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*International Journal of Basque Linguistics and Philology*, XXVII

## SYNTACTIC THEORY AND BASQUE SYNTAX

JOSEBA A. LAKARRA & JON ORTIZ DE URBINA (eds.)

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## Preface

This volume presents a series of articles dealing with questions of current interest within the field of generative syntax. If syntax has played a central role in the development of linguistic theory in the second half of this century, it seems clear that generative approaches occupy a central position in the area of syntactic research. Actually, it is to a large extent as a result of concerns addressed within the generative paradigm that syntax has emerged as the single most important field in theoretical linguistics. Since the publication of Chomsky's *Syntactic Structures* back in 1957, the 'generative enterprise' has managed to provide an appealing research program which has unified and guided the activity of a growing number of linguists.

The generative paradigm found an early echo in the Basque Country, and, for example, the late Mitxelena was among the first linguists, if not the first, to quote Chomsky in Spain. De Rijk's 1968 MIT thesis on Basque relative clauses and the publication of a descriptive generative grammar of Basque in Basque, Goenaga's *Gramatika bideetan*, in 1978 triggered the beginning of what is by now a fully established academic tradition. *ASJU-International Journal of Basque Linguistics and Philology* was also highly responsive to these developments, and already as early as 1972 produced a special issue devoted to American contributions to Basque generative studies.

We believe the present volume comes out at a specially interesting time in the development of both ends of our general topics, syntactic theory and Basque syntax. Since the late 80's, this field seems to have been gaining momentum among Basque linguists, and the quantity and quality of research has experienced a dramatic increase. The surge in generative studies of recent years coincides with a change in approach and emphasis within the theory of syntax. The development of the Principles and Parameters framework has revived interest in the parameters allowed by UG whose setting accounts for interlinguistic variation. This has led recently to a renewed interest in the study not only of related language groups (Romance, Germanic, Slavic, etc.), but also of typologically divergent languages. This new 'comparatist' research strategy has been extremely fruitful, even if we only take into account the sheer mass of data gathered in the last years from widely different languages and which have become standard research material practising linguists must reckon with.

In this context, the purpose of this collection of articles is to present current research framed within this new approach, trying to provide an accurate picture of the types of theoretical concerns and data configurations that spur research in this

field rather than producing a homogeneous volume devoted to a more or less broad topic. Thus, the articles range from particular analyses of very specific data to the consideration of general principles of language design. The core data base is also supplied by a wide variety of languages apart from the usual Germanic and Romance: Basque, of course, but also Quechua, Hungarian, Slovak, etc. The unifying force behind these articles is precisely the same one that guides the efforts of so many linguists today: the presence of a formal research program powerful enough to address the problem of accounting at the same time for the evident diversity found in natural languages and for the also evident underlying similarity.

# Why Basque doesn't Relativize Everything

XABIER ARTIAGOITIA

(University of Washington)

## Introduction

De Rijk (1972a, 1972b) has outlined and extensively discussed what I take to be a classical problem of the A'-Syntax in the tradition of Basque generative studies: the formation of relative clauses. According to his findings, there are two mainstream 'dialects' (where the concept must be understood in a broad, loose sense) with respect to relativization in Basque: in the restricted one, only true "NP"s, i.e. NPs whose morphological information is encoded in the auxiliary verb (= NPs marked ergative, absolutive and dative) can be gaps in the relative clause; in the main dialect, on the other hand, not only these NPs but also some postpositional phrases (locative, ablative, adlative or directional, instrumental) can be relativized; other PPs cannot be gaps. The following data illustrate the generalization:

- (1) Ainhoak Asierrek *e* erosi duen liburua irakurri du.  
buy aux-n book read aux  
Ainhoa has read the book that Asier (has) bought
- (2) Ainhoa *e* bizi den etxea urrun dago hemendik.  
live aux-n house far is here-abl  
The house Ainhoa lives ('in') is far from here
- (3) Ainhoak *e* inglesa irakasten duen eskola nahiko berria da.  
English teach aux-n school quite new is  
The school Ainhoa teaches English ('in') is quite new

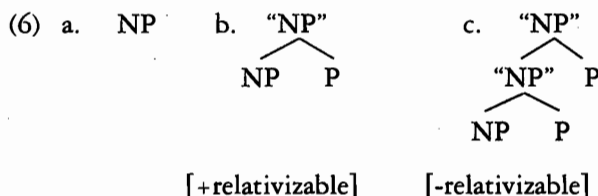
(\*) This research was made possible by a grant from the Department of Education, Universities and Research of the Government of the Basque Country.

(\*\*) The material presented here is based on chapters 1 and 2 of Artiagoitia 1990, earlier versions of which had circulated in a manuscript as "On the Existence of Null Operators in Basque". Sections 3, 5, (and 7), however, contain new material and/or proposals not formulated previously. I am thankful to H. Contreras and J. Emonds for their innumerable valuable comments on the earlier versions and on this one. This version has also considerably benefited from an informal discussion with A. Eguzkitza, J. Lakarra, J. Ormazabal, J. Ortiz de Urbina, and M. Uribeetxebarria, as well as from written comments by B. Oyharçabal. All my gratitude to Andolin Eguzkitza, Itziar Gomez Barrondo, Jose Ignacio Markaidea and Iñaki Markinez for discussing several aspects of the data. Thanks also to Perry Atterberry and Anxón Olarra for their moral support and for reading and commenting on this article.

- (4) \*Jon *e* ezkonduko den neska Bilbokoa da.  
 get-married aux-n girl -gen is  
 The young woman Jon will get married ('with') is from Bilbao
- (5) \*Jonek *e* hizkuntzalaritza ikasten duen jendeak jai bat antolatu du.  
 linguistics learn aux-n people party one  
 The people Jon studies linguistics ('with') have organized a party

(1) is grammatical in both systems. Sentences (2)-(3), where the gap (=e) in the relative clause corresponds to a locative PP (subcategorized for by the verb in (2), a plain adjunct in (3)), are grammatical sentences only in the main system. (4)-(5), where the gaps correspond to a comitative PP headed by *rekin* 'with' (a complement to the verb in (4) but again an adjunct in (5)), are ungrammatical in both systems. The paradigm is, to my mind, quite straightforward and widely motivated empirically.<sup>1</sup>

De Rijk's (1972a, 1972b) account of the facts posits a deletion rule of the relativized element inside the relative clause under identity with the head of the NP that contains the relative clause. He further observes that the "relativized" phrases have to have the structure in (6a) or (6b); phrases of the structure in (6c) can never be "deleted" (to use de Rijk's terms):



[PPs of type (6c) include benefactive, comitative, motivative, and the locative-/ablative/adlative postpositions used with [+human] nouns]

Under current assumptions in grammatical theory (Chomsky 1970, Jackendoff 1977, Stowell 1981), the quoted NPs are in fact PPs whose head is P (note that Basque is a head-final language, cf. Eguzkitza 1986); de Rijk's labeling is forbidden by the Endocentricity Principle of X'-theory.

In this paper I argue that it is the Bounding Theory of the Principles and Parameters approach to language that rules out sentences (4)-(5). In particular, I would like to claim that their ungrammaticality arises as a consequence of violating the Subjacency Condition as formulated, roughly, in Chomsky 1986b. The paper is organized as follows: first, an analysis of Basque relative clauses as involving the presence of an A'-chain headed by a null operator is motivated within the CP hypothesis, a possibility discussed (yet in my opinion not sufficiently exploited) by Ortiz de Urbina (1989) and Oyharçabal (1988, 1989). This analysis presupposes the existence

(1) Some (few) speakers tend to consider sentences like (2) slightly better than (3); these same speakers are occasionally reluctant to accept isolated examples where an adjunct PP (especially if headed by the ablative and the adlative/directional) is relativized. Nevertheless, my observations confirm that texts written in Standard Basque (journals, newspapers) and most speakers *systematically* relativize adjunct PPs of the type described by de Rijk. His generalization is hence correct.

of lexically null Ps mediating between the operator and the variable (e.g. in (2)-(5)), an assumption which I try to motivate in section 2 following Emonds's 1987 *Invisible Category Principle (ICP)*. The consequences of and apparent problems for the Null Operator Hypothesis (NOH hereafter) are handled in section 3. In section 4, I provide a principled characterization of Subjacency phenomena in Basque, and show how the ungrammaticality of sentences (4)-(5) can be derived from the Bounding Theory with little or no stipulation. Section 5 addresses some predictions that the Subjacency account makes: in particular, the distribution of resumptive pronouns.

Finally, section 6 shows that the empirical coverage of my proposal extends beyond the scope of the data discussed originally by de Rijk himself.

In the remainder of the paper, I assume the correctness of Ortiz de Urbina's (1989) approach to the structure of CP in Basque: both the specifier of C and C precede IP despite the fact that Basque is a head-final language (See Ortiz de Urbina 1989: chp.4 for the motivations). This has the advantage of treating both wh-movement and focus movement (which take place by S-S and trigger V-2 phenomena in Basque) in a unified manner.<sup>2</sup> Unless otherwise stated and for the sake of making the argumentation as simple as possible, Chomsky's (1986b) definitions of  $\theta$ -marking, L-marking, barrier and the Empty Category Principle are assumed.

## 1. The Null Operator Hypothesis (NOH)

De Rijk's (1972a, 1972b) deletion rule is no longer acceptable under current assumptions in generative syntax in that it leads to a violation of the Projection Principle (Chomsky 1981); in the best case, that rule does not explain why (4)-(5) should be ungrammatical. Thus some revision is in order.

Intuitively it looks like we must rely on the existence of empty categories (ECs). The Projection Principle and the  $\theta$ -Criterion require and ensure that the subcategorization frame of the verbs in the embedded relative clause be satisfied at D-Structure and preserved throughout the derivation. If covert, the arguments must be syntactically present by means of some EC. If adjunct, the category must also be syntactically present for whichever mechanism adjuncts are licensed since *eskolan* 'in the school' is non-pragmatically understood inside the relative clause in (3). The EC in

(2) This is controversial since Ortiz de Urbina has to assume that complementizers originate in a pre-clausal position and are then cliticized to I; if I-to-C movement takes place in an embedded sentence (i.e. one that has an obligatorily overt complementizer), the C position is filled again. For the purposes of this paper, we could as well assume (with Laka and Uriagereka 1987 and Laka 1989) that the structure of CP in Basque is as in (i) with the sentence-final complementizer *-n* occupying the C position in a relative clause:

i. [<sub>CP</sub> SPEC [<sub>C</sub> IP C]]

Obviously, this position calls for an alternative explanation of the V-2 phenomena in Basque.

- (3)  $\theta$ -marking: " $\alpha$  directly  $\theta$ -marks  $\beta$  only if they are sisters" (Chomsky 1986b: 14).  
 $\theta$ -government: " $\alpha$   $\theta$ -governs  $\beta$  iff  $\alpha$  is an  $X^0$  that  $\theta$ -marks  $\beta$ , and  $\alpha$ ,  $\beta$  are sisters" (ibidem: 15).  
 L-marking: " $\alpha$  L-marks  $\beta$  iff  $\alpha$  is a lexical category that  $\theta$ -governs  $\beta$ " (ibidem: 15).  
 Blocking Category: " $\gamma$  is a BC for  $\beta$  iff  $\gamma$  is not L-marked and dominates  $\beta$ " (ibidem: 14).  
 Barrier: " $\gamma$  is a barrier for  $\beta$  iff (a) or (b):  
 a) if it immediately dominates  $\delta$ ,  $\delta$  a BC for  $\beta$ ;  
 b)  $\gamma$  is a BC for  $\beta$ ,  $\gamma \neq$  IP" (ibidem: 14).  
 ECP: " $\alpha$  properly governs  $\beta$  if  $\alpha$   $\theta$ -governs  $\beta$  or antecedent-governs  $\beta$ " (ibidem: 16).





- (9) ?? Bera<sub>i</sub>-ren jabeak e<sub>i</sub> erre zuen etxea<sub>i</sub> salgai dago.  
 it-gen owner burn aux-n house on sale is  
 The house that its owner burned is on sale
- (10) ?? Bera<sub>i</sub> hiltzeko mehatxuak e<sub>i</sub> kezkatzen zuen diputatua<sub>i</sub>  
 s/he kill threat worry aux-n deputy  
 oportretan joan da.  
 on vacation go aux  
 The deputy that the threat to kill her/him worried has gone on  
 vacation

If WCO is accounted for by Koopman and Sportiche's (1982) Bijection Principle, which requires a one-to-one correspondence between operators and variables, the oddity of (9)-(10) follows straightforwardly: an operator in Comp is binding two variables: the variable left by operator movement, and the pronoun *bera*, which is contextually defined as a variable (it is a locally A'-bound pronoun in an A-position). Alternatively, if Safir's (1986) Parallelism Constraint on Operator Binding is the right approach to WCO, the conclusion must be drawn that an operator is binding both a pronominal variable (*bera*) and a non-pronominal variable, namely the trace of the operator. Either way, *e* in (9)-(10) (and in (1)) cannot be *pro*:

- (11) ?? ... [op<sub>i</sub> ... bera<sub>i</sub> ... e<sub>i</sub> ...] etxea<sub>i</sub>/diputatua<sub>i</sub> ...

Hence, we are left with what we might consider the null hypothesis in the analysis of relative clauses: across languages, the formation of a relative clause involves an operator-variable configuration. In the absence of overt *wh*-movement, I will assume that a null operator uniformly moves to the specifier of Comp in sentences (1)-(5).<sup>6</sup> In (2) through (5), the variable is an NP embedded in PPs headed by lexically null postpositions, the motivation of which is explored in the next section. This variable is subject to the Strong Binding Condition on Variables (Chomsky 1986a), which requires that a variable and a chain headed by a null operator be bound at LF by an overt argument (the postcedent of the relative clause) that will assign semantic content to it. The Visibility Condition and the  $\theta$ -Criterion are complied with: the verb in (1) and the empty Ps in (2)-(5) assign case and  $\theta$ -role to the operator prior to movement. Thus, the following configurations obtain:

- (12) (=1) ... [NP<sub>CP</sub> op<sub>i</sub> ... [NP e<sub>i</sub>] ...] N<sub>j</sub> ] ... (i=j)
- (13) (=2) ... [NP<sub>CP</sub> op<sub>i</sub> ... [[NP e<sub>i</sub>]  $\emptyset$  PP] ...] N<sub>j</sub> ] ... (i=j)
- (14) (=3) ... [NP<sub>CP</sub> op<sub>i</sub> ... [[NP e<sub>i</sub>]  $\emptyset$  PP] ...] N<sub>j</sub> ] ... (i=j)
- (15) (=4) ... [NP<sub>CP</sub> op<sub>i</sub> ... [[[NP e<sub>i</sub>]  $\emptyset$  PP]  $\emptyset$  PP] ...] N<sub>j</sub> ] ... (i=j)
- (16) (=5) ... [NP<sub>CP</sub> op<sub>i</sub> ... [[[NP e<sub>i</sub>]  $\emptyset$  PP]  $\emptyset$  PP] ...] N<sub>j</sub> ] ... (i=j)

(6) Or rather, it is generated there and then forms an A'-chain with the variable NP it c-commands and binds. I remain neutral on the issue. Note that my account is compatible with both.

We now have a unified treatment of relative clause formation, although we still lack an explanation for the ungrammaticality of (4)-(5). This explanation is the subject of section 4. We now turn to motivate the existence of null postpositions.

## 2. The Licensing of Null Postpositions

So far I have been assuming the existence of empty postpositions without specifically defining their licensing mechanism. The most principled account of empty Ps that I am aware of in the generative literature is that developed by Emonds (1985: ch.5) and subsequent work (1987, 1989). Emonds (1985, 1987) argues that closed categories (= Det, I, P, ...) bearing some kind of features can be null throughout a syntactic derivation as long as those features are alternatively realized in a phrasal sister of that category. For instance, in English the determiner may be null with a count noun only when the feature *plural* (generally a feature in Spec (N)) is alternatively realized in a sister noun, but not otherwise:

- (17) \*Student came / Students came

The same is claimed to be true of tense and the specifier of Adjectives, which can be alternatively realized in V and A respectively. This generalization is summarized by Emonds as the Invisible Category Principle:

- (18) *Invisible Category Principle*

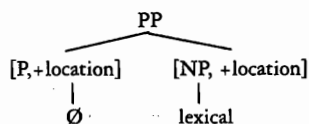
A closed category B with positively specified features  $C_i$  may remain empty throughout a syntactic derivation if the features  $C_i$  (save possibly B itself) are all alternatively realized in a phrasal sister of B. (Emonds 1987: 618)

Alternative realization can be understood as a productive morphological realization (such as an inflectional ending) or as a marked lexical realization, for example in the case of English adverbial NPs.<sup>7</sup>

As Emonds (1985) himself suggests, the ICP predicts that, in a language with no productive morphological case (say English, Spanish or French), where NPs do not contrast by virtue of being marked dative, ablative and so on, we do not usually expect to find cases of alternative morphological realization of properties of P in the NP (although lexical realization as in note 8 may be an option). Case inflecting languages like German, on the other hand, may allow empty Ps in general because there are minimal pairs of NPs marked as +/- dative with +P and -P.

(7) Emonds (1987) claims that the D-Structure of English bare adverbial NPs follows from the ICP on the reasonable assumption that the head noun of those NPs (which constitute a restricted subclass of nouns) are inherently marked with a lexical feature [+location] matching that of the preposition. Therefore, the ICP licenses a null P, making these NPs parallel to plain PPs:

- i. I saw Ainhoa [<sub>PP</sub>  $\emptyset$  [<sub>NP</sub>that day]]



With regard to inflectional case, Basque patterns together with German insofar as nouns can differ from each other by virtue of being marked dative, ergative and so on:

- (19) absolutive NP: etxea- $\emptyset$  the/a house  
 dative NP: etxea-ri to the/a house  
 ergative NP: etxea-k the/a house  
 locative PP: etxea-n in the/a house  
 ...

Thus, if we view Basque obliquely case-marked NPs as PP configurations where the features of the category P are systematically realized in the NP, it follows from the ICP that empty Ps may be licensed in Basque (perhaps this is also true of lexical NPs). In other words, when the features of P (dative, locative) are realized in the NP, postpositions can remain empty:<sup>8</sup>

- (20)
- ```

      PP
     /  \
  NP [+F $\alpha$ ]  P [+ $\alpha$ ]
   |         |
  null (lexical)  $\emptyset$ 
  
```

We can therefore conclude that the presence of empty Ps in (2)-(5) follows directly from the ICP, the different features of the postpositions being realized in the operator (or the variable): goal, location, motive, instrument, etc.<sup>9, 10</sup>

(8) Note, however, that the device of alternative lexical realization (i.e. the possibility of bare adverbial NPs) is not generally possible in Basque. This must be a direct consequence of the rich morphological case system of Basque (i.e. in Basque one could not distinguish bare NPs from "adverbials NPs").

(9) In the case of complex PPs, the relevant features can be borne by the upper P and then be transmitted to the lower one. Or, perhaps more plausibly, we can adopt Baker's (1988) abstract incorporation device so that the lower P incorporates into the higher one:

- i.
- ```

      PP
     /  \
    PP  P+Pi
   /  \
  NP  Pi
  
```

Crucially, the intermediate PP still counts as a barrier for Subjacency, although it must not count for government according to Baker's *Government Transparency Corollary*. This is consistent with Baker's view (1988: chp. 2) that the notion of government and barrierhood triggered by incorporation is not intended to account for Subjacency.

(10) A question remains unanswered in connection with the licensing of empty Ps in English and Basque: why sentences like (i) (i.e. = the English counterpart of (2) above) are ungrammatical:

- i. \*The house [OP<sub>i</sub> Mary lives [pp $\emptyset$  [NP<sub>e</sub>]]] is far away from here.

In other words, why can (i) not mean "the house Mary lives in is far away from here"? The explanation is straightforward: in English, unless a noun has the inherent lexical feature [+location], nothing forces the empty P to be interpreted as being "in". In Basque, however, locational relationships not expressed by the postposition *-n* must be expressed by means of a noun bearing the postposition *-n* itself preceded by a genitive PP; the Basque counterpart of "behind the house" is best translated as "in the back of the house". Therefore, a sentence like (2)-(3) with a non-lexical NP can never be interpreted ambiguously because there is only one P that could bear the feature [+location].

A final question with respect to PPs with empty heads is to ask whether such projections are subject to any other licensing requirement or subject to any other principle of the grammar. I shall not pursue this matter here, although I believe that these empty PPs may have to be governed by a head (= V).

### 3. Predictions and Apparent Paradoxes of the Null Operator Hypothesis

#### 3.1. *A prediction and ...a problem?*

As suggested in the introduction, the unified account of wh-movement and foci developed by Ortiz de Urbina (1989) is assumed in this article. By S-Structure both focused XPs and wh-phrases move to the spec of Comp triggering in general V-2 phenomena (analyzable as instances of I-to-C movement, cf. Chomsky 1986b) even in embedded clauses in the case of bounded movement:

(21)  $[_{CP}$  Nora<sub>i</sub> [<sub>C</sub> uste duzu<sub>j</sub> [<sub>IP</sub> pro [<sub>CP</sub> t<sub>i</sub> joan dela<sub>k</sub> [<sub>IP</sub> Ainhoa t<sub>i</sub> t<sub>k</sub>] t<sub>j</sub>]  
Where do you think Ainhoa went t ?

(22)  $[_{CP}$  ETXERA<sub>i</sub> [<sub>C</sub> uste dut<sub>j</sub> [<sub>IP</sub> pro [<sub>CP</sub> t<sub>i</sub> joan dela<sub>k</sub> [<sub>IP</sub> Ainhoa t<sub>i</sub> t<sub>k</sub>] t<sub>j</sub>]  
TO THE HOUSE I think Ainhoa went t

This seems to predict the following: if the specifier of Comp is occupied by a null operator in relative clauses, no wh-phrase or focused XP should be able to occur inside them: the Doubly Filled Comp filter would be violated otherwise. The prediction is borne out by the data in the unmarked case (with neutral intonation):

(23) \*Asierrek [Ainhoak nor deitu duen ordua] ahaztu du?  
who call aux-n time forget aux  
Asier forgot the time that Ainhoa called who?

(24) \*Asierrek [Ainhoak LAGUNA deitu duen ordua] ahaztu du.  
friend  
Asier forgot the time that Ainhoa called A/THE FRIEND

The strength of the prediction seems to be somewhat undermined by the fact, noted first by Ortiz de Urbina 1989, that wh-phrases in Basque can pied-pipe the whole island in which they are contained to the specifier of the matrix Comp. The strategy is not possible with focused elements:

(25)  $[_{CP}$  [<sub>CP</sub> Nora [<sub>C</sub> joan dela Ainhoa [<sub>IP</sub> ...]] [<sub>C</sub> uste duzu [<sub>IP</sub> ...  
(cf. (21))

(26) \*  $[_{CP}$  [<sub>CP</sub> ETXERA [<sub>C</sub> joan dela Ainhoa [<sub>IP</sub> ...]] [<sub>C</sub> uste dut [<sub>IP</sub> ...  
(cf. (22))

If the same clausal pied-piping strategy applies to sentences (23)-(24) and we generate the NP that contains the relative clause in the specifier of C of the matrix clause, we obtain:

- (27) (\*) [<sub>CP</sub> [<sub>NP</sub> [<sub>CP</sub> Ainhoak nor deitu duen] ordua] [<sub>C</sub> ahaztu du  
[<sub>IP</sub> Asierrek ... ]] ? (cf. (23))
- (28) \* [<sub>CP</sub> [<sub>NP</sub> [<sub>CP</sub> Ainhoak LAGUNA deitu duen] ordua] [<sub>C</sub> ahaztu du  
[<sub>IP</sub> Asierrek ... ]]<sup>11</sup> (cf. (24))

Clausal pied-piping is of no help for a focused phrase; this is expected since foci operators cannot pied-pipe the whole clause that contains them in complement clauses either (cf. (26)). (27), on the other hand, requires a more detailed analysis. Artiagoitia (1990) stars sentences like this on a par with (29)-(31) on the assumption that they violate the Doubly Filled Comp (at S-Structure):

- (29) (\*) [Umeari nork atera dion argazkia] izorratu da t ?  
child-dat who take aux-n picture spoil aux  
[The picture that who has taken of the child] has been damaged?
- (30) (\*) [Harria nori bota dion neska] atxilotu dute t ?  
stone who-dat throw aux-n girl imprison aux  
They put in jail [the young woman that threw a stone at who] ?
- (31) (\*) [Norentzat egin duzun pastela] jan du Asierrek t ?  
who-for make aux-n cake eat aux  
Asier ate [the cake that you made for whom] ?

It is indeed the case that many speakers (including myself) regard (27) and (29)-(31) as ungrammatical or as extremely odd questions. However, and as pointed out by de Rijk (1972a), other speakers do seem to accept these sentences, which he takes as evidence that Basque allows *wh*-phrases inside relative clauses in general.<sup>12</sup> Ortiz de Urbina (1989) finds this somewhat problematic for the null operator analysis of the relative clauses: either the Doubly Filled Comp filter has to be relaxed for Basque, or else we may assume that the null operator is in fact adjoined to IP (rather than in the spec of Comp). In what follows, I would like to suggest that the apparent problem posed by (speakers that accept) sentences (27) and (29)-(31) can be explained along the lines of Pesetsky 1987; moreover, once the necessary parallelism with other languages is drawn, one can claim that the problem for the NOH does not even exist.

(11) Interestingly, (28) may be made sound somehow better than (24) if the intonation is forced upon LAGUNA. This can be considered an instance of "extra emphasis by phonetic means" (Ortiz de Urbina 1989: 241), different from syntactic foci under discussion here. Note moreover that nothing would prevent the presence of two focused XPs in matrix and relative clause if the latter in Basque did not have a null operator in the spec of C. But such possibility is ruled out:

- i. \* ASIERREK ahaztu du Ainhoak LAGUNA deitu duen ordua.

The marginal contrast between (24) and (28) may thus be due to the pre-clausal character of the NP in the latter. In (24) phonetic emphasis of *laguna* would break the unmarked intonation pattern of the sentence right in the middle of it.

(12) Interestingly, he points out that such sentences are especially appropriate as echo questions. This is suspect. Nevertheless, I will still consider that those sentences are fully grammatical for some speakers without the echo interpretation.

### 3.2. *The problem is no problem.*

There is evidence that the set of sentences mentioned above is no threat to the NOH in that the wh-phrases inside them remain in-situ. For one thing, the V-2 phenomena that wh-phrases usually trigger in Basque is only apparent in (27), (29)-(31) for, if we take a triadic verb like *atera* or *bota* in (29) and (30), the more internal argument can follow the wh-phrase (i.e. in the unmarked order) and no contrast is found:

(32a) [[umeari nork atera dion] argazkia] izorratu da t ? (=29)

(32b) [[nork umeari atera dion] argazkia] izorratu da t ?

(33a) [[harria nori bota dion] neska] atxilotu dute t ? (=30)

(33b) [[nori harria bota dion] neska] atxilotu dute t ?

In the (a) examples, where the underlying order is not respected, we can assume that 'scrambling' has adjoined *umeari* and *harria* to CP leaving the wh-phrase in situ (thus producing the effect of V-2 phenomena). In the (b) examples, the arguments remain in their canonical, underlying position, and the wh-phrases are still in situ without V-2; no contrast is found between the (a) and (b) sentences. Hence, the V-2 effect of, not only (29) and (30), but also (27) and (31) is apparent and there is no reason to assume wh-movement of any kind by S-Structure on the basis of I-to-C movement.<sup>13</sup>

The second argument for analyzing wh-phrases in relative clauses as remaining in situ comes from Pesetsky's (1987 and references therein) discussion of the LF/Subjacency controversy in Japanese (see also Hasegawa 1984, 1985). In order to argue for the relevance of Subjacency at LF, Pesetsky shows that an answer to a non-D(is-course) linked wh-phrase inside a relative clause (or an adjunct for that matter) in Japanese has to recapitulate the entire island if the answer is to be felicitous (if the wh-phrase is D-linked, a short answer is possible). He assumes the following principle holds in Japanese:

(34) *Felicitous Principle*

A felicitous answer to a wh-question consists of a phrase structurally identical to the wh-phrase whose index is immediately dominated by the Comp of the question at LF. (Pesetsky 1987: 114)

Then, it follows that the answer to a wh-phrase inside a relative clause has to recapitulate the whole NP that includes the relative clause on the assumption that the *wh-phrase in situ* pied-pipes the whole NP to the specifier of Comp at LF:

(35a) Mary-wa [<sub>NP</sub> [<sub>S</sub> John-ni nani-o ageta] hito-ni] atta-no  
What did Mary meet the man who gave to John?

(13) Hence the actual representation of (27) and (31) can be this:

(27) [<sub>CP</sub> [<sub>NP</sub> [<sub>CP</sub> OP<sub>i</sub> [Ainhoak [<sub>PP</sub>[t<sub>i</sub>]Ø] nor deitu duen]] ordua] [<sub>C</sub> ahaztu du [<sub>IP</sub> Asierrek ... ]]

(31) [<sub>CP</sub> [<sub>NP</sub> [<sub>CP</sub> OP<sub>i</sub> [pro norentzat [[t<sub>i</sub>] egin duzun]] pastela] [<sub>C</sub> jan du [<sub>IP</sub> Asierrek ... ]]

(35b) Mary-wa [<sub>NP</sub> t<sub>i</sub>] atta-no [<sub>Comp</sub> John-ni nani-o ageta hito-ni];  
 (= LF representation)

(36a) \*/?? Konpyuutaa desu      (36b) Konpyuutaa-o ageta hito desu  
 It's a computer                      It's the man who gave a computer

Moreover, Pesetsky notes (yet gives no explanation for the fact) that questions containing aggressively non D-linked phrases with *ittai* ('the hell') do not allow pied-piping at LF and are therefore ungrammatical:

(37) \*Mary-wa John-ni *ittai nani-o* ageta hito-ni atta-no  
 What the hell did Mary ...?

The interest of Pesetsky's analysis lies on the fact that the Basque data manifest a striking parallelism with Japanese, except that pied-piping takes place in Basque by S-S (and not between S-S and LF). First of all, speakers that accept sentences of the type (27), (29)-(31) cannot answer them with a short phrase that matches the wh-phrase but rather need to recapitulate the whole pied-piped structure. Thus, only (38b) is an appropriate answer for (29):

(29) [[ Umeari nork atera dion] argazkia] izorratu da t ?  
 [The picture that who took of the child] has been damaged?

(38a) \*amak                      (38b) (umeari) amak atera dion argazkia  
 The mother                      The picture that the mother took (of him/her)

Secondly, aggressively non D-linked wh-phrases are not allowed inside relative clauses by these same speakers, even if there is pied-piping:

(39) \*Ainhoak nor arraio deitu duen ordua ahaztu du Asierrek?  
 Asier forgot the time Ainhoa called who the hell?

Consequently, and assuming that the Felicitous Principle holds in Basque at S-Structure, the parallelism between Japanese and Basque is complete: Basque (at least for some speakers) allows for the presence of wh-phrases in situ inside relative clauses (and, according to Ortiz de Urbina 1989, adjuncts as well);<sup>14</sup> these wh-phrases need not move to the specifier of Comp for they are able to pied-pipe the whole syntactic island in which they are contained. Pied-piping takes place by S-Structure, and the correctness of the approach is shown by the absence of V-2 phenomena and by the fact that an answer to these questions has to recapitulate the whole pied-piped struc-

(14) As expected, if a wh-phrase inside an adjunct is pied-piped to the spec of Comp, the answer to the question has to recapitulate the whole adjunct:

i. Zer ikusi ondoren joan zinen hemendik?      ii. \*Filmea      iii. Filmea ikusi ondoren  
 After seeing what did you leave?                      The movie                      After seeing the movie

ture. Japanese, on the other hand, shows the same kind of phenomena at the level of LF.<sup>15</sup>

To summarize, I have explored in this section the consequences of the NOH in the analysis of relative clause formation in Basque. It was first shown that the prediction that neither *wh*-phrases nor foci are allowed inside relative clauses is confirmed in the unmarked case. In the case of clausal pied-piping to the specifier of *Comp*, some speakers still consider *wh*-phrases inside relative clauses ungrammatical due to their analyzing them as violations of the Doubly Filled *Comp* filter. The fact that some speakers accept these pied-piped structures was claimed to be consistent with and parallel to Pesetsky's (1987) analysis of clausal pied-piping in Japanese; crucially, we proved it to be the case that the *wh*-phrases remain in situ in these cases, so no conflict arises with the NOH. The dichotomy in the levels at which clausal pied-piping occurs is a reflection of the *wh*-parameter: *wh*-phrases move at S-S in Basque, at LF in Japanese.

#### 4. A Subjacency Account of Non-relativizable Postpositions

The NOH, though providing some insight into the relative clause formation in Basque, does not yet give an explanation of the central problem here: the ungrammaticality of (4)-(5) (= (15), (16)), as opposed to the grammaticality of (2)-(3) (= (13), (14)). The issue relates to the different configurations that we sketched in (12)-(16), repeated (and further expanded) here for convenience:

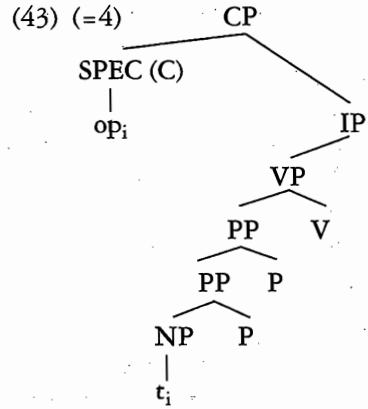
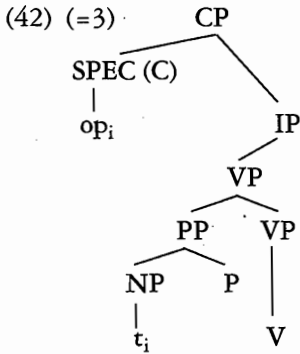
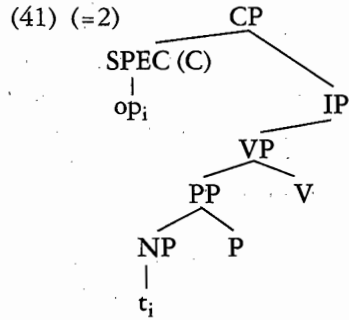
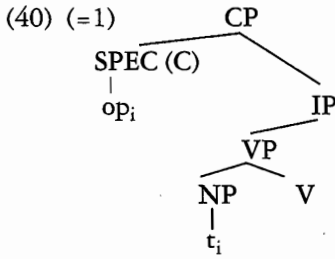
(15) Ortiz de Urbina (1989: 256) notes (citing Koldo Sainz) that there is a contrast between argument and adjunct *wh*-phrases inside relative clauses. (31), where the *wh*-phrase corresponds to an adjunct, and (2) below suggest that this is not a correct observation (point made to me by B. Oyharçabal (in lit.)). The only example provided by Ortiz de Urbina is with *zergatik* 'why', a reason adverbial:

- i. [[Nora ihes egin duen] preso] atxilotu dute?  
They have put in jail [the convict [that fled where]] ?
- ii. \*[[Zergatik egin duen] lana] gustatzen zaizu?  
You like [the job [that I did why]] ?

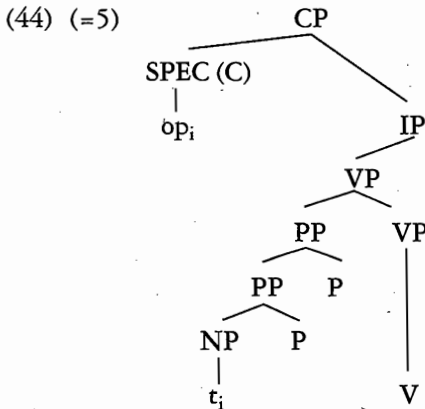
Ortiz de Urbina assumes that *wh*-phrases in pied-piped structures undergo further movement at LF; the ungrammaticality of (ii) would follow from the disjunctive ECP (Chomsky 1986b) on the assumption that *zergatik* will fail to antecedent-govern its trace. Here, I assume no further movement at LF of *wh*-phrases in situ in pied-piped structures (Basque S-S = Japanese LF). In this framework, the ungrammaticality of (ii) (but not of sentences like (i), with non-sentential adverbials) is expected. As pointed out by Rizzi (1990: 46-51), "the only possibility of" "*wh*-movement" for a sentential adverbial will be direct generation in the spec of *Comp*" (and further movement from Spec to Spec). Since this position is occupied by the null operator, *zergatik* is forced to remain in situ: hence it cannot be interpreted as an operator. Even if we assumed further LF movement of *zergatik* and adopted Rizzi's version of the ECP, no head-government would be possible for it (reason adverbials are too high in the tree to be governed by V or Tense (if we accept the split INFL hypothesis (Pollock 1989), and Agr can only govern elements that are coindexed with it).



[+relativizable] (=NP, locative, adlative, ablative, instrumental PPs)



[-relativizable] (= benefactive, commitative, motivative PPs)



Contrary to what one might have expected, the asymmetry observed here is not one between complements (sentences (1/40), (2/41) and (4/43)) and adjuncts ((3/42) and (5/44)), as de Rijk (1972a: 92) already points out: "strict subcategorization is irrelevant to relativization". It seems then that the contrast between (2)-(3) (= (41)-(42)) and (4)-(5) (= (43)-(44)) should not be explained in terms of the ECP, but rather has to do more with the distance mediating between the null operator and the variable. In other words, I would like to claim that (4) and (5) are Subjacency violations in that the null operator crosses two bounding nodes when moved to the specifier of Comp, namely two PPs. This, in turn, amounts to saying that, in Basque, PPs, as well as NPs and CPs, must be bounding nodes, a result that will be shown to follow from the *Barriers* framework (see (4.2.) below). If the postpositional phrase is lexical, this statement is redundant because postposition stranding will then be ruled out by independently motivated principles of the grammar, say the Stray Affix Filter (Baker 1988: 140): there cannot be postposition stranding in Basque when the PP is lexical, because postpositions are bound morphemes and not independent words. The crucial difference, then, between (2)-(3) and (4)-(5) comes down to the number of nodes crossed. A Subjacency account has the advantage of being compatible with the fact that, in certain contexts, the ungrammaticality can arguably be overridden (cf. Oyharcabal 1986 cites some examples from literary texts); we would certainly not expect this if the ECP (a stronger principle of the grammar than Subjacency) were responsible for the ungrammaticality of the examples considered so far (cf. Chomsky 1986a).

#### 4.1. *Subjacency in Basque.*

In the beginning of this section, I have informally characterized PP, NP and CP (and not IP) as bounding nodes for Basque. This affirmation deserves some careful consideration. For one thing, Basque obeys, as noted by de Rijk (1972a), the Complex Noun Phrase Constraint, assumed by Chomsky 1986b to be a subcase of Subjacency:

- (45) \* $[_{CP} op_i [_{NP}[_{CP} op_j [_{IP} bost aldiz [_{NP} t_i] [_{NP} t_j] irakurri duen]]$   
 apaiza $_k$ ] ezagutzen dudan] liburua $_i$ ... (i=k, j=1)  
 The book I know the priest that has read t five times

This, however, does not prove too much. What we need is to check whether Basque can violate the Wh-Island Constraint (cf. Rizzi 1982), so that it becomes clear that CP and not IP is the relevant bounding node. We see that indeed such a possibility exists in Basque:

- (46)  $[_{CP} Nora_j esan duzu_m [_{CP} t_j ez dakizula_i [_{CP} nork_i ihes egin duen_k$   
 $[_{IP} t_i t_j t_k] t_l] t_m]$ ?  
 Where did you say you don't know [who fled t]?  
 (47)  $[_{CP} Zein herritan_j esan du_m [_{IP} berriemaileak [_{CP} t_j ez dakitela_i$   
 seguru  $[_{CP} zenbat jende_i hil den_k [_{IP} t_i t_j t_k ] t_l] t_m]$ ?  
 [In which village] did the reporter say that they don't know for  
 sure [how many people died t ]?

- (48) [<sub>CP</sub> Non<sub>i</sub> ez dakizu [<sub>CP</sub> nor<sub>i</sub> bizi den<sub>k</sub> [<sub>IP</sub> t<sub>i</sub> t<sub>j</sub> t<sub>k</sub>]]]?  
Where don't you know [who lives t ]? <sup>16</sup>

In (46)-(48), the overt wh-operator is forced to move past the CP headed by another operator and, apparently, no ungrammaticality results. Two IPs are crossed but one CP in the first 'jump'. Therefore, CP is the relevant bounding node. According to the informal characterization of Subjacency that we have made so far, movement of a null operator contained within a simple PP will yield ungrammatical results if extracted past the CP in which it is contained. That is to say, long extraction should be sensitive to whether the operator is overt and corresponds to the whole PP (as in (46)-(48)), or covert (= null operator) and corresponds to an NP. In the latter case, the null operator will have to cross one more node (a PP); thus, two bounding nodes will be crossed and the sentence should be ungrammatical. The prediction turns out to be correct:

- (49) \* [<sub>CP</sub> op<sub>k</sub> [<sub>CP</sub> nor<sub>k</sub> ihes egin duen<sub>j</sub> [<sub>IP</sub> t<sub>i</sub> [[t<sub>k</sub>] Ø<sub>PP</sub>] t<sub>j</sub>]] ez dakigun] herria<sub>i</sub>. (k=1)  
The town [op we don't know [who fled [[t] Ø<sub>PP</sub>]] ]
- (50) \* [<sub>CP</sub> op<sub>k</sub> [<sub>CP</sub> zenbat jende<sub>i</sub> hil den<sub>j</sub> [<sub>IP</sub> t<sub>i</sub> [[t<sub>k</sub>] Ø<sub>PP</sub>] t<sub>j</sub>]] seguru ez dakigun] herria<sub>i</sub>. (k=1)  
The village [op we don't know sure [how many people died [[t] Ø<sub>PP</sub>]] ].
- (51) (?) [<sub>CP</sub> op<sub>k</sub> [<sub>IP</sub> [<sub>CP</sub> nor<sub>i</sub> bizi den<sub>j</sub> [<sub>IP</sub> t<sub>i</sub> [[NP<sub>i</sub> t<sub>k</sub>] Ø<sub>PP</sub>] t<sub>j</sub>]] ez dakidan ] etxea<sub>i</sub>. (k=1)  
The house [op I don't know [who lives [[t] Ø]] ]

As we shall see in the next subsection, the special status of (51) has to do with the fact that the postpositional phrase that has been relativized is a true complement to the verb *bizi* 'live'; this makes the subcategorized PP transparent for movement.<sup>17, 18</sup>

(16) Sentences (i) and (ii) are also grammatical:

- i. Zer ez dakizu nor idatzi duen?    ii. [op<sub>i</sub> nik/pro [nor<sub>k</sub> t<sub>i</sub> idatzi duen] ez dakidan] ipuina  
What don't know who wrote t?    The story [op that I don't know who wrote t]

Again, the Wh-Island Constraint is not respected. As H. Contreras points out to me, the wh-phrase/operator may be base-generated and coindexed with *pro* (Basque is a null-object language) in the embedded sentence, thus undermining the argument of the Wh-Island violation. But see section 1 of this article.

(17) There seems to be some variation in the acceptability of (51); as suggested by Artiagoitia (1990: 33), this may be related to a similar phenomenon in English (Johnson 1988: 601): L-marked PPs resist extraction out of their complements. The Basque data here differs from English in that we do not extract a NP out of the complement to an L-marked PP, but rather the complement itself.

(18) One might wonder how the ECP is complied with in (46)-(47), sentences where adjuncts undergo long-distance movement across a wh-island. If the ECP reduces to head-government as assumed by Rizzi (1990: chp. 3), then government of the VP-internal adjuncts by the verb in (46)-(47) (*non* is a complement in (48)) is sufficient for the ECP to be respected. Note that other (non VP-internal) adjuncts yield ungrammatical sentences if they undergo the same kind of movement:

- i. ??/\* Nola esan duzu ez dakizula [nor t ihes egin duen] ?  
How did you say you don't know [who fled t] ?
- ii. \*\*Zergatik esan duzu ez dakizula [nor t ihes egin duen] ?  
Why did you say you don't know [who fled t] ?

The data seem to favor the claim that head-government is enough to abide by the ECP; movement would then be constrained by Subjacency (and by Binding and the Chain forming algorithms) (See Rizzi 1990: chp. 3).

#### 4.2. Subjacency in Terms of Barriers.

After having determined the bounding nodes for Basque in a rather tentative way, we now turn to the question of how this can be stated in terms of the *Barriers* framework developed by Chomsky (1986b), where Subjacency is defined as follows:

- (52)  $\beta$  is n-subjacent to  $\alpha$  iff there are fewer than  $\alpha+1$  barriers for  $\beta$  that exclude  $\alpha$  (Chomsky 1986b: 30)

Crossing two barriers (being 2-subjacent) yields, according to Chomsky, a considerable decrease in acceptability. We henceforth adopt Johnson's (1988) modification of the definition of L-marking whereby  $\alpha$  has to be a  $\theta$ -governor and a lexical category in order to be an L-marker (see Johnson 1988 for motivations).<sup>19</sup> Under this definition, P [-N, -V] cannot be an L-marker even though it is a  $\theta$ -governor. We are now in a position to propose a straightforward account for (2)-(5), the configurations of which were reproduced in (40)-(44). In (1), there is no barrier between the null operator and the trace in the NP (it is L-marked by V) after the former moves to the specifier of Comp (or when the chain is formed otherwise). The same holds of sentence (2), where the PP is L-marked (it is a complement to the verb *bizi*). In (3), the null operator will cross one barrier (the P is not an L-marker) and the sentence will still be grammatical assuming adjunction to VP.<sup>20</sup> In (6), however, the lower PP will constitute an inherent barrier (it is not L-marked). The higher PP will inherit barrierhood from it, and, even if we assume adjunction to VP, two barriers will be crossed. In (7), the sentence is ungrammatical because both PPs are inherent barriers (neither is L-marked). The resulting derivations are as follows (bold nodes = barriers):

- (53) [<sub>CP</sub> OP<sub>i</sub> [<sub>IP</sub> ... [<sub>VP</sub> [<sub>NP</sub>t<sub>i</sub>] V ]]] (=1, 40)  
 (54) [<sub>CP</sub> OP<sub>i</sub> [<sub>IP</sub> ... [<sub>VP</sub> [[<sub>NP</sub>t<sub>i</sub>]  $\emptyset$  PP] V ]]] (=2, 41)  
 (55) [<sub>CP</sub> OP<sub>i</sub> [<sub>IP</sub> ... [<sub>VP</sub> t<sub>i</sub> [<sub>VP</sub> [[<sub>NP</sub> t<sub>i</sub>]  $\emptyset$  PP] V ]]] (=3, 42)  
 (56) \* [<sub>CP</sub> OP<sub>i</sub> [<sub>IP</sub> ... [<sub>VP</sub> t<sub>i</sub> [<sub>VP</sub> [[[<sub>NP</sub> t<sub>i</sub>]  $\emptyset$  PP]  $\emptyset$  PP] V ]]]] (=4, 43)  
 (57) \* [<sub>CP</sub> OP<sub>i</sub> [<sub>IP</sub> ... [<sub>VP</sub>t<sub>i</sub> [<sub>VP</sub> [[[<sub>NP</sub> t<sub>i</sub>]  $\emptyset$  PP]  $\emptyset$  PP] V ]]]]] (=5, 44)

(19) The main empirical problem is that even  $\theta$ -governed PPs become barriers.

(20) This is the only type of adjunction discussed in *Barriers*. Note that extraction through the spec of PP is not possible because the PPs under discussion lack an intermediate projection (P') and a specifier. In principle, nothing in the framework would prevent adjunction to the highest PP in (56)-(57). However, I will limit adjunctions to VP (and perhaps to AP predicates):

- i. Adjunction is only possible to a lexical  $X^{max}$  that is not an argument.

If it were to allow adjunction to PP predicates, we could re-state (i) as

- ii. Adjunction is only allowed to an  $X^{max}$  that is not an argument if it has a subject (i.e.  $X^{max}$  = predicate)

The nature of (i/ii) is as stipulative as Chomsky's. I will not explore the consequences of (i/ii) any further and leave the issue open for investigation.

We thus now have a purely configurational explanation for the asymmetry between (4)-(5) and (6)-(7).<sup>21, 22</sup>

## 5. The Distribution of Resumptive Pronouns

A Subjacency based approach to the different behavior of the two types of Postpositional Phrases with respect to relativization makes a basic prediction: if we accept, as is standard practice in generative syntax (see inter alia Sells 1984, Safir 1986, Contreras 1989), that resumptive pronouns generally occur in syntactic wh-islands (inside relative clauses in the classical examples) to overcome Subjacency violations, then it follows that resumptive pronouns should be able to occur only inside those PPs that resist relativization; otherwise, a resumptive pronoun inside a relative clause where the variable is contained in a simple PP (= [[vbl]  $\emptyset$  PP]) will not be tolerated since the pronoun is subjacent to the operator (as shown in the previous section). Let us formalize the principle determining the distribution of resumptive pronouns as follows:

(58) *Antisubjacency Condition on Pronominal Variables*

A [+pronominal] variable must be nonsubjacent to its A'-binder.

(Contreras 1989a)

We are now in good shape to see that the data confirm the prediction made by our analysis in section 4: the impossibility of forming relative clauses of the type exemplified by (4)-(5) is overcome by the presence of resumptive pronouns, not tolerated otherwise:

- (59) Gaur ikusi dut [iaz op<sub>i</sub> bera<sub>i</sub>-re-kin/\*[[[t] $\emptyset$ ] $\emptyset$ ] haserretu ginen  
 today see aux last year he-with get-angry aux-n  
 mutila<sub>i</sub>. (i=j)  
 boy-A  
 I saw today the boy<sub>i</sub> that we got angry with him<sub>i</sub>/\* $\emptyset$  last year (i=j)
- (60) [op<sub>i</sub> oparia bera<sub>i</sub>-ren-tzat/\*[[[t] $\emptyset$ ] $\emptyset$ ] erosi genuen] irakaslea;  
 Present (s)he-for buy aux-n teacher  
 gaisorik dago. (i=j)  
 sick is  
 The teacher<sub>i</sub> that we bought a present for her/him<sub>i</sub>/\* $\emptyset$  is sick

(21) The ECP for the variable inside the deepest NP is satisfied locally via (head-)government by the empty postpositions.

(22) Note that under the *Barriers* approach to Subjacency, there is one barrier crossed in examples (46)-(47) (viz, the embedded tensed CP). This, although it makes the structure good for Subjacency, should be enough to prevent intermediate traces in adjoined positions to VP to be antecedent-governed (the wh-phrases are adjuncts) from the next trace in the higher VP (the most deeply embedded trace is head-governed by the verb; see note 18). Hence, it is either the case that these intermediate traces are not subject to Chomsky's (1986b) ECP, or that antecedent-government is not part of the ECP (the latter being reducible to a head-government requirement), and can be reduced somehow to Subjacency (see Lasnik and Saito forthcoming). A third possibility is that antecedent-government is possible across one barrier in Basque. This also bears on the

- (61) [op<sub>i</sub> Ainhoak (\*ber<sub>i</sub>-tan)/ [[t]Ø] inglesa irakasten duen] eskola,  
           it-in  
           berria da (i=j)  
           The school Ainhoa teaches English (\*at it) is new

In (59) and (60), the null operator binds the pronoun *bera*, which is contained in a PP headed by the committative and benefactive postpositions respectively. Since these two postpositions are of the complex type (i.e. =6c), the pronoun is antisubjacent to the operator. Without the resumptive pronoun, both sentences are ungrammatical, of course, because the variable contained in the PP is 2-subjacent to its operator. (61) shows the opposite effect with a locative (thus, simple) postposition: a resumptive pronoun is subjacent to the operator and the sentence is ungrammatical. With a non-pronominal variable contained in a PP headed by a null postposition, on the other hand, the sentence is grammatical because no Subjacency violation is involved. If the PPs in question are complements to the verb, the same results obtain, as expected:

- (62) [op<sub>i</sub> Asier ber<sub>i</sub>-re-kin/\*Ø ezkonduko den] neska; Bilbokoa da. (i=j)  
           she-with  
           The young woman Asier will get married *with ber/* \*Ø is from Bilbao
- (63) [op<sub>i</sub> Ainhoa (\*ber<sub>i</sub>-tan)/ [[t]Ø] bizi den] etxea; nahiko berria da. (i=j)  
           it-in  
           The house Ainhoa lives *\*in it/* Ø is quite new

*Bera* is still antisubjacent to the operator in (62): the embedded PP constitutes a barrier (it is not L-marked by the upper one), and the higher PP constitutes the second barrier (by inheritance) even though it is itself L-marked by the verb. In (63), on the other hand, the pronoun *ber* is 0-subjacent to the operator (the only PP is L-marked by the verb) and the sentence turns out to be ungrammatical; no deviance is found without the resumptive pronoun.

Therefore, the distribution of resumptive pronouns inside relative clauses turns out to be exactly as our Subjacency based account of the ungrammaticality of sentences (4)-(5) predicts.

## 6. Further extensions of the analysis.

So far in this article, we have established that the formation of relative clauses in Basque seems to uniformly involve the presence of an A'-chain headed by a null operator, even in cases where Postpositional Phrases are relativized. For these cases, the presence of empty Ps was motivated along the lines of Emonds's (1987) ICP. It was shown that the Null Operator Hypothesis is consistent with the possible presence/absence of focused XPs and *wh*-phrases inside relative clauses. In a final step, the impossibility of relativizing complex PPs was attributed to Subjacency, a diagnosis that was confirmed by the distribution of resumptive pronouns inside relative clauses. Ideally, if the solution to the data presented (for first time) in de Rijk (1972a) that I have sketched here is to be right, its predictive power should extend

over empirical domains not originally present in de Rijk's discussion. This, I would like to argue in this section, is indeed the case once we look into the phenomenon of tenseless relative clauses and the relativization of genitives. As for the first set of data, I argue elsewhere<sup>23</sup> that the three types of tenseless relative clauses that one finds in Basque follow step by step the paradigm of the tensed counterparts. This parallelism, although not certainly unexpected, is but occasionally investigated and hinted at in de Rijk 1972a and I shall not comment on it here. A brief discussion of the relativization of genitives constitutes the core of this section.

Following the arguments (and the terminology) brought forward by Anderson's (1984) work on English prenominal genitives, one can distinguish two types of genitives in Basque: the *lexical* genitive, where the genitive morpheme assigns case and  $\theta$ -role to the NP in the genitive phrase (a true PP according to Anderson), and the *structural* genitive inserted (for the purposes of case-assignment) in the context NP \_\_\_\_\_ [N'  $\alpha$ ] in cases where  $\alpha$  is a noun with a  $\theta$ -grid (either a derived/abstract nominal or a relational noun like *sister*).<sup>24, 25</sup> This straightforwardly accounts for the following contrast:

- (64) Etxe hau Ainhoa-ren-[<sub>N'</sub>  $\emptyset$ ]-a da.  
This house is Ainhoa's
- (65) \*Neba hau Ainhoa-ren-[<sub>N'</sub>  $\emptyset$ ]-a da.  
\*This brother is Ainhoa's
- (66) \*Erosketa liburua-ren-[<sub>N'</sub>  $\emptyset$ ]-a da  
\*The purchase is the book's
- (67) \*Liburuaren erosketa Ainhoa-ren-[<sub>N'</sub>  $\emptyset$ ]-a da.  
\*The purchase of the book is Ainhoa's

Assuming that an empty N' is licensed by virtue of being licensed by 's in English (Contreras 1989b) and by the article *-a* in Basque, (65)-(67) turn out to be ungrammatical due to a violation of the selectional restrictions of *neba* and *erosketa*; the sentences are construed as though the possessive assigned  $\theta$ -role and case to *Ainhoa* ((65), (67)) and *liburua* (66). Since the copula is transparent and only serves the purpose of attributing the property expressed by the possessive phrase to the subject, it turns out that the former is incompatible with the latter (just like in *\*Mary's reliance on friends is on the table* (Anderson's 13d)). Note that the sentences only make sense insofar as one can think of brothers and the act of purchase as being possessed. This conflict does not arise in (64) since *etxea* 'house' does not assign  $\theta$ -role to *Ainhoa*; thus, no conflict exists between it and the possessive phrase.<sup>26</sup>

issue of separating barrierhood for government from barrierhood for Subjacency, a proposal suggested by several researchers (see Baker 1988, Johnson 1988, Rizzi 1990).

(23) Artiagoitia (1990: chp.3) and Artiagoitia (in prep.). Tenseless relative clauses (though only one type of them) are randomly discussed by Ortiz de Urbina (1989).

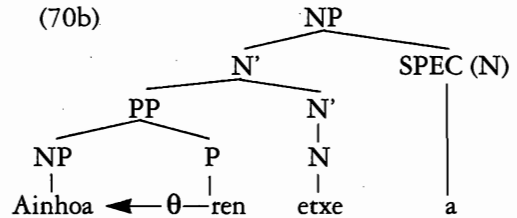
(24) The reader should bear in mind that in Basque the genitive is the only possibility for subjects and objects of derived and abstract nouns; thus, there is no Of-insertion/ Genitive alternation.

One crucial difference exists, however, between English and Basque: unlike in English, where according to Anderson lexical genitives count as PPs and structural genitives as NPs, both seem to have the status of PPs in Basque, the main evidence being that a genitive subject of an NP cannot bind an anaphor in the object position (or in any more embedded position). This can only be a consequence of the lack of c-command:<sup>27</sup>

- (68) ?? Guraso-en elkarren argazkiak  
 Parents-gen each other-gen photos  
 The parents' photos of each other
- (69) ?? Nire lagun-en elkarri buruzko eritziak  
 my friends-gen each other-about opinions  
 My friends' opinions of each other

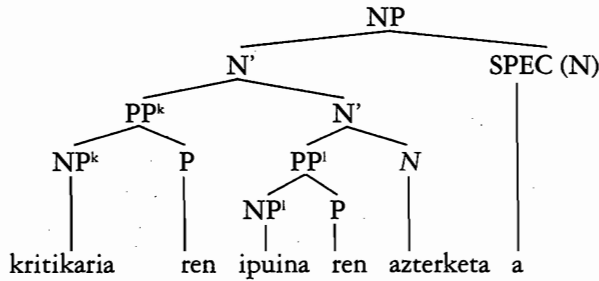
The structures, then, of an NP containing a lexical genitive (one where the genitive itself assigns  $\theta$ -role and case) and a genitive phrase that corresponds to the object and subject of a head noun that has a  $\theta$ -grid respectively look as follows:

- (70a) Ainhoa-ren etxea  
 -gen house  
 Ainhoa's house



- (71a) Kritikariaren ipuinaren azterketa  
 critic-gen tale-gen analysis  
 The critic's analysis of the tale

(71b)



(25) Cf. Chomsky's (1986a) proposal of inherent case-marking by nouns at D-Structure, which is not adopted here. See Oyharçabal (forthcoming) on inherent case-marking in Basque, and Eguzkitza (forthcoming) for a study of the internal structure of the Noun Phrase in Basque under the DP hypothesis.

(26) Further tests for the distinction are discussed in Artiagoitia (1990: chp. 2).

(27) The other anaphor (*X-ren burua* 'X's head') seems to be possible inside NPs; nevertheless, there is evidence that it is not a bona fide anaphor (cf. Ortiz de Urbina 1989), and that it counts as an R-expression





If the Subjacency account is correct, once again we expect (72)-(74) to be grammatical with a resumptive pronoun; this is also true of (74) because a resumptive pronoun (a pronominal variable) is not subject to the ECP. The prediction is correct:

(75a) [op<sub>i</sub> [NP [[bera<sub>i</sub>]-ren PP] [N<sub>r</sub> txakurrak] ] aginkatu nauen] baserritarra  
dog bite aux-n farmer

The farmer that his/her farmer bit me

(75b) [op<sub>i</sub> pro [NP [[bera<sub>i</sub>]-ren PP] [N<sub>r</sub> etxea] ] ikusi dudan] neska  
house see aux-n

The young woman that I saw her house

(76) [op<sub>i</sub> pro [NP [N<sub>r</sub> [[bera<sub>i</sub>]-ren PP] [N<sub>r</sub> azterketa]]] irakurri dudan] ipuina  
analysis read aux-n tale

The tale that I read its analysis

(77) [op<sub>i</sub> pro [NP [[bera<sub>i</sub>]-ren PP] [N<sub>r</sub> ipuinaren azterketa] ] irakurri dudan] kritikaria  
tale-gen analysis read aux-n

The critic that I read his/her analysis of the tale

Hence, a Subjacency approach seems to account for more cases where relativization is also impossible<sup>30</sup> and correctly predict the distribution of resumptive pronouns. Actually, there is one more prediction that (72)-(77) make: if an NP inside a genitive phrase is indeed antisubjacent to an operator in the specifier of Comp, then resumptive pronouns inside a genitive phrase should also be possible in questions in matrix clauses. Not surprisingly, the prediction appears to be correct:

(78) Nor<sub>i</sub> / Ze baserritar<sub>i</sub> aginkatu zaitu bera<sub>i</sub>-ren txakurrak?  
Who/which farmer did his/her dog bite you?

(79) Ze idazle erosiko duzu bihar bera-ren azken liburua?  
Which writer will you buy her/his last book tomorrow?  
(Examples adapted from Artiagoitia 1991)

## 7. Final Remarks

In trying to answer the question that gives this article its title, I have deliberately left aside one aspect of the paradigm discussed by de Rijk (1972a) that is somehow troublesome for all competing analyses of relative clause formation in Basque: the fact that complex Postpositional Phrases can be relativized if (and only if) the head noun that the relative clause modifies is contained in a complex PP of the same type, what one might call the 'matching effect', an example of which is found in (81):

*constitutes a sister or subject of L*". (Emonds 1985: 39). 'Constitute' is defined as follows: "D constitutes a C<sub>i</sub> if and only if C<sub>i</sub> dominates D and the only terminal elements C<sub>i</sub> are under D" (ibidem: 38). Then both NPs in (71b) constitute a sister and a subject respectively, as required.

(29) Even if the ECP were reduced to head-government (see note 18) along the lines of Rizzi (1990), NP\* would still fail to be governed by a head (null P is a *bare grammatical formative* inserted at S-S with no semantic content —unlike the postpositions in (6b, c)— and does not count) in the relevant sense.

- (80) (=5) \* $[op_i \text{ Jonek } [[[t_i] \emptyset_{PP}] \emptyset_{PP}] \text{ hizkuntzalaritza ikasten duen jendeak; jai bat antolatu du. (i=j)}$   
 The people that Jon studies linguistics has organized a party
- (81)  $\text{Ainhoak } [op_i \text{ Jonek } [[[t_i] \emptyset_{PP}] \emptyset_{PP}] \text{ hizkuntzalaritza ikasten duen jendearekin; jai bat antolatu du. (i=j)}$   
 Ainhoa has organized a party with the people Jon studies linguistics

(80) is ruled out by the Subjacency condition as explained throughout the article. (81), where the gap in the relative clause corresponds to a comitative PP ('with the people') just like in (80), turns out to be grammatical because the NP that contains the head noun is also embedded in a comitative PP in the matrix clause. Examples like (81) are systematically grammatical despite the fact that they a priori violate the Subjacency condition.

Any attempt to explain why (81) is good has to bear in mind that the grammaticality crucially depends on the morphological case of the strong binder, the head NP; since coindexation of the A'-chain headed by the null operator and the strong binder does not take place until LF, the mechanism that rescues (80b) must not be available until that level of representation. A solution could be proposed along the following lines: since the features of the empty Ps in the embedded relative clause are realized in the operator (or in the chain headed by it) via the ICP (cf. section 2), an operator whose features match those of its strong binder (e.g. provided that the features that the lexical Ps bear in the matrix clause are either transmitted to the NP or realized in the NP itself) may be allowed to move back to the head of its chain and attract the whole complex PP to the specifier of Comp (perhaps at LF' as part of reconstruction) as long as the operation is local, i.e. takes place within the same relative clause. This is shown in (82). Note that if the distance between the null operator and the head of the chain increases, the matching effect is lost:<sup>31</sup>

- (82a)  $\text{Ainhoak } [t_i \text{ Jonek } [[[op_i] \emptyset_{PP}] \emptyset_{PP}] \text{ hizkuntzalaritza ikasten duen] jendearekin; jai bat antolatu du. (i=j)}$
- (82b)  $\text{Ainhoak } [ [[[op_i] \emptyset_{PP}] \emptyset_{PP}]_x \text{ Jonek } t_x \text{ hizkuntzalaritza ikasten duen jendearekin; jai bat antolatu du. (i=j)}$
- (83) \* $\text{Ainhoak } [ op_i \text{ nik } [ t_i \text{ Jonek } [[[t_i] \emptyset_{PP}] \emptyset_{PP}] \text{ hizkuntzalaritza ikasten duela}] \text{ uste dudana] jendearekin; jai bat antolatu du.}$   
 that think aux-n  
 Ainhoa has organized a party with the people I think Jon studies linguistics

(30) Oyharçabal (1986) argues that relativization of genitives is possible (at least in some cases). Most of these involve idiom-like predicates with the verb *egon* 'to be, to stay' that subcategorize for a genitive PP (and usually have a morphologically related transitive verb that subcategorizes for an NP). Artiagoitia (1990: chp.2) analyzes these cases as involving reanalysis (a case of abstract incorporation; see Baker 1988) of the genitive Postposition as part of the predicate, so that relativization takes place as though an object NP were

The ungrammaticality of (82) can be due to the fact that unbounded movement of the operator back to the head of its chain will leave the intermediate trace ungoverned, thus violating the ECP. I shall not pursue the consequence of this proposal any further.

In conclusion, the answer to the question why Basque cannot relativize everything seems to be that Subjacency constrains the distance between the null operator and the head of the chain they form. In order to reach this conclusion, I have motivated a unified treatment of relative clause formation that permits, modulo the Invisible Category Principle, the presence of empty postpositions under certain conditions. The analysis is compatible with what is known about the syntax of *wh*-phrases and focus in Basque and seems to correctly predict the distribution of resumptive pronouns.

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# Arbitrary Null Object Languages in a Parametric Theory of Linguistic Variation

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## 0. Introduction\*

Within the Government-Binding framework, the parametric theory of linguistic variation spelled out in Chomsky (1981) is designed to provide a principled account of cross-linguistic and/or cross-dialectal variation as well as a maximally simple answer to the question of why such a variation remains unproblematic for the first language learner. According to the Chomskyan view of parameters, the grammar of a speaker consists of an innate set of universal principles, which are cross-linguistic constants, as well as an innate set of parameters, each of which range over a number of possible settings. The only “learned behavior” is the language specific operation of selecting a value for each parameter. The resulting set of value-fixed parameters then naturally interacts with the set of universal principles to yield a variety of language specific effects. Two given languages or dialects will therefore differ as long as they select different values for at least one parameter. When comparing several languages the task of the linguist is therefore to identify parameters on the basis of (a) cross-linguistic variation within a construction and (b) language specific systematic patterns which emerge from superficially unrelated constructions. In this paper I will use this theory of linguistic variation to argue that the presence vs. absence of V-governed arbitrary empty categories across languages is a direct consequence of the strong vs. weak agreement parameter advocated in Pollock (1989).

## 1. Some crucial assumptions

### 1.1 *Arbitrary Null Objects as Empty Categories*

Rizzi (1986) was first to notice the presence, in languages like Italian, of phonetically unrealized (V-governed) arguments which appear in sentences with a generic time reference. The following examples, due to Rizzi, contain a “null object” of that type:

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- (1) a. Il bel tempo invoglia [e] a PRO restare.  
 "The nice weather induces \_\_\_\_ to stay."  
 b. La buona musica riconcilia [e] con se stessi.  
 "Good music reconciles \_\_\_\_ with oneself."  
 c. Questa musica rende [e] allegri.  
 "This music renders \_\_\_\_ happy."

The empty slots in the glosses in (1) mimic what happens in Italian and remain ungrammatical in English. The argument these slots stand for receives a kind of arbitrary interpretation best described here as quasi-universal quantification over a pragmatically identified set of humans. Originally, Rizzi (1986) (and Roberge 1987 for French) argued that such arbitrary null objects are empty categories which fill a syntactic V-governed position. This view is not uncontroversial, however, since Bouchard (1987), Condoravdi (1987), and Williams (1986) all argue that arbitrary null objects are "implicit arguments", a term to be understood as referring to thematic roles which are in the thematic array at D-structure but are not mapped onto a structural position (e.g. the external argument in a passive without a *by*-phrase). In unpublished work (Authier 1988), however, I have shown that there are a number of tests which discriminate between implicit arguments and empty categories occupying a structural position and that all of these tests indicate that arbitrary null objects are of the latter sort.

The first test is based on one of the properties specific to control by an implicit argument isolated by Jaeggli (1986a). Jaeggli calls this type of control "thematic control" and argues for distinguishing this notion from the familiar notion of control which he terms "argument control". Among the diverging properties exhibited by the two types of control which Jaeggli (1986a) points out is the fact that argument control, but not thematic control, is possible into passive infinitivals. The following contrast in French illustrates this point:

- (2) a. Jean veut PRO être décoré de la Légion d'Honneur  
 "Jean wants to be awarded the Legion of Honor."  
 b. \*Le pont a été dynamité pour PRO être décoré de la Légion  
 d'Honneur.  
 "The bridge was blown up to be awarded the Legion of Honor."

This difference in behavior between structurally present arguments and implicit arguments with respect to control provides us with the means of testing whether arbitrary null objects are implicit arguments. Supposing that they are, we expect them to be unable to control into passive infinitivals. As the grammaticality of (3) indicates, however, this expectation is not fulfilled as the arbitrary null object triggers argument control:

- (3) Une intelligence hors du commun amène souvent [e] à PRO être mécompris.  
 "An uncommon intelligence often leads \_\_\_\_ to be misunderstood."



Thus we are led to the conclusion that the controller in (3) is not an implicit argument but, rather, a structurally represented empty category.

My second test is based on facts pertaining to pronominal reference in donkey anaphora sentences. Donkey anaphora refers to the possibility for a pronominal in a main clause to be understood as bound by a non c-commanding quantificational NP in an *if*-clause. Crucially, however, only syntactically present quantificational phrases in the *if*-clause can license the bound reading for the pronominal in the main clause. Although I do not have a satisfactory explanation as to why that should be, the constraint is nevertheless real, as the following contrast illustrates:

- (4) a. Quand une femme est humiliée par quelqu'un<sub>i</sub>, elle le<sub>i</sub> gifle.  
 "If a woman is humiliated by someone<sub>i</sub> she slaps him<sub>i</sub>."  
 b. \*Quand une femme est humiliée, elle le gifle.  
 "If a woman is humiliated, she slaps him."

The sentence in (4b) is ungrammatical only on the (relevant) reading where *le* (=him) is taken to be bound by the implicit argument of the passive. Since both the syntactically unlinked  $\theta$ -role in (4b) and its linked counterpart (i.e. the *by*-phrase in (4a)) have existential value, it appears that the contrast in (4) is to be attributed to the fact that donkey anaphora requires the presence of a structural position for the quantificational phrase which serves as the antecedent for the bound pronominal. Turning now to arbitrary null objects, we predict that if they truly are structurally present then they should be licit antecedents with respect to donkey anaphora. In order to construct the relevant examples, however, we must first determine what kind of pronominal element can potentially pick the same kind of reference as an arbitrary null object. Since in the unmarked case arbitrary null objects have roughly the force of universal quantification, the indefinite French pronominal *on* seems a good candidate as it displays similar quantificational force in generic contexts:

- (5) On a toujours besoin d'affection.  
 'For all x, x a person, x is always in need of affection.'

Consider now the sentences in (6) where the pronoun *on* in the main clause is understood as bound by the arbitrary null object in the *if*-clause:

- (6) a. Quand la peur pousse [e] à PRO fuir, on serre les dents.  
 "If fear pushes \_\_\_ to flee, one must grin and bear it."  
 b. Quand la musique rend [e] triste, on boit un petit coup.  
 "If music renders \_\_\_ sad, one must have a little drink."

That the pronominal *on* is truly understood as bound by the null object is deducible from the impossibility of interpreting a sentence like (6a) to mean that if fear pushes any individual of a group A determined by context to flee then any individual from another group B, also determined by context, must grin and bear it. Note that crucially there is nothing pragmatically incongruous with this type of reading since such a reading is, in fact, possible given a different syntactic environment:



All the accounts of the ungrammaticality of (11b) that I am familiar with (e.g., Kayne's 1975 Specified Subject Condition account, Heggie's 1987 Theta Criterion violation account, etc.) make reference to the presence of a structural subject of the small clause. The prediction is, therefore, that if there is an empty category in the subject position of the small clause in (10) then the predicate *sans voix* should not be cliticizable. This prediction is indeed borne out as the ungrammaticality of (12) indicates:

(12) \*Souvent, son talent le<sub>i</sub> laisse [e] [e]<sub>i</sub> (le = sans voix)

In light of this and the other pieces of evidence presented in this section I will assume that the so-called arbitrary null object in Romance is an empty category occupying a structural position.

### 1.2 Arbitrary Null Objects as Pronominal Variables

In Authier (1989) I present evidence that the arbitrary null object is an A'-bound empty category. In particular it is shown that arbitrary null objects behave like elements bound by a quantifier phrase in that (a) they trigger weak crossover violations and (b) they interact with existentially quantified NPs to yield scope ambiguities. I argue that arbitrary null objects are base-generated variables bound at LF by an overt or null adverb of quantification (Lewis' 1975 class of unselective binders), from which both the quantificational flavor of null objects and the restricted class of environments (i.e., "generic sentences") in which they are licensed follow naturally.

I will assume this analysis to be basically correct, though I wish to look in more detail at the notion of arbitrary null objects being base-generated variables, partly because this notion remains unorthodox in the Government-Binding framework (PRO and *pro* being the sole base-generated types of empty category) and also because I believe that there is evidence which is not theory-internal indicating that arbitrary null objects are pronominal in nature as well. This evidence comes from KiNande, a language of the Bantu family spoken in Zaire. All of the KiNande data used in this paper are due to Ngessimo Mutaka (p.c.).

KiNande, which displays a rigid SVO word order, exhibits arbitrary null object constructions which typically involve the causative morpheme *i*. There may be other constructions with arbitrary null objects in that language, but I have been unable to identify them with certainty, there being no subcategorized small clauses or control infinitivals as far as I can see. Note, however, the neat parallel between the arbitrary null "objects" found in French causatives in (13) and their KiNande counterparts in (14):

- (13) a. Ce poison fait mourir [e] (\*par les gens)  
 "Lit. This poison makes die \_\_\_\_ (by people)"  
 b. Ce film fait pleurer [e] (\*par l'audience)  
 "Lit. This movie makes cry \_\_\_\_ (by the audience)"

- (14) a. *esumu eyi yikaholaia* [e] (\**na* *abandu*)  
 “Lit. poison this makes-die (generic) \_\_\_\_ (by people)”  
 b. *efilme eyi yikaliraia* [e] (\**na* *abandu*)  
 “Lit. movie this makes-cry (generic) \_\_\_\_ (by people)”

That both French and KiNande should license “null objects” in causatives comes as no surprise if we assume a cross-linguistic treatment of causatives along the lines of Baker (1988) whereby the embedded D-structure subject is governed by a “verbal complex” at S-structure. Concerning (13) and (14), several remarks are in order. First, notice the ungrammaticality of the *by*-phrases given in parentheses. This indicates that such sentences are not instances of the so-called “faire-par” construction which Kayne (1975) shows displays striking similarities with passives. A further property distinguishing the construction in (13-14) from the “faire-par” construction is that while the latter allows an implicit object of causation which has the force of existential quantification, the “null objects” in (13-14) display a quantificational force close to that of universal quantification, a property characteristic of arbitrary null objects. In fact, causative constructions like those in (13-14) exhibit the full set of properties tied to arbitrary null object constructions, in particular the restriction to generic contexts on which we will now focus. Notice that in the KiNande examples in (14) two morphemes appear in italics: the already mentioned causative morpheme *i* and the generic present morpheme *ka*. The latter has a nongeneric counterpart *ma* with which it shares one of the morphological slots reserved for tense within the KiNande verbal compound. The first phenomenon worthy of interest when it comes to the distribution of *ka* and *ma* is that only the former can appear in the same sentence as an arbitrary null object:

- (15) a. *esumu eyi yikaholaia* [e]  
 poison this makes-die (generic) \_\_\_\_  
 b. \**esumu eyi yimaholaia* [e]  
 poison this makes-die (non-generic) \_\_\_\_  
 “This poison will kill you.”

Second, consider the fashion in which *ka* and *ma* interact with object cliticization. Once again these two morphemes appear to be in complementary distribution: *ma* but not *ka* can appear on a verb bearing an object clitic. The examples in (16) where *ba* (=them) is the object clitic and [e] is the empty category corresponding to that clitic illustrate this restriction:

- (16) a. *esumu eyi yimabaholaia* [e]  
 poison this them-makes-die (non-generic) \_\_\_\_  
 b. \**esumu eyi yikabaholaia* [e]  
 poison this them-makes-die (generic) \_\_\_\_  
 “This poison kills them.”

Why are *ka* and *ba* in (16b) mutually exclusive? In order to answer this question we must examine their respective characteristics. First, note that it cannot be the case

that (16b) is ruled out because *ka* and *ba* occupy the same morphological slot. This is because although *ma* and object clitics can co-occur as in (16a), *ma* and *ka* are mutually exclusive. Thus *ma* and *ka* but not *ma* and object clitics occupy the same morphological site, from which it follows that *ka* and object clitics occupy distinct slots. Second, the general prohibition against clitic doubling which holds in KiNande (cf. (17a)) does not affect *ka* (cf. (17b)), which suggests that the latter, unlike object clitics, is not nominal in nature.

- (17) a. \*Mutaka *akilangira ekitabū*  
 Mutaka it-saw book  
 "Mutaka saw the book."  
 b. *esumu eyi yikaholaia abandu*  
 poison this makes-die (generic) people  
 "This poison kills people."

Consider now the contrast between (17b), where *ka* co-occurs with the full NP *abandu* (= people), and (16b), where cliticization of that NP to *ba* (= them) yields an ungrammatical result. If the ungrammaticality of (16b) cannot be blamed on the fact that *ka* occupies the morphological niche reserved for the clitic, then we must conclude that somehow the morpheme *ka* and the object empty category with which the clitic is construed are incompatible. Recall now that I am assuming, following Authier (1989), that arbitrary null objects are licensed cross-linguistically by an unselective operator in the sense of Lewis (1975) which is induced by making reference to the generic property of INFL. In KiNande the generic present morpheme *ka* can therefore be viewed as an overt morphological reflex of INFL indicating the presence in the structure of an unselective operator. This hypothesis is consistent with the fact that in (15b) the absence of *ka* (replaced by its non-generic counterpart *ma*) makes the presence of an arbitrary null object impossible. The ungrammaticality of (16b) can now be viewed as a clash between two potential identifiers of the object empty category; that is, assuming that in KiNande V raises to INFL at S-structure (cf. section 2.3.) and that therefore both *ka* and object clitics are in INFL at that level, we derive the facts in (16b) from a prohibition against INFL harboring two identifiers for one identifyee (i.e., a sort of Bijection Principle). What I am in effect suggesting is that unselective operators like adverbs of quantification, their non-overt generic counterpart, modals, etc. share at least one property with pronominal object clitics: they identify the same type of empty category. Assuming that the empty category object clitics identify is *pro* (Jaeggli 1986b, Montalbetti 1982, Roberge 1986, Sportiche 1983, among others), we are led to view arbitrary null objects as instances of A'-bound *pro* (i.e., pronominal variables). The identification conditions on arbitrary null objects can therefore be added to the identification conditions on object *pro*, provided that we state these conditions in a disjunctive manner:

- (18) In order to be interpreted as a non-expletive empty category, V-governed *pro* must be identified by one (and only one) of two elements:  
 (a) an overt pronominal clitic (definite interpretation)  
 (b) an unselective operator (quantificational interpretation)

Identification is to be understood as a process which provides *pro* with semantic content. In the case of pronominal clitics, a bundle of phi-features such as person, number, and gender are transmitted to the empty category, forcing a definite interpretation and restricting the number of potential referents the pronominal can pick up in the domain of discourse. In the case of arbitrary null objects, the unselective binder present in the structure provides *pro* with quantificational force. To see this clearly, consider the examples in (19) and their paraphrases in (20), where the quantificational force associated with the null object corresponds to that carried by the adverb of quantification (i. e., the unselective binder) which appears in italics in the sentences in (19):

- (19) a. Ce gouvernement autorise *rarement* *pro* à PRO vendre des armes.  
 "This government rarely authorizes \_\_\_\_\_ to sell arms."  
 b. *Souvent*, cette drogue rend *pro* fou.  
 "Often, this drug renders \_\_\_\_\_ insane."
- (20) a. Ce gouvernement autorise *peu de gens* à PRO vendre des armes.  
 "This government authorizes few people to sell arms."  
 b. Cette drogue rend *beaucoup de gens* fou.  
 "This drug renders a lot of people insane."

The conditions in (18) thus account for the interpretive properties of V-governed *pro*. Following Rizzi (1986), I will assume that *pro* is subject to two distinct sets of conditions: the identification conditions and the licensing conditions. In addition to the arguments given in Rizzi (1986), my theory of arbitrary null objects also forces us to dissociate the two types of conditions. This is because if we assumed that the conditions in (18) make predictions as to whether a given language L does or does not license *pro* in a V-governed position, then we would wrongly predict that English, which has unselective operators (Lewis 1975, Heim 1982) should have arbitrary null objects by (18b). We are thus led to posit licensing conditions on V-governed *pro* which will be stated as a parameter so as to account for the fact that French, Italian and KiNande but not English have arbitrary null objects.

## 2. The null object parameter

### 2.1. Null Objects and the Theory of *pro*

Rizzi (1986) proposes that each language is arbitrarily associated with a set of licensing heads for *pro*, so that the presence of arbitrary null objects in French is explained by the fact that French has V as a member of its set of licensing heads for *pro*. In English, on the other hand, the set of licensing heads for *pro* is the null set, hence arbitrary null objects remain illicit in that language. Although one cannot a priori object to this kind of parameter, it is easy to see how costly a proliferation of such parameters would be. Indeed while it is relatively easy for the anglophone child to conservatively assume in the absence of positive evidence to the contrary that *pro* is never licensed, the francophone child has to deduce from unrelated constructions that the set of licensing heads for *pro* in French has as its members V (Authier,

1988; Roberge, 1986), the so-called orphan prepositions (Zribi-Hertz, 1984), and the head of DP (Authier, 1990). Furthermore, if Zribi-Hertz (1984) is correct in her claim that some, but not all prepositions can have *pro* as their complement, then the set of licensing heads for *pro* in French appears to be a heterogeneous one indeed. This makes Rizzi's (1986) parameter somewhat suspicious although it is difficult to see how this parameter could have been formulated differently given Rizzi's assumption that there is no distinction between *pro* and overt NPs with respect to Case theory and  $\theta$ -theory: they both are Case-marked and  $\theta$ -marked. When *pro* is an argument it has to be  $\theta$ -marked. From this we could conclude that the Visibility Condition forces us to assume that *pro* is Case-marked as well. As is well-known, however, PRO is a notable exception to the Visibility Condition since it is ungoverned, and therefore Caseless, yet it is  $\theta$ -marked. Suppose that we assume with Jaeggli (1986b) and Roberge (1986) that *pro* is not Case-marked either. This would put PRO and *pro* together under the assumption that base-generated empty categories are not Case-marked. More importantly, the assumption that *pro* is Caseless opens new possibilities as to what is responsible for the presence versus absence of arbitrary null objects across languages. In what follows I will explore the possibility that what is parametrized is not the presence of *pro* per se but, rather, the ability of transitive verbs to assign ACC Case to elements they govern.

## 2.2. Licensing *pro*: The ACC-drop Parameter

The idea that Case-assignment is not uniform across languages but is a parametrized option was put forth by Safir (1985) to formulate what is commonly known as the Null Subject Parameter and becomes, under Safir's formulation, the NOM-drop parameter. Briefly, Safir (1985) argues that the element to which the external  $\theta$ -role of the VP is assigned in null subject languages like Italian is a non-overt (or silent) subject clitic. The parameter that sets null subject languages like Italian apart from both overt subject languages like English and languages with overt subject clitics like French is the NOM-drop Parameter which may be stated as in (21).

(21) *NOM-drop Parameter:*

Nominative Case must/need not be phonetically realized

where "phonetically realized" is defined by Safir as in (22):

(22) A case C is phonetically realized if C is assigned directly to a lexical NP at S-structure.

The parameter in (21) is in fact a parametrization of one of Safir's (1985) Case Realization Conditions, which Safir states separately because he assumes that they can be parametrized across languages independently from one another:

(23) *Case Realization Conditions:*

- a. NOM Case must be phonetically realized.
- b. ACC Case must be phonetically realized.
- c. OBL Case must be phonetically realized.

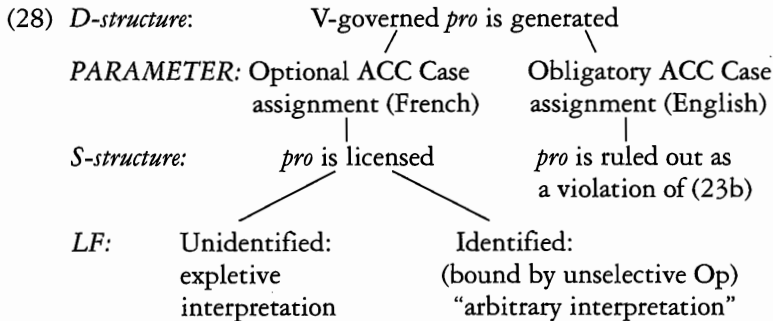
I would like to propose that English corresponds to the positive setting of (23b) (i.e., ACC Case is assigned obligatorily) whereas French and Italian correspond to the negative setting of the parameter (i.e., ACC Case is assigned optionally). This maximally simple parameter, taken together with the assumption that *pro* is a Case-less element, allows us to predict a number of superficially unrelated facts. First, given that the subject position of small clauses is projected independently from the Projection Principle, we expect that an overt expletive element should be allowed in that position in both English and French. This is indeed correct as shown in (24-25) where the expletive elements are italicized:

- (24) a. I find *it* stupid that Mary didn't say anything.  
 b. I consider *it* unlikely that Peter told her anything.
- (25) a. Je trouve *ça* stupide que Marie n'ait rien dit.  
 b. Je crois *ça* peu probable que Pierre lui ait dit quoi que ce soit.

Given the ACC-drop parameter just formulated, we additionally predict that since in French ACC Case is optionally realized, a null expletive pronominal should also be possible in that position in French and impossible in English where, given the obligatory realization of ACC Case, V-governed *pro* is never licensed. These predictions are borne out, as (26-27) illustrate:

- (26) a. Je trouve *pro* stupide que Marie n'ait rien dit.  
 b. Je crois *pro* peu probable que Pierre lui ait dit quoi que ce soit.
- (27) a. \*I find *pro* stupid that Mary didn't say anything.  
 b. \*I consider *pro* unlikely that Peter told her anything.

Furthermore, the ACC-drop parameter allows for the licensing of V-governed *pro* in French in thematic positions, provided of course that *pro* gets identified by either an object clitic or an unselective binder. This accounts for the presence of arbitrary null objects in French, as well as their absence in English. Thus, under the theory of *pro* advocated in this paper, the "null object parameter" can be represented in the following manner:



What remains to be spelled out is of course what salient clue(s) will enable the child to deduce that his/her language corresponds to a positive or negative setting of



the ACC-drop parameter. Before addressing this issue in detail, however, it may be useful to point out that treating the cross-linguistic licensing of arbitrary null objects in terms of parametrized Case realization is empirically superior to any account which would attempt to link the presence of arbitrary null objects in a language to the presence in that language of an object clitic paradigm. This latter possibility is, *prima facie*, a rather appealing one, particularly from the point of view of language acquisition. Indeed, assuming that the empty category clitics are construed with *pro*, the presence of such clitics in a language would signal that V is a licensing head for *pro*, hence arbitrary null objects would be expected in that language. Under this view, the presence of arbitrary null objects would be parasitic on that of object clitics. Such an approach, however, would fail to account for the existence of languages like Hindi, which do not have a set of object clitics yet nonetheless allow arbitrary null objects. The data I will use to demonstrate this point are due to Gyanam Mahajan (p.c.).

Hindi is an SOV language which, although it allows null subjects of tensed clauses, does not seem to exhibit object cliticization. Consider in this respect the following sentences:

- (29) a. Jon us-ko dekhaa.                      b. Jon us-ko or Raam-ko dekhaa.  
           John him-ACC saw                      John him-ACC and Raam-ACC saw  
           "John saw him."                        "John saw Ram and him."  
       c. Jon Raam-se us-ne-baareme baat kii.  
           John Raam-to him-ERG-about talked  
           "John talked to Ram about him."

The pronominal element *us* (him) in (29a) does not alternate with any other type of (overt) pronominal element. The question is therefore whether *us* is a full pronoun or a pronominal clitic. The sentence in (29b) shows that *us* can appear conjoined with a full NP, an option which is unavailable for pronominal clitics in a host of languages. Further support for the view that *us* is not an object clitic but is a full pronoun comes from sentences like (29c), where *us* appears as the object of a preposition and bears overt ergative marking. Thus we are led to the conclusion that Hindi does not have an object clitic paradigm. Hindi does, however, have arbitrary null objects in exactly the same constructions as French and Italian. This is illustrated in the (b) sentences below:

- (30) a. Bhuukh logo-ko galti karne par majbuur kar de-ti he.  
           hunger people-ACC mistakes to-do LOC force give (generic) is  
           "Hunger forces people to make mistakes."  
       b. Bhuukh [e] galti karne par majbuur kar de-ti he.  
           "Hunger forces \_\_\_\_\_ to make mistakes."  
       (31) a. Yah davaa logo-ko paagal kar de-ti he  
               this drug people-ACC insane do give (generic) is  
               "This drug makes people insane."  
           b. Yah davaa [e] paagal kar de-ti he.  
               "This drug makes \_\_\_\_\_ insane."

In (30b) the null object of *majbuur* (force) displays the force of quasi-universal quantification, a characteristic which identifies it as an arbitrary null object. As (31b) shows, the same type of null object can appear as the subject of a subcategorized small clause, just like in French and Italian. As expected, the arbitrary null object which appears in the (b) sentences in (30-31) is restricted to sentences with a generic time reference. In fact, Hindi arbitrary null objects, just like their KiNande counterparts, must co-occur with a generic marker in the sentence to be licit. So for instance if we replace the generic marker *ti* in (31b) with the perfective marker *yaa*, the environment created can no longer harbor an arbitrary null object:

- (32) \*is davaa-ne [e] paagal kar di-yaa thaa.  
 OBL drug-ERG insane to give-PERF was  
 "This drug has made \_\_\_ insane."

Given that Hindi displays arbitrary null objects in the absence of a pronominal object clitic paradigm, it appears that the parametric account of arbitrary null objects in terms of the optionality of ACC Case assignment advocated in this paper is empirically superior to the view that the presence of arbitrary null objects is parasitic on that of object clitics.

The account that I am suggesting is in fact independent from, though by all means compatible with, the generally accepted view that pronominal object clitics, like other overt pronominal elements, require Case (Aoun, 1979; Borer, 1983; Jaeggli, 1982). Thus, I assume that in French object clitic constructions like (33) below, Case is assigned to the object clitic *le*, not to the NP object position, hence the requirement that the latter be the non-lexical element *pro*.

- (33) Jean-Guy le connait *pro*.  
 Jean-Guy him-knows  
 "Jean-Guy knows him."

Because in object clitic constructions of this type ACC Case is assigned, object clitics can appear in a language independently from the parameter which determines the optionality of ACC Case assignment in that language and therefore the presence of V-governed null expletives and arbitrary null objects is in no way parasitic on that of object clitics. Positing an ACC-drop parameter therefore makes testable predictions concerning the typology of possible language types. Specifically, we expect to find the four types of languages given in (34) where theories which collapse object cliticization with arbitrary null objects would only predict the existence of two (i.e., Type A and Type B):

(34)	Type A	Type B	Type C	Type D
Object clitics?	yes	no	yes	no
ACC Case mandatory?	no	yes	yes	no

Type A is exemplified by languages like French, Italian and KiNande which display object clitic paradigms and have the option of not assigning ACC Case, hence

the licitness of arbitrary null objects in those languages. English is, of course, a Type B language, since it has neither object clitics nor arbitrary null objects. Hindi seems to fall under Type D, as I have just demonstrated. As for languages of type C, they have not, to my knowledge, been documented. If English had a set of object clitics, it would be a language of that type.

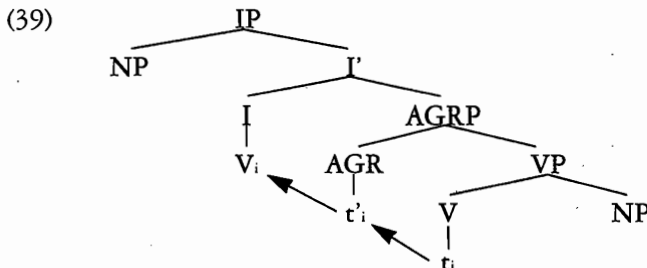
### 2.3. ACC-drop as a Consequence of the Strong vs. Weak AGR Parameter

The ACC-drop parameter, which, as I argued in the preceding section, allows us to formally capture the cross-linguistic distribution of arbitrary null objects, raises a number of non-trivial questions from the point of view of language acquisition. Given the Chomskyan view of parametric theory adopted in this paper, it is generally assumed that empirical evidence is the key to fixing the values of parameters of core grammar. With respect to arbitrary null objects, this amounts to saying that the child will need positive evidence to infer that in his/her language ACC case must or need not be phonetically realized. It goes without saying that the language learner's task would be greatly facilitated if it turned out that other language specific properties systematically correlate with the ACC-drop property. It therefore seems worthwhile to determine whether the ACC-drop parameter can in fact be subsumed under a larger parameter for which plenty of positive evidence is available to the child. In this section I will argue that the ACC-drop parameter is a direct consequence of a larger parameter which Pollock (1989) takes to determine the presence vs. absence of a certain type of V-movement across languages.

Based on a number of word order differences between French and English, Pollock (1989) argues, following Emonds (1978) and Kayne (1984), that there is in French a verb movement rule which is absent in English. This difference between the two languages, he claims, is responsible for contrasts like the following:

- |                                    |                                    |
|------------------------------------|------------------------------------|
| (35) a. Paul n'aime pas Christine. | (36) a. Paul bat souvent sa femme. |
| b. *Paul likes not Christine.      | b. *Paul beats often his wife.     |
| (37) a. My friends all left.       | (38) a. *My friends left all.      |
| b. *Mes amis tous partaient.       | b. Mes amis partaient tous.        |

Briefly, Pollock (1989) argues that there is, in French-type languages, a process of V-raising to tensed INFL which proceeds through the head of the agreement phrase as illustrated in (39):



Pollock (1989) further argues that the head of AGR is strong in French while in English it is weak. The difference between French and English with respect to V-raising then reduces to  $\theta$ -theory. In French, V-raising is possible because strong AGR allows an element which has moved into it to head a  $\theta$ -chain, but in English V-raising is illicit because weak AGR is opaque to  $\theta$ -assignment, which leads to a violation of the  $\theta$ -criterion. In French-type languages lexical verbs will therefore move to tensed INFL to become inflected in finite clauses and short move to AGR in infinitivals because [-finite] INFL is opaque to  $\theta$ -role assignment in all languages. Implicit in Pollock's account of V-raising is the assumption that strong AGR is not only transparent to  $\theta$ -assignment, but also is transparent to Case-assignment, otherwise no lexical objects could be licit in French-type languages. Suppose, however, that strong AGR may, but need not, be transparent to ACC Case-assignment, or, to put it differently, that strong AGR optionally absorbs ACC Case. If so, then the ACC-drop parameter formulated in the preceding section is, in fact, part of Pollock's (1989) strong vs. weak AGR parameter. From the point of view of learnability, deriving the ACC-drop property in French-type languages from the strong vs. weak AGR parameter is quite sensible if we assume, following Chomsky (1981:8) that experience is necessary for the learner to fix the value of a parameter and that in the absence of evidence to the contrary the unmarked option is selected. To determine what the unmarked option is with respect to the strong vs. weak AGR parameter, I will use Berwick's (1982) Subset Principle which identifies the marked option as resulting in an increase in the number of well-formed structures that the system can produce. For the learner to assume that AGR is weak in his/her language will result in the absence of V-movement and in the obligatory character of ACC Case assignment, hence V-governed *pro* will be illicit, ultimately resulting in the generation of fewer object NP types. According to the Subset Principle, the assumption that AGR is weak is therefore the unmarked hypothesis that the learner makes in the absence of evidence to the contrary. Learners of English, for instance, will select this unmarked option. Let us now determine what option will be selected by the learner of KiNande. According to Pollock (1989), learners of V-raising languages have access in the primary data to salient clues indicating that verbs undergo movement. These clues include the place of negation, adverbs, and floated quantifiers relative to that of the verb in tensed clauses. To illustrate in a maximally simple manner, let us assume that quantifiers like *each* and *all* are adjoined to VP at S-structure. If V-raising does not apply, we obtain the word order *quantifier verb*, for example, in English (cf. (37a)). If V-raising does apply, then the order *verb quantifier* is expected, French being a case in point (cf. 38b)). Turning now to KiNande, we note that it patterns with French, not with English, with respect to the position of floated quantifiers:

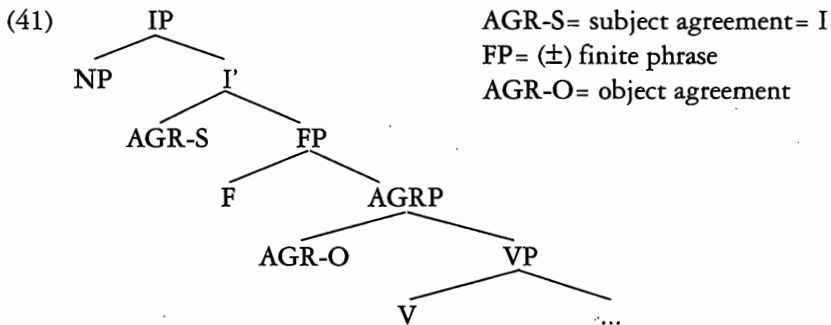
- (40) a. Abaira baage baosi mobaagendire.  
 friends mine all left  
 "All my friends left."  
 b. Abaira baage mobaagendire abaosi.  
 friends mine left all  
 "Lit. My friends left all. (i.e. My friends all left.)"

The presence of an *all*-type quantifier in post-verbal position in sentences like (40b) thus provides a salient clue for KiNande learners that V-raising takes place in that language and that therefore AGR is strong. From there, it is deduced that since strong AGR can absorb ACC Case, V-governed *pro* is licensed and the presence of arbitrary null objects is expected.

### 3. Concluding remarks

In this paper, I have made specific theoretical proposals with respect to the question of why some languages allow arbitrary null objects while other languages do not. I began by establishing that arbitrary null objects are structurally present and that they are instances of A'-bound *pro*. I then argued that *pro* being a Caseless empty category, the presence of arbitrary null objects in a language simply follows from the Case-assigning properties of verbs in that language. Specifically, I suggested that some languages require ACC Case to be lexically realized while others do not. This parameter, I argued, is not a primitive of core grammar but is a direct consequence of Pollock's (1989) strong vs. weak AGR parameter, a parameter responsible for the presence vs. absence of a certain type of V-movement across languages. In particular, I suggested that in addition to being transparent to  $\theta$ -assignment, strong AGR optionally absorbs Case and that it is this latter property which triggers the licensing of arbitrary null objects. V-raising then provides a salient clue for assuming the presence of null objects in a language.

I would like to conclude by pointing out that the "null object parameter" formulated in this paper might be extendable to cover cases attributed to the null subject parameter if we assume Chomsky's (1988) slightly modified version of Pollock's (1989) structure of IP which appears in (41):



In Authier (in progress) I argue that AGR-S, just like AGR-O, can be strong or weak and that null subject languages like Italian and Spanish have a strong AGR-S. Since strong AGR-S, just like strong AGR-O, is optionally opaque to Case-assignment, *pro* is licensed in the subject position of finite clauses in those languages.

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# Some Notes on Economy of Derivation and Representation

NOAM CHOMSKY

(M. I. T.)

The past few years have seen the development of an approach to the study of language that constitutes a fairly radical departure from the historical tradition, more so than contemporary generative grammar at its origins. I am referring to the principles-and-parameters approach,<sup>1</sup> which questions the assumption that a particular language is, in essence, a specific rule system. If this approach is correct, then within syntax (excluding phonology<sup>2</sup>), there are no rules for particular languages and no construction-specific principles.

A language<sup>3</sup> is not, then, a system of rules, but a set of specifications for parameters in an invariant system of principles of universal grammar (UG); and traditional grammatical constructions are perhaps best regarded as taxonomic epiphenomena, collections of structures with properties resulting from the interaction of fixed principles with parameters set one or another way. There remains a derivative sense in which a language *L* is a "rule system" of a kind; namely, the rules of *L* are the principles of UG as parametrized for *L*.

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(1) This is sometimes called "Government-Binding (GB) theory", a misleading term that should be abandoned, in my view; see my *Generative Grammar*, Studies in English Linguistics and Literature, Kyoto University of Foreign Studies, 1988, lecture 2. Generative grammar has engendered a good deal of controversy, sometimes for good reason, often not. There has been a fair amount of plain misunderstanding, beginning with the notion of generative grammar itself. I have always understood a generative grammar to be nothing more than an explicit grammar. Some apparently have a different concept in mind. For example, reviewing my *Knowledge of Language* (New York: Praeger, 1986), James McCawley notes that I interpret the concept here as meaning nothing more than explicit, as I have always done (see, e.g., *Aspects of the Theory of Syntax* (Cambridge: MIT, 1965, p.4)), and concludes erroneously that this is a "sharp change" in my usage that gives the enterprise an entirely different cast from that of the 1960s, when the task as he perceives it, was taken to be "specifying the membership of a set of sentences that is identified with a language" (*Lg* 64.2, June 1988; McCawley takes the set of sentences to be what I have called the "structure" of the language, that is, the set of structural descriptions). But the characterization he gives does not imply that "generative" means anything more than "explicit"; there is, furthermore, no change in usage or conception, at least for me, in this regard. The review contains a series of further misunderstandings, and there are others elsewhere, but I will not discuss these matters here.

(2) On why phonology alone might be expected to have specific rule structure, see Sylvain Bromberger and Morris Halle, "Why Phonology is Different", *LI* 20.1, 1989.

(3) Or what is sometimes called a "core language". The core-periphery distinction, in my view, should be regarded as an expository device, reflecting a level of understanding that should be superseded as clarification of the nature of linguistic inquiry advances. See the first cited reference of note 1.

In the course of this recent work, certain concepts have emerged with a unifying character in that they appear throughout the components of a highly modular system: *c*-command and government, for example. There also seem to be fairly general principles involving these concepts, with wide-ranging effects. The Empty Category Principle (ECP), belonging to the theory of government, is one such example, which has been the subject of much fruitful work. Such concepts and principles play a pervasive role in a tightly integrated system; slight modifications in their formulation yield a diverse and often complex array of empirical consequences, which have also been fruitfully explored in a large number of languages. And we may be fairly confident that much remains to be learned about just how they should be expressed.

I think we can also perceive at least the outlines of certain still more general principles, which we might think of as “guidelines”, in the sense that they are too vaguely formulated to merit the term “principles of UG”. Some of these guidelines have a kind of “least effort” flavor to them, in the sense that they legislate against “superfluous elements” in representations and derivations. Thus the notion of “full interpretation” (FI) requires that representations be minimal in a certain sense. Similarly, the “last resort” condition on movement, which yields a partial explanation for the requirement that A-chains be headed by a Case position and terminate in a theta-position (the “chain condition”), has the corresponding effect of eliminating superfluous steps in derivations, thus minimizing their length.<sup>4</sup> What I would like to do here is to search for some areas where we might be able to tease out empirical effects of such guidelines, with a view towards elevating them to actual principles of Language, if that is, indeed, what they are.

### 1. Preliminary assumptions

Let us begin with a range of assumptions concerning language design, generally familiar though often controversial, which I will adopt without specific argument.

I will assume the familiar EST framework, understood in the sense of the principles-and-parameters approach. We distinguish the lexicon from the computational system of the language, the syntax in a broad sense (including phonology). Assume that the syntax provides three fundamental levels of representation, each constituting an “interface” of the grammatical system with some other system of the mind/brain: D-structure, PF, and LF.

The lexicon is a set of lexical elements, each an articulated system of features. It must specify, for each such element, the phonetic, semantic and syntactic properties that are idiosyncratic to it, but nothing more; if features of a lexical entry assign it to some category *K* (say, consonant-initial, verb, or action verb), then the entry should contain no specification of properties of *K* as such, or generalizations will be missed. The lexical entry of the verb *hit* must specify just enough of its properties to determine its sound, meaning, and syntactic roles through the operation of general principles, parametrized for the language in question. It should not contain redun-

(4) On these notions, see my *Knowledge of Language*. General conditions of this sort were investigated in some detail in the earliest work in generative grammar, in the context of the study of evaluation procedures for grammars; see my *Morphonemics of Modern Hebrew*, ms., 1949, 1951 (New York: Garland, 1979).



dant information, for example, about the quality of the vowel, properties of action verbs generally, or the fact that together with its complement, it forms a VP.<sup>5</sup>

It has been suggested that parameters of UG do not relate to the computational system, but only to the lexicon. We might take this to mean that each parameter refers to properties of specific elements of the lexicon or to categories of lexical items; canonical government, for example. If this proposal can be maintained in a natural form, there is only one human language, apart from the lexicon, and language acquisition is in essence a matter of determining lexical idiosyncrasies. Properties of the lexicon too are sharply constrained, by UG or other systems of the mind/brain. If substantive elements (verbs, nouns, etc.) are drawn from an invariant universal vocabulary, then only functional elements will be parametrized. The narrower assumption appears plausible; what follows is consistent with it.<sup>6</sup>

The level of D-structure is directly associated with the lexicon. It is a "pure" representation of theta-structure, expressing theta relations through the medium of the X-bar-theoretic conditions in accordance with the projection principle. It may meet some strong "uniformity condition"<sup>7</sup> and in this sense be invariant across languages. I will assume here a two-level X-bar theory of the conventional sort, perhaps restricted to binary branching in accordance with Richard Kayne's theory of "unambiguous paths".<sup>8</sup>

The level of PF is the interface with motor-perceptual systems, and the level of LF, with conceptual systems.

Each of these levels is a system of representation of a certain type, its properties specified by principles of UG.<sup>9</sup> For a particular language, the choice of D-structure, PF and LF must satisfy the "external" constraints of the interface relation. Furthermore, the three levels must be interrelated by mechanisms permitted by the language faculty. The *structural description* of an expression *E* in language *L* includes — perhaps *is* — the set (*d*, *p*, *l*), representations at the levels of D-structure, PF, LF, respectively, each satisfying the "external" conditions.<sup>10</sup> We may understand the

(5) The lexical elements are sometimes called "atomic" from the point of view of the computational operations. Taking the metaphor literally, we would conclude that no feature of a lexical item can be modified or even addressed (say, for checking against another matching element) in a computational operation, and no features can be added to a lexical element. The condition as stated is too strong; just how it holds is a theory-internal question that I will put aside.

(6) See Hagit Borer, *Parametric Syntax* (Dordrecht: Foris, 1984); Naoki Fukui, "Deriving the Differences between English and Japanese: a case study in parametric syntax", *English Linguistics* 5, forthcoming, on restriction to functional elements.

(7) On this matter, see among others Mark Baker, *Incorporation: A theory of grammatical function changing* (Chicago: U. of Chicago Press, 1988).

(8) Kayne, *Connectedness and Binary Branching* (Dordrecht: Foris, 1984). As a matter of notation for X-bar theory, I will use prime instead of bar,  $X^0$  for the lowest level category, and XP for X', for each X.

(9) I have in mind the notion of "level of representation" discussed in my *Logical Structure of Linguistic Theory (LSLT)* (1955-6; New York: Plenum, 1975; Chicago: U. of Chicago, 1985), and subsequent work.

(10) Some have proposed that certain conditions on syntax hold at PF; see, e.g., A. Weinberg, J. Aoun, N. Hornstein and D. Lightfoot, "Two Types of Locality", *LI* 18.4, 1987. It cannot be, strictly speaking, the level of PF at which these conditions apply, since at this level there is no relevant structure, not even words, in general. Rather, this approach assumes an additional level S-P intermediate between S-structure and PF, the purported conditions holding at S-P.

*structure* of  $L$  to be the set of structural descriptions, for all expressions  $E$ . The language  $L$  itself consists of a lexicon, a specific choice of values for parameters of UG, and such rules as there may be, perhaps restricted to phonology. I understand “language” here in the sense of what I have called elsewhere “I-language”, where the terminology is intended to suggest “internalized” and “intensional”. Intuitively, a language, so construed, is “a way of speaking and understanding, “in a traditional sense; to have such a way of speaking and understanding (that is, to “have a language” or to “know a language”) is to have the I-language as a component of the mind/brain. Note that while “external” to the computational system of language, the interface constraints are “internal” to the mind/brain. Other interactions — for example, those entering into the study of reference and truth — are a different matter.

In accordance with the general EST framework, I assume that the three levels are not related to one another directly, but only through the intermediary level of S-structure, which is the sole point of interaction among the three fundamental levels. From this standpoint, S-structure is a derivative concept. For a specific language  $L$ , its properties are determined by those of the fundamental levels, and the condition that it be related to them by the appropriate principles. The level of S-structure for  $L$  is the system that satisfies these conditions, something like the solution to a certain set of equations. Presumably, the principles of language design require that this “solution” be unique.

Exactly how these principles of interaction among levels should be understood is not entirely clear. I will adopt the general assumption that S-structure is related to LF by iterated application of the principle Move-alpha (substitution and adjunction), deletion and insertion — that is, by the principle Affect-alpha in the sense of Lasnik and Saito<sup>11</sup> — and to PF by this principle and the rules of the phonological component.

The relation of S-structure to the lexicon has been construed in various ways. I will assume that the relation is mediated by D-structure, in the manner just outlined, and that D-structure is related to S-structure as S-structure is related to LF and (in part) PF, that is, by iterated application of Affect-alpha. Alternatively, it might be that D-structure is determined by a chain-formation algorithm applying to S-structure (or perhaps LF), and in this sense is “projected” from S-structure as a kind of property of S-structure; this algorithm will then express the relation of S-structure to the lexicon.

The choice between these two options has been open since the origins of trace theory, before the principles-and-parameters approach crystallized. It has never been entirely clear that there is a real empirical issue here. There is, at best, a rather subtle difference between the idea that two levels are simply related, and the idea that the relation is a “directional mapping”. Similarly, it is a subtle question whether the relation of S-structure to the lexicon is mediated by a level of D-structure with independent properties, serving as one of the fundamental “interface” levels. My own rather tentative feeling is that there is an issue, and that there is mounting, if rather subtle and inconclusive, evidence in support of the picture sketched earlier, with three fun-

(11) See Howard Lasnik and Mamoru Saito, “On the Nature of Proper Government”, *LI* 15, 1984, 235-289.

damental interface levels and the D- to S-structure relation interpreted as a directional mapping.<sup>12</sup> I will adopt this interpretation for expository purposes; it is rather generally adopted in practice, with results then sometimes reconstructed in terms of the alternative conception, a suggestive and possibly meaningful fact. Much of what follows is neutral between the several interpretations of this system.

S-structure may also have to satisfy independent conditions, for example, the binding theory principles, conditions on identification of empty categories, and perhaps X-bar theory.<sup>13</sup>

## 2. Some properties of Verbal Inflection

Of the many specific areas that might be investigated in an effort to clarify general guidelines of the kind mentioned earlier, I will concentrate on the topic of X<sup>0</sup>-movement, a matter of particular interest because of its implications for the study of word formation, though there are other cases, for example, V-movement in the sense of Hilda Koopman and others.<sup>14</sup> With respect to word-formation, there are two major categories where the question of X<sup>0</sup>-movement arises: complex predicates (causatives, noun-incorporation, etc.), and inflectional morphology. There is an ongoing and illuminating debate about whether X<sup>0</sup>-movement applies in these cases, and if so, how. I will not consider the first category, but will limit attention to inflection, assuming that it involves syntactic rules such as V-raising to INFL, and INFL-lowering to V (Affix-hop). I am thus assuming a sharp and principled distinction between inflectional morphology, part of syntax proper, and strictly derivational morphology, part of the lexicon, perhaps subject to such principles as right-headedness in the sense of Edwin Williams and others. I am, then, assuming something like the earliest version of the lexicalist hypothesis.

With respects to X<sup>0</sup>-movement, there is one salient descriptive fact—the Head Movement Constraint (HMC)—and one central question about it: is the HMC reducible, partially or completely, to independently motivated principles of syntactic movement? Assume for now that XP-movement (A- and A-bar-movement) is given, with its principles, specifically ECP. I will assume that ECP reduces to the property of antecedent-government, with the requirement of proper government of trace relating to other conditions that have to do with “identification” of empty categories.<sup>15</sup>

(12) See Luigi Burzio, *Italian Syntax* (Dordrecht: Reidel, 1986), and some remarks in my response to commentary in *Mind and Language* 2.2, 1987, pp. 193-7. Some have felt that there is a profound issue of principle distinguishing “two-level” theories that include a relation of D- to S-structure from “one-level” approaches, which relate S-structure to lexical properties in some different way; for some comment, see my response to queries in H. C. Longuet-Higgins, J. Lyons and D. E. Broadbent, eds., *The Psychological Mechanisms of Language* (London: Royal Society and British Academy, 1981, pp. 63f.), and my *Lectures on Government and Binding* (Dordrecht: Foris, 1981). There may be an issue, but as noted, it is at best a rather subtle one.

(13) On X-bar-theoretic conditions at S-structure, see Henk van Riemsdijk, “Movement and Regeneration”, to appear in Paola Benincà, ed., Proceedings of the workshop on dialectology and linguistic theory, GLOW conference, March 1987, Venice. In lectures in Tokyo in January 1986, I suggested some further reasons why such conditions might hold at S-structure.

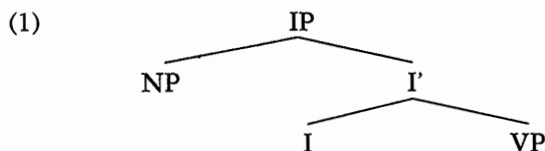
(14) See Koopman, *The Syntax of Verbs* (Dordrecht: Foris, 1984).

(15) I assume here the general framework of my *Barriers* (Cambridge: MIT, 1986), based essentially on Lasnik & Saito, *op. cit.*, though further modifications are in order that I will not consider here.

We then ask whether these same principles yield HMC as a special case. If so, we have a true reduction of HMC, and therefore reduction of properties of word-formation to independently-established principles of syntax.<sup>16</sup>

Let us begin with some recent ideas of Jean-Yves Pollock, based on work by Joseph Emonds on verbal inflection in English-type and French-type languages.<sup>17</sup> I will generally follow Pollock's proposals, adapting some of them in a different way and asking how they might bear on "least effort" guidelines and the status of HMC.

Assume the X-bar-theoretic principle that  $S=I'$ , so that the basic structure of the clause is (1):<sup>18</sup>



We leave open the question whether the subject NP is base-generated in place or raised from VP, as proposed in several recent studies; and many others that are not directly relevant.

Emonds's basic idea is that in French-type languages, V raises to I, while in English-type languages, I lowers to V. There is a variety of empirical evidence supporting this conclusion. Assume it to be correct. It will then follow that VP-adverbs, which we take to be generated under VP adjoined to another VP, are preverbal in English and post-verbal in French, as in (2):

- (2) (i) John often kisses Mary  
 (ii) John completely lost his mind  
 (iii) Jean embrasse souvent Marie  
 (iv) Jean perdit complètement la tête

But English auxiliaries *have-be* behave approximately like ordinary verbs in French, as in (3):

- (3) (i) John has completely lost his mind  
 (ii) books are often (completely) rewritten for children

(16) Note that there also might be a partial reduction, for example, a formulation of ECP that expresses a generalization holding of  $X^0$ -movement and other cases; that would be the import of a proposal by Luigi Rizzi developed in his "Relativized Minimality", ms. Geneva, 1987. We should also look into the other possible case of movement:  $X'$ -movement. For some recent evidence supporting this option, see van Riemsdijk, *op. cit.* See also Takayasu Namiki, "Remarks on Prenominal Adjectives and Degree Expressions in English", *Studies in English Linguistics* 7.71- 85, 1979.

(17) Pollock, "Verb Movement, UG and the Structure of IP", ms. Université de Haute Bretagne, Rennes, 1988. I will touch upon only a few of the questions that Pollock addresses. See Emonds, "The Verbal Complex V'-V in French", *LI* 9.151-75 (1978), and his *A Unified Theory of Syntactic Categories* (Dordrecht: Foris, 1985), for a more recent development of his approach.

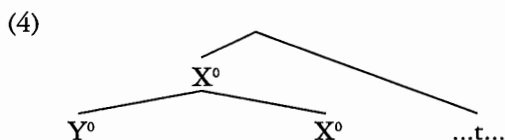
(18) Order irrelevant, here and below, for abstract formulations.

Therefore the distinction is not raising in French versus lowering in English, but some other difference that requires French verbs and English auxiliaries to raise while barring this possibility for other verbs in English.

On other grounds, it has been postulated that the AGR element is "stronger" in French than in English. Assume this to be true. Assume further that weak AGR is unable to "attract" true verbs such as *kiss* or *lose*, though it can attract auxiliaries, while strong AGR attracts all verbs.<sup>19</sup>

Why should weak and strong AGR behave in this fashion? One possibility, suggested by Howard Lasnik, is that it is simply a morphological property: only strong AGR can accept a "heavy" element such as a verb, though any AGR can accept a "light" element such as an auxiliary. Another possibility, developed by Pollock, is that the difference reduces to theta-theory: strong AGR allows an adjoined element to head a theta-chain, but weak AGR does not. If the auxiliaries are not theta-markers, then they can raise to AGR without a violation of the theta criterion, but raising of a true verb to weak AGR will lead to a violation of the theta criterion.

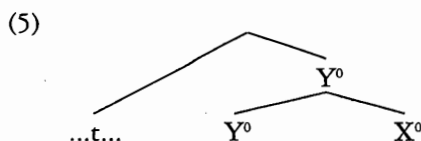
Looking at this option more closely, consider the effect of raising of  $Y^0$  to adjoin to  $X^0$ . This process yields the structure (4), where  $t$  is the trace of  $Y^0$ :



The theory of government must permit  $Y^0$  to govern its trace  $t$  in this structure, so as to satisfy ECP. If the theory of government precludes government of  $Y^0$  from outside of the complex element  $X^0$  formed by adjunction, then successive-cyclic movement of  $Y^0$  will be barred; thus causative formation, for example, cannot escape HMC (assuming it to reduce to ECP) by successive-cyclic movement. I will assume this to be the case, putting a precise formulation aside.

The chain  $(Y^0, t)$  will therefore be properly formed in (4) with regard to ECP. Suppose that  $Y^0$  is a theta-marker. Then  $t$  must be able to theta-mark; the theta-marking property of  $Y^0$  must be "transmitted" through the chain. That will be possible if  $X^0$  is strong, but not if it is weak. We will therefore have a theta criterion violation if a theta-marker  $Y^0$  is adjoined to weak AGR.

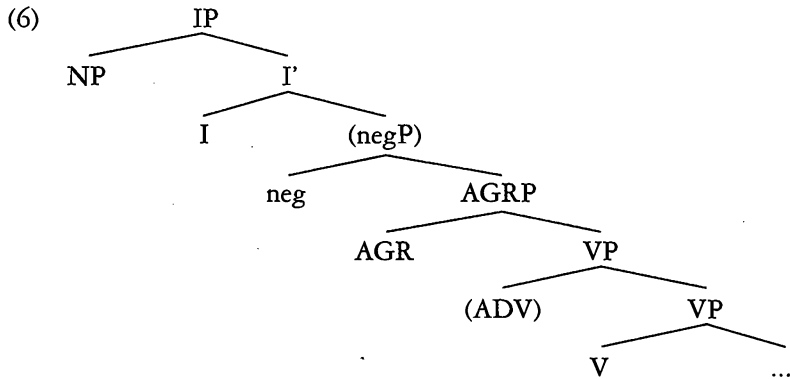
Suppose that instead of raising  $Y^0$  to adjoin to  $X^0$  to yield (4), we lower  $X^0$  to adjoin to  $Y^0$ . This process again forms the complex element  $[Y^0-X^0]$ , but with a structure different from (4), namely (5),  $t$  being the trace of  $X^0$ :



(19) Pollock's terms for "strong", "weak" are "transparent", "opaque", respectively, for reasons that become clear directly.

Here the lower  $Y^0$  is the head of the construction, and we may assume that whatever the character of  $X^0$ ,  $Y^0$  will retain all relevant relations to other elements, and will therefore retain the capacity to theta-mark a complement. The normal properties of adjunction, then, have the desired effect, as Pollock observes: lowering of weak AGR to the verb  $v$  does not bar theta-marking of the complement, but raising of  $v$  to weak AGR does bar theta-marking.

Pollock extends the domain of observation further to negation, proposing the following more articulated structure in a Kayne-style unambiguous path analysis:



Here I may be [ $\pm$  finite] and *neg* is English *not* or French *pas*.<sup>20</sup> This representation, separating I and AGR, eliminates the odd dual-headedness of INFL in earlier treatments. The assumption is that infinitives have (generally vacuous) AGR.

Suppose that V raises to AGR. Then we have the S-structure order V-Adverb-Object, as in English auxiliaries or French verbs generally. If AGR lowers to V, we have the order Adverb-V-Object, as in English non-auxiliary verbs. If V raises to AGR and then the complex raises further to I, we have such forms as (7):

- (7) (i) John has not seen Bill  
 (ii) Jean (n') aime pas Marie

If V raises to AGR but not to I, we have (8i) in French, with *sembler* ("seem") contrasting with *être* ("be"):

- (8) (i) ne pas sembler heureux  
 (ii) n'être pas heureux

The properties illustrated in (7) and (8) follow on the assumption that [+finite] is strong while [-finite] is weak. Being strong, [+finite] allows the verb *aime* to adjoin to it, crossing *neg* (*pas*), in (7ii). Being weak, [-finite] does not permit the verb *sembler* to adjoin to it, crossing *neg*, in (8i), though the auxiliary *être* can raise to weak I just as auxiliaries can raise to weak AGR.

(20) Pollock treats *ne* in the *ne-pas* construction as the clitic head of *negP*, raising to a higher position. We might think of it as a kind of scope marker.

While the V-raising rule in French is obligatory for tensed clauses, it is optional for infinitives. Thus alongside of (8ii), we have the option (9i); and alongside of the form V-Adv-NP (obligatory for finite as in (2iii)), we have (9ii):

- (9) (i) ne pas être heureux  
 (ii) souvent paraître triste

(9i) results from failure of *être* to raise over *neg* to [-finite] I, and (9ii) from failure of *paraître* to raise over the adverb to AGR in the infinitive.

We return in section 3.2 to the question of why there should be optionality just in the case of infinitive, and in section 5 to some further questions about the nature of AGR. Tentatively, let us assume the analysis just given, putting aside the optionality with infinitives.

At S-structure, the verb must typically be combined with its various affixes, to yield the proper forms at PF; the various affixes in (6) must form a single complex with a verb. Let us suppose that these affixes share some unique feature to guarantee proper association at S-structure. Thus any series of rule applications that separates them is barred by an appropriate S-structure condition, and we need not be concerned if the rule system permits "wild" application of rules that would leave affixes improperly scattered among the words of the sentence generated. Note that other improper rule applications are barred by the requirement that items lexically identified as affixes be properly "attached" at S-structure.

Assuming Pollock's parameter, we have strong and weak inflectional affixes. The [+finite] choice for I (tensed) is strong and the [-finite] choice (infinitive) is weak. AGR is strong in French, weak in English. The basic facts follow, with some idealization of the data.

Pollock observes that earlier stages of English were much like French, suggesting plausibly that a change in the AGR parameter led to the collection of phenomena that differentiate the languages in the current stages. Some of the forms reflect D-structure directly; for example, (9i,ii) in French and their English equivalents. Other forms reflect the consequences of raising of V to AGR or to I, as illustrated. A unitary treatment of the comparative data — with the array of facts involving tense-infinitive, negation and adverbs, verbs and auxiliaries — relies crucially, Pollock points out, on analysis of Tense and Agreement morphemes "as separate syntactic entities at an abstract level of representation", namely D-structure. The analysis, then, provides support for the rigid X-bar-theoretic condition of single-headedness and the consequent distinction between AGR and I, and on the distinction between D- and S-structure representation, Pollock concludes.

### 3. A "Least Effort" Account

#### 3.1. *Minimizing Derivations*

Let us now see how an analysis of this nature would bear on the guidelines we have been considering. I will put aside the relation of S-structure to PF and D-structure to lexicon. Thus we are considering the relations among D-structure, S-structure

ture and LF. For expository convenience, I will refer to the relation of D- to S-structure as “overt syntax” (since the consequences of the operations relating these levels are commonly reflected at PF).

The analysis of verbal inflection outlined in section 2 relies crucially on the principle that raising is necessary if possible. This would follow from the assumption that shorter derivations are always chosen over longer ones. The reason is that lowering of an inflectional element INF, as in the case of English true verbs, yields an improper chain ( $t, \dots, \text{INF}$ ), where INF is adjoined to V at S-structure to form [ $v\text{V-INF}$ ] and  $t$  is the trace of INF, which c-commands it. Subsequent LF-raising of [ $v\text{V-INF}$ ] to the position of  $t$  is therefore required to create a proper chain. The result is essentially the same as would have been achieved with the shorter derivation that involves only raising in the overt syntax. Therefore, by a “least effort” condition, only the latter is permissible.

A closer look shows that the “least effort” condition cannot reduce simply to the matter of counting steps in a derivation. Consider English interrogatives. Let us assume that an interrogative construction has the complementizer Q ( $\{wb\}$ ) to distinguish it at D-structure from the corresponding declarative, triggering the appropriate intonational structure at PF and the proper interpretation at LF. If Q is, furthermore, an affix, then it must be “completed” in the overt syntax by  $X^0$ -raising. The D-structure (10) will yield, by lowering, an S-structure with the verb [ $V\text{-AGR-I}$ ]<sup>21</sup> and traces in the positions of I and AGR:

(10) Q John I AGR write books

The resulting form is indistinguishable from the declarative at PF, and is, furthermore, illegitimate (at S-structure) if Q is a real element, as postulated. To permit an output from the legitimate D-structure (10), English makes use of the dummy element *do* to bear the affix, so that lowering does not take place; rather, AGR and I adjoin to *do*. Let us call this process *do*-support, a language-specific process contingent upon the weakness of AGR; for expository purposes, assume it to be a rule of the overt syntax inserting *do* in the Modal position, hence *do*-insertion, attracting the raised affixes and then raising to Q. Given this device, we can form “did John write books” from (10).<sup>22</sup>

The same device, however, permits the illegitimate form “John did write books” (*do* unstressed) alongside of “John wrote books”, both deriving from the declarative form corresponding to (10) (lacking Q). In fact, this option is not only available, but is arguably obligatory if shorter derivations are always preferred. The reason is that the illegitimate option requires only the rule of *do*-insertion and raising, while the correct form requires overt lowering and subsequent LF-raising.

(21) More explicitly, the verb [ $v\text{V}[\text{AGR}\text{AGR-I}]$ ].

(22) The mechanics of how modals and *do* relate to the inflectional affixes remain to be specified. If *do*-support can be shown to be a reflex of parameter-fixing (choice of weak AGR, we are assuming), then it is not, strictly speaking, a language-specific rule, though I will continue to use this term for expository purposes. The device of employing dummy elements in this manner is found elsewhere, also plausibly considered to be contingent on parameter-fixing; see section 6.4 for one example.



To yield the correct results, the “least effort” condition must be interpreted so that UG principles are applied wherever possible, with language-particular rules used only to “save” a D-structure yielding no output: interrogative forms without modal or non-theta-marking verbs, in this case. UG principles are thus “less costly” than language-specific principles. We may think of them, intuitively, as “wired-in” and distinguished from the acquired elements of language, which bear a greater cost.<sup>23</sup>

Consider now a negative expression with the D-structure (11):

(11) John I neg AGR write books

The correct derivation involves *do*-insertion and raising of AGR to form the complex verb [*do*-I-AGR], with the S-structure (12):

(12) John did (does) not write books

But again we face a problem: why doesn't I lower to AGR, then to V, yielding the complex verb [V-AGR-I] as in the non-negated form, so that at S-structure and PF we have “John not wrote (writes) books”? Then LF-raising will apply, eliminating the improper chain, exactly as in the case of the non-negative counterpart. This process involves only the UG principles of overt lowering and LF-raising, avoiding the language-particular rule of *do*-insertion. It is therefore not only a permissible derivation, but is actually required by the “least effort” condition, as just revised.

A partial solution to this problem is provided by HMC. The process of LF-raising has to cross *neg*, thus violating HMC. There is, therefore, only one legitimate derivation: the one involving *do*-insertion, which is therefore required in these cases.

We are thus assuming that, given a well-formed D-structure, we necessarily apply the least costly derivation that is legitimate to yield an S-structure and, ultimately, a PF output.

But several further questions arise at once. Consider the French counterpart to (11), or equivalently, the English form (13):

(13) John I neg AGR have written books

Here the correct derivation requires that the verb *have* raise to AGR, then to I crossing *neg*, to yield (14):

(14) John has not written books

And in French, the same will be true of a main verb, as in the counterpart to the D-structure (11). If HMC blocks the unwanted derivation with LF-raising over *neg* in the case of (11), then why does it not equivalently block the *required* derivation with overt raising over *neg* in the case of (14) and the French equivalent to (11)?

Note that there is also a similar question in the case of (11). Thus the required derivation involves raising of AGR over *neg* to I to form the complex verb [*do*-I-

(23) Note that there are empirical consequences to these assumptions. They entail that at the steady state attained in language acquisition, the UG principles remain distinct from language-particular properties. There is suggestive work by Suzanne Flynn on second-language acquisition supporting this conclusion. See her *A Parameter-Setting Model of L2 Acquisition: Experimental Studies in Anaphora* (Dordrecht: Reidel, 1987).

AGR] after *do*-insertion. Why, then, does not overt raising of AGR over *neg* violate HMC?<sup>24</sup>

To deal with these questions, we have to consider more carefully the nature of deletion. Clearly, we cannot delete an element if it plays a role at LF: for example, the trace of a verb. But such considerations do not require that the trace of AGR remain at LF, since it plays no role at that level. We might, then, suppose that the trace of AGR is deletable (I will return to this conclusion in a more general setting in section 6.2). We must also determine exactly what we intend the process of deletion to be. There are various possible answers to this question, generally not addressed because they go beyond known empirical consequences. In the present context, however, there are empirical consequences, so a specific decision must be reached. One plausible answer is that deletion of an element leaves a category lacking features, which we can designate [*e*]. Then deletion leaves a position but no features, in particular, no categorial features. Deletion of [<sub>AGR</sub> *t*], the trace of AGR, leaves [*e*], and by X-bar-theoretic principles, the dominating category AGRP is now *e* P, an XP with no features.<sup>25</sup> That is a satisfactory conclusion, since AGRP plays no role at LF.

Making these assumptions, let us return to the problems we faced. Consider first the raising of AGR to I over *neg* to form [*do*-I-AGR] in the correct derivation from the D-structure (11). This process will, in fact, violate the HMC regarded as a condition on derivations, but there will be no ECP violation at LF once the trace of AGR is deleted. Recall that we are taking ECP to be a condition on chains, along the lines discussed in *Barriers*, thus not applicable to the empty categories PRO, pro, *e*, but only to trace. We therefore have no ECP violation, though we do have an HMC violation. But if HMC is reducible to ECP, then we can dismiss HMC as a descriptive artifact, valid only insofar as it does in fact reduce to ECP. The present case would be one in which HMC does not reduce to ECP, and is therefore inoperative.

Let us now turn to the more general question. Why does LF-raising of [V-AGR] to I over *neg* violate HMC, while overt raising of [V-AGR] to I over *neg* (as in the case of English auxiliaries and all French verbs) does not violate HMC? To answer this question, we must again consider more closely the structures formed by adjunction.

Let us return to the D-structures (11), (13), repeated here as (15):

- (15) (i) John I *neg* AGR write books  
 (ii) John I *neg* AGR have written books

Lowering of I to AGR forms the element [<sub>AGR</sub>AGR-I], leaving the trace *t*<sub>I</sub>. Further lowering of the complex element to V forms [<sub>V</sub>V [<sub>AGR</sub> AGR-I]], a verb, leaving the trace *t*<sub>AGR</sub>. But this trace deletes, leaving [*e*], a position lacking features. Applying these processes to (15i), then, we derive the S-structures (16):

(24) There would, in fact, be a straightforward solution to this particular problem in terms of an analysis to which we return in section 5, but I will put that aside here, since it will not bear on the other questions just raised.

(25) Note that *e* is regarded here as an actual symbol of mental representation, but lacking phi-features and categorial features. *e* is not to be confused with the identity element of a syntactic level, regarded as an algebraic construction in the manner of *LSLT*.

(16) John  $t_I$  neg [e] [<sub>VP</sub> [<sub>V</sub> write<sub>[AGR AGR-I]</sub>]]books]

We now turn to LF-raising. The complex V raises to the position [e], leaving a V-trace; we may assume this to be substitution, not adjunction, on a natural interpretation of recoverability of deletion. We now raise this element to the position  $t_I$ , again leaving a V-trace. The latter is of course undeletable, being part of a chain with substantive content at LF. This step violates HMC, and its residue, (17), violates ECP at LF:

(17) John [<sub>V</sub> write-AGR-I] neg  $t'_V$  [<sub>VP</sub>  $t_V$  books]

Here antecedent government of  $t'_V$  is blocked by the intermediate element *neg*, under the minimality condition. We therefore have a violation of ECP at LF. In this case, HMC, reducing to ECP, is a valid descriptive principle, violated by the derivation.

Note that the situation contrasts with overt raising of V to AGR, then to I over *neg*, as in the case of (15ii) (and all French verbs). Here raising to AGR is permitted, therefore obligatory by the "least effort" condition. Following the derivation step by step, we first raise V to AGR, leaving V-trace and forming [<sub>AGR</sub> V-AGR]. We then raise this complex element to I over *neg*, forming [<sub>I</sub> V-AGR-I], and leaving AGR-trace; this step violates HMC. The AGR-trace now deletes, leaving [e]. We thus derive the form (18):

(18) John [<sub>I</sub> have-AGR-I] neg [e] [<sub>VP</sub>  $t_V$ ...]

This representation induces no ECP violation,<sup>26</sup> though the derivation that formed it violates HMC. Again, we see that HMC is descriptively valid only insofar as it reduces to ECP.

The range of problems that arise therefore receive straightforward solutions when we consider the nature of adjunction, as standardly defined. Note, however, the crucial assumption that "unnecessary elements" delete at LF; we return to the matter in section 6.2. Also crucial is the assumption that D-structure relates to S-structure by a directional mapping, a step-by-step derivational process. In the S-structure (and LF) representation (18), *have* is "too far" from its trace  $t_V$  for ECP to be satisfied, but the locality requirement has been satisfied in the course of the derivation from D- to S-structure.<sup>27</sup>

### 3.2 The Element I

Let us turn to some speculations on the status of IP and the optionality observed earlier in French infinitival constructions. If I is [+finite] (I=T=tense), then it presumably cannot be deleted, since a tensed phrase plays an LF-role. Therefore, we have either overt raising to [+finite] or LF-raising to the position of its trace.

(26) Recall that we are assuming, essentially, the Lasnik-Saito theory of ECP, as modified in *Barriers*. Under this theory,  $t_V$  in (17) is gamma-marked after raising of V to AGR, and subsequent deletion of AGR-trace in this position leaves no ECP violation.

(27) On other cases of a similar sort, see my remarks in *Mind and Language*, cited earlier.

There is, however, no strong reason to suppose that the same is true of [-finite] (infinitive). If [-finite] and its IP projection play no role at LF, then this element should be deletable, just as AGR (actually,  $t_{\text{AGR}}$ ) is. Suppose that this is the case.<sup>28</sup>

Before considering the consequences, we have to resolve a minor technical question about infinitival inflection: does [-finite] attach to the base form of the verb or does it not? Little is at stake in the present connection; for concreteness, let us adopt the former alternative.

Keeping now to French, consider verbs that can raise to weak inflection, for example, *être* ("be"). Suppose that we have the form (19), with *être* raised to AGR:

(19) ne I pas être heureux

In this construction, *être* may raise further to I in the normal way, yielding the form (20):

(20) n'êtr e pas heureux

But there is also another option. The form *être* may remain in place, with I lowering to [être-AGR] leaving not trace but [e]. This is permissible on the assumption we are now considering: that [-finite] is deletable, playing no L role. The resulting form is (21), identical to (19) but with [e] in place of I:

(21) ne pas être heureux

Each of these options involves one rule application. Therefore the two are equally costly and we have genuine alternatives, in conformity with the "least effort" guideline. As observed earlier, these two cases are both permitted in French.

Consider now a true verb, such as *paraître* ("seem"). We know that it cannot raise to I, so I must lower to AGR, leaving *e*. Suppose now that *paraître* is in an adverbial construction, as in the D-structure (22):

(22) souvent paraître triste

If *paraître* raises to AGR in the usual way, we derive the form (23):

(23) paraître souvent triste

Suppose, however, that AGR-I lowers to the V position, leaving [e] rather than trace. The resulting form is (22) itself, a legitimate form with no ECP violation. Again we have two options, (22) and (23), each involving a single rule, each legitimate. The reason is that AGR and its projection, exactly like [-finite] I and its projection, play no role at LF and are therefore deletable.

We conclude, then, that while there are no options in the finite forms, in their infinitival counterparts, we have the options illustrated. Along these lines, we might hope to incorporate Pollock's observations about the range of options for infinitives as distinct from tensed clauses.

(28) Semantic properties of infinitives, then, would be understood as properties of the construction, not its head [-finite].

We have not settled the precise character of LF-raising to the trace of [+finite]. What is required is that the finite (tensed) phrase, functioning at LF, not be deleted. The requirement is met under LF-raising, which might be either adjunction or substitution. If it is adjunction, the resulting form will be (24), which heads TP, where  $T=[+finite]$  (tense):

$$(24) [{}_T [{}_V V [{}_{AGR} AGR-T]] t_T]$$

We must then take this to be a legitimate form, with T c-commanding its trace  $t_T$ . If the LF-raising is substitution, we derive (25) in place of (24) in the I position, now heading VP:

$$(25) [{}_V V [{}_{AGR} AGR-T]]$$

The question of government of  $t_T$  does not now arise, but we must ask just how the element (25) in the I position satisfies the requirement of tense interpretation at LF. The further implications are not clear, and I will leave the question open.

#### 4. Summary: On Economy of Derivations

Summarizing, we have selected one particular option available for sharpening the notion of deletion, previously left undetermined; and we have made a distinction between deletable and nondeletable elements on the basis of their LF role. These moves are natural and seem generally unexceptionable. Apart from this, we have kept largely to familiar assumptions along with Pollock's basic analysis, modified in various ways. Attending to the meaning of the formalism for adjunction and other notions, the basic empirical observations follow.

Some more general conclusions are also suggested. First, HMC is not a principle, though it is largely accurate as a descriptive generalization. The principle is valid only insofar as it reduces to ECP, and can be violated when other processes overcome a potential ECP violation by eliminating an "offending trace". Second, with regard to the "least effort" guidelines, we now have a somewhat more specific interpretation. The condition requires that the least costly derivation be used, eliminating the S-structure and PF consequences of more costly derivations. To a first approximation, cost is determined by length; the condition requires the shortest derivation, so that overt raising is required where it is possible. But "cost" has a more subtle meaning: UG principles are less costly than language-specific rules that are contingent upon parameter choices (see note 22); and *do*-insertion, in particular, functions only as a "last resort", to "save" a valid D-structure that otherwise underlies no legitimate derivation.

Other well-known facts suggest further refinement of the notion of "least costly derivation". Consider, for example, a standard case of long-distance movement, as in (26):

$$(26) \text{how do you think that John said [that Bill fixed the car t]}$$

The sentence is well-formed by successive-cyclic movement. There is, of course, a shorter derivation, namely, in one step, in which case, on the general principles so far assumed, the sentence should have a status no different from (27):

(27) how do you wonder why John asked [which car Bill fixed t]

The shorter derivation does not bar the longer successive-cyclic one in this case. In fact, the *shorter* derivation is barred; it is not the case that (26) is structurally ambiguous, with one interpretation given by the legitimate derivation and another deviant interpretation given by the illegitimate shorter one. Hence it must be that the measure of cost prefers short movement to long movement, and thus requires the former where possible.

In such ways as these, we may proceed to refine the "least effort" conditions on movement, raising them from the status of imprecise guidelines to actual principles of UG.

Notice that this approach tends to eliminate the possibility of optionality in derivation. Choice points will be allowable only if the resulting derivations are all minimal in cost, as in the case of French infinitival constructions discussed earlier. Any remaining examples of optional rule application would then have to be assigned to some other component of the language system, perhaps a "stylistic" component of the mapping of S-structure to PF. This may well be too strong a conclusion, raising a problem for the entire approach.

### 5. The Agreement System: some speculations

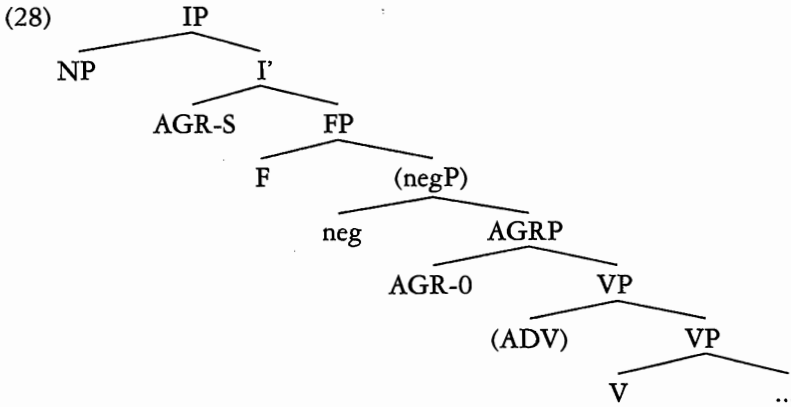
A number of questions arise about the status of AGR in the system just outlined. Following Pollock, we have assumed that AGR is dominated by Tense. But assuming these elements to be dissociated, one might rather expect AGR to dominate tense, since it presumably stands in a government relation with the subject in tensed clauses, to yield the standard subject-verb agreement phenomena. There is morphological evidence suggesting the same conclusion: in a number of languages where it is possible to obtain relevant evidence, the agreement element is "outside" the tense element in the verbal morphology, as would follow from successive adjunction if AGR dominates the tense element.<sup>29</sup> Nevertheless, facts of the kind just illustrated lead Pollock to postulate a position intermediate between Tense and VP, what he takes to be the AGR position.

These conflicts might be reconciled by noting that there are actually two kinds of Verb-NP agreement: with subject and with object. Hence pursuing the basic lines of Pollock's analysis, we should expect to find two AGR elements: the subject-agreement element AGR-S and the object-agreement element AGR-O. On general assumptions, AGR-O should be close to V, and AGR-S close to the subject, therefore more remote from V.<sup>30</sup> The element AGR in Pollock's structure (6), which we have adopted as the basis for discussion, would therefore be AGR-O, providing an intermediate position for raising. It would then be unnecessary to suppose that infinitives necessarily carry (generally vacuous) subject-agreement, though we would now be assuming that AGR-O is present even for non-transitives. Pollock's structure (6)

(29) See Adriana Belletti, ms., Geneva, 1988.

(30) A cursory check suggests that the morphological consequences are as expected, in languages where the hierarchic position of object and subject agreement can be detected.

would now be more fully articulated as (28), where AGR-S=I, the head of I' and IP, and F is [ $\pm$  finite]:



In terms of this proposal, the preceding analysis considered only the structure dominated by FP, which is identical with Pollock's (6) (notations aside).<sup>31</sup>

These conclusions are consistent with Kayne's analysis of participle agreement in a variety of Romance languages.<sup>32</sup> Kayne assumes an AGR element heading AGRP with VP as its complement. This element is distinct from the AGR involved in subject agreement; we may take it to be AGR-0. Thus we have such D-structures as (29), for a French participial construction, putting aside I and AGR-S:



If the NP object is a *wh*-phrase that undergoes raising, then the participle may or may not agree with it. Kayne assumes that these options correspond to two distinct structures, as in (30), where *t*, *t'* are the traces of the *wh*-phrase "combien de tables":

- (30) (i) combien de tables [Paul a [<sub>AGRP</sub> t' [<sub>AGRP</sub> AGR [repeint- t]]]]  
 (ii) combien de tables [Paul a [<sub>AGRP</sub> AGR [repeint- t]]]

The two forms are synonymous, meaning "how many tables has Paul repainted". In (i), the participle surfaces as *repeintes* (plural), in (ii) as *repeint* (lacking agreement).

In the derivation of (i), the *wh*-phrase raises to the position of the trace *t'*, adjoining to AGRP. In this position, it is in a government relation with AGR (in our terms, AGR-0). The participle thus agrees with its *wh*-phrase object.<sup>33</sup> The underlying assumption is that object agreement is contingent upon a government relation between AGR and an NP, exactly as in the case of subject agreement. In case (ii), the

(31) At various points, the reinterpretation would require slight modifications in the exposition and the resulting analysis. I will omit further comment on these matters, which do not seem to raise any serious problem.

(32) Richard Kayne, "Facets of Romance Past Participle Agreement", ms, MIT, 1987.

(33) More precisely, agreement holds between the *wh*-phrase and AGR-0, to which the participle raises so that it agrees with the *wh*-phrase; the same is true of subject-verb agreement.

*wh*-phrase has not passed through the adjoined position, so there can be no agreement.<sup>34</sup>

Since *t'*, adjoined to AGRP, is in an A-bar position, it follows, Kayne observes, that there will be no participial agreement with the *wh*-phrase in the case of an expletive subject (as is the case), on the assumption of expletive-replacement, to which we return in section 6.3. The reason is that expletive-replacement would require improper movement of the trace *t'* of the *wh*-phrase from an A-bar to an A-position.

If an NP remains in the object position, there is no participial agreement, though in clitic movement, we again find such agreement, as in (31):

- (31) (i) Paul a repeint (\*repeintes) les chaises (ii) Paul les a repeintes

The reason is that the object *les chaises* in (i) is not in the appropriate government relation with AGR-0 (the relation is barred by the minimality condition on government, since the participle intervenes<sup>35</sup>), while in case (ii), the clitic has raised to a position governed by AGR, perhaps the specifier of AGRP. Kayne argues further that although the two agreement processes (with *wh*-movement and clitics) are not clearly dissociated in French, comparative evidence shows that they are in fact distinct processes and that the clitic does not adjoin to AGRP.

The question arises why the NP object cannot appear in the postulated position associated with AGR, say, its specifier position, as in (32):

- (32) \*Paul a [ces tables repeint(es)]

Base-generation is excluded if we take theta-marking to be to the right in French; or, as in recent work that assumes raising of subject from VP to the specifier of IP position, we might assume that theta-marking must be internal to the projection of the theta-marking head, thus impossible in (33):

- (33) ... [<sub>AGRP</sub> NP AGR [<sub>VP</sub> V]]

Failure of the non-clitic object to raise to the position in (32) follows from the chain condition if the participle assigns Case directly to its object, to its right in the base form, as Kayne assumes.<sup>36</sup>

Without reviewing the further consequences that Kayne develops, note that the analysis supports the idea that there is an AGR position intervening between tense and the V, and that this element is distinct from the subject-agreement element. Furthermore, we have evidence that object agreement, like subject agreement, is based upon a government relation between AGR (in this case, AGR-0) and the noun phrase.

(34) Note that we must assume the two derivations to be "equally costly", each being "minimal" by successive-cyclic movement. This consideration would lead to a further refinement of the notion of "cost".

(35) The minimality condition assumed here is of the "absolute" form discussed in Barriers, not "relativized minimality" in the sense of Rizzi, *op.cit.* That is generally the case when minimality is invoked to block head government of XP.

(36) The case of clitic movement depends upon theory-internal assumptions about cliticization, but no new problems appear to arise here. Kayne's argument is slightly different from the above.



Hilda Koopman has independently proposed that agreement is always the reflection of a specifier-head relation.<sup>37</sup> We might revise this proposal to accord with Kayne's: agreement with an NP is always the reflection of a government relation between the head AGR and the NP, either the SPEC-head relation or the relation of the head to an adjoined element, the AGR typically being associated with the verb at S-structure by the processes we have been discussing. Koopman suggests further that this idea may relate to her earlier proposal that the order parameters of the X-bar system involve two independent factors: directionality of Case- and theta-marking.<sup>38</sup> If Case-marking is to the left and theta-marking to the right, then NP will be in pre-head and other theta-marked complements in post-head positions.

We might carry the proposals a step further, supposing that structural Case generally is correlated with agreement and reflects a government relation between the NP and the appropriate AGR element. Thus subject-verb agreement is associated with nominative Case, and is determined by the relation of the specifier to the AGR-S head of AGR-S" (=IP, in (28)), while verb-object agreement is associated with accusative Case, and is determined by the relation of the NP to the AGR-0 head of AGR-0", either in specifier position or adjoined to AGR-0. The relations might be uniform at LF, parametrized at S-structure, with Case-checking and Case-marking perhaps dissociated.

Note finally that if the proposal just outlined is tenable, with AGR-0 distinct from AGR-S, then one of the problems discussed earlier in connection with example (11), repeated as (34), does not arise:

(34) John I neg AGR write books

The problem was to ensure *do*-insertion and raising of AGR to form the complex verb [<sub>v</sub> *do* -AGR-I] with no violation of HMC, while barring an alternative derivation with overt lowering. If we were to adopt the structure (28) rather than (6), distinguishing AGR-S from AGR-0, then AGR in (34) is actually AGR-0, which would not raise over *neg*, but would lower to V (with subsequent LF-raising to the position of the trace of AGR-0 to form a proper chain). There is, then, no violation of HMC, straightforwardly. The more general problems discussed earlier however remain, still motivating the argument presented.

## 6. Economy of Representation

It has been suggested elsewhere that movement is available only as a "last resort". The preceding discussion suggested that deletion might also be regarded as a "last resort" operation, applicable where necessary, but not otherwise, and that the same is true of whatever is involved in *do*-support: insertion, if that is the proper way to interpret the phenomenon. More generally, then, it may be that the principle Affect-

(37) Koopman, "On the Absence of Case Chains in Bambara", ms., UCLA, 1987. She is considering the possibility of object-raising to SPEC of VP; alternatively, we might suppose that the process in question is raising to SPEC of AGRP.

(38) Koopman, *The Syntax of Verbs*. See also Lisa Travis, *Parameters and Effects of Word Order Variation*, Phd dissertation, MIT, 1984.

alpha applies only where necessary. This overarching principle, then, expresses a general property of transformational rules—or more properly, of *the* transformational rule, actually a principle of UG. The intuitive meaning is that derivations must be as economical as possible: there is no superfluous rule application. The intuitive content of this idea, however, is spelled out in terms of specific notions of cost that distinguish UG principles from language-particular properties, introduce locality considerations, and so on. We thus have a plausible “least effort” principle, but a principle that is apparently specific to the language faculty in its actual formulation. This is a familiar conclusion elsewhere as well, one that bears on the nature of the language faculty generally.

The analogous principle for representations would stipulate that, just as there can be no superfluous steps in derivations, so there can be no superfluous symbols in representations. This is the intuitive content of the notion of full interpretation (FI), which holds that an element can appear in a representation only if it is properly “licensed”. Let us proceed now to ask how this intuitive notion might be refined, in an effort to move it too from the status of a guideline towards that of a principle of UG.

It would be natural to expect that FI holds at each of the three fundamental levels that constitute an interface between the computational system of language and other systems: hence at the levels of D-structure, PF and LF. If so, then “licensing” under FI is expressed in terms of conditions relating the syntax, broadly construed, to other systems of the mind-brain.

At D-structure, FI holds by definition, this level simply being a projection of lexical structure in terms of the notions of X-bar theory.<sup>39</sup> At PF, it is universally taken for granted, without discussion, that the condition holds in a strong form. That is, a condition on phonetic representation is that each symbol be interpreted in terms of articulatory and perceptual mechanisms in a language-invariant manner; a representation that lacks this property is simply not considered a phonetic representation, but rather a “higher-level” representation, still to be converted to PF. Like D-structure, PF is understood to be defined by some version of FI. The corresponding notion at LF would be that every element that appears at LF must have a language-invariant interpretation in terms of interactions with the conceptual systems. Let us explore this idea further.

### 6.1. Operators and variables

One consequence is that vacuous quantification should be forbidden. That is, language should differ from typical formal systems that permit vacuous quantification freely, with the well-formed expression “(x)(2 + 2 = 4)” receiving the same interpretation as “2 + 2 = 4”. Formal systems are designed this way for ease of description and computation, but the design of human language is different. Thus we cannot have such expressions as (35i) interpreted as “John saw Bill”, or (35ii) interpreted as “some person left”:

(39) There are further refinements to be considered. For example, should expletives be present at D-structure or inserted in the course of derivation? What is the status of functional elements? And so on.

- (35) (i) who John saw Bill, who did John see Bill  
 (ii) every some person left

Similarly, if a language permits such structures as (36), the vacuous operator interpretation is excluded:

- (36) (i) who did Mary see him      (ii) the man that Mary saw him

These expressions cannot be interpreted to mean "Mary saw  $x$ ", "the man  $y$  such that Mary saw  $x$ ", respectively. If some theory of grammar stipulates specific devices and rules to bar such constructions and interpretations, we conclude that it is the wrong theory: it is generating expressions and structures too accurately, and is therefore incorrect. There is nothing paradoxical about this conclusion. The unwanted constructions are excluded on general grounds, in terms of the overarching condition FI; there is no reason to suppose that the mechanisms of language include superfluous devices and rules to achieve, redundantly, the same result in special cases. Similarly, the phonological component contains no rules to express special cases of general properties of universal phonetics or of phonetic representations.

A related question has to do with free variables. What is their status in natural language? Typically, formal systems permit well-formed expressions with free variables, interpreting them as universally quantified or with the free variable treated as an arbitrary name, as in the course of natural deduction and intuitive mathematics generally. One natural language analogue to a free variable would be an empty category bound by an empty operator. There is quite strong evidence that such constructions exist, for example, in complex adjectival constructions such as (37):

- (37) (i) John is too clever to catch  
 (ii) John is too clever to expect anyone to catch  
 (iii) \*John is too clever to meet anyone who caught  
 (iv) Mary expected John to be too clever to catch

The general properties of these and many other constructions follow from the assumption that the underlying D-structure is as in (38i) (for (37i)), and that empty-operator movement, meeting the usual conditions on A-bar movement, raises the empty category  $O$  to the COMP position of the bracketed clause (to the specifier position of CP), leaving a trace  $t$  in the S-structure (38ii):

- (38) (i) John is too clever [<sub>CP</sub> PRO to catch  $O$ ]  
 (ii) John is too clever [<sub>CP</sub>  $O$  [<sub>S</sub> PRO to catch  $t$ ]]

But variables are subject to the property sometimes called "strong binding": a variable must have a range determined by its restricted quantifier (language permitting no unrestricted quantification, as distinct from typical formal systems), or a value fixed by an antecedent that meets certain structural properties: thus *John* but not *Mary* in (37iv). The latter condition applies when the operator is an empty category. Sentence (i), for example, cannot mean that John is so clever that he cannot catch everything, or that he cannot catch something (someone) or other, analogous to

“John ate”, meaning that John ate something or other. In short, language does not permit free variables: the strong binding property determines the curious semantic properties of these constructions. We might think of this condition as a specific application of the UG condition FI.

In these terms, we would interpret the empty operator binding an empty pronominal, in the sense of James Huang’s work on Chinese, as “restricted”, in that it is necessarily discourse-related.<sup>40</sup> There are semi-free variables such as PRO and *one*, which, however, always appear to have special properties, specifically, human or animate (e.g., “it is easy to roll down a hill” does not refer to a rock). Thus a true free variable interpretation is disallowed.

### 6.2. Legitimate LF Elements

A further sharpening of the condition FI is suggested by consideration of what counts as a proper element at the LF level. The question here is analogous to the question of what counts as a phonetic element at the PF level. Each relevant element at the LF level is a chain (39), perhaps a one-membered chain:

$$(39) (\alpha_1, \dots, \alpha_n)$$

It seems that the following elements are required at LF, each a chain (39):

1. Arguments: each element is in an A-position,  $\alpha_1$  Case-marked and  $\alpha_n$  theta-marked, in accordance with the chain condition.<sup>41</sup>
2. Adjuncts: each element is in an A-bar position.
3. Lexical elements: each element is in an X<sup>0</sup>-position.
4. Predicates, possibly predicate chains if there is predicate raising, VP-movement in overt syntax,<sup>42</sup> and other cases.
5. Operator-variable constructions, each a chain ( $\alpha_1, \alpha_2$ ), where the operator  $\alpha_1$  is in an A-bar position and the variable  $\alpha_2$  is in an A-position.

These are the only elements that seem to have an interpretation at LF. Suppose, then, that these are the only elements permitted at LF, in accordance with FI. Then the rule Affect-alpha may apply (and must apply) only to yield such an element, given an illegitimate object. We conclude that AGR-trace (and perhaps the trace of [-finite]) must be eliminated, and V-trace may not be eliminated, as required for the proper functioning of ECP if the argument sketched earlier is correct.<sup>43</sup>

Consider successive-cyclic A-bar movement from an argument position. This will yield a chain that is not a legitimate object; it is a “heterogeneous chain”, consisting

(40) Huang, “On the Distribution and Reference of Empty Pronouns”, *LI* 15.4, 531-74, 1984.

(41) If we adopt the approach to NP-raising discussed in *Barriers*, then we will have to distinguish the chain (39) formed by movement from the intermediate “derived chain” that takes part in the process of gamma-marking of  $\alpha_n$ .

(42) An alternative possibility, suggested by certain facts about binding and trace interpretation, is that VP-movement is restricted to the PF component (as an optional “stylistic rule”), and possibly also to (obligatory) LF movement, along the lines of a reinterpretation of the *Barriers* framework discussed in my lectures at Tokyo in January 1986. This conclusion may indeed follow from the considerations discussed above concerning optionality, within the present framework.

(43) Note that further precision is necessary to make explicit just when and how this condition applies.

of an adjunct chain and an (A-bar, A) pair (an operator-variable construction, where the A-bar position is occupied by a trace). This heterogeneous chain can become a legitimate object, namely a genuine operator-variable construction, only by eliminating intermediate A-bar traces. We conclude, then, that these must be deleted at the point where we reach LF representation.<sup>44</sup> In contrast, intermediate A-bar traces formed by successive-cyclic movement from an A-bar position need not be deleted, since the chain formed is already a legitimate object, namely, an adjunct; since they need not be deleted, they may not be deleted, by the "least effort" principle for derivations already discussed. The same is true for A-chains (arguments) and X<sup>0</sup>-chains (lexical elements). On these natural —though of course not logically necessary— assumptions, we derive, in effect, the basic principle for trace-deletion stipulated in the Lasnik-Saito theory of ECP, now a consequence of the general condition FI, with "may delete" strengthened to "must delete". There are further consequences, and interesting questions arise with regard to the specifier of Noun Phrases, which shares some properties of A-positions and other properties of A-bar positions, but I will not pursue these matters here.

### 6.3. FI and Expletives

Consider finally the status of expletive elements, such as English *there* or Italian *ci*, or their various counterparts, null or overt, in other languages. This element receives no interpretation, and therefore is not licensed as a legitimate LF object. It must therefore be somehow removed.

Elsewhere, I have suggested that *there* is eliminated by LF-substitution.<sup>45</sup> But *there* has specific features, and we might suppose on these grounds that it is undeletable, by the condition on recoverability of deletion —yet to be precisely formulated. Then we must treat *there* as an LF-affix; something must adjoin to it.

The expletive *there* has three salient properties. First, an NP must appear in a certain formal relation to *there* in the construction; let us call this element the *associate* of the expletive, and take the expletive to be licensed by its presence. Second, number agreement is not with *there* but rather with the associate. Third, there is an alternate form with the associate actually in the subject position after overt raising. Thus we have (40), with the associate in italics, but not (41):

- (40) (i) there is *a man* in the room  
 (ii) there are *men* in the room  
 (iii) *a man* is in the room
- (41) (i) there was decided to travel by plane  
 (ii) there is unlikely that anyone will agree

(44) They might be present at earlier stages, where licensing conditions do not yet apply, serving, as Norbert Hornstein observes, to permit the application of principles for the interpretation of anaphors in displaced phrases of the sort proposed by Andrew Barss, *Chains and Anaphoric Dependence*, Phd Dissertation, MIT, 1986.

(45) See *Knowledge of Language*. For extensive discussion of expletives, which I shall largely follow here, see Burzio, *op. cit.* See also Travis, *op. cit.*, on the typology of expletives. The status of *it* (and its counterparts) in extraposition constructions is more convoluted for various reasons, including the question of whether it occupies a theta-position.

These properties are rather naturally explained on the assumption, deriving from FI, that the expletive is an LF-affix, with its associate adjoining to it. Since *there* lacks inherent phi-features (including number) or category, these features will “percolate” from its associate on usual assumptions. If agreement is checked at LF, then it will already have to have been established at S-structure between AGR-S and the associate of *there*, as in (40i,ii), yielding the observed overt agreement. This analysis fits readily into the framework already outlined, particularly if agreement and Case are treated in the manner suggested: both assigned by S-structure since they may appear overtly, both checked at LF since they have LF consequences having to do with visibility (the Case Filter) and the chain condition.<sup>46</sup> If we assume further that the specifier of IP (AGR-S”, if the speculations of section 5 are correct) must be an NP with phi-features matching AGR-S, then it will also follow that the associate must be an NP; and it is this NP that raises in overt syntax, as in (40iii).

Luigi Burzio argues further that if the expletive is a clitic, it will have to satisfy additional conditions holding generally between a clitic and the position associated with it, specifically, a very restrictive locality condition which, he argues, holds at D-structure; on this further assumption, he derives an interesting range of phenomena that differentiate English, Italian, French and Piedmontese expletive constructions. On the general assumptions of the principles-and-parameters approach, we expect to find that expletive constructions of this type have the same basic properties across languages, with differences explicable in terms of the lexical properties of the elements involved.

For such reasons, then, it is plausible to assume that *there* (and its counterparts) is indeed an LF-affix, as required by FI.

In (40i), LF-adjunction of the associate to the expletive yields the phrase (42) as subject, the complex constituting an NP by percolation:

(42) [<sub>NP</sub> there-<sub>[NP a man]</sub>]

Other well-established principles conspire to guarantee that the only element that can adjoin to the expletive is the associate with the appropriate properties.

Given that *there* must have an NP associate, it follows that some other expletive (in English, *it*) is associated with clauses, as in (43), contrasting with (41):

- (43) (i) it was decided to travel by plane  
 (ii) it is unlikely that anyone will agree

It should therefore not be necessary to stipulate distributional conditions on *there* and *it* expletives, or their counterparts in other languages, when their lexical properties are considered.<sup>47</sup>

(46) See Baker, *op.cit.*, on the role of both Case and agreement in this connection.

(47) Such properties had to be stipulated on the assumptions of Chomsky and H. Lasnik, “Filters and Control”, *LI* 8.3, 1977, but perhaps they are dispensable along the lines just sketched. For these reasons alone, it seems doubtful that what adjoins to the expletive is a small clause of which it is the subject; thus what I assume adjoins is *a man*, not the small clause [*a man in the room*], in (40i). There are other reasons for supposing this to be true. Kayne observes (see his note 6) that the assumption is required for his explanation

It also follows that at S-structure, an expletive *E* and its associate *A* must satisfy all LF chain conditions, since there is a chain  $([A-E], \dots, t_A)$  at LF. Given the chain condition holding at LF, it must be that at S-structure, the expletive *E* is in a Case-marked position and the associate *A* in a theta position.<sup>48</sup> Furthermore, if we assume that binding theory holds at LF, then at S-structure, *A* and *E* must be in a relation that satisfies binding theory condition (A), since at LF an antecedent-trace relation holds of their S-structure positions. Similarly, ECP, a chain condition at LF, will have to hold of the expletive-associate pair at S-structure. These consequences are largely descriptively accurate, as illustrated in (44):<sup>49</sup>

- (44) (i) \* *there* seems that *a man* is in the room (ECP violation)  
 (ii) \* *there* seems that John saw *a man* (violation of binding theory condition (A))

Similarly, other conditions on movement must be satisfied. Compare the examples of (45):

- (45) (i) \* *there* was thought that [pictures of *a man* were on sale]  
 (ii) *we* thought that [pictures of *each other* were on sale]  
 (iii) \* *a man* was thought that [pictures of *t* were on sale]

The italicized elements are properly related in (ii), but not in (i) or (iii). The problem with (i) is not binding theory, as (ii) shows, but rather a condition on movement (ECP), as we see from (iii).

Such properties of expletives now follow from FI, without further stipulation. Note that it also follows that binding theory must apply at LF; whether or not it also applies elsewhere (including S-structure) is a separate question.

Another consequence has to do with binding theory Condition (C), which requires that an r-expression, such as the associate of an expletive, be unbound. A long-standing question has been why there is no Condition (C) violation in the case of an expletive and its related associate. But we now assume that the two simply have different indices.<sup>50</sup> There is, therefore, no need to complicate the binding theory to exclude this case, as in a number of proposals over the past years.

of the lack of participle-object agreement with object raising in expletive constructions. Consider, furthermore, such expressions as \*‘‘there seems to be several men sick’’, excluded by lack of agreement between *several men* and *seems*. But the phrase [‘‘several men sick’’) can be singular, as in ‘‘[several men sick] is a sign that the water is polluted’’, and a range of similar cases discussed by Kenneth Safir, though many questions remain unsettled. On the possibility of non-agreement between the verb and its associate, see Burzio, *op.cit.*, pp. 132-3. Note that nothing requires that the two kinds of expletives be morphologically distinct.

(48) We assume that Case distributes from a category to its immediate constituents, a process that is often morphologically overt, thus from the category of the complex element  $[A-E]$  to the adjoined element *A*, heading the chain  $A, \dots, t_A$ . Recall that *A* adjoined to *E* does head such a chain, by earlier assumptions.

(49) Note that these examples could be accounted for by stipulations on the distribution of expletives, as in Chomsky and Lasnik, *op.cit.*, but we are now exploring the possibility, which seems plausible, that these are dispensable.

(50) Or no linking, in James Higginbotham’s sense. Note that we cannot assume the expletive to be unindexed —thus it might have raised, leaving an indexed trace.

Certain problems of scope of the kind discussed particularly by Edwin Williams also are overcome. Consider the sentences (46):

- (46) (i) I haven't met many linguistics students  
 (ii) there aren't many linguistics students here

Sentence (i) has a scopal ambiguity, but in (ii) *many* unambiguously has narrow scope. The LF representation of (ii) is (47):

- (47) [<sub>NP</sub> [there<sub>A</sub> many linguistics students]] are not  $\tau_A$  here]

If *many linguistics students* were literally to replace *there*, it would be expected to have scope over *not*, but in (47), no relation is established between the two, and the scope of *many* can be assumed to be narrow, as in "pictures of many students aren't here".<sup>51</sup>

#### 6.4. Further Questions Concerning LF-raising

There is one major exception to the generalization that the expletive *E* and its associate *A* are in a binding theory (condition (A)) relation at S-structure, namely raising constructions such as (48):

- (48) \* *there* seems [*a man* to be in the room]

Here the expletive-associate pair satisfies all chain conditions, but the expression is ungrammatical.

A natural explanation of these facts is provided by Adriana Belletti's theory of partitive Case assignment.<sup>52</sup> Taking partitive Case to be oblique, therefore theta-related in accord with the uniformity condition on Case assignment,<sup>53</sup> partitive Case will not be assigned to the associate in (48) but will be properly assigned at S-structure to the associate of the expletive after unaccusatives and, we must assume, copula, as in "there arrived a man", "there is a man in the room". Assume as before that Case must be assigned at S-structure, given that it appears at PF and is relevant at LF. Then (48) is \*, since an S-structure condition is violated. Note that even with these assumptions, it still follows that *there* must be in a Case-marked position, by the chain condition, which requires that an LF chain be headed by a Case-marked position.<sup>54</sup>

(51) To account for scopal properties appropriately, more elaborate assumptions are required, taking into account the position of both the head and the terminal position of the associate chain (*A*, ..., *t*). In a raising construction such as "there appear (not) to have been many linguistics students here", we have to ensure that the scope of *many* falls within that of *appear* and *not*; no relation is determined by the proposed LF-representation, but such a relation would be established in the correct way if the position of the trace is considered, given that the head of the chain has no relation to the other relevant elements. Just what is entailed by a wider range of considerations remains to be determined.

(52) See Belletti, "The Case of Unaccusatives", *LI* 19.1, 1-34 (1988).

(53) On this condition, see *Knowledge of Language*.

(54) Similar remarks hold of "quirky Case", assigned at D-structure under the uniformity condition, but realized in a Case-marked position at S-structure.



If this line of argument is correct, there cannot be a process of Case-transmission, for that process would allow (48) to satisfy the Case Filter. Rather, Case must be assigned at S-structure directly by some Case-marker or other device.<sup>55</sup> Howard Lasnik observes that similar conclusions follow from such examples as (49):

- (49) (i) I consider [there to be a solution]  
 (ii) \*I consider [there a solution] (analogous to "I consider John intelligent")

In (49i), it must be that *be* assigns Case directly to *a solution*; *there* also receives Case (from *consider*), so that the chain condition is satisfied after LF-raising. There is, it seems, no S-structure process transmitting Case from the expletive *there* to its associate, the phrase *a solution* in these examples.

Kenneth Safir observes that we have such pairs as (50):<sup>56</sup>

- (50) (i) [<sub>wh</sub> how many men] did John say that [there were  $t_{wh}$  in the room]  
 (ii) \* [<sub>wh</sub> how many men] did John say that [ $t_{wh}$  were in the room]

Sentence (ii) is a standard ECP violation; the trace  $t_{wh}$  is in a position that is not gamma-marked, in the Lasnik-Saito sense. The question then arises why this is not also true of (i), if the trace  $t_{wh}$ , the associate of the expletive *there*, is raised by LF movement to the position of *there*. The Lasnik-Saito theory provides an explanation, whether we assume LF-substitution or, as above, LF-adjunction. In either case, the trace  $t_{wh}$  is gamma-marked by the process of *wh*-movement in overt syntax, and retains this property when it raises to the position of the expletive, so there is no ECP violation. Similar observations hold with regard to Luigi Rizzi's analysis of *wh*-extraction of subjects in Italian: the subject first extraposes, leaving expletive *pro* subject, and then undergoes normal *wh*-movement leaving a trace  $t$ , gamma-marked in overt syntax and then raising at LF to the position of the expletive.

The notion of LF-adjunction eliminates much of the motivation for Case-transmission theories of expletive-associate relations, and these approaches are still more dubious in the light of the observations just reviewed.<sup>57</sup> Nevertheless, there is evidence supporting Case-transmission.

An indirect though plausible argument for Case-transmission is developed by Hilda Koopman in a comparative study of the West African language Bambara and languages of the French-English type.<sup>58</sup> Koopman postulates a parametric difference between languages that have Case chains ([+CC]) and those that do not ([-CC]). Bambara is [-CC] and English-French, [+CC]. She considers three kinds of Case chains:

(55) See Jean-Yves Pollock, "On Case and Impersonal Constructions", in Robert May and Jan Koster, eds., *Levels of Syntactic Representation* (Dordrecht: Foris, 1981), for arguments against Case transmission. For additional argument, see Kayne, *op.cit.*

(56) For discussion of these and the preceding examples, see Ur Shlonsky, *Null and Displaced Subjects*, Ph.D. Dissertation, MIT, 1987.

(57) See also references of note 55.

(58) Koopman, "On the Absence of Case Chains in Bambara".

- (51) (i)  $(V, \dots, t)$ , where  $V$  is a Case-assigner.  
 (ii)  $(O, \dots, t)$ , where  $O$  is an operator and  $t$  the variable it binds  
 (iii)  $(E, \dots, NP)$ , where  $E$  is an expletive and  $NP$  its associate

Case (i) results from V-raising. In a [+CC] language, the trace of  $V$  will assign the Case "transmitted" from  $V$  through the chain. In a [-CC] language, lacking Case chains, the trace will be unable to assign Case, and raising of transitive verbs will therefore be impossible.

Case (ii) is standard operator-movement. Typically, the trace must be in a Case-marked position, and, Koopman assumes, the operator must inherit Case from it to satisfy the Case Filter. This will be possible in a [+CC] language, impossible in a [-CC] language, which will therefore lack overt operator-movement.

Case (iii) is the expletive-associate relation. In a [+CC] language, Case can be transmitted from  $E$  to  $NP$ , as in standard Case-transmission theories, and the Case Filter is therefore satisfied. In a [-CC] language, there can be no expletives, for Case-transmission will be impossible, Case-chains not being permitted.

Koopman observes that in all respects, English-French are of the [+CC] variety, while Bambara is of the [-CC] variety. Omitting details, we find in Bambara the following properties. Consider Case chains of type (i). A verb that does not assign Case raises to  $I$ , but a verb that assigns Case remains in place, with a dummy element inserted to bear the affix; the explanation is that the trace could not assign Case if the verb were to raise. In causative-formation, an intransitive verb raises to form a complex V-causative construction in the familiar way, but this is impossible for a transitive verb, which allows causative only if the external argument is suppressed, as if prior passivization had taken place. These properties follow on the assumption that the trace of a transitive verb cannot assign Case; since the complex verb assigns its sole Case to the obligatory object, the subject cannot appear.

With regard to property (ii) of (51), Bambara has only *wh* in-situ, as predicted. As for (iii), there are no overt expletives; rather the associate raises overtly to subject position, again as predicted.

We thus have an indirect argument in favor of Case-transmission, absent as a device just when Case-chains generally are not permitted.

Can we reinterpret these data so as to resolve the conflict between the argument for Case-transmission and the evidence against such a process? Suppose we reinterpret Koopman's parameter in the following way, in accord with the plausible and generally applicable principle that parameters are lexical, i.e., stateable in terms of  $X^0$  elements and  $X^0$  categories only. We then consider the property [C], which an  $X^0$  element may or may not have: A [+C] element can enter into Case relations, either assigning or receiving Case; a [-C] element cannot. Suppose further that  $X^0$  elements with lexical content are always [+C], but that languages can differ as to whether other  $X^0$  elements are [+C] or [-C]. The parameter is restricted to functional elements, in accordance with the plausible condition discussed earlier. French-English are [+C], meaning that all  $X^0$  elements may enter into Case relations; Bambara is [-C], meaning that only a lexical  $X^0$  enters into such relations.

Turning to the three properties, (i) follows directly: in Bambara, the trace of *V*, being [-C], cannot assign Case. As for (ii), the trace of the operator cannot receive Case in Bambara, being [-C], so that we have a typical violation of the Case Filter (or the visibility requirement from which it derives), with a variable heading a (perhaps one-membered) chain that violates the chain condition, since it lacks Case. Note that we need not assume that the operator requires Case, an otherwise unmotivated assumption, particularly unnatural for empty operators.

The property that concerns us directly is (iii). Since Bambara is [-C], an expletive cannot receive Case. If the language had expletives, then LF-raising (which Koopman assumes) would form a chain headed by an element in a non-Case-marked position, violating the chain condition. Consequently, there can be no expletives, and overt raising is required.

There seems, then, to be no strong argument for Case transmission, if this line of argument is viable.<sup>59</sup> We do, however, have evidence for a narrowly specified parametric difference involving Case theory, with a range of interesting consequences. I am not aware of other convincing evidence for Case transmission, so it may be that the property can be eliminated from UG, in favor of LF-movement, driven by FI.

## 7. Some Conclusions on Language Design

Summarizing, we have found evidence to support the basic assumptions on language design sketched in section 1, the more specific assumptions concerning the separate syntactic status of Tense and Agreement elements, and those of subsequent discussion. There is varied evidence suggesting that both derivations and representations are subject to a certain form of "least effort" condition and are required to be minimal in a fairly well-defined sense, with no superfluous steps in derivations and no superfluous symbols in representations. Proceeding in the way indicated, we may hope to raise these "least effort" guidelines to general principles of UG. Notice that while these principles have a kind of naturalness and generality lacking in the specific principles of UG such as ECP, binding theory, and so on, nevertheless their formulation is, in detail, specific to the language faculty.

As discussed elsewhere,<sup>60</sup> these properties of UG, if indeed they are real, are rather surprising in a number of respects. For one thing, they are the kinds of properties that yield computational difficulties, since structural descriptions have to meet "global" conditions. From the point of view of parsing, suppose that we have a process recovering an S-structure *s* from the PF representation *p*. Then to determine the status of *s*, we have to carry out a number of operations. We have to determine whether *s* is derived from a properly formed D-structure *d* licensed by the lexicon, and whether the derivation from *d* through *s* to the LF representation *l* is minimal in the required sense, less costly than any other derivation from *d*. Furthermore, we have to determine whether *l* satisfies the conditions of external licensing, FI, and other properties of LF. In general, these computations may be nontrivial. In these respects,

(59) Koopman considers other possible Case chains, but the evidence is less convincing.

(60) See my paper "Prospects for the Study of Language and Mind", ms, MIT, 1988.

language design appears to be problematic from considerations of use. The basic assumption that the fundamental levels are those that satisfy the external licensing conditions at the "interface" with other systems already illustrates these properties, and the "least effort" conditions, while natural and plausible in terms of empirical consequences, provide further illustration. The discrepancies between natural language design and the structure of formal systems constructed for computational efficiency may also be relevant here, as well as other properties of natural language, such as the existence of empty categories, which might also be expected to yield parsing problems. Note that one cannot easily motivate the conditions on economy of representation in terms of processing considerations, since they hold at LF, and only derivatively at S-structure. Nor does there appear to be any argument that the particular properties of language design are necessary for language-like systems. These are contingent properties of natural language.

There are "computational tricks" that permit easy determination of the grammatical properties of an S-structure representation in a large class of cases, broad enough to allow for language to be usable in practice. But language design as such appears to be in many respects "dysfunctional", yielding properties that are not well adapted to the functions language is called upon to perform. There is no real paradox here; there is no reason to suppose, *a priori*, that the general design of language is conducive to efficient use. Rather, what we seem to discover are some intriguing and unexpected features of language design, not unlike those that have been discovered throughout the inquiry into the nature of language, though unusual among biological systems of the natural world.

# Superiority and Head Government

HELES CONTRERAS

(University of Washington)

The superiority facts discussed in Chomsky 1973 have been claimed to fall under ECP at LF (Chomsky 1981, Jaeggli 1982, Huang 1982, Lasnik and Saito 1984). Consider the ungrammatical (1).

- (1) \*What did who buy?

The assumption is that the S-structure of (1), given in (2), is mapped onto the LF representation (3) by Wh-Raising, and that in this representation,  $e_j$  violates the ECP, since it is neither lexically governed nor antecedent-governed.

- (2) [S' [<sub>Comp</sub> what<sub>i</sub> did] [<sub>S</sub> who buy  $e_i$ ]]

- (3) [S' [<sub>Comp</sub> who<sub>j</sub> what<sub>i</sub> did] [<sub>S</sub>  $e_j$  buy  $e_i$ ]]

The failure of antecedent government is attributed to the fact that Comp inherits the index from *what* and can thus only serve as an antecedent for  $e_i$ , not for  $e_j$ . Different implementations of this idea are presented in Aoun et al. (1980), Lasnik and Saito (1984), Stowell (1986), and Aoun et al. (1987).<sup>1</sup>

The main problem with this account is that it makes the wrong predictions for sentences like (4), which, although structurally parallel to (1), are perfectly grammatical, a fact first pointed out by Kayne (1981).

- (4) Which books did which students read?

Since the subject wh-phrase *which students* is not lexically governed, it can only comply with ECP at LF via antecedent government. But this is not possible, since Comp inherits the index of *which books*.

Pesetsky (1987) has dealt with the contrast between (1) and (4) in terms of the notion D(iscourse)-linking. Under his approach, D-linked phrases like *which students* do not undergo Wh-Raising at LF, so there is no ECP violation.<sup>2</sup> Phrases like *which*

(1) All of these proposals assume a pre-Barriers structure of clauses based on Bresnan's (1972) rule (i).

(i) S' → Comp S

It is not clear how they would translate to the current analysis where S' is a regular X-bar projection of C (Chomsky 1986).

(2) For Pesetsky the relevant principle is not ECP but his Path Containment Condition, which prohibits 'crossing A' dependencies'.

*students* are considered D-linked because they presuppose previous mention of 'students'.

There are empirical problems with this account which have been pointed out by Hornstein and Weinberg (1987, 1990). While it makes sense to consider a phrase like *which students* D-linked, the same is not true of phrases like *whose mother* or *what type of car*, which also fail to induce superiority violations, as shown in (5), from Hornstein and Weinberg (1987).

- (5) a. What did whose mother buy?  
b. What type of book does what type of man read?

Hornstein and Weinberg (1987) tackle the contrast between (1) and (4) within the Generalized Binding framework of Aoun (1986). Their crucial assumption is that pied-piping is disallowed at LF, so that in phrases like *which students* only *which* undergoes Wh-Raising. The different behavior of a raised *who* versus that of *which* is then accounted for because only the former has a binding domain and can, therefore, violate principle A of Generalized Binding. The latter, which has no domain, induces no such violation. For details, see Hornstein and Weinberg (1987) and (1990).

It is beyond the scope of the present paper to give a detailed critique of Hornstein and Weinberg's interesting proposal. There is one fact, however, that justifies the exploration of other alternatives, namely that their basic assumption to the effect that there is no pied-piping at LF is in conflict with well-supported claims to the contrary by Choe (1984), Hasegawa (1985, 1986), Nishigauchi (1984), and Pesetsky (1987).

The analysis I will propose here is neutral with respect to this question. My basic assumptions are as follows:

- (6) *Who, what* are structurally parallel to *which students, which books* respectively. They consist of a functional head *wh* of category D and an empty complement N'.<sup>3</sup>
- (7) Nonpronominal empty categories must be canonically head-governed at S-structure (Stowell 1986, Rizzi 1989).

The intention, then, is to claim that (1) violates the Head Government Requirement (HGR) at S-structure, while (4) does not.

There is an independent argument in favor of the analysis of *who* and *what* suggested here. As is well known, quantification in natural language is always restricted (contra Hornstein and Weinberg 1987). This is informally represented in LF structures like the following:

- (8)  $Wx, x$  a person [John saw  $x$ ]

In 'heavy' wh-phrases like *which girls*, the N' *girls* specifies the domain over which the quantifier *W* ranges. In this respect, 'light' wh-forms like *who* and *what* seem to be exceptional, since they contain no separate lexical item to serve as 're-

(3) I am thus adopting the DP hypothesis of Abney (1987) and Fukui and Speas (1986).

strictor'. However, the LF representation of a *who* or a *what* question must be parallel to that of a question containing an overt N', since they also quantify over restricted domains. This poses a problem for the rule that maps a question like (9) onto its LF representation (8), since apparently the rule must introduce material not present at S-structure.

- (9) Who<sub>i</sub> did John see e<sub>i</sub>?

It is clearly undesirable to allow inter-level mappings of this sort. It seems reasonable, instead, to extend the commonly accepted restriction (10) proposed by Lasnik and Kupin (1977) to the mapping between S-structure and LF.

- (10) Rules relating D-structure and S-structure can only involve substitution or right or left adjunction.

Once this is done, we are forced to analyze *who* and *what* as syntactically complex, to avoid inserting new material in the mapping between S-structure and LF.

The analysis presented here raises the question of the status of null N'. Assuming Chomsky's (1982) analysis in terms of the features +/- pronominal and +/- anaphor, we can identify null N' by its behavior with respect to the Binding Theory. Consider structure (11).

- (11) [<sub>IP</sub> [<sub>QP</sub> Three students from New York] [<sub>Γ</sub>[<sub>VP</sub> challenged [<sub>QP</sub> two [<sub>N'</sub> e] from Peoria]]]]<sup>4</sup>

Since the N' *students*, responsible for the interpretation of the empty N', does not c-command it, the null N' is free. This means it must be [-anaphor], but it could be either [+pronominal] or [-pronominal]. To decide this matter, consider the following structure

- (12) \*[[<sub>QP</sub> Three students from [<sub>DP1</sub>[<sub>DP2</sub> a town] [<sub>CP</sub> that [<sub>QP</sub> two [<sub>N'</sub> e]] detest]]]]

Presumably, this structure is ill-formed because the null N' is bound by *students*. This binder, however, is outside the governing category for the null N', which, under any reasonable definition, could not extend beyond DP1. The natural conclusion is that (12) violates principle C, not principle B, of the Binding Theory. For this to be the case, the null N' must be [-pronominal].<sup>5</sup>

This brief demonstration is intended to show that by analyzing *who* and *what* as containing a null N' we are not adding a new type of empty category to Chomsky's (1982) system.

We must now identify the licensing conditions for null N'. Consider the following examples:

(4) An implicit assumption, irrelevant for the point under discussion, is that numerals are functional heads of category Q.

(5) This implies rejecting the identification of the feature complex [-anaphor, -pronominal] with the notion 'variable', a position that various linguists have provided support for. See, for instance, Koopman and Sportiche (1982), and Safir (1984).

- (13) a. Since two [<sub>N'</sub> e] have been sold, we only have five chairs left.  
 b. Since the first pick is gone, we'll have to take the second [<sub>N'</sub> e].  
 c. Talking about students, I think many [<sub>N'</sub> e] are overworked and underpaid.

These sentences show that numerals and other quantifiers, which we may take to be functional heads, following Abney (1987) and Fukui and Speas (1986), license a null N'. Other functional heads, like *the* and *every*, do not license a null N', as shown in (14).<sup>6</sup>

- (14) a. \*the students that I know and the [<sub>N'</sub> e] that I don't know  
 b. \*every student that Bill knows and every [<sub>N'</sub> e] that Mary knows

The Spanish definite article contrasts with the English one in that it does license a null N', as in (15), the Spanish version of (14a).

- (15) Los estudiantes que conozco y los [<sub>N'</sub> e] que no conozco

If the structures in (14) are disallowed as violations of the Head Government Requirement, a reasonable hypothesis, we must recognize two types of functional heads: a) head governors, like *two*, *second*, *many*, and Spanish *los*; b) non head governors, like *the* and *every*.

Looking beyond the nominal system, we find an additional type of functional category represented by *to*, an I<sup>0</sup> which may or may not be a legitimate head governor for a null VP (Lobeck 1986, Zagona 1982, 1988). Consider the following examples from Zagona (1988):

- (16) a. John persuaded Mary to leave, and Fred persuaded Jane to [<sub>VP</sub> e].  
 b. \*John runs to stay fit, and Bill swims to [<sub>VP</sub> e].

Zagona (1988) accounts for this contrast on the basis of the following requirement:

- (17) Null VP must be Tense-governed.

She shows that *to* can only Tense-govern a null VP if *to* occurs in a complement clause, not in an adjunct clause.

We could view (17) as a subcase of the Head Government Requirement, and assume that *to* is a head governor only if it gets Tense features from a higher clause.

I would like to suggest that the functional head *wh* is similar to *to* in that it can only head-govern a null N' under certain conditions.

Consider sentence (18), with S-structure (19).

- (18) Who saw what?      (19) [<sub>CP</sub> [<sub>DP</sub> wh<sub>1</sub> e<sup>1</sup>]<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> saw [<sub>DP</sub> wh<sub>2</sub> e<sup>2</sup>]]]

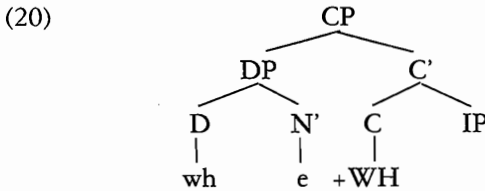
It is reasonable to assume that wh<sub>2</sub> can head govern e<sup>2</sup> because it is itself head-governed by *saw*. This parallels the behavior of *to* sketched above.

(6) For further discussion, see Contreras (1989).

(7) e<sup>1</sup> and e<sup>2</sup> differ in the feature specification for +/-human.



What allows  $wh_1$  to head-govern  $e^1$ ? If we assume Fukui and Speas' (1986) framework, CP is headed by [+WH], a functional head with an F-feature to discharge to its specifier position. The structure is as in (20).



Under standard assumptions, the F-feature assigned to DP by +[WH] trickles down to the head of DP. I will claim that this is what enables *wh* to be a head governor for the null N'.

Combining these two cases, we arrive at the following generalization:

- (21) *wh* can be a head governor iff (a) or (b):  
 (a) it is lexically governed; (b) it carries an F-feature.

If these considerations are correct, the contrast between (1) and (4) follows without stipulation. Consider the structure of (1).

- (22) [<sub>CP</sub> What<sub>i</sub> did [<sub>IP</sub> [<sub>DP</sub> wh e] buy t<sub>i</sub>]]?

Since *wh* is neither lexically governed nor assigned an F-feature, it cannot be a head governor for *e*. In contrast, the DPs in (4) contain no empty N' categories, so there is no violation of the Head Government Requirement.<sup>8</sup>

- (23) [<sub>CP</sub> [<sub>DP</sub> Which books]<sub>i</sub> did [<sub>IP</sub> [<sub>DP</sub> which students] read t<sub>i</sub>]]?

Hendrick and Rochemont (1982) have pointed out some cases which are problematic for ECP-based accounts of Superiority:

- (24) a. \*What does Mary expect who to buy?  
 b. \*What did Mary force who to buy?

The problem is, of course, that *who* is lexically governed, and consequently failure of antecedent-government at LF should not matter.

Some recent versions of ECP fare better in this respect than the older (disjunctive) version we have been assuming so far. Consider, for example, Rizzi's (1989) proposal:

- (25) ECP  
 A nonpronominal EC must be (a) canonically head governed, and  
 (b) antecedent-governed or theta-governed<sup>9</sup>

Let us assume that the structures for (24) are as in (26).

- (26) a. [<sub>CP</sub> What<sub>i</sub> does [<sub>IP</sub> Mary expect [<sub>IP</sub> who to buy t<sub>i</sub>]]]  
 b. [<sub>CP</sub> What<sub>i</sub> did [<sub>IP</sub> Mary force [<sub>DP</sub> who]] [<sub>CP</sub> PRO to buy t<sub>i</sub>]]

(8) The trace of *which books* is, of course, head governed.

(9) For the notion 'theta-governed' see Chomsky 1986.

In (26a), *who* is head-governed by *expect*, but it is not theta-governed. Consequently, its trace at LF must be antecedent-governed. This is not possible because the Spec (CP) is filled by *what*. Structure (26a) is not a problem, then, for Rizzi's version of the ECP.

Structure (26b), on the other hand, remains problematic, because *who* is both head-governed and theta-governed by *force*.

Let us now consider how our approach fares with respect to these structures, which I assume must be as in (27).

- (27) a. [<sub>CP</sub> What<sub>i</sub> did [<sub>IP</sub> Mary expect [<sub>IP</sub> [<sub>DP</sub> wh e] to buy t<sub>i</sub>]]]  
 b. [<sub>CP</sub> What<sub>i</sub> did [<sub>IP</sub> Mary force [<sub>DP</sub> wh e] [<sub>CP</sub> PRO to buy t<sub>i</sub>]]]

Recall that in order for *wh* to be a head governor, it must be either lexically governed or carry an F-feature. Since neither is the case in (27a), *wh* is not a head governor for *e*, and the structure is disallowed.

In (27b), on the other hand, *wh* is lexically governed by *force*, so we predict incorrectly that the structure should be well formed.

So in terms of accounting for the Hendrick and Rochemont cases, our analysis is equivalent to an LF account based on Rizzi's (1989) version of the ECP. The same is true of Hornstein and Weinberg's (1987) proposal.

H&S suggest that if (27b) is reanalyzed to conform to Kayne's (1984) binary-branching restriction, their account will extend to it. Under that revised analysis, *who* would be the subject of the clause *to buy t*. If this suggestion is correct, (27b) is not a problem for the present proposal either, since *wh* would no longer be lexically governed by *force*.

In conclusion, I have shown that the superiority facts can be accounted for in terms of failure of Head Government at S-structure. This provides an immediate account of Kayne's (1981) observation that 'heavy' *wh*-phrases like *which students* show no superiority effects. The analysis is easily extendable to other 'light'/'heavy' pairs like *why/for what reason* and *how/in which manner*, which exhibit a comparable difference with respect to superiority, as shown by Huang (1982). Our account has also enabled us to identify the following typology of functional heads: a) 'intrinsic' head governors (*three, some, Spanish los, etc.*); b) non head governors (*the, every*); c) 'contingent' head governors (*to, wh*).

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# The Autonomy of the (Syntactic) Lexicon and Syntax: Insertion Conditions for Derivational and Inflectional Morphemes

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## 1. The Problem of "Neutralized" Phrases

A central concern of western grammar has always been the proper characterization of what can be called non-finite verbal constructions: the infinitive, the gerund, and the participle. Under the aegis of generative grammar, progress toward this goal has been swift, in comparison to what went before; the principal clarifications will be outlined just below.

Nonetheless, we still lack a complete and formalized understanding of what a "verbal noun" (gerund) or a "verbal adjective" (participle) is. We cannot be content with describing them loosely as "neutralized" categories, precisely because an English gerund phrase, for example, appears only in noun phrase positions (Emonds 1976, ch. 4) but has the internal structure of a verb phrase (Chomsky 1970).<sup>1</sup> The pre-theoretical term "neutralization" sheds no light on why the opposite properties don't hold: why not internal noun phrase structure and external verb phrase distribution?

We can ask further questions: why are the modals and tense endings not available in "verbal nouns" and "verbal adjectives"? What determines the choices among infinitives, participles, and gerunds, especially in cases where all three have understood, rather than lexically overt, NP subjects? How is it that Modern English uses the

(\*) It is a pleasure to dedicate this study to my esteemed colleague, S.-Y. Kuroda. This work fits into our shared research program of rendering unto syntax what is syntactic (namely, most of what is linguistically interesting), and of rendering unto the lexicon very little.

I am grateful to Professor José Deulofeu of the Université de Provence and to the French University system for providing teaching conditions under which research could be simultaneously undertaken, conditions which were free of the endless grantsmanship and bureaucracy which precedes "research time" in the U.S. The stimulating paper presented by Professor Abdelkader Fassi Fehri at the First International Conference of the Moroccan Linguistic Society on the related Arabic *masdar* construction was crucial in refocusing my interest on this topic.

Ms. Jan M. Griffith of Wordwright, Seattle, efficiently and accurately prepared the manuscript, for which I am most appreciative.

(1) Other languages have gerund phrases of this sort; cf. George and Kornfilt (1981) for Turkish, and Fassi Fehri (1986) for Arabic.

same ending *ing* for participles and gerunds, which is furthermore a suffix of derivational morphology for turning verbs into both adjectives and nouns (*very intriguing, a thought-provoking reading*)? Many more questions can be posed in terms of the recent analyses of gerunds and participles, questions whose import can't be understood, however, without entering into more detail about what we already know about these constructions.

In this paper, I hope to sketch an answer to these questions, utilizing some theoretical tools developed in Emonds (1985). To my mind, these tools provide, almost automatically, some satisfying formal representations that succinctly express empirical generalizations about this subject matter. The fact that a number of these answers are latently present in a framework I developed without being aware of them suggests that the proposals in that work for lexical representation, categorial asymmetries, and grammatical formatives are on the right track. In what follows then, I will first show, in section 2, how the four principal uses of *ing* in English form a balanced and quite abstract syntactic paradigm, which is centrally based on the property that *ing* is an N or A (and not a V). These findings are then formally expressed, in section 3, by a unified lexical representation which crucially uses the two levels of lexical insertion for grammatical formatives provided for in Emonds (1985).<sup>2</sup> To fully exploit the predictive power of this framework, the notion functional head must be refined, so that a bar notation head  $X^0$  empty at deep structure yields its selectional predominance to a filled  $Y^0$  sister (section 4). Once the appropriate modifications are in place, section 5 is devoted to, if I may cite the reviewer, "the order that the framework reveals and accounts for in what the GPSG authors have called 'the unruly and idiosyncratic syntactic facts of subcategorization'... Most of the regularities discussed are not even observed in other approaches, let alone given a theoretical account".

If the analyses of English gerunds, infinitives, and present participles given here are satisfactory, a logical next step would be to extend the approach to passive and perfect participles, which are basically identical in several western languages, even though they differ both in their syntax and in their morphological (agreement) pro-

(2) Milsark (1988) also argues for a unified lexical entry for *ing*. His main proposal is that *ing* is "unique among derivational affixes, at least in English" (as well as among inflectional affixes) in lacking a category specification. (Uncontroversially, as here, *ing* suffixes to V). As this paper had been accepted with a space limit before Milsark's appeared, my remarks on his analysis must be brief. Nonetheless, his position clashes with mine at most points where an explicit comparison can be made. The many problems with his proposal, some of which are indicated in notes here, to my mind undercut severely his idea that (only) *ing* lacks a category.

As one result, for example, Milsark is empirically "forced to predict that *ing* should be available to form lexical items of the class P in addition to the N, V, and A items exemplified above" (615). However, no examples of lexically derived V are provided, since none exist: \**The article convincings me*; \**she helpinged us*, etc. (Affixes which derive V from V, such as *re-* and *over-*, are nonetheless common.) For another example, Milsark ends up stipulating how "different instances of *-ing*-affixed lexical items acquire their various categorial identities in the absence of any specification thereof by either their stems or the *-ing* affix itself" according to whether an item is N or V (by "the provisions of Case theory, predication,  $\theta$ -theory, and so on"), P ("listed lexically under their appropriate categorial feature specifications"), or A ("a semantically motivated bifurcation of the class of verbs with respect to their ability to accept *-ing* affixation"). (616) Indeed, Milsark's sections 2 and 3 read as a catalog of problems that arise when *ing* is accorded unique categoryless status. While it is refreshing that the author openly formulates what the problems are, his tentative suggestions for resolving them are often inexplicit or ad hoc, and do not seem to me promising.

perties. In another study, I argue that the passive/perfect participial ending (e.g., English *en*) is an A (but unlike *ing*, is never an N). The agreeing adjectival passive *en*, like the derived adjectival *ing*, is present in deep structure, while the verbal passive *en* and the perfective *en*, like participial *ing*, are inserted only at s-structure. The differences between the passive and the perfective, I show there, all result from whether or not the A position into which a surface *en* is inserted agrees with its subject, adjectival agreement of an empty A being optional. All passive (e.g., subject agreeing) *en* have in common a co-indexing with an empty object NP, quite analogous to that found with direct object clitics in Romance languages, in contrast to *ing*, which is completely unrelated to any phrase inside the X<sup>1</sup> which it heads.

## 2. The Uses of *ing*

*Derived nominals.* Papers by Fraser (1970), Chomsky (1970), Ross (1973), and Walinska de Hackbeil (1984) have shown that the italicized forms in (1) are nouns, even though the selection restrictions that these nouns enter into with surrounding argument phrases are determined by the verb to which *ing* is attached.

- (1) your thought-provoking *reading* of that text to a large audience  
the *shooting* of the lions by the hunters

Walinska de Hackbeil (1984) shows that such "action nominalizations" are far from having all the properties of nouns. She proposes that the suffix *ing* is the "categorical head" of the NP, while the verb is the "lexical head" of the phrase. Roughly speaking, we may say that semantic selection proceeds as with verbs and that syntactic selection (i.e., the choice of phrasal categories in which arguments are represented) proceeds as with nouns. We return to this distinction later.

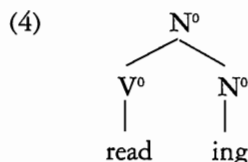
These derived nominals are incompatible with stative verb roots.

- (2) \*Your knowing of algebra surprised me.  
\*The possessing of a few art objects makes a good impression.  
\*Susan criticized such constant owing of money.  
\*Mary's preferring of (for) Cuban cigars got her in trouble.  
\*They warned me about television's boring of Sam.  
\*A lot of daily amusing of children is fatiguing.

The right-hand head rule for English morphology of Lieber (1980), Williams (1981), and Selkirk (1982), to the effect that the affixes of derived morphology are lexical category heads, squares well with general constraints on word order in the bar notation (e.g., only phrases follow the head; Emonds 1985: ch.1). Under this approach, the *ing* of (1) is lexically represented as in (3).

- (3) *ing*, N, +V \_\_\_\_\_; V = +ACTIVITY

The subcategorization feature indicates that *ing* combines with an X<sup>0</sup> of the bar notation, namely V. Combinations of an X<sup>0</sup> (here, the N *ing*) with non-maximal phrases give rise to another X<sup>0</sup>, whose head, according to Williams and Lieber, is, in English and other suffixing languages, its right-hand member, as in (4).



*Derived adjectives.* Chomsky (1957) points out the fact that a class of verbs denoting psychological states and requiring animate direct objects can be systematically made into adjectives by the addition of *ing*. The possible realizations of SPEC for adjectives, given in (5), can be freely combined with the forms in (6a) but not with those in (6b).

(5) very, rather, so, too, more, less, how, etc.

- (6) a. amazing, amusing, boring, exciting, fatiguing, frightening, irritating, pleasing, revolting, soothing, surprising, tempting, etc.  
 b. reading, shooting, barking, describing, destroying, completing, etc.

Like the derived nominals in *ing*, the forms in (6a) retain selectional properties of the stem verbs, while choosing the syntactic form of their complements like adjectives. For example, verbs but not adjectives can take direct object NP's:

- (7) The political manipulations frightened my friends.  
 The manipulations were very frightening \*(to, for) my friends.

Further, adjectives with non-animate subjects cannot appear in the progressive:

- (8) The manipulations were frightening my friends.  
 \*The manipulations were being very frightening for them.

As pointed out in a careful study by Brekke (1988), certain other classes of verbs (in his terms, of "disposition", "manner", and "impact") form adjectives in *ing*. He further notes that, in order to form a true adjective in *ing*, the "psychological" feature "is only a necessary but not a sufficient condition, since the (overt or covert) position of the Experiencer argument appears to be crucial: psychological predicates with a  $\beta$ -Experiencer [i.e., in object position, J.E.] produce *ing* adjectives, whereas those with an  $\alpha$ -Experiencer do not" (172).

In a forthcoming study, I argue that the direct object position of the Experiencer (the psychological Location, in thematic role terms) results from an intrinsic feature on the verbal head, +LOCATION. Thus, parallel to the earlier entry for derived nominals (3), we can represent the *ing* for the derived adjectives of (6) as follows:

- (9) *ing*, A, +V \_\_\_\_\_, V = +PSYCHOLOGICAL, +LOCATION;  
 V="disposition", etc.

Throughout, I abbreviate the condition on V in (9) as "V = +PSYCHOLOGICAL".



To express the similarity between (3) and (9), we can use the "archicategory" [+N] introduced in Chomsky (1970).<sup>3</sup> This archicategory is typically used to account for the many common properties of adjectives and nouns.

- (10) *ing*, [+N], +V \_\_\_\_\_,  $\left. \begin{array}{l} \text{N: V} = +\text{ACTIVITY} \\ \text{A: V} = +\text{PSYCHOLOGICAL} \end{array} \right\}$

The lexical entry (10) maximally factors out the common properties of the English *ing* in derivational morphology.<sup>4</sup>

*Gerunds*. One of the principal clarifications achieved by early generative grammar in the study of non-finite clauses was the characterization of English "NP-gerunds", two examples of which are italicized in (11).

- (11) We preferred *John's having been awarded the prize* to *your obtaining it fraudulently*.

Chomsky (1970) showed that this construction is entirely separate from derived nominals ending in *ing* in that inside its maximal projection, it has all the structural properties of verb phrases, including the requirement that its subject NP be structurally present (even if "understood"; Wasow and Roeper 1972). Emonds (1976: ch. 4) showed that, in contrast to infinitives and finite clauses, the NP-gerund has the external distribution of NP's with respect to both its deep structure positions and its behavior under transformational movements in passives, clefts, etc. We can informally summarize these results in a quasi lexical entry for gerundive *ing* as in (12):

- (12) *ing*, [+N], +V \_\_\_\_\_, N:V+[ing] selects like V inside its maximal projection, but its maximal projection is syntactically an NP.

*Present participles*. In Emonds (1985, ch. 2), a study is undertaken of the properties of another set of maximal projections whose head is V+*ing*, the "present participles" of traditional English grammar. As with NP gerunds, these heads select inside their maximal projection like a V, but unlike NP gerunds, they do not appear in positions characterized by deep and transformational syntax as NP positions. Some examples of participles are italicized in (13).

- (13) We {found the students/went on} *studying French*.  
The students *conversing quietly* were waiting in the lobby.  
He made the children sandwiches (while) *describing Albania*.  
With John *having obtained his degree*, we can leave for Guadeloupe.

Participles never have an overt NP subject within these maximal projections. In addition, they do not exhibit overt COMP's, elements of INFL, or gaps characteristic

(3) The N and A in (10) may be viewed as easy-to-read representations of [-V] and [+V], respectively, where, using Chomsky (1970), N=[+N, -V] and A=[+N, +V].

(4) Each of the lines in the entry (10) may well include a lexical list of co-occurring stems. Some verbs would occur in one list but not the other: *very astonishing* / *\*very forgetting* vs. *\*the astonishing* / *the forgetting*. Under Milsark's 1988 proposal, *ing*'s unique property of not having a lexical category precludes the listing of such distinctions. Nor can Milsark have recourse to a future semantics to express these distinctions, "as it is difficult or impossible to isolate a 'meaning' for any of the types of *-ing* mentioned above, . . ." (614)

of non-overt movements into COMP: *\*the books sending on to John are expensive*.<sup>5</sup> I concluded that these “non-NP” forms are VP’s immediately dominated neither by S nor by NP – i.e., that these are “bare VP’s”. This analysis led to a couple of puzzling questions, however, within the framework I developed there.

- (14) What is the nature of the participial *ing*, since there is no morpheme category with which it can be associated?

This analysis, together with my proposal for the characterization of S in the bar notation as an “extra projection” of V (=V<sup>3</sup>), implied that both V<sup>2</sup> and V<sup>3</sup> can appear as complements to X<sup>0</sup>. Might it be preferable to restrict complements to strictly maximal projections, allowing VP to appear only as a sister to INFL?

In fact, I came to be aware of a distributional generalization about the syntactic distribution of present participles, but did not really see how to express it naturally in the system I developed. Terming such participles “bare VP’s”:

Bare VP’s have turned out to have the deep structure distributional characteristics of AP’s, which is to be expected if bare VP’s are V<sup>2</sup>, and if V and A are considered to share a cross-classifying feature [+V], as in Chomsky (1970). Like AP’s, bare VP’s can be sisters to V (aspectual and object-controlled gerunds), sisters to N<sup>1</sup> and NP (reduced relatives), and sisters to V<sup>1</sup> and VP (adverbial gerunds; here an AP would have adverbial form). Also like AP’s, [bare] VP’s can be sisters to P, under restrictive choices of a head P. Lastly, [bare] VP’s can occur directly under the initial symbol E in absolutive constructions, as can AP’s (*With John sick, ...*). Thus, no special base composition rule is needed to specify where [bare] VP’s occur, as opposed to other phrasal categories. (Emonds 1985: 97)

On other grounds, I am not convinced that the feature  $\pm V$  plays a role in syntax, and yet the above passage crucially relies on the archcategory +V. Moreover, the passage leaves the questions in (14) unanswered. Finally, if the (bare) VP’s in NP-gerunds were sisters to empty deep structure N, this would square badly with my argument (Emonds 1985: ch. 1) that all deep structure sisters to N must appear in PP.

The basis of an answer to these problems lies, I believe, in the empirical generalization outlined in the citation; with respect to syntactic principles of phrasal distribution, participial VP’s have the deep structure properties of AP’s. If participial clauses are AP’s, their lack of overt internal NP subjects for the participles is immediately explained. Moreover, this explains why participles do not combine directly with modals and tense endings (English AP’s never do), and the category of participial *ing* is identified with that of derived adjectives.

Besides sharing the deep structure distribution of AP, present participles also share the following surface properties with AP.

- (i) English pre-nominal AP’s and participles must end in their head:<sup>6</sup>

(5) Some of them can contain parasitic gaps: *the papers he read without sending on to John*. An analysis of these gaps, which involves an operator in subject position but not a separate COMP, is given in Emonds (1985 section 2.5).

(6) Borer (1990) claims not only that the pre-head participles contrasted in (15) are AP’s, but that their heads are A’s; she reasons that if these heads are not A’s, “the categorial component has to be complicated in the way Emonds suggests” (as in this paper, available to her prior to publication).

If Borer is right about pre-nominal AP’s (i.e., *conversing* in (15) is a lexical adjective), the framework of the present study is unaffected; such forms are simply derived adjectives rather than present participles, and then

- (15) A few very unhappy (\*about the exams) students were in the lobby.  
A few quietly conversing (\*about the exams) students were in the lobby.

(ii) AP's and participles are incompatible with cleft focus position:

- (16) \*It was guilty about the exams that the students felt.  
\*It was talking about the exams that the students finished.

As indicated to me by a reviewer, this argument is strengthened by the observation that in dialects of English in which AP *may* appear in the focus position of a cleft, present participle phrases may also appear there. In some varieties of Irish English, examples like (17 a-b) are grammatical. In these dialects, (17 c-d) are also grammatical:

- (17) a. It's cold and wet we are.  
b. It's too full of spite they are.  
c. Is it going home you are already?  
d. It is trying to milk the poor you are?

If the phrases projected from present participles are simply VP, there is no explanation for this correlation.

(iii) Present participles, which indicate actions and not states, can be complements to the Spanish verb *estar* 'be', which is compatible only with those AP's which indicate non-inherent states.

Thus, the best approximate generalization about present participles is *not*, as in Emonds (1985: ch. 2), that they are VP's which are not immediately dominated by NP or by S. It is rather that their maximal projections have the external distribution of AP's, while inside the maximal projection, the participle selects complements like a verb.<sup>7</sup> Thus, we arrive at a preliminary statement for participles (18), analogous to the one for gerunds (12).

- (18) *ing*, [+N], +V \_\_\_\_\_, A:V +[ing] selects like V inside its maximal projection, but its maximal projection is syntactically an AP.

can not be used to further confirm that participles have the syntactic distribution of AP. However, since I contest some of her empirical paradigms and argumentation, I continue to maintain that pre-modification by SPEC(A)=*very, rather, how, as, more, less, too*, etc. is necessary and sufficient for A status of V+*ing*, though, as Borer points out, it is only a sufficient condition for V+*en* (\**very unoccupied*).

In any case, the present categorial component is not more complicated than Borer's; it differs rather in that my definition of head of a phrase (35) requires that the head not be entirely empty (neither co-indexed with another head nor associated with a morpheme.)

(7) We have now seen that clauses headed by V+*ing* appear structurally in NP and AP positions, but not in VP, S, or PP positions. In contrast, Milsark (1988) "would thus expect to find nominal, verbal, adjectival, and even prepositional 'gerundives', . . . It is the major contention of this article that essentially this state of affairs obtains in English..." (618) Yet later, he observes: "Of prepositional gerundives there is not a trace". (631) His subsequent denial that the problem exists (section 5.3) is unconvincing; I see nothing in his system that excludes, for example, \**They put us crossing the street*, analogous to *They put us across the street*. Moreover, there is no natural way for him to exclude gerundives in typical VP or S positions; although his position is that present participles are "verbal gerundives", we have just surveyed the evidence that they have rather the distribution of AP. (See also my criticisms of Baker (1985) in note 20).

Before continuing, it may be appropriate to return again to the possibility of whether the behavior of a participle as in (18) can be explained by appeal to the notion of a category which is "neutralized" between A and V. The problem with such a notion is that we can perfectly well imagine a syntactic category which selects like an A inside its own maximal projection, but whose maximal projection distributes syntactically like a VP. The adjective in Japanese and Korean, which case-marks its closest complement differently than does a verb and also takes adjectival specifiers, is exactly a category of this type (Jo 1986). In external distribution, the maximal projection of A can combine with INFL (tense and mood), like an English VP. Recourse to a "neutralized category" can't explain any of these asymmetries. We could as well say, with no better success in making specific predictions, that an ordinary English verb phrase is "neutralized" between the Japanese AP and the English participial phrase. Under this curious view, which would be perfectly consistent with "neutralization", a "pure VP" would be incompatible with INFL.

### 3. A Generalized and Autonomous Lexical Entry for *ing*

The similarity between the quasi-formalizations for gerundive and participial *ing*, (12) and (18), allows us already to begin to understand a development from Middle to Modern English. The Old English participial suffix *-end-* develops in Chaucer to *-ing(e)*, for derived adjectives and participles. The Old English derived nominal suffix *-ung-* is also represented as *-ing(e)* in Chaucer's Middle English (late fourteenth century). In Emonds (1971), I show that Chaucer apparently does not have a native gerund, a view recently reinforced by the more detailed study of Donner (1986). Thus, Chaucer's English represents *ing(e)* as follows:

- (19) *ing(e)*, [+N], +V \_\_\_\_\_,  $\left. \begin{array}{l} \text{N: V} = +\text{ACTIVITY} \\ \text{A: V} = +\text{PSYCHOLOGICAL} \\ \text{A: V} + [\text{ing}] \text{ selects like V inside its maximal} \\ \text{projection, but its maximal} \\ \text{projection is syntactically a } [+N]\text{-} \\ \text{phrase.} \end{array} \right\}$

Even before formalizing the property in the third part of (19), it is easy to see why the falling together of OE *ung* and *end* in Chaucer's time led to a further development, namely, a generalization. The symbol A (that is [+V]; see note three) in the third line of (19) was eliminated, giving rise to the NP gerund in Modern English; e.g., Spenser (late sixteenth century) has a fully developed gerund. No explanation of the introduction of the NP gerund in Modern English could be simpler.

Unlike the English *-ing*, the Spanish participial suffix *-ndo* on verbs, whose lexical entry is (20), does not double as a derived nominal affix.

- (20) *ndo*, A, +V \_\_\_\_\_, V +[ndo] selects like V inside its maximal projection, but is syntactically an AP.

Exactly as expected, given the above reasoning, there is no pressure on the Spanish participle to develop a gerundive usage. This verbal noun phrase in Spanish is expressed rather by a form of the infinitive (*el* +V) (cf. Plann 1981).



- (26) With respect to deep structure and transformational syntactic principles, participles act like AP's and gerunds act like NP's.

The syntactic principles referred to include the base composition rules of the bar notation, the requirement that V's and A's must have subject NP's (Chomsky's Extended Projection Principle), the definition of subject, structure-preservation or some counterpart, case theory, binding theory, c-command, and word order parameters.

Given that a participle is now seen to be truly an AP as far as syntax is concerned, we can rewrite the Middle English (19) as (27).

$$(27) \text{ } \textit{ing}(e), [+N], +V\_\_\_\_\_\_, \left. \begin{array}{l} \text{N: } V = +\text{ACTIVITY} \\ \text{A: } V = +\text{PSYCHOLOGICAL} \\ \text{A: } V [+ing] \text{ selects like a head of a VP} \end{array} \right\}$$

It is hardly surprising that lexical selection should be sensitive to morpheme categories such as V (25), and that syntax should be sensitive to phrasal labels (26). The lexicon is, after all, the repository of properties of morphemes (not of phrases), and syntax has largely been elaborated on the basis of the properties and distribution of phrases. (25) and (26) are thus merely reflections of a more general type of autonomy between syntax and the lexicon; the lexicon expresses relations between categories of morphemes, and the syntax expresses relations between phrases and other categories (phrasal or non-phrasal).

To better reflect the centrality of morpheme categories (in contrast to phrasal categories) in lexical selection, I now replace subcategorization frames such as +\_\_\_\_NP and +\_\_\_\_PP with +\_\_\_\_N and +\_\_\_\_P. The contextual feature +\_\_\_\_X requires the selection of the largest phrase of which X is the head. For extensive justification of this move, see Baltin (1989).<sup>10</sup>

The feature +\_\_\_\_V now specifies deep structure selection of a phrase whose head, or at least whose selectionally dominant element, is a V. Since the principles of syntax I use here do not treat the VP as maximal, the feature +\_\_\_\_V in fact requires some other maximal projection, at first glance S(=V<sup>3</sup>), which accommodates all the head properties of V. What I wish to show, however, is that the principles of syntax and  $\theta$ -role assignment can conspire with inflectional morphology to produce situations in which a "non-head" V of Y<sup>max</sup> can act as the selectionally-dominant (head-like) member of Y<sup>max</sup>. In particular, an AP or NP can in fact contain such non-head selectionally dominant V<sup>0</sup>.<sup>11</sup>

In order to represent this seemingly incongruous dichotomy, I turn to a proposal made in Emonds (1985: ch. 5) for introducing inflectional morphology. In contrast to open class items inserted at deep structure, the morphemes of inflectional morphology, among which participial and gerundive *ing* certainly belong, are introduced

(10) Writing the selected category to the right of the blank (Y,+\_\_\_\_X) requires selecting a phrase as a complement to Y, whereas Y,+X\_\_\_\_ indicates selection of an X<sup>0</sup> underneath Y<sup>0</sup>. Alternatively, we could define Y,+\_\_\_\_X and Y,+X\_\_\_\_ as directly representing left-to-right order, with a general word order parameter of English determining that all and only the complements to the right of a head Y are maximal in deep structure.

(11) There is no question here of two different derivational "levels", since semantic (lexical) selectional properties and various syntactic principles hold at the same level, deep structure.

into syntactic contexts defined at s-structure (or subsequent to s-structure). In the cases considered there, the inflectional morphemes (e.g., the finite tense endings and the adjectival comparison endings) are inserted under categories positioned by virtue of transformational movements such as "affix movement". However, there is no reason to exclude such surface structure insertion of inflectional morphemes into base positions of categories. In fact, as will now be explained, surface insertion of a head  $X^0$  into a base configuration  $[_X V^0 - X^0]$  will have just the "incongruous effect" of making  $V^0$  selectionally dominant, the puzzling factor in (12), (18), and (19).

I thus propose to formally express the Middle English (19) by (28). By the historical generalization which introduces the NP-gerund, (28) becomes the Modern English (29).

$$(28) \textit{ing}(e), [+N], +V \text{ \_\_\_\_\_\_}, \left\{ \begin{array}{l} \text{N: V} = +\text{ACTIVITY}; \text{ d-structure insertion} \\ \text{A: V} = +\text{PSYCHOLOGICAL}; \text{ d-structure insertion} \\ \text{A: s-structure insertion} \end{array} \right\}$$

$$(29) \textit{ing}, [+N], +V \text{ \_\_\_\_\_\_}, \left\{ \begin{array}{l} \text{N: V} = +\text{ACTIVITY}; \text{ d-structure insertion} \\ \text{A: V} = +\text{PSYCHOLOGICAL}; \text{ d-structure insertion} \\ \text{A: s-structure insertion} \end{array} \right\}$$

A final simplification is possible. In this model utilizing both deep and s-structure insertion, deep structure insertion is restricted to inserting elements associated with (either conditioned by or inducing) the presence of a purely semantic (non-syntactic) feature. Thus, since the two uses of *ing* as functional heads for derived nominals and derived adjectives are conditioned by the presence of semantic features (ACTIVITY, PSYCHOLOGICAL), their insertion in deep structure is fully predictable.<sup>12</sup> In this model, then, most of what is termed "derivational morphology" is the insertion of morphemes as deep structure N, A, and V heads, using the "right-hand head" rule within words.

Members of closed classes, therefore, can be inserted in deep or surface structures. It is to be expected that the level of insertion can be predicted from other properties; for example, a proposal that determines which closed class verbs are inserted at deep structure is contained in Emonds (1985: ch. 4), while unresolved questions remain about insertion level for various SPEC. But for bound inflectional morphemes, it can be proposed that, when no semantic features are associated with insertion, s-structure is *always* the level of insertion. Thus, (28) and (29) can be revised by means of the parenthesis notation:

$$(28) \text{ Middle English (Revised):} \\ \textit{ing}(e), [+N], +V \text{ \_\_\_\_\_\_}, \left\{ \begin{array}{l} \text{N: V} = +\text{ACTIVITY} \\ \text{A: (V} = +\text{PSYCHOLOGICAL)} \end{array} \right\}$$

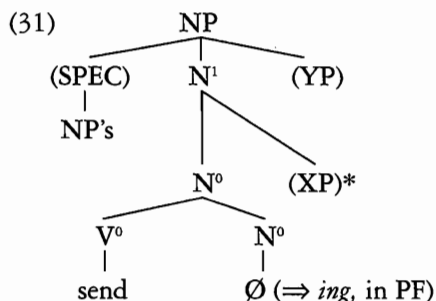
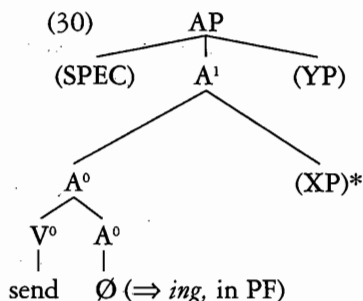
(12) Similarly, insertion of open class N, A, and V can only take place at deep structure, since the members of N, A, and V (except for small closed subsets of grammatical N, A, and V) are differentiated only by purely semantic features.

(29) Modern English (Revised):

$$ing, [+N], +V \text{ \_\_\_\_\_\_}, \left( \left( \begin{array}{l} N: V = +ACTIVITY \\ A: V = +PSYCHOLOGICAL \end{array} \right) \right)$$

The Revised (29) is the final simplified form of the lexical entry for *ing* in Modern English; it is completely general, and expresses, as no other competing theory, the related nature of derivational and inflectional *ing*. That is, *ing* is a morpheme added to V to yield forms of category [+N], at either possible level of lexical insertion. When the insertion is conditioned by a semantic feature, the level is deep structure.<sup>13</sup> When the insertion is unconditioned, the level is s-structure.

We must now see how surface insertion of *ing* automatically predicts (25) and (26). We will be working with the representations of English present participles and NP-gerunds (30) and (31), respectively. These trees are both deep and s-structure trees (i.e., inputs to logical form). They provide the context for s-structure insertions; after the insertion of *ing*, the trees are of course "on the way" to phonological form (PF), and no longer are strictly speaking s-structures.



It is clear that such phrases will have the syntactic distribution and behavior of AP's and NP's respectively, and hence conform to (26). However, it is not obvious how, in line with (25), the "non-head" V will select complements (XP), adjuncts (YP), and specifiers in (30) and (31). And it is even less clear why a higher governing predicate lexically specified as +\_\_\_\_\_V would choose (30) or (31) instead of, say, an S whose functional head is V. Nonetheless, these properties follow immediately from plausible generalizations of some independently motivated principles of lexical selection, as will now be seen.

#### 4. Defining the Functional Head

We first discuss how and why the V in (30) and (31) acts as an "internal head". The basis of the explanation is a revision of the "right-hand head" rule of Lieber (1980), Williams (1981), and Selkirk (1982). Following the lead of Walinska de Hackbeil (1986, ch.3), I recast Lieber's definition of head (of an immediately dominating node) so that certain Z<sup>0</sup> are defined as heads of entire maximal projections.

(13) I argue in Emonds (1985: ch. 2 and 3) that "deep structure insertion" is actually insertion into the head of a given domain D at the beginning of the cycle on D. As long as insertion of all elements in D occurs during the transformational cycle on D (even at the end of this cycle), the head of D will be filled during subsequent cycles, which is all that is required for what in this study is called "deep structure insertion".



- (32) The “functional head” of  $W^2$  is the rightmost  $Z^0$  dominated by  $W^2$  (and by no other maximal projection under  $W^2$ ).

By (32), it is still unhelpfully the case that A rather than V is the functional head of (30). To remedy this, let us extend a prohibition on empty deep structure complements, which is motivated in part by the need to prevent “accidental violations” of subadjacency. The unrevised prohibition is as follows:

- (33) A contextual subcategorization feature + \_\_\_\_\_  $X^k$  of a morpheme  $\alpha$  is satisfied only by an  $X^k$  which dominates a terminal element at the level at which  $\alpha$  is inserted, unless  $X^k$  is further stipulated as (possibly) empty by the feature in question. (Emonds 1985: 178)

The needed extension is (34):<sup>14</sup>

- (34) A subcategorization relation  $Z^0$ , + \_\_\_\_\_  $X^k$  of a morpheme  $\alpha$  is satisfied only by a functional head  $Z^0$  and a complement  $X^k$  which both dominate terminal elements after the operation inserting  $\alpha$ , unless  $X^k$  is further stipulated as (possibly) empty by the feature in question.

Thus, in order for subcategorization to be satisfied, the selecting head category must dominate a terminal element. To be consistent with this requirement, (32) must be modified.

- (35) The “functional head” of  $W^2$  is the rightmost *lexically filled*  $Z^0$  dominated by  $W^2$  (and by no other maximal projection under  $W^2$ ).

We now have the desired result which is the basis for explaining (25); namely,  $V^0$  in (30) and (31) is the functional head of AP and NP, due to the existence in English of late (s-structure) insertion of *ing* into the bar notation head position.<sup>15</sup> This late insertion, in both Middle and Modern English, is effected by ignoring the parenthesized material in Revised (28) and (29).

Let us now discuss how deep structure lexical selection proceeds inside participles (30) and gerunds (31).

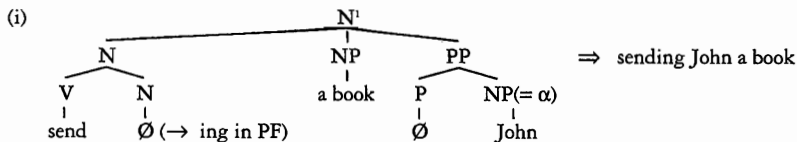
Stowell (1981) argues for a category-neutral syntactic bar notation. Following this idea, I elaborate a theory of complementation in Emonds (1985: ch. 1) in which complement category types, the XP in (30) and (31), are determined lexically by how they receive their semantic roles (“ $\theta$ -role assignment”). If the head lexical item is a V or P, what I term “direct  $\theta$ -role assignment” to XP sisters of all categories is allowed; if instead the head lexical item is N or A, then a secondary mode of “indirect  $\theta$ -role assignment” is induced, with the effect (details play no role in the argument here) that complement XP will always have the surface form of PP’s. Thus, the functional heads, as defined in (35), which determine the categorial types of XP in

(14) For languages which allow empty “small pro” complements (English does not), (33) and (34) have to be modified appropriately. This extension is not of concern here.

(15) In recent grammatical discussion, one hears of insertion “at a level”, as if an element (e.g., abstract case) could be simultaneously absent and present. This type of illogic is avoided here. S-structure defines the context for *ing*-insertion, but *ing*-insertion itself derives a post s-structure representation.

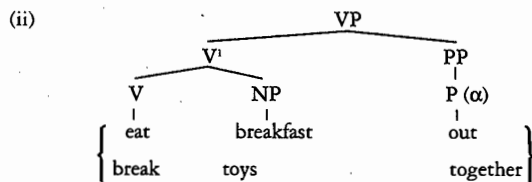
(30) and (31) are verbs, so that (30) and (31) will internally, at least as far as deep structure selection is concerned, *look like VP's*.<sup>16</sup>

(16) English participles and gerunds seem to also exhibit some "surface" VP properties; for example, they permit an indirect object NP to move toward their functional head, as in (i).



Such movement is not allowed in derived nominals with filled bar notation heads: *\*the sending John of a book*.

This contrast can be explained without mention of the dominating category  $N^1$  or  $V^1$ , however. In Emonds 1986, this "indirect object movement" is subsumed under a quite general language-particular local transformation,  $NP-\alpha \Rightarrow \alpha-NP$ . Local transformations cannot apply to sequences of terms where neither minimally  $c$ -commands the other (Emonds 1976, ch. 6):



I eat breakfast out.

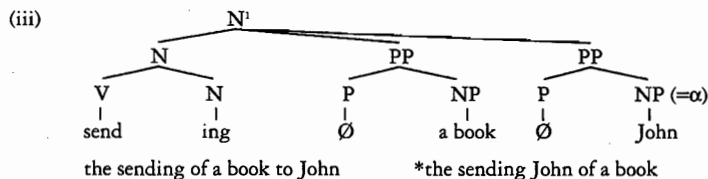
⇒ \*I eat out breakfast.

Children tend to break toys together.

⇒ \*Children tend to break together toys.

In (ii), neither NP nor  $\alpha$   $c$ -commands the other, so movement of  $\alpha$  is not allowed. But in (i), NP  $c$ -commands  $\alpha$ , and so indirect object movement is permitted.

If the head of  $X^1$  is a deep structure lexical N or A, as in a derived nominal, indirect  $\theta$ -role assignment insures the presence of an intervening PP over *a book* in the counterpart to (i). Thus, the minimal  $c$ -command condition is violated in (iii), and indirect object movement is prevented:



It has sometimes been claimed that "particle movement" affects derived nominals. However, by a general ordering restriction, intransitive P precedes transitive P, whatever the category of the head:

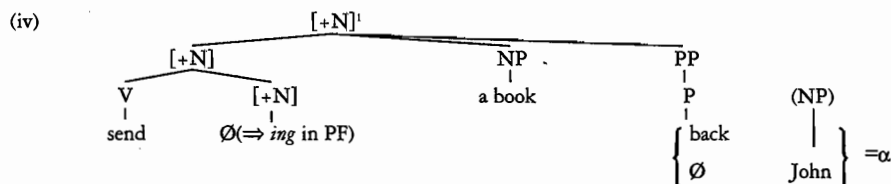
Mary talked {back to John/\*to John back} yesterday.

We moved {out to St. Louis/\*to St. Louis out} last year.

The sending {back of a book/\*of a book back} is impolite.

Thus, derived nominals (where the  $c$ -command condition on local movements is not met) are irrelevant to any discussion of particle movement.

If particles appear in a gerund or participle, NP minimally  $c$ -commands  $\alpha$ , so NP- $\alpha$  inversion is allowed (*sending back a book; sending John a book*).



With the proviso that a *functional* head (whether or not immediately dominated by  $W^1$ ) governs the daughters of  $W^1$ , it also follows that the V in (30) and (31) can assign abstract accusative case when  $XP=NP$ . The Arabic *masdar* (Fassi Fehri 1986), essentially a verb-initial gerund, has the expected property of being able to assign morphological accusative case to its direct object.<sup>17</sup>

We now turn our attention to what is outside the first projection in (30) and (31). The interplay of syntactic principles and lexical selection with respect to the presence of the subject NP node under SPEC makes interesting and correct predictions. We know that the English SPEC(N) may be expanded as an overt NP subject, while the SPEC(A) may not be.

(36) SPEC(N)  $\rightarrow$  NP

The definition of subject and the requirement that verbs must have subjects are stated in (37)-(38).

(37) The subject of a functional head of  $W^2$  is the closest maximal  $N^i$  which minimally *c*-commands  $W^1$  and is in all the same NP and S as  $W^1$  (Emonds 1985: 76; modified to include "functional head").

(38) Extended Projection Principle. Functional heads which are V or case-marked A must have unique subjects at deep structure, s-structure, and logical form. (Emonds 1985: 134; modified to include "functional head").<sup>18</sup>

It automatically follows from (37) and (38) that the optional expansion of SPEC(N) in (36) becomes obligatory in NP-gerunds (31). This NP may of course be "understood", i.e., an empty category, but the subject of gerunds is invariably structurally present (cf. Wasow and Roeper 1972). In contrast, (37) and (38) have no noticeable effect in participles, because SPEC(A) does not permit overt NP subjects; consequently, English participles are indistinguishable from verb phrases as far as their relations to subjects go. Thus, principles of syntax correctly predict the existence of separate subjects for gerunds (31) and no separate subjects for participles (30).

It remains to discuss the selection of specifiers and adjuncts in (30) and (31). Since lexical selection is in general a relation between pairs of morpheme categories, it is natural to assume that the lexical classes SPEC(N) and SPEC(A), as well as numerals, are licensed by the category of the selectionally dominant functional head of a phrase. Similarly, since there are well-known selectional restrictions between nouns and modifying adjectives, it is plausible that in the absence of a functional head N, no adject-

(17) The behavior of gerunds and participles in Celtic also confirms the proposal of Emonds (1985) that the genitive is assigned by SPEC(N) rather than by N, and, like any other case, under government. Since the details would be tedious (I would have to repeat the treatment of the genitive, the exact definition of government, the possibility of multiple governors, etc.), I limit myself to observing that the definitions of government and case-assignment in Emonds (1985, section 1.8) predict that a genitive case (assignable by SPEC) should be optionally available for XP in (30) and (31). This seems to be exactly what occurs in Welsh (Harlow 1981, and Sproat 1985) and Irish (McCloskey and Chung 1987).

(18) I make no effort to reconcile my proposals with "small clause" analyses of English AP's. Cf. Williams (1983) and Emonds (1985: ch. 2) for critiques of such analyses.

tive can be chosen. In participles and gerunds, the functional head (at deep structure—the level of lexical insertion) is a V, and so only modifiers which are SPEC(V) can be chosen for the SPEC position (perhaps certain adverbs such as *already*, *yet*, *never*, *always*, etc.).<sup>19</sup>

The only syntactic restriction on the form of adjuncts is that, across categories of the head, the YP is (30) or (31) must be AP, PP or S. There are cases where adjuncts appear to be NP's: the "bare adverbial NP's" of Larson 1985 and the "measure phrases" of Jackendoff 1977. I argue that the former have PP structure, with empty P, in Emonds 1987. The latter (*John read the book three times*) seem more like extraposed specifiers than like adjuncts; as pointed out by Jackendoff, English measure phrases are in SPEC(X) for X=V. The general restriction against truly bare NP adjuncts I imagine is due to the lack of a potential case assigner; here I agree with Larson. In fact, by the case theory developed in Emonds (1985, ch. 1), predicate attribute (nominative) NP adjuncts *are* licensed, but they are not interpreted adverbially: *the man walked out of the room a better person*.

The particular kinds of adjunct allowed are determined by particular choices of SPEC; this is most evident in the AP system, where each specifier imposes a limitation on adjunct types (*so* with a *that*-clause; *more/less* with a *than*-clause; *as* with an *as*-clause; *too/enough* with an infinitive; *very* with no clause, etc.). Significantly, possessive NP's in SPEC(N) are incompatible with restrictive relative clauses (*John's friend that I saw*); since possessive NP's are always structurally present in NP-gerunds, this suffices to correctly exclude relative clause modifiers in this construction. In any case, the choice of adjuncts is dependent on the choice of SPEC, and the latter in turn depends on the category of the functional head. It follows that gerunds and participles will contain only adjunct phrases that are compatible with the functional head V, and none that are selected by various lexical choices for SPEC(N) or SPEC(A).

In summary, the definition of "functional head" in (35) has allowed us to construct a thorough account of how and why NP gerunds and present participles act internally like VP's. The simple fact that the bar notation heads N or A remain unfilled through s-structure provides the key for explaining the "dual nature" of these constituents.<sup>20</sup>

(19) In derived nominals and adjectives, the functional head throughout the syntactic derivation is the N or A *ing*, so this filled head, like any other N or A, permits selection of SPEC(N) or SPEC(A), and appropriate corresponding adjunct phrases.

(20) My analysis of English gerunds might seem akin to Baker's (1984), who argues "that the puzzling behavior of English gerunds can be understood and explained in terms of an affixation that changes verbs to nouns between underlying syntactic structure and surface syntactic structure". In fact, many of his and my empirical predictions are the same, and both might be termed "syntactic" (as opposed to lexical) affixation. However, his approach contains many ad hoc moves, which we will examine.

Our two s-structures for gerunds are alike, except that his affixal head N contains a lexical item *ing* (whereas the affixal here in (31) is  $\emptyset$ , so that V is the functional s-structure head). Baker admits that this entails abandoning s-structure case-marking by governing heads, since direct objects in gerunds must then receive case from (his non-head) V. He acknowledges the difficulty in note 3: "Another possibility is that accusative Case assignment happens strictly at S-structure, and that the verb root is still visible and able to assign Case in gerunds". As he explicitly recognizes, this variant entails that the internal s-structurals of derived nominals and gerunds such as *singing*, *balancing*, *trafficking* are distinct. But all such words have an identical phonology (e.g., familiarly, no *ing* affects word stress nor softens final velars of romance origin). This uniformity is ac-

## 5. Lexical Selection of Non-Finite Clause Types

In the previous section, we have seen that a V whose deep structure sister is  $N[\emptyset]$  or  $A[\emptyset]$  satisfies the definition of "functional head of a phrase", and thus induces "VP-internal structure" inside gerunds (NP's) and participles (AP's). I have claimed that this same functional head (V) is also selected by higher predicates subcategorized as +\_\_\_\_\_V, with variations as discussed below. More precisely, general principles of grammar, and not ad hoc lexical selection for "participles", "gerunds", and "infinitives", determine when +\_\_\_\_\_V leads to choosing one or another of these complement structures.

For example, I claim that verbs such as *keep*, *avoid*, *hope* and *decide* share the subcategorization feature +\_\_\_\_\_V, even though they take, respectively, participle, gerund, infinitive, and indirect question complement structures.

- (39) a. John kept mowing the lawn.  
       \*John kept (when) to mow the lawn  
       Participial (AP) complements do not move like NP's:  
       \*Mowing the lawn was kept by John.  
       \*It was mowing the lawn that John kept.
- b. John avoided mowing the lawn.  
       \*John avoided (when) to mow the lawn.  
       Gerund (NP) complements move like NP's:  
       Mowing the lawn was avoided by John.  
       It was mowing the lawn that John avoided.

cidental in Baker's model, but here, when derived nominals and gerunds enter the phonological component after s-structure insertion, the two types of  $N^o$  nominals correctly are absolutely identical in structure.

In both Baker's scheme and mine, the functional head (governing selection) of a gerund at deep structure is a V. The difference is whether the gerund phrase is an S (Baker, following a proposal of Stowell 1981) or an NP. Here, all indications point to difficulties for Baker. For example, an S but not an NP may stand alone as the root of a tree and express an independent (Fregean) judgment; a gerund certainly patterns as NP and not as S in this regard. Another problem for Baker is whether the gerundive S is embedded in an S or not; if so, why is its COMP always obligatorily empty: if not, how does a "bare S" come to require only this INFL, and moreover not appear in other non-NP positions (e.g., as a complement to an N or an A)? In my analysis, no such questions arise, since gerunds are not S's at any level and are not expected to alternate with S's.

In my view, general principles beyond the item-specific selections imposed by lexical choices govern the distribution of phrases at deep structure. These principles are outlined in Emonds (1985: chs. 1 and 2). One of them is that only NP's can appear in subject positions at deep structure. From this principle, we correctly expect that gerunds will freely appear as subjects; Baker's analysis also leaves this fact unexplained. (Note that s-structure subjects are *not* limited to NP's.)

Finally, besides these inadequacies in Baker's proposed deep and s-structures, his utilization of "affix movement" to place *ing* has special and unmotivated formal effects. When his *ing* moves from INFL to V, it changes S into NP, because *ing* is "nominal". Yet, movement of other INFL (the Tense endings) does not change phrasal categories, even though they are, if anything *more* nominal than *ing*, since they but not *ing* exhibit person and number variation. As Baker acknowledges, such category changing prior to s-structure also violates Chomsky's (1981) Projection Principle, but he contents himself here with citing other analyses of a similar sort, without revision to overcome the difficulty.

Milsark (1988) utilizes Baker's analysis of gerunds, but replaces *ing* lowering with raising of V to INFL. But this leaves the "change" of deep structure S to surface NP just as mysterious, since *ing* has no categorial feature. Why should V to INFL (= *ing*) create an NP, while *be* or of anything else to INFL *not* induce such a change?

- c. \*John {hoped/decided} mowing the lawn.  
 John {hoped/decided} to mow the lawn.  
 \*John hoped when to mow the lawn.  
 John decided when to mow the lawn.

For a full discussion of tests which differentiate participles (39a) from gerunds (39b), see Milsark (1972), Emonds (1973), and Pullum (1974).

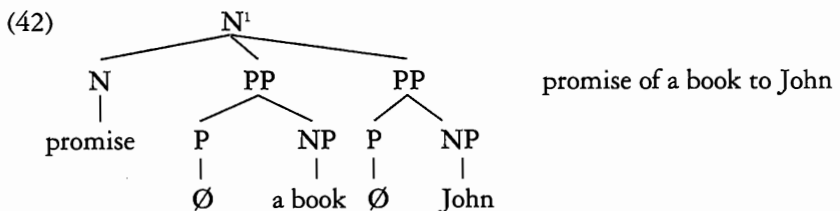
To describe such distributions, I utilize the theory of subcategorization and  $\theta$ -role assignment developed in Emonds (1985: ch. 1). The central principles are the uncontroversial condition for  $\theta$ -role assignment (40) and an extension (41). Z is a functional head subcategorized for a complement phrase  $\alpha$  which Z may also assign a  $\theta$ -role to.

- (40) Direct  $\theta$ -role Assignment. If  $Z = V$  or  $P$ , then Z and  $\alpha$  may be sisters. A given lexical Z may assign only one  $\theta$ -role directly.
- (41) Indirect  $\theta$ -role Assignment. If principles of syntax block (40), then  $\alpha$  must dominate the only lexical material under a sister of Z.

Unless otherwise licensed by (40), all phrasal sisters to an  $X^0$  or  $X^1$  in the bar notation are of the form PP or  $\bar{S}$  (cf. Emonds 1985: ch. 7, for arguments that S is a subcase of PP).

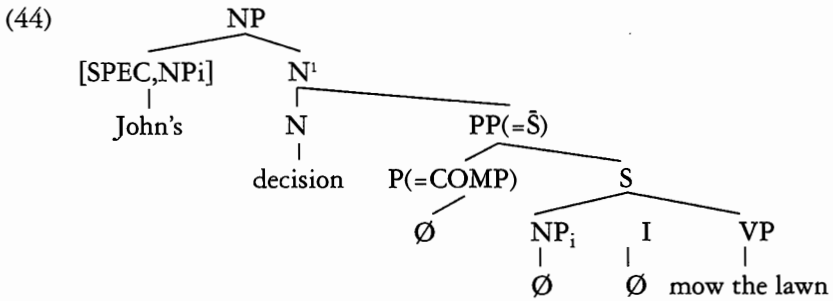
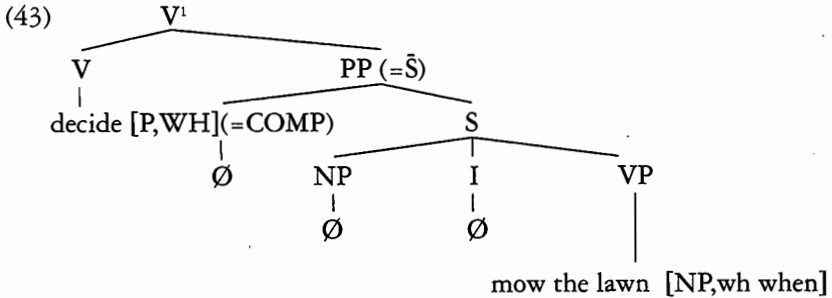
In a phrasal subcategorization frame + \_\_\_\_\_  $\alpha$ ,  $\alpha$  can just be an  $X^0$  (in our new notation), or, as in Chomsky (1965),  $\alpha$  may consist of a grammatical formative category linked to a phrase; e.g.,  $\alpha = of^{\wedge}N$  with the verb *think*. (For typological convenience, I introduce a caret  $\wedge$  in subcategorization features for linking grammatical formatives and phrases to replace the arch " $\cap$ " of Chomsky (1965) and Emonds (1985).

Some deep structures which exemplify indirect  $\theta$ -role assignment are exemplified in (42)-(44). In the first case, a verb and its associated derived nominal (*promise*) share the subcategorization + \_\_\_\_\_  $NP^{\wedge}NP$  (+ \_\_\_\_\_  $N^{\wedge}N$  in our newer notation), but the prohibition on direct  $\theta$ -role assignment by N and A makes indirect  $\theta$ -role assignment in the deep structure derived nominal (42) the only option. That is, the only lexical material under sisters of N must be under NP's, so the P's in (42) are necessarily empty when *promise* is inserted.



In (43), the deep structure for *decide when to mow the lawn* results from the frame for *decide* + \_\_\_\_\_  $(WH)^{\wedge}V$ ; the V determines that *decide* takes a complement phrase with a V head (a VP) which, prior to WH-movement, dominates the only lexical material under a sister (S) of *decide*. The same frame for the related derived nominal

*decision* gives rise to (44). Like many other grammatical morphemes, *to* under I is inserted only after s-structure.<sup>21</sup>



*The Choice between Participles and Gerunds.* According to (41), direct  $\theta$ -role assignment has priority over indirect  $\theta$ -role assignment. We can factor this stipulation out of (41) and generalize it as follows:

- (45) Minimal Structure: Co-occurrence restrictions are to be satisfied by deep structure trees which contain the fewest number of phrasal nodes consistent with the principles of syntax.

Hence, verbs can not take the “unnecessary” indirect  $\theta$ -role assignment which would parallel (42):

- (46) \*Bill promised of a book to John.

Minimal Structure can be taken as a special case of a Principle of Economy of Representation proposed in Chomsky (this volume:): “The analogous principle for representations would stipulate that, just as there can be no superfluous steps in derivations, so there can be no superfluous symbols in representations”.

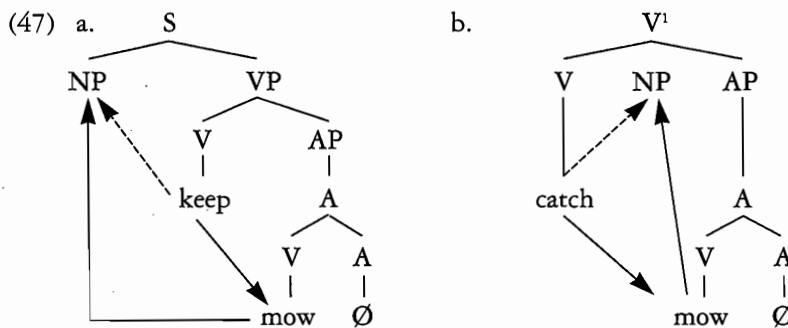
Let us now turn to the selection of non-finite complements. The definition of functional head (35), the two principles of  $\theta$ -role assignment, and Minimal Structure together now interact to make a series of correct predictions about the distribution of non-finite clausal structures in English. Since English surface insertion of *ing* de facto licenses [V-Ø] at s-structure, the node which is both maximal with respect to

(21) The detailed explication of licensing conditions for zeroed infinitives after *to* provided in Lobeck (1986) utilizes this analysis of *to*, and thus provides independent support for it.

V being its head and minimal in the sense of (45) is in fact AP. An NP with a functional head V (a gerund) would contain an extra subject NP phrase, and a VP, not being maximal, would entail the presence of both an S and a subject NP phrase. Thus, the "preferred" non-finite structure, other principles of syntax permitting, will be a participle (AP).

In non-subcategorized positions (e.g., those of restrictive relative and of adverbial clauses), the non-finite English structures without overt subject NP's are in fact participles, as predicted. In subcategorized positions, the frame + \_\_\_V of temporal aspect verbs (e.g., *keep*) and + \_\_\_N^V of perception verbs (e.g., *catch*) are also satisfied by participles (cf. 39a).<sup>22</sup>

Nonetheless, it is only by virtue of an exceptional lexical property that the two classes of verbs just mentioned do not run afoul of a principle of syntax. Temporal aspect verbs assign no independent  $\theta$ -role to their subject, nor do perception verbs to their object. In other words, *keep* and *catch* assign  $\theta$ -roles following the downward solid arrows in (47a-b) respectively, but not following the broken arrows. The  $\theta$ -roles assigned by the embedded verbs to their NP subjects, as characterized in (37), are indicated by upward solid arrows.



If  $\theta$ -roles were assigned along the broken arrows in (47), this would violate a principle of syntax, the " $\theta$ -criterion", which under certain circumstances prevents a single NP from being assigned two  $\theta$ -roles.<sup>23</sup>

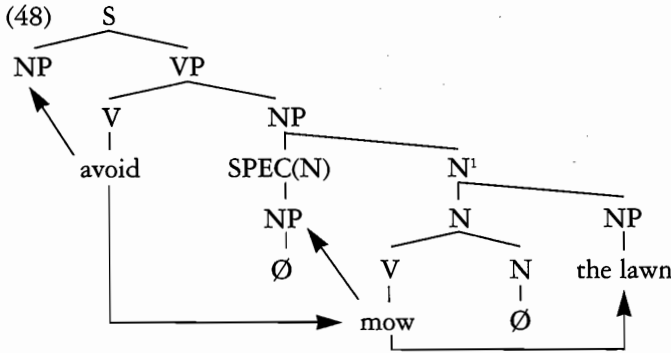
Most verbs with the feature + \_\_\_V do in fact assign  $\theta$ -roles along the broken lines in (47); e.g., *avoid*, *attempt*, *complete*, *describe*, *explain*, etc. In these cases, the principle of Minimal Structure (45) allows a phrasal structure to be generated which contains an additional NP that permits the  $\theta$ -criterion to be respected, with  $\theta$ -roles assigned as in (48).

(22) Milsark (1972) establishes that the domain of the "double *ing* filter" does not apply across an NP boundary, which seems like a plausible restriction on all such filters. However, Milsark 1988 recasts this filter to apply to "any sentence containing contiguous *-ing*-affixed words", which PRO can interrupt. I don't believe this succeeds, given examples such as *his amazing findings*, etc.

(23) In Emonds (1985, ch. 2), arguments are presented that the  $\theta$ -Criterion of Chomsky (1981) must be modified as follows, where  $X^0$  and  $Y^0$  are " $\theta$ -related" if and only if one assigns a  $\theta$ -role to the maximal projection of the other.

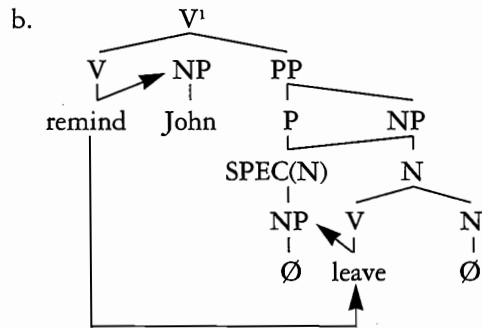
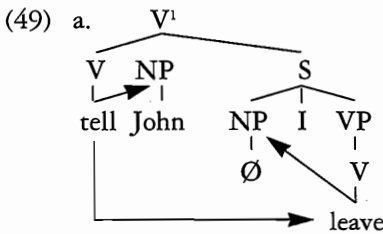
Revised  $\theta$ -Criterion.  $\theta$ -relatedness is anti-transitive.





After *ing* is inserted according to (29) after s-structure, NP-gerunds as in (39b) correctly result.

If a transitive verb, e.g., *tell*, *remind*, subcategorized as +\_\_\_N^V assigns  $\theta$ -roles to both complements, the  $\theta$ -criterion could be respected via either (49a) or (49b).



By inspection, we see that Minimal Structure allows either choice, if single bar projections are ignored. This seems correct, given possibilities as in (50).<sup>24</sup>

(50) They {reminded/told} John {to leave/of leaving}.

We have seen that the minimal structure induced by +\_\_\_V in English (thanks to post s-structure *ing*) is preferably a participial AP and then, *pace* the Revised  $\theta$ -Criterion, an NP-gerund. However, since gerunds are NP's, they cannot immediately follow direct objects, nor can they be sisters to N or A. When a second complement to a V (or a first complement to N or A) is specified by +\_\_\_V, and when the governing head assigns all its complements  $\theta$ -roles, then +\_\_\_V leads either to an NP-gerund embedded in a PP structure, as in (51), or to infinitives of obligatory control, as in (52).

- (51) Bill accused John of working slowly.
- Bill limited John to working nights.
- His preference for eating fish is understandable.

(24) By Indirect  $\theta$ -role Assignment, where  $\alpha$ =VP in (49a) and NP in (49b), the lower NP in (49a) and the P in (49b) must be empty in deep structure. As discussed in detail in Emonds (1985: ch. 2), "obligatory control" in infinitives is thus predicted by independently justified principles of  $\theta$ -role assignment. Of course, as in competing accounts, the antecedent of the controlled NP must be determined by the binding theory or a special control rule.

- (52) Bill forced John to work fast.  
 Bill urged John to work nights.  
 His tendency to eat fish is understandable.

*Why Infinitives and not Gerunds?* Certain verbs do not accept a gerund or a participle as a first complement, but at the same time are not subcategorized for a sentence (they are not listed as +\_\_\_\_I). Such verbs take infinitives with obligatorily understood subjects (obligatory control), sometimes with the added possibility for fronted WH-constituents.

- (53) John hoped (\*when) {to mow/\*mowing} the lawn.  
 (54) John will decide (when) {to mow/\*mowing} the lawn.

Unless an indirect question is involved, some additional factor beyond +\_\_\_\_V must force a verb like *hope* or *decide* to take an S, rather than appear as in (50). As discussed in more detail in (Emonds 1985, ch. 2), I claim that the complements of such verbs express an "unrealized" or future/potential modality, which is syntactically translated as the obligatory presence of the category modal M on the head I of S. Thus, verbs like *hope* and *decide* have the subcategorization feature +\_\_\_\_M^V, and verbs which take an indirect question appear with the similar lexical frame +\_\_\_\_WH^V.

Consider now a verb like *hope*, which does not accept an indirect question. In the system used here, either the feature +\_\_\_\_M^V or the feature +\_\_\_\_GOAL^V (where GOAL characterizes the complementizer/preposition *for*) will induce an S complement with obligatory control. In order for M or GOAL to be present at deep structure, the sister *a* of *hope* which is mentioned in Indirect  $\theta$ -role Assignment (41) must include S or  $\bar{S}$ . Either way, VP is the largest complement phrase for which *hope* is subcategorized (i.e., of which V is the head), so that at deep structure, all of COMP, its subject NP, and its I must be empty, by (41). The surface realization of unmarked COMP with an empty subject is  $\emptyset$ , and that of empty I is *to* (cf. Emonds 1985: ch. 7, and Lobeck 1986, respectively). In this manner, infinitives of obligatory control can arise from the frame +\_\_\_\_F^V, without our invoking any feature specific to infinitives; MODAL and GOAL are features which play a central role in any analysis of finite clauses and indirect object PP's.

It is a simple matter to specify other occurring subcategorizations of English verbs. For example, a range of verbs like *arrange*, *beg*, *pray*, *watch*, *wait*, etc. take either *for* +NP, *for* +S, or an infinitive of obligatory control.

- (55) John was waiting for the train.  
 John was waiting for the train to leave.  
 John was waiting to leave.

A verb like *wait* can be assigned the unified frame +\_\_\_\_([P, GOAL]). The subject of an S complement to P(=COMP) will be lexical or empty, giving rise to a *for-to* clause or a bare infinitive.

A verb like *decide* does not accept an *ing* complement clause (39c). It might be listed as +\_\_\_\_(WH)^M^V. However, this frame would employ two pre-head fea-

tures. The same complement types can be generated via the frame  $+ \_\_\_\{WH, GOAL\}^V$ . In fact, since the only complementizers (P) which are even compatible with an empty I (an infinitive) are WH (*whether*) and GOAL, the desired frame for *decide* might reduce to  $+ \_\_\_\{P\}^V$ . Indirect  $\theta$ -role Assignment (41) will still insure that the subject NP is empty (obligatorily controlled).

If  $+ \_\_\_\{F\}^V$  (F=GOAL, WH, MODAL) are possible subcategorizations, then the features  $+ \_\_\_\{F\}^V$  should also exist. The value of F=M or GOAL is realized by several temporal aspect verbs whose complements are optionally realized as participles or as infinitives of "modal force": *begin, start, continue* (but not *finish* or *resume*). Such distributions can be elegantly captured by the feature  $+ \_\_\_\{M\}^V$ . Without M, Minimal Structure (45) will favor a participial (AP) complement structure for these verbs, made possible by the English post s-structure *ing* insertion. With M, an S-complement containing [I, M] must be generated, yielding infinitives.

When the same frames  $+ \_\_\_\{M\}^V$  or  $+ \_\_\_\{GOAL\}^V$  occur with a non-aspectual verb, the choice of V without M leads, as expected, to an NP gerund complement. Consequently, there can be verbs whose complements are either NP-gerunds, without modal force, or infinitives, with modal force.

- (56) John has tried to climb the mountain.  
       John has tried climbing the mountain.

The fact that *try* can also occur with NP or *for* +NP suggests that its most general frame is  $+ \_\_\_\{GOAL\}^{\{N, V\}}$ , which correctly provides four different options.

Another example of the insertion frame  $+ \_\_\_\{V\}$  optionally accompanied by an introductory feature is provided by  $+ \_\_\_\{WH\}^V$ . This feature gives rise to a type of complement paradigm which is not uncommon in English, but which has not previously been naturally expressible in terms of even ad hoc features for gerunds and infinitives.

- (57) The lawyer discussed  $\left\{ \begin{array}{l} \text{buying some clothes in Rome.} \\ \text{*what clothes buying in Rome.} \\ \text{*to buy some clothes in Rome.} \\ \text{what clothes to buy in Rome.} \end{array} \right\}$

- (58) I don't recall  $\left\{ \begin{array}{l} \text{using these dishes for lunch.} \\ \text{*which dishes using for lunch.} \\ \text{*to use these dishes for lunch.} \\ \text{which dishes to use for lunch.} \end{array} \right\}$

That is, our system expresses very naturally the "changeover" from gerundive to infinitival structure with those factive verbs which can take indirect questions. No competing system which differentiates infinitives and *ing* forms on the basis of features internal to V, rather than on the basis of explanatory principles, can make this non-stipulative prediction.

To summarize, all classes of clausal complements not selected by  $+ \_\_\_\{I\}$  can be selected by  $+ \_\_\_\{+F\}^V$ , where F is WH, GOAL, or M. When F is present, some type of infinitive of obligatory control results. For gerunds and participles, F is not

present, the choice between the two being determined by Minimal Structure and the Revised  $\theta$ -Criterion. The features N or NP are not involved in choosing gerunds; lexical selection of participles and gerunds results entirely from their functional head being V, and not from their empty structural head A/N. Thus, all "verbal" properties of participles and gerunds in fact result from deep structure lexical selection, in which verbs are both the governing and governed verbal head. In other respects, these two constructions are unambiguously AP and NP (respectively) throughout their syntactic derivations.

## 6. Conclusions

The crucial step in this unified analysis of derived nominals, derived adjectives, participles and gerunds is that the single "substantiving" English verbal affix *ing*, associated with one general lexical entry (29), is inserted at both the deep and surface levels. When the insertion is "semantically conditioned", it occurs at deep structure, and selection proceeds as with nouns and adjectives. On the other hand, the "unconditioned" insertion of *ing* occurs, as predicted, at s-structure, giving rise to the well-known "verbal properties" of gerunds and participles, but in no way neutralizing their syntactic status as NP's and AP's.

The "verbal properties" of gerunds and participles are in fact nothing other than what results from their having functional V heads at deep structure. Entirely general principles of  $\theta$ -role assignment and a newly isolated principle of "Minimal Structure" (45) determine when the feature +\_\_\_\_V gives rise to participles, gerunds, and infinitives.

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## Appendix

My analysis of English gerunds might be taken as related to that of Baker (1984), who argues "that the puzzling behavior of English gerunds can be understood and explained in terms of an affixation that changes verbs to nouns between underlying syntactic structure and surface syntactic structure". In fact, many of the empirical predictions of his and my analyses are the same, and the term "syntactic affixation" (as opposed to lexical affixation) is a not inappropriate moniker for either approach. However, I believe that descriptive adequacy under his approach leads to several theoretical ad hocqueries, which we will now examine.

At s-structure, our two structures for gerunds are alike, except that his affixal head N corresponding to (31) contains a lexical item *ing*. (The affixal head in my (31) is  $\emptyset$ , so that the V is the functional head at s-structure.) Baker admits that this entails

abandoning s-structure case-marking by governing heads, since if XP in (31) is an NP, it must receive case from (his non-head) V, not from the N *ing*.

Baker acknowledges the difficulty in his note 3: "Another possibility is that accusative Case assignment happens strictly at S-structure, and that the verb root is still visible and able to assign Case in gerunds". As explicitly recognized by Baker, this variant entails that the internal s-structure of derived nominals such as *singing*, *balancing*, *trafficking* is distinct from the s-structure representation of the same words taken as gerunds. But all such words, whatever intuitions we may have about their internal identity, have an identical phonology, whether they are derived nominals or gerunds (e.g., familiarly, no *ing* affects word stress or softens final velars of Romance origin). Where can this generalization be expressed in Baker's model? His phonological component, including phonology at "level 2", must apply to two different kinds of structures, his lexical items and his surface affixations. Even the vague solution that "it's all in the lexicon" is unavailable to him.

In the model followed here, it is exactly when derived nominals and gerunds enter the phonological component ("PF"), after s-structure lexical insertion, that the two types of nominals are, within  $N^{\circ}$ , absolutely identical.

In both Baker's scheme and mine, the functional head of a gerund at deep structure, that is, the element that governs selection of gerund-internal material, is a V. The difference is whether the deep structure phrase is an S (Baker) or an NP. Whether or not this choice gives rise to empirical differences depends on what fuller theory Baker's proposal is embedded in. If he claims that deep structure well-formedness is nothing more than lexical selection, then different (but still telling) predictions will be made only with respect to external distribution of the gerund, since in my theory the lexical selector within the gerund is also V.

Even here, all indications point to difficulties for Baker's alternative. For example, an S but not an NP may stand alone as the root of a tree and express an independent (Fregean) judgment; a gerund certainly patterns as NP and not as S in this regard. Another problem is that Baker makes no mention of whether the gerundive S is embedded in an  $\bar{S}$  or not; if so, why is its COMP always obligatorily empty? if not, how does a "bare S" come to require only this INFL, and moreover not appear in other non-NP positions (e.g., as a complement to an N or an A)? In the analysis presented here, no such questions arise, since gerunds are not S's at any level and are not expected to alternate with S's.

In my view, very general principles beyond the item-specific selections imposed by lexical choices govern the distribution of phrases at deep structure. These principles are outlined in Emonds (1985, chs. 1 and 2). One of them is that only NP's can appear in subject positions at deep structure. From this principle, we correctly expect that gerunds will freely appear as subjects; Baker's analysis leaves this fact unexplained. Of course, he can choose to embed this analysis in a theory where this fact follows from Case Theory, but it is exactly this use of Case Theory that I claim to show is entirely inadequate in ch. 1 of the work cited.

Finally, besides these inadequacies in Baker's proposed deep and s-structures, his utilization of "affix movement" to place *ing* has special and unmotivated formal effects. When his INFL *ing* moves from INFL to V, it changes S into NP, because *ing*

is "nominal". Yet, movement of other INFL (the Tense endings) does not change categories, even though they are, if anything *more* nominal than *ing*, since they but not *ing* exhibit person and number variation. As Baker acknowledges, such category changing prior to s-structure also violates Chomsky's 1981 Projection Principle, but he contents himself here with citing other analyses of a similar sort, without offering a theoretical refinement to overcome the difficulty.

Another recent analysis of NP-gerunds offered in Suzuki (1988) derives them from a deep structure [<sub>@</sub>DET [<sub>S</sub>NP-*ing*-VP]]. He investigates in detail the various extractions, especially those of long-distance movement, allowed from both gerunds with possessive subjects and those with objective case subjects, and derives various restrictions on such movements from an interplay of his proposals and a government and binding framework slightly modified from Chomsky (1981, 1986).

Suzuki's analysis might appear quite incompatible with my present proposals, but much of the incompatibility arises from terminology he chooses on the basis of considerations that are not treated here. Thus, for him, @ is a DET-phrase ("DP"), while I retain NP. We do not, however, disagree on the need for DET to govern its phrasal sister; with Lobeck (1986), I espouse "specifier government"-government by SPEC(X) of intermediate projections of X. Neither does Suzuki deny that DET and N are universally linked in some way as the "functional" and lexical categories that "go together" in the unmarked case. Nor is the structure within DET a point of conflict. Suzuki elaborates a system wherein DET contains a potentially phrasal specifier position as well as a head (D) position: his [<sub>DP</sub>(XP)D-NP] = my [<sub>@</sub>(XP)-SPEC(N)-N<sup>max-1</sup>] parallel to [<sub>S</sub>NP-SPEC(V)-V<sup>max-1</sup>]; I am comfortable with such a parallel, which slightly simplifies the abstract case theory I have elsewhere elaborated, in which both SPEC(V) and SPEC(N) assign case. Thus, I am willing to accept much of the mechanics required for Suzuki's analysis of movement restrictions in possessive gerunds.

Some other differences between him and me are harder to reconcile. His claim that @ is not a projection of N is based on the fact that some DET can appear with gerunds, especially in earlier stages of English; even today we have *I don't like this removing the grass*. My interpretation of such "mixed gerunds", to the extent that they are grammatical, is that their DET morphemes are structurally available in the SPEC of an NP, as in example (31), and need not be lexically selected by a head noun. Granted, this is not explanatory (cf. *\*I don't like some removing the grass*), but Suzuki can do no better (his *this* but not *some* is subcategorized for S complements). Beyond these puzzling variations described but not explained under either view, the "DP hypothesis" for gerunds is subject to many of the criticisms I presented above against Baker: why does the S after D always contain the INFL *ing*? (For Suzuki, this *ing* is *not* always +N.) Why can't *ing* freely appear in other INFL? Why are these gerund S not embedded in  $\bar{S}$  when all others are? Why can't such an S appear as a root?

Another area where Suzuki and I differ in a way that impinges upon my analysis here concerns his deriving NP-gerunds with objective case subjects from clauses whose head *ing* is -N. For me, all *ing* are crucially +N. Suzuki justifies his proposal on the basis that the subjects of such "accusative gerunds" can be governed and case-marked from outside the gerund. However, for me, the governor of these subjects is

in any case never N or *ing*, but rather the SPEC(N); I am not against the idea of exploring a variant of Suzuki's main idea here, which is that a governor without a positive feature specification (his *ing* and my SPEC(N)) doesn't govern and yields rather to government "from outside" by a higher governor. To my mind, however, there is a complication he overlooks, which suggests to me that government from outside the gerund (his justification for *ing*=-N) is possibly misguided. In his *we preferred each other reading books*, *each other* may be the direct object of *prefer* and *reading books* a modifying participle. We can be more certain that an "accusative gerund" is involved with a singular verb (e.g., *we were shocked by agents making political decisions*; *agents making political decisions was shocking*); compare *we were shocked by agents as dope runners*; *agents as dope runners shocks some people*. We then find that government of their subject from the outside is highly dubious: *\*we were startled by each other making political decisions*; *\*we were startled by each other as agents*.

In answer to Suzuki's proposed *ing* as -N, then, I proffer my several objections to Baker's similar use of INFL, given earlier; I add the idea that Suzuki's government "from the outside" could just as well be elaborated on the basis of an unspecified SPEC(N) as well as an unspecified INFL not governing; and I conclude that factually we may still need to exclude this possibility, since it is not clear that all "accusative gerunds" are really of the same type.

Finally, I continue to emphasize that a central advantage of the present article's approach to *ing* is that it formally relates the adjectival and participial uses of *ing* to its nominal and gerundive uses, and this in a maximally compact way, via the unified lexical entry (29). Neither of the alternatives discussed in this appendix nor any other in the literature takes on this challenge, nor is it easy to see how they could.

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# Towards a Typology of Psych Verbs: Evidence from Spanish

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## 1. Introduction

Belletti and Rizzi (1988) establish three classes of Experiencer verbs in Italian in relation to the Case an Experiencer argument can take, as illustrated in (1). For the first class, the *temere*-class, the Experiencer takes the nominative Case, and a parallel list of verbs can be found in Spanish, for example: *amar, odiar, adorar*. The second class of verbs is the *preoccupare*-class. In this second group, the Experiencer takes the accusative Case inherently. Finally, the third class of "psych" verbs is the *piacere*-class under which the Experiencer arguments receive the dative Case inherently as well.

(1) Italian (B & R 1988)				Spanish
<i>Class I</i> (fear)	<i>temere</i> :	Nom.	Acc.	amar, odiar, adorar
		Exp	Theme	
<i>Class II</i> (worry)	<i>preoccupare</i> :	Nom.	Acc.	? divertir, ? enojar, ? preocupar
		Theme	Exp	
<i>Class III</i> (like)	<i>piacere</i> :	Nom.	Dat.	gustar, agradar, complacer
		Theme	Exp	

With some important exceptions such as Mexican and Peruvian Spanish, many dialects of Spanish do not have such a clear cut between the second class and the third class. A significant number of speakers, on the other hand, do not acknowledge any Experiencer argument bearing the accusative Case. Intriguingly, there are some dialects of Spanish, especially from the Southern Cone of Latin America and some

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areas of Spain, in which homophonous forms of Experiencer verbs allow an alternation accusative-dative in the Case marking of Experiencer arguments. The data corresponding to the latter phenomenon are examined in detail in this paper.

The aim of this study is to discriminate between the different types of Experiencer verbs in Spanish and to avoid a Lexicon with multiple homophonous lexical entries as much as possible. Therefore, the hypothesis I will pursue is that the accusative status of the Experiencer arguments results from having been derived from the intransitive embedded subject of an infinitival causative construction.

## 2. Discrimination of the data

The basic contrast with which I will be concerned here is illustrated in (2) and (3) below:

- (2) a. Ese espectáculo *le*<sub>i</sub> / ? *lo* divierte a Juan<sub>i</sub>.  
That show-NOM CL-DAT/ACC amuse to Juan-DAT  
That show amuses Juan.
- b. María *lo*<sub>i</sub> divierte a Juan<sub>i</sub> por las noches  
María CL-ACC amuse to Juan-DAT at the nights.  
María amuses Juan at nights.
- (3) a. Ese tipo de comentarios *le*<sub>i</sub> enojan a Juan<sub>i</sub>.  
That type of comments CL-DAT anger to Juan.  
That type of comments anger Juan.
- b. María *lo*<sub>i</sub> enojó a Juan<sub>i</sub>.  
María CL-ACC anger to Juan.  
María angered Juan.

In (2b) and (3b), the argument *a Juan* takes the accusative Case as indicated by its coreferentiality with the accusative clitic *lo* 'him'. Contrastively, the Experiencer argument *a Juan* in (2a) and (3a) is coindexed with the dative clitic *le*, 'him'. Apart from this asymmetry in Case marking, another difference that stands out is that, in (2b) and (3b), the subject is an Agent whereas in (2a) and (3a), the subject, or — from a less compromising position — the argument that agrees with the verb, is a Theme. This phenomenon was pointed out by Jaeggli (1984), and the insight was that the agentivity of the subject determines the Case of the other argument of the verb with verbs like *molestar*, 'to bother'. Furthermore, once we have an agentive subject, it would be logical for us to think that *a Juan* in (2b) and (3b) is not an Experiencer anymore but a Patient-Theme, and that (2b) and (3b) are examples of two regular transitive clauses. This line of thought could have been inspired by the analysis of verbs like *molestar* 'to bother', *excitar* 'to excite', or *encantar* 'to love' or 'to cast a spell on', which should have two lexical entries, even if they are homophonous, as shown in (4) and (5). However, for a number of reasons that I will expose below, it would be the wrong approach to extend the [Agent Patient] analysis that applies to (4b) and (5b) to *divertir* and *enojar* in (2b) and (3b).

- (4) a. A Juan<sub>i</sub> le<sub>j</sub> molestan sus hermanitos.  
 To Juan CL-DAT bother his brother-Diminutive-PL  
 His little brothers annoy Juan.
- b. A Juan<sub>i</sub> lo<sub>j</sub> molestan sus hermanitos diariamente.  
 To Juan CL-ACC bother-PL his brother-Dimin-PL. daily  
 His little brothers bother Juan daily.
- (5) a. Ese mago del circo<sub>i</sub> / ? lo encantó a Juan<sub>j</sub>.  
 That magician fromcircus CL-DAT/ACC love-PAST to Juan  
 Juan loved that magician from the circus.
- b. Ese mago lo<sub>j</sub> encantó a Juan<sub>i</sub>.  
 That magician CL-ACCbewitch-PASTto Juan  
 That magician cast a spell on Juan.

In addition to the fact that (4b) and (5b) emphasize a physical activity rather than a psychological process, syntactically, the behavior of the NP *a Juan* in these sentences cannot be paired with *a Juan* in (2b) and (3b).<sup>1</sup> For instance, if the NP *a Juan* in (2b) and (3b) received the Patient Theta-role from the verb as its internal argument, they should be able to appear as subjects in passive constructions. However, the passive structure is only going to be possible with the *molestar* verb-type but not with the *divertir* one, as shown in (6) and (7):

- (6) \* Juan es divertido por María por las noches.  
 Juan be amused by María at the nights  
 Juan is amused by María at nights.
- (7) Juan es molestado por sus hermanos diariamente.  
 Juanbe bother-Part by his brother-Pl daily  
 Juan is bothered by his brothers daily.

Bearing in mind the oppositions between the data above, it seems unlikely that the D-structure objecthood of *a Juan* in the accusative occurrence of *divertir* has any resemblance to that of a direct object in a prototypical transitive sentence, since the two objects do not participate in the same syntactic operations, as shown additionally by the contrast between (6) and (8):

- (8) Juan es odiado por María.  
 Juanbe hate-Part by María  
 Juan is hated by María.

There is also another piece of evidence that argues in favor of the Experiencer thematicity of *a Juan* even when it is marked accusative, as in (2b) or (3b). Possessive pronouns that accompany subject nominals that are derived from Experiencer verbs in coordinated structures, have to be coreferential with the Experiencer argument:

(1) I am subscribing here to the view that *a Juan* is an NP regardless of the Case it takes and that *a* is a pseudo-preposition. For further discussion of this issue, see Suñer (1988) and Franco (1988).

- (9) María<sub>i</sub> odia a Elena<sub>k</sub> y su<sub>j</sub>/<sup>\*</sup><sub>k</sub> odio es por envidia.  
 María hate to Elena and her hatred be by envy.  
 María hates Elena and her hatred is out of envy.
- (10) Pedro<sub>j</sub> enfadó a Juan<sub>k</sub> y su<sup>\*</sup>/<sub>j</sub>/<sub>k</sub> enfado duró meses.  
 Pedro anger-PAST to Juan and his anger last-PAST months  
 Pedro angered Juan and his anger lasted months.
- (11) A José<sub>i</sub> le<sub>j</sub> gustaba María<sub>k</sub> pero su<sub>j</sub>/<sup>\*</sup><sub>k</sub> gusto nunca fue muy bueno.  
 To José CL-DAT like-past María but his taste never be-PAST very good  
 Jose liked Maria by his taste never was any good

In examples (9), (10) and (11), the Experiencer argument has to control the possessive pronoun *su* 'his/her/its/your (formal)/their', nevertheless, one would miss this semantic generalization if *a Juan* were assigned a Patient role in (10).<sup>2</sup>

Furthermore, one may wonder whether all the Experiencer verbs whose Case distribution resembles those of ergative systems exhibit the Case alternation presented in (2) and (3). The answer is negative. There is a group of verbs (in all dialects of Spanish) that mark the Experiencer argument with the dative Case. These verbs belong to the *gustar*-class (*piacere*-class for Belletti and Rizzi):

- (12) María le<sub>i</sub> / \*lo<sub>i</sub> gusta a Juan<sub>i</sub>.  
 María CL-DAT/ACC like to Juan  
 Juan likes María.
- (13) María le<sub>i</sub>/<sup>\*</sup>la<sub>i</sub> agrada a la seleccionadora<sub>i</sub>.  
 María CL-DAT/ACC please to the coach  
 María pleases the coach.

Notwithstanding, as far as morpho-syntactic operations are concerned, there is a construction that singles out the Experiencer verbs with dative-accusative alternations from the rest of Experiencer verbs, namely, the antipassive construction. In this type of structure, one of the verb arguments, normally the one adjacent to the verb in D-structure, gets an oblique Case. For instance, the antipassive counterparts of (2) and (3) would be as follows:

- (14) Juan<sub>i</sub> se<sub>i</sub> divierte con ese espectáculo.  
 Juan-NOM CL-APASS amuse with that show  
 Juan has fun with that show
- (15) Juan<sub>i</sub> se<sub>i</sub> divierte con María.  
 Juan CL-APASS amuse with María  
 Juan has fun with Maria

(2) A crucial test to validate this argument would be to check whether a patient argument can be the only controller with verbs with attested double Theta-grids like those in (4) and (5):

(i) Ese mago<sub>i</sub> lo<sub>k</sub> encantó a Juan<sub>k</sub> y su<sub>j</sub>/<sup>\*</sup><sub>k</sub> encanto duró meses.

That magician cast a spell on Juan and his spell lasted months.

Although *Juan* is the one that has the spell, *mago* can still control the possessive pronoun as the creator of the spell. This type of dual control (split antecedent) is impossible in sentences like (10) or (11).

- (16) Juan<sub>i</sub> se<sub>i</sub> enoja con ese tipo de comentarios.  
 Juan CL-APASS anger with that type of comment-PL  
 Juan gets angry with that type of comment.
- (17) Juan<sub>i</sub> se<sub>i</sub> enojó con María  
 Juan CL-APASS anger-PAST with María  
 Juan got angry at Mary

The clitic *se* has a multiple value in Spanish which ranges from reflexive to passive. I am not going to pursue this issue here, however, the clitic *se* in (14), (15), (16), and (17), is not a true reflexive marker, but a detransitivizer. This *se*, although a pronominal for its features, appears to have the "effects" of a passive morpheme, as pointed out by Osvaldo Jaeggli (p.c.), in the sense that *se* absorbs the Case assignment of the verb to its object, forcing, in this way, the insertion of a preposition in order to avoid a violation of the Case Filter which the second verbal argument would otherwise commit,<sup>3</sup> as in (18) and (19):

- (18) \* Juan<sub>i</sub> se<sub>i</sub> enojó María.  
 JuanCL-APASS anger-PAST María  
 \* Juan got angry María.
- (19) \* Juan<sub>i</sub> se<sub>i</sub> divierte María.  
 Juan CL-APASS amuse María  
 \* Juan gets amused María

Although the antipassive construction is banned from occurring with Experiencer verbs of the *gustar*-type or the *amar*-type (see (20) and (21)) the antipassive pattern can be found with other verbs in the language, as exemplified in (22) with the verb *besar*, 'to kiss'. Even if (22b) conveys some subtleties in the action of kissing, the syntactic process is the same as the one involved in examples (14)-(17):

- (20) \* Juan<sub>i</sub> se<sub>i</sub> gusta de/con/por María.  
 Juan CL-APASS like of/with/by María  
 ? Juan likes with María.
- (21) \* Juan<sub>i</sub> se<sub>i</sub> ama con María.  
 Juan CL-APASS love with María  
 ? Juan loves with Mary
- (22) a. Juan besó a María en la plaza.  
 Juan kiss-PAST to María in the square  
 Juan kissed Mary at the square
- b. Juan<sub>i</sub> se<sub>i</sub> besó con María en la plaza.  
 Juan CL-APASS kiss-PAST with María in the square  
 Juan kissed Mary at the square.

(3) This property of Case absorption is not shared by the anaphoric reflexive *se* which does not affect the verb Case assignment:

(ii) Juan<sub>i</sub> se<sub>i</sub> compró un coche.  
 Juan CL-REFLXbuy-PAST a car  
 Juan bought himself a car.

Much of the ambiguity existing between the anaphoric reflexive *se* and the non-anaphoric one is owed to their ability to appear with one single overt argument. In the reflexive anaphoric construction, the anaphor itself is the dropped argument, whereas in the antipassive there is an indefinite implicit argument which is not phonologically realized. Thus, (23) may have two readings:

- (23) a. Juan<sub>i</sub> se<sub>i</sub> enojó (consigo mismo).  
 Juan CL-REFLX anger-PAST (with himself)  
 Juan got angry at himself.
- b. Juan<sub>i</sub> se<sub>i</sub> enojó (con todos).  
 Juan CL-APASS anger-PAST (with everyone)  
 Juan got angry at everyone.

Two observations ought to be made. First, not all verbs subject to the antipassive construction allow to the same felicitous degree the deletion of the oblique argument, as seen in (24a). Second, the reflexive reading as opposed to the antipassive one is possible for most diadic predicates, including the two other types of Experiencer verbs as in (25):

- (24) a. ??? Juan<sub>i</sub> se<sub>i</sub> interesó.<sup>4</sup>  
 Juan CL-APASS interest-PAST  
 Juan became interested.
- b. Juan<sub>i</sub> se<sub>i</sub> interesó por la política.  
 Juan CL-APASS interest-PAST for the politics  
 Juan became interested in politics.
- (25) a. Juan<sub>i</sub> se<sub>i</sub> adora (a sí mismo).  
 Juan CL-REFLX adore (himself)  
 Juan adores himself
- b. Hoy, Juan<sub>i</sub> se<sub>i</sub> gustó.  
 Today, Juan CL-REFLX like-PAST  
 Today, Juan liked himself.

### 3. The Semantics of the THEME Argument

Many of the different patterns found in structures with Experiencer verbs have been attempted to be explained by a specified subdivision of the role Theme. In this line of analysis, Pesetsky (1987) distinguishes between a Theme that is Cause of Emotion and a Theme that is Object of Emotion. In a subsequent manuscript, Pesetsky (1988) makes an even sharper distinction of the semantic roles that have been subsumed under the label Theme. Thus, Pesetsky's classification of Experiencer predicates is:

(4) As pointed out to me by Carmen Silva-Corvalán, *Juan se interesó* could only be uttered as the answer to one question or in a conversational context:

- (iii) — Nadie se interesó por la conferencia.  
 Nobody was interested in the conference.
- No, Juan se interesó.  
 No, Juan was interested.

- (26) a. predicate (Cause, Experiencer)  
 b. predicate (Experiencer, Target of Emotion)  
 predicate (Experiencer, Subject Matter)

As Pesetsky points out, the new thematic relations in (26) give us a chance to rescue Perlmutter and Postal's Universal Alignment Hypothesis for which Experiencer verbs have been posing a good challenge as regards the alignment between theta roles and grammatical relations. The hypothesis in question states the following:

- (27) UNIVERSAL ALIGNMENT HYPOTHESIS: There exist principles of UG which predict the initial relation borne by each [argument] in a given clause from the meaning of the clause. (Perlmutter and Postal 1984)

Given a classical Theta-grid for Experiencer verbs like (28), the prediction would be that the grammatical function or the Case of the Theme is an accusative object, as in (29). However, this prediction is incorrect for verbs like *gustar* 'to like, as in (30), which have always needed an ad hoc analysis to save the prediction of the UAH.

- (28) Experiencer V: Exp Theme  
 (29) Juan ama a María.  
 Juan loves María.  
 (30) A Juan<sub>i</sub> le<sub>j</sub> gustan los Rollings.  
 To Juan CL-DAT like-Pl the Rolling-Pl  
 Juan likes the Rolling Stones

Advantageously, Pesetsky (1988) would analyze (29) as a predicate of the type (26b) whereas, in his analysis, (30) would belong to the type of predicate described in (26a), allowing us in each case to align the Theta role with the correct grammatical function. Nevertheless, there are some drawbacks in Pesetsky's proposal. First, his analysis brings, as a consequence of the different realizations of the "old" Theme role, a multiplication of lexical entries for verbs that seem to be closely related in Spanish. For instance, Pesetsky (1988) makes a thematic distinction between *to be angry at* and *to anger* as in (31):

- (31) a. Bill was very angry at the article in *The Times*  
 (TARGET).  
 b. The article in *The Times* angered Bill (CAUSE).

The Spanish counterpart of (31) would be (32):

- (32) a. i. Felipe González estaba muy enojado por/con<sup>5</sup> el artículo de  
*El País* (TARGET).  
 OR  
 ii. Felipe González se enojó con el artículo del *El País*  
 (TARGET).  
 b. El artículo de *El País* le enojó a Felipe González (CAUSE).

(5) As a matter of fact, whether we interpret (32a) as a Cause or as a Target may depend very much on the choice of preposition the speaker makes. For instance, one of the basic meanings of *por* is Cause, and this meaning is listed in dictionaries under the lexical entry of *por*, not of *enojar* or *enojarse*.

(32a.i) constitutes an example of the imperfective passive in Spanish. Thus, along the lines of Jaeggli (1986), passive morphology neutralizes the verb property to assign a theta role to its object; then a prepositional head appears to fulfil the functions of Case and Thematic role assignment. The same explanation could also be extended to (32a.ii), as we have seen in (16). The prepositional head *con* 'with' somehow modifies the thematic content of the sentence, yet, this modification is not strong enough as to exclude the interpretation that the article in *El País* caused Felipe González's anger. Although Pesetsky's interpretation of both sentences is tenable, that is, it is plausible that (31b) and (32b) focus on the content of the article rather than on the article itself, *el artículo* in both (32a) and (32b) can be the cause of anger.

Additional data show us that the imperfect passive structure is not always available for Experiencer verbs. Still, Spanish can resort to the antipassive construction as in (33b):

- (33) a. \* Juan no está divertido con las películas de miedo.  
 Juan NEG be-amused-PASS with the film-PL of fear  
 Juan is not amused by scary movies.
- b. Juan no se divierte con las películas de miedo.  
 Juan NEG CL-APASS amuse with the film-PL of fear  
 Juan is not amused by scary movies. (? TARGET)
- c. Las películas de miedo no le divierten a Juan.  
 The film-PL of fear NEG CL-DAT amuse-PL to Juan  
 Scary movies do not amuse Juan. (? CAUSE)

The distinction between Cause and Target in (33b) and (33c) is very hazy, according to my informants' intuitions. Therefore, it is undesirable to have a Lexicon such as (34) in which different forms of an Experiencer verb are listed every time there is a different non-verbal morphological occurrence:

- (34) 1. enojar: Cause Exp  
 2. estar enojado: Exp Target  
 3. enojarse: Exp Target

Moreover, if we did not derive the entries in (34) from a basic form we would fail to capture a process that is taking place in other parts of the language.

An account of the alternation accusative-dative for the Experiencer argument of *divertir* and *enojar* that hinges on the refinement of the role Theme, although plausible, might be rather complicated. For instance, let us say that for the dative realization of *divertir* the agreement subject would be aligned with the role Cause, and that for the accusative *divertir* the subject would be aligned with the role Agent, as illustrated in (35a,b) respectively:





- (37) *María hace divertirse<sub>i</sub> Juan<sub>i</sub> por las noches.*  
 María make amuse-CL-APASS to Juan at the nights  
 María makes Juan have a good time at nights.
- (38) *María hizo enojarse<sub>i</sub> a Juan<sub>i</sub>.*  
 María make-PAST anger-CL-APASS to Juan  
 María made Juan get angry.
- (39) *María lo<sub>i</sub> hizo enojar\*(se)<sub>i6</sub> a Juan<sub>i</sub>.*  
 María CL-ACC make-PAST anger-CL-APASS to Juan  
 María made Juan get angry.

Interestingly, only those forms that show the accusative-dative alternation can be paraphrased with a causative construction. This restriction could also be deduced from the fact that the embedded infinitive verb in the causative paraphrase can only occur with the antipassive *se* form as in (39). Consequently, the types *amar* and *gustar* which lack antipassive structures cannot undergo causativization, hence the ungrammaticality of (40) and (41):

- (40) \* *María hace gustar/se<sub>i</sub> a Juan<sub>i</sub>.*  
 María makes like-CL-APASS to Juan  
 María makes Juan like.
- (41) \* *María hace amar/se<sub>i</sub> a Juan<sub>i</sub>.*  
 María make love-CL-APASS to Juan  
 María makes Juan love.

Having discussed all these data, my claim is that it is not accidental that the Experiencer verbs that take accusative Experiencer arguments have semantic causative correlates: on the contrary, the whole phenomenon seems to be quite natural if we assumed that both constructions have been generated in the same causative phrase marker at D-Structure. This analysis enables us to avoid idiosyncratic solutions with respect to Case Theory like that of Belletti and Rizzi's (1988) Inherent Accusative Case Assignment for the *preoccupare*-class in Italian. This aspect of Belletti and Rizzi's Case theory is problematic for Spanish. For instance, if the Case grids of Experiencer verbs, with the exception of the *amar*-class, were instances of morphological ergativity, as it is generally assumed, the accusative Case would be something anomalous in the Spanish ergative pattern which is nominative-dative, as illustrated in (42) and (43):

- (42) *A Juan<sub>i</sub> le<sub>i</sub>/\*la<sub>i</sub> hacen falta esos libros.*  
 to Juan CL-DAT/ACC have-PL lack this-PL book-PL  
 Juan needs those books.

(6) According to Mario Saltarelli (p.c.), since sentences (37), (38) and (39) are impossible in Italian with the clitic *se*, the occurrence of the reflexive and antipassive clitic *se* in causative structures might be a parameter in Romance that could account for various differences among Romance languages. This is an interesting topic that should be explored in the future.

- (43) A María<sub>i</sub> le<sub>i</sub>/\*la<sub>i</sub> sobran los novios.  
 to María CL-DAT/ACC be left over-PL the boyfriend-PL  
 María has plenty of boyfriends.

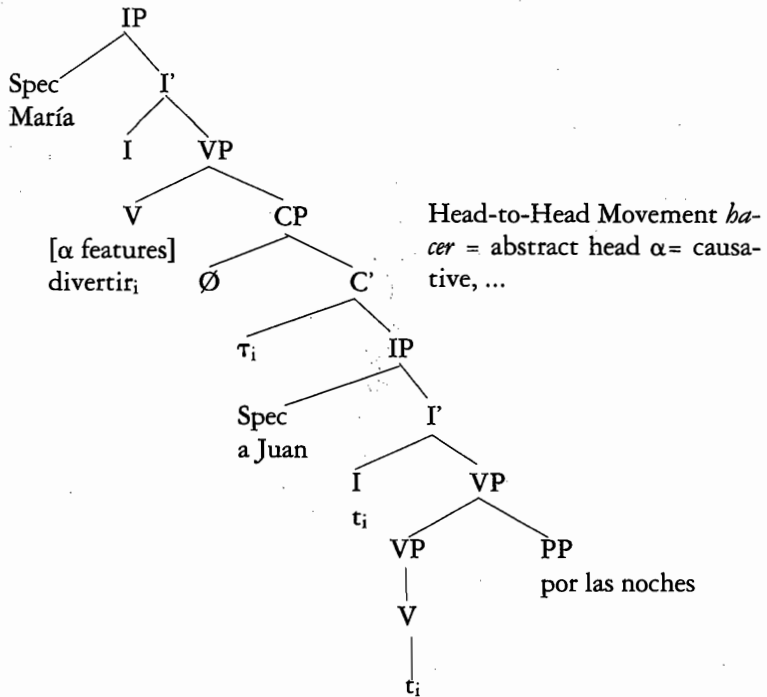
In effect, inherent Case assignment for the accusative is rather suspicious in Spanish, especially when the language has strategies to assign this Case structurally. The causative analysis that I propose below will shed some light on how the accusative Case got lined up with an Experiencer argument in (2b) and (3b). Since the Experiencer was originated as the subject of an intransitive sentence embedded in a causative infinitival construction, as the paraphrases in (37) and (38) may reflect, the accusative Case in *a Juan* results from conforming the predictions in Comrie (1976), that is, in causative constructions, the subject of an embedded intransitive sentence surfaces as an accusative. Yet, if the derivation of (2b) is done by means of Baker's Incorporation, as I will adopt here, a straightforward derivation of (2b) from (37) should be discarded since it may require some extra device in the morphology. Notice, moreover, that (44) would not be a type of incorporation by adjunction of lexical heads, as it is normally realized in Baker's (1988), but by substitution:

- (44) Hacer divertirse → divertir

In the flavor of Zubizarreta (1985), I am going to assume that *hacer* 'to make' does not need to have lexical content. Moreover, one could claim that *hacer* can have a double status within the same lexical entry: for the derivation of (2b), *hacer* would belong to a class of abstract functional heads, like AGR and TENSE, with  $\alpha$  features. However, since *hacer* must assign Theta-roles, it must be in V. A possible alternative would be [*(hacer)*:  $\theta_1$  (Cause),  $\theta_2$  (Event)]. In other words, *hacer* would have a lexical entry, projected as head of VP which would be the same for [*hacer divertirse* and *divertir*]. The only small stipulation is that this verb may be phonologically null. Subsequently, since morphology requires heads to be overt, the Head-to-Head Movement of *divertir* would be triggered.<sup>7</sup> The derivation of (2b) would be as in (45):

(7) Pesetsky himself proposes a predicate raising analysis for the *anger*-type of verbs, yet, his motivations for such an analysis are different from mine. Whereas my main concern is how the accusative Case is assigned to the Experiencer, Pesetsky tries to account by means of Case Theory for the paradox that one cannot have the roles Cause of Emotion and Target or Subject Matter in the same clause even if they are two distinct Theta roles. Thus in regard to (iv) below, Pesetsky (1988: 23) states that after head raising of the lower predicate has applied, the trace left by the verb 'is unable to assign the required inherent Case to its object' (*at the government*). However, in accordance to more recent principles of the PP Theory such as Baker's Government Transparency Corollary, the status of the object in (iv) in terms of Case assignment under government should be fine. This explanation looks as though it were only bound to Experiencer predicates. Notice, moreover, that the Spanish mirror construction in (v) is perfectly correct:

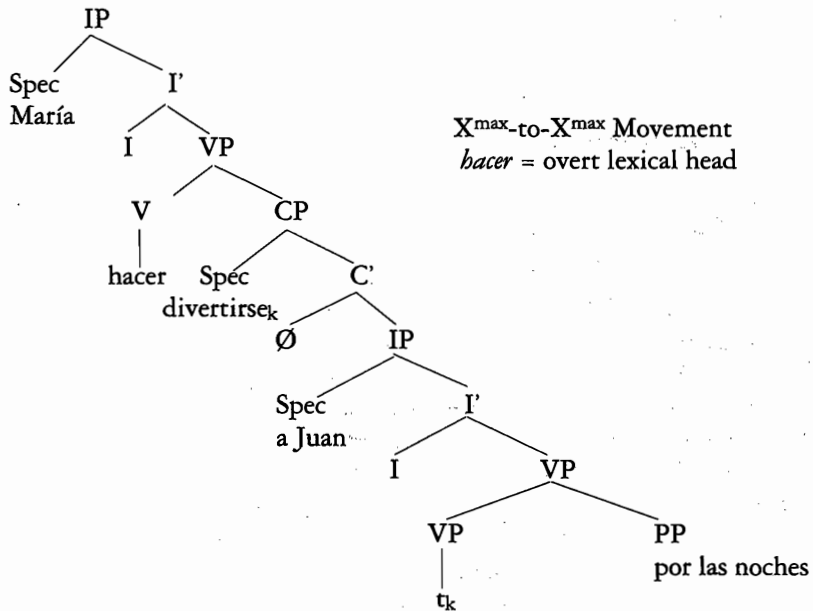
- (iv) \* The article angered<sub>i</sub> [Bill <sub>t</sub> at the government]  
 (CAUSE) Causat + angry (TARGET)  
 (v) El artículo enojó a Bill con la prensa.  
 \* The article angered Bill at the media.

(45) *María divierte a Juan.*

With respect to (37) *hacer* would be a genuine lexical head, as it is made evident by the possibility of having in some dialects an intervening subject between the causative and the embedded verb. Although desirable, it would be too much of a simplistic analysis to derive *divertir* from *hacer divertirse*, since one would have to face the problem of how to regulate the surface of each occurrence at S-structure.

At this point, the regulation might be unnecessary if *hacer divertirse* and *divertir* count as two possible strategies of Spanish causatives, in the same way that one finds causative structures with complementizers and without them. Thus, even if *divertir* and *hacer divertirse* share a similar original configuration at D-structure the derivations that render (2b) and (37) must follow different paths. The former is done via Head-to-Head Movement, as illustrated in (45), whereas the latter is done via  $X^{\max}$ -to- $X^{\max}$  Movement, as illustrated in (46):

(46) *María hace divertirse a Juan.*



A legitimate question to ask is why one does not find [ $IP$  *María* [ $VP$  [ $V$   $\alpha$  f. *se* *divierte*]] [ $CP$  [ $IP$  *a Juan*...]]]. Apart from the Theta role absorption of *se* that would outlaw *a Juan*, one could say that there is a morphological filter that prevents antipassive *se* and  $\alpha$  features from occurring under the same head.

As a further piece of evidence about the naturalness of this process, one can also find in the language other examples of verbs that have nothing to do with Experiencer predicates, but can also be decomposed in a verbal complex of the type seen, that is,  $V \rightarrow$  *hacer* + *Vse*. For instance:

- (47) a. *El padrino casó a la chica con el gobernador.*  
 the godfather marry off-PAST the girl with the governor  
 The godfather married the girl to the governor.
- b. *El padrino hizo casarse<sub>i</sub> a la chica<sub>i</sub> con el gobernador*  
 the godfather make-PAST marry-CL-APASS the girl with the governor  
 The godfather made the girl marry the governor.

Be that as it may, the typology of Experiencer verbs proposed in this paper relies on the kinds of constructions in which these verbs can appear, rather than on the  $\theta$ - and Case-grids that these verbs may have. Without further comment, the typology would be as in (48) and, since it is a first sketch, I have endowed it with some redundancy for the sake of exposition.

## (48) TYPOLOGY OF SPANISH EXPERIENCER VERBS

Class I *amar*: [- Antipassive]  
 [- Functional Causative]  
 [+ Passive]

Class II *divertir*: [+ Antipassive]  
 [+ Functional Causative]

Class III *gustar*: [-Antipassive]  
 [- Functional Causative]  
 [- Passive]

A secondary goal I have attempted to achieve with this taxonomy is to capture the syntactic parallel behavior of these verbs in different dialects of Spanish despite the fact that Case marking may vary from one dialect to the other. For instance, in most varieties of Castilian Spanish, *divertir* and *gustar* have the same Case grid which hides a different syntactic behavior that is otherwise reflected in the typology in (48). Nonetheless, the dative nature of the Experiencer argument of the Castilian *divertir* could be attributed to a merging of Case systems which is taking place in the language with the 'leísmo' phenomenon as a typical feature of this dialect.<sup>8</sup> A potential problem for my analysis might be a sentence like (49) in the dialects that contemplate, additionally, the possibility of having dative Experiencers with verbs of the *divertir*-type. In (49), although *a Juan* is the subject of an intransitive embedded clause in an infinitival causative sentence, and hence should be marked accusative, it is the dative Case that emerges in the incorporated form, as in (3a), the one that is also present in the causative paraphrase:

- (49) Esos comentarios le<sub>i</sub> hacen enojarse<sub>i</sub> a Juan<sub>i</sub>  
 those comment-PL CL-DAT make-PL anger-CL-APASS to Juan  
 Those kinds of comments make Juan get angry.

The occurrence of (49) with a dative Experiencer is indeed puzzling.<sup>9</sup> Nonetheless, one could infer an implicit argument licensed by *enojarse* 'to get angry', that has been underspecified. Example (49) has several readings, since *Juan* can be mad (a) at himself (*consigo mismo*), (b) at the person that made the comment (e.g.: *con el periodista*, 'at the journalist') or (c) even at the whole world (*con el mundo*). Any of the constituents in parenthesis could be added to (49) without affecting the correctness of the sentence. Thus, one could hypothesize that the speakers that produce (49) deem this unrealized argument as a constituent subcategorized by *enojarse* when the time comes to apply the Case assignment rules. Hence, following Comrie (1976), the cross-referentiality of the embedded subject with the dative clitic in (49), stems from the fact that the embedded verb subcategorizes a non-external argument. In

(8) Although there are several degrees of *leísmo*, in broad lines one could say that *leísmo* refers to the replacement of accusative clitics by dative ones in contexts in which the so-called etymological system requires accusative Case.

(9) Perhaps the Case marking anomaly in (49) for non-Castilian dialects could be reduced again to a partial spreading of the *leísmo* phenomenon.

any case, whether or not there is an implicit argument licensed by *se* in (49) is an open issue which deserves further investigation.

Finally, a sample of the lexical entries for Spanish Experiencer verbs is attempted in (50):

(50) THE LEXICON OF SPANISH EXPERIENCER VERBS

amar:	<i>Experiencer</i>	Theme
[ - F.caus.]		
	Nominative	Accusative
divertirse:	<i>Experiencer</i>	(Theme)
[+F. caus.]		
	Nominative	(Oblique)
gustar:	<i>Theme</i>	Experiencer
[ - F. caus.]		
	Nominative	Dative

#### 4. Conclusion

This paper has described mainly the behavior of Experiencer verbs that take accusative Experiencer arguments. I have argued that although these accusatives may occur with Agent subjects, they still preserve their Experiencer status since they never take part in the syntactic processes in which accusative Patients do. I have also shown that the oddity of these Experiencer accusatives has its origin not in their receiving their Case inherently, as Belletti and Rizzi propose for the Italian *preoccupare*, but in the position they occupy at D-structure, that is, the subject of an intransitive embedded sentence in an infinitival causative construction. I justify this analysis by putting forward the unnaturalness of inherent accusative Case when compared to other instances of split in the nominative-accusative Case system in Spanish and by showing the existence of causative structures semantically parallel to each of these particular verbs. Finally, a GB account of the generation of these verbs is developed via Baker's Incorporation in interaction with the idea of having an abstract causative head.

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# Inalienable Possession and Locative Aspect

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## 1. Introduction<sup>1</sup>

In the "inalienable possession" (IP) structures (1) through (4), an NP denoting a body part is obligatorily associated with a [+animate] NP somewhere else in the clause:

- (1) Jean lève la main                      (3) La tête lui tourne  
(2) Je lui prends la main                (4) Jean le frappe sur la tête

In my opinion, an adequate explanation of these structures must solve three problems simultaneously.

I. The syntactic structure: is it possible to generate (1) through (4) within the framework of Chomsky's (1981) modular system without referring to the semantics of inalienable possession?

II. The parameters: why do sentences (1) through (3) have no direct correspondance in English?

- (1') \*John raises the hand                (2') \*I take her the hand  
(3') \*The head turns to her

By identifying *lui* in (2) and (3) with the benefactive dative in (5a), one might attribute the absence of (2') and (3') in English to the absence of (5b) in this language:

- (5) a. Je lui ai cassé le vase.                b. \*I broke her the vase.

This hypothesis, however, cannot explain the unacceptability of (1'), specially since sentences like (1') are acceptable in English if the NP denoting the body part has an indefinite or empty determiner:

- (6) a. She would't lift a/\*the finger to help.  
      b. She raised an/\*the eyebrow.  
      c. They joined (\*the) hands.

Unlike (1) through (3), (4) does exist in English:

- (4') John hit him on the head

(1) I would like to thank Anne Zribi-Hertz for her comments and encouragement during the development of this research.

III. What can account for the strict lexical constraints on PI constructions?<sup>2</sup> They require a verb of action (cf. (8)) and a [+animate] NP (cf. (10) in Wierzbicka 1988). The particular verb selected differs from one IP context to the other (cf. (7a) vs. (9b), and (7b) vs. (8a)). Only body parts can appear in them (cf. (11)):<sup>3</sup>

- |  |   |
|--|---|
| (7) a. Jean lève la main. (=1)               | b. *Jean lave la main.                    |
| (8) a. Je lui lave les mains. (cf. (2))      | b. *Je lui admire les mains.              |
| (9) a. La tête lui tourne. (=3)              | b. *La main lui lève.                     |
| (10) a. Fido bit John on the leg. (cf. (4')) | b. *Fido bit the table on the leg         |
| (11) a. Elle lui pince les fesses. (cf. (2)) | c. *Elle lui prend la veste. <sup>4</sup> |
|  | b. *Elle lui pince le fils.               |

2. In Guéron (1983, 1986); I proposed that IP is based on anaphoric binding.

2.1 On the basis of (12), I hypothesized that the definite article may have the status of a pronoun in French:

(12) Pronouns are made up of  $\phi$ -features for number, gender and person

A French child could easily identify the determiner as a pronoun from data like (13a); (13b), on the other hand, would demonstrate that the definite article is not a pronoun in English:

- (13) a. le livre, la rose, les livres.  
b. the book, the rose, the books.

The definite article in IP would be equivalent to PRO, a pronominal anaphor subject to control theory. Thus, the structures in (14) and (15) would be parallel:

- (14) a. Jean<sub>i</sub> lève (<sub>NP</sub> la<sub>i</sub> main).  
b. Jean<sub>i</sub> veut (<sub>CP</sub> PRO<sub>i</sub> partir).  
(15) a. Jean lui<sub>i</sub> prends (<sub>NP</sub> la<sub>i</sub> main).  
b. Jean lui<sub>i</sub> dit (<sub>CP</sub> de PRO<sub>i</sub> partir).

Since PRO is bound within the government category in its domain (Manzini 1983), the NP which contains it counts as an anaphor for binding theory. It follows that IP is subject to the constraints on anaphoric binding: (i) obligatory antecedent within the clause (cf. (16)); (ii) obligatory locality relation with the antecedent (cf. (17)); (iii) obligatory c-command relation between antecedent and anaphor (cf. (18)):

- (16) a. J'ai acheté une table ce matin. Le pied est déjà cassé.  
b. J'ai vu Jean ce matin. \*Le pied est malheureusement cassé.

(Azoulay 1978)

(2) I owe to Nicolas Ruwet's influence the desire to give lexical variation its proper place. As he demonstrated (cf. Ruwet 1972, Ch. 5, or Ruwet 1984, for example), a syntactic analysis based on few examples runs the risk of falling quickly apart when confronted with a wider lexical choice.

(3) The constraints quoted here could be violated, as long as the interpretive rules in (48) are respected. I cannot develop this point here.

(4) (11c) is acceptable if *lui* is interpreted as benefactive. A possession relation between *lui* and *la veste* is then pragmatically possible without being obligatory, and the definite article alternates freely with a demonstrative, possessive or indefinite determiner.

(17) \*Marie veut (que je prenne la main).

(18) a. Jean a levé la main.      b. \*La main a été levée par Jean.

Like other anaphors, the NP denoting a body part doesn't have any reference: it cannot be combined with a descriptive adjective:

(19) Elle a levé la (\*grande) main. (Kayne 1975)

2.2 This analysis presents some problems which led to the formulation of cumbersome auxiliary hypotheses.

2.2.1 If *les mains* is an anaphor in (20a), the sentence should be grammatical, just like (20b) and (20c):

(20) a. \*Jean lave les mains.      b. Jean se lave  
           AG      TH                      c. John washes himself

I proposed that body part and antecedent make up a single argumental chain in the syntax. (20a), where an A-chain is associated at the same time with the Agent theta-role of the subject and the Theme theta-role of the object, is then excluded by the theta-criterion, which requires that each chain receives a single theta-role.

2.2.2 The exclusion of (20a) by the theta-criterion makes the grammaticality of (21b) problematic, since a single A-chain receives the Benefactive and Theme theta-roles:

(21) a. \*Jean lave les mains      b. Jean lui lave les mains.  
           AG      TH                      BEN      TH

I therefore distinguished primary theta-roles such as Agent and Theme, selected by the verb, and secondary theta-roles like Benefactive, which are not selected. The theta-criterion would take into account only primary theta-roles, correctly excluding (21a) but not (21b).

2.2.3 But, as opposed to (21a), (22) is acceptable, even though a single chain receives the theta-roles Agent and Theme:

(22) Jean lève la main. (= (1))  
           AG      TH

I proposed that (22) undergoes reanalysis: verb and object are analyzed as a single verb at the level of Logical Form (LF). This verbal complex absorbs the Theme theta-role, so that the verb has a single argument at LF, as required by the theta-criterion. Constraint (23), following Hatcher (1944) and Kayne (1975), permits reanalysis in (22) but not in (21a):

(23) Reanalyzed V + NP must be interpretable as a simple natural gesture

2.2.4 If the contrast between French and English with respect to (1) through (3) follows from the pronominal status of the French determiner, the absence of contrast between the two languages in the case of (4) implies that the determiner does not have a pronominal function there. I associated (4) and (4') with the structure in (24), where the article has a generic interpretation and there is a noun complement trace which functions as an anaphor bound by *le/bim*:

- (24) a. Je l<sub>i</sub>'ai frappé sur [<sub>NP</sub> la tête t<sub>i</sub> ]  
 b. I hit him<sub>i</sub> on [<sub>NP</sub> the head t<sub>i</sub>]

3. Subsequent research proposed alternative hypotheses, briefly summarized in this section.

### 3.1 Junker and Martineau's (1987) conceptual hypothesis

3.1.1 According to Junker and Martineau, by making the interpretation of IP dependent on syntactic binding, I would be putting the cart before the horse, as it were. On the contrary, syntactic structures would themselves be filtered by semantic concepts preestablished in the human brain. Filter (25) would distinguish (1) from (2).

- (25) i. Is NP<sub>2</sub> included in NP<sub>1</sub>? If so, then (1) or (2).  
 ii. Is V + NP *selfdoable*? If so, (1); otherwise, (2).

(1) is acceptable because *la main* gives the impression of raising itself independently, while (2) is used because a hand cannot take itself independently.

3.1.2 A conceptual grammar supposes the existence of a series of syntactic constructions each filtered by a concept. If such a hypothesis is to have any content, it must include a theory of the linguistically relevant conceptual structure, or at least a list of such concepts. Unfortunately, this component is missing in Junker and Martineau's grammar.

From an empirical point of view, the concept of inclusion does not account for the contrasts illustrated in (10) and (16): the leg of a table is as much included in the table as the leg of a man is included in a man. The notion of "*selfdoability*" is inadequate clearly for (1): the hand does not raise itself: it is Jean who raises it. Closer to the notion of *selfdoability* is sentence (9a), but, as (9b) shows, (1) is excluded under this form. Finally, as Ruwet (to appear) points out, a conceptually based grammar cannot account for the differences among languages. One cannot attribute the ungrammaticality of (1) to (3) in English to the absence of "inclusion" from the list of concepts relevant to sentences which mention body parts: the grammaticality of (4) suggests that the same concept is valid in English and in French. The problem is why this concept is associated with (1) through (4) in French but only with (4) in English. But this problem is purely syntactic.

### 3.2 Tellier's (1988) Predication Hypothesis

3.2.1 According to Tellier, IP hinges not on (anaphoric) A-binding, but on (quantificational) A-bar binding and Predication. Ns such as *père* 'father', *bras* 'arm', or parts of a whole assign an 'inalienable possession' theta-role to their complement. An empty category in the complement position counts as a variable bound by an operator within the SPEC,DP position, comparable to the SPEC,CP position in the clause. The operator receives a referential index via Predication, producing structures like (26):

- (26) NP<sub>i</sub> ... [<sub>DP</sub> OP<sub>i</sub> D N t<sub>i</sub>]

The phenomenon of parasitic gaps supports the hypothesis of a parallelism between CP and DP:

- (27) a. ?Un livre que j'ai aimé avant de lire.  
 Un livre<sub>i</sub> [<sub>CP</sub> OP<sub>i</sub> [<sub>CP1</sub> que [j'ai aimé t<sub>i</sub>]]] [avant de [<sub>CP2</sub> OP<sub>i</sub> [<sub>PRO</sub> lire t<sub>i</sub>]]]

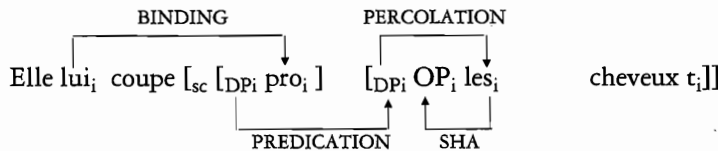
- b. Quelqu'un<sub>i</sub> dont le bras est plus long que la jambe  
 Quelqu'un<sub>i</sub> dont [<sub>DP</sub> Op<sub>i</sub> le bras t<sub>i</sub>] est plus long que [<sub>DP</sub> Op<sub>i</sub>  
 la jambe t<sub>i</sub>].

IP constructions would be parallel to the “easy to please” structure (28), where an operator within CP is identified by the subject of the matrix clause:

- (28) Mary is easy to please  
 Mary<sub>i</sub> is [<sub>AP<sub>i</sub></sub> easy [<sub>CP</sub> Op<sub>i</sub> [<sub>IP</sub> PRO to please t<sub>i</sub>]]]

More exactly, (2) is associated with structure (29). A verb like *prendre* ‘take’ or *couper* ‘cut’ subcategorizes optionally for a small clause (sc). The DP subject of the sc (the chain *lui* - pro) transmits a predication index to the DP predicate. The index percolates from DP to D, which transfers it to the operator in SPEC,DP by Specifier-Head agreement (SHA):

- (29) Elle lui coupe les cheveux. (=cf. (2))



3.2.2 Without denying that an empty category in SPEC,DP may be interpreted as an operator under certain conditions, I claim that it cannot be interpreted as such in structures (1) and (3).

(i) Wherever the existence of a wh-element in Comp or of a clear quantificational interpretation makes the existence of an operator in DP plausible, English and French do not differ from each other. The sentences in (30) are parallel to those in (26):

- (30) a. ?A book [which I liked t ] before [reading t ]  
 b. ?Someone I like [the legs of t ] better than [the arms of t ]

And DP may contain a generic operator in both languages:

- (31) a. [OP le bras t ] est une partie importante [du OP corps t ]  
 b. [OP the arm t ] is an important part of [OP the body t ]

If, as these facts suggest, where SPEC,CP contains an operator in French it also contains one in English, the hypothesis of an A-bar chain within DP could account for (4), where the two languages don't differ, but not for (1) through (3), where they do. Moreover, the hypothesis according to which (2) has a structure of type (28) also predicts the grammaticality of (2'), since (28) also exists in English.

(ii) Predication structures are exempt from the lexical constraints which bear upon IP. Stative verbs which don't pose any problem for (28) are unacceptable in (2):

- (32) a. Je lui pince/\*aime/\*reconnais la main (cf. (2))  
 b. John is easy to pinch/like/recognize (cf. (28))

And unlike IP, an NP extracted from another nominal by wh-movement does not necessarily denote a body part:

- (33) a. Un garçon dont elle a pincé les fesses/le fils/la veste  
 b. Elle lui a pincé les fesses/\*les fils/\*la veste (= (11))

(iii) ‘Long distance’ binding of a variable by an operator is possible, but the relation between “possessor” and body part is strictly local:

- (34) a. Quelqu’un<sub>i</sub> dont il a promis [d’épouser [la fille t<sub>i</sub>]]
- b. \*Je lui<sub>i</sub> ai promis de [prendre [la main t<sub>i</sub>]]

(iv) The contrast in (35) suggests that quantified DPs have a referential value which the corresponding IP nominal lacks:

- (35) a. Il a levé les (\*beaux) yeux
- b. Un garçon dont elle admire les (beaux) yeux.

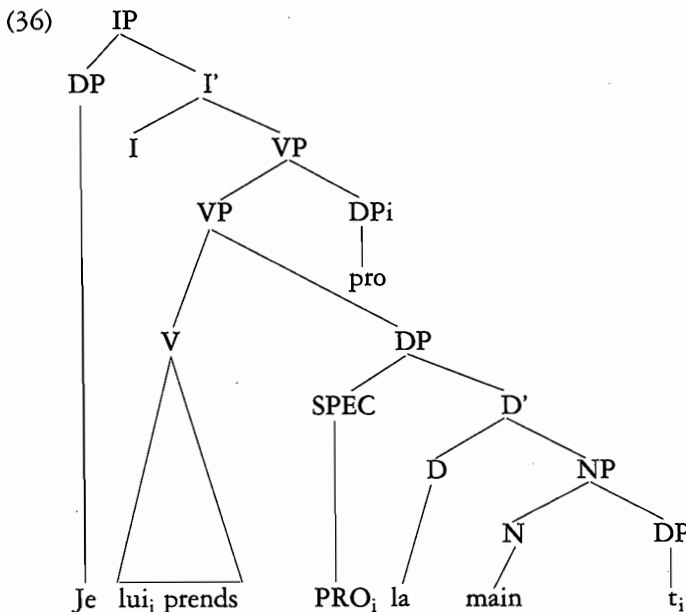
4. My new theory of IP (i) adopts the DP structure posited by Tellier, (ii) retains the analysis of IP as based on anaphoric binding, (iii) attributes the IP contrast between French and English to a syntactic characteristic of the determiner and (iv) eliminates the auxiliary hypotheses of section 2.2.

4.1 *The syntactic structure*

Let us keep structure (26), replacing the operator in SPEC,DP by a PRO anaphor:

- (26’) NP<sub>i</sub> ... [DP PRO<sub>i</sub> D N t<sub>i</sub>]

The D-structure of (2) is as in (36), which contains two A-binding configurations in addition to the (lui<sub>i</sub>;pro<sub>i</sub>) chain: on one hand, PRO<sub>i</sub> in SPEC,DP binds a trace; on the other, PRO<sub>i</sub> itself is controlled by DP<sub>i</sub>:



4.2. *The parameters*

I propose that SPEC,DP is an A'-position in (37) but an A-position in (38):

(37) l'homme dont j'aime [<sub>DP</sub> OP<sub>i</sub> les yeux t<sub>i</sub>]

(38) Elle lui a fermé [<sub>DP</sub> PRO<sub>i</sub> les yeux t<sub>i</sub>] d'un baiser

The A or A' status of SPEC,DP would depend on the referential status [ $\pm R$ ] of D:

(39) SPEC,DP is part of an A'-chain if D has [+R] referential features.

The determiner *les* would be interpreted as [+R] in the quantification structure (37) and as [-R] in the binding structure (38). If we assume, on one hand, that the [ $\pm R$ ] status of the determiner fixes the [ $\pm R$ ] interpretation of DP, and, on the other, that only a [+R] DP allows a descriptive adjective, this analysis of (38,39) predicts the contrast in (40):

(40) a. l'homme dont j'aime [OP<sub>i</sub> les (beaux) yeux t<sub>i</sub>]

b. Elle lui a fermé [PRO<sub>i</sub> les (\*beaux) yeux] d'un baiser

The difference between French and English with respect to IP would be reduced to a difference in the status of the definite article: the definite determiner in English is always [+R], whereas it is [ $\pm R$ ] in French.

In previous work, I proposed that the definite determiner is not a pronoun in English. However, *the* belongs to the same morphological paradigm as *this* or *that*, which are pronominal. Moreover, *the* was an invariable relative pronoun in Old English and its status in modern English may not be so different.

Following Tasmowski and Verluyten (1982), I distinguish deictic pronouns, which are always referential, from grammatical pronouns, which contain non-referential pronominal features. Although the English definite determiner is not a demonstrative like *this* and *that*, I assume that it shares with the relative pronouns *what*, *who*, etc. the feature [+D] (=deictic), which entails the [+R] (=referential) interpretation of the determiner and the operator status of any element in SPEC, DP, according to (39). French determiners, on the contrary, may also be [-D] and therefore [-R].

The [-R] interpretation of French determiners would correlate with their grammatical gender feature. The contrast in (41) shows that gender is grammatical in French DPs but referential in English DPs: while the feature 'masculine' of the specifier *son* in (41a) does not prevent the pronoun from having a feminine binder, the possessive pronoun in (41b) must have the same gender feature as its binder:

(41) a. Chaque fille<sub>i</sub> a pris [NP son<sub>i</sub> sac].

f. m. m.

b. Every girl<sub>i</sub> took [her<sub>i</sub> bag]

f. f.

The well-formedness status of structures (1) to (3) would depend on the existence in the language of an article bearing grammatical features, compatible with the interpretation of an empty category in SPEC, DP as an anaphor.

### 4.3 Lexical constraints

Since A-binding relates two argumental positions, the hypothesis that IP depends on A-binding entails that  $PRO_i$  and  $NP_i$  are arguments in (36). However, neither  $t_i$  nor  $NP_i$  are arguments at D-structure.

I assume that a [+concrete] N does not assign theta-roles, and therefore  $t_i$  is not the argument of N in (36), but rather an element adjoined to NP. The fact that French uses the same genitive pronouns, *en* and *dont*, to bind the trace of an adjunction to VP in (42a) and a trace in DP in (42b) would be explained by the identical status of both traces:

- (42) a. (i) l'homme dont<sub>i</sub> [CP je parle t<sub>i</sub>]  
 (ii) j'en<sub>i</sub> parle t<sub>i</sub>  
 b. (i) l'homme dont<sub>i</sub> j'ai vu [<sub>DP</sub> la main t<sub>i</sub>]<sup>5</sup>  
 (ii) j'en<sub>i</sub> ai vu [<sub>DP</sub> la main t<sub>i</sub>]

$DP_i$  is an adjunction to VP, of the form  $\bar{a} NP$ . Like all adjunctions, it is optional, as in (43a) or (43b). It only becomes obligatory where there is an anaphor or a variable to bind, as in (43c) or (45c) below, respectively.

- (43) a. Je (lui) prends sa bicyclette      c. Je \*(lui) prends la main  
 b. Je (lui) parle

I propose that  $DP_i$  is a place complement which determines, by means of control, the interpretation of the chain ( $PRO_i$ ,  $t_i$ ) as a place too.<sup>6</sup>

The hypothesis that a place may have the feature [+human] is necessary independently of IP. According to Bouchard (to appear), the experiencer NP in psych structures like (44) is a place:

- (44) a. Marie<sub>i</sub> fait peur a Jean<sub>j</sub> (Source<sub>i</sub>, Goal<sub>j</sub>)  
 b. Jean<sub>i</sub> a peur de Marie (Place<sub>i</sub>)

In Guéron (1986), I attributed the same place status to *there* in (45a), *Marie* in (45b) and *lui* in (45c): the location functions as an existential operator which binds an indefinite NP interpreted as a variable:

- (45) a. There is a problem  
 b. Marie has brothers/a cold/nice eyes  
 c. Je lui<sub>i</sub> crois [t<sub>i</sub> un amant dan chaque port]<sup>7</sup>

The identification of  $t_i$  and  $DP_i$  in (36) as adjunctions is compatible with the hypothesis that IP relies on A-binding only if adjunctions may acquire argument status in the course of a derivation. I propose that such change of status is possible within the conditions specified in (46):

- (46) (i) An adjunction is *syntactically* integrated in the argumental structure of IP if it is T-marked (see Guéron and Hoekstra 1989), i.e. if it is governed by T+V or coindexed with T+V.

(5) On *dont* see Godard (1988).

(6) The intuition that the possessor in IP is a place is also shared by Coupas (ms.).

(7) See Ruwet (1982), chapter 5.



- (ii) An adjunction is *semantically* integrated in the argumental structure of XP if it plays a role in the event structure (E-structure) of XP.<sup>8</sup>

I assume that in French only NPs introduced by the (abstract or phonologically realized) preposition *à* may satisfy (46i), *à* being the only locative P transparent to government of NP by T+V. In (36), the syntactic integration of the adjunctions is done by T-marking: DP<sub>i</sub> is T-marked by V+T from the INFL position. PRO<sub>i</sub> acquires T-marking either indirectly, by agreement with D, whose maximal projection DP is T-marked by V, or indirectly by inheriting T-marking from NP<sub>i</sub> via control.

Control of PRO by DP<sub>i</sub> associates (36) with the following partial interpretation:

- (47) The place where body parts attach has the same referent as the place where the event denoted by VP takes place.

(47) represents the core of IP: in these structures, the human body is interpreted as a geographical place where an event identified as the transition from one spatial configuration to another takes place. (47) accounts for the contrasts in (11). In order for the body to be identified as a place, the spatial transition can only affect a part of this body: any other Theme would extend beyond the boundaries of the place in the course of its trajectory. Thus, if I take somebody's *hand*, in the only interpretation relevant to IP, the whole action takes place within the borders defined by that body. But if I take his/her *daughter* or *coat*, the physical separation between an entity's body and its daughter or clothing entails that the movement of the Theme in the space/event necessarily extends beyond the boundaries of its body. Then interpretation (47) fails and the sentence is not acceptable.

The rules in (48) and (49) define the locative aspect of a sentence from the syntactic position of the integrated place with respect to VP. (48) defines an *extensional* locative aspect and (49) a *punctual* locative aspect:

- (48) If the place minimally c-commands VP at S-structure, the place has a spatial extension, and the spatial borders of the place coincide with the initial and final spatial boundaries of the event denoted by the VP.
- (49) If the place does not c-command VP, it does not have a spatial extension and it coincides with either the initial spatial boundary of the event or its final boundary.

A place which is not integrated within the E-structure of the sentence functions as an operator having under its scope either a VP, as in 'I live in Paris' or an indefinite NP, as in (45a-c).

Benefactive datives are [+human] places subject to (48). [+human] places may have a spatial extension, either geographic, if perceived from the outside, as in (2), or

(8) (46ii) permits the interpretation of an adjunction to an N which denotes an event, like *destruction*, as a semantic argument.

psychological, if perceived from the inside as a container of emotions or feelings, as in (44b).

(50) below satisfies (48): the place has a psychological extension and the event denoted by VP has initial and final spatial boundaries, those described by the trajectory of a hand in space. The sentences in (51), on the other hand, do not satisfy (48): (51a) because an intransitive verb denotes an activity without a final spatial boundary, (51b) because an unaccusative verb denotes an event without an initial spatial boundary, and (50c) because VP denotes a state, which does not have any spatial boundary at all:<sup>9</sup>

(50) Jean lui a frappé son fils

- (51) a. \*Marie lui court                    c. \*Marie lui reconnaît Jacques  
       b. \*Marie lui arrive

The acceptability of the sentences in (52), which contain the same verbs as those in (51), shows that the constraints at work in (51) are interpretive rather than lexical. (52a) is acceptable because the event denoted by VP has a final spatial boundary, in agreement with (48), and (52b) is acceptable because the dative pronoun itself functions as a final boundary (Goal), in accordance with (49). In (52c) the place is not subject to (48) on (49), but functions as an existential operator, as in (45c):

- (52) a. Marie lui court les cent mètres  
       b. Il lui<sub>i</sub> arrive un malheur t<sub>i</sub>  
       c. Je lui<sub>i</sub> reconnais [ t<sub>i</sub> des qualités]

A structure with an integrated place is usually subject either to (48), like the benefactive structure (50), or to (49), like the psych structure (44a). IP structures have the unique property of being subject both to (48) and (49).

In (36), DP<sub>i</sub>, which c-commands VP, is subject to (48), whereas PRO<sub>i</sub>, which does not c-command VP, is subject to (49). Since the referent of DP<sub>i</sub> is identical to that of PRO<sub>i</sub>, according to (47), it must be situated at one of the spatial boundaries of the event and yet encompass its initial and final boundaries. The transitive sentence (36) satisfies this double requirement: the place is located at the initial spatial boundary of the event while encompassing its entire spatial expanse. An unaccusative sentence like (53b) may satisfy (49): here the place of the action and its initial boundary define a single spatial point without an extension:

- (53) a. tourne [<sub>DP</sub> PRO la tête t] lui (D-structure)  
       b. Il<sub>i</sub> tourne [<sub>DP</sub> PRO la tête t] t<sub>j</sub>

The rules in (48), (49) require that the place and the event have the same locative aspect, whether extensional or punctual. The contrast between (53a) and (54) follows from this constraint: in (54), the event has a spatial extension, but the place is reduced to a single point, creating an incoherent interpretation:

(9) For a distinction between event and state, see, for example, Vendler (1979).

(54) \*Il lave la tête

(55), derived from (53a) by raising the direct object should be equally excluded: the place has a spatial extension, while the VP denotes a punctual action:

(55) a. La tête lui tourne      b. [<sub>DP</sub> PRO la tête t] lui; tourne t t<sub>i</sub>

(55) is excluded, like (51b), if the event is located within a geographical space external to the body. But it is acceptable if the place is interpreted as a container of feelings (cf. (44b)), and the action as a metaphorical process, an endless spinning around of the theme which fills the mental container from one end to the other. This interpretation creates an extensional locative aspect which satisfies (48).<sup>10</sup>

Locative aspect is to be distinguished from temporal aspect: (56a) has a punctual temporal aspect and (56b) a durative temporal aspect. But in both cases, the event stretches over space, satisfying (48):

(56) a. Je lui prends la main      b. Je lui brosse les cheveux

And (53b), in spite of its extensional locative aspect, does not have, as a description of a state, any temporal extension.

3.4. (4) and (4') would be associated with the predication structure (57): a locative PP adjoined to VP is integrated within the argumental structure, and an animated NP identifies an operator within SPEC,DP. In future work, I will show that the interpretation of (56) is analogue to that of (36): the body part is the Theme and the animated NP is the Place:

(56) Fido bit John<sub>i</sub> [[<sub>PP</sub> on [<sub>DP</sub> Op<sub>i</sub> the<sub>i</sub> leg t<sub>i</sub>]]

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(10) In "Spleen", Baudelaire appeals explicitly to the locative perspective to which I attribute the well-formedness of (55), according to which the human skull is seen as a container filled with objects:

Un gros meuble à tiroirs encombré de bilans,

...

Cache moins de secrets que mon triste cerveau.

C'est une pyramide, un immense caveau,

Qui contient plus de morts que la fosse commune.

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# Lexical Categories and the Projection of Argument Structure

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## 0. Introduction<sup>1</sup>

The Linguistic entity commonly referred to by means of the term “argument structure” is fundamentally a *syntactic* structure. At least, that is the viewpoint we have adopted in carrying out lexicological research based on the notion that syntax is projected from the lexicon, a notion which we believe to be at the very core of the Projection Principle, so central to the work currently being done in the theoretical framework to which we are most closely allied (cf. Chomsky 1981, 1986a). In this paper, we would like to be rather explicit about what we think argument structure actually is within our conception of the lexicon and the projection of syntactic structures.

The concept theta-role, or thematic role, holds a central position in current work on the theory of grammar. A verb is said, for example, to “assign” theta-roles to its (direct) arguments, and various formal representations have been proposed to express this relation (e.g., that developed by Stowell 1981). A number of scholars have noted that theta-roles are assigned in a manner which corresponds to a hierarchical organization, according to which certain arguments (associated with certain theta-roles) are “higher” than others (e.g., Bresnan and Kanerva 1989, Carrier-Duncan 1985, Grimshaw 1990, Larson 1988). While there is some disagreement as to what the hierarchical arrangement of theta-roles is in fact, particularly in the “middle” and “lower” ranges of the hierarchy, the results of very careful and detailed investigations on a number of languages converge to a remarkable degree. The hierarchy of roles set out by Grimshaw 1990, depicted in (1) below, exemplifies a system utilized in a fully worked-out theory of argument structure – other published hierarchies differ from this one in the positioning of the theme role (above GOAL, typically):

- (1) AGENT > EXPERIENCER > GOAL/SOURCE/LOCATION > THEME

(1) We wish to thank Morris Halle for very helpful criticism of this paper. And we are especially indebted to Mika Hoffman and Tova Rapoport for discussions of particular issues and problems which they have seen in the proposals being entertained here. Many of their ideas have been used here, though they are not to be held responsible for any conceptual or factual errors which remain. This paper is a revised version of the final section of a longer work, Hale and Keyser, 1991, distributed by the MIT Lexicon Project.

Among the observable correlates of the hierarchy, for example, is the association of thematic roles with the subject function in syntax (agent, otherwise experiencer, and so on). Moreover, assuming the correct hierarchy, the correlations are universal – that is, they conform to Baker’s “Uniformity of Theta Assignment Hypothesis” (UTAH), according to which, for any two natural languages, or for any two items within a single language:

- (2) Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure (Baker 1988: 46).

While we feel that the grammatical effects commonly attributed to the thematic hierarchy are genuine, we are not committed to the idea that the hierarchy itself has any status in the theory of grammar, as an autonomous linguistic system, that is. And we are sympathetic with the view (expressed by a number of scholars, often tacitly or indirectly) which questions the autonomous existence of theta-roles as well.

In what follows, we would like to address two questions which these matters suggest to us:

- (3) (a) Why are there so few thematic roles? (b) Why the UTAH?

The number of thematic roles suggested in the literature is rather small. And it seems to us correct that the inventory is so small. If so, why is it so? Why aren’t there twenty, or a hundred theta-roles? Surely if thematic roles exist, there could, in theory, be any learnable number of them. And why are thematic roles “assigned” according to a universal hierarchy and in conformity with the UTAH? Why isn’t the assignment random? Or, at least, why isn’t it as nearly random as would be allowed by limitations relating to learnability? This is the content of our questions, and we will be concerned to suggest partial answers to them.

Before proceeding to the central topic, we wish to make a few comments concerning our background assumptions. This paper assumes familiarity with the analysis of thematically complex verbs found in Larson (1988) and with Baker’s work on incorporation (Baker 1988). Our ideas concerning argument structure grow out of an examination of denominal and de-adjectival verbs, like *shelve (the book)*, *saddle (the horse)*, *clear (the screen)*, etc., whose formation appears to be limited by general principles of syntax (cf. Hale and Keyser 1991 in press, Walinska de Hackbeil 1986, 1989). We sometimes refer to the process involved in their formation by means of Talmy’s term “conflation” (Talmy 1985), and we assume that it is to be equated with incorporation and, therefore, with the head-movement instance of the general syntactic rule move-alpha. It is, therefore, subject to the Head-Movement Constraint (Travis 1984, Chomsky 1986b). Denominal and de-adjectival verb formation, while subject to constraints which are fundamentally syntactic in character, is not “productive” in the sense normally attributed of syntactic processes. For this reason, we speak of a “level” of l-syntax (i.e., lexical syntax) at which these formations take place. Although our exposition sometimes opposes this level to the conventional notion of “syntax”, which we term s-syntax (for d-/s-structure and LF representations), we do

not wish to be irretrievably condemned to the view that l-syntax and s-syntax are really distinct. This is a separate question, which we do not attempt to answer here. Its resolution will depend on a number of things, including not only the question of the well-known asymmetry in productivity, but also the important question of whether the full syntactic projections defined for l-syntactic representations, sometimes called Lexical Relational Structures, are “visible” at d-structure. Essentially, this is the question of whether traces of l-syntactic head-movement, or conflation, are visible at d-structure. In any event, the issue is not particularly germane to the views which we wish to examine here.

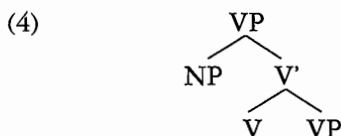
### 1. Categories and projections

The linguistic elements which we believe to be fundamental in answering the questions in (3) above are in fact nothing new. They are (1) the lexical categories, or parts of speech, and (2) the projection of syntactic structure (i.e., phrase structure, or X-bar structure) from lexical items.

For our purposes, we will assume the traditional categories V, N, A, P (cf. Chomsky 1970), and we will continue to employ this traditional alphabetic notation for them. Furthermore, we assume that this exhausts the inventory of major lexical categories. The fact that the inventory of categories is restricted in this way is relevant, we will claim, to understanding why the inventory of “thematic roles” is also small. In part, the answer to the first of the questions posed above will reduce to another question – namely, assuming it to be (approximately) true, why are the lexical categories just V, N, A, P? We do not pretend to have an answer to this question and assume simply that it has something to do with how certain basic “notional” categories (e.g., event, instance or entity, state, and relation) are expressed in linguistic form. But given this restricted inventory, we are interested in the possibility that there is a relationship between that and the similarly impoverished inventory of thematic roles.

Our understanding of the second of the two factors we have taken to be directly relevant to our questions, i.e., projection of syntactic structure, is due in some measure to Kayne’s discussion of Unambiguous Paths (Kayne 1984) and to Larson’s related proposal, the Single Complement Hypothesis, which requires that the head-complement relation be biunique (Larson 1988).

In particular, we suggest that our questions (3a,b) above find their answer in part in the fundamental nature of the syntactic projections which define Lexical Relational Structures (and therefore also the syntactic structures dominating lexical heads at d-structure). Each lexical head X determines an unambiguous projection of its category —to a phrasal level, XP— and an unambiguous arrangement of its arguments, as specifier and complement, as depicted in (4) below:



The structure depicted in (4) is “unambiguous” in the sense we intend. Thus, for example, the relation *sister* holds unambiguously between V and VP and between NP and V'. Moreover, the relation is asymmetrical in each case, since just one member in the relation is a maximal projection. And the *c*-command relation is likewise unambiguous, in the relevant sense – the “subject” or “specifier” (NP in this instance) asymmetrically *c*-commands the “internal argument” or “complement” (lower VP in this case).

In part, the unambiguous nature of (4) is due to the fact that branching is binary at all non-terminal nodes; and in part also, (4) is unambiguous because it conforms to the X-bar theory of “types”, according to which the levels in a given categorial projection (i.e., the lexical, intermediate, and phrasal levels) are distinct from one another (and are so indicated notationally in various ways, here as X, X', and XP). Our belief is that these aspects of the syntax of Lexical Relational Structures are not *stipulated*, but rather that they follow directly from the notion *unambiguous projection*. That is to say, the theory of grammar does not include a stipulation to the effect that all branching must be binary, or that the projection of types (lexical, intermediate, and phrasal) conform to the distinctness criterion. The theory of grammar requires merely that projections be unambiguous. And we suppose that it simply follows from this that the syntactic structures initially projected from the lexicon must have the (branching and type) properties we have identified. We must merely speculate that this is the case here, since we do not have formal proof of it; but we suspect strongly that the unambiguous projection requirement does in fact yield this result.

In any event, we will speculate further that the unambiguous structure requirement will yield an additional limitation on the projection of categories to types – to wit, the requirement that “intermediate” types (X') be restricted to just one for any given projection. Thus, the structure depicted in (4) represents a full projection of the category V – it includes a specifier (NP), a complement (VP), as well as the lexical (X), intermediate (X'), and phrasal (XP) type-projections. The limitation on types follows, we wager, from the assumption that multiple “intermediate” types would be linguistically (though perhaps not notationally) indistinct – we imagine that they would be “segments” of a single node (in the sense of Chomsky 1986b, where, to be sure, the issue has to do with the nature of adjunction structures, not intermediate type-projections).

Given the principle of unambiguous projection, and given the four lexical categories traditionally assumed (V, N, A, P), we can propose an answer to the questions posed in (3).

## 2. Thematic relations and theta-role assignment

Our basic answer to the question expressed as (3a) — why there are so few thematic roles — is that, in an important sense, there *are* no thematic roles. Instead, there are just the relations determined by the categories and their projections, and these are limited by the small inventory of lexical categories and by the principle of unambiguous projection.



While we might assign a particular thematic label, say “agent”, to the NP in (4), its grammatical status is determined entirely by the relation(s) it bears in the Lexical Relational Structure (LRS) projected by the lexical head V. Specifically, the NP of (4) bears the “specifier” relation within a VP whose head takes a complement which is also a projection of the category V. It is not without reason, of course, that the term agent is associated with the subjects of verbs —like *cut, break, drop, send, give, tighten, put, shelve, saddle*, etc.— which share the LRS of (4). But we would like to suggest that the thematic terminology typically applied in this case simply reflects the *relational* status of the NP in the upper specifier position.

The use of the term “agent”, we imagine, is appropriate here simply because of the elementary semantic relations associated with (4) by virtue of the elements which enter into the structure. Each of the lexical categories is identified with a particular notional “type”, and the relational structures they project define an associated system of semantic relations, an “elementary meaning”, so to speak. Thus, for example, the category V is associated with the elementary notional type “event” (or perhaps, “dynamic event”), which we can symbolize *e* (cf., the usage in Higginbotham 1985). The LRS depicted in (4) contains a V heading the structure as a whole, and another (implicit in the tree) heading the complement VP. The structural relation of complementation involves an asymmetrical c-command relation between the two verbs – the matrix V asymmetrically c-commands the subordinate V (head of the complement VP).

The structural relations of c-command and complementation are unambiguous in (4), as required. Since the lexical items involved there have elementary notional content, it seems reasonable to suppose that, in addition to the structural relations associated with the projection, there are elementary semantic relations associated with (4) as well. And further, the semantic relations associated with (4) are unambiguous and fully determined by the LRS projections of categories. The matrix V of (4) governs another V, the head of its complement. Corresponding to this syntactic relation, there is a similarly asymmetric (semantic) relation between two events, a relation which we will take to be that of “implication”. Accordingly, the matrix event “implicates” the subordinate event, a relation which makes perfect sense if the syntactic embedding corresponds to a “semantic” composite in which the subordinate event is a proper part of the event denoted by the structure projected by the main verb:

$$(5) \quad e_1 \rightarrow e_2$$

Let us assume that (5) is the “semantic” relation associated uniformly with the complementation structure (6), in which a lexical V takes VP as its complement in LRS representations.



The syntactic structure (6) and the associated semantic relation (5) comprise the LRS expression of what is commonly called the “causal” relation (see Lombard 1985,

for relevant discussion of relations among events and for an appropriate formal semantic representation of the causal relation). In this light, it is with some justification that the NP in (4) is typically associated with the thematic role term “agent” – inasmuch as it bears the specifier relation in the structure projected by the “causative” verb. This NP bears a syntactically unambiguous relation to the V’ of (4), and, by hypothesis, its semantic relation within the structure is likewise unambiguous and fully determined by the LRS. Suppose we symbolize this relation as > and devise a composite elementary “semantic” representation for the entirety of (4):

$$(7) \quad i > (e_1 \rightarrow e_2)$$

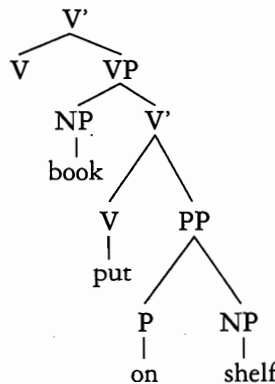
In (7), we represent the notional type of the category N as *i* (for “instance”), following Leder (in progress). We can choose to use the expression “agent of” to refer to the relation borne by *i* in (7), but this, like (7) itself, is entirely derivative under the assumptions we hold here.

Similar remarks are appropriate to the syntactic and semantic characterizations of the relations inherent in other LRS projections determined by lexical items. And a survey of plausible LRS representations suggests ready candidates for association with the standard thematic terminology. That the list of thematic role terms is not endless or even large follows, we claim, from the fact (if it is a fact) that the roles are derivative of lexical syntactic relations, and these are limited in the manner we have described.

In actual fact, however, we cannot now substantiate the claim we are making – i.e., that all theta-roles are derivative of lexical syntactic relations or, to phrase it in a slightly different manner, that argument structure is expressed entirely in the syntactic structures projected by heads (X) belonging to the lexical categories. At this point, we can say simply that we are in the process of attempting to show that this view is correct in essence, and we will proceed to discuss a few more examples, restricting ourselves primarily to the V category.

Consider, for example, the “inner VP” of (6) above. One possible system of projections dominated by that node is the structure we have associated with the English verb *put* (following Larson 1988, cf. also Hale and Keyser 1991, in press), as in *she put the book on the shelf*:

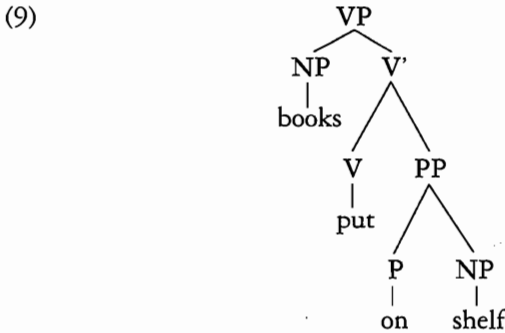
(8)



This LRS representation is shared by a vast number of English verbs, including a large number of denominal verbs formed by conflation of the N object of the PP argument – e.g. *shelve, pen, corral, box, saddle, blindfold*, and the like, putatively formed by incorporation of a nominal into an abstract P and thence successively into the abstract Vs (cf. Hale and Keyser 1991, in press).<sup>2</sup>

By hypothesis, the syntactic relation between the matrix V and the inner VP corresponds uniformly to the “causal” relation, by virtue of the syntactic relation itself and by virtue of the elementary notional type associated with the V category. The external argument of the matrix verb bears an unambiguous syntactic relation to it and, by hypothesis, its elementary semantic connection to the structure is likewise unambiguous – it is the “agent” following accepted usage.

Now let us consider the inner VP itself:



In this structure, the head-complement relation involves the categories V and P, with the latter subordinate to the former. We will continue to assume that the notional type of V is “(dynamic) event” (*e*), and we will suggest that the notional type of P is “interrelation” (we will use *r* to symbolize this). The *r*-relation includes—but is not to be strictly identified with—relations commonly thought of as spatial or locational (cf. Kipka 1990, for detailed criticism of the “locationist” conception of adpositions). If these basic semantic notions combine to assign an elementary semantic value to the syntactic structure in which they appear, then they will do so unambiguously, since the syntax is itself unambiguous. We suppose that the semantics of the relation embodied in V' of (9) is that according to which a (dynamic) event “implicates” an interrelation, as expressed in (10), utilizing the elementary notation we have adopted:

$$(10) e \rightarrow r$$

The most salient “meaning” attached to this structure is “change”. Thus the elementary semantic expression embodied in (10) corresponds to the situation in which

(2) In assuming complex VP structures as the basis of denominal location (e.g., *shelve*) and locatum (e.g., *saddle*) verbs, we do not intend to imply that a conflation such as *shelve* “means” the same thing as its analytic paraphrase *put on a shelf* (cf., *put the sand on a shelf* beside *shelve the sand*). We maintain simply that they share the same LRS (a claim which could also be wrong, to be sure). We will not address here the very real linguistic problem of accounting for the fact that conflations typically do not, in the full sense, mean the same things as expressions usually offered up as their analytic paraphrases.

some entity, represented by the subject, comes to be involved in an interrelation with an entity corresponding to the NP object of the P.

An interrelation involves at least two entities, of course. Thus, the preposition *on*, for example, relates some entity (functioning as a place, typically) and some other entity (typically a thing, substance, or the like), as in such sentences as *a fly got in the soup* or *mud got on the wall*. However, the syntax of V' in (9), given the principle of unambiguous projections, has just one expression (NP object of P) corresponding to an entity entering into the interrelation *r* established by P. Therefore, a "subject" (specifier of VP) is required in VP as an absolute necessity in the lexical syntactic projection of V here. We continue to use the symbol > to represent the semantic relation which the subject bears in relation to the V' expression, but this is nothing more than a notational filler at this point — more will be said presently about the syntax and semantics of the subject relation in Lexical Relational Structure representations.

The subject NP in (9) corresponds to an entity which completes the interrelation *r*. It is the subject of a "predicate of change" and, therefore, as in the syntax, it is external to the semantic expression assigned to V':

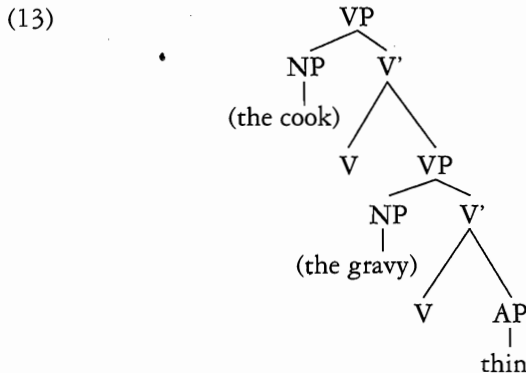
$$(11) i > (e \rightarrow r)$$

The subject of a change predicate is sometimes called a "theme" (cf. Gruber 1965, Jackendoff 1972) or an "affected patient" (cf. Anderson 1977, Pesetsky 1990). Again, however, these semantic roles, like the elementary semantic interpretations in general, are derivative of the lexical syntactic relations.

In an accepted view of thematic relations, the "theme" roles, and the associated elementary semantic relation "change", extend to predicates of the type represented in (12) below:

- (12) (a) The oven browned the roast.  
 (b) The storm cleared the air.  
 (c) The cook thinned the gravy.  
 (d) This narrows our options.

We assume that the verbs here, like the others we have been examining in this study, are derived by conflation. Here, however, the conflating elements are adjectival. The Lexical Relational Structure of the verb in (12c) is set out in (13):



The upper V in (13) projects the LRS associated with the “causal” relation represented in (6) above. The lower V projects a structure which is parallel to the VP displayed in (9), but with the PP of the latter replaced by AP, the phrasal projection of the adjectival category A.

The lexical category A is associated with the notional type “state” (*s*), and the elementary semantic relation associated with the V’ projection is presumably as in (14):

$$(14) e \rightarrow s$$

That is to say, an action or dynamic event “implicates” a state. Or to put it another way, a state is achieved as an integral, or defining, part of a dynamic event. This corresponds, we suggest, to the notion of a “change resulting in a state”.

It is a fundamental semantic requirement of AP that it be attributed of something, e.g., of an entity. Thus, just as in the case of PP complements, so also in the case of AP complements, a “subject” necessarily appears in the specifier of VP (i.e., *the gravy* in (13)). And this subject is integrated into the associated semantic representation in the usual way:

$$(15) i > (e \rightarrow s)$$

Again, the subject can be thought of as the “theme”, inasmuch as it corresponds to an entity undergoing change.

We have examined three of the complement types available in LRS representations, i.e., those projected by the categories V, P and A. The fourth type, that projected by the category N, is exemplified by the unergative verbs of (16) and the simple transitives of (17):

- |                             |                                 |
|-----------------------------|---------------------------------|
| (16) (a) The child laughed. | (17) (a) We had a good laugh.   |
| (b) The colt sneezed.       | (b) She did her new song.       |
| (c) Petronella sang.        | (c) The ewe had twins.          |
| (d) The ewes lambled.       | (d) This mare does a nice trot. |

In both cases, the abstract relational structures here involve a verbal head projecting a V’ structure containing an NP in complement position:



In the case of (17), of course, the complement NP is a categorial variable in the LRS representation of the various verbal lexical items; it is realized as an NP argument in s-syntax, through lexical insertion in the usual manner. In the case of (16), on the other hand, the complement NP dominates a constant, the nominal source, through conflation, of the denominal verb (see Hale and Keyser 1991, for some discussion of this).

If it is appropriate to assume that the elementary semantic structures are associated with syntactic structures in the unambiguous manner suggested so far, then the semantic structure associated with the  $V'$  of (18) is as in (19):

$$(19) e \rightarrow i$$

Here, an action or dynamic event “implicates” an entity, or instance,  $i$ . This corresponds to the notion that the implicating event is completed, or perfected, by virtue of the “creation”, “production”, or “realization” of the relevant entity or instance.

If (18) is the correct relational structure for unergatives, and for the “simple transitive” (light-verb, cognate object, and creation predicate constructions), then full expression of the associated semantic structure is as follows, integrating the “subject” into the interpretation in the customary manner:

$$(20) i > (e \rightarrow i)$$

This correctly reflects the fact that the sentences of (16) and (17) clearly have subjects at s-structure. In fact, all members of the category  $V$  which we have examined here project structures which, at some point or other, have subjects. It is nevertheless legitimate to ask whether the lexical relational structures of verbs necessarily express the specifier relation. We will turn to this question in the following section.

## 2. Categories and specifiers

We have been considering a conception of lexical syntactic projections according to which any appropriate VP may “embed” as the complement of a verb. Structures (8) and (13) represent projections of just this type. And verbs projecting both these structures are energetically represented in the verbal vocabulary of English, for example.

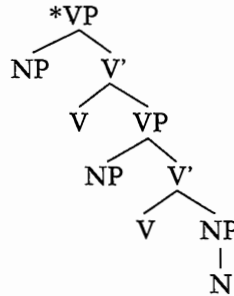
But there are some gaps, and the theory of argument structure which we are considering must have an explanation for them. Consider the following ill-formed usages:

- (21) (a) \*The clown laughed the child. (i.e., got the child to laugh)  
 (b) \*The alfalfa sneezed the colt. (i.e., made the colt sneeze)  
 (c) \*We'll sing Loretta this evening. (i.e., have Loretta sing)  
 (d) \*Good feed calved the cows early. (i.e., got the cows to calve)

These sentences represent an extremely large and coherent class of impossible structures in English. In particular, unergative VPs cannot appear as complements of  $V$  – i.e., an unergative may not appear in the l-syntactic “causative” construction, as depicted in (22):

This structure, the putative source of the verbs in (21), satisfies all conditions so far considered in our discussion. No principle precludes it, so far. But the structure is consistently absent, so far as we can tell, from the English vocabulary of denominal verbs.<sup>3</sup> Why should this be?

(22)



The answer, we think, lies in the LRS representation of unergative verbs. The verbs of (21) are a problem only under the assumption that they have the relational structure (18) – in particular, the problem is in our assumption that these verbs have a VP-internal subject. If we assume instead that unergatives do not have a subject in l-syntax, then the problem disappears, since the structure depicted in (2) cannot exist and, therefore, the verbs of (21) cannot exist either.

This is our answer. Unergatives have no subjects in their LRS representations. But for this to be a solution of any interest, it must be something other than a stipulation to the effect that some verbs have a subject in LRS and others do not. Which verbs are allowed not to have VP-internal subjects at l-syntax? Which verbs must have a subject, as the inner VP of *shelve* and *clear* surely must? If these questions have no answer, our suggested explanation for (21) is no more than an observation.

In the relational structures of the location and locatum verbs studied above—verbs like *shelve* and *saddle*—and, likewise, in the relational structures of change of state verbs of the type represented by (12), the appearance of a subject in the inner VP is “forced”, being required by the complement within that inner VP. In essence, since the complement in the inner VP is a predicate in the LRS representation of those verbs, full interpretation of the inner VP requires that a subject appear, internal to the VP, so that predication can be realized locally, as required (cf. Williams 1980, Rothstein 1983), thereby correctly relating the complement of the inner VP to the subject of that VP.

We will assume that the specifier position of VP in the LRS representation of a lexical verb is filled only when that is forced by some principle. In the case of change of state or location verbs just considered, the appearance of a subject is forced by predication, we suggest.

For verbs of the class now commonly termed “unergative”, nothing forces the appearance of a subject. This follows, since the complement in the lexical relational

(3) This is a feature which distinguishes l-syntactic representations from s-syntax, where causatives in many languages readily take unergatives. We postpone for later work the class of prima facie l-syntactic counterexamples represented by English *trot the mule*, *jump the horse*, and *run the bounds*; cf. Brousseau and Ritter, 1991.

structures of such verbs is not a predicate. We can assume, then, that the subject is in fact excluded from the LRS representations of unergatives.

In our attempt to answer the questions formulated in (3) above, we suggested that argument structures, or LRS projections, were constrained in their variety by (a) the paucity of lexical categories, and (b) by the unambiguous nature of lexical syntactic projections. If what we have suggested here for unergative verbs is correct, then we must consider an additional limit on the variety of possible argument structures – specifically, we must also determine what is it that forces the appearance, or absence, of a subject.

We believe that nothing new has to be added to achieve the correct result. This result is in fact given by the general principle according to which linguistic structures must be “fully interpreted” (Chomsky 1986). The principle of full interpretation will guarantee that verbs of change of location or state *have* a subject in the inner VP – absence of the subject would leave the complement of the inner VP uninterpreted (see Rothstein 1983, whose work on predication we take to be true origin of this idea). The same principle will also guarantee that unergative verbs *lack* a subject in their LRS representations – a subject, if present in an unergative LRS, would itself be uninterpreted for lack of a predicate in the complement position. The s-syntactic subject of an unergative verb is, therefore, a “true external argument”, appearing in the specifier position of the functional projection IP (or, in the case of small clause constructions, in the adjoined position assumed by the subject).

These remarks on l-syntactic internal subjects apply not only to verbs which involve conflation, of course; they also apply to “analytic” constructions in which the main verb appears with an overt complement. Thus, for example, various constructions employing the relatively abstract English verb *get* exhibit the predicted range of acceptability in the causative. Thus, for example, *get drunk* and *get into the peace-corps*, with complements which are inherently predicative, permit not only the intransitive form (e.g., *my friend got drunk*, *my friend got into the army*), but they also appear freely in the causative form (e.g., *we got my friend drunk*, *we got my friend into the peace-corps*). By contrast, expressions like *get the measles*, *get smallpox*, and the like, with nominal (hence non-predicative) complements, cannot appear in the causative, as expected by hypothesis (e.g., *\*get my friend the measles*, *get my friend smallpox*, in the relevant sense). Alternative explanations (e.g., case theory, for one) exist to explain this contrast, but we would like to suggest that a more straightforward l-syntax explanation exists, accounting not only for these examples but also for the ill-formedness of *\*laugh my friend*, where a case-theory account is not plausible (given *laugh my friend off the stage*, in which *laugh* does assign case, apparently; Cf. Burzio 1981).

Given the above considerations, we can assume that the structures which express the relations among the arguments of a verb are characterized by the operation of two fundamental defining principles, (23a) and (23b):

(23) Lexical Relational Structure (Argument Structure):

- (a) unambiguous projection; (b) full interpretation.



To the extent that they are correct, these principles, in conjunction with the restricted set of lexical categories (V, N, A, P), determine the limits on the range of relations which arguments can enter. This effectively answers question (3a), concerning the paucity of so-called thematic roles. The principles also define a precise class of relational structures. And to that extent, they answer question (3b), since the LRS representations embody biunique structural-semantic (i.e., structural-thematic) relationships for all lexical items.

Although it is perhaps premature to assert this now, it is likely that the requirement of full interpretation prevents the appearance of a subject within the projections of the categories other than V. This follows, since the semantic licensing of a subject in the specifier position projected by a given category is, by hypothesis, through predication of a complement in that same projection – in short, a subject is licensed by local predication. If the lexical structure representations of the categories P, N, and A do not take complements which are predicates, then it follows that they cannot themselves have subjects. If this is true, then to that extent, the class of potential lexical structures is further constrained.

To say that the non-V categories do not take predicate complements in their lexical structure representations does not mean, of course, that there are no “predicative” complements to these categories at d-structure, for example. Thus, consider such predicates as *out to get us*, *proud to be here* in which the complements are clausal, and hence contain predicates. But these are not simple predicates of the type permitted in l-syntactic representations. If they are infinitivals, as they appear to be, they are complete in their relational structure and *cannot* be predicates (in our view, but see Williams 1980). Consequently, *out* and *proud* here cannot have “local” subjects, i.e., subjects within their own projections, since their complements do not require that the specifier position be filled. Besides, if the complements *to get us* and *to be here* are infinitivals, headed by the functional category INFL, then they do not represent a class of projections available at l-syntax as we have defined it, and, if they are not, they are simply irrelevant to the discussion.

The question remains whether any of the non-V categories take predicates in the sense of the foregoing discussion, i.e., predicated directly of a local subject. Beguiling candidates are constructions like *good at her job*, *dynamite at calculus*, in which the complement is a PP. However, these are not real instances of what we are seeking. The PP complement here is, in reality, an oblique object, marked for case by means of the preposition. To say that someone is good at her job or dynamite at calculus does not involve predicating *at her job* or *at calculus* of the subject of the sentence, or of anything, for that matter. To be sure, to say that someone is *good in the ring* does involve (secondary) predication of a PP – *in the ring* is predicated of the subject, but this PP is not a *complement* of the adjective, properly speaking (see Rapoport 1990, for relevant discussion of secondary predication and for references to an extensive literature on the subject).

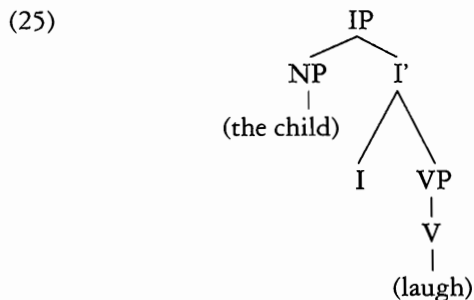
### 3. The specifier position and the depth of embedding in lexical relational structures

If the specifier position for so-called “unergative” verbs, like those in (16) above, is excluded by virtue of the principle of full interpretation, then their expressed sub-

jects must be “external”, as we have said. The Lexical Relational Structure of a verb like *laugh* cannot be as in (18). Rather, it must be something on the order of (24) – at least that is what we will assume for present purposes:



The precise sense in which the subject of an unergative verb is external can be left vague, for our purposes, but it will involve at least the following assumptions: (a) the subject is not present in the LRS projection of the predicator and, (b) it is not dominated by the maximal projection of the predicator at d-structure (though it might be an adjunct to that node, cf. Sportiche 1988). In English, at least, subjects in general are in the specifier of the functional category IP, and that could, in principle, be the d-structure position of unergative subjects, which is what we will assume for expository purposes. Thus, omitting some irrelevant details, the d-structure of (16a) —i.e., *the child laughed*— is essentially as in (25):



The verb, by hypothesis, is the result of conflation – of the LRS object *laugh* into the abstract V which heads the lexical item as a whole. There can be no VP-internal subject, by the principle of full interpretation, so that the expressed subject must be external.<sup>4</sup>

We must assume that the VP in (25) is a predicate at d-structure; it therefore requires a subject at some level in s-syntax, by the extended projection principle (Chomsky 1982, and Rothstein 1983), presumably a corollary of the general principle of full interpretation. The required subject must at least appear in specifier of IP at s-structure (our assumption that it appears there at d-structure is merely a convenience).

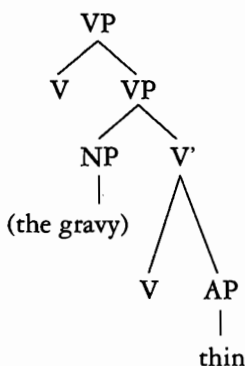
There are a number of problems which must be addressed in relation to the external subjects of verbs which have no “internal subject” in their LRS representations. We ask the reader’s indulgence in this regard. The problems we allude to are, in part, inherent in our approach to the study of argument structure, and we are still very much in the process of dealing with the issues that arise. For the moment, we

(4) The s-syntactic representation (25) is simplified from the l-syntactic representation in various ways — e.g., by erasure of the trace defined by head-movement, together with the phrasal node projected thereby. We leave open here the important question of whether the material thus deleted is “visible” at d-structure.

assume simply that the VP of (25) is inherently a predicate at d-structure, probably because of the elementary "meaning" associated with it (i.e., (19)) – perhaps, linguistically speaking, a "dynamic event" must have an expressed "cause", "perpetrator", "source", or the like, as in (20). Whatever the reason, it is a fact, pure and simple, that unergatives have a subject ... they are predicates, from the point of view of grammar, and they must be predicated of certain kinds of linguistic expressions (normally NPs), and there are certain relatively well understood selectional restrictions on predication (*neigh* of horses, *low* of cattle, *bleat* of sheep, and *talk* of people, *rain* of ambient *it*, and so on). This is prototypical predication. But since the subject of an unergative, by hypothesis, cannot be internal to the VP projection in l-syntax, since its appearance there is not forced by the principle of full interpretation, we must assume that the predication requirements must be met in s-syntax, by an external subject.

If this reasoning is correct, then it must apply equally to the lexical relational structure representations of verbs associated with the "causal semantics" informally expressed in (7) – i.e., to location verbs (like *put* and *shelve*) to locatum verbs (like *saddle*, *blindfold*), and to verbs of change of state (like *thin*, *lengthen*, *break*, and the like). This follows, since the inner VP, being "complete", and therefore not a predicate, cannot force the appearance of a subject in the matrix VP. Accordingly, the structure presented in (13), for the verb *to thin* (as of *gravy*, *paint*), must be corrected to (26), omitting the matrix subject.

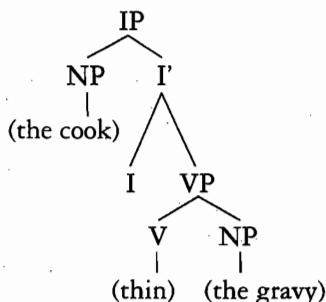
(26)



Thus, in a sentence employing this verb, like *the cook thinned the gravy*, the expressed subject (i.e., *the cook*) must be external to the lexical VP projection at all levels of s-syntactic representation, as is the subject of an unergative verb. And, further, as in the case of unergatives, predication at d-structure is the means by which the expressed subject is interpreted, the domain of predication being the IP, in which the expressed subject occupies the specifier position in s-syntax, as in the abbreviated d-structure (27).

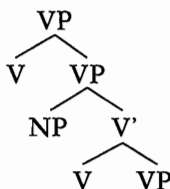
The verb here is derived in l-syntax by successive incorporation of the adjective *thin* into the abstract verbs of (26), in conformity with the provisions of the head-movement process:

(27)



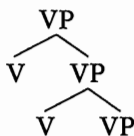
Our analysis of unergative and causative verbs depends on the notion that a VP is not a predicate in l-syntax. If this notion is correct, then we can explain—in part, at least—why there is a limit on recursion in LRS representations. Generally, the lexical relational structure for a verb has at most one VP embedding. Thus, so far as we know, no verb corresponds to the hypothetical LRS structures (28), the reason being that the structure fails to satisfy the requirement of full interpretation—the most deeply embedded VP is not a predicate, so, by that hypothesis, the inner subject is not licensed:

(28)

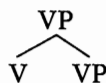


But, if this structure is illicit because of a failure of predication, then what if the NP is simply omitted? This would give (29), also non-existent, so far as we know:

(29) (a)



(b)



We assume that the same general principle precludes this structure as well. The “double causative structure” cannot be interpreted, since only one can be predicated of a subject in s-syntax. Again, this is a failure of predication (of the inner VP in this case) and, hence, a failure to achieve full interpretation. Thus, unrestricted recursion of the VP category—while it is similar in character to the s-syntactic recursion freely permitted, for example, by clausal complementation—is impossible in the syntax of LRS representations, precisely because of the full interpretation requirement.<sup>5</sup> It is

(5) Full interpretation is a requirement of s-syntactic structures as well, of course, but its effect there is different, due, among other things, to the properties of the various functional categories, which define a Specifier position for external arguments.

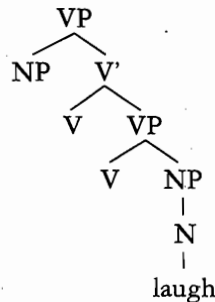
also quite possible that (29a) is ruled out on the even more general grounds that, in LRS representations, it is not distinct from the simpler structure (29b). If it is not, then considerations of ambiguity and economy will rule the more complex structure (29a) out.

#### 4. Some remarks on subjects and external arguments

There is clearly a sense in which a subjectless VP is an open expression, since it functions freely as a predicate in s-syntax – e.g., *laugh* in (25), where an unergative verb is predicated of an NP in s-syntax; or similarly, the causative *thin*, also putatively subjectless in lexical relational structure, predicated of *the cook* in (12c) above.

The fact that these unergative and causative lexical relational structures correspond to VPs which function as predicates in s-syntax makes it necessary, of course, to ask seriously whether they might also function as predicates in l-syntax. We must, for example, consider the possibility that the lexical VP corresponding to *laugh* could be an l-syntax predicate and, therefore, be permitted to appear as a complement to an l-syntax matrix verb which, by the principle of full interpretation, would force the appearance in the matrix of a subject, as in (30):

(30)



One possibility, of course, is that this is in fact the correct representation of the verb *laugh* and, correspondingly, the same “causative” structure might be assigned to all unergatives, accounting for the “agentivity” or their subjects, perhaps.

Suppose the inner VP corresponds to the elementary notion of the happening of an event *e* which “implicates,” or “is” a laugh. The matrix VP simply represents the causal relation, as before. And *Mary laughed*, under the analysis implied in (30), would correspond to something like *Mary caused a laugh to happen*. But this is wrong semantically. While *Mary broke the pot* can correspond to a situation in which Mary indirectly causes a pot to break (e.g., she bumps against the wall causing the pot to fall off the shelf, or so), *Mary laughed* cannot correspond to any such situation (e.g., Mary told a joke causing laughter, or the like). The system of relations expressed in (30) is far too “indirect”.

Be this as it may, we *must* argue that (30) is an impossible structure. Otherwise, we cannot account for the ill-formedness of *\*we laughed Mary* and the full range of structures it represents. If (30) were a possible lexical relational structure, of course, then nothing would prevent it from appearing as the complement of V, yielding an

LRS representation which, in the relevant respects, is the same as those of an ergative verb like *break*, a locatum verb like *saddle*, or a location verb like *shelve*, verbs whose internal VP *does* have a subject. We would be forced then to seek elsewhere for an explanation of \**laugh Mary*, \**cry Billy*, \**sing Merl*, #*break Billy a pot* (not equal to *cause Billy to break a pot*), #*holster Matt his pistol*, and the like. If (30) is simply impossible, then these problems disappear.

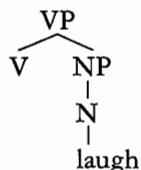
The key to this problem, we feel, is to be found in an understanding of the notion "predicate". Let us put aside, first, the obvious fact that VP can be a predicate at d-structure in s-syntax. We know, for example, that an NP can also be a predicate there, though, by hypothesis, it *cannot* be a predicate in LRS representations in l-syntax. So, the question we must ask is whether VP is a predicate in l-syntax. We want the answer to this question to be "no", obviously, since (30) is impossible, according to the view we are advancing.

Considering just the relations expressed in l-syntax, the notion "predicate" can be correlated with the elementary notional type associated with the four categories. The category P projects a predicate, because it is inherently relational – thus, an expression of the type represented by *on the shelf* requires an additional argument, a subject, because the preposition *on* relates a place (e.g., *shelf*) to some other entity; that is the fundamental characteristic of the category realized by prepositions in English. Similarly, the category A, we maintain, represents the fundamental notional type of "attributes". We maintain that this property of adjectives forces the appearance of a subject in l-syntax, since the relation "attribute of", inherent in adjectives, must be satisfied by predication. By contrast, we have argued, the category N is fundamentally non-relational, and hence cannot license the appearance of a subject in l-syntax.

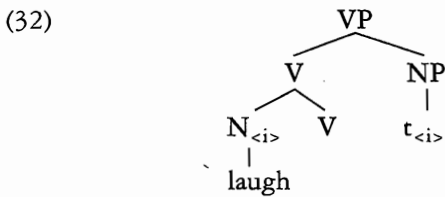
Now we must address the problem of the category V. Does V project a predicate in l-syntax? We have said that the fundamental notional type associated with the category V is "(dynamic) event". We wish to argue that this category is *not* inherently relational. An event is no more relational than an instance or entity is relational. While an event may have participants, and these may have "interrelationships" internal to the event, the latter is not itself a relation. Thus, while the category VP is the paradigm predicate in s-syntax, it is *not* a predicate at l-syntax, where the notion "predicate" correlates strictly with the elementary notional type of a category. Accordingly, VP does not license the appearance of a subject in an immediately superordinate clause, and (30) is therefore not a possible l-syntax representation. So the English verb *laugh*, and all verbs of the type, acquire their subjects through predication at d-structure. Their subjects are "true" external arguments.

Assuming this view of the matter, an unergative verb of the type represented by *laugh* will have an initial LRS representation of the form depicted in (31):

(31)



Actually, of course, this is a simplification. The complete l-syntactic representation of an unergative verb is a *derivation* which, by hypothesis, is defined by the conflation process (i.e., incorporation by head-movement) applied to an initial structure of the simple verb-object form exemplified by (31). Assuming that the conflation process responsible for denominal verb formation is in fact incorporation, and if it is subject to general constraints on transformational rules (as argued in Hale and Keyser 1991, and in press), then l-syntactic head movement, like the corresponding process at s-syntax, must involve structures in which empty categories, specifically *traces*, are appropriately related to *antecedents*. Thus, head movement defines a structure of the form (32) from the initial structure (31) above:



This structure is licit under the conditions on head-movement (cf. Travis 1984, and Baker 1988), hence the relation between the trace and its antecedent (the incorporated N, with which it is coindexed) is necessarily licit. In general, we make crucial use of constraints on head-movement in suggesting explanations for the ill-formedness of certain conflations which, on *a priori* grounds, should be possible – e.g., “external subject conflations” of the type represented by *\*it stormed Rama Cay*, in the sense of *a storm did something to Rama Cay*, “dative conflations” as in *\*house a coat of paint* in the sense *give a house a coat of paint*, and “small clause subject conflations” as in *\*metal flat* in the sense of *flatten metal, render metal flat* (cf. Hale and Keyser 1991, and in press, Walinska de Hackbeil 1986, 1989). Our perception of these matters requires that we assume derivations of the type suggested by (31-32) and, in particular, derived structures involving trace-antecedent relations (i.e., “chains”) like that indicated by coindexation in (31).

Without meaning to prejudice the question of whether l-syntactic traces are “visible” at d-structure, or anywhere else in s-syntax, we employ the trace-pruning convention to abbreviate the syntactic structure projected by the verb *laugh* to its conventional “intransitive” form (33):

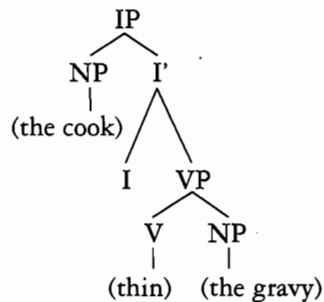


Thus, while we will assume that the full derivation of an unergative verb (and the same applies *ceteris paribus* to all verb types) is “visible” in the lexicon, and is therefore an integral and accessible part of our linguistic knowledge, its full complexity will be abbreviated in s-syntactic representations here. The abbreviation is achieved by means of a simple algorithm according to which any l-syntactic trace, and each

categorical node it projects, is deleted – accounting for the monadic structure of (31) through deletion of the nominal trace and the categories it projects (N, and NP).<sup>6</sup>

The analysis suggested here for unergative verbs extends naturally to causative verbs as well, i.e., to attribute causatives (e.g., *thin*, *tighten*, etc.), locatum verbs (e.g., *saddle*, *bridle*), and location verbs (e.g., *pen*, *corral*). Thus, for example, the structure given in (13) for *thin* (*the gravy*) must, by hypothesis, be rejected and replaced by (26); and correspondingly for verbs like *shelve* (*the books*) and *saddle* (*the horse*). The “agentive” s-syntactic subjects of such verbs, in their transitive use, are “truly external”, as depicted in (27) for the attribute causative verb *thin* repeated here as (34), in which the internal VP (conflated from (26)) is abbreviated in the manner just suggested:

(34)



Locatum and location verbs also project s-syntactic VP structures of this simple transitive sort.

If the s-syntactic subjects of transitives and unergatives are “external subjects,” how are they in fact related to their verbs? In a sense, of course, the answer is simple – they are related to their verbs through predication. Relative to the VP, they appear in an s-syntactic position (e.g., Spec of INFL) appropriate for predication (cf., Williams 1980, Rothstein 1983, Rapoport 1987).

We will assume that this answer is correct. But there is, of course, a deeper question. Is this external subject a part of the argument structure of the verb which heads the VP predicated of it? Is the external subject an argument, in any sense, in the l-syntactic representation of the verb? Does it get its theta-role from the verb?

The answer to this question, we believe, is negative. The external subject is not present in the LRS representation of the verbs under consideration here. At least, it is not present in the sense of this framework – e.g., in the sense in which an object, say, is present, as a point in the LRS projection defined by the verb. It cannot, therefore, “receive its theta-role” from the verb, since the concept “theta-role”, to the extent that it can be understood in the context of LRS representations, corresponds precisely to the notion “lexical relation”, defined over the LRS projection. If the subject

(6) The situation is somewhat more complex than this however, since the derived verb is also abbreviated in (33); it is abbreviated from its complex l-syntactic form consisting of the verb root (zero) and the (adjoined) noun corresponding to the “morpheme” *laugh*. Here again, the question arises whether this internal structure, as opposed to the overall category V, is “visible” at d-structure. For the general importance of zero derivational morphology, and issues akin to “visibility”, see Myers 1984, and Pesetsky 1990.



is absent from the LRS representation of a verb, then it cannot “get its theta-role” from the verb, clearly.

How, then, do we account for the fact that the external subjects of unergative and causative verbs, say, are understood as “agents” in relation to the events named by those verbs? How is the “agent role” assigned?

We assume that it is in fact correct to say that the subjects in question are associated with a semantic role, typically the role termed “agent”, and we will adhere to the traditional usage in saying that these subjects are “assigned the agent role”. But, we assume that this assignment is “constructional”, in the sense that it is effected in a syntactic configuration defined in s-syntax. This manner of assignment, we contend, is to be distinguished entirely from that associated with the semantic roles (theme, patient, goal, etc.) corresponding to the l-syntactic relations defined by LRS projections. The agent role is a function of s-syntactic predication. In so far as it concerns the agent role, this view of the matter is essentially that developed by Chomsky 1981 and Marantz 1984, according to which the subject receives its semantic role from VP, not from the V itself.

Not all subjects are “external” in this sense, of course. And, accordingly, not all subjects are “agents”. Verbs of the type represented by *thin (the gravy)*, *tighten (the cinch)*, *loosen (the girth)* —i.e., members of the class of “ergative verbs” (cf. Burzio 1981; Keyser and Roeper 1984)— have the property that they may project both transitive and intransitive s-syntactic verb phrases. In the latter case, the internal NP undergoes movement to subject position —i.e., to Spec of INFL in the following sentences:

- (35) (a) The gravy is thinning nicely.  
 (b) The cinch finally tightened.  
 (c) The girth loosened.

Here, the s-syntactic subject is “internal” in the sense that it is an argument internal to the LRS representation of the verbs. We maintain that it is exactly this internal subject which is to be identified with the “affected argument” of the Affectedness Condition, which has played an important role in lexical and syntactic studies since Anderson’s work on passive nominalss (Anderson 1977; and for relevant recent studies of the role of the affectedness property, see Jaeggli 1986, and Pesetsky 1990). If the affected argument is an internal subject in l-syntax, as we believe, the semantic notion “affected” is correlated with a structural position in the l-syntactic representation of verbs.

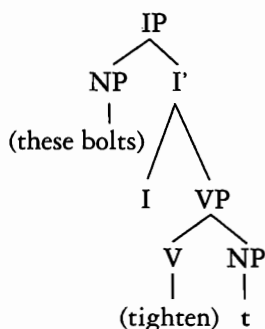
The verbs of (35) above belong to the class of so-called “ergative verbs”, exhibiting an “uncompromised” transitivity alternation along the ergative pattern (i.e., with object of transitive and subject of intransitive the stable argument in the alternation). But to this class of verbs must be added the so-called “middle” of English, which exhibit the same transitivity alternation, “compromised” by various well-known requirements which must be met for full acceptability (e.g., use of the generic, a modal, or an adverb like *easily*, etc.):

- (36) (a) Rye bread cuts easily.  
 (b) These bolts tighten easily.  
 (c) Limestone crushes easily.

Of course, all ergative verbs can be used in the middle construction – (36b) is a good example. The middle, like the inchoative (i.e., the intransitive use of ergatives as in (35)), involves s-syntactic movement of an internal subject. Transitive verbs which can undergo middle formation are just those whose s-syntactic object is an “affected argument”, i.e., those verbs whose s-syntactic object corresponds to an internal subject in l-syntactic structure.

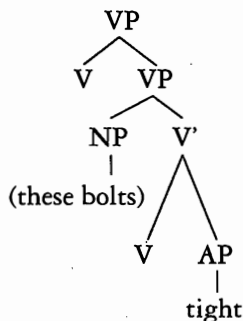
Under these assumptions, is it perhaps not sufficient to assume that the relevant portion of the s-structure of the middle sentence (36b) is simply that depicted in (37), in which the derived subject heads a chain with the trace (of NP-movement) in s-syntactic object position.

(37)



This is insufficient, since the VP here is indistinguishable from that of expressions of the type represented by *make trouble*, *have a baby*, *do a job*, and the like, whose l-syntactic representations correspond to the simple transitive type [<sub>VP</sub>V NP] (i.e., the same as that projected by unergative verbs). These latter do not enter into the middle construction and, by hypothesis, do not involve an “affected” argument in the relevant sense. By contrast, the l-syntactic counterpart of the VP of (36b) is that depicted in (38) below, in which the argument at issue (*these bolts*) is an internal subject:

(38)



The middle construction of English appears to be restricted to verbs which have an internal subject in this sense. This implies of course, that transitive verbs like *cut*, *break*, *crush* partake of the complex l-syntactic causative structures assumed here for the conflated denominal location/locatum verbs and for de-adjectival verbs of the type represented in (36b). And if the English middle construction is formed in s-syntax, then the relevant aspects of these structures must be "visible" at that level.

While we will assume that this account is essentially correct, there are a number of serious problems which must eventually be dealt with. We will deal with only one of these here. It concerns an aspect of the relation between middle and inchoative constructions.

### 5. The overlapping distribution of middles and inchoatives

The difference between inchoatives and middles is an old issue, and it is the focus of an extensive literature (e.g., van Oosten 1977, Lakoff 1977, Keyser and Roeper 1984, Jaeggli 1984, Hale and Keyser 1986, 1987, 1988, Condoravdi 1989). Why is the acceptability of the middle conditional? Why must there be some modification—modal, aspectual, an adverb, etc.—to achieve acceptability in the case of the middle, as opposed to the inchoative, which has no such requirement? In the following discussion, we will not be concerned with this time-honored problem but rather with a problem which our own system defines, namely, the distribution, across verbs, of the inchoative and the middle constructions.

The problem is this. So-called "ergative" verbs, like *narrow*, *clear*, *tighten*, all have an inchoative use, as well as the transitive, and related middle, uses:

- (39) (a) The screen cleared.  
 (b) I cleared the screen.  
 (c) This screen clears easily.

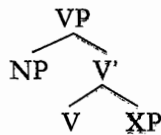
We have assumed that such verbs, in their transitive uses at least, all have the structure depicted in (38). And, we have assumed further, that this structure is, in the relevant respects, the same as that associated with location and locatum verbs. However, these verbs lack the inchoative:

- (40) (a) \*The books shelved.  
 (b) I shelved the books.  
 (c) These books' shelve easily.

Thus, while both the middle and the inchoative, by hypothesis, involve s-syntactic movement of an internal argument, the two processes are not coextensive—the inchoative is more restricted than the middle. Why is there this difference?

We believe that the answer to this question lies in the structures of the two classes of verbs. More specifically, it is to be found in the nature of the inner predication. Our assumption to this point has been that both ergative verbs and location/locatum verbs involve an inner VP of the following form:

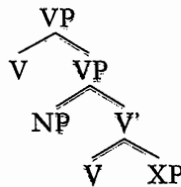
(41)



The head of XP belongs to a category which forces the appearance of a subject, hence the NP in Spec of VP. Since the two verb classes involve the same structure, there is no obvious reason for the difference they exhibit in relation to the inchoative. However, the structure depicted in (41) is overly abbreviative with respect to the content of XP. The ergative verbs we have been considering are de-adjectival, and the complement of the inner V is therefore AP. By contrast, the location and locatum verbs have PP in the complement function. This difference, we feel, is crucial.

For verbs of the ergative class, the transitive is defined by the canonical causative structure [V VP]:

(42)



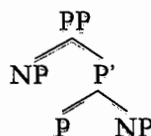
And we will assume also that the middle construction is defined on the transitive and, therefore, that it involves an abstract causative configuration in the LRS representation of verbs.

By contrast, we would like to suggest that the inchoative is based not on the transitive (causative) structure. Rather, the inchoative is simply the inner VP alone – i.e., the structure (41). This is the form of the intransitive of an ergative verb. Thus, we suggest, (39a) is simply the intransitive counterpart of the transitive which underlies (39b,c).

But if the intransitive form of an ergative verb simply lacks the upper VP, there should, in principle, be intransitive counterparts of the location/locatum verbs – these would be instances of (41) in which XP is PP. A reconsideration of the nature of the category P suggests a reason why this might be impossible.

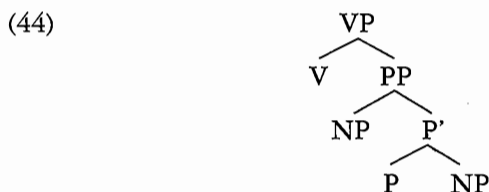
The category P has the fundamental property that it is interrelational, requiring two arguments, one a complement, the other a subject (or specifier). Most important, like the adjectival category A, prepositions force the appearance of a subject. In our initial representations of this property, we assumed that this required the use of a verb to introduce the required specifier position – the internal subject position of (42). We ignored the possibility that *both* the complement and the subject might appear internal to PP, as in (43):

(43)



However, the logic of our framework might actually be seen to require this alternative. This would be so, for example, if we supposed that the special property of the P category were necessarily acknowledged in the minimal possible structure. Its complement taking property is met, of course, in the V' phrase. And that structure immediately defines the predicate corresponding to the second property of P, i.e., that it projects a phrase requiring a subject. All of this happens internal to PP, without violating the principles of unambiguous projections and full interpretation.

We suggest that this line of reasoning is possibly correct. If it is, then, we can explain why location and locatum verbs are always transitive (or middle) and never inchoative. These verbs have the structure depicted in (44), in which V denotes a dynamic event implicating an interrelation:



Inchoatives are the intransitive counterparts of the causative structures, defined as the inner VP, bereft of the superordinate causative verb. While (44), underlying the location/locatum class, are causatives, the inner construction is not verbal – it is prepositional. Therefore, there can be no parallel intransitive counterpart to these verbs. The configuration (41) is simply absent from the LRS representation of location/locatum verbs.<sup>7</sup>

It is natural to ask why the A category does not also take its subject argument internally. The class of adjectives we have so far considered, we believe, are monadic – it may be a basic property of adjectives, as an l-syntactic category, that they do not take complements of the sort which force the appearance of a subject. Nonetheless, they themselves denote attributes and must be predicated of an NP. This NP is not a complement, but rather a subject. And it is a subject whose appearance is not forced by virtue of an element *internal* to AP. It must therefore appear *external* to the AP projection. This, of course, requires the use of a V projection in the LRS representation of verbs like *clear*, *narrow*, and the like. It follows, then, that these verbs have the inchoative use.

## 6. Concluding remarks

The purpose of this paper has been to explore the limits on (verbal) lexical items in respect to their argument structures —with a view to determining what is, and

(7) It is, of course, not obvious why the V of (44) should be a “causative” (requiring an external subject at d-structure) rather than a “raising predicate”. That is to say, why can’t the NP in the Spec of PP simply raise to Spec of VP and thence to Spec of IP in s-syntax? The second step, at least, appears to be involved in closely parallel s-syntactic “analytic” structures like *mud got on the saddle*, *paint dripped on the floor* (cf. transitive *we got mud on the saddle*, *we dripped paint on the floor*). However, the first step is impossible for location/locatum verbs, since raising (like NP-movement in general) is motivated by case theory and is therefore irrelevant to l-syntax.

what is not, a possible lexical argument structure— and, if possible, to give an explanatory account of linguistically relevant limitations on lexical forms. Extending Talmy's (1985) term somewhat, we have used the phenomenon of "conflation" as a probe into the inner organization of lexical argument structure, concluding that argument structure can be properly viewed as a *syntax*. And accordingly, it is subject to the laws of syntax, as known generally, and, in particular, it is subject to the principles determining the grammatical uses of "head movement" or "incorporation" (Baker 1988). A full attempt to account for argument structure must, we have argued, assume that the syntactic projection of lexical categories and arguments conforms to the principles of "unambiguous projection" (cf. Kayne 1984) and "full interpretation" (cf. Chomsky 1986a). We have intended to show that this is all that is needed to give a full account of the notion "argument structure". If so, then there are no linguistic mechanisms which are specific to argument structure. There is, for example, no process of "theta role assignment", apart from predication. And there are no "theta roles", apart from the lexical relations expressed in unambiguous, fully interpreted, projections of the elementary lexical categories.

At this point, the claims of the preceding paragraph represent little more than speculations, supported by suggestive, though not altogether conclusive, evidence. Further work along this line must both strengthen the evidentiary base and extend its coverage to the full range of confluations.

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# Negative Complementizers: Evidence from English, Basque and Spanish

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## 1. Inherently negative verbs: a clausal/non-clausal asymmetry.

It is a well known fact that Negative Polarity Items (henceforth NPI) can be licensed across clause boundaries without the occurrence of overt negation (Klima 1964, Ladusaw 1979, Linebarger 1980 and references therein). Some examples of this interclausal licensing are given below:

- (1) a. The witnesses denied [that anybody left the room before dinner]  
b. The professor doubts [that anybody understood her explanation]

It has been usually assumed since Klima (1964) that it is the negative force of the main verbs *deny* and *doubt* that makes the embedded clause an NPI licensing domain.<sup>1</sup> If this assumption is correct, we should expect the NPIs in (2) to be licensed as well, since they are direct objects of the same verbs *deny* and *doubt*. However, as noted by Progovac (1988), this is not the case: NPIs in object position are not licensed. These NPIs can only receive, marginally, a 'free choice' reading,<sup>2</sup> characteristic of unlicensed NPIs (Ladusaw 1979):

- (2) a. \* The witnesses denied anything  
b. \* The professor doubts any explanation

As noted by Feldman (1985), examples like (3) clearly illustrate that this asymmetry is a fact about the structural relation between *deny* and its sister:

- (3) I deny that the witnesses denied anything

In (3), the matrix occurrence of *deny* licenses the object NPI of the lower clause

(1) Klima's account is to assume that these verbs contain the syntactic feature *neg*. It will be recalled that in the discussion of inherent negatives in section 35, *doubt*, *too*, and *without* were assumed to contain the syntactic symbol *neg*. With these words, however, *neg* was assumed to have no phonological form; i.e., *neg*+*doubt* had the form *doubt*, and the verb *doubt* did not occur without the symbol *neg*+. (Klima 1964: 313)

(2) This asymmetry has also been pointed out, independently as far as I can tell, at least in two other works besides Progovac (1988): Feldman (1985) notes the contrast for English in a footnote and Kempchinsky (1986) acknowledges also in a footnote that Jàcas notes it for Spanish.

*deny*, although the embedded clause is ungrammatical if it is not embedded, as shown in (2a).

It is this asymmetry between clausal and non-clausal arguments of 'inherently negative' verbs that will motivate the main claim of this paper. Given its central role, I will discuss it in more detail, in order to show that it holds consistently, despite occasional appearances to the contrary.

### 1.1. *Three Criteria to Distinguish licensed NPIs.*

I will present here three criteria that distinguish licensed NPIs from 'free' ones. In each of them, the sentences in (1) will pattern as having licensed NPIs, whereas the sentences in (2) will pattern like instances of 'free' NPIs.

(I) The first criterion involves the adverb *just*. Attachment of this adverb forces a 'free choice' interpretation of the constituent headed by *any*. The effect induced by *just* can be seen in (4). Thus, compare (4a) to (4b):

- (4) a. I didn't eat anything, I starved \* I ate truffles  
 b. I didn't eat just anything, I ate truffles \* I starved

In (4a), the NPI *anything* is licensed by negation, and thus the sentence means roughly the same as 'I ate nothing'. Hence, the appropriate continuation of this sentence is 'I starved' and not 'I ate truffles', since the latter would result in a contradiction. However, in (4b), the introduction of the adverb *just* induces a complete reversal in the interpretation of the sentence. Now the entailment is that I ate something out of the ordinary. This is in fact the effect that obtains by introducing *just* in a context where the NPI is licensed by negation. *Just* forces the 'free' reading of the NPI, changing the interpretation of the sentence. On the other hand, introducing *just* in a context where the constituent headed by *any* is anyway 'free choice' does not induce a change in interpretation.

Let us see what results are obtained when *just* is introduced in the examples in (1) and (2). If *just* is introduced in the examples in (2), the interpretation of the sentences do not change; thus, (5a) and (5b) mean the same as (2a) and (2b):

- (5) a. The witnesses denied just anything  
 b. The professor doubts just any explanation

If anything, the only change is that the sentences are now more acceptable. This is so because *any* has only a 'free choice' reading in all the examples in (2) and (5), and *just* makes that reading more salient.

For those speakers who do not find *just* particularly helpful in inducing a 'free choice' reading, there is another option that gives similar results. This is to introduce the modifier *ol'* after *any*. This particle can be inserted either alone or in combination with *just*, and it also has the effect of forcing a 'free choice' reading.

Notice that the sentences in (2) also become more easily acceptable if we introduce modals, and if the DP itself is modified, as in (6):

- (6) a. The witnesses will deny any statement made by the defendant  
 b. The professor would doubt any explanation given by a student

These sentences sound less awkward than the ones in (2); but, even in these cases and maybe even against the speaker's first intuition, the *any* constituents still have only a 'free choice' reading. Thus, if we introduce the adverb *just*, the interpretation of the sentences does not change at all, a result that can only obtain if the constituent had solely a 'free choice' reading already in (7):

- (7) a. The witnesses will deny just any statement made by the defendant  
b. The professor would doubt just any explanation given by a student

In contrast, when we consider the sentences in (1), we find that they behave in a radically different way. Thus for instance, adding *just* (and/or *ol'*) to the sentences in (1) induces a sharp change in interpretation, indicating that the NPI previous to the insertion of *just* was not 'free' but licensed:

- (8) a. The witnesses denied that just anybody left the room before dinner  
b. The professor doubts that just anybody understood the explanation

The conditions under which the sentences in (8) and (1) are true are not the same. Thus, (8a) is true even if the witnesses agree that some people left the room before dinner. Their claim is that only certain people did it. By contrast, the sentence in (1a) is true if the witnesses are claiming that absolutely nobody left the room before dinner. Similarly, in (8b), the sentence is true even if the professor believes that some of her students did understand the explanation, whereas in (1b) the professor believes that none of them did.

(II) The second criterion for distinguishing 'free' and licensed NPIs will involve substitution of the inherent negative verbs for non-negative ones. In cases of 'free' *any* constituents, this change has no consequences, whereas in cases of licensed NPIs it results in ungrammaticality.

Consider the sentences in (6), which are identical to those in (2) except for the fact that modals and relative clauses have been added to make them more acceptable. If the *any* constituent is a 'free choice' in (6), then substituting *deny* or *doubt* will have no effect on the acceptability of the *any* constituent, because the negative verbs play no role in licensing the presence of the *any* phrase. This expectation is indeed borne out.

If we replace *deny* and *doubt* with verbs that are never licensors of NPIs like *repeat* and *believe*, the sentences are still good and the NPIs have the same interpretation of 'pick any' (Vendler 1967):

- (9) a. The witnesses will repeat any statement made by the defendant  
b. The professor would believe any explanation given by her student

However, when this criterion is applied to the cases in (1), and we substitute *repeat* and *believe* for *deny* and *doubt*, as we did before with the sentences in (2) and (6), the results are now sharply ungrammatical:<sup>3</sup>

- (10) a. \* The witnesses repeated that anybody left the room before dinner  
b. \* The professor believes that anybody understood the explanation

(3) I follow Ladusaw's (1979) convention: "... the asterisks on sentences containing *any* below represent judgements about PS-*any*. Many have good FC-*any* interpretations which I will be ignoring." (Ladusaw 1979: 105)

(III) The third criterion involves NPIs that do not have a 'free choice' reading available. There are NPIs like *a single N* which do not have a 'free' reading. Instead, they have the following two choices: if licensed by an affective element, they are interpreted as existentials, but if not licensed, they are interpreted as equivalent to 'one and only one'. The two interpretations are illustrated in (11):<sup>4</sup>

- (11) a. I didn't write a single letter, I had no paper at all  
          # the one for Mary  
      b. I wrote a single letter, #I had no paper at all  
          the one for Mary

Let us now substitute the *any* constituents in sentences (1) and (2). The prediction is that in the cases where the *any* is a licensed NPI, we will find the interpretation in (11a), whereas in those cases where the *any* phrases are not licensed, we will find the interpretation in (11b). Let us first consider the paradigm in (1). The substituted versions are given in (12):

- (12) a. The witnesses denied that a single person left the room before dinner  
      b. The professor doubts that a single student understood her explanation

The sentences in (12) have roughly the same interpretation as the ones in (1). This shows that the NPI *a single N* is indeed licensed in the embedded clause.

By contrast, when we consider the sentences in (2) under this criterion, the effects are the opposite. I will use the sentences in (6) to give these sentences the best chance, given that some speakers find the sentences in (2) already quite marginal. Consider now the cases in (13):

- (13) a. The witnesses will deny a single statement made by the defendant  
      b. The professor would/can doubt a single explanation given by her students

The sentences in (13) have only one interpretation: in the case of (13a), there is only one particular statement the defendant will make, which the witnesses will deny. In the case of (13b), there is one particular explanation the professor will doubt. Hence, (13a) could be followed up with 'namely, the statement about her being in the kitchen during the shooting', and, similarly, (13b) could be continued with 'namely, the one about the bus catching fire on the road'. Note that no matter what intonation is given to the sentence, the NPI reading is simply not available in these cases.

We can therefore conclude that the asymmetry illustrated in (1) and (2) exists in English: NPIs are licensed only in clausal complements of 'inherent negative' lexical items. In what follows, I will be concerned with NPI cases of the sort in (1), where the interpretation of the NPI is that of an existential under the scope of negation. I will mark as deviant (\*) all instances of non-licensed NPIs like the ones in (2), regardless of whether they acquire a 'free choice' interpretation or not. The asterisk

(4) The readings are facilitated if given a particular intonation contour. However, as we shall see in examples in (12), intonation cannot salvage cases where *a single N* is not licensed at S-structure. Hence, I assume that intonation contours are derived from particular S-structure representations, and thus they are not the determining factor in licensing, but a phonetic signal that licensing has taken place.

thus means that the NPI is not licensed by negation, not necessarily that the sentence cannot have any interpretation at all.

Given the evidence just presented, we must conclude that there is a sharp contrast between clausal and non-clausal arguments of what are called 'negative verbs'. It is only in clausal arguments that NPIs are licensed by negation. NPIs are not licensed in non-clausal arguments.<sup>5</sup> However, these results are very puzzling if it is true that the NPIs in the clausal arguments of these verbs are licensed by the 'inherent negation' of the main verb. If this is the case, there is no way to account for the clausal/non-clausal asymmetry with respect to NPI licensing.

### 1.2. *No asymmetry induced by overt negation.*

Note further that this asymmetry does not appear in cases where an overt negation licenses NPIs across a clause boundary. Consider the examples in (14):

- (14) a. The witnesses didn't say that anybody left the room before dinner  
b. The witnesses didn't say anything

If we apply the two tests we used above to distinguish 'licensed NPIs' from 'free NPIs', the results are that there is no clausal/non-clausal asymmetry in (14).

(I) Hence, if *just* is introduced, the meaning of *both* sentences changes:

- (15) a. The witnesses didn't say that just anybody left the room before dinner  
b. The witnesses didn't say just anything

(II) And if the negation is eliminated, both sentences yield ungrammaticality:<sup>6</sup>

- (16) a. \* The witnesses said that anybody left the room before dinner  
b. \* The witnesses said anything

(III) If we substitute the *any* NPI for a *single N*, no radical change in interpretation is obtained, as illustrated in (17):

- (17) a. The witnesses didn't say that a single person left the room before dinner  
b. The witnesses didn't say a single thing

(17a) can be interpreted as meaning the same as (14a). It also has another interpretation, namely 'the witnesses did not say that only one person left the room', but this is not relevant here. As far as the present arguments goes, it is enough to show that a meaning equivalent to (14a) is available for (17a). Similarly, (17b) has a meaning equivalent to (14b).

Given this evidence, we must conclude that there are fundamental differences between the NPI licensing properties of an overt negative morpheme and those of an

(5) See below for a discussion on the status of action nouns like *damage*, *involvement* or *allegation* in examples like:

- (i) The bumper prevented any damage to the car  
(ii) The witness denied any involvement in the crime  
(iii) The senator denied any allegations of child abuse

(6) Again, like in all cases of NPIs that are not licensed, a very heavy stress can rescue the sentence, but only in the 'free choice' interpretation, which is not the one at stake here.

inherent negative lexical element. Namely, whereas an overt negative marker does not discriminate between clausal and non-clausal complements in its ability to license NPIs, inherently negative lexical items do discriminate between these two types of arguments with regard to NPI licensing.

This result is unexpected if the negation in the inherently negative items is active for NPI licensing; both overt negation and this inherent negative feature should have the same licensing properties.

### 1.3. *Some tough cases: action nouns.*

There are some cases where the generalization presented above might seem to break down. All these cases involve action nouns. Some examples are given in (18):

- (18) a. The bumper prevented any damage to the car  
 b. The witness denied any involvement in the crime  
 c. She dispelled any doubts we had  
 d. He refused any medication  
 e. The senator denied any allegations of drug-trafficking

These cases do sound like NPI *any* to some native speakers. However, important differences can be pointed out that clearly show otherwise. Here, I will present a fourth criterion that distinguishes 'free choice' *any* constituents from NPI ones; this criterion follows the spirit of Ladusaw (1979): 'free choice' *any* is a universal quantifier, but NPI *any* is an existential.

This fourth criterion involves putting *all* where we had *any*. If the *any* DP is a 'free choice', this change does not alter the conditions under which the sentence is true. However, if the DP headed by *any* is an NPI, the conditions under which the sentence is true do change significantly. In order to illustrate this, let us consider uncontroversial cases of both 'free choice' *any* and NPI *any*. Let us start with the former; consider (19):

- (19) a. any dog can bite            b. any store would be cheaper than this one  
 c. all dogs can bite            d. all stores would be cheaper than this one

The sentences in (19a, c) and (19c, d) mean almost the same:<sup>7</sup> if any dog can bite, then it must be true that all dogs can bite, and vice versa. Similarly, it is a necessary truth that any store would be cheaper than this one if and only if all stores are cheaper than this one. It is a sufficient condition for *any* to be a 'free choice' (rather than an NPI) that the substitution of *all* preserves truth conditions. If the substitution is possible, the *any* at stake is a 'free choice'.

Consider now sentences with NPI *any*, like the ones in (20):

(7) There is of course one difference between 'free choice' *any* and universals like *all* and *every*: whereas the former takes the totality of elements one by one, the latter does not necessarily do so (Vendler 1967). This difference becomes apparent in cases like (i) and (ii), which are by no means similar:

- (i) pick any card            (ii) pick all cards

This difference between 'free choice' *any* and other universal quantifiers is however not relevant for the purposes of the distinction made in the text.

- (20) a. I did not see any dog  
 b. Did any store give you a lower price?  
 c. Never did any senator say anything like that before  
 d. If any human being were to enter this room...

If we now introduce *all* where we had *any*, the meaning of the sentences change considerably: (20a) could be false at the same time that (21a) is true, for instance if I have seen some dogs but not all of them. Similarly, one could answer 'yes' to (20b) and 'no' to (21b) being entirely truthful, and the same is true for the remaining cases.

- (21) a. I did not see all dogs  
 b. Did all stores give you a lower price?  
 c. Never did all senators say anything like that  
 d. If all human beings were to enter this room...

This confirms that there is an observable difference between NPIs and 'free choice' *any*s regarding their existential and universal quantificational force, respectively. We can now make the substitution in the apparently problematic cases in (18), in order to determine whether these cases are truly exceptions to the generalization that inherent negative verbs do not license NPIs in non-clausal complements. Hence, consider (22):

- (22) a. The bumper prevented all damage to the car  
 b. The witness denied all involvement in the crime  
 c. She dispelled all doubts we had  
 d. He refused all medication  
 e. The senator denied all allegations of drug-trafficking

There is no possible scenario where any of the sentences in (22) could be true and its correlate in (18) false, or vice versa. Thus for instance, if it is true that the bumper prevented all damage to the car, then it is necessarily true that the bumper prevented any damage to the car. Similarly, if the witness denied all involvement in the crime, she denied any involvement in the crime as well, and if she dispelled all doubts we had, then it is also true that she dispelled any doubts we had. Hence, we can conclude that all sentences in (22) entail their correlates in (18). Crucially, however, the entailment from *all* to *any* does not hold in cases of NPI *any*; the sentences in (21) do not entail the sentences in (20). Therefore, the examples in (18) are cases of 'free choice' *any*.<sup>8</sup> They do not constitute counterevidence to the claim that negative verbs do not license NPIs in non-clausal complements.

(8) This result is further confirmed by cross-linguistic evidence. Progovac (1988) provides evidence from Serbo-Croatian, where NPIs do not have a free-choice reading available. Object NPIs always yield ungrammaticality in negative environments, as shown in (i):

- (i) \* ovoj ku -i nedostaje i-kakvo mesto      da se sedi napolju kad pada ki a  
 this house-DAT lacks any-what-kind place    that self sits outside when falls rain  
 ('this house lacks any kind of place      where one can sit when it rains')

Spanish also lacks 'free choice' readings of its NPIs, and NPIs are not allowed in these environments (Jácas 1986):

- (ii) \* Noriega negó ninguna acusación de narcotráfico  
 ('Noriega denied any allegation of drug trafficking')

For independent arguments that constituents like *ningún* are NPIs in Spanish, see Laka (1990, 1991).

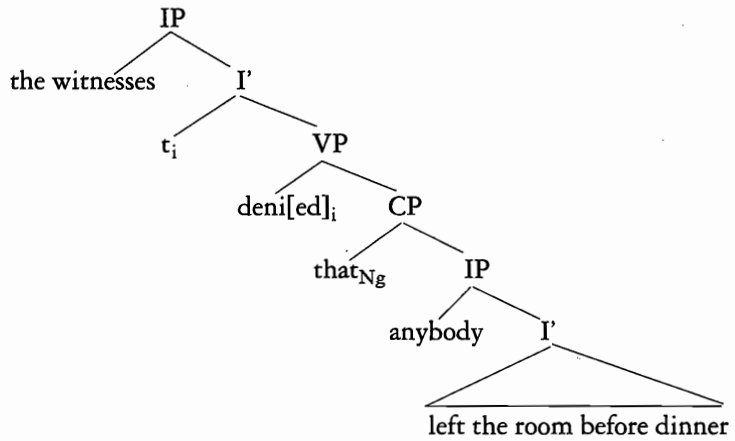
## 2. An explanation of the asymmetry: [Ng] complementizers

### 2.1. *The Proposal.*

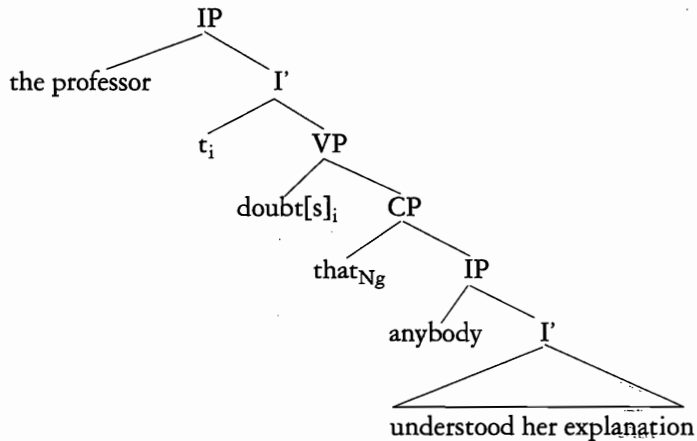
I will claim that the clausal/non-clausal contrasts presented in the previous section involve the presence versus absence of a 'negative' complementizer; that is, a complementizer that may be selected only by certain predicates. Lexical elements like *deny* and *doubt* select complementizers that have the feature [Ng], in the same way that lexical items like *wonder* and *ask* select complementizers that have the feature [Wh]. It is the complementizer that licenses the NPIs in the examples in (1). The absence of the complementizer precludes licensing of NPIs, and thus the fact that NPIs in non-clausal arguments are not licensed follows trivially.

The S-structure representations of the sentences in (1a, b), under this hypothesis, are as illustrated in (23a, b):

(23) a.



b.



Previous discussions of this type of sentences assumed that the syntactic structure of the embedded sentences in (23a) and (23b) was identical to the structure of a declarative clause like 'I say [that penguins fly]'. The NPI licensing properties thus



relied crucially on the structure of the matrix verb (Klima 1964), or on the downward entailing properties of the matrix predicate (Ladusaw 1979). Thus, in the case of *doubt* or *deny*, these analyses focus on the verbs themselves in order to account for licensing of NPIs across clause boundaries, failing to explain the asymmetry presented in section 1.<sup>9</sup>

The proposal made here follows the spirit of Progovac (1988), in that the syntactic representation of sentences embedded under inherently negative verbs diverges from the structure of *that* clauses embedded under non-negative verbs. Progovac (1988) argues that it is crucially the CP projection that is responsible for the successful NPI licensing inside the embedded clause. I depart from her analysis in the specifics of what in CP it is that licenses the NPIs. Progovac's proposal involves a polarity operator in the specifier of the CP projection, rather than a distinctive [Ng] complementizer head.

## 2.2. *Some Further Supporting Evidence.*

Added to the generalization presented in 1., there is more evidence internal to English supporting the existence of negative complementizers, which I will now discuss.

### 2.2.1. *Lack of subject-object asymmetries*

Subject NPIs in English are not licensed by sentence negation, because negation does not c-command the subject at S-structure; only when negation is placed in Comp can the subject NPI be licensed (Laka 1990). In the cases under consideration, the licenser is Comp itself, and, similar to cases where Neg has moved to Comp, licensing of subject NPIs obtains (24c):

- (24) a. \*[<sub>IP</sub>Anybody [<sub>I</sub> didn't leave]  
 b. [<sub>CP</sub>Why didn't [<sub>IP</sub> anybody leave]]  
 c. I doubt [<sub>CP</sub> that<sub>Ng</sub> [<sub>IP</sub> anybody left]]

As shown in (24a), if the licenser does not c-command the NPI at S-structure, licensing fails. Hence, a case where the negative verb does not c-command the NPI

(9) Hale (1968) makes a proposal regarding negation in Warlpiri, which involves selection of a negative AUX by a matrix negative verb; in this respect, the proposal put forward here resembles his. Warlpiri displays the negative *kula* attached to the front of the inflected auxiliary. But *kula* can also follow the element *lawá*:

- (i) lawa kulaka-na pula-mi (na<sup>v</sup>u)  
 negative neg-pres-I shout-nonpast (I)  
 'I am not shouting. It is negative (i.e., not so) that I am shouting.'  
 (ii) lawa kula-na-ZERO wawiri pantu-nu (na<sup>v</sup>ulu-lu)  
 negative neg-defpast-I-it kangaroo spear-past (I-erg)  
 'I did not spear the kangaroo. It is not so that I speared the kangaroo'

Hale argues that the element *lawá* is not a constituent of the sentence containing the negative auxiliary, as evidenced by the ungrammaticality of (iii):

- (iii) \* kulaka-na lawa pula-mi (na<sup>v</sup>tu)

Hale (1968) claims that *lawá* is a negative matrix verb, which takes the negative sentence as subject. He proposes that the embedded AUX acquires the negativized element by a special rule relating to the fact that its sentence is the subject of the negative verb.

but where the complementizer does is a crucial testing ground for this hypothesis. The prediction is that even if the verb does not *c*-command the NPI, the NPI will nevertheless be licensed, since the negative complementizer is still *c*-commanding it. This prediction is borne out, as the following example illustrates:

- (25) [<sub>CP</sub>that<sub>Ng</sub> [<sub>IP</sub> anybody left the room before dinner]]<sub>i</sub> was denied t<sub>i</sub> by the witnesses

In fact, it is precisely examples like the one in (25) that force Ladusaw (1979) to introduce an 'ad hoc' condition in his *Inherent Scope Convention* for the distribution of NPIs in English. Let us consider what the problem is that sentences like (25) pose for Ladusaw (1979).

### 2.2.2. Ladusaw (1979): precedence and clausemateness.

Under Ladusaw's (1979) definition of scope, both the subject and the VP are under the scope of negation in a clause. Ladusaw notes that, given this fact, it cannot be claimed that being in the scope of a trigger is a sufficient condition for the licensing of an NPI. If it were, subject NPIs would be licensed in negative sentences in English, and they are not. Moreover, Ladusaw notes that when a triggering element precedes the subject, that is, when it appears sentence initially, subject NPIs are licensed. The following examples are taken from his work:

- (26) a. has anyone seen Clarence?    b. rarely is anyone audited by the IRS

In light of these facts, Ladusaw (1979) must introduce an 'ad hoc' condition in the principles accounting for the distribution of NPIs; this condition requires that NPIs appear rightward of their triggers as well as within their scopes. Thus, the condition introduces a linear constraint in terms of precedence.

However, Ladusaw notes, when the negation is in a higher clause, the precedence condition does not apply anymore. The examples presented by Ladusaw are given in (27):

- (27) a. that anyone has finished yet isn't likely is unlikely is doubtful  
 b. for John to have found any unicorns is impossible isn't possible  
 c. for anyone to win all six races would be unlikely

Because of examples like these, which are identical to (25) in all relevant respects, Ladusaw reduces the precedence condition to those cases where the trigger and the NPI are clausemates. The 'ad hoc' condition added is thus as follows:<sup>10</sup>

(10) Ladusaw also modifies the first part of his *Inherent Scope Convention* in accordance to (25).

#### *Inherent Scope Convention* (Ladusaw 1979)

##### A. Inheritance

- (i) A meaning *m* inherits the properties associated with the meaning which are its immediate components except as provided for in (ii) and (iii).
- (ii) When an N-meaning becomes the scope of a trigger, the resulting meaning is no longer an N-meaning. If the NPI is clausemate with the trigger, the trigger must precede.
- (iii) A sentence with a W-meaning produces a neutral meaning as an S'.

where N-meaning stands for the interpretation of a licensed NPI, and W-meaning is the interpretation of the so-called Positive Polarity Items.

- (28) A NPI must appear in the scope of a trigger. If its trigger is in the same clause as the NPI, the trigger must precede the NPI.  
(Ladusaw 1979: 112)

This solution is not very satisfactory, given the premises of Ladusaw's work: NPI licensing can only be accounted for in terms of the semantics of the clauses in which they occur, and not in terms of the syntax. The problem posed to the enterprise by the addition of this condition is in fact acknowledged by Ladusaw:

In spite of the argument of section 0, it is wrong to say that polarity filtering is totally semantic, since there is still reference to syntactic structure in part of the ISC [Inherent Scope Convention]: the left-right order restriction on clausemate triggers and NPI's. (Ladusaw 1979: 207)

Ladusaw also notes that this problem cannot be solved by simply altering the notion of scope, so that it will rule out those cases where the NPI is in the scope of the trigger but not licensed by it (as in cases of subject NPIs in negative sentences). Such a change, in fact, would make all the wrong predictions for all other cases of scope interactions. Indeed, the scope of the triggers does extend to those positions: if we substitute the NPIs with other types of quantifiers, the trigger has scope over the quantifier, as illustrated by Ladusaw in the following examples:

- (29) a. Three of the students rarely finish their papers on time  
b. Everyone rarely agrees on whether to get anchovies on a pizza

Hence, Ladusaw concludes, scope is not sufficient to determine NPI distribution, and the conditions on clausemateness and precedence must stay, even though they seem to threaten his central claim that 'the property that NPI's are sensitive to is not a property of sentences, it is a property that only expressions with functional meanings can have' (Ladusaw 1979: 2-3).

### 2.2.3. *On the relevance of the Comp head.*

The problems encountered by Ladusaw (1979) can be avoided if we accept that syntactic structure plays a central role in determining the distribution of NPIs. I will argue that once the role of syntax in NPI licensing is acknowledged, the oddities displayed by NPIs as compared to other quantifiers are easily explained away.

The precedence condition is no longer necessary if the licensing conditions require that NPIs must be in the *c*-command domain of their triggers at S-structure. The clausemateness condition, on the other hand, can be done without once it is accepted that what licenses the NPI in the embedded clause is not the upstairs negative verb, but, rather, the complementizer that heads the embedded clause. Thus, all the problematic cases are reduced to S-structure *c*-command by the licenser of the NPI.

Let us go back to (25). As noted by Linebarger (1980), it cannot be argued that D-Structure plays any role in the licensing of NPIs, since subjects of passives are never licensed by an element that *c*-commands them at D-structure but not at S-structure:

- (30) \*anybody wasn't arrested by the police

Therefore, the grammaticality of (25) could not be accounted for on the basis of the D-structure configuration. Neither can it be argued that the NPI in the embedded sentence is actually licensed by the negative verb at Logical Form, after some kind of reconstruction has taken place (Chomsky 1976, Van Riemsdijk & Williams 1986 and references therein).

First, if reconstruction were available for NPI licensing, we would expect that a sentence like (30) would be grammatical. Second, even if we could somehow keep (30) aside, an account of (25) in terms of reconstruction would predict that an NPI in a preposed VP should be licensed even if the licenser is not preposed along with it. This, however, is not the case. Thus, consider the VP preposing cases in (31), which yield ungrammaticality:

- (31) a. \*[<sub>VP</sub> buy any records]<sub>i</sub>, she didn't t<sub>i</sub>  
 b. \*[buy any records] is what she refused to do

The importance of the complementizer is also confirmed by the contrast between (32) and (33) (Pesetsky, p.c.):

- (32) What did nobody do?      a. \*Buy any records      b. Buy records  
 (33) What did Bill deny?      a. That he had bought any records

The answer to the question in (32a) is ungrammatical, because there is no available licenser in the VP that constitutes the answer. Note, however, that if the NPI is not present, the answer is fine, as in (32b). In contrast, the answer to the question in (33b), which has an NPI in it and does not contain the negative verb *deny* is perfectly grammatical. The crucial difference between (32a) and (33a) is the presence of the C<sub>Ng</sub> heading the clause.

The evidence presented strongly suggests that it is precisely the complementizer of the embedded sentence in (25) that is making the difference. All the ungrammatical cases we have considered lack negative complementizers.

The presence or absence of the negative complementizer is also crucial in complements of 'inherently negative' nouns. Thus, consider the following contrasts:

- (34) a. her denial that anybody left the room before the shooting surprised the jury  
 b. \* her testimony that anybody left the room before the shooting surprised the jury

The paradigm in (34) is accounted for under the negative complementizer hypothesis: in (34a), *denial* selects a C<sub>Ng</sub>, which in turn licenses the subject NPI in the clause it heads. In (34b), however, there is no C<sub>Ng</sub>, because *testimony* does not select it. Therefore, NPI licensing fails.

Moreover, the following contrast illustrates that, parallel to the cases in (1), noun complements of 'negative' nouns also display a clausal/non clausal asymmetry:

- (35) a. Her denial that any human rights should be respected shook the audience  
 b. \* Her denial of any human rights shook the audience

Whereas (35a) is fine as a result of the NPI being licensed by the  $C_{Ng}$ , (35b) is either deviant or only acceptable in a 'free' reading, as the usual test of introducing *just* will confirm.

The assumption that 'inherently negative' lexical items select a complementizer that has the [Ng] feature explains the asymmetry presented in section 1., and it accounts more satisfactorily for the conditions under which NPI licensing takes place.

### 2.3. [Ng] and [Wh] complementizers.

There are some clear parallels and some not so clear issues that can be brought up regarding [Ng] and [Wh] complementizers.

#### 2.3.1. Selection.

Let us first consider the parallels: The first similarity is that [Wh] complementizers can be selected by lexical items that have an 'interrogative' meaning like *wonder* and *ask*, and [Ng] complementizers can be selected by lexical items with a 'negative' meaning (*deny* and *doubt*, for instance). However, both complementizers can also occur in environments where the main verb does not appear to be 'interrogative' or 'negative' in a straightforward manner. Take for instance the examples in (36):

- (36) a. I can't say whether Mary will arrive  
 b. That anyone might do anything like that never occurred to John

It is not a straightforward matter to determine in what sense *say* in (36a) is interrogative. Note further that the presence of the modal and *not* (or a Q morpheme in the matrix sentence) is necessary in order to allow the presence of the [Wh] complementizer in (36a). If the modal and *not* are missing, the embedded Complementizer can no longer be [Wh]:<sup>11</sup>

- (37) \*I say whether Mary will arrive

Similarly, in (36b), taken from Ladusaw (1979) the verb *occur* selects a [Ng] complementizer,<sup>12</sup> although it is by no means an 'inherently negative' lexical item. The presence of the negative adverb is again mandatory to sanction the complementizer type, and its absence makes the selection of the negative complementizer invalid:

- (38) \*That<sub>[Ng]</sub> anyone might do anything like that often occurred to John

Feldman (1985) discusses many more cases that are similar to those in (36). Feldman (1985) notes that affectives in the sense of Klima (1964) and Ladusaw

(11) Note also that the verb *say* can always take a [+wh] complementizer if the subject of the matrix sentence is focalized, as in (i):

(i) I say whether we will go on vacation or not!

This further illustrates that it is not solely the matrix verb that determines what complementizer is selected; rather, selection may involve more elements than just the matrix V, as noted long ago by Bresnan (1970) for the case of 'for to' infinitivals.

(12) Given that English does not overtly distinguish declarative complementizers from negative ones, the presence of a negative complementizer will be 'signaled' in the next by placing a NPI in the embedded clause.

(1979) and root modals can alter the selectional properties of certain verbs,<sup>13</sup> in that the presence of these elements allows these verbs to take [Wh] complements. Some of the contrasts noted by Feldman (1985) are given in (39):

- (39) a. \*Albert said whether energy was matter  
 b. Albert didn't say whether energy was matter  
 c. Why did you assume who I would bring?  
 d. They can never think what to do  
 e. We ought to deny how much John eats

Feldman (1985) concludes that the evidence forces us to abandon the idea that complement selection is determined by the verb of the matrix clause alone (Grimshaw 1979 and Pesetsky 1982). Rather, he suggests, complement selection must be viewed as a compositional process, one where not only the matrix verb, but also the inflectional elements of the matrix sentence play a role.

This conclusion seems to be further confirmed by data on  $C_{Ng}$  selection, because a functional element distinct from the lexical verb affects the selection of the complementizer heading the embedded clause.

### 2.3.2. NPI licensing

Both [Wh] and [Ng] complementizers are NPI licensors, as shown in (40):

- (40) a. I wonder whether anybody will show up  
 b. I deny that[Ng] anybody will show up

Given that in (40a) it is the complementizer that licenses the subject NPI in the embedded sentence, all the asymmetries observed in the case of negative verbs and  $C_{Ng}$  also surface in relation to interrogative verbs and  $C_{WH}$ .

Thus for instance, similarly to the cases presented above, involving licensing of NPIs in the domain of negative verbs, there is also a clausal/non-clausal asymmetry when we consider interrogative verbs (H. Lasnik, p.c.). Consider (41a) and (41b):

- (41) a. I wonder whether any questions will be asked  
 b. \* I wonder about any questions

Whereas in (41a) the NPI *any questions* is licensed, this is not the case in (41b), where the NPI occurs in a non-clausal argument. As usual, we can resort to the *just* test: a non licensed *any* will be interpreted identically whether *just* is present or not; a licensed NPI is forced to acquire a 'free' interpretation and thus the conditions under which the sentence is true will change. Consider now (42a) and (42b), where *just* has been introduced:

- (42) a. I wonder whether just any questions will be asked  
 b. I wonder about just any question

It is clear that *just* induces a change in the interpretation of (41a) and (42a). The

(13) The verbs mentioned by Feldman are *believe, suspect, doubt, suppose, assume, expect, assert, say, deny, imply, think, regret*.

two sentences do not mean the same thing: in (41a) the subject wonders whether the number of questions asked will be zero or more than zero. In (42a), however, the subject of the sentence wonders about the kind of questions that will be asked. On the contrary, (41b) and (42b) have the same meaning. If anything, the only difference between the two is that (41b) is more easily acceptable than (42b). Nevertheless, both of them are instances of 'free' *any*.

If we passivize a sentence headed by a [Wh] complementizer, the NPI licensing properties of the embedded sentence do not change. This is shown in (43):

- (43) [CP Whether [IP anybody ever survives a plane crash]]<sub>i</sub> is often asked t<sub>i</sub> of commercial pilots by their passengers

In this respect too, the behavior of C<sub>WH</sub> is parallel to the pattern discussed in section 3.2. regarding C<sub>Ng</sub>.

It is a well-established fact that [Wh] is an extremely active feature in Syntax (Chomsky 1977): it may trigger *move*  $\alpha$ , it is an affective element in the sense of Klima (1964), and it plays a fundamental role in complementation. But note that [Ng] is also an active syntactic feature or property: it may also induce *move*  $\alpha$  (as in cases of *Neg-Aux inversion*, Klima 1964, Lasnik 1975), and it is an affective element (Klima 1964). This parallel extends to the domain of complementation, as we have seen.

In what follows, I will present abundant cross-linguistic evidence supporting the existence of [Ng] complementizers.

### 3. Evidence from Basque

#### 3.1. A phonologically distinct [Ng] complementizer.

English does not distinguish overtly the [Ng] complementizer from declarative complementizers, in that both of them surface as *that*. However, if the two complementizers are indeed different syntactic entities, the expectation is that some languages will overtly distinguish them. Hence, we expect some languages to have one complementizer for the purely declarative cases and another complementizer for the cases where a negative complementizer is selected.

I will argue now that Basque is one of those languages. There is a declarative complementizer *ela*,<sup>14</sup> whose distribution is like that of its English equivalent, the declarative *that*. Some instances of embedded clauses headed by *ela* are given in (44):

- (44) a. [Galapagoak muskerrez beterik daude/la] diote  
Galapagos lizards-of full are-that say-they  
'They say that the Galapagos are full of lizards'
- b. [Hiriak eta ibaiak kutsaturik daude/la] uste dugu  
cities and rivers polluted are-that think have-we  
'We think that the cities and the rivers are polluted'

(14) Usually, this complementizer is referred to as *-(e)la*, because the initial *e* only surfaces in certain phonological environments. I will call it *ela* for simplicity. I will do the same with all other complementizers. Complementizers in Basque are morphemes attached to the inflected verb or auxiliary.

There is also a [Wh] complementizer, distinct from *ela*, which occurs in embedded clauses where some operator movement has taken place. This is the complementizer *en*. The examples in (45) show an indirect question (45a), and a relative clause (45b), both headed by the complementizer *en*.

- (45) a. [Telebistako langileek greba egingo duten] galdetu diet  
television-of workers strike make will-whether asked have-I  
'I have asked them whether the television workers will go on strike'
- b. [Juanek erosi duen] kotxea 'Mazda Miata' bat da  
Juan bought has-that car-the 'Mazda Miata' one is  
'The car that Juan has bought is a 'Mazda Miata''

There is also a third complementizer that occurs in direct object embedded clauses. This complementizer is *enik*; it is selected in negative environments like the ones we have been considering in the beginning of this chapter. The complementizer *enik* can be selected when the matrix verb is inherently negative, as in (46a, b):

- (46) a. Amaiak [inork gorrotoa dionik] ukatu du  
Amaia anyone hatred has-her-that denied has  
'Amaia denied that anybody hated her'
- b. Lekukoek [gau hartan inor jauregira hurbildu zenik] ukatu dute  
witnesses night that anyone castle-to near was-that denied have  
'The witnesses denied that anyone got near the castle that night'

The examples in (46a) and (46b) also show that Negative Polarity Items (*inork*, *inor*) are licensed interclausally in these cases, just like in English in the previous section.

Since the claim made here is that the Comp head is the element responsible for the licensing of the NPIs in the embedded clause, we expect to find a sharp clausal/non-clausal asymmetry in Basque as well. The asymmetry does indeed exist: when the verb *ukatu* takes a complement without a Comp head in it, licensing of NPIs in that argument is no longer possible and the sentences are ungrammatical:

- (47) a. \* Josebak ezer ukatu du  
Joseba anything denied has  
(‘Joseba has denied anything’)
- b. \* Lekukoek hertzainak esandako ezer ukatuko dute  
witnesses policeman said anything deny will they  
(The witnesses will deny anything said by the policeman’)

Parallel to the English cases, a ‘free choice’ reading of the NPI is possible in these contexts in Basque. Thus, as in English, in (47b), the NPI *ezer* can be even more easily interpreted as a ‘free choice’ element if the matrix verb is in the future, if modals are added, and also if the matrix verb is focalized.<sup>15</sup>

(15) I am indebted to X. Arriagoitia for discussing these data with me.



The example in (48) has all these: the sentence has the irrealis modal, the verb is heavily focalized, and the object of *ukatu* 'deny' is modified by an infinitival adjectival clause.<sup>16</sup>

- (48) Lekukoek ukatu egingo lukete nik esandako *ezer*  
witnesses deny do-irr would I said-that anything  
'The witnesses would *deny* anything said by me'

But, also in Basque, there are ways to distinguish the two types of readings by introducing certain modifiers. The test is essentially identical to those used before for English. Here I will present just one test that distinguishes licensed NPIs from 'free choice' ones in Basque.

The test involves the introduction of the adverb *ere*. Sarasola (1984) notes that this particle can be attached to NPIs in negative contexts. The particle *ere* cannot be successfully attached to an NPI that has not been licensed.<sup>17</sup> The basic contrast induced by *ere* is illustrated in (49). The example in (49a) shows a NPI in a negative sentence; it has *ere* attached to it and the sentence is grammatical. However, in (49b), *ere* is attached to an NPI that is not licensed. The result is ungrammatical.

- (49) a. Ikernek ez du *ezer ere* aurkitu  
Ikerne no has anything found  
'Ikerne hasn't found anything at all'
- b. \*Zuk esandako *ezer ere* sinistuko nuke nik  
you said anything believe would I  
'(I would believe anything at all you said)'

Consider now the contrast that obtains when *ere* is attached to NPIs in the domain of *ukatu* 'to deny': the NPIs inside a clause can be modified by *ere*, but the ones not headed by the *enik* complementizer cannot, as illustrated in the following examples:

(16) In addition to allowing its NPI to acquire a 'free choice' reading, Basque also has a separate lexical item with the same meaning as Spanish *cualquier*, a 'free choice' universal quantifier:

- (iii) edonor etor daiteke                      (iv) *cualquiera* puede venir  
anybody come can                              'anybody can come'  
'anybody can come'

These facts seem to refute Progovac's (1990) claim that Negative Polarity *any* and 'free choice' *any* are separate lexical items that happen to be homophonous in English. Progovac (1990) argues that whereas one of the *any*'s is a Negative Polarity Item, the other one is the equivalent of Romance *cualquier*. The fact that Basque has a three way distinction, which incorporates both a possibility of having 'free choice' readings of the element that is interpreted as an NPI when licensed, and also a separate lexical item with an exclusive 'free choice' interpretation acquired in different contexts must lie on the nature of the licenser and its relation with the Negative Polarity Item, rather than on a phonological homophony.

(17) This particle does not have an exact equivalent in English. On top of the use of *ere* that is being considered in this test, Sarasola (1984) distinguishes the following uses of *ere*:

(a) After something has been affirmed or denied, it is used to affirm or deny something else. In this value, it is similar to English 'too' and 'neither'

(b) If attached to conditionals it is equivalent to English 'even': 'even if...'

(c) Attached to Wh-words it is equivalent to English 'ever', as in 'whoever', 'whatever', 'wherever' etc.

I will translate it as 'at all' in the examples below.

- (50) a. Amaiak [*inork ere gorrotoa dionik*] ukatu du  
 Amaia anyone hatred has-her-that denied has  
 'Amaia denied that anybody at all hated her'
- b. \*Lekukoek ukatu egingo lukete nik esandako *ezer ere*  
 witnesses deny do would I said-that anything  
 ('The witnesses would deny anything at all said by me')

These results prove that whereas the NPIs in the clausal complements of *ukatu* 'to deny' are licensed, the ones in non clausal complements are not instances of licensed NPIs, also in Basque, like in English.

When the matrix sentence involves an overt negation, the [Ng] complementizer can also be selected, as in (51):

- (51) Ez du Zuriñek [*inor etorriko denik*] esan  
 no has Zuriñe anyone come will that said  
 'Zuriñe has not said that anybody will come'

The example also illustrates that interclausal NPI licensing is also possible in matrix sentences involving overt negation. As expected, in these cases no asymmetry arises with respect to the type of complement taken by the verb, as shown by (49a) and (51).

Since it occurs in the same environments as the postulated [Ng] complementizer in the beginning of this paper, and since it displays the same properties as its equivalent in English, I conclude that the complementizer *enik* is the [Ng] complementizer in Basque. It is the phonologically distinct version of English that [Ng].<sup>18</sup>

### 3.2. Selection of [Ng] is not obligatory.

The fact that the [Ng] complementizer is phonologically distinct in Basque allows us to observe contrasts that are not directly detectable in English.

One important fact to be discussed now is that the selection of [Ng] complementizer is not the only option in negative environments: rather, both the negative complementizer *enik* and the declarative complementizer *ela* can be selected, as shown by (52a) and (52b):

- (52) a. Iñigok ez du sinisten [lurрак eztanda egingo *duela*]  
 Iñigo no has believed earth explode do will that  
 'Iñigo does not believe that the earth will explode'
- b. Iñigok ez du sinisten [lurрак eztanda egingo *duenik*]  
 Iñigo no has believed earth explode do will that<sub>[Ng]</sub>  
 'Iñigo does not believe that the earth will explode'

(18) The reader might have noticed that all examples of inherently negative verbs given for Basque involve the verb *ukatu* 'to deny'. It seems to be a fact that inherent negative lexical items are extremely scarce in Basque. Thus, the equivalent of English *doubt* and Spanish *dudar* is not a verb, but a combination of the noun *zalanza* 'doubt' and the verb *egin* 'make'. A simple form *zalanztatu* does exist, but is never used as a transitive verb, but as unaccusative. In general, 'I doubt that...' is expressed by means of 'I don't think that...'

Under the hypothesis that *enik* is the [Ng] complementizer in Basque, and that *ela* is the declarative one, lacking the feature [ $\emptyset$  Ng], the prediction is that NPIs will only be licensed in clauses headed by *enik*, not in clauses headed by *ela*.<sup>19</sup> This is in fact the case, as illustrated by the contrast in (53):<sup>20</sup>

- (53) a. \* *Iñigok ez du sinisten [ezerk eztanda egingo duela]*  
 Iñigo no has believe anything explode do will that  
 ('Iñigo does not believe that anything will explode')
- b. *Iñigok ez du sinisten [ezerk eztanda egingo duenik]*  
 Iñigo no has believe anything explode do will that<sub>[Ng]</sub>  
 'Iñigo does not believe that anything will explode'

The contrast illustrated in (53) cannot be detected in English because the two complementizers (53a) and (53b) are phonologically identical. Presumably, then, the English equivalent of (52b) is always interpreted as being structurally identical to (52a), that is, to be headed by a [Ng] complementizer, since the phonological output always matches the grammatical derivation.

### 3.3. Semantic differences in each choice.

One further contrast that is directly observable in Basque but not in English, concerns the different semantic interpretation attached to each choice of complementizer in a negative environment. Whether the embedded sentence is headed by *ela*, the declarative complementizer, or *enik*, the negative one, is not semantically neutral.

In this respect, we must qualify the claim made above about optionality in selection: selection of *enik* or *ela* in negative contexts is optional in that either choice yields a possible syntactic derivation; but the optionality is not such in that it makes a difference for NPI licensing (as seen above) and also for semantic interpretation.

I will argue that the presence of the [Ng] complementizer results in an interpretation where the embedded clause is under the scope of negation, whereas the choice of the non-negative complementizer results in an interpretation where the embedded clause is not. This fact results in the different truth value of the embedded sentence with respect to the matrix one.

Saltarelli (1988) describes the difference between *enik* and *ela* as a difference in presupposition of truth values:<sup>21</sup>

(19) I have argued in Laka (1990b) that the complementizer *ela* is in fact empty in its syntactic features.

(20) Azkue (1923) notes that some dialects of Basque do not have *enik* complementizers. Eastern dialects like Labourdin, for instance, have a different distribution of complementizers without the option of *enik* (B. Oyharçabal, p.c.). I assume that these dialects are like English, in that the distinction between declarative and negative complementizers is not overt. Interestingly, Lafitte (1979) notes that older stages of these eastern dialects did have the *enik* complementizer, which has only recently been put out of use.

(21) The negative complementizer *enik* has a great morphological similarity with the partitive case *ik*. In fact, the complementizer *enik* appears to be composed of the interrogative complementizer *en* and the partitive marker *ik*. This fact has not gone unnoticed in the literature. The parallel between the negative complementizer *enik* and the partitive case has been pointed out at least in Azkue (1905), and in Saltarelli (1988).

-(*e*)*nik* is affixed to the embedded verb of complements of negative main clause verbs (...). However, when the truth of the embedded clause is presupposed on the part of the speaker, -(*e*)*la* will appear as the complementizer. (Saltarelli 1988: 32)

This description seems rather accurate. Hence, for instance, the difference between (53a) and (53b) is the following: In (53a), that the earth is going to explode is taken to be a fact. What the sentence means, then, is that Iñigo does not believe something that is true. However, (53b) simply means that Iñigo does not believe that the earth will explode, but this later proposition is not taken to be a fact; it could be true or false, and therefore Iñigo could be right or wrong. Consider the sentence in (54):

- (54) Galileok ez zuen sinisten [eguzkia lurrari inguruka zebilen*nik*]  
Galileo no had believed sun-the earth-to turns-in went-that  
'Galileo did not believe that the sun revolved around the earth'

This sentence does not entail that what Galileo did not believe was necessarily true. Now, if we change the complementizer heading the embedded clause and insert *ela*, the declarative complementizer instead, as in (56),

- (56) Galileok ez zuen sinisten [eguzkia lurrari inguruka zebile*ela*]  
Galileo no had believed sun-the earth-to turns-at goes-that  
'Galileo did not believe that the sun revolved around the earth'

the reading that obtains is that we take it to be a fact about the world that the sun turns around the earth, and that Galileo did not believe that. Judging from the sentence in (56), we are led to believe that Galileo must have been wrong.

These different semantic interpretations can be accounted for under the assumption that the *enik* complementizer is necessarily interpreted under the scope of the negative element that selects it, whereas the *ela* complementizer is interpreted outside the scope of the matrix negative. That is to say, at the level of Logical Form the sentences headed by *enik* remain in the scope of the matrix Infl and V, whereas the sentences headed by *ela* do not. A specific way of implementing this idea is to assume that embedded clauses headed by *ela* undergo Quantifier Raising at Logical Form (May 1985), whereas the clauses headed by *enik* do not.

Of course, this is a fact about  $C_{Ng}$ , and not about its particular instantiation in Basque. We will see in the next section that this semantic difference is manifested also in Spanish.<sup>22</sup>

(22) There is one more instance where the complementizer *enik* is selected. Certain rhetorical questions allow it too:

- (i) Nork uste izango zuen Bilbon honenbeste kojo zegoenik?  
who thought would have Bilbo-in so many crippled were that  
'Who would have thought that there were so many cripples in Bilbao?'

This example (from Bustintza 1918), is noted by Altube (1929), who nevertheless considers it a 'negative environment'. As suggested by Ken Hale (p.c.), the occurrence of *enik* in these rhetorical questions is consistent with the description, because all cases entail doubt. Thus, (i) presupposes the doubt that there would be so many cripples in Bilbao. Interestingly, Spanish licenses dubitative subjunctives in these environments:

- (ii) ¿Quién iba a pensar que hubiera tanto cojo en Bilbao?  
Who would have thought that there were so many cripples in Bilbao?

See below for an account of dubitative subjunctive as an instance of  $C_{Ng}$ .

#### 4. Evidence from Romance: dubitative subjunctive

In this section, I will concentrate on the relation between the C[Ng] and subjunctive mood in Spanish (the results extend also at least to Catalan). I argue that the C[Ng] in Spanish selects subjunctive mood; this combination of C[Ng] and subjunctive is what is referred to as *dubitative subjunctive* by traditional grammars. I will show that the C[Ng] accounts not only for the interclausal NPI licensing in these cases, but also the occurrence of subjunctive mood in negative environments.

##### 4.1. Interclausal NPI licensing in Spanish.

Similarly to the English and Basque cases discussed in the previous sections of this paper, there are certain environments where Negative Polarity Items (NPIs) are licensed in embedded clauses of inherently negative verbs in Spanish. Thus, for instance, in the examples in (57), a postverbal NPI is licensed without having any overt licenser within the embedded sentence.

- (57) a. Dudo que lo sepa *nadie*  
 'I doubt that anybody knows that'  
 b. El testigo negó que la acusada le hubiera dicho *nada*  
 'The witness denied that the defendant had told him anything'  
 c. Ella ignoraba que hubiésemos estado *nunca* en Menorca  
 'She didn't know that we had ever been in Menorca'

NPIs like the ones in (57) require an affective element *c*-commanding them in order to be licensed (Laka 1990). The examples in (57) are parallel to the ones in (1) in all respects. Hence, as expected, they display the same asymmetry discussed in the first section of this chapter: NPIs are only licensed in CP arguments, but not in DP arguments. Thus compare (57) to (58), where NPIs heading DP complements induce ungrammatical results:<sup>23</sup>

- (58) a. \* Dudo *nada* de lo que me ha dicho  
 ('I doubt anything of what she told me')  
 b. \* El testigo negó *nada* de lo que la acusada le dijo  
 ('The witness denied anything of what the defendant told him')  
 c. \* Ella ignoraba *nada* sobre nuestros viajes  
 ('She didn't know anything about our trips')

There is no 'free choice' reading or any other kind of interpretation that can be assigned to the sentences in (58). In this respect, the only difference with respect to English and Basque is that the asymmetry is more immediately perceived in Romance: the examples in (58) simply have no appropriate interpretation, and hence there is no need to resort to independent tests to prove that they do not contain licensed NPIs.

(23) The contrast between (52) and (53) is noted in a footnote in Kempchinsky (1986), where the observation is attributed to Jacàs. Jacàs observed that verbs like *dudar* do not license NPIs in their own clause. Example (53a) is the one pointed out by Jacàs (Cf. Kempchinsky 1986: 206).

Also as expected, cases where an overt negation is involved do not display any clausal/non-clausal asymmetry: in both cases, the NPI is licensed and the sentences are grammatical (59):

- (59) a. Ella no ha dicho que pase *nada* malo  
 'She hasn't said that anything bad happens'  
 b. Ella no ha dicho *nada*  
 'She hasn't said anything'

#### 4.2 $C_{[Ng]}$ and Subjunctive Mood.

Given the results obtained so far, we can conclude that the  $C_{[Ng]}$  hypothesis is supported by the Spanish data. Spanish is like English and not like Basque, in that the declarative complementizer and the  $[Ng]$  one are phonologically indistinguishable: both surface as *que*. However, Spanish is unlike English and like Basque in that there is something else that  $C_{[Ng]}$  affects: the mood of the sentence it heads.

All the embedded sentences we have considered so far are inflected for *subjunctive mood*. The subjunctive mood is in fact required in sentences headed by a negative complementizer. This fact makes the Spanish cases of negative complementizers overtly different from declarative complementizers. It allows us to determine more exactly the distribution of this complementizer: we can now compare the behavior of the Basque complementizer *enik* with the evidence from Spanish in order to further establish the nature of the  $C_{[Ng]}$  in Universal Grammar.

As expected, given the evidence from Basque presented in the previous section, the choice between  $C_{[Ng]}$  and declarative complementizer is available also in Spanish. Thus, it is possible to have indicative sentences as complements of negative verbs, as (60) illustrates:

- (60) a. Sancho ignora [que su señor *está* arruinado].  
 'Sancho does not know that his lord is broke'  
 b. Este libro niega [que Lorca *fué* asesinado].  
 'This book denies that Lorca was murdered'

But when the mood of the embedded sentence is indicative, it is no longer possible to have an NPI in it licensed without the sentence itself being negated:

- (61) a. \*Sancho ignora [que su señor debe *nada*].  
 ('Sancho does not know that his lord owes anything')  
 b. \*Este libro niega [que Lorca *fué nunca* asesinado].  
 ('This book denies that Lorca was ever murdered')

These facts parallel exactly the data on Basque presented in the previous section, and thus they confirm that  $C_{[Ng]}$  is not obligatorily selected by the lexical items that can select it.

The sentences in (61) contrast minimally with those in (57). The only overt difference is the mood of the sentence. We can therefore reasonably assume that there is some relation between the subjunctive mood and the  $C_{[Ng]}$ .

This relation between subjunctive and  $C_{[Ng]}$  could not however be one of identity; if it were, that would imply that whenever subjunctive mood is present we

should find all the effects that the postulated negative complementizer induces. For instance, NPIs should be licensed in all subjunctive sentences. That this is not the case is shown in (62), where the embedded sentences are inflected for subjunctive mood, and nevertheless the NPIs are not licensed, inducing ungrammaticality:

- (62) a. \*Carmen quiere [que la asamblea decida *nada*]  
 ('Carmen wants the assembly to decide anything')  
 b. \*Andone espera [que sus experimentos resuelvan *nada*]  
 ('Andone hopes that her experiments will solve anything')

The examples in (62) show: first, that the postulated  $C_{[Ng]}$  and the subjunctive mood are not the same entity, because here we have sentences inflected for subjunctive mood where NPIs are not licensed, unlike in the ones in (62). Second, these examples also show that not all occurrences of subjunctive involve a  $C_{[Ng]}$ .

The claim I am putting forward is that subjunctive mood is required in a sentence headed by a  $C_{[Ng]}$ . However, a  $C_{[Ng]}$  is not required whenever a sentence is inflected for subjunctive mood. I will later discuss the status of subjunctive mood in Spanish, and argue that subjunctive is in fact an irrealis modal.<sup>24</sup> The reason why clauses headed by  $C_{[Ng]}$  are inflected for subjunctive mood is because these clauses, being under the scope of negation (Cf. section 3.3.) are irrealis. Thus, all the contrasts observed for Basque in sections 3.2. and 3.3. hold also of the subjunctive/indicative distinction in Spanish. This is illustrated in the following examples, (from Kempchinsky 1986):

- (63) a. No me pareció que el bar *estuviera* cerrado; es más, creo que está abierto  
 'It didn't seem to me that the bar was<sub>subj</sub> closed; what's more, it is open'  
 b. \*No me pareció que el bar *estaba* cerrado; es más, creo que está abierto  
 'It didn't seem to me that the bar was closed; what's more, it is open'

The contrast between the perfect (63a) and the anomalous (63b) is totally determined by the presence versus absence of the  $C_{[Ng]}$  (reflected in the change of mood in inflection). The fact is that the bar is open. If it didn't look closed to me, I could say so as in (63a), where there is a  $C_{[Ng]}$  and thus the sentence is interpreted under the scope of negation. It would still make sense to admit that the bar is in fact open. In contrast, (63b) is anomalous because the embedded sentence is headed by a declarative Comp, which will not be interpreted under the scope of negation. The meaning of (63b) is 'the bar was closed but it didn't seem like that to me'; thus the anomaly of following the sentence with a statement about the bar being in fact open.<sup>25</sup>

(24) This is in fact the view maintained by many traditional grammars, among them the Grammar of the Academy of the Spanish Language.

(25) A similar contrast can be observed in the following pair:

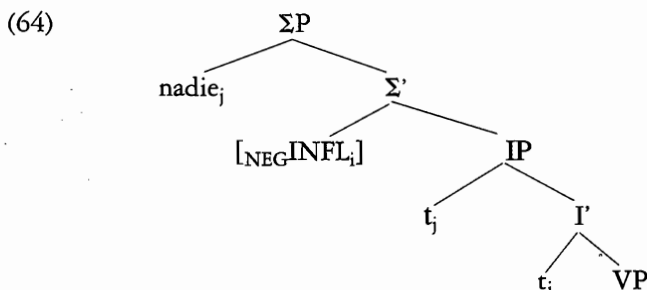
- (i) Nadie niega que el vasco y las lenguas caucásicas estén emparentadas  
 'Noone denies that Basque and the Caucasian languages are<sub>sub</sub> related'  
 (ii) Nadie niega que el vasco y las lenguas caucásicas están emparentadas  
 'Noone denies that Basque and the Caucasian languages are related'

Example (i), which inflects its embedded verb with subjunctive, indicates no commitment as to whether Basque is related or not to Caucasian languages, and it simply states that there is no denial of that relation. The second sentence, inflected in indicative, entails that Basque and Caucasian languages are indeed related, thus, the state of affairs denoted by the embedded sentence in (ii) is taken to be true, whereas that is not necessarily the case in (i).

These data are exactly parallel to the contrasts observed in Basque regarding the use of the  $C_{[Ng]}$  (*enik*) or the declarative complementizer (*ela*). Thus, we can conclude that it is a general property of the  $C_{[Ng]}$  that it demands that the sentence it heads be interpreted under the scope of the matrix negation.

#### 4.3. $C_{Ng}$ and Movement to $\Sigma P$ .

In Laka (1990) and (1991b), I have given an account of the distribution and behavior of N-words (elements like *nadie*, *nada*, *ningún*, etc.) in Spanish: N-words are Negative Polarity Items (NPIs), and therefore require a licenser at S-Structure. When these N-words occur preceding Inflection in a clause, they have moved to the specifier of  $\Sigma P$ , which is headed by the phonologically empty element [NEG]. Whereas the N-word in the specifier of P licenses the projection, the head licenses the NPI in the specifier via SPEC-Head agreement. Thus, the S-structure representation of a sentence with a preverbal N-word is as in (64):



Infl must raise to the head of  $\Sigma P$  at S-structure, in order to satisfy the Tense C-Command Condition (Laka 1990). Further, the agreement relation between *nadie* and the head of  $\Sigma P$  must also be satisfied at S-Structure.

If we combine these two independent hypotheses, we obtain the following scenario. In clauses headed by  $C_{[Ng]}$ , there are two ways in which a preverbal N-word can be licensed: there is a negative complementizer available, which c-commands the NPI and thus licenses it, as we have seen in the previous section. Thus, the first prediction is that preverbal N-words will be licensed in the same way that postverbal ones are. But, moreover, there is also the possibility of having a preverbal NPI sitting in the specifier of a  $\Sigma P$  headed by [NEG]. In this latter case, there will be two negative licensers available. The interpretation of the sentence should therefore reflect this fact.

I will now show that the scenario just described does indeed obtain in Spanish,<sup>26</sup> and that  $C_{[Ng]}$  and  $\Sigma P$  interact inducing interesting effects in the interpretation of the sentences.

Bosque (1980) notes that a preposed *nadie* word can be ambiguous between an existential reading and a universal negative reading. The sentence in (65) is one of the examples given by him:

- (65) Es imposible [que *nadie* lo sepa]  
 Is impossible that anybody it knows<sub>SUBJ</sub>

(26) All the effects about to be presented obtain also in Catalan (E. Bonet and E. Benedicto, p.c.).



The sentence in (65) has the interesting property of having two readings that happen to be contradictory. The two meanings that the sentence can have are given in (66), and they crucially involve the interpretation of the word *nadie*:

- (66) a. It is impossible that anybody knows it  
 b. It is impossible that nobody knows it

This kind of contradictory ambiguity extends in fact to all cases where a  $C_{[Ng]}$  is involved. Some more examples are presented in (67) and (68):

- (67) El director duda [que nadie venga al estreno]  
 1. 'The director doubts that anybody will come to the première'  
 2. 'The director doubts that nobody will come to the première'

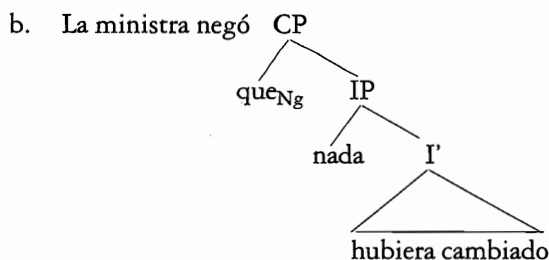
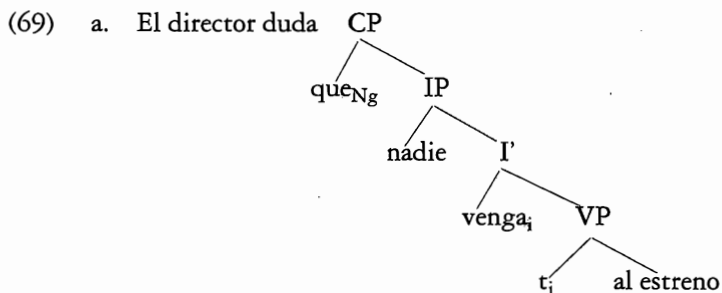
- (68) La ministra negó que [nada hubiera cambiado]  
 1. 'The minister denied that anything had changed'  
 2. 'The minister denied that nothing had changed'

Given the two possible ways in which N-words can be licensed in sentences headed by  $C_{[Ng]}$ , the contradictory readings of the sentences in (65), (67) and (68) are straightforwardly accounted for:

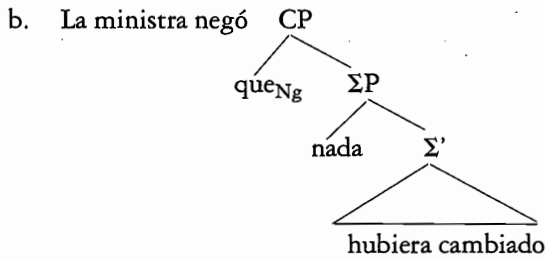
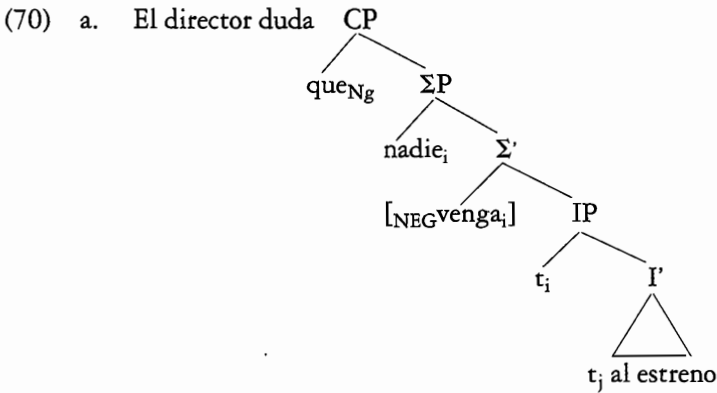
a) In the cases where the preverbal N-word is interpreted as an existential (that is, the *anybody* reading in (67.1) and (68.1)), what we have is licensing by the  $C_{[Ng]}$ , and the N-word is sitting in the specifier of IP.

b) In the interpretation where *nadie* has a universal negative quantifier interpretation (that is, the 'nobody' readings in (67.2) and (68.2)), the N-word is sitting in the spec of  $\Sigma P$  headed by [NEG].

The S-structure representations of the first readings are illustrated in (69):



In the second reading, the  $\Sigma P$  has been projected: it is headed by the [NEG] element. The preverbal N-word now sits in its specifier, and it is thus licensed by it, as in matrix clauses. Hence, as in matrix clauses, the N-word is interpreted with a universal negative reading. The S-structure representations are illustrated in (70):



Given that these latter readings involve  $\Sigma P$ , we expect that they will be available also in embedded sentences where there is no negative complementizer. Thus, for instance, CP complements of negative verbs that are inflected for indicative mood can have preverbal N-words. But these indicative sentences are not headed by  $C_{[Ng]}$ , and, therefore, unlike the sentences headed by  $C_{Ng}$ , they display no ambiguity:

- (71) a. Sancho ignora [que nadie es perfecto]  
 'Sancho does not know that nobody is perfect'  
 b. Este libro niega [que nadie vive en el Everest]  
 'This book denies that nobody lives in the Everest'

Recall that certain adverbs, like *frecuentemente* 'often', can occur between the specifier of IP and I, that is, between the subject and the inflected verb, but not between the specifier of  $\Sigma P$  and  $\Sigma$ . This fact accounted for the following contrast (72):

- (72) a. [<sub>IP</sub>María [<sub>I'</sub>frecuentemente [<sub>I</sub>canta en la ducha]]]  
 b.\* [<sub>ΣP</sub>Nadie [<sub>Σ</sub>frecuentemente [<sub>NEG</sub>canta [<sub>IP</sub> en la ducha]]]]  
 c. [<sub>ΣP</sub>Nadie [<sub>NEG</sub>canta [<sub>IP</sub> frecuentemente en la ducha]]]

Given that the ambiguity of sentences like (67) and (68) involves representations like (72a) and (72c), the prediction is that if an adverb like *frecuentemente* intervenes

between *nadie* and the inflected verb, the ambiguity will disappear, and only an existential meaning will be available. This is so because the only possible S-structure representation where the adverb intervenes between *nadie* and the inflected verb is the one where *nadie* sits in the specifier of IP and the inflected verb sits in I. The prediction is borne out, as (73) illustrates:

- (73) a. El director duda [que ningún actor frecuentemente olvide su texto]  
 'The director doubts that any actor often forgets his text'
- b. La ministra negó [que nadie frecuentemente hubiera destruído documentos comprometedores]  
 'The minister denied that anybody often destroyed compromising documents'

In these cases, the only reading available is the one where the only licenser available is the complementizer. The embedded sentence is no longer interpreted as having a negation in it; there is no [NEG] heading a  $\Sigma$ P phrase.

I have shown previously that [Wh] complementizers are also NPI licensers, in the same way [Ng] ones are (Cf. section 2.3.). Given this fact and the account of the ambiguities that I have just given, the prediction is made that the same ambiguities as in (65), (67) and (68) must arise also in contexts where a [Wh] complementizer is involved. This is indeed the case. Consider (74) and (75):

- (74) Me pregunto [si nadie vendrá a la fiesta]  
 1. 'I wonder whether anybody will come to the party'  
 2. 'I wonder whether nobody will come to the party'
- (75) Le gustaría saber [si nada ha cambiado desde que se fué]  
 1. 'She would like to know whether anything changed since she left'  
 2. 'She would like to know whether nothing has changed since she left'

The explanation for these ambiguities is of course identical to the one given before: In the first readings (English translation number 1), the NPI is licensed by the complementizer, and the NPI is sitting in the specifier of IP. In the second reading, the  $\Sigma$ P has been projected, headed by [NEG], and the N-word is sitting in its specifier. This is why the sentence is now interpreted as having a negative element in it.

#### 4.4. Volitional subjunctive and $C_{Ng}$ .

It has already been shown that not all subjunctive clauses are headed by a  $C_{[Ng]}$ . Hence, for instance, subjunctive clauses embedded under volitional verbs do not allow postverbal NPIs:

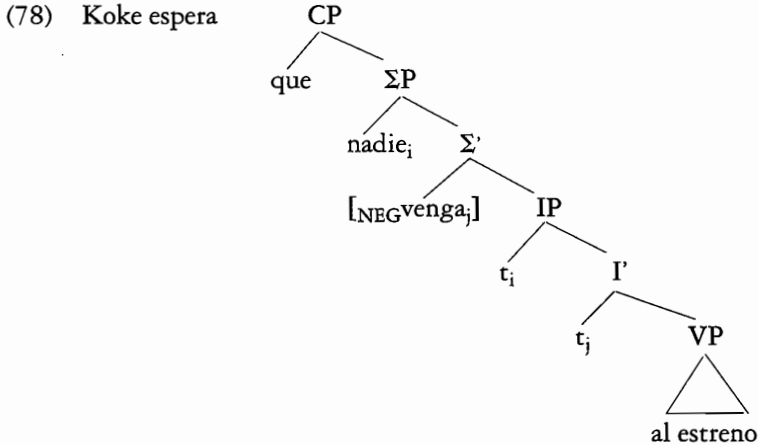
- (76) \*Koke espera [que venga *nadie* al estreno]  
 Koke hopes that comes<sub>SUBJ</sub> anybody to the première

Fronted N-words are allowed but they display no ambiguity. They are unequivocally

interpreted as universal negatives, the interpretation obtained when these words have moved to the specifier of  $\Sigma P$  headed by [NEG]. This is shown in (77):

- (77) Koke espera [<sub>CP</sub> que [ <sub>$\Sigma P$</sub>  *nadie* venga al estreno]  
 'Koke hopes that nobody will come to the première'

The S-structure representation of (77) is as in (78):



The question that arises is what the behavior of these clauses is when the volitional verb is negated. We will now see that, when the matrix verb is negated, these types of clauses pattern like the cases considered above. They license Polarity Items even though there is no overt licenser in the clause, as illustrated in (79):

- (79) Lander no quiere [que cambie *nada*]  
 'Lander doesn't want anything to change'

And when the N-word is preverbal, it displays the same type of ambiguity we have discussed above. Thus, consider (80):

- (80) Pablo no quiere [que *nada* cambie]  
 1. 'Pablo does not want anything to change'  
 2. 'Pablo does not want nothing to change'

We can therefore conclude that volitional subjunctives are headed by a  $C_{[Ng]}$  when the matrix sentence is negative. In this respect, volitional subjunctives are like any other clause. Moreover, they provide further evidence that subjunctive mood is not the key factor in the negative complementation, but rather a side effect. The crucial element in negative complementation is the head of C.

#### 4.2. On the relation between $C_{Ng}$ and Subjunctive Mood.

Studies of subjunctive undertaken within the GB framework (Cf. Picallo 1985, Kempchinsky 1986 and references therein) have concentrated on a salient phenomenon found in subjunctive clauses, first pointed out by Guéron (1978). I will refer to this phenomenon as the Subject Disjoint Reference effect (name due to Kempchinsky 1985, henceforth SDR); it is illustrated in the examples in (81a, b):

- (81) a. Mingo<sub>i</sub> dice [que pro<sub>i</sub> canta un fandango]  
 'Mingo says that she sings a fandango'  
 b. \* Mingo<sub>i</sub> quiere [que pro<sub>i</sub> cante un fandango]  
 Mingo wants that sing<sub>subj</sub> a fandango  
 ('Mingo wants to sing a fandango')  
 c. Mingo<sub>i</sub> quiere que [ pro<sub>j</sub> cante un fandango]  
 Mingo wants that sing<sub>subj</sub> a fandango  
 'Mingo wants her to sing a fandango'

In example (81a) we can see an embedded sentence inflected for indicative mood. The subject of the embedded sentence is *pro*, and it can be coreferent with the subject of the matrix clause, as expected under condition B of Binding Theory. In contrast with this, consider (81b), which is inflected for subjunctive mood. Coreference between the embedded *pro* and the subject of the sentence is not possible. (81c) illustrates that the effect has nothing to do with the possibility of licensing the empty category *pro* in the subjunctive clause. It is the coreference between the subjects that is not possible.

Most accounts of this SDR effect have linked it to the very nature of subjunctive mood. Thus, for instance, one intuition shared by many proposals crucially relies on the properties of Tense in subjunctive clauses. Bouchard (1982) bases his account of the SDR effect on Bresnan's (1972) observation that subjunctives and infinitives are 'unrealized tenses'. Johnson (1984) and Picallo (1984), (1985) argue that the Tense of the subjunctive clauses is anaphoric and must be bound by the matrix Tense much in the same fashion in which anaphors must be bound in their governing category.

If the SDR effect is crucially linked to the nature of subjunctive Tense, the prediction is that all clauses inflected for subjunctive mood will display the SDR effect. This is not true, as noted by Padilla-Rivera (1985).<sup>27</sup> Subjunctive clauses embedded under inherently negative verbs do not display any SDR effect, as shown in (82):

- (82) a. Maitane<sub>i</sub> ignoraba [que pro<sub>i</sub> *hubiera* ganado el concurso]  
 'Maitane didn't know that she had<sub>subj</sub> won the contest'  
 b. Santi<sub>i</sub> duda [que pro<sub>i</sub> *vaya* a encontrar trabajo este año]  
 'Santi doubts that he will<sub>subj</sub> find a job this year'

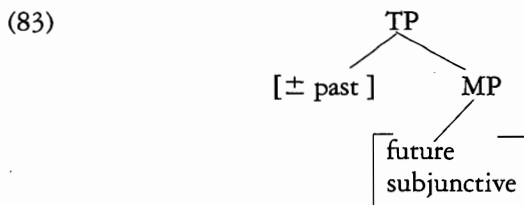
Kempchinsky (1986) concludes that subjunctive complements to verbs of doubt /denial, and in some dialects of Spanish and the other Romance languages, to factive emotive predicates, allow coreference of the embedded subject with the matrix subject. Only verbs of volition and influence show SDR effects in their complements.

When we consider the data from dubitative subjunctive, it becomes apparent that whatever induces the SDR effect, it cannot be just the subjunctive inflection.

(27) See this work for an extensive discussion on Tense restrictions in subjunctive clauses, where volitional contexts again differ from dubitative ones: the later do not display the restrictions that are typical of the former. This undermines the claim that it is in the very nature of subjunctive mood to be restricted in choice of Tense. Only *certain* subjunctives are restricted in that respect.

### 4.3 The Structure of Inflection in Spanish.

I want to put forward the traditional idea that subjunctive is not a Tense, but a Modal. In particular, the inflectional structure I want to propose is the following:



Where subjunctive is a separate head from Tense, and in the same category as future. Romance subjunctive has properties similar to modals in other languages (Kempchinsky 1986). The X' implementation of the inflectional structure of Spanish presented in (83) makes some immediate predictions: whereas future and subjunctive cannot cooccur in a sentence, both values of Tense can in principle cooccur with any of the values of the Modal Phrase, future and subjunctive. These predictions are borne out.

Regarding the cooccurrence of future and subjunctive, the prediction is confirmed: modern Spanish lacks any future subjunctive. Old Spanish, which presumably had a different inflectional structure, did have what is called the 'future subjunctive'. This future subjunctive is shown in (84):

(84) *Adonde fueres, haz lo que vieres* 'Wherever you go, do whatever you see'

These forms are substituted by present subjunctive in modern Spanish.<sup>28</sup> Only in fossilized registers of the language, like old sayings or law, can these forms be found nowadays.

As for the interaction between the two values of Tense and the two values of Modal, they are all possible and instantiated in the verbal paradigms of Spanish. Let us consider them:

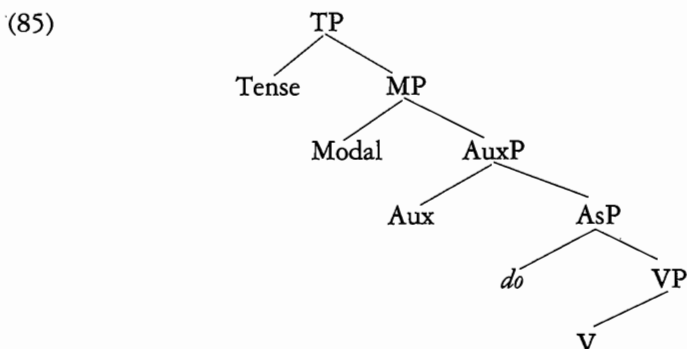
- (i) Combination of [present] and [future] is the simple future: *iré* 'I'll go'; *comeré* 'I'll eat'...
- (ii) Combination of [present] and [subjunctive] results in present subjunctive: *vaya* 'I go<sub>SUBJ</sub>'; *coma* 'I eat<sub>SUBJ</sub>'
- (iii) Combination of [past] and [future] yields the conditional: *iría* 'I'd go'; *comería* 'I'd eat'
- (iv) Combination of [past] and [subjunctive] results in the past subjunctive: *fuera* 'I went<sub>SUBJ</sub>'; *comiera* 'I eat<sub>SUBJ</sub>'

All other verbal paradigms are obtained from the interaction of the heads in Tense and Modal with the category Aspect. When Aspect is [perfect], the past participle morpheme *do* heads the Aspect projection.

(28) Hence, for instance, the saying illustrated in (47) is stated in present subjunctive nowadays:

(i) *Adonde fueras, haz lo que vieras*

The verb will raise to Asp and no further, exactly like periphrastic verbs in Basque raise to Aspect and no further (Laka 1990). The Auxiliary verb generated in AuxP is now the one that will raise to Modal and eventually to Tense. It will therefore be the auxiliary verb that supports the morphology generated by the different values of the heads Tense and Modal.



Hence, we find the same array of choices illustrated in (i) to (iv) above, repeated for the *haber* auxiliary of periphrastic forms, which differ from the ones above in that the value of aspect is now [perfective]. The perfective forms are illustrated in (v) to (viii):

- (v) Combination of (i) and [perfective]:  
*habré ido* 'I'll have gone'      *habré comido* 'I'll have eaten'
- (vi) Combination of (ii) and [perfective]:  
*habría ido* 'I would have gone'      *habría comido* 'I would have eaten'
- (vii) Combination of (iii) and [perfective]:  
*baya ido* 'I have<sub>SUBJ</sub> gone'      *baya comido* 'I have<sub>SUBJ</sub> eaten'
- (viii) Combination of (iv) and [perfective]:  
*hubiera ido* 'I had<sub>SUBJ</sub> gone'      *hubiera comido* 'I had<sub>SUBJ</sub> eaten'

The other possible choices in the verbal paradigm are those that involve no modal element (that is, a zero choice in the Modal Phrase). They are the following:

- (ix) [-past] [-perfective] is the present of indicative:  
*voy* 'I go';      *como* 'I eat'...
- (x) [-past][+perfective] is present perfect:  
*he ido* 'I have gone';      *he comido* 'I have eaten'
- (xi) [+past][-perfective] is the 'pretérito indefinido'  
*fuí* 'I went';      *comí* 'I eat'
- (xii) [+past][+perfective] is the 'pretérito perfecto'  
*hube ido* 'I had gone';      *hube comido* 'I had eaten'

There are only two verbal forms to be accounted for in order to complete the verbal paradigm of Spanish. These are the so called imperfective pasts: *cantaba* and

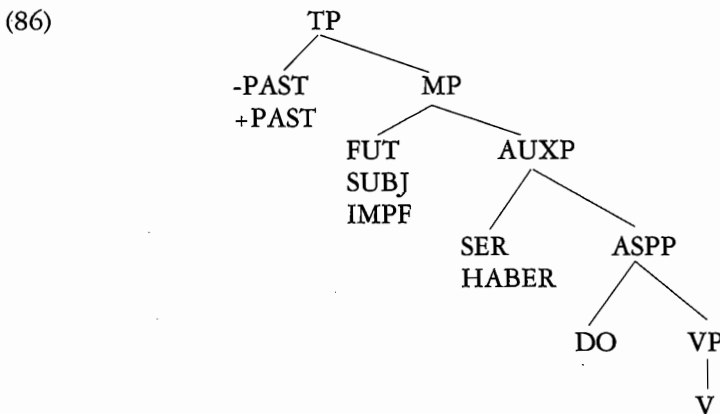
*había cantado*. Notice that the kind of imperfectivity conveyed by these forms is not incompatible with a periphrastic form construed with a participle and an auxiliary. In fact, the second one is perfective in meaning. I will claim that the morpheme distinguishing these two later forms from the ones in (xi) and (xii) is a third value of Modal, which I will call IMPF to suggest the traditional imperfective term:

(xiii) [+past][—IMPF] [-perfective]: imperfective past  
*iba* 'I was going'; *comía* 'I was eating'

(xiv) [+past][IMPF] [+perfective]: 'pretérito pluscuamperfecto'  
*había cantado* 'I had sung'

If this morpheme is heading the Modal Phrase, we expect that it will be incompatible with both future and subjunctive. This prediction is borne out. There is a restriction in the presence of [IMPF] in the Modal head: it must be governed by a [+past] tense. Thus, present tense forms do not display the distinctions the past does, in opposing (xi), (xii) to (xiii), (xiv).

Under this view of Spanish Inflection, the distribution of inflectional elements is as shown in (86):



The structure of this tree is identical to the one proposed for the structure of Inflection in Basque in Laka (1988, 1991a): TP dominates a MP, which in turn dominates an AuxP, which in turn dominates an AspP, which dominates VP.

The claim that Spanish (and at least Catalan) subjunctive is an irrealis modal is further supported by uses of subjunctive other than volitional and negative contexts. I will consider here some of these.

Subjunctive mood appears within relative clauses when and only when the head of that clause is not used referentially; that is, when the DP the relative clause is part of has narrow scope. Consider the following examples:

- (87) a. Compró gatos [que tengan pelo azul]  
 'I buy cats that have<sub>subj</sub> blue fur'  
 b. Compró [gatos que tienen pelo azul]  
 'I buy cats that have blue fur'



In (87a), the existence of cats that have blue fur is not presupposed; that is, the DP that contains the relative clause is interpreted non-referentially, and I speak truly even if I never bought any cat. What (87a) means is that I happen to be a person that buys blue cats. However, in (87b), the existence of blue cats is presupposed, and the DP containing the relative clause is interpreted as having wide scope. For the sentence to be true, it must be the case that I have bought or am about to buy some cat or other whose fur is blue.

The hypothesis that subjunctive mood is an irrealis modal allows us to unify all environments where subjunctive appears. Volitional contexts, and clauses embedded under negative environments fall naturally together because they are all interpreted narrowly, parallel to the DPs that receive a non-referential interpretation. Relative clauses inflected for subjunctive naturally fit in the same category, because they are also interpreted narrowly. Moreover, adjunct clauses can also be inflected for subjunctive, as shown in (88):

- (88) a. Cuando nieve en Sevilla te compraré un palacio  
 'When it snows<sub>subj</sub> in Seville, I'll buy you a palace'  
 b. Cuando nieva en Sevilla dan fiesta en los colegios  
 'When it snows in Seville, they have holiday at school'

Once again, the difference between the temporal adjunct clauses in (88a) and (88b) has to do with modality. Whereas (88a) considers a possibility that might never take place, the sentence in (88b) reports a fact. (88a) is indeed like a conditional, whereas (88b) is a statement.

Finally, the irrealis value of subjunctive is also illustrated by sentences containing modals or adverbs that denote possibilities or wishes. These sentences are not embedded ones (unless we consider the adverbs heading them to be matrix clauses). I will assume that the adverbs heading them are sitting in the head of  $\Sigma$ P or CP, and that their irrealis character requires the presence of subjunctive in the clause. Some examples of these type of matrix subjunctive sentences are given in (89):

- (89) a. quizá venga/\*viene mañana      maybe it will rain<sub>subj</sub> tomorrow  
 b. ojalá llueva/\*llueve                  will it rain<sub>subj</sub> tomorrow!  
 c. así te parta/\*parte un rayo!        may a lightning strike<sub>subj</sub> you!

Under the hypothesis that subjunctive is a modal, all instances of subjunctive fall under a single group, and no stipulations about different kinds of subjunctives are necessary. Moreover, the evidence presented throughout this chapter shows that syntactic effects like the *Subject Disjoint Reference Effect* or interclausal Negative Polarity Item licensing must not be treated as inherently tied to the nature of subjunctive. Rather, these phenomena result from the properties of the various syntactic environments that select subjunctive mood: they all lack a truth value, and thus they all display the irrealis value of the modal projection in Infl.

On the other hand, assuming that distinct inflectional elements head distinct X' projections, and given the status of subjunctive as a modal head, the entire Spanish verbal paradigm can be quite simply generated.

#### 4.4. Imperative is a value of $\Sigma$ .

There is one element of Inflection in Spanish that I have not yet discussed: the imperative. I will now argue that Imperative in Spanish is generated in  $\Sigma$ . This explains straightforwardly the distribution of imperative in this language, and its interaction with the other values of (Laka 1990) on the one hand, and subjunctive on the other.

It is well known that imperative mood and sentence negation are incompatible in Spanish. The following paradigm illustrates this fact:

- |      |    |                |                               |
|------|----|----------------|-------------------------------|
| (90) | a. | Ven aquí       | 'Come here'                   |
|      | b. | *No ven aquí   | not come <sub>subj</sub> here |
|      | c. | No vengas aquí | 'Do not come here'            |

The example in (90a) is a case of imperative mood. The ungrammatical (90b) illustrates that negation cannot coocur with a verb inflected for imperative mood. Finally, in (90c), a negative command is illustrated. The verb is now inflected for subjunctive mood, and negation can occur in the sentence.

This restriction on the cooccurrence of imperative and negation is not a linguistic universal. In Basque, for instance, imperative and sentence negation do coocur in negative commands, as shown in (91):

- |      |    |                   |                  |                   |
|------|----|-------------------|------------------|-------------------|
| (91) | a. | jan ezazu hori    | eat you-imp that | 'Eat that'        |
|      | b. | ez ezazu hori jan | not aux that eat | 'Do not eat that' |

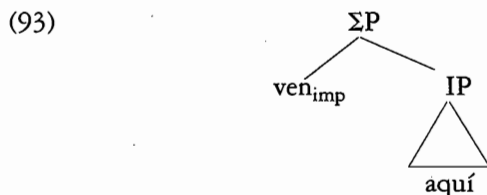
The same is true for French, as shown in (92). French does not require the change to subjunctive mood in negative commands:

- |      |    |                  |                    |
|------|----|------------------|--------------------|
| (92) | a. | Viens ici        | 'Come here'        |
|      | b. | Ne viens pas ici | 'Do not come here' |

Hence, the source of the impossibility of having negation and imperative in Spanish must necessarily lie on language particular aspects of Spanish, such as the specifics of imperative and negation in this language.

The claim I will put forward here is that the reason why negation and imperative cannot coocur in Spanish is because they both are elements of  $\Sigma$ . Therefore, they are in complementary distribution. The claim is that Spanish imperative is one of the values of  $\Sigma$  in this language. If this is correct, it follows not only that imperative and negation will not cooccur, but also that none of the other values of  $\Sigma$  in Spanish will appear with imperative mood. We will see that this prediction is correct.

Under this hypothesis, then, the S-structure representation of an imperative sentence like (90) is as in (93):



However, in a negative command, the head of  $\Sigma$ P is occupied by *no* 'not'. Imperative cannot be generated. Subjunctive is generated in Modal, and Tense is headed by the default value [-past]. Thus the negative command is conveyed. If it is correct to think of subjunctive mood as an irrealis modal marker, it is expected that it would be required in a command that does not have imperative, given that imperative shares with the irrealis value the properties of being unrealized and modal-like.

The hypothesis that imperative is a value of  $\Sigma$  accounts naturally for the contrast in (90). But, as noted before, it makes a further prediction. If imperative is a value of  $\Sigma$  in Spanish, then it cannot cooccur with any of the other values of that category. Let us consider the three remaining values of  $\Sigma$ : the phonologically empty [NEG], the emphasizer [AFF] and the affirmative particle *sí*. Consider first the affirmative values *sí* and [<sub>Aff</sub>]. Take the examples in (94):

- |      |    |                      |    |                         |
|------|----|----------------------|----|-------------------------|
| (94) | a. | ven aquí             | b. | * <i>sí</i> ven aquí    |
|      | c. | <i>sí</i> , ven aquí | d. | * <i>sí</i> vengas aquí |

In (94b) *sí* and the imperative appear together in an ungrammatical sentence, as predicted. The case in (94c) is not a counterexample, because it is a case of complementizer *sí*, as discussed in Laka (1990).<sup>29</sup> However, (94d) where *sí* and subjunctive cooccur, as in (90c), is also ungrammatical. This indicates that *sí* and *no* differ in some fundamental way in contexts of commands.

I will assume that the ungrammaticality of (94d) is due to semantic factors: a command is unrealized and thus it cannot be affirmed, because only true statements can be affirmed. Note that in this respect affirmation and negation differ, since commands can be negated, because negation does not entail truth. If this is correct, that is, if the restriction is semantic in nature, we expect to find no languages that can have imperatives cooccurring with affirmative particles. The prediction is true at least of Basque, which, as you recall, didn't have restrictions on the cooccurrence of imperative and negation:

- |      |    |   |
|------|----|---|
| (95) | a. | Etor hadi hona come do-imp here 'Come here' |
|      | b. | *Bahadi etor hona yes-do-imp come here      |

Interestingly, *sí* and subjunctive can cooccur in embedded sentences, even when the embedded sentence reports a command. Examples of this are given in (96):

- |      |    |                                 |  |
|------|----|---------------------------------|--|
| (96) | a. | Espero que <i>sí</i> lo traigas | hope-I that yes it-bring <sub>subj</sub> you |
|      |    |                                 | 'I hope that you <i>will</i> bring it'       |
|      | b. | Me pidió que <i>sí</i> fuera    | me-asked that yes go <sub>subj</sub>         |
|      |    |                                 | 'She asked me to go'                         |

The sentence in (96a) illustrates cooccurrence of *sí* and subjunctive; the inflected verb is emphasized. The example in (96b) reports a request/command; the verb is inflected for subjunctive mood and emphasized by means of *sí*. This indicates that the ungrammaticality of (94b, c) and (95) is due to its semantic ill-formedness, and not to syntactic restrictions.

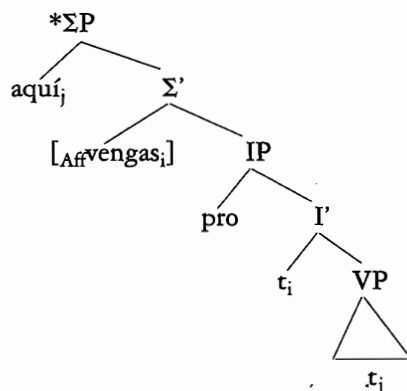
(29) The structure of this sentence is illustrated in (i): (i) [<sub>CP</sub> *sí* [<sub>ΣP</sub>  $\delta$ ], [<sub>ΣP</sub> ven<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> aquí]]]

The same is true of the second affirmative value of [Aff] (Laka 1990). It cannot coocur with imperative, as shown in (98), but the reason for this seems to go beyond the particulars of Spanish grammar.

(98) a. \* $[\Sigma_P \text{ aquí}]$  ven [...]

Neither is it possible to have (99), where  $\Sigma P$  is headed by [Aff] and selects subjunctive mood, parallel to (94d).

(99)



Finally, let us consider the fourth value of  $\Sigma$  in Spanish. This fourth element in  $\Sigma P$  is the empty [Neg] that triggers the preposing of N-words. We have seen previously that negative values of  $\Sigma$  are not semantically incompatible with imperatives. Thus, the prediction is that this element should behave similarly to overt negation: it cannot coocur with imperative, but it can be part of a negative command when followed by subjunctive. This is indeed the case, as illustrated in (100):

- (100) a. Ven aquí 'Come here'  
 b. \*Nunca ven aquí (do never come here)  
 c. Nunca vengas aquí 'Do never come here'

(100a) illustrates a command inflected for imperative. (100b) has the N-word *nunca* fronted in  $\Sigma$ , and imperative inflection. The result is ungrammatical. Finally, (100c) shows the N-word in the specifier of  $\Sigma P$ , and the verb inflected for subjunctive. The sentence is now grammatical and it conveys a negative command.

The interaction between imperative and negative values of  $\Sigma$  is simply accounted for under the hypothesis that imperative itself is generated in  $\Sigma$  in Spanish. Furthermore, negative commands provide empirical support for the claim that subjunctive is an irrealis modal element, and that, as such, it occupies the Modal node in the Inflectional structure.

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# Minimality Effects in Hungarian

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## 1. Introduction\*

In this paper, I will argue that V-movement in Hungarian displays a minimality effect, that is, the verb may only move stepwise from its base-generated position to higher positions in the tree. This provides empirical evidence for approaches which incorporate the concept of minimality, like Rizzi's (1990) *Relativized Minimality*. Rizzi proposes the following definition of the *Empty Category Principle*:

- (1) *Empty Category Principle (ECP)*  
A non-pronominal empty category must be:
  - (i) properly head-governed (formal licensing)
  - (ii) antecedent-governed or theta-governed (identification)

where proper head-government and antecedent-government are defined as:

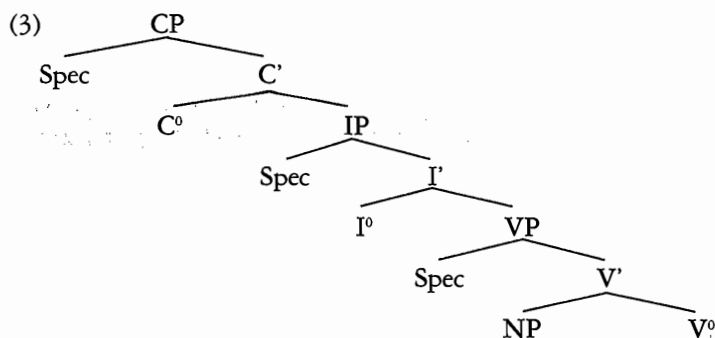
- (2) a. *Head-Government*: X head governs Y iff
  - (i)  $X \in (A, N, P, V, I[AGR/T])$ , (ii) X m-commands Y
  - (iii) no barrier intervenes
  - (iv) Relativized Minimality is respected
- b. *Antecedent-Government*: X antecedent governs Y iff
  - (i) X and Y are coindexed, (ii) X c-commands Y
  - (iii) no barrier intervenes
  - (iv) Relativized Minimality is respected

Let us consider how minimality effects are derived from these principles, which I will adopt throughout this paper.

In recent work (for example, cf. Chomsky 1986), it has been argued that apart from lexical categories, functional categories (like  $I^0$  or  $C^0$ ) may also have a fully artic-

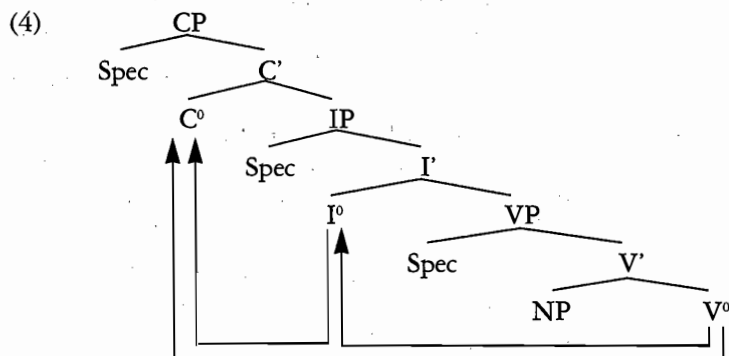
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ulated X'-projection. Chomsky assumes the following universal representation for phrase structure (neglecting linear order, which may vary across languages):



Here I will adopt the null-hypothesis: if there is evidence for the projection of a functional category in one language, then the phrase structure of all languages possesses this category. Therefore, the phrase structure representation of Hungarian is as in (3). Parametric variation across languages depends on the properties of the functional categories CP and IP. These properties may include the feature make-up of their heads and a certain give and take between the heads.

A minimality effect with V-movement, a case of head-to-head movement, involves the movement of the verb from its base-generated V<sup>0</sup>-position, to the C<sup>0</sup> position via I<sup>0</sup>:



So, an intervening head cannot be skipped. The reason for this is that the second part of the ECP is violated because Relativized Minimality is not respected. An intervening I<sup>0</sup> blocks Antecedent-Government of the verbal trace by its antecedent from C<sup>0</sup>.<sup>1</sup> In this paper, I will attempt to demonstrate that V-movement in Hungarian proceeds as in (4).

This paper is organized as follows. In section 2, I will determine the neutral and underlying order in Hungarian. I will conclude that the neutral SVO-order is deriv-

(1) Following Rizzi (1990), I will assume that all lexical categories and functional categories specified for AGR/T are head-governors (cf. p.14) and that the maximal projections IP and VP do not function as intrinsic barriers (cf. Ch.1 fn.6).



ed from the basic SOV-order by V-movement. This operation is a case of V-to-I movement. In section 3, I will discuss some Inversion phenomena in Hungarian. In the literature, such phenomena are considered a diagnostic for V-movement cross-linguistically. Hence, inversion between the verb and its prefix in Hungarian supports the hypothesis that V-movement applies in this language. It appears that Hungarian displays two types of Inversion, namely, Inversion in neutral SVO-sentences and Inversion in sentences containing wide-scope quantifiers. I will demonstrate that these types apply in different structural configurations. This then will provide empirical evidence for "cyclic" V-movement in Hungarian.

Let us consider first the structure of neutral sentences in Hungarian.

## 2. The Structure of Neutral Sentences in Hungarian

### 2.1. *The Neutral Order*

In this section, I will determine the neutral sentence order in Hungarian. I will only consider transitive sentences of the agent-theme class which, in my view, represent the unmarked case. Transitive sentences with a nominative subject and an accusative (ACC) object can have the following orderings:

- |     |    |   |           |
|-----|----|---|-----------|
| (5) | a. | János látta Marit<br>John saw Mary-ACC<br>'John saw Mary' | SVO-order |
|     | b. | Marit látta János   | OVS-order |
|     | c. | János Marit látta   | SOV-order |
|     | d. | Marit János látta   | OSV-order |
|     | e. | Látta János Marit   | VSO-order |
|     | f. | Látta Marit János   | VOS-order |

This paradigm shows that Hungarian allows scrambling. Any ordering of the constituents in a transitive sentence results in a grammatical sentence. However, Kiefer (1967) and Horvath (1986) have argued that in terms of the discourse context variant (5a) represents the unmarked case. An appropriate answer to the question 'What happened?' would be the SVO-order *János látta Marit*. So, the neutral order is SVO. All the other orders in the above paradigm represent a marked option in terms of the discourse context. For example, a preverbal object, like in (5b), receives a 'left-dislocation' interpretation corresponding to the 'as for phrase' in its English counterpart: *As for Mary*, John saw her (cf. Horvath 1986: 21).

Transitive sentences with a prefixed verb have the same possibilities. Consider the following sentences in which the prefix *meg*, a perfectivity marker (Perf), combines with the verb *eszik* 'eat' yielding the complex transitive verb *megeszik* 'eat up':

- |     |    |   |           |
|-----|----|---|-----------|
| (6) | a. | János <i>meg</i> ette a kenyeret<br>John Perf ate the bread-ACC<br>'John has eaten the bread' | SVO-order |
|     | b. | A kenyeret <i>meg</i> ette János  | OVS-order |
|     | c. | János a kenyeret <i>meg</i> ette  | SOV-order |
|     | d. | A kenyeret János <i>meg</i> ette  | OSV-order |

- |    |                                   |           |
|----|-----------------------------------|-----------|
| e. | <i>Meg</i> ette János a kenyeret. | VSO-order |
| f. | <i>Meg</i> ette a kenyeret János  | VOS-order |

Again, the unmarked order in terms of a neutral discourse context is SVO (cf. (6a)). Observe that the prefix *meg* in (6a) is left-adjacent to the finite verb in a sentence with a neutral order. Hence, we derive the following descriptive generalizations:

- (7) a. The neutral order is SVO  
 b. In the neutral order a prefix must be *left-adjacent* to the finite verb

The question arises whether the neutral SVO-order reflects the basic word order in Hungarian. In the next section, I will argue that this is not the case. This is of course not surprising, if we adopt the position of Chomsky (1957) that syntax is autonomous.

## 2.2. Hungarian is an SOV-language

In general, maximal projections headed by a lexical category are *head final* in Hungarian. Within a single maximal projection, complements precede their heads. The following examples show that NPs and PPs are left-branching:

- |        |                 |    |                    |
|--------|-----------------|----|--------------------|
| (8) a. | A piros ház     | b. | A ház mögött       |
|        | the red house   |    | the house behind   |
|        | 'the red house' |    | 'behind the house' |

The only exception to this generalization is the VO-order of the VP in finite sentences. However, in non-finite constructions, like the present (glossed as PresP) or past participle (PastP) constructions, V conforms to the general scheme. It can only be head-final:

- (9) a. A [[<sub>VP</sub> kormányt *vezet*] ö] miniszter  
 the government-ACC lead-PresP minister  
 'The minister leading the government'  
 b. A [[<sub>VP</sub> miniszter által *vezet*] ett] kormány  
 the minister by lead-PastP government  
 'The government led by the minister'  
 c. A [[[<sub>VP</sub> miniszter *vezet*] ett] e ] kormány  
 the minister lead-PastP-AGR3sg government  
 'The government led by the minister'

These examples support the following condition on branching of maximal projections with a lexical head in Hungarian:

- (10) *Uniformity Condition on Branching of the Lexical X'-Categories in Hungarian*  
 Lexical endocentric categories are left-branching

This principle is further supported by the fact that the realization of exocentric right-branching structures, like relative clauses or complex NPs, is avoided; if realized, they cannot be embedded in left-branching lexical categories. Let us discuss an instance of the former strategy.

The verb *tartoz* 'belong to' subcategorizes for an NP marked allatively (glossed as ALL) (cf. (11a)). Nominalizing this verb with the suffix *-ás* (glossed as NOMI) may yield a right-branching exocentric complex NP (11b):

- (11) a. János tartozik a csoporthoz  
 John belongs the group-ALL  
 'John belongs to the group'  
 b. [<sub>NP</sub> [<sub>NP</sub> a tartozás] [<sub>NP</sub> a csoporthoz]]  
 the belong-NOMI the group-ALL  
 'The belonging to the group'

However, a more common way to represent the equivalent of (11b) is by inserting an *adjectivizer*, such as the present participle *való* 'being' of the verb *van* 'be', resulting in the following left-branching endocentric category:

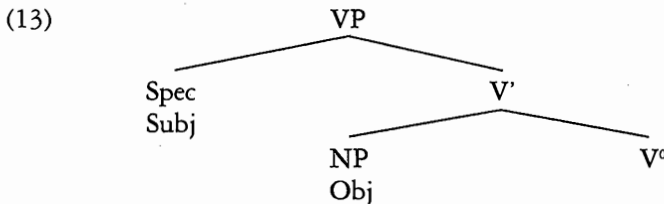
- (12) A [<sub>NP</sub> [<sub>VP</sub> [[<sub>VP</sub> csoporthoz *val*] *ó*] tartoz] *ás*]  
 the group-ALL be-PresP belong-NOMI  
 'The belonging to the group'

Observe from the comparison between (11b) and (12) that the present participle *való* does not have any semantic effect. It is an instantiation of principle (10).

So, if this principle is operative in the grammar of Hungarian, then the VP in finite sentences must be head-final as well. From this it follows that Hungarian is an SOV-language. The question is then why the verb precedes its direct object complement at surface structure. In the next section, I will suggest that this 'reversed' order arises because of V-movement.

### 2.3. Deriving Word Orders

In this section, I will discuss the derivation of the orders in (5). According to principle (10), the underlying order of the VP in Hungarian is 'OV', yielding the following representation:



In order to derive the neutral SVO-order, the verb must move to either I<sup>0</sup> or C<sup>0</sup> and the subject to respectively the [Spec, IP] or [Spec, CP], as indicated in the following representations:

- (14) a. [<sub>IP</sub> *Subj*<sub>i</sub> [<sub>I</sub> *V*<sub>i</sub> [<sub>VP</sub> *t*<sub>i</sub> [<sub>V</sub> *Obj* *t*<sub>i</sub> ]]]]
- b. [<sub>CP</sub> *Subj*<sub>i</sub> [<sub>C</sub> *V*<sub>i</sub> [<sub>IP</sub> [<sub>VP</sub> *t*<sub>i</sub> [<sub>V</sub> *Obj* *t*<sub>i</sub> ]]]]]]

The choice between these derivations can be made more easily if we take into account the word order in embedded clauses. Compare the sentences in (5) embedded in an clause introduced by the complementizer *hogy* 'that':

- (15) a. Péter tudta hogy János látta Marit  
 Peter knew that John saw Mary-ACC  
 'Peter knew that John saw Mary'  
 b. Péter tudta hogy Marit látta János  
 c. Péter tudta hogy János Marit látta  
 d. Péter tudta hogy Marit János látta  
 e. Péter tudta hogy látta János Marit  
 f. Péter tudta hogy látta Marit János

The neutral order in embedded clauses is, similar to root clauses, SVO. Thus sentence (15a) represents the unmarked case in terms of the possible discourse context. This means also that Hungarian embedded clauses do not display a complementary distribution between the complementizer and the finite verb, as we find with the well-known V-second effect in Dutch (cf. Koster 1975). Compare:

- (16) a. Jan zag Marie                      b. dat Jan Marie zag  
 John saw Mary                              that John Mary saw  
 (Dutch root-clause)                        (Dutch embedded clause)

In Dutch, either the finite verb or the complementizer is in  $C^0$ . In Hungarian, on the other hand, the verb occupies an identical position in root and embedded clauses. This strongly suggests that Hungarian clauses have the structure represented in (14a).

Let us derive now the possible orders in (5). Consider first the neutral SVO-order.

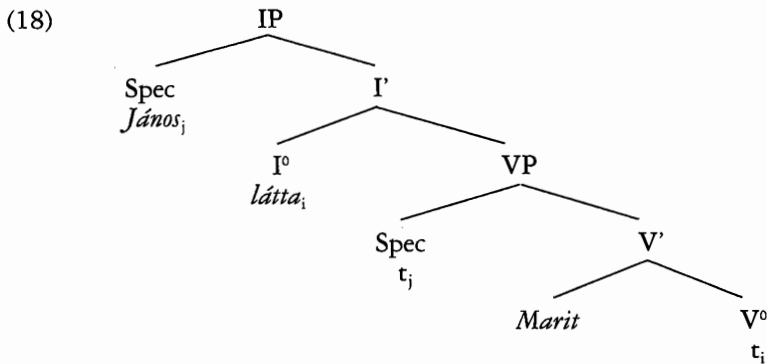
The inflectional features of the sentence, agreement (AGR) and tense (T), are generated under  $I^0$ . These features are bound morphemes which must obey the following condition:

- (17) A bound morpheme cannot remain stranded

This principle triggers V-to-I movement resulting in the inflected verb, V/Infl. The subject moves from its base-generated position [Spec, VP] to [Spec, IP], which may be due to Case considerations. In this position, the nominative Case may be licensed under Spec/head agreement. Therefore, sentence (5a) has the representation in (18).

Note that in this representation the ECP is satisfied both for the subject trace in the [Spec, VP] position and the trace of the verb in  $V^0$ .

In all the other orderings of (5), the verb must move to  $I^0$  as well, otherwise principle (17) is violated.



In addition to this operation, two other operations may affect structure (18), namely, *Topicalization to IP* and *adjunction to VP*. These operations may apply both to the subject and the object. Adjunction to the VP of both the subject and the object is legitimate in Hungarian, contrary to Italian that acknowledges only subject-adjunction (cf. Rizzi 1982), because Hungarian displays both subject (cf. (19a)) and object (cf. (19b)) *pro*-drop. Compare:

- (19) a. *pro* látta Jánost                      b. János látta *pro*  
           he/she saw John-ACC                      John saw him/her

The OSV-order (cf. (5d)) is derived by Topicalization of the object to IP:

- (20) [<sub>IP</sub> *Obj*<sub>i</sub> [<sub>IP</sub> *Subj*<sub>j</sub> V<sub>k</sub>/Infl [<sub>VP</sub> t<sub>j</sub> [<sub>V</sub> t<sub>i</sub> t<sub>k</sub> ]]]]

The SOV-order (cf. (5c)) results from applying multiple Topicalization. First Topicalization of the object to IP, as in (20), and then Topicalization of the subject to IP:

- (21) [<sub>IP</sub> *Subj*<sub>j</sub> [<sub>IP</sub> *Obj*<sub>i</sub> [<sub>IP</sub> t<sub>j</sub> V<sub>k</sub>/Infl [<sub>VP</sub> t<sub>j</sub> [<sub>V</sub> t<sub>i</sub> t<sub>k</sub> ]]]]]]

The OVS-order (cf. (5b)) is derived by topicalizing the object to IP and adjoining the subject to VP:

- (22) [<sub>IP</sub> *Obj*<sub>i</sub> [<sub>IP</sub> *pro*<sub>i</sub> V<sub>k</sub>/Infl [<sub>VP</sub> [<sub>VP</sub> t<sub>j</sub> [<sub>V</sub> t<sub>i</sub> t<sub>k</sub>]]] *Subj*<sub>j</sub> ]]]]

The VOS-order (cf. (5f)) represents an ordinary case of subject-postposing, that is, adjunction of the subject to the VP:

- (23) [<sub>IP</sub> *pro*<sub>i</sub> V<sub>k</sub>/Infl [<sub>VP</sub> [<sub>VP</sub> t<sub>j</sub> [<sub>V</sub> *Obj* t<sub>k</sub>]]] *Subj*<sub>j</sub> ]]]]

The VSO-order (cf. (5e)) results from object-postposing to structure (23):

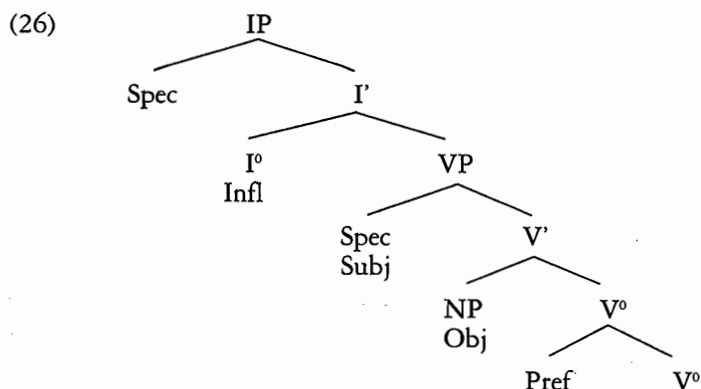
- (24) [<sub>IP</sub> *pro*<sub>i</sub> V<sub>k</sub>/Infl [<sub>VP</sub> [<sub>VP</sub> [<sub>VP</sub> t<sub>j</sub> [<sub>V</sub> *pro*<sub>i</sub> t<sub>k</sub>]]] *Subj*<sub>j</sub> ]] *Obj*<sub>i</sub> ]]]]

Let us consider now how the orders in a transitive sentence with a prefixed verb are derived.

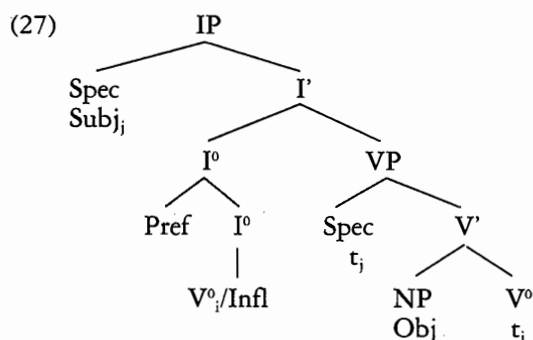
I will adopt the position that a prefix subcategorizes for a V° and that this combination yields another V°. So, the subcategorization frame of a prefix has the following form:

(25) Prefix: [ $v^0$  [- ] [  $V^0$  ]]

Hence, the sentences in (6) have the following representation at D-structure:



Again, principle (17) triggers V-to-I movement and the subject moves to the [Spec, IP] position, resulting in the following structure:



Note that nothing prevents the verb from taking along its prefix when it is moved to  $I^0$ . Because of the merging of V and Infl under  $I^0$  the prefix finally ends up in a position adjoined to  $I^0$ . All the other orders in (6) are then derived similarly to their equivalents in (5).

### 3. Inversion Phenomena in Hungarian

In this section, I will discuss Inversion phenomena in Hungarian which involve the inversion between the verb and its prefix. I will argue that there are two types of this phenomenon to which I will refer as *Inversion I* and *Inversion II*. Let us consider Inversion I first.

#### 3.1. Inversion I

The following phrases trigger inversion between the finite verb and its prefix: the predicate negation marker *nem*, *sem* ('neither')-phrases, negative universal quantifiers

and negative predicative adverbials. Compare the neutral sentence (6a), here repeated as (28), with the examples in (29)-(33):

- (28) János *meg* ette a kenyeret  
John Perf ate the bread-ACC 'John has eaten the bread'
- (29) a. \*János nem *meg* ette a kenyeret  
John not Perf ate the bread-ACC 'John has not eaten the bread'  
b. János nem ette *meg* a kenyeret  
c. János nem ette a kenyeret *meg*
- (30) a. \*János sem *meg* ette a kenyeret  
John neither Perf ate the bread-ACC  
'Neither has John eaten the bread'  
b. János sem ette *meg* a kenyeret  
c. János sem ette a kenyeret *meg*
- (31) a. \*Senki sem *meg* ette a kenyeret  
No-one neither Perf ate the bread-ACC  
'No-one has eaten the bread'  
b. Senki sem ette *meg* a kenyeret  
c. Senki sem ette a kenyeret *meg*
- (32) a. \*Senki nem *meg* ette a kenyeret  
No-one not Perf ate the bread-ACC 'No-one has eaten the bread'  
b. Senki nem ette *meg* a kenyeret  
c. Senki nem ette a kenyeret *meg*
- (33) a. \*János ritkán *meg* ette a kenyeret  
John seldom Perf ate the bread-ACC  
'John has seldom eaten the bread'  
b. János ritkán ette *meg* a kenyeret  
c. János ritkán ette a kenyeret *meg*

The above sentences show that the predicate negation marker *nem* (cf. (29b-c)), phrases modified by *sem* 'neither' (cf. (30b-c)), negative universal quantifiers (cf. (31b-c); (32b-c)) and negative predicative adverbials (cf. (33b-c)) must be left-adjacent to the finite verb and trigger inversion between the finite verb *ette* 'ate' and its prefix *meg*.<sup>2</sup>

Negative universal quantifiers in Hungarian, such as *senki* 'no-one', cannot appear on their own. They must be licensed by a negation marker, i.e. by a *sem*-phrase (cf. (31)) or by the predicate negation marker *nem* (cf. (32)). Therefore, I will consider Inversion with negative universal quantifiers as a subcase of Inversion triggered by *sem* or *nem*.

(2) Inversion I triggers, except the predicate negation marker *nem*, do not always have to be left-adjacent to the finite verb. However, this is only possible in sentences with an operator, like focussed NPs, Wh-phrases, etc. Such cases, however, do not involve neutral sentences (cf. Kenesei 1986).

Observe furthermore that in the above sentences the subject has a neutral interpretation, i.e., it does not receive a 'left-dislocation' reading. Hence, sentences (29b) and (33b) have the following interpretation:

- (34) a. János nem ette *meg* a kenyeret  
 John not ate Perf the bread-ACC 'John has not eaten the bread'  
 \*'As for John, he has not eaten the bread'
- b. János ritkán ette *meg* a kenyeret  
 John seldom ate Perf the bread-ACC  
 'John has seldom eaten the bread'  
 \*'As for John, he has seldom eaten the bread'

In order to find out which interpretation the subject may have in sentences with *sem*-phrases, we have to modify the object instead of the subject with such a phrase. Compare:

- (35) a. János a kenyeret sem ette *meg*  
 John the bread-ACC neither ate Perf  
 'Neither has John eaten the bread'  
 \*'As for John, neither has he eaten the bread'
- b. János semmit sem evett *meg*  
 John nothing neither ate Perf 'John has eaten nothing'  
 \*'As for John, he has eaten nothing'

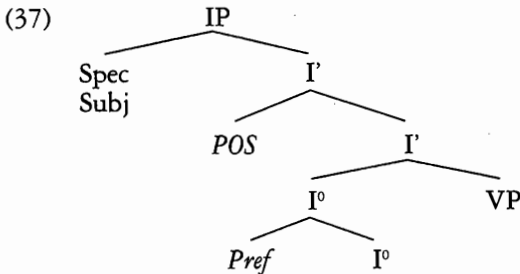
Again, these sentences show that a neutral subject in front of an Inversion I trigger receives the unmarked interpretation. Inversion I triggers are not unique in having this property: a neutral subject also receives the unmarked interpretation when it precedes a sentence adverbial (cf. (36a)), a positive universal quantifier (cf. (36b)) or a positive predicative adverbial (cf. (36c)). Compare:

- (36) a. János *tegnap* *meg* ette a kenyeret  
 John yesterday Perf ate the bread-ACC  
 'John has eaten the bread yesterday'  
 \*'As for John, he has eaten the bread yesterday'
- b. János *minden kenyeret* *meg* evett  
 John all bread-ACC Perf ate 'John has eaten all the bread'  
 \*'As for John, he has eaten all the bread'
- c. János *állandóan* *meg* ette a kenyeret  
 John constantly Perf ate the bread-ACC  
 'John has constantly eaten the bread'  
 \*'As for John, he has constantly eaten the bread'

Observe that in these sentences, a neutral subject is separated from the prefixed verb. This indicates that sentence adverbials, positive universal quantifiers and positive predicative adverbials (for ease of reference POS) are internal to the IP-projec-



tion, similarly to Inversion I triggers. Recall that a prefix is adjoined to I<sup>0</sup>. If POS appears between a prefix and a neutral subject, then it is adjoined to I':



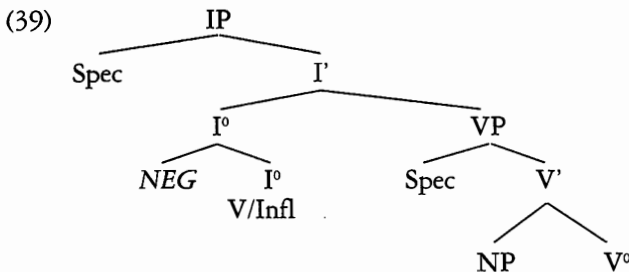
Summarizing, Inversion I has the following properties:

(38) *Inversion I*

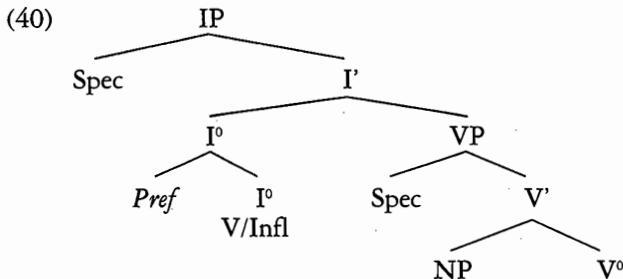
- I. Inversion I triggers (henceforth, I will refer to them as NEG) must be *left-adjacent* to the finite verb
- II. A neutral subject preceding NEG has the *unmarked interpretation*
- III. NEG and Pref are in *complementary distribution* (Inversion)

Let us account for these properties.

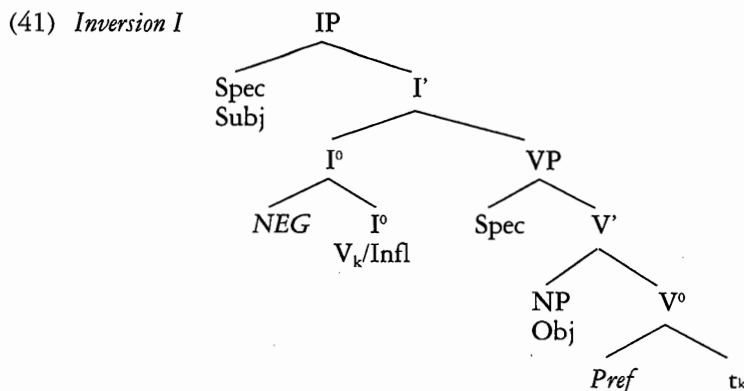
Property (38II) suggests that the subject is in the [Spec, IP] position. Recall that the finite verb is in I<sup>0</sup> because of V-to-I movement. Hence, NEG must occupy a position between [Spec, IP] and I<sup>0</sup>. Property (38I) indicates that NEG is adjoined to I<sup>0</sup> in the following manner:



Let us consider now (38III). A sentence with a prefixed verb has the following representation:

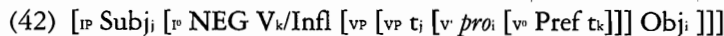


Note that a prefix ends up in a position adjoined to  $I^0$ . In a sentence with NEG, however, this position is already occupied by NEG itself (cf. (39)). So, the verb cannot take along its prefix. This results in inversion between the verb and its prefix:

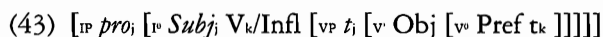


The structure in (41) represents the core case of Inversion I. Other alternants can be derived quite easily by applying the additional operations discussed in section 2.3.

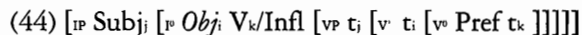
Applying adjunction of the object to the VP yields the (b)-alternants of (29)-(33):



Adjunction of the subject to  $I^0$  as in the case of *sem*-phrases or negative universal quantifiers can be covered by inserting *pro* in the subject position, similar to subject-postposing. Hence, the grammatical sentences in (30)-(32) have the following structure:



Adjunction of object *sem*-phrases and negative universal quantifiers to  $I^0$  (cf. (35)) gives the following result:



Let us turn now to Inversion II phenomena.

### 3.2. *Inversion II*

Inversion between the finite verb and its prefix may also appear with wide-scope quantifiers (for ease of reference OP), involving Wh-phrases (cf. (46)), focussed NPs (cf. (47)), *csak* ('only')-phrases (cf. (48)) and negated constituents (cf. (49)). Compare the neutral order (6a), here repeated as (45), with the following examples:

- (45) János *meg* ette a kenyeret  
 John Perf ate the bread-ACC 'John has eaten the bread'

- (46) a. \**Ki meg ette a kenyeret*                      b. *Ki ette meg a kenyeret*  
 Who ate Perf the bread-ACC                      c. *Ki ette a kenyeret meg*  
 'Who has eaten the bread?'
- (47) a. \**JÁNOS meg ette a kenyeret*  
 John Perf ate the bread-ACC  
 'It is John who has eaten the bread'  
 b. *JÁNOS ette meg a kenyeret*  
 c. *JÁNOS ette a kenyeret meg*
- (48) a. \**Csak János meg ette a kenyeret*  
 Only John Perf ate the bread-ACC  
 'Only John has eaten the bread'  
 b. *Csak János ette meg a kenyeret*  
 c. *Csak János ette a kenyeret meg*
- (49) a. \**Nem János meg ette a kenyeret*  
 Not John Perf ate the bread-ACC  
 'Not John has eaten the bread'  
 b. *Nem János ette meg a kenyeret*  
 c. *Nem János ette a kenyeret meg*

At first sight, the phenomenon exemplified in these sentences seems to be the same as Inversion I. There appears a complementary distribution between OP and the prefix *meg* and OP must be left-adjacent to the finite verb. No sentence adverbial (cf. (50a)), positive universal quantifier (cf. (51a)) or positive predicative adverbial (cf. (52a)) may intervene between OP and the finite verb:

- (50) a. \**Ki tegnap ette meg a kenyeret*  
 Who yesterday ate Perf the bread-ACC  
 'Who has eaten the bread yesterday?'  
 b. *Ki ette meg tegnap a kenyeret*
- (51) a. \**Ki minden kenyeret evett meg*  
 Who all bread-ACC ate Perf  
 'Who has eaten all the bread?'  
 b. *Ki evett meg minden kenyeret*
- (52) a. \**Ki állandóan ette meg a kenyeret*  
 Who constantly ate Perf the bread-ACC  
 'Who has constantly eaten the bread?'  
 b. *Ki ette meg állandóan a kenyeret*

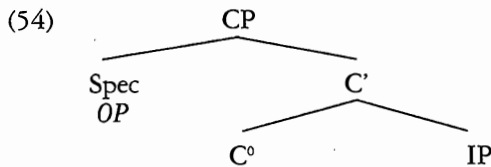
The only exception to this strict adjacency condition is the case of the predicate negation marker *nem*. The following sentences illustrate that *nem* can stand between OP and the finite verb:

- (53) a. *Ki nem ette meg a kenyeret*  
 Who not ate Perf the bread-ACC  
 'Who has not eaten the bread?'
- b. *JÁNOS nem ette meg a kenyeret*  
 John not ate Perf the bread-ACC  
 'It is John who has not eaten the bread'
- c. *Csak János nem ette meg a kenyeret*  
 Only John not ate Perf the bread-ACC  
 'Only John has not eaten the bread'
- d. *Nem János nem ette meg a kenyeret*  
 Not John not ate Perf the bread-ACC  
 'Not John has not eaten the bread'

Below I will argue that this is only an apparent counterexample to the adjacency generalization.

Apart from the correspondences between Inversion I and the cases discussed in this section, the following distributional differences appear between these phenomena.

First, OP forms a natural class, consisting of wide-scope quantifiers. It is generally assumed that wide-scope quantifiers, like Wh-phrases, occupy the canonical operator position [Spec, CP] to represent their syntactic scope. Hence, they occur in the following configuration:



I will assume that wide-scope quantifiers in Hungarian occupy this position as well. Recall, however, that Inversion I triggers are adjoined to I°.

Second, the interpretation of a subject preceding NEG differs from the interpretation of an object preceding NEG (cf. (38II)). A subject may receive a neutral interpretation (cf. (55a)), whereas an object always has a left-dislocation interpretation (cf. (55b)):

- (55) a. *János nem ette meg a kenyeret*  
 John not ate Perf the bread-ACC  
 'John has not eaten the bread'  
 \*'As for John, he has not eaten the bread'
- b. *A kenyeret János nem ette meg*  
 the bread-ACC John not ate Perf  
 \*'John has not eaten the bread'  
 'As for the bread, John has not eaten it'

However, any constituent in front of OP has a left-dislocation reading. So, an initial subject and object have the same interpretation with Inversion II, in contrast to Inversion I. Compare:

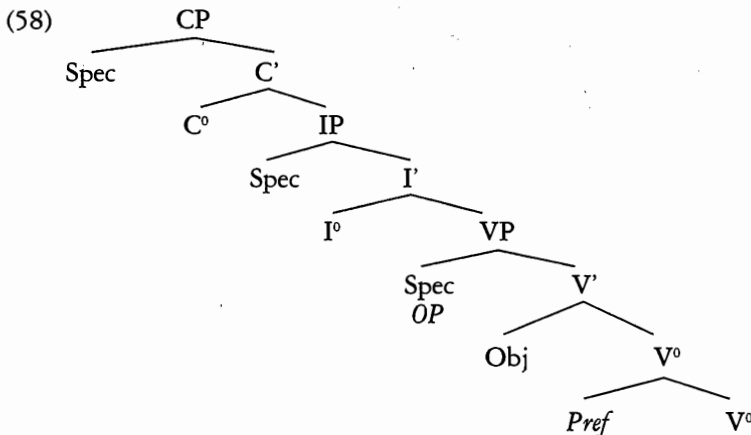
- (56) a. János mit evett meg      b. A kenyeret ki ette meg  
 John what-ACC ate Perf      the bread-ACC who ate Perf  
 \*'What has John eaten?'      \*'Who has eaten the bread?'  
 'As for John, what      'As for the bread, who  
 has he eaten?'      has eaten it?'

Summarizing, Inversion II has the following properties:

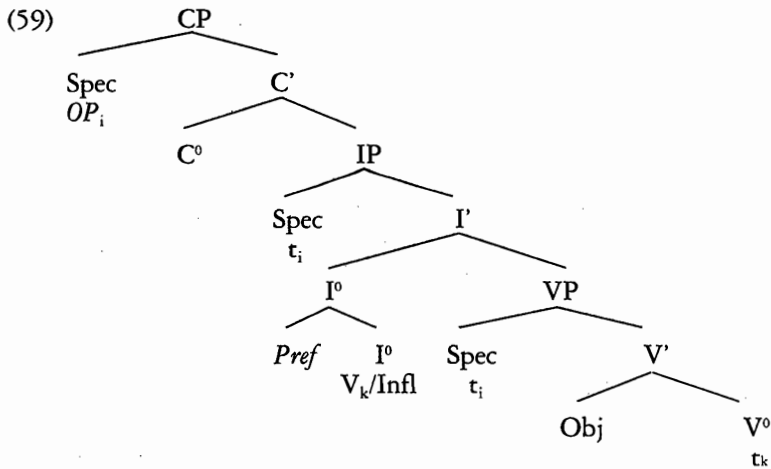
- (57) Inversion II  
 I. OP must be *left-adjacent* to the finite verb  
 II. OP and Perf are in complementary distribution (Inversion)  
 III. OP occupies the [*Spec, CP*] position  
 IV. Any constituent in front of OP is *left-dislocated*

Let us elaborate an analysis for Inversion II.

In accordance with (57III), I will assume that sentences containing an OP are CPs. The sentences in (53) have the following D-structure representation:



Now the subject OP has to land in the [*Spec, CP*] position for reasons of scope. It can only reach this position by movement via [*Spec, IP*], otherwise Relativized Minimality is not respected and the sentence is ruled out as an ECP violation. V-to-I movement applies because of (17). The verb must pick up its inflectional features. Its prefix may move along because the adjunction site of I° is available. Compare:



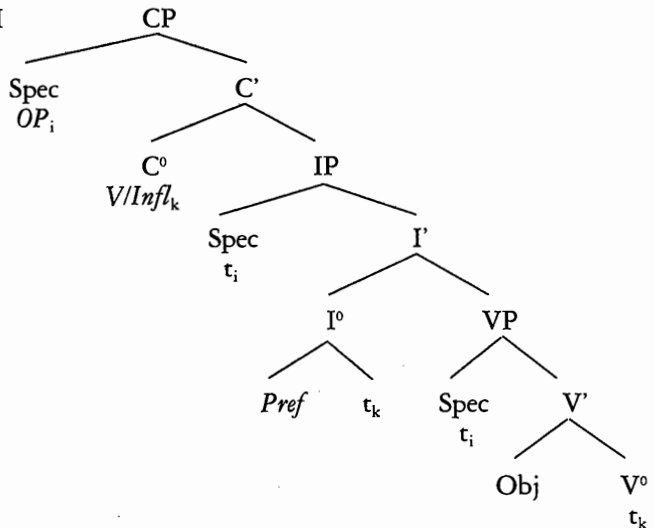
I will adopt the following principle of X'-theory:

(60) Each X'-projection is headed by a lexical head or its trace

From this principle it follows that a position in a projection is available if and only if that projection is headed by a lexical category or its trace.

Note that [Spec, CP] is filled by a wide-scope quantifier and that the CP is not headed by a lexical head or its trace in (59). Therefore I-to-C movement must apply in order to avoid a violation of principle (60). As a consequence, the prefix remains stranded under I<sup>0</sup> and OP becomes left-adjacent to the finite verb. This yields the Hungarian manifestation of the *V-second effect*, i.e. Inversion II:

(61) *Inversion II*



Representation (61) also illustrates the minimality effect with V-movement in Hungarian. The verb can only reach  $C^0$  from its base-generated position via stepwise movement through  $I^0$ . This is witnessed by the stranded prefix.

Obviously, the finite verb cannot take along its prefix in case it moves to  $C^0$ . For some reason, the Spec/head relation in the CP may not be interrupted hierarchically by adjunction to  $C'$  or  $C^0$ . This seems to be a unique property of the CP-projection because, as we have discussed above,  $I^0$  and  $I'$  may be used as an adjunction site in IP. I have no solution for this discrepancy between IP and CP. So I will put it aside for further research.

Property (57IV) is accounted for if we allow Topicalization to the CP. Hence, sentence (56b) in which the object is topicalized has the following representation:

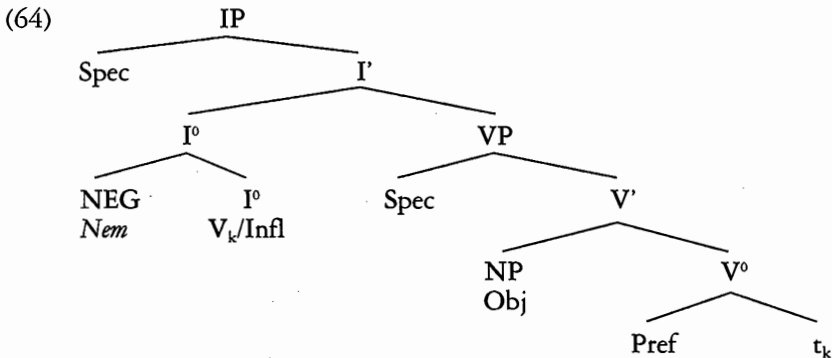
$$(62) [_{CP} XP_i [_{CP} OP_i V/Infl_k [_{IP} t_i Pref t_k [_{VP} t_i [_{VP} t_j t_k ]]]]]$$

Topicalization of the subject yields structure (63):

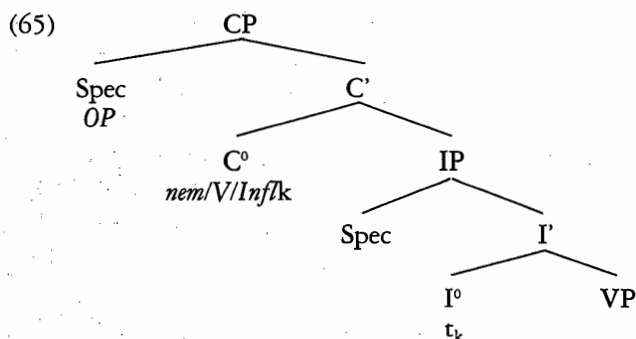
$$(63) [_{CP} XP_i [_{CP} OP_i V/Infl_k [_{IP} t_j Pref t_k [_{VP} t_j [_{VP} t_i t_k ]]]]]$$

Note that in this structure the ECP is satisfied. Head-Government is covered because the moved V/Infl head governs from  $C^0$  the [Spec, IP] position. Relativized Minimality is respected because XP and OP are dominated by the same category node, namely CP. Hence, Antecedent-Government is covered as well.

Above I noted that *nem* may violate the strict adjacency requirement between OP and the finite verb (cf. (53)). After the application of V-to-I movement, we have the following representation:



Suppose now that *nem* may cliticize onto the V/Infl complex. This certainly is not exceptional across languages. For example, Rizzi (1990) argues that the predicate negation marker cliticizes onto the highest functional category in some Romance languages. If *nem* cliticizes onto the V/Infl complex in  $I^0$ , it may travel along to  $C^0$  with the inflected verb. So, the sentences in (53) have the following S-structure representation which respects the strict adjacency condition with Inversion II:



#### 4. Concluding Remarks

In this paper, I have argued that Hungarian sentences are basically IPs. The CP-level is only activated in the case of wide-scope quantifiers. Furthermore, I have argued that there are two types of inversion between the finite verb and its prefix. Inversion I applies at the IP-level and is triggered by the category NEG. Inversion II, on the other hand, involves the CP-level and is triggered by the category OP. The latter is the Hungarian manifestation of the V-second effect.

If Inversion phenomena are considered a diagnostic for V-movement and if they may apply at each "cycle" in Hungarian, then it follows that V-movement must proceed stepwise. The verb can only reach the highest head-position, i.e. C°, from its base-generated V°-position by travelling through the intermediate I°-position. In sum, Inversion phenomena in Hungarian display a minimality effect. This provides empirical support to a government approach which incorporates the concept of minimality, like Rizzi's (1990) Relativized Minimality.

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# Some Speculations on the Nature of Agreement

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## 0. Introduction\*

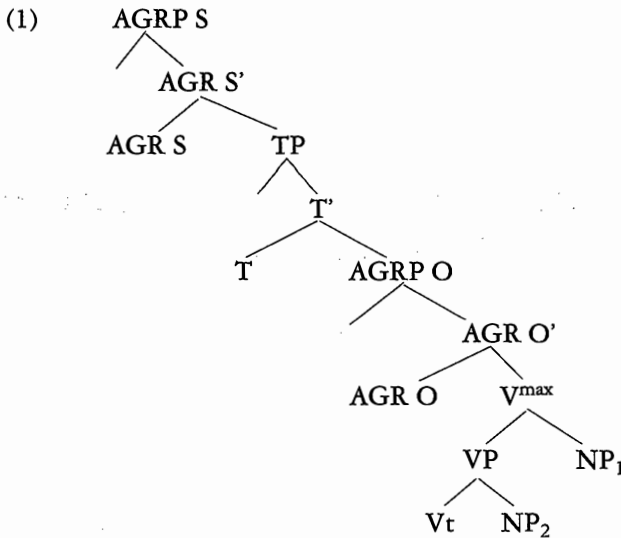
Chomsky (1989) has suggested that transitive sentences may contain two (or more) AGR projections: an AGR S(ubject) and an AGR O(bject), a possibility made available by UG for all languages, even for those with no overt morphology to indicate agreement between the V and its internal argument in a transitive structure. Whether we make use of functional (AGR) projections to account for agreement facts or whether all kinds of agreement can be reduced to a Spec-Head relation, with subject agreement in [SPEC, IP], object agreement in [SPEC, VP], etc. (see Georgopoulos 1991) is a matter of current controversy in the literature, which we do not intend to enter into here. We are simply exploring the possibility of having an AGR S and an AGR O involved in the processes of subject and object agreement, respectively, in order to account for certain agreement facts in the languages we are concerned with here (namely, Romance and English, with some references to Basque).

The purpose of this work is two-fold: (i) to examine the 'double' function of AGR S as an assigner of nominative Case and as a category containing agreement features, and to see if there is any relation between these two functions, and (ii) to see whether the conclusions reached for AGR S can be extended to AGR O, a projection present in transitive structures even in those languages with no overt V-Object agreement morphology, such as Spanish.

The relative order of the functional projections in a transitive structure assumed here is as in Chomsky (1989) and Belletti (1990):<sup>1</sup>

\* The contents of this article were first presented in a talk given at a seminar at the University of Deusto in December 1991. I would like to thank the participants for their comments and discussion, especially J. Ortiz de Urbina for his help with the Basque data.

(1) The structure in (1) contrasts with the proposal made by Pollock (1989), with an AGR head associated with the subject position intervening between TP and  $V^{\max}$  (the position of AGR O above) and no AGR head over TP. Evidence for the need of an intermediate AGR (O) projection between TP and  $V^{\max}$ , distinct from the AGR projection involved in subject agreement concern, among others, instances of participial agreement in French (see Kayne 1989a), and languages showing overt object agreement morphology (see Chomsky 1989).



We are also following the hypothesis postulated by Kuroda (1988) and Koopman & Sportiche (1988) that the external argument of a transitive structure is base-generated within the  $V^{\max}$  projection ( $NP_1$ ). This hypothesis has been developed by Roberts (1990), who claims that in Romance languages the external argument of a transitive structure ( $NP_1$ ) is base-generated within  $V^{\max}$  to the right of the VP, which, in turn, contains the transitive  $V(Vt)$  and its internal argument ( $NP_2$ ). In a canonical transitive structure, which has the structure in (1), such as that in (2), structural nominative Case is assigned to the  $NP_1$  (*los bomberos* 'the firemen' in (2)) and structural accusative Case is assigned to the  $NP_2$  (*el incendio* 'the fire' in (2)).<sup>2</sup>

- (2) Los bomberos apagaron el incendio.  
 the firemen put-out-pret.3rd.p.pl the fire  
 'The firemen put out the fire.'

It is commonly assumed that AGR S plays a crucial role in the assignment of nominative Case to an NP in a language like Spanish. If the features of AGR O are at all similar to those of AGR S, it is to be expected that AGR O should play a role in accusative Case assignment, as well. This is the hypothesis that we are going to explore here.

In section 1 we examine the nature and the function of AGR S. In particular, we review ideas in the literature concerning 'rich' AGR (Rizzi 1982) and 'strong' AGR (Pollock 1989) and the role played by AGR S in nominative Case assignment. We conclude that the properties of AGR S in a particular language determine the way(s)

(2) The nominal elements involved in these structures, *los bomberos* 'the firemen' and *el incendio* 'the fire', are in fact DPs, following Abney's (1987) DP-hypothesis. It has been claimed by Rigau (1991) following ideas in Torrego (1983) and Belletti (1988) that only DPs receive structural (nominative and accusative) Case, while NPs (bare plurals or nominal phrases introduced by an indefinite article) must receive inherent partitive Case. Since the distinction between inherent Case and structural Case is not crucial for our purposes here, we are using the more general denomination for nominal phrases (NP).

in which nominative Case is assigned in that language. In languages in which nominative Case assignment is linked to the feature [person], nominative Case can only be assigned under [SPEC-HEAD] agreement. This is the case for Italian and Spanish, but not for English, where nominative Case assignment is a coindexing relation between an NP in [SPEC, AGRP S] and an AGR S, which can be in a [SPEC-HEAD] relation or in a governing relation with that NP.

In section 2 we examine the properties of AGR O in Spanish to see whether the conclusions reached in section 1 about the nature and properties of AGR S can be applied to AGR O. We will see that, contrary to what has been claimed (see Belletti 1990), Spanish AGR O may have a [person] feature, as well as [gender] and [person] features. The features of AGR O in Spanish are only triggered, however, in the right syntactic context, and are not always overtly realized. In this Spanish contrasts with Basque, where the features of AGR O are always morphologically realized, but also with English, which lacks AGR O features. Due to the nature of its features, AGR O cannot assign Case by itself, although it has a Case feature. Accusative Case is assigned under government by the complex head V + AGR O, after incorporation of the V into AGR O (following Baker 1988), except when a clitic is present.

## 1. The role and features of AGR S.

### 1.1. *Some generalization about AGR S*

Let us start by looking at the role and the features of AGR S, which have been explored in detail in the literature. AGR S is assumed to have a 'double' function: (i) to provide the V with number and/or person and/or gender features and (ii) to assign nominative Case. The way in which these processes take place is a question of parametric variation. The aim of this section is simply to present ideas that have been put forward in the literature in order to provide a framework for the discussion of the features of AGR O in section 2.

#### 1.1.1. *The features of AGR S*

We are going to look at the first role of AGR S mentioned above: to provide the V with morphological features. The features of AGR S are going to be discussed in relation to certain structural processes that have been recently a matter of discussion and controversy in the literature such as V-raising and the N(ull) S(ubject) Parameter.

It is assumed that in Romance languages like Spanish, Italian and French, a finite V raises to AGR to get its morphological features, in the way that has been described by Pollock (1989) for French. These languages are said to have 'strong' AGR. 'Strong' AGR should be distinguished from 'rich' AGR (or INFL) in the sense of Rizzi (1982). The concept of 'rich' AGR has been directly related to the possibility of having *pro* in the subject position of a tensed clause, a possibility allowed to languages belonging to the NS parameter.<sup>3</sup> In Rizzi's (1982) account the INFL (or

(3) For a thorough examination of the properties of the NS Parameter in general see Jaeggli and Safir (1989). For Spanish, see Fernández Soriano (1989).

AGR) of these languages were said to contain the morphological features needed to 'recover' the content of *pro*.

That 'strong' AGR is not the same as 'rich' AGR is clear in the fact that languages like French lack a rich AGR in the sense that they do not allow for NS's (except for stylistic inversion), but have a strong AGR in the sense that they trigger V-raising, following Pollock (1989) (see (3), (3a) from Pollock 1989: 367). In this, French contrasts with languages like Spanish that allow for both possibilities (4), and English that does not allow for any (except for V-raising with *have* and *be* and auxiliary Vs) (5):<sup>4</sup>

- (3) a. Jean embrasse souvent \_\_ Marie. (French)  
 Jean kisses often \_\_ Marie
- b. \**pro* embrasse souvent \_\_ Marie  
*pro* kisses often \_\_ Marie
- (4) a. Juan besa a menudo \_\_ a María. (Spanish)  
 Juan kisses often \_\_ to María
- b. *pro* besa a menudo \_\_ a María  
*pro* kisses often \_\_ to María  
 'He/She often kisses María.'
- (5) a. John \_\_ often kisses Mary. (English)
- b. \**pro* often kisses Mary

What Pollock means by strong AGR has to do with  $\theta$ -assigning properties, i.e. only a sufficiently rich AGR allows the V to assign its  $\theta$ -roles. Thus, French AGR being richer morphologically than English AGR, is transparent for  $\theta$ -role assignment, while English 'weak' AGR is opaque to  $\theta$ -role assignment.<sup>5</sup>

The AGR features of French are, then, sufficiently rich to trigger V-raising, but not to allow NS's. The AGR features of English, on the other hand, do not allow for any of the two processes. At the other end of the scale, we have Romance languages like Italian and Spanish, whose AGR S features are sufficiently rich to allow both. Another example of a language that allows both V-raising and NS's is Basque (see Laka 1990). In (6) the V-root *kar* 'to take' has been raised to the different functional heads containing the inflectional suffixes for the different forms of agreement (A

(4) In Spanish, it is more difficult to test the V-raising hypothesis than in languages like French and Italian, due to the fact that adverbs seem to have a freer distribution and that there is no overt negative adverb such as French *pas*.

(5) French, for example, has some person features (see (i) from Jaeggli & Safir 1989: 30), which are lacking in English, if we follow Kayne (1989b) in that the -s found in 'He/She walk-s' is a number feature, and not a person feature.

(i) [parl] present 1sg., 2sg., 3sg., 3pl.  
 [parl-o] present 1pl.  
 [parl-e] present 2pl.

stands for absolutive case, D for dative case and E for ergative case), as well as for mood (potential) and tense (present):<sup>6</sup>

- (6) pro pro pro            d-a-kar-kio-ke-t  
 pro-E pro-D pro-A 3A-Pres.-take-3D-Pot.-1E  
 'I can take it for him/her.'

We have the following paradigm in (7):

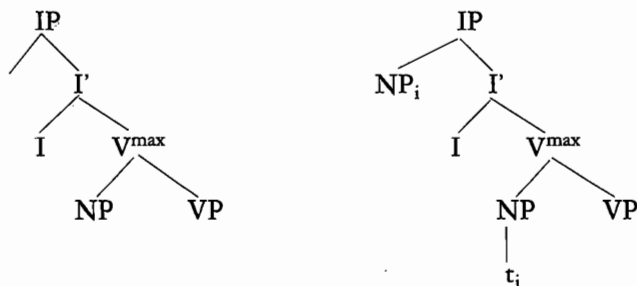
(7)	'STRONG' AGR ( $\theta$ -theory)	'RICH' AGR (Morphological features)
English	-	-
French	+	-
Spanish/Italian/ Basque.	+	+

As for how agreement of features between a V (+AGR S) and its subject takes place, the standard assumption is that it is a SPEC-HEAD relation, in the sense of Chomsky (1986). That is, feature sharing takes place under SPEC-HEAD agreement between the element occupying the position SPEC-AGRP S (a lexical subject, an expletive pro, a NS pro, etc.) and AGR S, to which the V raises in Romance, and which is lowered to the V by the rule of Affix-Hopping in English (see Chomsky 1981).

### 1.1.2. AGR S as a Case-assigning head.

Koopman & Sportiche (1988) have put forward the idea that nominative Case can be assigned by (former) INFL (containing AGR) in two basic ways: (i) under government (a relation between a Head and its Complement or the Specifier of its Complement) or (ii) under SPEC-HEAD agreement (a relation between a Head and its Specifier following Chomsky 1986), as in (8):<sup>7</sup>

- (8) a. By Government      b.      By SPEC-HEAD Agreement



(6) On the relative order of the different functional projections in Basque see Laka (1990).

(7) As Roberts (1990: 24) points out, agreement here should be understood as a purely structural relation, independent from morphological agreement.

Whether in a language nominative Case is assigned as in (8a) and/or as in (8b) is a question of parametric choice. According to Koopman & Sportiche (1988), both procedures exist in languages like Spanish and Italian. Thus the possibility of the so-called 'free inversion' of the subject, when INFL assigns Case by government to the element occupying the position [SPEC, V<sup>max</sup>] at SS. English and French, on the other hand, only allow the possibility in (8b), thus, the obligatory raising of the subject to [SPEC, IP], where it can be assigned nominative Case under SPEC-HEAD agreement. The contrast between Italian and Spanish, on the one hand, and French and English, on the other hand, is illustrated below.<sup>8</sup>

- (9) a. Ha telefonato María. (Italian)  
has phoned Mary
- b. Ha telefonado María. (Spanish)  
has phoned Mary  
'María has phoned.'
- (10) a. \*has phoned Mary (English)  
b. \*a téléphoné Marie (French)

Roberts (1990) has adapted the ideas in Koopman & Sportiche (1988) to a framework in which INFL is split into different functional projections. Both AGR S and T may have the feature [+nom]; they are both potential nominative Case assigners. Since [SPEC, TP] is an A'-position (a position for operators in which no  $\theta$ -marked NP can be licensed), Roberts (1990: 1.2.) claims that T can only assign Case by government, while AGR can assign Case either by government or by SPEC-HEAD agreement.

In languages such as Spanish and Italian AGR must assign nominative Case under SPEC-HEAD agreement after raising of the VP-internal subject to [SPEC, AGRP S]. Also, T assigns Case by government to the VP-internal subject in [SPEC, V<sup>max</sup>] in sentences showing free-inversion like those in (9). The ungrammaticality of (10a) suggests that T is not a nominative Case assigner in English. As for French, in spite of the ungrammaticality of (10b), there is a limited class of structures that allow free inversion, the so-called stylistic inversion constructions (see fn.8; see (11) below). It seems that, in principle, T is [+nom] in French, but the theory will have to specify why government of a postverbal NP by T is not generally available in the language (see (10b)), except for structures like (11):

- (11) Je me demande quand *pro*<sub>i</sub> partira ton ami<sub>i</sub>  
I me wonder when *pro* will-leave your friend  
'I wonder when your friend will leave.'

Having T assigning nominative Case to a postverbal subject allows for a situation in which the properties of bearing nominative Case and sharing AGR features with the V could be dislocated as pointed out by Roberts (1990). This is true for

(8) The possibility of inverted subjects exist in French for those instances of stylistic inversion, as studied by Kayne & Pollock (1978) and Kayne (1983).

some Celtic languages like Welsh (12) (from Roberts 1990: 29) and in instances of quirky agreement in Italian dialects like Trentino (T) and Fiorentino (F) (13) (from Brandi & Cordin 1989: 115) and Genoese (14) (from Battye 1990: 2):

- (12) Canodd [y plant] bob dydd (Welsh)  
 sing-past-sg. [the children] every day  
 'The children sang every day.'
- (13) a. Gli é venuto della ragazze. (F)  
 there is come-masc./sg. some girls-fem./pl.  
 b. E vegnú qualche putela. (T)  
 is come-masc./sg. some girls-fem./pl.  
 'Some girls have come.'
- (14) se inversou due barke (Genoese)  
 se is-capsized two boats  
 'Two boats have capsized.'

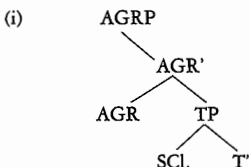
In Spanish (and Italian), however, assignment of nominative Case by T involves feature sharing between the V and the 'inverted subject' as the ungrammaticality of (15) shows:

- (15) \*Ha telefonado los chicos  
 has phoned the boys

Let us assume with Roberts (1990) that AGR S is never entirely divorced from the assignment of nominative Case in languages like Spanish (and Italian): it can assign nominative Case to the element in its Specifier (under [SPEC- HEAD] agreement) and it is co-superscripted with T when T assigns Case under government (Case is assigned by the complex head T + AGR S).<sup>9</sup> The possibility of showing some kind of free inversion (and V-raising) seems to suggest that French is closer to other Romance languages such as Italian and Spanish, than to English, with respect to the features of AGR and the ways in which nominative Case is assigned. A crucial difference pointed out by Roberts (1990) between Romance and English concerns the contrast between (16) and (17) (examples from Roberts 1990: 30, 69):

- (16) a. When has Mary phoned?  
 b. What film is John seeing?

(9) The fact that AGR always plays a role in nominative Case assignment has been observed by Fernández Soriano (1989), who goes further than Roberts (1990) in that she claims that T and AGR always assign Case together. This is due to the fact that there is a Subject Clitic in [SPEC, TP] (an A-position in Fernández Soriano's framework) in which T discharges its features, which then incorporates into AGR, making explicit the relation between T and AGR, as in (i)



- (17) a. A quelle heure a téléphoné Marie? (French)  
When has phoned Mary?  
'When did Mary phoned?
- b. ¿A qué hora ha llamado María? (Spanish)  
When has phoned Mary  
'When did Mary phoned?
- c. Che film ha visto Gianni? (Italian)  
what film has seen Gianni  
'What film did Gianni see?

In the English examples in (16), the auxiliary verb (e.g. *has*, or *is*) has risen from its DS position in T (through AGR S) to C. Similarly, the DS subject NP in [SPEC, V<sup>max</sup>] has moved to [SPEC, AGRP S], where it can be assigned nominative Case. Roberts (1990) claims that nominative Case is assigned to the subject NP by AGR S (or rather by the complex head C+AGR S+T) under government.

Raising of the Romance auxiliary to C parallels raising of the English auxiliary, a requirement of the Wh-Criterion, as formulated by Rizzi (1991). However, no raising of the DS subject to [SPEC, AGRP S] seems to take place in Romance questions; the subject remains in its DS position in [SPEC, V<sup>max</sup>]. So far we have said that in Romance languages the subject can either remain in its DS position or move to [SPEC, AGRP S]. But in questions like those in (17) movement of the DS subject to [SPEC, AGRP S] is blocked, as we can see in (18):

- (18) a. \* A quelle heure a Marie<sub>i</sub> téléphoné t<sub>i</sub>? (French)  
When Marie has phoned ?
- b. \* ¿A qué hora ha María<sub>i</sub> llamado t<sub>i</sub>? (Spanish)  
When María has phoned
- c. \* Che film ha Gianni<sub>i</sub> visto t<sub>i</sub>? (Italian)  
what film has Gianni seen

Movement of the DS subject to [SPEC, AGRP S] in (18) is blocked under the assumption that AGR S cannot assign Case under government in Romance (Roberts 1990). In Romance languages, with a 'richer' morphology than English, AGR S can only assign Case under SPEC-HEAD agreement.<sup>10</sup>

The discussion above leaves two questions unanswered: (i) why cannot English AGR S assign nominative Case under government to the DS subject in [SPEC, V<sup>max</sup>]? and (ii) why cannot Romance T assign Case under government to the SS subject in (18)? That is, the ungrammaticality of the examples in (19) is left unexplained:

(10) An exception to the pattern in (16) is mentioned by Rizzi (1991: 12) and it concerns French questions like the one in (i):

(i) [Qui<sub>i</sub> a-t [elle t<sub>i</sub> rencontré t<sub>i</sub>]?  
who has she met?

The structure in (i) shows *elle* intervening between the auxiliary and the participle, as in the English gloss. (i) is possible because French *elle* is a subject clitic, whose position in the sentence and the way in which nominative Case is assigned to it are different from those of a full NP.



- (19) a. \* (It) has phoned Mary  
 b. \* ¿Ha María llamado?  
 has María phoned

Roberts (1990) claims that (19a) is ungrammatical in English because a T head intervenes between AGR S and the 'inverted' subject *Mary* in [SPEC, V<sup>max</sup>]. Since T is [- nom] in English, it blocks assignment of Case by AGR S under government.<sup>11</sup>

As for (19b), its ungrammaticality has to do with the way in which complex heads (AGR + T) assign Case. For Roberts (1990) a complex head is the result of incorporation following Baker (1988). In a structure like that in (19b) T incorporates into AGR and the complex head AGR + T incorporates into C. The DS subject has raised to [SPEC, AGRP S] from its DS position, thus destroying the environment in which it could be assigned Case by T (co-superscripted with AGR) as in sentences showing 'free inversion' and questions. In [SPEC, AGRP S], the SS subject can only be assigned Case under agreement with AGR S, but AGR S has moved to C in (19b) destroying the environment in which it can assign Case to a subject, as pointed out by Roberts (1990: 1.3.1.). Thus, we have the following pattern for nominative Case assignment by AGR S in Romance and in English:<sup>12</sup>

(20)	Nominative Case assignment by AGR S:		
		Government	SPEC-HEAD Agreement
	Romance	-	+
	English	+	+

(11) The answer given by Roberts (1990) for the impossibility of 'free inversion' in English due to an intervening T head between AGR S and the DS subject, poses a problem for the corresponding (grammatical) sentences in Romance, where an AGR O head intervenes between T and the subject in [SPEC, V<sup>max</sup>] in transitive structures. The solution to this problem could be that AGR O is involved in the assignment of accusative Case and thus it does not count as an 'intervening head' for the assignment of nominative Case to the inverted subject.

(12) In fact, it is not clear how Roberts (1990) would account for structures like those in (i), which may in principle involve movement of the DS subject to [SPEC, AGRP S]:

- (i) a. ¿Compró<sub>i</sub> Juan<sub>k</sub> t<sub>i</sub> las manzanas t<sub>k</sub>?  
 bought Juan the apples  
 'Did Juan buy the apples?'  
 b. ¿Está<sub>i</sub> Juan<sub>k</sub> estudiando t<sub>i</sub> la propuesta t<sub>k</sub>?  
 'Is Juan studying the proposal?'

The structure in (ia) involves movement of the V root to C after incorporation into AGR S and T. As for (ib) the auxiliary moves to C, in the same way as its English counterpart. It appears to be the case that in the structures in (i) the DS subject has moved to its SS position in [SPEC, AGRP S]. If that is not a position where the NP *Juan* can be assigned Case under government, as argued by Roberts (1990), how does Case-assignment take place? We could argue that Case-assignment can take place under SPEC-HEAD agreement, prior to the movement of the complex head V + T + AGR S to C to satisfy the Wh-Criterion. The same structure is not possible with the auxiliary *haber*, because nothing can intervene between the auxiliary *haber* and the participle in modern Spanish. It is possible that both *haber* and the auxiliary may move to C in structures like (17b), repeated below as (ii):

- (ii) ¿A qué hora [CP ha llamado] [AGRP S María]...?  
 at what time has called María  
 'When did María call?'

The structure in (ii) would be analogous to (i) with the V in C and the subject in [SPEC, AGRP S], contrary to what Roberts (1990) claims. The problem is that if AGR S can assign Case prior to movement to C in Romance, what stops it from assigning Case in the same way in English structures like (16a) (repeated as (iii))?:

- (iii) When has Mary phoned?

### 1.2. *The relation between the two roles of AGR S and the structure of AGRP S in Spanish.*

So far, we have sketched some of the characteristics of the feature composition of AGR S and the ways in which it assigns nominative Case. It remains to be seen if there is any relation between the two functions of AGR S: assignment of morphological features and the assignment of nominative Case.<sup>13</sup> What this relation is is, in principle, a matter of speculation, rather than a matter of empirical consequences. In what follows, we are going to concentrate on the difference between English and Spanish.

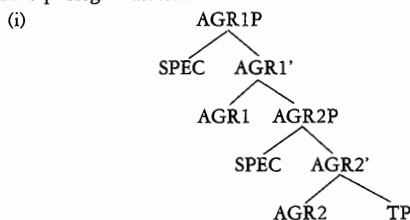
It could be claimed that the 'content' of the morphological features of AGR S determines how Case is assigned by AGR. Thus, in Italian and Spanish, with 'rich' morphological systems AGR can only assign Case under SPEC-HEAD agreement, and not under government, as claimed by Cardinaletti & Roberts (1991: 37). This requirement does not hold in English with a 'poorer' morphological system. The question is in what way morphological features condition the way in which nominative Case is assigned. For example, Kayne (1989b) has argued that what is different between English AGR S and Spanish/Italian AGR S is that English AGR S lacks the feature [person], with 3rd.p. -s being a specification for [number], but not for [person].<sup>14</sup>

Similar ideas are found in Rigau (1991), who has argued that for some dialects of Catalan (Noroccidental), when AGR is specified as [-person] it cannot assign

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If sentences like (iii) are possible in English because AGR S (in C) can assign Case under government, but not in Romance, where AGR S can only assign Case under [SPEC, HEAD] agreement, according to Roberts (1990) and now we say that AGR S can assign case under [SPEC- HEAD] agreement, prior to movement to C, there seems to be no fundamental difference between Romance and English AGR S. Clearly, if AGR S assigns Case under [SPEC-HEAD] agreement prior to movement into C in Romance, we would have to find a mechanism that stops English AGR S from doing so in structures like (iii) if we want to maintain the distinction in the way AGR S can assign nominative Case in English and in Romance. We leave this question open here.

(13) Cardinaletti & Roberts (1991) have actually suggested that the two roles of AGR (providing the V with morphological features and assigning nominative Case) may be performed by different AGR S heads. In a structure like the one in (i) AGR1 would be concerned with the assignment of nominative Case and AGR2 with the assignment of morphological features



Motivation for a structure like that in (21) comes from some X-second effects: V2 in Icelandic, Old French and Yiddish and Clitic-second in German and medieval Romance.

(14) The special status of the feature [person] is pointed out by several authors. Kenstowicz's (1989) shows that in Bani-Hassan Arabic participial verb forms fail to inflect for person, showing only tense distinctions. Consequently, no NS are found in constructions involving a participle, in contrast with the perfect forms of the verb, which have person inflection and allow NS. Similarly, the special status of the feature person with respect to V-raising is pointed out by Platzack & Holmberg (1989) for Scandinavian languages, in which V-raising correlates strongly with person agreement. Of course, the presence of person morphology is not a guarantee that these two processes are allowed. Raposo (1989) analyses some structures that do not allow NS in European Portuguese, in spite of having person and number agreement, the so-called 'prepositional infinitival construction'. Clearly, other processes are intervening to block the general property of European Portuguese to allow NS. The case of Chinese (and Japanese), which allows NS, with no tense and person agreement in the inflection, is also well-known. The option of having NS's is available thanks to processes such as operator binding or control (see Huang 1989).

nominative Case and only partitive Case is available. This happens for example when the clitic *hi* 'inhibits' the [person] feature of verbal inflection, which shows 'default' 3rd.p.sg. features, as in (21) (from Rigau 1991):

- (21) a. Hi haurà pocs hòmens.  
           there will-be-sg. few men-pl  
           'There will be few men.'
- b. \*Hi hauran pocs hòmens  
           'there will-be-pl few men-pl'

A similar process is observed in Spanish in configurations containing the clitic ARB(itratry) SE. It is claimed in Mendikoetxea (1992) that the clitic SE is the realization of the feature [person] in AGR S in constructions like those in (22):

- (22) a. SE bebe mucho en las fiestas. (Unerg.)  
           SE drinks a-lot in the parties  
           'One (SE) drinks a lot at parties.'
- b. Con estos atascos, SE llega siempre tarde. (Unacc.)  
           with these traffic-jams, SE arrives always late  
           'With these traffic-jams, one (SE) is always late.'

Absorption of the feature [person] by ARB SE involves absorption of nominative Case, once we have claimed that the feature [person] is responsible for nominative Case-assignment. Once absorbed by ARB SE, nominative Case cannot be reassigned to a nominal element, hence the ungrammaticality of (23) with the relevant ARB SE interpretation:

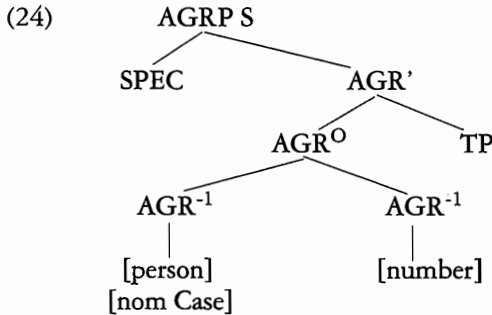
- (23) a. \*SE bebe mucho en las fiestas Juan  
           SE drinks a-lot in the parties Juan
- b. \*SE llega siempre tarde Juan  
           SE arrives always late Juan

This seems to suggest that [person] and [number] are to be considered independent features within AGR (see Rigau 1991), or even, different functional projections, a proposal suggested by several authors (Rouveret 1991, Ritter 1991).<sup>15</sup> A way of representing the less radical view suggested by Rigau (1991) that [number] and [person] should be considered independent features within AGR S (and not independent functional heads) is to make use of sublexical categories of the kind discussed by Belletti (1990) and Roberts (1990) (following Selkirk 1982).

(15) Rigau (1991) argues that [person] and [number] express different grammatical relations: the feature [person] is directly related to nominative Case assignment, while the feature [number] indicated the prominent argument in predication. A similar view is held by Rouveret (1991) who argues that the different behaviour of [number] and [person] has to do with their different origin in the derivation: [person] is a specification inherent to finite Vs, generated under AGR, while [number] is generated under the functional system associated with nominal categories and then incorporates into [person].

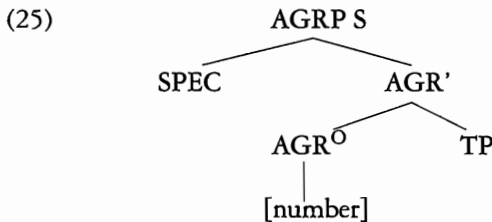
According to this proposal there is a projection below the lexical ( $X^0$ ) level, i.e. an  $X^{-1}$  level, where the elements that occupy the  $X^{-1}$  position are affixes.

Roberts (1990) claims that languages vary in the composition of the functional head AGR, which can have affixes at the  $X^0$  level or at the  $X^{-1}$  level. What we would like to claim here is that in Spanish and in Italian [person] and [number] are  $X^{-1}$  features and the possibility of having null subjects is related to the possibility of having an  $X^{-1}$  [person] feature which can only assign nominative Case under SPEC-HEAD agreement. The structure for AGR S in Spanish and Italian is therefore as in (24):



Romance finite Vs would move into a subcategorized position at the  $AGR^{-1}$  level, according to Roberts (1990).

On the contrary, English finite Vs seem to lack features at the  $AGR^{-1}$  level. Kayne (1989b) suggests that English finite Vs lack a [person] feature. However, they have a [number] feature that is realized by the suffix *-s* for 3rd.p.sg. subjects in the present. Let us assume that the structure of AGR S for English finite Vs is as in (25):



We said at the beginning of this work that the role of AGR S was two-fold: (i) to assign nominative Case and (ii) to provide the V with agreement features. The two functions are, in principle, independent of each other, though they normally coincide. Feature sharing (morphological agreement) is a SPEC-HEAD relation in the sense of Chomsky (1986), while assignment of nominative Case by AGR S may take place under government or under SPEC-HEAD agreement.<sup>16</sup> In languages like Spanish and Italian, where AGR S can only assign Case under SPEC-HEAD agreement,

(16) We are using the term feature-sharing to denote morphological agreement between a V (+AGR S) and an NP. Morphological agreement is in this sense different from the kind of structural agreement involved in the assignment of nominative Case. Although the two kinds of agreement normally coincide: Case being assigned from X to XP and agreement from XP to X, this is not always the case. Georgopoulos (1991) mentions examples in Palauan, a language showing overt morphological object agreement in which the XP that receives Case is the complement of X and the XP in agreement is the specifier (by definition).

feature-sharing and nominative Case-assignment by AGR S always coincide. When it is T (or rather AGR S + T) that assigns Case to the 'inverted' subject, coindexation between the inverted subject and an expletive *pro* in a Spec-Head relation with AGR S (to which the V raises) ensures the correct agreement pattern, assuming a feature-transmission mechanism, as in (26) (where  $X^k$  indicates nominative Case-assignment and  $X^i$  feature-sharing):

$$(26) \quad [\text{pro}^i \text{V} + \text{T}^k + \text{AGR S}^{\text{ik}}] \dots [\text{VP } \text{t} (\text{NP})] [\text{NP}]^{\text{ki}}$$

Let us now turn to English. To be licensed (i.e. assigned Case) a subject NP in English must occupy the position in SPEC-AGRP S at SS, where it can be assigned nominative Case under SPEC-HEAD agreement with AGR S, as in Spanish and Italian; or under government in questions. It is also under SPEC-HEAD agreement that sharing of features (morphological agreement) between the subject NP and AGR S takes place. Feature-sharing must then be prior to the rule of Affix-Hopping at (PF) (see Chomsky 1981), which lowers AGR S to the verbal root, destroying the environment in which nominative Case and feature-sharing between the lexical subject and AGR S takes place. The process is illustrated in (27):

$$(27) \quad \text{John}_{\text{ik}} \text{AGR } s^k \text{T like- fun } t^i$$

Assignment of nominative Case in (27) is then the result of SPEC-HEAD coindexing between an NP in [SPEC, AGRP S] and AGR S.

Let us now move to questions like those in (28) below, where we have said that AGR S (or rather C+AGR S+T) assigns Case under government, a possibility not available for Romance languages:

- (28) a. When has Mary phoned?  
 b. What film is John seeing?

Auxiliaries, as opposed to verb roots, do raise in English to pick up their inflection (Tense + AGR S) suffixes. The contrast is illustrated in (29):

- (29) a. \*Mary phones not \_\_ / Mary has not \_\_ phoned.  
 b. \*John sees not a film / Mary is not \_\_ seeing a film.

If it is true that V-raising is associated with the presence of the feature [person], as we have been suggesting here following Kayne (1989a) (see also fn. 14 here), it seems that the feature [person] must be part of the feature composition of auxiliaries in English. Thus, AGR S for English auxiliaries must be similar to Spanish AGR S for finite Vs in (24). However, structures like (28) are ungrammatical in Spanish, but not in English.

What is different is that in English whatever feature [person] there is in the auxiliary system, this feature is not linked to nominative Case assignment. If it was there would be no way of explaining how nominative Case is assigned by AGR S when no such feature is present. Also, we have said that the feature composition of

AGR S determines the way in which nominative Case is assigned. The fact that nominative Case is linked to the feature [person] in Spanish in AGR S means that AGR S can only assign Case under SPEC-HEAD agreement, and not under government, as in English.

The questions in (28) above illustrate movement of AGR S to C in order to satisfy the Wh-Criterion (see Rizzi 1991), a position where AGR S governs [SPEC, AGRP S], where the subject requiring nominative Case is. Feature matching between AGR S and the subject NP takes place because the auxiliary moves through AGR S on its way to C. Feature matching however does not involve assignment of nominative Case in English, as we said above. Assignment of nominative Case in English is simply a coindexing relation between AGR S and an element occupying the position in SPEC-AGRP S. That coindexation process can take place under government or under SPEC-HEAD agreement.

Thus, in languages in which the feature [person] in AGR S is responsible for nominative Case assignment (such as Spanish), feature-sharing involves assignment of nominative Case to the element occupying SPEC-AGRP S. In English, where the [person] feature (if at all present) is divorced from the process of nominative Case assignment, feature-matching under SPEC-HEAD agreement does not necessarily involve assignment of nominative Case under SPEC-HEAD agreement. Nominative Case assignment to the element in SPEC-AGRP S in English is a coindexing relation between the element in [SPEC, AGRP S] and AGR S, either under government, or under SPEC-HEAD agreement. Nominative Case assignment to the element in AGRP S in Spanish, on the other hand, is a coindexing relation that can only obtain under SPEC-HEAD agreement, since feature-sharing between AGR S and the element in [SPEC-AGRP S] involves the assignment of nominative Case, with the feature [person] being linked to nominative Case. The question is, if feature sharing in Spanish involves assignment of nominative Case and we have argued that in English feature sharing is prior to movement of AGR S to C, why can't we have structures like (28) in Spanish? Could not nominative Case be assigned to the NP in [SPEC, AGRP S] (*Juan* in (30) below) by AGR S under SPEC-HEAD agreement, on its way to C?

- (30) \*¿Ha<sub>j</sub> [<sub>AGRP S</sub> Juan<sub>k</sub> t<sub>i</sub>] t<sub>i</sub> visto la película t<sub>k</sub>?  
Has John seen the film?

The assumption here is that Case assignment takes place at SS. The structure is correct in English because AGR S can assign Case under government at SS, but not in Spanish where AGR S can only assign Case under agreement, an environment that has been destroyed after raising of AGR S to C (but see fn. 12 here for a different interpretation).

A final remark about Spanish: We have claimed following Roberts (1990) that both AGR S and T can assign nominative Case in Spanish, i.e. that they are both [+nom]. There must be some way, however, of preventing both functional heads

from discharging their Cases at the same time, since there cannot be two lexical NPs bearing nominative Case in the same structure as in (31) (irrelevant details omitted):

- (31) Juan<sup>i</sup> [ha AGR S<sup>i</sup> + T<sup>k</sup>] visto la película [María<sup>k</sup>]  
 Spec-Head government

Let us assume that since T always incorporates into AGR S in Spanish, it is always the Complex Head AGR S + T that assigns Case in this language (see fn. 9). Let us further assume that the unmarked strategy for nominative Case assignment in Spanish is SPEC-HEAD agreement, given that Spanish is considered to have a 'rich' inflectional system. Thus, if there is an NP requiring nominative Case in SPEC-AGRP S, AGR S will block the [+nom] feature of T after incorporation, preventing T from assigning nominative Case under government. The grammatical result of this process is as in (32a) and the ungrammatical result as in (32b) (where neither AGR S, nor T can assign nominative Case)

- (32) a. Juan ha visto la película.  
 'Juan has seen the film.'
- b. \*Ha Juan visto la película  
 Has Juan seen the film

On the other hand when there is no NP requiring nominative Case in SPEC-AGRP S, the Case-assigning property of T is not blocked after incorporation, giving the so-called 'free-inversion' structures as in (33a) below. Also, T is able to assign nominative Case under government in Aux-to-Comp structures (Rizzi 1982), where there is no AGRP in the construction, and therefore, the feature [+nom] of T is not blocked, as in (33b):

- (33) a. Ha visto la película Juan.  
 has seen the film John  
 'John has seen the film.'
- b. Habiendo Juan recibido la noticia...  
 having Juan received the news...  
 'Once Juan received the news...'

The conclusion to be drawn from this section is that assignment of nominative Case and feature-sharing (morphological agreement) are, in principle, independent features. Case-assignment may take place under government or under agreement, while feature-sharing can be reduced to a SPEC-HEAD relation. The feature composition of AGR S plays a role in determining how nominative Case is assigned in languages like Spanish and English. In particular, whether the feature [person] is linked to nominative Case assignment determines whether Case is assigned under government or under SPEC-HEAD agreement. Not much has been said about the relation between the features of AGR S and V-raising, but it seems possible that an

analysis along the lines of the one sketched here could give us a clue about what determines V-raising.<sup>17</sup>

In the next section we are going to see whether the conclusions for subject agreement can be extended to object agreement. That is, whether all kinds of agreement can be reduced to a SPEC-HEAD relation and what is the relation between accusative Case assignment and object agreement.

## 2. The role and the features of AGR O.

The initial hypothesis is one in which AGR O has the same features and the same role as AGR S: (i) to provide the V with the morphological features for object agreement and (ii) to assign accusative Case to the V's internal argument. In this section we are going to see whether this is true even for languages in which there is no overt morphological object agreement. As in the case of AGR S, we first look at the features of AGR O and then at the way in which Case is assigned.

### 2.1. *The feature of AGR O.*

Let us first examine the role of AGR O as the head that contains the features needed for object agreement. The hypothesis that AGR O provides the V with the morphological features involved in object agreement encounters two initial problems. First, if morphological agreement is a SPEC-HEAD relation, as we have been maintaining, and an object is the complement of the V it agrees with, how does feature-sharing take place? Second, if object agreement parallels subject agreement, why is it that it is less common cross-linguistically than subject agreement?

The first problem is solved if we assume that for an XP to show morphological agreement with the V it must occupy the position of [SPEC, AGRP O].<sup>18</sup> As for the rarity of morphological object agreement, Georgopoulos (1991: fn 10) notes that object agreement is a highly redundant mechanism. This is under the assumption that agreement systems are recovery mechanisms, from a functional point of view. The need for recovery of the features of the subcategorized complement of the V, to which the V assigns the internal  $\theta$ -role, is comparatively much lower than the need for the recovery of an element which is external to the  $\theta$ -grid of the V (for transitives and unergatives). Thus in French, for example, agreement between an object and a participle only takes place when the object has been extracted (with clitics and *wh*-phrases) (see Kayne 1989a). Similarly, in Spanish agreement only obtains when there is a *pro* element in the object position that needs to be identified and when an object moves out of its position as complement of the V (e.g. with passives), as we shall see.

(17) In this respect, see Belletti (1990: sec. 1) who claims that differences between French and Italian with respect to V-raising can be the result of the different nature of the verbal inflectional morphology in AGR S in the two languages. Belletti (1990: Ch.I, fn. 83) suggests that if the feature composition of AGR S determines whether languages can have Null Subjects as well, the two fundamental properties of Italian (V-raising and Null Subjects) would turn out to be linked to each other.

(18) But see Georgopoulos (1990) for an account of object agreement that does not make use of AGR projections. In this account morphological agreement between the XP(object) and the V is triggered by the XP object in [SPEC, VP].



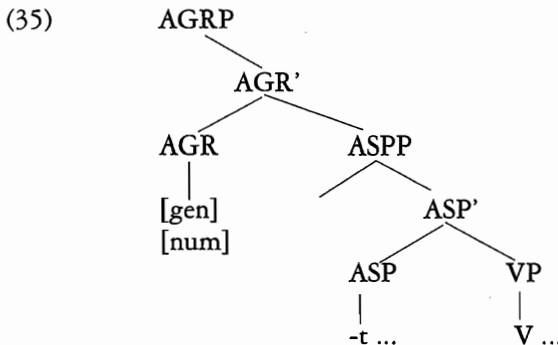
Here we are going to concentrate on the kind of agreement systems in languages that show no overt morphological object agreement. In particular we are going to look at the properties of AGR O in Spanish. It should be clear that we are considering object agreement as a property of UG, available, in principle, to all languages. Also, when we talk about object agreement, we are referring to 'structural' agreement and not to 'morphological' agreement (which we have been referring to as feature-sharing, unless otherwise specified).

In section 1 we looked at the special status of the feature [person] with relation to subject agreement. Let us now examine the status of the feature [person] in AGR O. It appears to be the case that in those languages that show no overt morphological agreement, AGR O lacks the feature [person]. Belletti (1990), for instance, has claimed that Italian (and Spanish) AGR O contains the features [number] and [gender] (unlike English), but not the feature [person].

Evidence for the assumption that AGR O contains the features [number] and [gender] comes from sentences that show participle agreement, such as the passive structure in (34a) and the A(bsolute) S(mall) C(lause) (see Belletti 1990: Ch. II) in (34b):

- (34) a. *Los pirómanos fueron detenidos ayer.*  
 the pyromaniac-masc.-pl. were-3rd.p.pl.  
 arrested-masc.-pl. yesterday  
 'The pyromaniacs were arrested yesterday.'
- b. *Llegados los bomberos todo el mundo se alejó del lugar.*  
 arrived-masc.-pl. the fireman-masc.-pl. all the world  
 themselves left-of-the place  
 '(Once) the firemen arrived, everybody left the place.'

Belletti (1990: 2.1.1.) has argued that a past participle can be viewed as the AGR O projection of Chomsky (1989), as independently proposed by Chomsky (1989) and Pollock (1989) (see also Kayne 1989a). In particular, in the structure proposed by Belletti there is a further functional projection, an Aspectual Phrase (ASPP), which contains the past participial affix (-t in Italian, -d in Spanish, etc.), while the AGR head contains typical agreement features such as [gender] and [number], as in (35) (from Belletti 1990: 34):



The AGR features in (35) can be either overtly realized (as in the examples in (34) or 'default', depending on the syntactic context. In a passive structure (34a) and in structures with ASCs (34b) agreement of [num] and [gen] features takes place between the participle and the SS subject. On the contrary, no such agreement takes place in complex tenses with the auxiliary *haber* (roughly 'have'), irrespective of the DS position of the SS subject in the unaccusative structure (36a), and in the unergative structure (36b):

- (36) a. Los bomberos han llegado/(\*-os) tarde.  
 the firemen-masc.-pl. have-3rd.p.pl. arrived-masc.-sg.  
 (def)/(\*-masc.-pl.) late  
 'The firemen arrived late.'
- b. Los bomberos han trabajado/(\*-os) toda la noche.  
 the firemen-masc.-pl. have-3rd.p.pl. worked-masc.-sg.  
 (def)/(\*-masc.-pl.) all the night  
 'The firemen worked all night.'

Although the participle seems to manifest [number] and [gender] features in the appropriate syntactic contexts, it does not seem to manifest any [person] features. This feature seems to be lacking in AGR O. Morphologically, an (object) [person] feature is never manifested in the V. Syntactically, if the feature [person] in AGR S plays a crucial role in identifying NS's (i.e. assigning some 'content', in the sense of Rizzi 1986), the fact that structures with N(ull) O(bjects) like those in (37) are not possible in Spanish seems to confirm that there is not a person feature in Spanish AGR O:<sup>19</sup>

- (37) a. \*He llevado pro  
 have-1st.p.sg. carried pro
- b. \*He puesto pro en las baldas  
 have-1st.p.ag. put pro on the shelves

That [person] feature is, however, present in Basque, with a 'rich' AGR O morphology, which allows NOs in standard transitive structures, such as those in (38):

- (38) a. (Zuk) (Jon) egunero ikusten *duzu* dendan.  
 (you-E) (Jon-A) every-day see aux/3rd.p. sg.-2nd.p.sg.  
 in-the-shop  
 'You see Jon in the shop every day.'
- b. (Zuk) (ni) egunero ikusten *nauzu* dendan.  
 (you-E) (me-A) every-day see aux/1st.p. sg.-2nd.p.sg.  
 in-the-shop  
 'You see me in the shop every day.'

(19) Dialects of Spanish in the Basque Country may allow for structures with NOs like those in (37), if the NO has a clear pragmatic reference. Structures like those in (37) have parallel (grammatical) Basque counterparts.

Differences in the feature composition of AGR O can be reduced to parametric differences, as we did with AGR S. The pattern would be as follows:

(39)	The features of AGR O			
		[number]	[gender]	[person]
	English	-	-	-
	Spanish/Italian	+	+	-
	Basque	+	-	+

Thus, Spanish and Italian AGR O have [number] and [gender] features, as shown by the fact that they can have V-participle agreement in some contexts, and lack a [person] feature, as shown by the fact that they do not allow NOs. In what follows, we are going to see that this simple pattern cannot be maintained when we examine the facts related to the possibility of NOs more closely.

### 2.1.1. Null Objects

The statement that languages like Spanish and Italian lack NOs is not altogether true. Fernández Soriano (1989: ch. 6) distinguishes three types of NOs in Spanish, illustrated in (40):

- (40) a. Esto lleva \_\_\_ a la siguiente conclusion.  
 'This leads \_\_\_ to the following conclusion.'
- b. -¿Tomaste cerveza?  
 had-you beer  
 -Sí, tomé \_\_\_  
 yes, had-I
- c. Este niño no come \_\_\_  
 'This kid doesn't eat \_\_\_'

(40a) illustrates the kind of NOs analyzed by Rizzi (1986) for English and Italian, with a generic (arbitrary) interpretation. Structures like (40b) have been analysed by Campos (1986) (see Fernández Soriano 1989: 6.3.2.), with a NO with partitive content in discourse. Finally, (40c) shows implicit NOs, as analysed by Fernández Soriano (1989: 6.3.3.).

The examples relevant for the purpose of showing that AGR O in Spanish (and Italian) has a [person] feature are those discussed by Rizzi (1986). Rizzi (1986) has claimed that the missing object in (40a) in Italian, is syntactically realized in the structure as a phonetically null element, namely *pro*. In this, Italian contrasts with English where the missing object is absent from the structure (not projected syntactically). Such evidence concerns structures in which the NO can act as a controller (41a), a binder (41b) and a subject of predication (41c), illustrated below for Spanish (compare with the English glosses):

- (41) a. Esto lleva *pro* a [PRO concluir lo siguiente]  
 this leads *pro* to [PRO conclude what follows]  
 'This leads \*(one) to conclude what follows.'

- b. La buena música reconcilia *pro* con uno mismo  
 the good music reconciles *pro* with oneself  
 'Good music reconciles \*(one) with oneself.'
- c. Esta música pone [*pro* contento]  
 this music renders [*pro* happy- 3rd.p.sg.]  
 'This music makes \*(you) happy.'

Following Rizzi (1986), an analysis of NOs would have to specify (i) the conditions that allow a NO to occur in a given environment: the formal *licensing* of the NO, and (ii) the way in which the content of the NO is recovered: the *identification* of the NO, where content involves minimally its phi-features.

As far as (i) is concerned object *pro*, as well as subject *pro*, have to be licensed by a governing head that can assign Case to it. This governing head belongs to a language-specific set of licensers. Thus, in view of what we have seen in Section 1.1.1, in Spanish, Italian and Basque, but not in English and French, AGR S can license a NS (Rizzi 1986: 519). For an object *pro*, the only possible licenser is the V. Thus, Rizzi (1986: sec. 3) argues that in Italian and Spanish, V belongs to the set of possible licensers, while in English it does not.

As for (ii), the following convention is adopted by Rizzi (1986: 520):

- (42) Let X be the licensing head of an occurrence of *pro*: then *pro* has the grammatical specification of the features on X coindexed with it.

Thus, in the case of subject *pro*, its licensing head, AGR S, provides subject *pro* with the features that allow it to function as a pronominal with referential value, among which the feature [person] plays a crucial role. Object *pro*, on the other hand, lacks referential value; it has arbitrary interpretation. Since the V (its licenser) lacks phi-features, its content is recovered via an independent rule like that in (33) (from Rizzi 1986: 521):

- (43) Assign *arb* to the direct  $\theta$ -role.

When (43) applies on the syntax, object *pro* gets the usual specifications corresponding to *arb*, which in Spanish are: [+human, +masculine, +singular, +generic].

With this, Rizzi (1986) establishes an analogy between the processes of licensing and identification of subject *pro* and object *pro*. Feature recovery is done, in both cases, through non-standard binding by (features on) the licensing head, represented in (44) (from Rizzi 1986: 521):

- (44)  $pro_i$       Infl   V       $pro_j$   
                   Agr<sub>i</sub>    $\theta_j$

However, a closer examination of Rizzi's (1986) account reveals that we are, in fact, dealing with different processes. In the case of subject *pro*, its licenser (AGR S), provides the features needed for the recovery of its content. On the contrary, in the case of object *pro*, the licenser (V) has no features that make the recovery of the content of *pro* possible. Also, to say that V is the licenser and the category that

identifies a NO poses a problem for languages in which there are referential NOs, such as Basque (see (38) above). If V has no features, how is the content of a referential *pro* recovered?

A process that would make formal licensing closer to the recovery procedure is mentioned (and disregarded) by Rizzi (1986: fn. 25) himself. He suggests that it could be the case that all possible licensors should have the feature [+pronominal]; *pro* could then occur coindexed with the feature [+pronominal] of a Case-assigning head in subject position or in object position. Rizzi (1986: fn. 25) dismisses this suggestion because it has no immediate consequences for his analysis. However, the proposal has obvious advantages in a system that makes use of two AGR projections.

In a language in which object *pro*-drop occurs freely, such as Basque, AGR O can act as the licensor of object *pro* (it can assign Case to it) and as its binder in terms of feature recovery. The same should apply to languages like Spanish and Italian. The difference is that in Spanish and Italian, where object *pro*-drop is only possible in generic contexts with arbitrary interpretation, the licensor AGR O should contain the features of *arb* interpretation [3rd.p., masculine, singular].

Thus, we can establish a parallelism between the *licensing* and the *identification* of *pro* in subject position and the licensing and the identification of *pro* in object position. Furthermore, the differences observed in the licensing/identification of object *pro* between languages like Basque, on the one hand, and languages like Spanish/Italian, on the other hand, are the result of parametric differences concerning the nature of the phi-features in AGR O.

It seems that AGR O should be specified as in (45) for Spanish and Italian:<sup>20</sup>

- (45)      AGR O  
            (def)
- |        |          |
|--------|----------|
| person | [3rd.]   |
| number | [+sg.]   |
| gender | [+masc.] |
|        | [+Case]  |

But we have seen that a past participle can agree in number and gender with the SS subject in certain contexts (see (34)). In passive structures and ASCs, [number] and [gender] are not default; they show morphological agreement with an NP. Similarly, in those cases in which a missing object co-occurs with an argument SC, the reference, which is *arb* in nature, can be made explicitly feminine or plural, as in (46):

(20) Having an AGR O with 'default' features does not explain why sentences with NO's of this kind can only appear in generic contexts. With specific time reference, NOs of the kind we are discussing are disallowed, as we can see in (i):

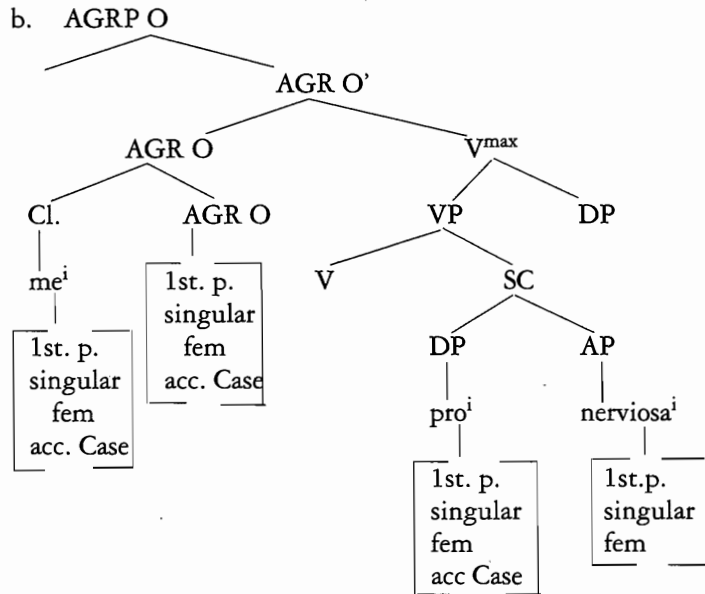
- (i) \* Esta música puso *pro* contento  
      this music rendered *pro* happy

We believe that the ungrammaticality of (i) has to do with some incompatibility between a 'default' AGR O and the features of T in contexts with specific time reference. Perhaps, a 'default' AGR O is only possible when it is bound by an unselective operator of the kind found in generic contexts binding a variable in T and AGR O (thanks to K. Sainz for suggesting this to me).

- (46) a. Esta bebida pone [*pro* nerviosa].  
 this drink renders *pro* nervous-fem  
 'This drink makes you nervous.'
- b. ??Tanto ejercicio deja [*pro* cansados].  
 so-much exercise leaves *pro* tired-masc-pl.  
 'So much exercise makes you tired.'

As far as the feature [person] is concerned, there are also cases in which the default value of this feature is obviated. Rizzi (1986: Sec. 4) follows Sportiche (1983) in that the trace left by a clitic after movement is *pro*. Also, supporters of the 'base-generated' hypothesis for cliticization (see Jaeggli 1986a) argue that the clitic is co-indexed with a *pro* occupying the argument position. If we further adopt Kayne's (1990a) analysis of cliticization in which Romance object clitics like *me* 'me', *te* 'you' etc. adjoin to the left of a functional head, we have a situation in which the clitic (whether at DS or at SS) is governed by AGR O and the amalgamation of clitic + AGR O fulfills the licensing properties and the properties concerning the recovery of the content of *pro*, as in (47) (irrelevant details omitted).<sup>21</sup>

- (47) a. Esta bebida *me*<sub>i</sub> pone [*pro*<sub>i</sub>; nerviosa<sub>i</sub>]



In Spanish only 3rd.p. clitics are specified for gender. Thus, the clitic *me* can have a [masc.] or a [fem.] referent. The fact that the clitic *me* is not overtly specified for gender does not mean that it lacks gender features. Its gender features are triggered

(21) Similar ideas are found in Fernández Soriano (1989: 1.5.3.), who argues that AGR O is a head that contains an object clitic that licenses and identifies the element *pro* in argument position.

in the right syntactic contexts, which in (47) involves the presence of the adjective *nerviosa* 'nervous-fem'. The way the AGR O features surface, then, depends on the syntactic context.

How does feature-sharing obtain? We have said that feature-sharing is a SPEC-HEAD relation. Let us then assume that in constructions like that in (47) there is an expletive *pro* in [SPEC, AGRP O] which is coindexed with AGR O (+ Cl.) and with *pro* in the subject position of the SC. When no clitic is adjoined to AGR O as in (46), coindexing is a relation between *pro* in [SPEC, AGRP O] and an AGR O, with the subsequent feature-transmission process to the NO. A similar mechanism of feature-transmission was adopted for examples of free inversion in section 1.

The hypothesis we want to pursue here is one in which Spanish AGR O can be [ $\pm$  gender] and [ $\pm$  number]. When AGR O is positively marked for [number] and [gender], these features are realized as [ $\pm$  masc.] and [ $\pm$  sing.] (e.g. with passive participles) (see (48a)) or as default [+ masc.] [+sing.] (e.g. with active participles in complex tenses with the auxiliary *haber* 'have') (see (48b)). There is also a third possibility: one in which AGR O gender features do not surface at all (not even in a default form). This happens in transitive contexts not involving complex tenses with the participle, nor clitics, such as (48c) below. In examples like (48c) AGR O will be negatively marked for the features [gender] and [number]:

- (48) a. *Los pirómanos fueron detenid-os/-(\*o) ayer.*  
 the pyromaniac-masc.-pl. were-3rd.p.pl  
 arrested-masc.-pl./-(\*-masc./sg.) yesterday  
 'The pyromaniacs were arrested yesterday.'
- b. *Los bomberos han apagad-o/-(\*as) las llamas.*  
 the fireman-masc.p. have-3rd.p.pl. put-out-  
 masc.-sg.(def.)/\*fem.pl.) the flames- fem.pl.  
 'The firemen have put out the flames.'
- c. *Los vecinos trajeron mantas.*  
 the neighbours-masc.pl. brought-3rd.p.pl.  
 blankets-fem.pl.  
 'The neighbours brought blankets.'

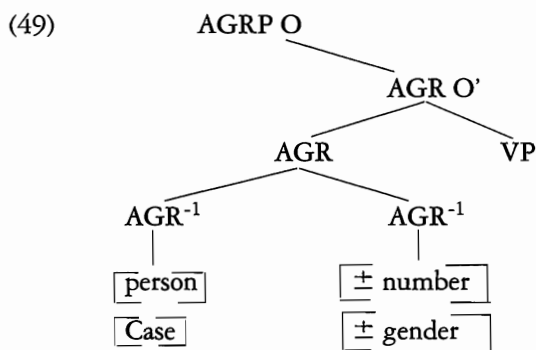
As for the feature [person], we have seen that it only surfaces with clitics. However, we have seen that in the case of AGR S, the feature [person] played a crucial role in nominative Case assignment and the identification of NS. The role of AGR O as an accusative Case assigner will be examined in the following section, but something needs to be said now.

Let us assume that [+ person] is triggered by object clitics in a position adjoined to AGR O, which can show overt 1st., 2nd. and 3rd. person morphology, and in those cases where identification of a *pro* makes it necessary for AGR O to contain a [person] feature. When the feature [person] is present (either overt in a clitic or default), it must be associated with accusative Case, as the licenser of *pro*. Otherwise,

accusative Case assignment is independent of the feature [person]. The feature [person], however, is never overtly realized in the verb morphology in Spanish, as opposed to languages like Basque.

As in the case of AGR S, the feature [person] appears as different from the features [number] and [gender]. The feature [person] is associated with structural Case, and thus, in close connection with the V. On the other hand, the features [number] and [gender] play a crucial role in the specification of the referential properties of nominal arguments (see Rouveret 1991). AGR O [number] and [gender] features are only overtly realized in the participle when it is necessary to express the relation between the SS subject and the predicate (as in the case of passives) (see Rigau 1991), and inherently realized in clitics.

This leads us to expect the following representation for AGR O in Spanish in those cases in which the feature [person] is present:

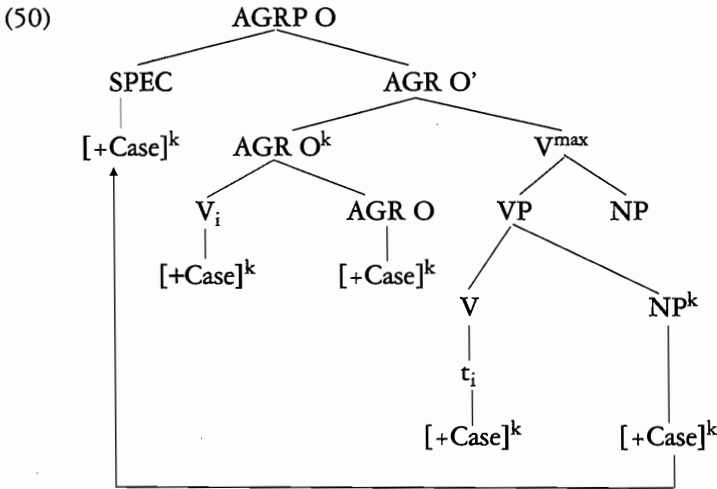


The implication here is that the realization of the features of AGR O obeys to parametrization. In Basque, all the features are positively marked, in Spanish (and possibly Italian) they are only positively marked in the right syntactic context. Finally in English all the AGR O features are negatively marked, which is the same as saying that English lacks AGR O features (though AGR O is possibly present as a syntactic projection). In the next section, we are going to see how this relates to the role of AGR O as an accusative Case assigner.

## 2.2. AGR O as a Case assigning head.

If we want to maintain the parallelism between AGR S and AGR O, we should start by looking at the unmarked hypothesis: AGR O may, in principle, assign Case in the same way as AGR S: under government and under SPEC-HEAD agreement (following the original proposal in Koopman & Sportiche 1988). Let us assume, as well, that AGR O is not the only accusative Case assigner: V is also [+acc]. V may assign accusative Case to a subcategorized NP under government, either *in situ* or after incorporation into AGR O, in the same way as T assigns nominative Case under government after incorporation into AGR S in Spanish. The patterns for accusative Case assignment can be represented as in (50) (where the arrow indicates the movement of the internal argument to be assigned accusative Case under SPEC-HEAD agreement):





We said in section 1 that it is a characteristic of languages with ‘rich’ AGR S that AGR S can only assign Case under SPEC-HEAD agreement and never under government. This was related to the fact that in those languages the Case feature of AGR S was linked to the feature [person]. Since feature-sharing (morphological agreement) is a SPEC-HEAD relation, it follows that Case-assignment by AGR can only take place in that configuration (although the language may have other alternative mechanism for Case-assignment). This must be the case in Basque, with overt V-Object agreement, so we assume that AGR O can only assign accusative Case under SPEC-HEAD agreement in Basque.

An example of Case assignment by AGR O under government is found in Italian ASCs in (51), where AGR O in C can assign accusative Case to the element in [SPEC, AGRP O], as we shall see. That accusative Case is assigned to *Maria* in (51a) is clear in (51b), where instead of a full NP we have an accusative clitic: (examples from Belletti 1990: 102-103):

- (51) a. *Conosciuta Maria, Gianni ha subito cambiato il suo stile di vita.*  
known Maria, Gianni immediately changed his lifestyle
- b. *Conosciuta me, hai cominciato ad apprezzare il mare.*  
known me(acc), you started liking the seaside

The ungrammaticality if the corresponding syntactic structure in (52) appears to suggest that Spanish AGR O cannot assign accusative Case in Spanish:<sup>22</sup>

- (52) \**Conocida* [<sub>AGRP O</sub> me...]  
known me...

We are going to see here that, contrary to what the ungrammaticality of (52) seems to suggest, Spanish AGR O plays a part in the assignment of accusative Case.

(22) For a different analysis of Absolute Small Clauses in Spanish, see de Miguel (1990).

It follows that when the internal argument remains in its DS position at DS, AGR O cannot assign Case to it unless V-raising takes place, voiding minimality. In English, where no V-raising takes place in finite contexts (except with the Vs *be* or *have*) accusative Case must be assigned by the V *in situ*. This is also coherent with the hypothesis that English AGR O lacks features.

Spanish AGR O may contain [number], [gender] and [person] features in the appropriate syntactic context. In Spanish both the V and AGR O have the feature [+acc]. Accusative Case is assigned after the Case feature of AGR O is 'strengthened' by the incorporation of V [+acc]. The complex head V + AGR O inherits certain properties of the incorporated head; government relations remain the same so V (+ AGR O) can assign its Case feature to the DS internal argument under government.<sup>23</sup>

The ungrammaticality of (52) suggests that [SPEC, AGRP O] is not a position where accusative Case is assigned under government. Accusative Case can be assigned, though, in [SPEC, AGRP O] under SPEC-HEAD agreement. This should be the only possibility when a clitic is present, since clitics provide AGR O with the feature [person], according to the hypothesis we are developing here, rendering 'rich' AGR O. Thus we can explain instances of clitic doubling such as that in (53), where the doubled NP has to move to [SPEC, AGRP O] to get Case:<sup>24</sup>

- (53) a. Lo vi a Juan.  
           to him saw-I Juan  
           'I saw Juan.'
- b. [<sub>AGRP O</sub> a Juan lo + V + AGR O] .. [<sub>VP t t</sub>]

Let us now see how assignment of Case relates to number and gender agreement. We retake here the examples in (34) above that proved the existence of [number] and [gender] features in AGR O, repeated here as (54):

- (54) a. Los pirómanos fueron detenidos ayer.  
           the pyromaniac-masc.-pl. were-3rd.p.pl. arrested-masc.-pl.  
           yesterday  
           'The pyromaniacs were arrested yesterday.'
- b. Llegados los bomberos todo el mundo se alejó del lugar.  
           arrived-masc.-pl. the fireman-masc.-pl. all the world themselves  
           left of-the place  
           '(Once) the firemen arrived, everybody left the place.'

(23) See Baker (1988) for the Government Transparency Corollary.

(24) The account above does not explain why clitic doubling is not possible in standard Spanish in structures like (i):

(i) \* Lo tengo<sub>i</sub> [<sub>AGRP O</sub> el libro t<sub>i</sub>]

A. Eguzkitza has suggested to me that a [-animate] *lo* may not contain the feature [person] that allows a 'doubled' NP to receive Case in [SPEC, AGRP O]. The differences in behaviour between [-animate] and [+animate] clitics has also been pointed out by Torrego (1990). For an analysis of clitic doubling in Spanish in which the clitic is a Case-assigner, see Fernández Soriano (1981: 6.4.).

(54a) is a passive structure, in which the DS object must move out of the VP to get Case. The same is true for ASCs like (54b) as we shall see below. If morphological agreement (feature-sharing) is a SPEC-HEAD relationship *los pirómanos* in (54a) and *los bomberos* in (54b) must be in a SPEC-HEAD relation with AGR O at some point at the derivation.

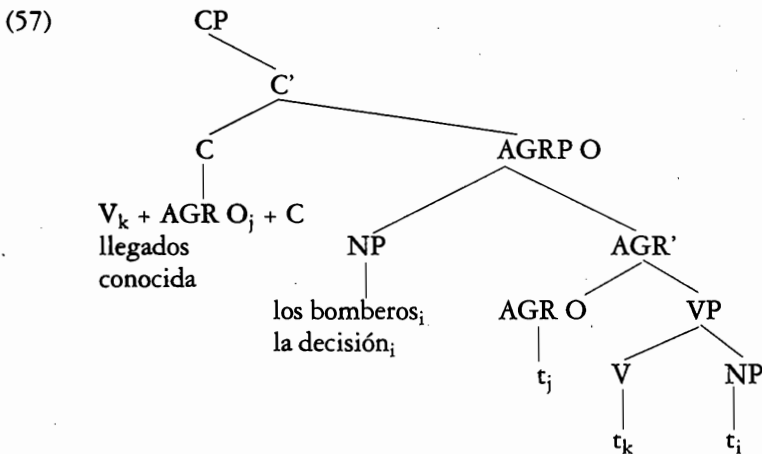
Let us look at ASCs like those in (55), first:

- (55) a. *Llegados los bomberos, empezaron a apagar el fuego.*  
 Arrived-masc./sg. the firemen-masc./sg. began to put-out the fire  
 'Once the firemen arrived, they began to put out the fire.'
- b. *Conocida la decisión, comenzaron las protestas.*  
 known-fem./sg. the decision-fem./sg., started the complaints  
 'Once the decision was known, protest started.'

No accusative Case can be assigned to *los bomberos* 'the firemen' in (55a) because *llegar* 'to arrive' is an unaccusative V, thus [-acc]. As for (55b), the V *conocer* is a transitive V, but (55b) is a passive construction and not an active construction. If we replaced the NP *la decisión* 'the decision' for an animate NP requiring the presence of the 'dummy' preposition *a* in an active transitive structure, the result would be an ungrammatical structure, as in (56) (compare with its Italian equivalent in (51a), where accusative Case is assigned to the NP *Maria*):

- (56) \**Conocida a María, Juan ha cambiado su estilo de vida*  
 known (to) Mary, Juan has changed his style of life

Thus in constructions like those in (55) agreement obtains between the participle and an NP receiving nominative Case in the following configuration (see Belletti 1990: ch.2):



Since neither AGR S, nor T are present in the structure, assignment of nominative Case to the NP in [SPEC, AGRP O] is a marked process. Belletti (1990: Ch. 2) assumes that C<sup>o</sup> can be a nominative Case assigner in some non-finite contexts.

When the V + AGR O incorporate into C<sup>o</sup>, nominative Case can be assigned to [SPEC, AGRP O] under government. If no V-movement takes place, C<sup>o</sup> cannot assign nominative Case by itself:

- (58) a. \*Los bomberos llegados...  
           the firemen arrived  
       b. \*La decisión conocida ...  
           the decision known

Feature-sharing between the participle and the NP obtains in a SPEC-HEAD configuration, prior to movement.

Structures like this are only possible when there is no conflict of Cases between C<sup>o</sup> and AGR O. If AGR O was [+acc], as in the ungrammatical structure in (56) there would be a Case conflict between C<sup>o</sup> and AGR O. With an unaccusative V like *llegar* 'to arrive', the AGR O required by the presence of the participle morpheme is always [-acc]. As for the transitive V *conocer* 'to know', its (acc) Case feature is 'absorbed' by the passive morpheme in configurations like that in (56b); see Jaeggli (1986b); Baker, Johnson & Roberts (1989).

It seems then that feature sharing must obtain in [SPEC, AGRP O] between the participle and an NP which does not require accusative Case. Agreement can only take place when the Case [feature] of AGR O has been absorbed forcing the movement of the NP object out the its position in the VP. The same is true for passive structures where regular nominative Case assignment takes place, such as (54a). In (54a), the DS object has moved to a position where it can be assigned nominative Case. We have claimed that nominative Case can be assigned in two positions: [SPEC, AGRP S] (under SPEC-HEAD agreement) and in the DS position of the external argument [SPEC, V<sup>max</sup>] (under government by the complex head T + AGR S).

In a structure like (54a) nominative is assigned in [SPEC, AGRP S]. In order to ensure proper government of its traces, the DP *los pirómanos* 'the pyromaniacs' must move to [SPEC, AGRP O] before it moves to [SPEC, AGRP S] (through [SPEC, TP]).<sup>25</sup> Once accusative Case has been absorbed by the passive morpheme, AGR O has no Case to assign, but its [number] and [gender] agreement features have not been absorbed by the passive morpheme, with the consequence that agreement in number and gender can take place between the participle and the NP in [SPEC, AGRP O].

The other possibility for nominative Case assignment is [SPEC, V<sup>max</sup>], as in (59):

- (59)       Fueron detenidos los pirómanos ..  
               were arrested the pyromaniacs ..

Kayne (1990b) has claimed that in a passive structure [SPEC, V<sup>max</sup>] is not projected at DS level, following the general assumption that the passive morpheme absorbs the external  $\theta$ -role. That position, however, can be created in the course of

(25) This is according to the Head Movement Constraint in (i):

(i) HMC: Movement of a zero-level category  $\beta$  is restricted to the position of a head  $\alpha$  that governs the maximal projection  $\gamma$  of  $\beta$ , where  $\alpha$   $\theta$ -governs or L-marks,  $\gamma$  if  $\alpha \neq C$ . (Chomsky 1986: 71).

derivation to allow movement of the DS object out of the VP for Case reasons (see Battye 1990). Once the position has been created nominative Case can be assigned. We have been assuming with Roberts (1990) that an NP in [SPEC, V<sup>max</sup>] gets nominative Case in Spanish under government by the complex head T + AGR S. Let us then assume that when there is no conflict of Cases between AGR S and AGR O co-superscription for Case assigning purposes involves the three functional heads present in the structure: AGR S, AGR O and T. Since accusative Case has been absorbed by the passive morpheme, it cannot be reassigned to a NP so the NP gets nominative Case from AGR O + T + AGR S

Agreement of features, on the other hand, is a SPEC-HEAD relation. In a structure like (59), what we have is a mechanism for feature-transmission, which operates whenever T is the assigner of Case. There is a *pro* in [SPEC, AGRP S], which is coindexed with a *pro* in [SPEC, AGRP O], which is, at the same time, coindexed with the NP *los pirómanos* in [SPEC, V<sup>max</sup>]. Feature-sharing obtains between AGR O and the *pro* in [SPEC, AGRP O], and then feature-transmission takes place.

If agreement in number and gender between the participle and the NP in a passive structure is the result of the fact that the NP is in a position where it can enter a SPEC-HEAD relation with AGR O, the explanation for why agreement does not take place in complex tenses with the participle and the auxiliary *haber*, like those in (60) below can be straightforwardly accounted for:

- (60) a. *Los bomberos han apagad-o/(\*-as) las llamas.*  
 the fireman-masc.p. have-3rd.p.pl. put-out- masc.-sg.(def)/  
 (\*- fem.pl.) the flames- fem.pl.  
 'The firemen have put out the flames.'
- b. *Todos los vecinos han trabajad- o/(\*-as) duro para apagar el fuego.*  
 all the neighbour- masc.-pl. have-3rd.p.pl. worked-masc.-sg.(def)/  
 (\*-masc.-pl.) hard for to put-out the fire  
 'All the neighbours have worked hard to put out the fire.'

A past participle agrees with the DS object/SS subject of a passive structure (54a), but not with either the DS/SS object of an active transitive structure (60a), nor with the DS/SS subject of a transitive (60a) or unergative (60b) structure. What is crucial is that agreement takes place between the past participle in a passive structure and an NP bearing nominative Case, and not accusative Case, exactly the same as for ASCs, where the element that agrees with the participle receives nominative Case and not accusative Case.

In (60a), the participle does not show number and gender agreement either with the external argument receiving nominative Case, or with the internal argument, receiving accusative Case. We have suggested that accusative Case is assigned by V after incorporation into AGR O. This complex head governs all that was governed by V so that V can still assign its Case feature to the NP *las llamas* 'the flames'. Feature-sharing is, however, a SPEC-HEAD relation. When V (+ AGR O) assign Case under government the internal argument remains in its DS position, instead of

moving into [SPEC, AGRP O]. Thus, no feature-sharing takes place and the participle shows 'default' [masculine, singular] features.<sup>26</sup>

As for the external argument, *los bomberos* 'the firemen' in (60a), and *todos los vecinos* 'all the neighbours' in (60b), if we assume Koopman & Sportiche's (1988) hypothesis that the external argument is base-generated within the verbal projection, and subsequently moves to its SS position in [SPEC, AGRP S] (an optional movement in Spanish), in order to properly govern its traces it will have to move through [SPEC, AGRP O] (and [SPEC, TP]), in the same way as the internal argument of the passive morpheme. However, in an active transitive sentence [SPEC, AGRP O] is, potentially, a position where accusative Case can be assigned, because the [Case] feature of AGR O has not been absorbed. It follows that feature-sharing cannot take place between an NP requiring nominative Case and an [acc] Case assigning AGR O.

Still, structures like (61) with an unaccusative V like *llegar* in a complex tense with *haber* are a potential problem for our analysis, since the DS internal argument must move out of the VP for Case reasons, as in passive structures:

- (61) a. *Los bomberos han llegado tarde.*  
 the firemen-masc./pl. have arrived-def late  
 'The firemen arrived late.'
- b. \**Los bomberos han llegado tarde.*  
 the firemen-masc./pl. have arrived-masc./sg. late  
 'The firemen arrived late.'

In (61) the SS subject *los bomberos* is generated as the complement of the V *llegar* and moves to [SPEC, AGRP S] to receive nominative Case and it must do so through all intermediate SPEC positions to ensure proper government of its traces. A possible explanation for why the lack of agreement features in (61) would be to claim that unaccusative Vs lack an AGRP O. This is coherent with the idea that the presence of an AGRP O is linked with the accusative Case-assigning properties.<sup>27</sup>

The problem with the hypothesis that unaccusative Vs lack an AGRP O is to explain where the participle morpheme *-d* is generated. However, in a structure like that put forward by Belletti (1990) (see (35)), the participle is the head of an ASPP in the complement position of AGR O. We could assume that in complex tenses with the auxiliary *haber* and an unaccusative V all we have is an ASPP containing the participle and not an AGRP O containing [number] and [gender] features. Thus, the NP *los*

(26) Belletti (1990: Ch 2, fn. 27) argues that in some Southern Italian varieties agreement between the participle and the internal argument takes place in active transitive clauses with a past participle and an auxiliary (i). The same is true for older stages of Italian (ii) (from Rohlfs 1969: 725):

- |        |   |         |  |
|--------|---|---------|--|
| (i) a. | <i>avimo trovata na borza</i> (Campano) | (ii) a. | <i>aveva rubati danari</i> (Machiavelli, 16th C) |
|        | we have found fem.-sg. a purse          |         | ha had stolen-masc.pl the money                  |
| b.     | <i>a' vinnute lóva</i> (Salentino)      | b.      | <i>ha presi i marchi</i> (Novellino, 13th C.)    |
|        | he has sold fem.-pl. the eggs.          |         | he has taken-masc-pl. the money                  |

For Belletti (1990) this is an example of head-complement agreement, a marked procedure for accusative Case assignment in standard Italian.

(27) This is the approach in Bartye (1991) to account for transitive/unaccusative alternations in English.

*bomberos* moves through [SPEC, ASPP] on its way to [SPEC, AGRP S] and since ASP contains neither [number], nor [gender] features, the pattern in (61) is explained.

Two facts are left unexplained by the account we have given for (61). First, although it is true that there is no feature-sharing in (61), it is also true that the participle shows some [gender, number] features, although they are 'default' [masculine, singular]. Secondly, the Italian counterparts to (61a) show NP-participle agreement. The structures in (62) illustrate the contrast between unaccusative (62a) and unergative Vs (62b):

- (62) a. *Maria è arrivata*/(\*-o)  
 Maria is arrived-fem./sg./( \*-def)  
 b. *Maria ha telefonato*-/( \*-a)  
 Maria has telephoned-def/( \*-fem./sg.)

It seems that we have to postulate the existence of a ([-acc]) AGR O even for unaccusative structures with complex Vs like those above. In Spanish, that AGRP O can only contain default features, which is not true for Italian. This is somewhat related to the presence of the auxiliary *haber* in Spanish. The difference between Italian and Spanish is that Italian has two auxiliaries for complex tenses: *essere* for unaccusative constructions and *avere* for unergative and transitive constructions. Agreement obtains with *essere*, but not with *avere*. In Spanish only *haber* appears in perfective complex tenses. Whenever *haber* is present, the participle shows default number and gender features. Let us assume that the reason why no agreement obtains in (61) (and in (62b)) is because the auxiliary *haber* has the feature [+acc], which is assigned to [SPEC, AGRP O], whenever it is projected in the structure. Feature-sharing is blocked in (61) due to the conflict of Cases we have been referring to for structures like (60).<sup>28</sup>

In summary, in passive constructions the participle in AGR O has lost its accusative Case assigning properties after absorption by AGR O. In active constructions the participle in AGR O can still assign accusative Case.<sup>29</sup> If the NP and the participle shared features under agreement, those features should be not only number and gender but also Case. Thus a Case conflict takes place between an NP that requires nominative Case and AGR O that assigns accusative Case.

The conclusion is that in languages like Spanish no accusative Case is assigned under [SPEC, AGRP O] agreement, unless a clitic provides AGR O with a [person] feature. Otherwise, the Case feature of AGR O combines with that of the V, which assigns Case under government to its DS argument, but AGR O is not a Case assigner by itself. Also, we have seen that AGR O plays an important part in the assignment of nominative Case, when its accusative Case assigning property is absorbed by the passive morpheme. [SPEC, AGRP O] is not, then, a position where

(28) That *haber* is associated with accusative Case seems to be confirmed by its behaviour as a main V in structures like (i), where a subcategorized NP receives accusative Case, as it is obvious in the clitic construction in (ib):

- (i) a. *Hay problemas.*    b. *Los hay.*  
           there-is problems    them there-is

(29) Belletti (1990: fn. 27)) argues that in active transitive sentences containing an auxiliary and a past participle, the past participle does not absorb accusative Case in AGR, because accusative Case is provided by the auxiliary (*haber* 'to have' in Spanish).

accusative Case is assigned in Spanish (except when a clitic is present), though it may be a position where nominative Case is assigned, as we have seen here.

Some important questions remain concerning accusative Case assignment. Whether accusative Case is assigned by the V *in situ* or after V-raising seems to be of no practical consequence concerning the grammatical output. So, (i) why is it necessary for V to move to AGR O. Can it not assign Case *in situ*? and (ii) why does it move to AGR O anyway?

The answer to these questions can only be theory-internal. As far as (i) is concerned, having AGR O somehow involved in the assignment of accusative Case provides a more coherent model for the assignment of structural Cases, since AGR S plays a crucial role in the assignment of nominative Case. Also, since AGR O seems to be involved in processes of Case absorption (by clitics and the passive morpheme), it is only logical to think that it should be involved in processes of Case assignment, as we pointed out above.

As for (ii) V-raising is associated with movement of the V to pick up its inflectional affixes (Pollock (1989)). Thus, a 'rich' or 'strong' AGR S, like that in Spanish and Italian, attracts the verb, while a 'poor' or 'weak' AGR S (English) does not. Clearly, no inflectional affixes are to be picked up by the verb in AGR O in an active transitive structure in Spanish (unlike Basque). However, the V has to move out of the VP to pick up its T and AGR S affixes. The *Head Movement Constraint* (see fn 26), ensures that the V moves to T and AGR S through AGR O. We have seen here that movement through AGR O is also needed for the purposes of Case-assignment.<sup>30</sup>

### 3. Conclusion

The goal of this paper was to provide a unified account of the patterns of subject and object agreement in a framework that makes use of AGR functional heads. We have looked at the roles of the two AGR heads involved in a transitive structure. AGR heads are responsible for structural Case-assignment and for verbal agreement with an NP subject and an NP object. We claimed that the two roles of the two AGR heads are, in principle, independent, although they normally coincide. Case-assignment can be done under [SPEC-HEAD] agreement or under government (depending on parametric variation), while feature-sharing is always a SPEC-HEAD relation. In particular it was claimed that when the feature [person] is linked to [Case], Case-assignment by AGR can only take place under [SPEC-HEAD] agreement. This is how nominative Case is assigned in Spanish, but not in English, where

(30) Nothing has been said as to whether there is an AGR O in English or not. Arguments for the presence of an AGR O in Spanish concerned the identification of NO's and Absolute Small Clauses in which AGR O moves to C. These two structures are lacking in English:

- (i) a. \* This leads to conclude what follows
- b. \* Arrived the firemen...

Also, the participle in English never shows number and gender agreement features. It could be claimed that English has an ASPP where the participle is generated but not an AGRP O associated with it. Alternatively, if we want to maintain that the possibility of having an AGR O associated with the assignment of accusative Case is a UG property, we would have to postulate the existence of an AGR O in English which is lacking in features. For arguments in favour of an AGR O involved in the assignment of accusative Case in English see Battye (1991).



assignment of nominative Case is a coindexing relation between an NP in [SPEC, AGRP S] and an AGR S which may enter either a SPEC-HEAD relation or a government relation with it.

The same conclusions applied to AGR O. We claimed that Spanish AGR O may have number and gender features (when a past participle was present) and may also have a person feature (with clitics). Unless a clitic was present, we claimed that it is the complex head V + AGR O that assigns accusative Case in Spanish. To do so V must combine with the [Case] feature of AGR O by incorporating into that position. The examination of participle agreement patterns in Spanish, suggested that number and gender agreement can only take place when there is not a Case conflict between the [Case] feature of AGR O and the Case required by the NP triggering agreement.

Nothing has been said about 'nominal' agreement (e.g. agreement between a head and its specifier). Since the feature [Case] is not involved in this kind of process, it is logical to think that other mechanisms are working here. However, it would be interesting to see whether what has been discussed here can be extended to other agreement processes found in other languages.

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# A note on inflected quantifiers in Quechua

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This paper is a first exploration of some aspects of quantification in Quechua.<sup>1</sup> The paper will assume a level of representation much like the Logical Form proposed in the literature, and provide evidence that agreement in Quechua is checked at this level. I will be using the word quantifier in a loose sense, to designate a class of elements that determines the scope of reference of a noun phrase.

Quantifiers in Quechua have some properties worthy of note:

- (a) Quantifiers, morphologically nouns, can be inflected for person and number.
- (b) Quantifiers may be 'floated away from' the element they modify.
- (c) Quantifiers differ in the extent to which they trigger subject or object agreement on the verb.

I will discuss these features one by one, in consecutively numbered sections, slowly developing a theoretical analysis of the elements involved. What I want to argue is that it is not purely morphological properties of the quantifiers that determine the pattern of agreement, but rather their semantic properties.

## 1. Inflected quantifiers

I will begin by describing the inflection markers quantifiers may carry.<sup>2</sup> A number of quantifiers carry inflectional markers. Three cases must be distinguished:

- A. obligatory inflection (cf. 1.1);
- B. optional inflection (cf. 1.2);
- C. no inflection (cf. 1.3).

(1) To my knowledge, this is the first time that some aspects of quantifiers in Quechua have been studied systematically. I will be describing the variety of Quechua spoken in the provinces of Cuzco and Chumbivilcas, Peru. Fieldwork was carried out with the support of the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), in 1986. Part of the material analyzed here was presented at the Workshop on Logical Form held in Tilburg, the Netherlands, in 1988. I am grateful for comments by Willem Adelaar and Simon van de Kerke.

(2) The person and number paradigm in Quechua is as follows:

	singular	plural
first	-y	-y-ku
second	-yki	-yki-chis
third	-n	-n-ku
fourth	-nchis	

### 1.1 Obligatory inflected quantifiers

The quantifiers *llipi-* 'each and all', (glossed below as 'each'), *sapa-* 'alone', and *kiki-* 'self' cannot occur without person marking. Consider first the case of *llipi-* in (1):

- |                                    |                          |
|------------------------------------|--------------------------|
| (1) a. *llipi - ta riku - sha - ni | c. llipi - n runa - kuna |
| b. llipi - n - ta riku - sha - ni  | each DUM man PL          |
| each 3 AC see PR 1                 | 'each of the men'        |
| 'I see each one'.                  | d. llipi - nchis         |
|                                    | each 4 'each of us'      |

Notice that this inflection is even obligatory when *llipi-* is used attributively (in which case a dummy 3rd person occurs), as in (1c); I return to this in section 2.<sup>3</sup>

The forms *sapa-* 'alone' and *kiki-* 'self' function in a similar manner:

- |  |
|--|
| (2) a. *sapa hamu - nki - chu          |
| b. sapa - yki hamu - nki - chu         |
| alone 2 come 2 Q 'Do you come alone?'  |
| (3) a. *kiki - ta riku - ku - sha - ni |
| b. kiki - y - ta riku - ku - sha - ni  |
| self 1 AC see RE PR 1 'I see myself'   |

It should be kept in mind that the ungrammaticality of (1a), (2a), and (3a) cannot be due to morpho-phonological restrictions. CVCV words are quite frequent in Quechua.

### 1.2 Optionally inflected quantifiers

In contrast, the sentences in (4) show that another class of elements can occur both with and without person marking:

- |  |
|--|
| (4) a. pi - n / pi - n - ni - nchis - mi ri - sha - n  |
| who AF who 3 EUPH 4 AF go PR 3                         |
| 'Who/who of us is going?'                              |
| b. ima - ta - n / ima - y - ta - n muna - nki          |
| what AC AF what 1 AC AF want 2                         |
| 'What/what of me do you want?'                         |
| c. mayqin - mi / mayqin - ni - nchis - mi ri - sha - n |
| which AF which EUPH 4 AF go PR 3                       |
| 'Which/which of us is going?'                          |

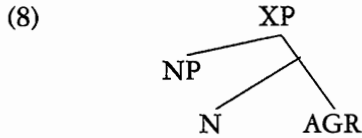
Fourth person is first person plural inclusive. I classify it as singular, even though its reference is clearly plural and it has no alternative plural form. The reason for this is that it does not trigger the restrictions on double plural agreement (subject and object) in the verb that hold otherwise (cf. Lefebvre and Muysken 1987).

Other abbreviations used in the glosses include AC = accusative; AF = affirmative; DUM = dummy element; EUPH = euphonic element; FU = future tense; GE = genitive; LO = locative; NEG = negation; PA = past; PL = plural; PR = progressive; Q = question; ob = object marker; su = subject marker.

(3) Willem Adelaar of Leiden University reports a quantifying element *rapqa-* 'both', which functions like *llipi-*, in the dialect of Pacaraos (personal communication). Given our analysis, the parallel behaviour is to be expected: the set denoted by 'both' and 'us' is coextensive in 'both of us'.



Notice that in (7b) the verb 'come' agrees with 'mother' and not with the inflection on it. If we assume something like (8) as the structure for (7a,b), and if we take XP to be a projection of AGR, as in much recent work, we cannot assume that the features of this AGR percolate to the XP node so as to trigger agreement with the verb:



I will not enter into the problems raised by this structure for ordinary noun phrases. All of the elements in (1)-(6) can receive nominal morphology, and the unmarked case would be to assume that the person marking on quantifiers reflects the same structure as that on other nouns. Unlike ordinary nouns, however, it is not possible to have a subject with an inflected quantifier, either with or without genitive marking (neither can we have a subject with an uninflected quantifier, to be sure):

(9) \* runa - kuna - (q) llipi - n - ku  
 man PL GE each 3 PL 'each of the men'

(10) \* nuqa - nchis - (pa) pi - ni - nchis  
 I 4 GE who EUPH 4 'who of us'

(11) \* qan - kichis - (pa) mayqin - ni - yki - chis  
 2 PL GE which EUPH 2 PL 'which of you'

In addition, we will see below in section 3 that agreement facts appear to suggest a rather different analysis than the one implied by a tree such as (8). The analysis provided there and in the concluding section 4 will need to account for the ungrammaticality of (9)-(11) and for the agreement patterns found.

## 2. Quantifier Floating

A second question is where the quantifiers can appear. Ordinarily modifiers are attributive and occur in pre-nominal position, but they can also function independently and even adverbially. Consider the following contrast, where (12a) exemplifies an attributive quantifier, (12b) one used independently, and (12c) an adverbial one:

- (12) a. [ashka papa - ta] mikhu - ni      b. ashka - ta mikhu - ni  
 many potato AC eat 1                      much AC eat 1  
 'I eat many potatoes'.                      'I eat a great deal'.  
 c. papa - ta ashka - ta mikhu - ni  
 potato AC many AC eat 1 'Potatoes I eat many (of them)'.

Examples (12b) and (12c) show that when modifiers appear by themselves, they carry their own case marking. This phenomenon was labelled co-case marking for 'floated', adverbially used modifiers, in Lefebvre and Muysken (1988), and analysed as the basis for a predication chain between the noun phrase and the pre-nominal

element in Muysken (1989). The same thing is possible with a number of quantifiers.

- (13) a. [llipi - n papa - ta] mikhu - ni  
 each 3 potato AC eat 1 'I eat each of the potatoes'.  
 b. papa - ta llipi - n - ta mikhu - ni  
 potato AC each 3 AC eat 1 'I eat each of the potatoes'.  
 c. papa - ta - n mana llipi - n - ta - chu mikhu - ra - ni  
 potato AC AF not eat 3 AC NEG eat PA 1  
 'I did not eat each of the potatoes (only some)'.

In (13c) the floated quantifier is negated independently of the element in its scope, showing that it is a separate constituent. In (13b) other constituents could intervene between *papata* and *llipinta*.

Prenominal attributive usage is impossible with *sapa-* 'alone', *kiki-* 'self', which can only be used adverbially, and with *pi* 'who', and *ima* 'what', which cannot be used adjectivally.

As shown in (14) and (15), not only inflected quantifiers can float, but also uninflectable quantifiers such as *hayk'a* and *lluy*:

- (14) a. [hayk'a t'anta - ta - n] qawa - nki chay - pi  
 how much bread AC AF see 2 that LO  
 'How much bread do you see there?'  
 b. hayk'a - ta - n t'anta - ta qawa - nki chay - pi  
 how much AC AF bread AC see 2 that LO  
 'How much bread do you see there?'
- (15) a. riku - ra - nki - chu [lluy qari - kuna - ta]  
 see PA 2 Q all man PL AC  
 'Did you see all the men?'  
 b. riku - ra - nki - chu lluy - ta qari - kuna - ta  
 see PA 2 Q all AC man PL AC  
 'Did you see all the men?' ('en bloque')

Again the quantifier can also be separated from the noun it modifies.

Let us assume, as in Sportiche (1988), that the floated quantifiers appear in NPs containing the quantifier and a small pro. In addition, the small pro is interpreted as coreferential with the quantified noun phrase. We will assume that the coreferential interpretation is possible through the establishment of the predication chain.

Generally, the floated quantifier, if inflected, needs to agree in person, but not in number (for third persons), with the element it modifies:

- (16) a. nuqa - nchis - ta llipi - nchis - ta riku - wa - nchis  
 I 4 AC each 4 AC see 3su-4ob  
 'He sees each of us'.  
 b. \* nuqa - nchis - ta llipi - n - ta riku - wa - nchis  
 I 4 AC each 3 AC see 3su-4ob

(16b) is ungrammatical because *llipi-n* does not carry fourth person (first person plural inclusive) marking. As pointed out by Lefebvre & Dubuisson (1978), the presence of an overt pronoun as in (16a) is slightly marginal; nonetheless the contrast between (16a) and (16b) is quite clear.

There is evidence, presented in some detail in Lefebvre and Muysken (1988), that expressions with independently used modifiers also contain a small *pro* in Quechua. Thus they are structurally similar to adverbially used floated quantifiers, and indeed they have the same properties.

### 3. Subject and Object Agreement on the Verb

In addition to varying with respect to inflection and capability of being used attributively, the elements in (1)-(6) differ in the agreement they trigger on the verb. Some forms, such as *mayqin* 'which', trigger optional subject (cf. 17a) and object (cf. 17b) agreement. Thus they are quite different, at first sight, from ordinary nouns, where the inflection does not trigger agreement on the verb (cf. the discussion of (7) and (8) above):

- (17) a. *mayqin - ni - nchis ri - sunchis / ri - nqa*  
 which EUPH 4 go 4FU go 3FU  
 'Which of us will go'.  
 b. *mayqin - ni - nchis - ta riku - n / riku - wanchis*  
 which EUPH 4 AC see 3 see 3su-4ob  
 'Which of us does he see?'

The full pattern is presented in (18) (? = data lacking or unclear):

(18)	subject	object	inflection	
(A)				
<i>llipi-nchis</i>	+	±	obl.	'each'
<i>sapa-nchis</i>	+	±	obl.	'alone'
<i>kiki-nchis</i>	?+	±	obl.	'self'
(B)				
<i>pinninchis</i>	-	-	opt.	'who'
<i>imanchis</i>	-	-	opt.	'what'
(C)				
<i>mayqinninchis</i>	±	±	opt.	'which'
<i>tawantinichis</i>	±	±	opt.	'four'
<i>huqninchis</i>	±	?	opt.	'one'
<i>wakinninchis</i>	±	±	opt.	'some'
(D)				
* <i>hayk'a-nchis</i>	n.a.	n.a.	*	'how many'
* <i>lluy-ni-nchi</i>	n.a.	n.a.	*	'all'

I will discuss the clusters of data one by one.



Notice that the first group, (A), shows obligatory subject marking. The elements in this group also show obligatory inflection, and if we assume that the features of this inflection percolate to the phrase as a whole the obligatoriness of the subject agreement is explained. Notice that the set of elements denoted by the quantifier is identical with the set of elements denoted by the inflection feature here: *x-self*, *x-alone*, *all of x*. These quantifiers do not trigger obligatory object marking, however. This case of a Subject-Object asymmetry can be accounted for by the claim in Muysken (1989) that in Quechua overt *-ta* object marking is required for a predication chain. This claim was supported by evidence involving asymmetries in exceptional case marking, relative clause extraposition, small clauses and perception complements. The reasoning with respect to agreement is as follows: assume that agreement is obligatory when the triggering element is in either subject or object position. However, quantifiers can be predicated of object positions, but not of subject positions, since there needs to be accusative co-case marking. Hence the quantifiers of the first group will trigger obligatory agreement when they function as subjects.

The second group, (B), consists of the optionally inflected quantifiers *pi* 'who' and *ima* 'what', which never show agreement between the verb and their inflection. Assume here that at the relevant level of semantic interpretation, say Logical Form, the head of these phrases is the unique subset of individuals or elements questioned, rather than the set with respect to which this subset must be chosen. Thus the head of 'who with respect to us (inclusive)' is 'who', and this is what agrees. While in actual fact this 'who' may be part of the other subset, this is not relevant for the level at which agreement is established. Notice that in (4a), repeated here, *pi-n-ni-nchis* 'who of us' carries an additional inflection marker *-n* 'third person', but only when there is the inflection of the group with respect to which the 'who' is questioned as well:

- (4) a. *pi - n / pi - n - ni - nchis - mi hamu - sha - n*  
 who AF who 3 EUPH 4 AF come PR 3  
 'Who/who with respect to us is coming?'

The form *pi-nchis*, without this additional inflection marker, is ungrammatical, and I will assume that the reference of *-n* 'third person' is disjoint at Logical Form from the reference of *-nchis* 'us'. I take the pattern in (4a) to support the analysis proposed here. The disjoint reference of the two sets is particularly clear with *ima* 'what'. In *ima-nchis* 'what of us' the set of elements questioned obviously does not form a subset of the persons denoted by the inflection marker.

In group (C) the quantifiers show optional agreement. Assuming once again that agreement is obligatory, and that there are no predication chains involving subjects, the optionality of agreement with *mayqin* in subject position etc. must reflect the fact that the constituents these quantifiers are part of are only optionally marked with the relevant person features. Notice that the quantifiers in this group always denote subsets, proper or not, of the individuals denoted by the inflection: 'four of us', 'which of us', 'one of us', 'some of us'. Along the lines of the analysis above, we

can assume that there is no agreement when there is indeed a *proper* subset denoted by the quantifier, and that there is agreement when the sets denoted by quantifier and person inflection are coextensive.

I have no explanation for the fact that *bayk'a* 'how many' cannot be inflected; as for *lluy* 'all', it refers to the set as a whole rather than to individuals in it, and this may be the reason why it cannot be inflected. That these elements do not trigger agreement speaks for itself.

#### 4. Conclusion

What I have tried to argue here is that there is a direct relation between the logical properties of different quantifying elements in Quechua and the kind of agreement they trigger. The situation can be represented as in (19):

- (19) a. same set denoted by inflection and quantifier = obligatory agreement between inflection and verb;  
 b. disjoint sets denoted by inflection and quantifier = no agreement between inflection and verb;  
 c. quantifier denotes subset of set denoted by inflection = optional agreement between inflection and verb, since the subset may or may not be a proper one.

The generalization to be drawn from this is that in no case there is a need to assume agreement of the verb independently of the set delimited by the quantifier itself. This means that in principle it is possible to maintain the structure in (8) for the inflected quantifiers, with percolation from the head noun.

The restriction on pre-nominal possessor phrases with quantifiers, noted in (9)-(11), remains unexplained, however. Notice that there are restrictions on possessor phrases with quantifiers in English as well:

- (20) a. Each of the men      b. \* The men's each

Perhaps the pre-nominal possessor phrases are thematically restricted in both languages. This remains a matter for further research.

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# Asymmetries on Wh-movement and Specific DP-s

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## 0. Introduction\*

The purpose of this paper is to examine some of the syntactic properties of a phenomenon that has often been considered as belonging to the domain of semantics or pragmatics, that of the specificity of nominals, in the light of its property of constraining movement from within its domain.

The paper will not consider but a very reduced subset of phenomena related to the topic; in concrete, I will restrict myself to cases of Wh-extraction asymmetries in connection with specific nominals introduced by the definite article *el/la* ('the') in Spanish; thus, neither specificity domains introduced by a determiner other than the definite article nor the scope of quantifiers base-generated within these domains will be considered. Nevertheless, the consequences of the analysis might hopefully extend to other related contexts.

The analysis I will present reduces the asymmetric behavior of the different arguments with respect to their extraction possibilities from a specific DP, which I call the *Det(erminer)-trace effects*, to the *that*-trace phenomenon, and subsumes these cases of the specificity constraint to the ECP. The apparent differences between the two paradigms are then derived from the distinct nature of the functional head involved in each system.

Section 1. presents the basic relevant data and briefly considers the possible connection of this phenomenon with other restrictions on Wh-movement of NP-internal arguments, what is usually called Cinque's generalization, as well as an

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attempt of unification proposed by Torrego (1987). Departing from previous analyses, section 2. develops the core of our analysis, which treats the specificity constraint as unified to the *that*-trace effects. Based on several facts related to pied-piping in Romance languages, I first argue in section 2.1. for a projection higher than DP in the nominal system that displays properties similar to CP in its sentential correlate. Given this, an analysis where the strong determiner *el/la* ('the') moves to the head of that projection gives the right configuration to explain the asymmetries under discussion in terms of Minimality and the ECP. Extending Lasnik & Saito's (1984) mechanism of  $\gamma$ -marking to the DP-system, it is argued that the argument/adjunct distinction with regard to the level of application of that mechanism is also supported by the behavior of agent arguments of nominals, despite apparent evidence to the contrary given in the literature. It is argued that only if we treat agents of NPs as true arguments with respect to  $\gamma$ -marking can we explain the lack of specificity effects when such an agent is moved not directly from the specific nominal but from a generic DP embedded in a specific one, reconstructing an argument that was central in Lasnik & Saito's discussion of the *that*-trace paradigm.

Finally the discussion in section 3. of some general remarks and further implications of the analysis closes the paper.

### 1. The "Opacity" of Specific DP-s

A difference that distinguishes Spanish from other Romance languages is that specific DPs introduced by the definite article *el/la* ('the') constitute a domain from which extraction of certain types of elements is impossible. Compare the grammaticality of the French example in (1a) with its Spanish counterpart in (1b):<sup>1</sup>

- (1) a. Rembrandt, dont<sub>ag</sub> j'ai vu [<sub>DP</sub> le portrait d'Aristote t<sub>ag</sub>]...  
 b. \*Rembrandt, del que<sub>ag</sub> he visto [<sub>DP</sub> el retrato de Aristoteles t<sub>ag</sub>]...  
 Rembrandt, of (by) whom I have seen the portrait of Aristotle

As already observed in the literature, these specific domains are not absolutely opaque to movement, and the different elements in the nominal behave differently with respect to Wh-extraction, depending on the thematic relation they bear to the nominal head: thus, while Wh-movement of subjects and adverbials from these domains are totally out, objects can more easily move out of specific DPs. These differences are exemplified in (2a, b and c) respectively:

- (2) a. De qué cantante<sub>obj</sub> salieron publicadas [<sub>DP</sub> LAS/algunas fotos t<sub>obj</sub>]?  
 Of what singer were the/some photos published?

(1) The examples in (1) are taken from Torrego, who attributes the French version to Ruwet (1972). A caveat is necessary here with respect to the contrast in (1) since, as observed by Koldo Sainz (personal communication), examples involving non-restrictive relative clauses do not constitute a totally satisfactory check for extraction out of a specific DP, and it is not so clear that the same restrictions on movement do not show up with Wh-phrases in other Romance languages as well. Observe that even in Spanish, sentences involving non-restrictive relative clauses, such as (1), are considerably better than their Wh-parallels, like the ones considered immediately below. A more detailed study of the particular structures where these specificity effects appear remains to be done. See section 2 for discussion of some other cases; see also Giorgi & Longobardi (1991, ch. 2, fn. 10) and Torrego (1987, fn. 15) for discussion.

- b. De qué autor<sub>ag</sub> has leído [DP \*LOS/varios libros t<sub>ag</sub>]?  
By what author have you read \*THE/some books?  
c. De qué país<sub>adv</sub> conoces [DP \*LAS/muchas ciudades t<sub>adv</sub>]?  
From what country do you know \*THE/many cities?

The asymmetry between complements, on the one hand, and subjects and adjuncts, on the other, is rather familiar from other domains of syntax in various languages, and seems closely related to those cases of Wh-movement out of IP that are commonly accounted for by the ECP. There has been considerable discussion, however, on whether this specificity restriction on Wh-movement can be unified with a second well studied phenomenon concerning Wh-movement out of nominals. The general observation, which is sometimes called Cinque's generalization, is that, among the elements present in a nominal, only the highest one with respect to the hierarchy in (3) can be the target of a cluster of transformations; these include Wh-movement, possessivization, and genitive-cliticization, exemplified in (4-6) respectively.<sup>2</sup>

- (3) Possessor > Agent > | Object |  
| Adverbial |
- (4) a. [De qué pintor]<sub>ag</sub> han robado [DP varios retratos t<sub>ag</sub>]?  
[Of (by) what painter]<sub>ag</sub> have they robbed [several portraits t<sub>ag</sub>]?  
b. \* [De qué pintor]<sub>ag</sub> han robado  
[DP varios retratos t<sub>ag</sub> [de ese coleccionista]<sub>poss</sub>] ?  
[Of (by) what painter]<sub>ag</sub> have they robbed  
[several portraits t<sub>ag</sub> [of that collector's]<sub>poss</sub>]?  
(5) a. [NP SU<sub>obj</sub> ag poss. retrato] b. ?\* [NP SU<sub>obj</sub> retrato [de Picasso]<sub>ag</sub>]  
his-clitic portra his-clitic<sub>obj</sub> portrait [of Picasso]<sub>ag</sub>  
c. \* [NP. SU<sub>ag</sub> retrato [de Picasso]<sub>poss</sub>]  
his-clitic<sub>ag</sub> portrait [of Picasso]<sub>poss</sub>.  
(6) a. [Ne]<sub>obj</sub> è stato scoperto [NP il furto t<sub>obj</sub>]  
[Of-it]<sub>obj</sub> has been discovered [the theft t<sub>obj</sub>]  
b. \* [Ne]<sub>obj</sub> è stato scoperto [NP il furto t<sub>obj</sub> [del custode]<sub>ag</sub>]  
[Of-it]<sub>obj</sub> has been discovered [the theft t<sub>obj</sub> [of the guardian]<sub>ag</sub>]

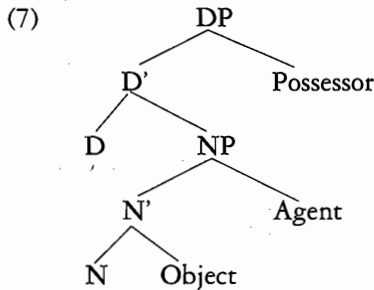
This observation has been the center of much attention, especially among romanists, during the past years,<sup>3</sup> and different hypotheses have been entertained in an attempt to deal with the problem. Most of these works assume some condition that blocks direct movement from any internal position, forcing this argument then to "externalize" in some relevant sense. Since the property of being the most external argument is univocal, no element lower in the hierarchy can move if a more

(2) Spanish lacks genitive clitic (It. *ne*, Fr., Cat. *en*); the Italian examples of *ne*-cliticization in (6) are taken from Cinque (1980).

(3) See, among others, Ruwet (1972), Milner (1977), Cinque (1979, 1980), Zubizarreta (1979), Aoun (1982), Torrego (1985, 1987), Pollock (1989), Ormazabal (1991), Giorgi & Longobardi (1991), and references cited in these works.

“prominent” element, the external(ized) one, is present. In practice, this requires any argument within the nominal to move successive cyclically through any available higher specifier.<sup>4</sup>

Torrego (1987) assumes a DP-structure like (7), where the hierarchical order in (3) is structurally captured in X-bar and  $\theta$ -theoretical terms:<sup>5</sup>



She then appeals to Minimality to force the Wh-movement through the specifier positions, which accounts for most of the facts covered by Cinque’s generalization.<sup>6</sup> If a higher element is present, (i.e., base generated in an intervening specifier), successive cyclic movement is blocked and the trace left behind, unable to be  $\gamma$ -marked (in Lasnik & Saito’s (1984) sense), violates the ECP.

In order to extend this account to the specificity constraint on extraction exemplified in (2), Torrego (1987) argues that the determiner *el* (‘the’), when in its ‘strong’ version, raises to the Spec of DP at LF in Spanish.<sup>7</sup> Adapting Lasnik & Saito’s (1984) mechanism of  $\gamma$ -marking, she proposes that the complement/non-complement asymmetries triggered by the presence of the article are due to a crucial distinction in the level at which the different types of traces are licensed: while object-traces are  $\gamma$ -marked at S-structure, prior to the movement of the article to the specifier of DP, the traces of the moved adverbials and, according to her analysis, those of subjects are not licensed until LF. Although the movement is basically the same in all cases,

(4) This assumption is common, as far as I know, to all the approaches to the topic, except for Pollock (1989) and Ormazabal (1991) [see the end of section 3. below], although the principles and conditions appealed to in order to force these results differ from one analysis to another. Cinque’s (1980) original proposal was made in terms of Opacity conditions. Subsequent work in the literature, however, has shown that Wh-traces are not subject to Binding Condition A [see especially Rizzi (1980) and Freidin & Lasnik (1981); Cinque himself acknowledges this problem in the mentioned paper]; therefore, the generalization has to be captured in different terms. Although different proposals have been made in the literature (see references in the previous footnote), I will center my discussion on Torrego’s hypothesis, where a unified account is proposed for these and the asymmetries that concern us more directly.

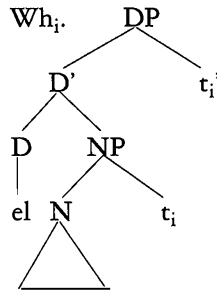
(5) To be precise, Torrego (1987, sect. 5) argues that the possessor is base-generated within NP, in a predication relation with the noun, and then raises to the specifier of DP in the syntax. Since the position of the possessor will not be central to the discussion in this paper, I will not consider this possibility here.

(6) See Torrego (1987) for details and discussion; see also Stowell (1989) for a similar approach in terms of Subadjacency.

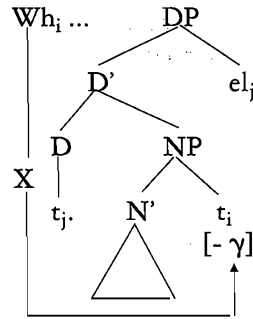
(7) As Torrego observes, there are some configurations where despite the presence of the determiner *el/la* (‘the’) heading the DP, the nominal is interpreted as generic, and extraction is therefore possible (see section 2.3. and especially footnote 20. below). The terminology *strong/weak determiners* is thus a descriptive device to distinguish those determiners that induce specificity effects from those that do not.

the raising of the determiner to the specifier position of DP at LF blocks antecedent government of the trace in subject position since, under Torrego's approach, this subject trace will not be  $\gamma$ -marked until LF. Examples (8a-b) show the relevant S-structure and LF representations obtained from the extraction of the subject or adverbial Wh-phrase:

(8) a. S-Structure

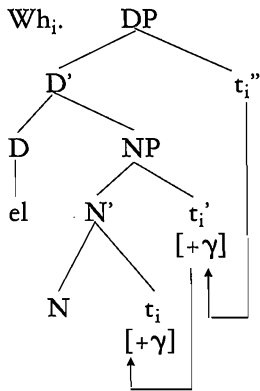


b. LF

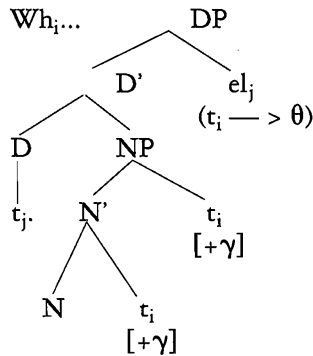


The trace of the object, on the other hand, is assigned [+ $\gamma$ ] at S-structure by the intermediate trace in [Spec, NP] which, in turn, is also  $\gamma$ -marked by the trace in [Spec, DP], prior to the deletion of this trace and the raising of the determiner at LF:

(9) a. S-Structure



b. LF



In this analysis, then, the two phenomena are unified by resorting to the unaccessibility of the specifier of DP as an intermediate landing site for the Wh-phrase when a possessor or the strong determiner occupy that position; at the same time, the two phenomena yield different results, since the determiner, unlike the possessor, does not occupy that position until LF. The theoretical implications of this approach have multiple ramifications which cannot be considered at length here; let me briefly discuss, however, some of the consequences that follow from the auxiliary

assumptions the hypothesis is forced to make concerning, especially, the argument structure of nominals.

### 1.1. *The Argument Structure of Nominals*

The question of what the argument structure of nouns consists of and how it is realized in the syntax has played an important role in generative grammar in the last two decades. Its theoretical interest is in part due to the fact that an underlying assumption of the theory since Chomsky (1970) is that the thematic structure of verbs and the related nouns is basically the same; at the same time, and despite this thematic relationship, NPs have shown a considerable resistance to reduce to well behavior in several respects under current assumptions about argument structure and its syntactic realization. As is usually the case, the study of related areas of research can bring some light to the problems at stake. In what concerns us in this paper, there are two fundamental respects where arguments of nouns and verbs are assumed to differ under the standard approach to extraction outlined above.

The first assumption concerns the status of the nominal subject with respect to *g*-marking: in order to obtain the right object/subject asymmetries with respect to extraction out of specific DPs, it is assumed that subjects are *g*-marked at LF rather than at S-Structure. This property of NP-subjects not only distinguishes them from objects but also from VP-subjects and, more generally, from arguments. There is, in fact important evidence that some classes of nouns do not take thematic arguments at all,<sup>8</sup> but in those cases neither the agents nor the objects form part of the argument structure of the nominal and, therefore, these nouns are irrelevant with regard to the object/subject asymmetries at stake. In the remaining cases where the nominal head has its own argument structure, however, the main motivation for pairing subjects along with adjuncts with respect to  $\gamma$ -marking seems relatively weak and rather a mere redefinition of the problem in different terms. Chomsky (1986) suggests that this could be due to the optionality of these arguments in the NP system; notice, however, that *de* (*of*)-agents in Romance behave as true arguments in most respects; moreover, their apparent optionality seems to be due to a systematic ambiguity of argument-taking nouns, which can also be used in a non-eventive reading, as largely argued by Grimshaw (1990). Furthermore, assimilating *de*-agents to adjuncts would undermine the necessary distinction between these arguments and their *por* ('by') counterparts, which behave as true adjuncts in all respects.

A closely related matter concerns the status of internal complements with regard to proper government; the analysis of Cinque's asymmetries in terms of Minimality forces the assumption that objects, like subjects and adjuncts, have to be governed by their antecedent from the immediately higher specifier and cannot be lexically governed. If lexical government were to be eliminated altogether and the disjunctive definition of proper government reduced to antecedent government, we still would need some mechanism that permits the less local movement of the complements of

(8) See Grimshaw (1990) and references cited there for extensive discussion of this and related topics.



verbs (and, presumably, VP-subjects in Romance languages), as compared to adjunct or preverbal subject Wh-movement. Suppose, for instance, that this is achieved by means of antecedent government of the complement trace by an intermediate trace adjoined to VP, as proposed by Chomsky (1986, sect. 11.). The question then would be whether there is any independent motivation, other than the empirical observation on Wh-extraction over a realized specifier itself, to prevent the same mechanism in NP; the lack of such a principled way to distinguish the two systems in this respect raises some questions about the stipulative character of that move. In the works I am considering here, on the other hand,<sup>9</sup> the hypothesis that complements of nouns have to be antecedent governed implies the assumption that nouns, unlike other lexical heads, are not able to lexically govern their complements. It has been sometimes argued that nouns and adjectives do not have the ability to directly assign  $\theta$ -roles to their complements and they need the support of a prepositional element that "transfers" the  $\theta$ -roles that they have to discharge to the complement. If so, the impossibility of lexically governing their complements could be derived from their defective character as  $\theta$ -assigners.<sup>10</sup> Whether these are the correct results is a question that depends to a large extent on other theory internal matters; in the specific cases discussed here, this conclusion is directly connected to the first assumption concerning  $\gamma$ -marking of agents discussed above: since, by assumption, objects in the DP system are not lexically governed and, therefore, they have the same status as subjects with regard to proper government, this difference between objects and subjects cannot be appealed to to derive the asymmetric behavior of the two types of elements with respect to their extractability from specific DPs; since, on the other hand, the movement is basically the same except for the first step in the derivation of the object Wh-movement, the difference must be attributed to some independent licensing condition of the traces that distinguishes objects from agents. This is then achieved stipulating a difference in the level at which object and subject traces are  $\gamma$ -washed.

If, on the contrary, we assumed that objects can be properly governed also within NP, the object/subject asymmetries could be accounted for by this difference in rather familiar terms, without making the additional (and, from my point of view,

(9) See especially Torrego (1987) and Chomsky (1986, sect. 8.). Torrego does not make any explicit mention of the concrete definition of the ECP she is assuming. Notice, however, that in order for her hypothesis to work properly, that hypothesis has still to distinguish between VP and NP-objects in the way their traces are licensed; otherwise, Wh-movement of objects in the IP system would always be blocked via Minimality.

(10) Another possibility worth exploring is to make the ability of a lexical head to properly-govern its object dependent on its Case-assignment possibilities. This approach would be consistent with the difficulty of moving elements that are assigned inherent Case, discussed in Chomsky (1986a). Moreover, several works in the literature (see Lasnik & Saito (1984) and Chomsky (1986), among others) explore the relationship between lexical-government and Case-assignment.

There is, however, a crucial difference between these approaches and the assumption we would have to make in order to derive the right results with respect to the object of the NP: in the former, Case assignment is incorporated into the definition in a disjunctive way, in order to allow lexical-government of some traces that otherwise would be incorrectly predicted to violate the ECP. In order for the trace of the NP-complement not to be lexically governed, however, Case-assignment would have to be introduced as an additional condition narrowing the configurations where the relevant relation between the head and the trace applies. Although not totally impossible a priori, such a definition of 'lexical-government' seems to be too narrow for other configurations.

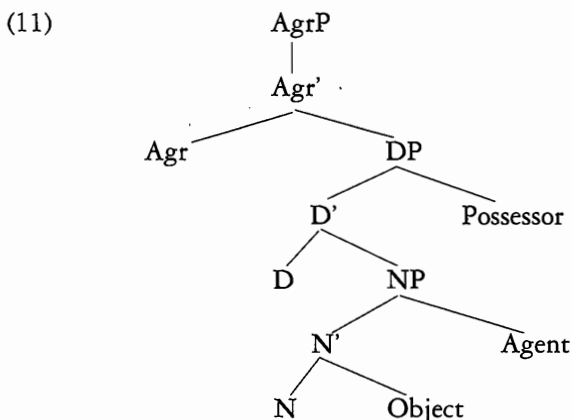
problematic) stipulation that subjects also differ in the two systems with regard to  $\gamma$ -marking. This second approach is indeed supported on empirical grounds: as already noted by Torrego (1987), movement of agents or adjuncts across an occupied specifier yields much more severe violations than complement extraction in the same configurations, contrary to what the Minimality hypothesis would predict. Observe the contrast in (10a-b); the object extraction in (10a), though degraded, is far better than (10b) where the extracted element is an agent:

- (10) a. ?? [De qué obra]<sub>obj</sub> has leído  
           [DP varios ejemplares t<sub>obj</sub> [de Juan]<sub>poss</sub>]?                    (=1b)  
           [Of what work]<sub>obj</sub> have you read  
           [DP several copies t<sub>obj</sub> [of John's]<sub>poss</sub>]?  
       b. \* [De qué pintor]<sub>ag</sub> han robado  
           [DP varios retratos t<sub>ag</sub> [de ese coleccionista]<sub>poss</sub>]?            (=2b)  
           [Of (by) what painter]<sub>ag</sub> have they robbed  
           [several portraits t<sub>ag</sub> [of that collector's]<sub>poss</sub>]?

The milder character of the violation when object-extraction is involved suggests, in turn, a subadjacency-based explanation of these effects, a matter to which I briefly return in section 3.

## 2. The Determiner-trace Effect

Torrego, in work in progress, already sets the basis for a possible alternative approach that overrides various undesired consequences of the theory sketched in the previous section: she argues for a functional projection, AgrP, that under her analysis would be immediately dominating DP; according to her analysis, the structure of the nominal would then be as in (11):



Taking advantage of this additional position, Torrego (personal communication) slightly reanalyzes the difference between the 'strong' version of the definite article and other determiners in the following terms: in opposition to other determiner

heads, which remain in their base-generated position within DP, the strong definite article incorporates into the AGR head at LF. The LF-movement of the definite article (or, to be more precise, the complex [Det+Agr] head resulting from this movement) is what makes AgrP (rather than DP) a barrier for subject and adjunct extraction out of the nominal, basically in the same terms proposed in the previous analysis. Thus, following that line of reasoning, there is one step in the movement up that crosses AgrP; since this projection is made a barrier by the incorporation of the definite article to the Agreement head position at LF, there is (at least) one trace in the resulting chain that fails to be antecedent-governed at that level. Following the previous assumption, extraction of an agent or an adverbial is then ruled out by the ECP since, the original trace being  $\gamma$ -marked at LF, all the traces in the chain (including the offending one) have to be present.

It is worth mentioning that Torrego's proposal is not the only case in the literature where an additional functional projection over DP has been proposed. Based on some extraction phenomena in Greek, Horrocks & Stavrou (1985) argue for a structure of NP that would mirror that of the CP projection, and work by Szabolsci (1987) and Abney (1987) also suggests that such a projection is needed. In what follows, I will present some new facts related to pied-piping of DPs in Wh-movement in Spanish that also seem to support the claim that there is a functional projection over DP that can be used as the landing site for Wh-phrases.

### 2.1. *Pied-piping and the Structure of DP.*

In Spanish, the linear order in which the different elements appear within a nominal is quite free, apparently as the result of an optional scrambling process that adjoins the most embedded complement to the right of the nominal; thus, when more than one element appears modifying the nominal, these elements can show up in almost any order to the right of the noun head:

- (12) a. El cuadro [de las Meninas] [de Velazquez]  
 The painting [of the Meninas] [of Velazquez]  
 b. El cuadro [de Velazquez] [de las Meninas]  
 The painting [of Velazquez] [of the Meninas]  
 "The painting of the Meninas by Velazquez"

Two apparently complementary restrictions can be observed with respect to the optional scrambling rule: in multiple Wh-constructions where the DP-internal Wh-element is not fronted to the Wh-Comp until LF, this phrase has to remain in situ at S-structure and cannot scramble over another element at this level; observe the following contrast between (14a-b), comparing it with the free order in (13):

- (13) a. Pedro conocía [el retrato [de Las Meninas]<sub>obj</sub> [de Picasso]<sub>ag</sub>]  
 Pedro knew [the portrait[of the Meninas] [of Picasso]]  
 b. Pedro conocía [el retrato [de Picasso]<sub>ag</sub> [de las Meninas]<sub>obj</sub>]  
 Pedro knew [the portrait [of Picasso] [of the Meninas]]  
 "Pedro knew the portrait of the Meninas by Picasso"

- (14) a. Quién conoce [el retrato [de quién]<sub>obj</sub> [de Picasso]<sub>ag</sub>]?  
 Who knows [the portrait [of whom]<sub>obj</sub> [of Picasso]<sub>ag</sub>]?  
 b. \* Quién conoco [el retrato [de Picasso]<sub>ag</sub> [de quién]<sub>obj</sub>]?  
 Who knows [the portrait [of Picasso]<sub>ag</sub> [of whom]<sub>obj</sub>]?  
 "Who knows the portrait of whom by Picasso"

As an alternative strategy to extraction out of DP, Spanish allows, at least marginally, pied-piping of the entire DP containing the Wh-element to the Wh-Comp, as represented in (15):

- (15) [<sub>DP</sub> El retrato [de quién]]<sub>i</sub> ha dicho Juan que vieras  $t_i$  en el museo?  
 [<sub>DP</sub> The portrait [of whom]]<sub>i</sub> has said Juan that see-you  $t_i$  at the Museum?  
 "Who told you Juan to see the portrait of at the Museum?"

When this alternative strategy is used, the Wh-element that triggers this operation has to show up necessarily in the rightmost position within the nominal, and it cannot remain in situ:<sup>11</sup>

- (16) a. [La estatua [en el jardín]<sub>adv</sub> [de qué diosa]<sub>obj</sub>]<sub>i</sub>  
 te ha dicho Juan que había reconocido  $t_i$ ?  
 [The statue [in the garden]<sub>adv</sub> [of what goddess]<sub>obj</sub>]<sub>i</sub>  
 has Juan told you that he recognized  $t_i$ ?  
 "What goddess has Juan told you that he recognized the statue of  
 in the garden?"  
 b. \* [La estatua [de qué diosa]<sub>obj</sub> [en el jardín]<sub>adv</sub>]<sub>i</sub>  
 te ha dicho Juan que había reconocido  $t_i$ ?  
 [The statue [of what goddess]<sub>obj</sub> [in the garden]<sub>adv</sub>]<sub>i</sub>  
 has Juan told you that he recognized  $t_i$ ?  
 "What goddess has Juan told you that he recognized the statue of  
 in the garden?"

An obligatory scrambling operation that adjoins the Wh-element to the right whenever pied-piping is involved could be responsible for the contrast in (16), but there seems to be no obvious reason why this rule should be obligatory just in that context, especially when Wh-phrases do not seem to scramble in other contexts, as shown in (14). Moreover, an analysis in that direction would in addition have to guarantee that in these particular constructions non-Wh-elements (say, *en el jardín* in (16)) must stay 'in situ' and cannot scramble over the (already adjoined) Wh-element since, otherwise, a sentence like (16b) would be incorrectly ruled in with a representation like (17):<sup>12</sup>

- (17) [<sub>DP</sub>[<sub>DP</sub>[<sub>DP</sub>La estatua  $t_{obj}$   $t_{adv}$ ] [de qué diosa]<sub>obj</sub>] [<sub>DP</sub>en el jardín]<sub>adv</sub>] ...

(11) It should be kept in mind that, as structurally represented in the example, the reading of (16b) relevant for the discussion is the one in which *de qué diosa* and *en el jardín* do not form a constituent; in other words, the intended meaning of the DP is that 'there is a statue that represents a goddess and the statue is located in the garden', and not that 'there is statue that represents a goddess in the garden', which would be the reading of the DP if *de qué diosa en el jardín* formed a single constituent.

(12) For the sake of exposition, I assume that the scrambled element adjoins to DP, although it is not totally clear to me whether this is the right assumption.

A more plausible hypothesis seems to be an obligatory "fronting" of the Wh-phrase within the DP as a condition for pied-piping to take place,<sup>13</sup> i.e. a Wh-type movement of the phrase to the specifier position of the highest projection in the nominal. That this projection is higher than DP is, in turn, suggested by the contrast between (18a) and (18b) below, where the specifier of DP is filled by the possessor element:<sup>14</sup>

- (18) a ??[La fotocopia  $t_{obj}$  [de Pedro] [de qué libro] $_{obj}$ ] $_i$  dices  
 que has visto  $t_i$ ?  
 [The fotocopy  $t_{obj}$  [of Peter] [of what book] $_{obj}$ ] $_i$  say-you  
 that have-you seen  $t_i$ ?  
 "Peter's fotocopy of what book do you say you saw?"  
 b. \* [La fotocopia [de qué libro] $_{obj}$  [de Pedro]] $_i$  dices  
 que has visto  $t_i$ ?  
 [The fotocopy [of what book] $_{obj}$  [of Pedro]] $_i$  say- you  
 that have-you seen  $t_i$ ?

Although, as expected, the sentence (18a) is already marginal, due to the intervention of the specifier of DP between the Wh-element and its NP-internal trace, it sharply contrasts with (18b), where the Wh-element appears before the possessor, presumably in situ.

The functional projection over DP, thus, is playing the same role that CP is playing at the sentential level; in particular, its specifier is the landing site for Wh-phrases in pied-piping configurations. If this is correct, it seems reasonable to generalize these results and to assume that it is also a position through which the Wh-phrase moves on its way out of the nominal, in the same way specifiers of intermediate CPs are landing sites for the Wh-element in Comp-to-Comp movement at the sentential level.

## 2.2. *Det- vs. That-trace Effects.*

In the light of this discussion, we can now reconsider the asymmetries presented in (18) above with regard to the specific DPs headed by the definite article *el/la* ('of') in Spanish. More concretely, let us assume, with Torrego, that what distinguishes this determiner from the others is that it moves to the functional head that governs it (following terminology by Horrocks & Stavrou (1985), I will denominate this maximal projection dominating DP  $K(omp)P$ );<sup>15</sup> but, contrary to Torrego's assump-

(13) The term 'fronting' is used only in order to suggest the parallelism between this process and movement to [Spec, CP]. It goes without saying that it should not be understood in its strict sense, which seems to suggest a specific directionality of the process.

(14) As in the cases in (16) above (see footnote 12), (18b) has to be distinguished from (i), where *Pedro* is the possessor or, preferably, the author of the book, and not the possessor of the copy. The sentence with this particular reading is, of course, absolutely perfect:

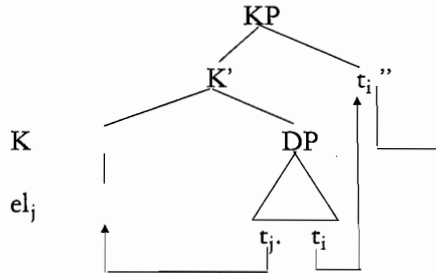
(i) [La copia [de qué libro [de Pedro]]] $_i$  dices que has visto  $t_i$ ?  
 [The copy [of what book [of Pedro]]] $_i$  say-you that have-you seen  $t_i$ ?  
 "The copy of what book by Pedro/of Pedro's what book did you say that you saw?"

(15) Not to be mistaken with  $K(ase)$  Phrase, used in various other works in the literature.

tion, let us assume that this movement takes place at S-structure. Furthermore, suppose that Wh-phrases have to move successive cyclically through the specifier of that projection. With those rather natural assumptions, the S-structure derivation of sentences like (2) above, repeated here under (19), would be roughly as in (20):

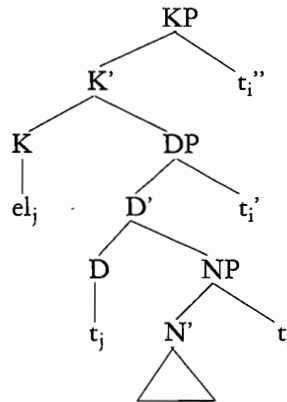
- (19) a. De qué cantante<sub>obj</sub> salieron publicadas [<sub>DP</sub> *las*/algunas fotos  $t_{obj}$ ]?  
Of what singer were the/some photos published?  
b. De qué autor<sub>ag</sub> has leído [<sub>DP</sub> \**LOS*/varios libros  $t_{ag}$ ]?  
By what author have you read \**THE*/some books?  
c. De qué país<sub>adv</sub> conoces [<sub>DP</sub> \**LAS*/muchas ciudades  $t_{adv}$ ]?  
From what country do you know \**THE*/many cities?

(20) De qué<sub>i</sub>...



Restricting our attention to the subject extraction in (19b) for a moment, its S-structure representation would be as in (21):<sup>16</sup>

(21) De qué<sub>i</sub>...



Assuming the Minimality Condition proposed in Chomsky (1986) to hold for antecedent government, the trace  $t_i'$  in (21) is protected from being antecedent-governed

(16) I will leave aside here several issues related to the successive movement through (Spec, DP) assumed standardly; for the sake of simplicity, I will assume that agent Wh-phrases move through this position in their way out, although the motivations for this obligatory movement are in this case due to more general considerations independent of Wh-movement, having to do with Case theory; see Ormazabal (1991) for discussion. If that possibility is correct, the intermediate trace in (Spec, DP), being the element that receives Case in an A-chain, is not deletable, contrary to what has been assumed in the standard approach. Alternatively, it could be argued, contrary to the standard theory, that (Spec, DP) as well as (Spec, NP) are not possible positions for Wh-movement. I will come back in section 2.3. and 3. to the status of the (Spec, DP) position with respect to movement.

from (Spec, KP) by the K head if the strong determiner *las* ('the') has raised at S-structure, before  $\gamma$ -marking of the agent traces takes place.

From this perspective, the asymmetries with regard to extraction out of specific DPs is clearly reminiscent of a well known phenomenon in English and other languages: the *that*-trace effect. Both phenomena involve similar object/subject asymmetries, which suggests an ECP account of the distinction; in both cases the intervening factor blocking the relationship between the subject trace and its antecedent is the presence of an overt head (the complementizer *that* or the determiner *el/la*) in the projection from where the antecedent would otherwise succeed in governing the trace.<sup>17</sup> Considering all this, let us explore in more detail the parallelisms and, more important, the differences between these two phenomena. Compare the *that*-trace paradigm in (22-24) with the one in (25-27) involving the asymmetries at stake, which I will dub *Det(erminer)-trace effect*:

- (22) a. Who<sub>i</sub> do you think [CP t<sub>i</sub>' [IP t<sub>i</sub> left early]]?  
 b. \* Who<sub>i</sub> do you thin [CP t<sub>i</sub>' that [IP t<sub>i</sub> left early]]?
- (23) a. What<sub>i</sub> do you think [CP [IP he bought t<sub>i</sub>]]  
 b. What<sub>i</sub> do you think [CP that [IP he bought t<sub>i</sub>]]?
- (24) a. Why<sub>i</sub> do you think [CP t<sub>i</sub>' [IP he left early t<sub>i</sub>]]  
 b. Why<sub>i</sub> do you think [CP t<sub>i</sub>' that [IP he left early t<sub>i</sub>]]?
- (25) a. De qué autor<sub>ag</sub> has leído [DP varios libros t<sub>ag</sub>]?  
 By what author have you read some books?  
 b. \* De qué autor<sub>ag</sub> has leído [DP LOS libros t<sub>ag</sub>]?  
 By what author have you read the books?
- (26) a. De qué artista<sub>obj</sub> han salido publicadas [DP algunas fotos t<sub>obj</sub>]?  
 Of what artist have some photos been published?  
 b. De qué artista<sub>obj</sub> han salido publicadas [DP LAS fotos t<sub>obj</sub>]?  
 Of what artist has the photo been published?
- (27) a. De qué país<sub>adv</sub> conoces [DP muchas ciudades t<sub>adv</sub>]?  
 From what country do you know a lot of cities?  
 b. \* De qué país<sub>adv</sub> conoces [DP LAS ciudades t<sub>adv</sub>]?  
 From what country do you know the cities?

There is an obvious respect where the parallelism between the two paradigms breaks down: while one of the most characteristic properties of the phenomenon in (22-24) is the lack of *that*-trace effects with adjuncts, which pair together with complements, adverbial elements can be grouped together with agents, and not with objects, with respect to the Det-trace effects. When examined in detail, however, this difference seems to be more apparent than real, even if its solution, of course, depends in a lot of respects on the particular account we assume to explain the better known *that*-trace effect phenomenon. Following (a slightly modified) proposal by

(17) The parallelism between these two phenomena and, more generally, the similarities between the determiner and the complementizer are already pointed out by Torrego, though her concrete proposal does not pursue this relationship to a full extent.

Lasnik & Saito (1984), a difference between the two systems that could account for that fact immediately comes to mind:

Suppose with standard approaches that the *that*-trace asymmetry between subject and adjunct is due to the failure of the subject trace in the specifier of CP to  $\gamma$ -mark the original trace through the overt complementizer *that* at S-structure, but that  $\gamma$ -marking of adjunct-traces at LF is possible once the complementizer *that* has deleted. If some mechanism like that is correct, we can account for the different behavior of adjuncts in each paradigm by appealing to the distinct nature of the intervening head in both cases: while the complementizer *that* does not seem to have any intrinsic semantic content and, therefore, it has to delete at LF according to the principle of Full Interpretation, the import of the definite article in the semantic interpretation of the nominal is far from being null; in fact, it is partially responsible, among other things, for the specific interpretation of the DP. If, accordingly, the determiner cannot delete at LF, the same structural condition that blocked antecedent-government of the subject-trace at S-structure in the DP-system remains at LF (the level at which adjunct-traces have to be  $\gamma$ -marked) and, consequently, the Det-trace effects will also show up with adverbials.

The distinction that the impossibility of deleting the determiner at LF introduces in the system, then, accounts for the different extraction possibilities between CP and DP in a straightforward way: while the whole system conspires to separate complements and adjuncts from subjects in the *that*-trace phenomenon, the presence of the determiner *ella* at LF will pair together subjects and adjuncts, distinguishing them from complements, which are lexically governed.

It has to be noticed that the analysis does not depend on the concrete mechanism we assume for blocking antecedent government of the subject in *that*-trace configurations, but it crucially relies on two independent assumptions: first, that subject and adjunct traces differ in the level at which their traces are licensed (by means of  $\gamma$ -marking or some other similar mechanism); second that the blocking effect of the head, whatever the concrete way of achieving it is, differs in the two systems, i.e. that it remains at LF in the DP system but not in the IP one. This second assumption seems well motivated under any account of the *that*-trace phenomenon that relies on Full Interpretation and the lack of semantic relevance on the part of the complementizer, as argued above. With respect to the first assumption, apart from being the null hypothesis from a theoretical point of view,<sup>18</sup> it also gives the correct empirical results with regard to extraction of the subject when we take a closer look at other relevant data. Section 2.3. will present a domain where the predictions made by our hypothesis crucially depends on this particular assumption.

### 2.3. *Avoiding the Specificity Constraint*

Observe that the hypothesis I have just presented derives the right results with respect to the set of empirical facts covered by the standard analysis; however, the theoretical assumptions underlying each proposal are different in several respects.

(18) See Lasnik & Saito (1984, in print) and Chomsky (1986) for discussion.



Moreover, contrary to what could appear at a first glance, the two hypotheses do not have exactly the same empirical scope and relevant configurations can be found where the two proposals differ in their predictions. In order to see this difference, we have first to consider a more complicated structure where the *that*-trace effect is also relevant.

Lasnik & Saito (1984) noted that in order for the *that*-trace effect to show up, the original trace of the subject and the filled complementizer have to be in the same embedded sentence. If, on the contrary, the subject has moved from a sentence in which the head of the CP projection is not realized, the presence of a *that* complementizer in a higher CP intervening between the Wh-phrase and the trace does not yield an ECP violation. The relevant examples are illustrated in (28a-b), their structural configuration being as in (28'a-b) respectively:

- (28) a. \* Who do you think that left early?  
 b. [Who [ do you believe [ that [ Mary said [ t<sub>i</sub> [ t<sub>i</sub> left ]]]]]]]
- (28') a. \* WH<sub>i</sub>... [CP that [IP t<sub>i</sub> ]]  
 b. WH<sub>i</sub>... [CP that [IP ... [CP e [IP t<sub>i</sub>]]]]

Under Lasnik & Saito's theory the contrast in (28) follows straightforwardly from the fact that in (28b) the complementizer *that* is absent from the most deeply embedded COMP. Given this, the trace  $t_i$  in subject position can be  $\gamma$ -marked at S-structure by the intermediate trace in the most embedded COMP ( $t_i'$  in (28')). Although this intermediate trace is not antecedent governed and, therefore, is assigned [- $\gamma$ ], it can in turn delete in the mapping from S-structure to LF:

- (28'') WH<sub>i</sub>...      [ CP t<sub>i</sub> " that [ IP ... [ CP t<sub>i</sub> ' [ IP t<sub>i</sub> ] ] ] ]
- 

If the parallelism between the simple cases of *that*-trace and Det-trace effects is on the right track, we will expect the same asymmetry to arise when the relevant configurations of Det-trace effects parallel to those in (28) above are constructed at the DP level. Consider now the abstract structure in (29), the DP counterpart to Lasnik & Saito's structure in (28'b) above:

- (29) WH<sub>i</sub>...      [KP e] [DP ... [KP e [DP t<sub>i</sub>]]]

Given that the two theories of the Det-trace effects under analysis differ with respect to the level at which the trace of the subject is licensed, the predictions are different in each case: although under both theories the original trace can be antecedent governed from [Spec, KP] ([Spec, DP] in Torrego's system), in either analysis there must be one trace in the chain which is not antecedent governed. If  $\gamma$ -marking of the subject-trace takes place at LF, as assumed in the standard analysis, a Wh-extraction of the subject out of a configuration like the one in (29) should be ruled out by the ECP. This is so because the offending intermediate trace has to be present at that level, and it cannot be deleted. If, on the other hand, the initial subject-trace

is  $\gamma$ -marked at S-structure, as proposed here, the offending intermediate trace can be deleted prior to LF and the sentence is predicted to be grammatical. Indeed, this prediction is born out; compare (30a) with (30b):<sup>19</sup>

- (30) a. \* [De qué pintor]<sub>ag</sub> has visto [<sub>DP</sub> los cuadros t<sub>ag</sub>]  
 'By Which painter have you seen the paintings?'  
 b. (?) [De qué autor]<sub>ag</sub> has visto  
 [<sub>DP</sub> la reproducción de [<sub>DP</sub> algunos cuadros] t<sub>ag</sub>]  
 'Of which author have you seen  
 the reproduction of some paintings?'

It is a well-known fact that the specificity of a DP considerably decreases, or even disappears, when some types of complements modify the nominal element, even if this nominal is introduced by the definite article. As we would expect, when the definite DP is more likely to be interpreted as generic, as in the case of (31b), the specificity effects tend to disappear, contrasting with (31a) where the preferred reading is the specific one and extraction is not possible:

- (31) a. \* De qué orador has oído los discursos?  
 By which orator have-you heard the speeches?  
 b. ?? De qué orador has oído los discursos más interesantes?  
 Of which orator have-you heard the speeches most interesting  
 By which author have you heard the most interesting speeches?'

In (31b), although the definiteness effect of the complement NP introduced by the definite article is maintained, the interpretation given to the NP tends to be the non-specific one, and Wh-extraction improves considerably.<sup>20</sup>

Considering this, one could argue that the improvement in the extractability of the agent argument out of the definite DP when it moves from a more embedded DP that is non-specific, as in (30b), can be due to the fact that the non-specific complement from where the Wh-subject moves makes the whole definite DP non-specific, as in the case of the comparative element in (31b). In order for our argu-

(19) Although the concrete grammatical status of (30b) is not totally clear (it goes from "good" to "marginal" depending on the speakers), all speakers I have consulted (including myself) agree that there is a sharp contrast between the totally ungrammatical (30a) and (30b), which improves considerably. This improvement also contrasts with cases where the moved element is an adjunct, as in (36b) to which I will immediately come back.

As for the marginality of (30b), two factors can plausibly be playing a role here: on the one hand, even with objects, Wh-movement out of a DP already embedded within another DP is slightly marginal, independently of whether the DPs are specific or not (see also footnote 24. below).

On the other hand, it could be the case that although the original trace is  $\gamma$ -marked and, consequently, no violation of the ECP occurs, crossing of the KP in which the determiner is incorporated results in a subadjacency violation. It is not clear to me at this point what the relevant factor (if any) is.

(20) As noted by Koldo Sainz (p. c.), this (not totally well understood) fact is even true with some elements, such as demonstratives, which typically yield much stronger specificity effects than definite articles, as can be observed in minimal pairs like (ia-b) [the latter adapted from Giorgi & Longobardi (1991), who report some similar contrasts in Italian (see their footnote 10. to chapter 2.)]:

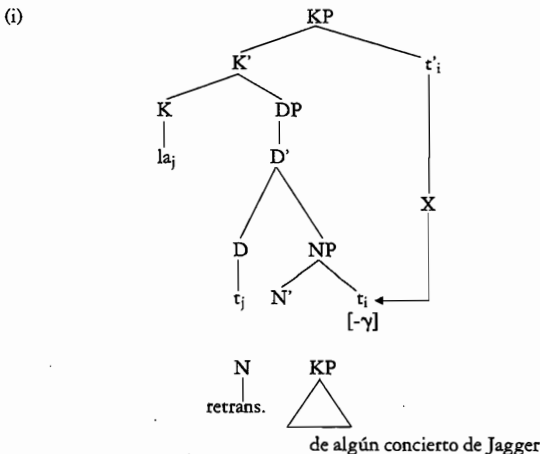
- (i) a. \* De qué autor has leído [los/esos libros t ]?  
 'By which author have-you read the/those books?'  
 b. ?? De qué autor has leído [los/esos libros t con la cubierta azul]?  
 'By which author have-you read the/those books with the blue cover?'

ment to go through, thus, we have to guarantee that this is not true in this case, and that the complement does not affect the specificity of the upper DP. That the specificity of the DP is not affected by its non-specific complement can be seen, however, by comparing sentences like (44a-b), where the only difference is the position from where the agent-argument is extracted:

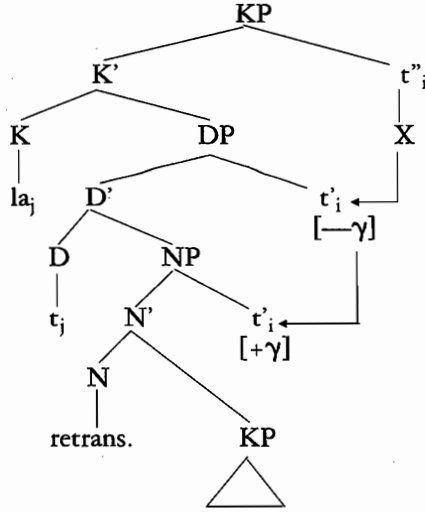
- (32) \* [De qué cantante]<sub>ag</sub> has visto [la actuación t<sub>ag</sub>]  
Of which singer have you seen the performance?
- (33) a. (?) [De qué cantante]<sub>ag</sub> has visto  
[la retransmisión de varias actuaciones t<sub>ag</sub>]  
Of (by) which singer have you seen  
[ the transmission of several performances t ]?
- b. \* [De qué televisión]<sub>ag</sub> has visto  
[la retransmisión [de varios concierto(s) de M.Jagger] t<sub>ag</sub>]  
[Of (by) which TV-channel ] have you seen  
[the transmission [of several concerts by M. Jagger] t ]?

The contrast between (32) and (33a) basically reproduces the one observed between (30a) and (30b) above. The difference between (33a) and (33b), however, shows that the contrast is not due to the effects of the embedded DP-complement on the specificity of the higher-most definite DP: as illustrated by (33b), when the moved Wh-phrase is the subject of the main DP, i. e. when this movement takes place directly from the DP introduced by the definite article *la*, the sentence is uniformly perceived as strongly deviant, even if the non-specific complement is still present. The hypothesis presented in the paper accounts for this contrast by attributing it to the failure of the intermediate trace in [Spec, KP] to antecedent-govern the (Spec, DP) trace of the subject in (33b) when the determiner has incorporated to the head of KOMP, as represented in (34).<sup>21</sup>

(21) Alternatively, if the second hypothesis in footnote 17. is correct, it would be the *original* trace in (Spec, NP) the one that is assigned [-γ] as in (i); see immediately below and section 3. for discussion:



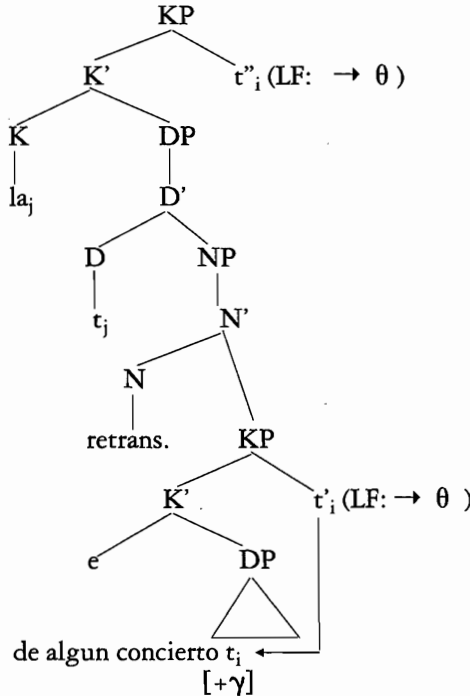
(34)



de algún concierto de M. Jagger

In (33a), on the other hand, the trace of the subject can be governed by its closer antecedent in the Spec position of the embedded KP which in turn deletes in the mapping from S-Structure to LF and the *Det-trace* effects can be avoided. This is represented in (35):

(35)



de algún concierto t<sub>i</sub> [+γ]

Notice that if the explanation of the contrast between (34) and (35) is correct, this suggests that either there is no intermediate trace of agents in (Spec, DP) (that is, the agent Wh-phrase does not move through that position) or, alternatively, that trace cannot delete from S-structure to LF (see footnotes 17. and 22.); otherwise, under our assumptions, this trace could  $\gamma$ -mark the original trace in (Spec, NP) and then delete in the mapping between S-structure and LF, and the specificity constraint would never affect overt Wh-movement of agents. The second alternative, in fact, seems the right conclusion; there are independent facts related to the distribution of agents in nominals suggesting that argumental agents have to raise to a functional projection to get Case. If so, this raising operation is required independently of the successive cyclic character of Wh-movement out of nominals and the intermediate trace in the Spec of that functional projection, whether DP or some Agreement phrase, is forced under Full Interpretation to remain undeleted through the derivation. In addition, the raising of the agent to that functional projection could explain the asymmetries between agents of nominals, which show Det-trace effects, and the lack of *that*-trace effects and Superiority on the part of subjects of sentences in Romance languages:<sup>22</sup> if, as Rizzi (1982) and Jaeggli (1982, 1985) argue, the lack of *that*-trace effects is due to the fact that subject extraction in these languages takes place from the post-verbal position and the trace in that position is lexically governed, agents of nominals within NP would also be, under our assumptions, in a configuration of lexical government. If, on the other hand, this argument has raised to a Case-position outside NP at S-structure, wh-extraction would take place from a position where the agent cannot be lexically governed, similarly to the case of subjects in English sentences, and the trace left behind would have to be antecedent-governed, showing then Det-trace effects. Finally, observe that if that raising operation is not motivated by the Wh-movement itself, one could argue that neither is it forced in the case of complement and adverbial traces by the successive cyclic nature of Wh-movement, a conclusion also well motivated on conceptual grounds.

To finish, as a consequence of the argumentation above, the hypothesis defended here predicts after all an asymmetry between agents and adjuncts also in the Det-trace paradigm, although in this case in the opposite direction to the observed *that*-trace contrasts: since the Det-trace effect (unlike the *that*-trace effect) also shows up at LF, Wh-extraction of adjuncts should have the status of an ECP violation, no matter how many intervening projections are between the definite DP and the original adjunct-trace; this is so because the trace of the adjunct being  $\gamma$ -marked at LF, all the traces in the chain have to be present, and the trace marked [- $\gamma$ ] by the failure of antecedent-government through the overt determiner cannot thus be deleted in the mapping from S-Structure to LF. We therefore expect a sharp contrast between agent and adjunct extraction in this respect.

(22) I am indebted to Myriam Uribe-Etxebarria (personal communication) for bringing this point to my attention.

Although the relevant data are somehow obscured by independent reasons, the prediction also seems to be born out:<sup>23</sup>

- (36) a. \* [De qué países]<sub>adv</sub> conoces [<sub>DP</sub> las banderas t<sub>adv</sub>]  
 [Of what countries] do you know [the flags t ]?  
 b. \* [De qué países]<sub>adv</sub> has visto  
     [<sub>DP</sub> la expulsión [<sub>DP</sub> de algunos inmigrantes t<sub>adv</sub>]]  
     [Of what countries[ have you seen  
     [the expulsion [of some immigrants t ]]

If this is correct, we then have strong evidence supporting the view that the relevant constraint on specificity is not a condition on movement as Chomsky (1977, 1981) suggests, but rather an LF condition that can be subsumed under the ECP.

### 3. Conclusions and Further Consequences.

Some more general conclusions are also suggested by the new contrast introduced in (30-36). First of all, the fact that the familiar three-way distinction adjunct /subject/complement reappears also here with a different 'make up', indirectly supports an analysis of the ECP where arguments and adjuncts differ in the level at which they are licensed, on the lines of Lasnik & Saito's (1984) proposal. Moreover, independently of whether the concrete mechanisms proposed in this section are right or not, the paradigm also suggests that the distinction uniformly divides complement-subject vs. adjunct in both the IP and the DP systems and, more concretely, that subjects behave as real arguments also within the DP system. On the other hand, the three way distinction observed at the DP level forces us to revise the status of the object trace: this is so because the necessary distinction between subject and adjunct traces, supported by the paradigm in (30a-b), is captured in terms of the different level at which each element is licensed (i. e.  $\gamma$ -marked). A different explanation is thus needed that derives the asymmetric behavior of object and subject traces with regard to the Det-trace effects. Once again, the null hypo-

(23) As observed to me by Juan Uriagereka and Myriam Uribe-Etxebarria (personal communications), extraction of adverbials out of doubly embedded NPs is already ungrammatical even in those cases where both of them are generic. Even so, it seems to me that the extraction is considerably worse if the adverbial moves from a specific DP, as in (ia), than if this movement takes place from within two bare NP-s (but compare it to the grammatical (ic), where the adverbial modifies the higher nominal):

- (i) a. \* De qué países conoces las leyendas?  
     'From which countries do you know the legends?'  
 b. ?\* De qué países conoces [algún libro [de leyendas t ]]?  
     'From which countries do you know some book of legends?'  
 c. De qué países conoces [algún libro [de leyendas ] t ]?  
     'From which countries do you know some book of legends?'

As can be expected, if any of the nominals is specific the sentence is hopeless:

- (ii) a. \* De qué países<sub>adv</sub> conoces [ los libros [de leyendas t<sub>adv</sub> ]]?  
     'From which countries do you know the books of legends?'  
 b. \* De qué países conoces [algún libro [de las leyendas t ]]?  
     'From which countries do you know some book of the legends?'

thesis, that object-traces can be locally licensed within NP just like verbal complements are in VP, gives the right result. Insofar as all these conclusions seem to be the 'least costly' ones for the theory (they do not require any additional assumption other than the ones already needed for the IP-system), the approach presented in this section appears to be on the right track.

Notice, moreover, that the consequences of this parallelism between the two systems go farther: if the object trace within the nominal is properly governed, there is no obvious way to maintain an ECP approach to the set of asymmetries that fall under Cinque's generalization when the element extracted over a filled specifier (agent or possessor) is the internal argument of the nominal. The Minimality approach to "movement-through-Spec" argued for by Torrego (1985, 1987) and Chomsky (1986) then does not seem directly available for object extraction.

A possible solution, proposed by Stowell (1989), is to accommodate the analysis and make the ungrammatical cases follow from Subjacency when the intermediate Spec positions are not available for successive cyclic movement.<sup>24</sup> Apart from the difficulty of making the approach consistent with any current theory of Subjacency, this hypothesis inherits most of the problems faced by the classic approach, especially those regarding the legitimacy of the successive cyclic movement through the specifiers of NP and DP itself.<sup>25</sup> A more promising line of research, which cannot be developed at length here,<sup>26</sup> seems to me a Subjacency approach that makes use of the barrier-inducing character of specifiers, following the directions proposed by Fukui & Speas (1986). Such an approach is well motivated on the basis of other Subjacency configurations in various languages, and it has the advantage of making it possible an analysis of extraction out of DP that does not appeal to the necessity of successive cyclic movement through the different (argumental) positions of the nominal, while maintaining the blocking effects of the specifiers.

Summarizing, the analysis proposed here presents a way to characterize the syntax of the specificity constraint on extraction, unified with the *that*-trace effect and, consequently, falling under the ECP. The paper also presents evidence for an additional functional projection in the nominal system, located higher than DP, that shows some properties similar to the complementizer phrase at the sentential level. The analysis indirectly supports a thematic structure of nominals parallel to that of verbs, where the thematic arguments of nouns maintain the same relation with their head with regard to government; in particular, their traces behave in consonance with the argumental traces in other subsystems with respect to proper government and  $\gamma$ -marking. Several details and problems remain to be worked out,<sup>27</sup> but the

(24) See Stowell (1989) for details and discussion. It has to be pointed out that Stowell's proposal on object extraction is only indirectly related to the main topic of his paper and, therefore, the analysis presented there is not fully developed.

(25) See Pollock (1989) and Ormazabal (1991) for discussion of these problems from different points of view.

(26) See Ormazabal (1991) for extended discussion and some problems.

(27) In concrete, the connections between the syntax and semantics of specific DP-s remains mostly unsolved; in a framework like the one I have been assuming through the paper where the input for semantic interpretations is the LF-representation, it is plausible to assume that the movement of the strong determiners is related to its quantificational nature which, in turn, can be related to the specific reading of these nominals. The details of how these relations can be made, however, have to be worked out.

main line of argumentation seems to have the right theoretical consequences and opens a promising path to a study of the similarities and differences between the verbal and nominal systems.

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# Interrogative Discharge and the Wh-criterion in Basque

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## 0. Introduction\*

This article presents evidence for a view of pied-piping as a mechanism whereby a [+wh] operator 'discharges' its [wh] feature on to the phrasal category within which it appears. This view, which seems rather harmless and innocuous, turns out to have important empirical consequences in a language with clausal pied-piping like Basque. I will try to show that a wh-word in SPEC of CP which has discharged its operator feature ceases to function syntactically as a wh-element. In particular, it will no longer be visible for the Wh-criterion. This will be shown in two ways. First, discharged wh-words can appear with [-wh] complements such as declarative clauses and nominalized tenseless clauses, even though these complement types are not otherwise compatible with [+wh] elements. Second, discharged wh-words are incompatible with [+wh] complements. The Basque data are particularly telling in this context not only because of the existence of clausal pied-piping, but also because of the different phonological realizations of the [+/-wh] complementizers.

The article is organized as follows. Section 1 presents the interaction between feature discharge and interrogative selection. 1.0 gives some data on the distribution and form of [+wh] and [-wh] complementizers. Section 1.1 presents the first paradigm I will be trying to account for. After reviewing in 1.2 the case for clausal pied-piping, argued for more extensively in Ortiz de Urbina (forthcoming), 1.3 examines the interaction between [+wh] feature discharge and Rizzi's (1991) Wh-criterion. Section 2 addresses the second paradigm, showing how [+wh] words are excluded from embedded nominalized clauses if they take narrow scope, but are fully acceptable if they are construed as having wide (root) scope. An account of this paradigm is given which relies also on the interaction between feature discharge and the wh-criterion.

(\*) Parts of this paper were presented at the meetings of ESF Eurotyp Project Group 3 at Gregynog (Wales) and Donostia (Basque Country). I would like to thank the audience there for their comments and attention.

### 1. Complementizers and the wh-criterion

Basque possesses two main complementizers, *-(e)la* and *-(e)n*. The first one appears in declarative complements, while *-(e)n* shows up in a series of embedded contexts like the ones in (2): indirect questions, adverbial clauses, subjunctive complements, negative completives, relative clauses, etc.:

- (1) [Jon bihar etorriko d-ela] esan dut  
Jon tomorrow come aux-comp said aux  
I've said that Jon will come tomorrow
- (2) a. [Jon bihar etorriko d-en] galdetu dut  
aux-comp asked aux  
I've asked whether John will come tomorrow
- b. [Jon datorr-en-ean] esango dizut  
comes-comp-in tell aux I'll tell you when John comes
- c. [Etorr dadi-n] nahi dut  
come aux-comp want have  
I want him to come (=that he comes)
- d. Ez dut uste [Jon bihar etorriko d-en-ik]  
neg aux think aux-comp-partitive  
I don't think that John will come tomorrow
- e. [Etorri d-en] gizona Jon da  
come aux-comp man Jon is The man that has come is Jon

It looks then that the shape of the complementizer is sensitive to the presence of an operator, since arguably all of the subcases in 2 involve some sort of operator in the embedded clause. In this article I will concentrate only on interrogative complements like (2a) and will consequently refer to *-(e)n* as a [+wh] complementizer for ease of reference.

Let's examine interrogative complements like the one in (2a). A more complete pattern, with both yes/no and wh-questions, can be seen in (3):

- (3) a. [Jon bihar etorriko d-en] galdetu dut  
aux-comp asked aux  
I've asked whether John will come tomorrow
- b. [Bihar nor etorriko d-en] galdetu dut  
tom. who  
I've asked who will come tomorrow

Where no overt wh-word occurs, the complementizer *-(e)n* signals the presence of a yes/no embedded clause. We can assume, along the traditional lines, that an empty yes/no operator occupies the embedded SPEC position. Embedded wh-questions like the one in (3b) include both the interrogative complementizer and the wh-word. I will assume, again following traditional analyses, that wh-words contain a [wh] feature.

I will also assume that the relation between the head C and its specifier is ruled by Rizzi's (1991) wh-criterion, stated as in (4):

- (4) a. A wh-operator must be in a Spec-head configuration with a [+wh] head.  
 b. A [+wh] head must be in a Spec-head configuration with a wh-operator.

For our purposes here, the only head I will consider will be C. The criterion requires the existence of two elements independently bearing the [wh] feature specification. In embedded clauses the [+wh] feature in the embedded C is licensed by virtue of being subcategorized from the matrix clause, while in root clauses the wh-specification is independently anchored to the INFL-head. The [+wh] feature in SPEC is supplied by the wh-element. So in (3) we find a [+wh] complementizer *-(e)n* associated with a covert or overt [+wh] operator in its specifier. Notice again that while in many languages the two [+wh] elements may not be phonetically overt, there is no such 'doubly-filled COMP' constraint in Basque, and the interrogative complementizer must cooccur with the overt wh-word.

### 1.1. [+/-wh] verbs and clausal pied-piping

The paradigm I'll try to analyze here is the following one:

- (5) a. [Nor etorriko d-ela bihar] uste du Jonek?  
 who come aux-ela tom. think aux Jon  
 'that who will come tomorrow does Jon think?'  
 b. \*[Nor etorriko d-ela bihar] uste du Jonek.  
 Jon think's who will come tomorrow
- (6) a. \*[Nor etorriko d-en bihar] galdetu duzu?  
 who come aux-en tom. asked aux  
 'Who will come tomorrow have you asked?'  
 b. [Nor etorriko d-en bihar] galdetu duzu.  
 You have asked who will come tomorrow

The (b) examples follow the regular description I gave above: where the scope of the interrogative element is the embedded clause, a verb selecting an interrogative complement like *uste izan* 'think' cannot have an operator in the embedded SPEC. This would violate clause (a) of the Wh-criterion, since the complementizer is [-wh] *-(e)la*, selected by the verb. On the other hand, a [+wh] verb like *galdetu* 'ask' requires a [+wh] complementizer which in turn, by (4b) must be associated with an operator in SPEC, as in (6b). The surprising patterns are the ones in (5a) and (6a).

In (5a) the embedded wh-word seems to have scope over the entire structure, since this is a root question. Still, *nor* 'who' occupies the embedded SPEC, CP position. Evidence for this comes from the fact that we find a verb-second effect between *nor* and the embedded verb. Such adjacency occurs between elements within

the same CP in Basque, as in neighboring languages. Thus, the intervening element in (7) produces an ungrammatical result:

(7)\*[Nor *bihar* etorriko d-ela] esan diozu Mireni?

So, a first problem is why and how an embedded wh-word can get root scope, while remaining in the embedded context of a [-wh] verb like *uste izan* 'think' in (5a). A second problem is why the same may not occur in the same structure with a [+wh] verb like *galdetu* 'ask', as the ungrammaticality of (6a) indicates. (6a) is acceptable as a yes/no question on the matrix, but not in the interpretation relevant here, parallel to (5a). Finally, a third problem is why (5a) is acceptable even though a wh-word in the embedded SPEC cooccurs with the [-wh] complementizer *-(e)la*, a circumstance which does not occur anywhere else in Basque and which looks like a violation of clause (a) of the wh-criterion.

### 1.2. Getting matrix scope from an embedded clause at S-structure

The wh-word *nor* in (5a) occupies the SPEC of the embedded clause, as shown by the existence of the adjacency phenomenon with the verb. Now, there is a well-known asymmetry of pied-piping positions between specifiers in general and complements (leaving complements of prepositions aside), as shown in (8) and (9):

- (8) a. Whose problem did he solve?                      b. How tall is she?  
       c. How far did you get?
- (9) a. \*The problems of what did you solve?        b. \*Proud of whom is he?  
       c. \*Far from where did she go?

Wh-words in specifier positions of different phrasal categories, like the ones in (8), seem, quite generally, to be able to pied-pipe the whole phrasal category. This contrasts with complement wh-words like the ones in (9), which cannot act as pied-pipers. SPEC of CP appears to be a gap in this pattern, since a wh-word in that position seems not to be able to pied-pipe CP:

- (10) a. \*Who met John did Mary say?            b. \*What John said do you know?

Principled accounts of pied-piping, like Webelhuth's (1989) analysis, leave SPEC of CP as an accidental gap in the set of pied-piping positions, ruled out by independent factors not directly related to pied-piping. I will also support this view and will claim that this is precisely the type of pied-piping one finds in Basque. I will claim that structures like (10a) are acceptable in Basque, and that (10b) is ruled out in this language not because of any general constraint against pied-piping of CP, but as a violation of clause (b) of the Wh-criterion. (I won't have anything to say here as to why (10a) is unacceptable in English). Assume then that SPEC,CP is a pied-piping position. Then in (5a) the embedded clause occupies the matrix SPEC,CP position. A residual verb second phenomenon will also occur between the embedded clause in the matrix SPEC,CP and the matrix verb, so that any element intervening will produce an ungrammatical result:

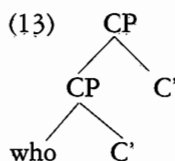
- (11) \*[Nor etorriko d-ela bihar] *zuke* uste duzu?  
 who come aux-ela tom. you think aux

Further evidence which shows that the whole embedded clause in (5a) is indeed in the specifier position comes from the ability of the pied-piped clause to undergo long wh-movement. Since operators can move from SPEC to SPEC, the expectation is that the embedded clause behaving like an operator also will, and this expectation is actually met, as in (12):

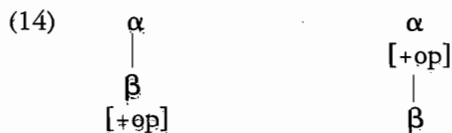
- (12) [Nor etorriko d-ela bihar] *esan* du Mirenek *entzun* du-ela Peruk?  
 said aux Mary heard aux-ela Peter  
 'that who will come tomorrow has Mary said that has Peter heard?'

In (12), the whole embedded clause, complement of *entzun* 'hear', has moved first to the SPEC of the intermediate clause and then to the root SPEC, triggering adjacency with the verb *esan* 'say'.

If clausal pied-piping is involved here, the relevant structure after the embedded CP has moved is as in (13):



Still, the two CPs are not segments of the same category produced by adjunction: the upper one corresponds to the matrix clause, while the lower one is the embedded CP. Therefore, the wh-word does not actually c-command anything within the higher CP, and something else must be said to explain why (5a) is a root question. In order to account for this, I will detail the type of mechanism I am assuming as underlying pied-piping, a purely descriptive term. In trying to account for the operator-like behavior of the maximal projection undergoing syntactic movement, Webelhuth and others have assumed a percolation mechanism, whereby an operator feature of  $\alpha$  (usually [wh], but also [negative], as discussed in Ortiz de Urbina forthcoming) is transmitted up to the category  $\beta$  in certain configurations (here from the specifier position):



Let us assume that once  $\beta$  discharges its operator feature to  $\alpha$ , the former loses its operator status, so that it is no longer syntactically active. With this assumption in mind, let us return now to (13). The embedded CP has been moved to the matrix SPEC position because the wh-word has discharged its operator feature onto it, so now the embedded CP bears this operator feature and behaves as such. This means that the [wh] element in (13) is not *nor* but CP. Since the latter does c-command

everything in the root clause, like any other element in SPEC,CP does, then we can understand why (5a) is a root question.

### 1.3. Percolated features and the Wh-criterion

Let's address now the two remaining problems, that is, why a wh-word in SPEC;CP in (5a) may cooccur with the [-wh] complementizer *-(e)la* without violating the wh-criterion and why clausal pied-piping is excluded from selected interrogative complements. (5a), repeated here, exemplifies the first problem:

- (5) a. [Nor etorriko d-ela bihar] uste du Jonek?  
 who come aux-ela tom. think aux Jon  
 'that who will come tomorrow does Jon think?'

Given the feature percolation mechanism described above, we can already understand this problem: if the [wh] feature has been discharged onto CP, the wh-word *nor* 'who' no longer works as a [wh] element in the syntax and the first part of the wh-criterion is not applicable. The complementizer can then be *-(e)la*, [-wh] as required by the matrix [-wh] verb *uste izan* 'think'. This apparent SPEC-head mismatch will occur in Basque only if the wh-word has lost its operator feature, that is, only in clausal pied-piping structures, which are then only an apparent exception to the distribution of this complementizer.

Turning now to the remaining problem, sentence (6a), repeated here, shows that a wh-operator in the complement of a [wh] verb like *galdetu* 'ask' can not pied-pipe the embedded clause:

- (6) a. \*[Nor etorriko d-en bihar] galdetu duzu?  
 who come aux-en tom. asked aux  
 'Who will come tomorrow have you asked?'

One analysis I would like to reject could claim that after clausal pied-piping, a trace is left by the embedded complement clause moved to SPEC. This trace would be [-wh], as generally assumed, and would not match the requirements of the matrix [+wh] verb. This analysis assumes that the selectional restriction of the matrix is checked against the trace once the complement with the head C has been removed.

Still, other applications of Move- $\alpha$  leave traces, presumably also [-wh], but do not induce ungrammaticality. Thus, if scrambling results from an S-structure application of Move- $\alpha$ , as assumed by Saito (1985), the structure of an SVO pattern in a head-last SOV language like Basque would be as in (15), where the trace is coindexed with the object:

- (15) S    t    V    O

This SVO order is quite common with heavy objects such as complement clauses, so the structure of a clause like (16a) will be as in (16b):

- (16) a. Mikelek galdetu du [nor etorri d-en]  
 Mikel asked aux who come aux-en  
 Mikel has asked who has come  
 b. Mikelek t galdetu du [nor etorri den]



marked in the same way as in tensed clauses. The nominalized verb bears a case ending corresponding to the function of the embedded clause in the matrix, so the tenseless clause is case-marked like regular nominal arguments. An example is given in (18) and (19). The verb *eritzi* 'consider' assigns dative case to the subject of its small clause complement, as in (18):

- (18) *Horr-i egoki deritzot*  
 that-dat appropriate consider I consider that appropriate

The subject of the secondary predicate may also be a tenseless clause, as in (19a). The nominalized verb will then be marked dative, and its subject and object are marked following the usual ergative pattern in Basque. (19b) shows that tensed complements are barred from the same position, indicating that the distributional properties of nominalized clauses pattern with DPs rather than with CPs:

- (19) a. [*Zuk hori esa-te-a-ri*] *egoki deritzot*  
 you that say-imp-det-dat  
 I consider your saying that appropriate
- b. \*[*Zuk hori esan dezazu-la(-ri)*] *egoki deritzot*  
 say aux-comp  
 I consider it appropriate that you say that

I will focus on complement clauses, where both tensed and tenseless forms may occur. When complement types of individual verbs are examined, we find that in most cases finite indicative clauses and nominalizations are in complementary distribution. This is exemplified below with verbs belonging to different semantic classes:

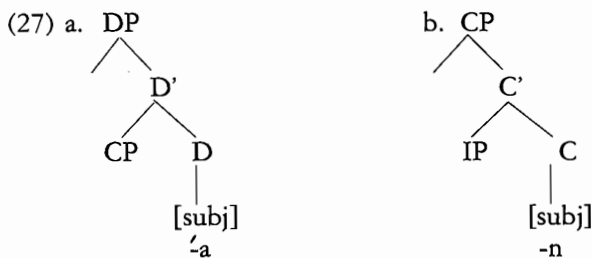
- (20) **Epistemic verbs:** *uste izan* 'think', *sinistu* 'believe'
- a. [*Jonek liburua irakurri du-ela*] *sinisten dut*  
 read aux-comp believe aux  
 I believe that John has read the book
- b. \*[*Jonek liburua irakur-tze-a*] *sinisten dut*  
 read-imp-det
- (21) **Declarative verbs:** *esan* 'say', *adierazi* 'declare':
- a. [*Jonek liburua irakurri du-ela*] *esan du*  
 read aux-comp say aux  
 He has said that John has read the book
- b. \*[*Jonek liburua irakur-tze-a*] *esan du*
- (22) **Emotive factive verbs:** *barritu* 'surprise', *gorrotatu* 'hate'
- a. \*[*Jonek liburua irakurri du-ela*] *gorrotatzen dut*  
 aux-comp hate aux  
 'I hate that John has read the book'
- b. [*Jonek liburua irakur-tze-a*] *gorrotatzen dut*  
 I hate John reading the book





- (25) a. Egia da [Jonek liburua irakurri du-ela]  
 true is aux(ind)-comp  
 It is true that John has read the book
- b. \*Egia da [Jonek liburua irakur-tze-a]
- (26) a. \*Harrigarria da [Jonek liburua irakurri du-ela]  
 surprising is aux(ind)-comp
- b. Harrigarria da [Jonek liburua irakur-tze-a]  
 It is surprising for John to read the book

Intuitively, subjunctive complements are more closely linked to their matrix predicates than complements to assertive verbs, which are well-known to be quite independent from them. Subjunctive complements are often claimed to be dependent on the matrix predicate either because of their tense orientation or because of the presence of an empty modal-like operator in the head C (Kempchinsky 1986, Pesetsky 1990). The presence of a modal-like C head is helpful in trying to explain the fact that, apparently, mood selection is not a head-to-head relation as other selectional relations, since a matrix predicate seems to skip over the C and require a particular mood in INFL. The assumption of an intervening C which is selected by V and in turn selects INFL helps solve this problem. As Kempchinsky notes, this analysis receives morphological support from the existence of special subjunctive complementizers in some languages.<sup>3</sup> I will therefore follow this path and assume that non-assertive predicates select an operator (or perhaps a [+subj] operator feature, like [neg] or [wh]) in their propositional complements. Such complements may be nominal (DPs) or clausal (CPs), but in both cases there is an operator feature associated with their head. Nominal complements correspond to nominalizations, which I will assume here have a structure as in (27a); regular subjunctive complements would have the familiar clausal structure in (27b):



## 2.2. Tenseless indirect questions

There is a context where nominalized clauses are not acceptable, namely, indirect questions, as shown in (28):

(3) Even though there are no special subjunctive complementizers in Basque, it is important to notice that the complementizer used in subjunctive complements is often the same one (-n) used with complements containing operators: relative clauses, indirect questions, negated complements, temporal clauses, etc. See section 1

- (28) a. Ez dakit zein *hautatu*                      b. \*Ez dakit zein *hauta-tze-a*  
 neg know which choose  
 I don't know which one to choose

The question one has to address is why (28b) is ungrammatical. Actually, this fact can be related to a variety of similar restrictions holding on embedded questions. Thus, Kempchinsky (1990) points out that Spanish verbs that subcategorize for subjunctive complements do not have interrogative complements with subjunctive, as shown in (29):

- (29) a. Decidí que viajaras                      a Asturias  
 decided that travel(subj) to Asturias  
 I decided that you should travel to Asturias  
 b. \*Decidí [adónde viajaras]                      I decided where you should travel  
 where

Similarly, Raposo (1987) notices that inflected infinitives in European Portuguese, which resemble Basque nominalizations in distribution and in their ability to license phonologically realized subjects, are excluded in interrogative complements:

- (30) \*Eu nao sei [quem [eles convidar- em para o jantar]]  
 I neg know who they invite-agr for dinner  
 I don't know who they invited for dinner

According to Raposo, (30) is out as a result of the need of the inflected infinitive to receive case in order for it to be licensed. It cannot get case in the embedded tenseless clause because tenseless INFL cannot assign case. On the other hand, it cannot be moved to the embedded head COMP position, a position case-marked by the matrix verb which would have licensed its presence. The reason is that the Doubly filled COMP filter would have been violated: the *wh*-word would cooccur along with a filled COMP head position. This explanation does not work for Basque, though, since that filter does not apply in this language: tensed indirect questions always contain both a *wh*-word and a complementizer head (see section 1.0 above). Moreover, that analysis says nothing about the apparently related Spanish pattern in (29). Let us therefore take the alternative approach mentioned above. Following Kempchinsky (1986), we can say that the [+*wh*] operator selected by the matrix verbs in the structures in question already 'fills' up the head position in CP, excluding other selected operators from appearing (see also Rizzi 1991). In particular, it excludes the modal selection required for nominalized structures to be licensed.

Now, the fact that selected interrogative complements cannot appear in nominalized forms does not imply that *wh*-elements are totally excluded from them, as the following example shows:

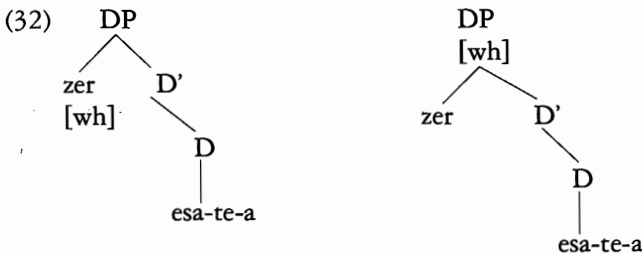
- (31) [(Nik Mikeli) zer esa-te-a]                      gustatuko litzaizuke?  
 I M.-dat what say-imp-det like                      aux  
 What would you like me to tell Michael?

In this sentence, a nominalized complement clause contains the *wh*-word *zer* 'what', in apparent contradiction with the claim in this section. However, the

acceptability of (31) does not mean that the subjunctive specification is compatible with a [+wh] feature of the same head. Notice that the verb *gustatu* 'like' does not select interrogative complements, and that (36) is only acceptable as a matrix question, so the sentence is acceptable because the wh-word has scope over the whole sentence, and not only over the embedded clause. Still, the wh-word does not occupy the matrix SPEC,CP, but appears within the embedded clause. As in the case of declarative clausal pied-piping discussed in the previous question, this can be shown by the positional facts. In (31) the wh-word must be adjacent with the lower nominalized verb, not with the main tensed verb, indicating that it occupies a position in the embedded clause.

An explanation in terms of clausal pied-piping and feature discharge would proceed as follows. The main verb selects a subjunctive type of complement, here realized as a nominalization as explained above. No [+wh] feature can be selected on the embedded CP, since that feature is not selected by any governing element and the CP is not a root context where such feature may be independently licensed. Therefore no [+wh] element may occupy the SPEC,CP position, since it would not match the non-interrogative head, violating clause (a) of the wh-criterion. Moreover, the wh-word cannot be in that position here, since it would not have matrix scope and that is the interpretation required in (31).

Now, assume the wh-word has moved to the specifier of DP. Again, it may not remain as such there because the head DP is not [wh] but [subj]. But there is an alternative: the interrogative operator may transfer its operator feature to the matrix DP, since it occupies a standard pied-piping position, namely, that of a specifier. This is illustrated in (32):



The operator feature of the wh-word is transferred to the maximal projection it specifies, DP. Now the DP itself behaves like an interrogative operator and moves to the usual landing site, SPEC of the matrix CP. This explains a second type of adjacency found in (33), namely, that between the DP and the matrix verb. No element of the matrix may intervene between them; contrast (31), repeated here as (33a), and (33b):

- (33) a. [(Nik Mikeli) zer esa-te-a] gustatuko litzaizuke? (=31)  
 b. \*[(Nik Mikelik) zer esatea] zuri gustatuko litzaizuke?  
 you-dat

In (33b) the matrix argument *zuri* 'to you' appears between the embedded nominalized clause and the matrix verb; the lack of adjacency with the verb in-

dicates that the nominalized clause has not moved to SPEC,CP. This in turn means that the *wh*-word has retained its operator feature, rather than transferring it to the embedded DP. But such structure is not possible since the [*wh*] feature is incompatible with the subjunctive operator. Thus, just like with (5a), structures like (31) are only possible if [*wh*] feature discharge from SPEC,DP to DP takes place, and the DP is adjacent with the matrix verb. Such discharge renders the *wh*-word invisible to the *wh*-criterion, so that (31) does not represent a violation of its first clause.

In Section 1, I claimed that clausal pied-piping is not possible in selected [+*wh*] complements as a consequence of clause (b) of the *wh*-criterion: after interrogative feature discharge, the selected [+*wh*] head will not appear in a spec-head configuration with a *wh*-element in SPEC, accounting for (6a). The same can be said of the tenseless counterpart. Thus, the participial embedded clause in (28) above, repeated here as (34a), with its [+*wh*] head, is not acceptable with a wide scope interpretation of the *wh*-word, as in (34b):

- (34) a. *Ez dakit zein hautatu*            I don't know which one to choose  
           *ez know which choose*            b. \**Zein hautatu ez dakizu?*

Thus, (34b) is ruled out as a consequence of the same process that makes (31) acceptable, namely, feature discharge in combination with the requirements of the *wh*-criterion.

The feature discharge analysis is made necessary by the fact that *wh*-movement takes place at S-structure in Basque. The adjacency facts argue for a position of the *wh*-word within the embedded clause at the level where the *wh*-criterion is checked in Basque, that is, in the syntax. Therefore, the relevant scopal facts must derive from some process other than movement. On the other hand, similar facts in languages with LF *wh*-movement can receive a regular treatment based on extraction of the relevant operator at that level. Thus, Turkish nominalizations exhibit some facts which closely resemble the ones mentioned above. As described in Kornfilt (forthcoming), *-ma* complements seem to be [-*wh*] and cannot therefore occur in embedded questions, which must then be of the [+*wh*] *-dik* type:

- (35) a. [*Parti-ye kim-in gel-diğ-in*]-i      *bil-iyor-um*  
           *party-to who-gen come-dik-3sg-acc know-prs-1sg*  
           I know who came to the party  
       b. \**[Parti-ye kim-in gel-me-sin]-i bil-iyor-um*  
           *-ma-*

Now, this does not mean that *-ma* complements are incompatible with clause-mate *wh*-questions, as (36) shows:

- (36) [*Parti-ye kim-in gel-me-sin*]-e      *kız- dı-n?*  
           *-me-3sg-dat angry-pst-2sg*  
           'Who were you angry that came to the party (i.e. about whose coming to the party were you angry?)'

This is only possible if the wh-word takes wide matrix scope, i.e., if this is a matrix question. This seems to indicate that (36) does not violate clause (a) of the wh-criterion, the question being at which level the wh-criterion applies in this language. If wh-movement takes place at LF in Turkish, as seems to be the case, one may assume that the wh-word has moved out of the embedded clause at that level, taking root scope at LF. In the case of Basque, this analysis is barred by the fact that the wh-criterion and the movements to satisfy it must take place in the syntax.

I have tried to show that pied-piping involves a feature discharge mechanism whereby a wh-operator actually 'loses' its syntactic [wh] feature after transferring it to CP. This not only entails that CP will behave as an interrogative element for syntactic purposes, but also that the wh-word will no longer count as such for the wh-criterion. A discharged wh-word will then be compatible with a [-wh] complementizer head, while it will be incompatible with a [+wh] one. A language like Basque with clausal pied-piping in the syntax and different complementizers allows us to check the different scenarios produced by this discharge mechanism.

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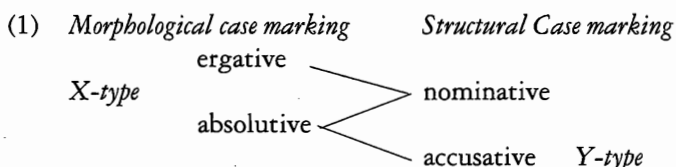
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# Structural Case and Inherent Case Marking: Ergaccusativity in Basque

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It has been observed (Anderson 1976, Comrie 1978, Dixon 1979) that languages which show an ergative case marking in morphology most often are not syntactically ergative, in the sense for example of the Ergativity Hypothesis (Marantz 1984) or more traditionally in the sense of the so-called Theory of Verbal Passivity (Schuchardt 1925, Gavel 1930, Uhlenbeck 1948, Lafon 1960, 1972).

A striking problem remains, however: many non-related languages have —even though often partially (split ergativity)— an X-type case marking in morphology and a Y-type (abstract) Case marking in syntax, where X and Y types offer a systematic and regular crossing, as shown in (1):<sup>1</sup>



Let us call ergaccusative those constructions where we find an ergative or active morphology with an accusative syntax. Although ergaccusativity refers more to constructions than to languages, I will call ergaccusative languages those which show the pattern in (1) in a regular and systematic way (i.e. nominative-accusative languages with B-case-marking in Marantz's 1984 terms).

The aim of this paper is to analyze the relations between morphology and syntax in one ergaccusative language, namely Basque. I will propose to analyze the mismatch illustrated in (1) within the analysis summarized in (2) below:

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*Abbreviations:* A/ABS=Absolutive; ACC=Accusative; Apl=Absolutive plural marker; AFF=Affirmative; ASP=Aspectual suffix; COMPL=Complementizer; D/DAT=Dative; DET=Determiner; E/ERG=Ergative; FAM=Familiar; FUT=Future; MOD=Mood; NOM=Nominative; PL=Plural; PRES=Present Tense; RESUL=Resultative; SG=singular;

(1) *Nominative* and *accusative* in (1) only refer to structural Case when it is given to subject and object NPs respectively. This is independent of morphological case marking. When we refer to accusative constructions showing a corresponding case marking we will use the term *nominaccusative* (vs. *ergaccusative*).

(2) *Case marking in ergaccusative languages:*

- a. Ergative case is an inherent Case;
- b. Absolutive case is structural Case (both nominative and accusative).

(2a) states that the ergative case, which is morphologically marked, looks like a lexical case (in the terminology of Kiparsky 1985, among others). It is assigned at D-structure by the theta-role assigner along with theta-role. (2b) states that what is usually called the absolutive case is the structural Case. It is a default Case which makes 'visible' inherently non Case marked DPs.<sup>2</sup> It corresponds to both nominative and accusative Cases, depending on the Case assigner. As shown below, Basque verbs only assign Case inherently. Structural Case, both nominative and accusative, is assigned by functional heads.

This proposal, contrary to the Case Parameter proposed by Levin & Massam (1984), (cf. also Massam 1985), does not include any kind of Case discharging requirement.<sup>3</sup> It also departs from previous analyses of Basque Case marking. I will not examine how previous proposals have accounted for Basque Case marking,<sup>4</sup> because it would be too long an undertaking (for different proposals during the last few years, see Levin 1983, Hualde 1986, Ortiz de Urbina 1989, Cheng & Demirdash 1990). I will only indicate that the analysis proposed here differs from these works (i) by assuming that the ergative case is an inherent Case; (ii) by assuming that the absolutive case (=structural Case) is assigned by different functional heads, depending on whether it is nominative or accusative; (iii) by avoiding vacuous absolutive case assignment. However, the main elements of the proposal are very proximate to descriptions given in traditional grammars, specially in Lafitte (1944).

Following Pollock (1989) and Chomsky (1989a) I assume there are several inflectional heads. I analyze inflectional heads as F(unctional) heads in the sense of Fukui (1986) and Fukui & Speas (1986). F-projections project double bar levels. Since it is not relevant for the analysis proposed, I will remain neutral regarding the bar level

(2) I assume the DP analysis of NPs; cf. Abney (1986). This point, however, is not relevant to the analysis proposed.

(3) Levin & Massam's (1984) proposal has two parts: Conditions on Case assignment (i) and Case Parameter (ii); cf. Massam (1985):

- (i) Conditions on Case Assignment:
  - a. Cx= Abstract Case must be assigned
  - b. Case is assigned only under government
- (ii) Case Parameter:
  - a. x=I (Nominative / Accusative)
  - b. x=V (Ergative / Absolutive)

(i) and (ii) are opposed to the Ergaccusative Analysis in (ia) and (iib) respectively. For another analysis of ergative case-marking based on the right-left association of NPs (in the phrase structure) to surface cases (on the case tier), see Moira, Maling and Jackendoff (1987).

(4) The question of case marking has been discussed for a long time now. During a long period most linguists adopted the Passivist Theory (Stempf 1890, Schuchardt 1893, Gavel 1930, Uhlenbeck 1948, Lafon 1960, among others). But today this theory has very few defenders (see however, outside the Basque field, Williams 1987 and Bittner 1988). The rejection of the Passivist Theory followed the works by Anderson (1976). Another proposal has been to consider Basque as an extended ergative language in the sense of Dixon (1979), see Levin (1983).

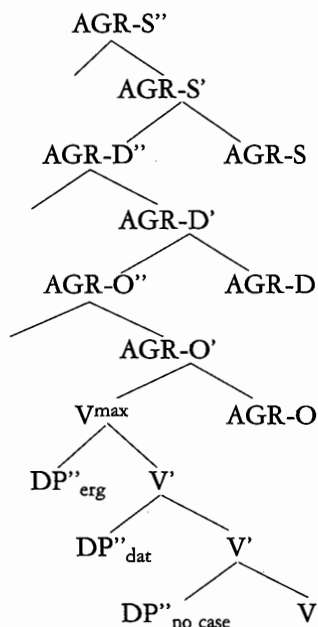


of L(exical) projections. Further, I also assume that Spec of F-projections of lexical heads are L-related. Following Chomsky (1989b), we define L-relation as in (3):

- (3) A is L-related to B, B a lexical category, if A is included in a projection of B; (A includes B if every segment of A includes B).

In this view, Specifiers of AGR-Ps are L-related, since they are included in every segment of a projection which is a projection of V. I also assume that L-related positions are argument positions.<sup>5</sup> [Spec, AGR] positions are A-positions, because agreement phrases are F-projections of V, and thus, are L-related. Abstracting away from other inflectional categories like TP, and ignoring their interactions with agreement, let us outline a structure of Inflection based on AGR-Ps:

(4a)



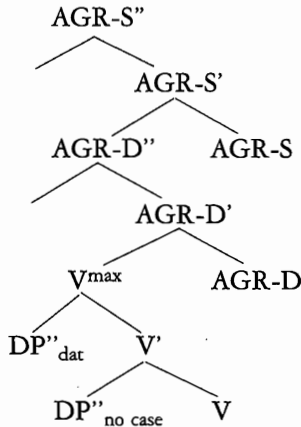
(5) Argument positions are L-related positions. They include theta-related VP internal positions, and Spec of F-projections of V (such as AGR-Ps). On L-relations, cf. Chomsky (1989b): Most Basque linguists, explicitly or implicitly, have assumed that DPerg in its agreement position is in an A-position. Empirical evidence showing that the head position of the chain is an A position is provided by weak cross over effects (WCO). Thus see the following contrast:

- (i) \*?nor<sub>i</sub> jo zuen bere<sub>i</sub> aitak e<sub>i</sub>  
 who.ACC hit AUX his father.ERG  
 Who did his (own) father hit?
- (ii) nor<sub>k</sub><sub>i</sub> jo zuen e<sub>i</sub> bere<sub>i</sub> semea?  
 who.ERG hit AUX his (own) son.ACC  
 Who hit his (own) son?

(i) is a classical illustration of WCO, and contrasts with (ii). Assuming the Bijection Principle (Koopman & Sportiche, 1982), e<sub>i</sub> in (ii) binds *bere* and is in an A position; (cf. the following contrast: *Peter seems to his mother to be the best* vs ?\* *Who does it seem to his mother that Mary saw?*).

The matching between inflectional structure and case morphology as shown in (4a) is reminiscent of other previous proposals (see especially Laka 1988).<sup>6</sup> However, I will argue that, while AGR-O assigns accusative Case to inherently non Case marked DPabs in transitive sentences, AGR-S assigns nominative Case to DPabs in unaccusative sentences. The D-structure of unaccusative sentences is illustrated in (4b) below:

(4b)



In the first section, I show that Basque corresponds to an ergaccusative language in the sense of (1), and I give the main indications regarding the relevant data in that language. In section 2, I examine the proposal of considering ergative case as an inherent Case (see also Levin & Massam 1984, Williams 1987, Mahajan 1989). I discuss the conditions in which ergative case is assigned and realized, assuming there is DP<sub>erg</sub> movement forming an L-related A-chain. In order to provide an account for DP<sub>erg</sub> movement, I will formulate the Condition for inherent Case marking (17). Despite crucial differences in the formulation, this latter Condition keeps a core idea of the Uniformity Condition discussed by Chomsky (1986a), since it assumes the possible compositional character of inherent Case marking (under the same lexical domain), and distinguishes between Case assignment (at D-structure) and Case realization (at S-structure). In section 3, I analyze the absolutive case, assuming that Basque verbs are not structural Case assigners and cannot have more than one non inherently Case-marked argument. Under these assumptions, I will propose that absolutive is a morphologically non-marked form, which corresponds

(6) Laka (1988) proposes that the heads of F-projections are rather T(ense) (on the top), M(odality), and R(oot) (on the bottom). In her proposal, NP<sub>erg</sub>, NP<sub>dat</sub>, and NP<sub>abs</sub> occupy respectively the Spec positions of T'', M'', and R''. This analysis gives a direct account of verb inflection morphology (a question I will not directly discuss in this paper). Laka doesn't deal with the question of Case marking, and it is not clear whether her analysis is compatible or not with the ergaccusative analysis: probably it is, with respect to the analysis of ergative as an inherent Case, but it seems to be at odds with the analysis of absolutive as corresponding to structural Case assigned by distinct F-heads. Cheng & Demirdash (1990), following Laka's proposal, examine also the possibility that AGR-Ps (not DPs themselves) are generated in Spec of T'', M'', and R''.

to structural Case marking. DPs which are not inherently Case marked must move to get structural Case from functional heads. With unaccusative verbs, I will argue, D-object DPs move to [Spec, AGR-S"] to get (nominative) Case. With transitive verbs, the [Spec, AGR-S"] position is occupied by the DPerg, and D-object DPs move to [Spec, AGR-O"], where they are assigned accusative Case. This last point accounts for the fact that Basque has obligatory object agreement. Since all verb arguments but one (at most) receive inherent Case, nominative-accusative sentences are not allowed in Basque. In the following section I will discuss some consequences of this analysis regarding several constructions: object incorporation and object genitivization in nominalized sentences; passive and implicative constructions.

### 1. Data on Ergaccusativity in Basque.

I will briefly show, first, that Basque is morphologically ergative, and second, that it is syntactically accusative. The main arguments of this section are not new and they are well-known by linguists familiar with the Basque language. Since the question is not controversial, I will only keep in this presentation the most salient elements which can be useful to non-specialist readers. Before entering the matter, let me briefly indicate that Basque is a relatively free word order language, though most of the authors agree that there is a neutral order SOV (following de Rijk 1969). It also has a rich agreement system and it allows empty forms (pro) for pronouns which agree with verbs. Agreement occurs with ergative, dative and absolutive DPs.

#### 1.1. *Ergative morphology in nominal inflection*

Basque is morphologically ergative or, more accurately, morphologically active. This is obvious in nominal inflection. On one hand, the subject DPs in transitive sentences (5a) and intransitive active sentences (5b) receive a special marker, the suffix *-k*, called ergative (*Maddi-k* 'Mary'-ERG in (5a,b)).<sup>7</sup> On the other hand, the object DPs in transitive sentences (5a), and the subject DPs in intransitive sentences with unaccusative verbs (5c), don't take any overt suffix (*sagarra-Ø* 'the apple' in (5a,c), where the absence of overt suffix is glossed -Ø):

- (5) a. *Maddi-k*                    *sagarr-a- Ø*                    *jan du*  
           Mary- ERG            apple-        DET-ABS            eat AUX  
           Mary ate the apple

(7) As pointed out by Dixon (1987) recent literature has introduced some confusion in the terminology. The use of *ergative* to name the case now usually called *ergative* was introduced by Ditt in 1929 in Caucasian studies (Tchekhoff 1978). In Basque grammars the name *active* was traditionally used (it appears already in the 17th century), but most modern linguists have been reluctant to employ it. Regarding the names of the two classes of intransitive verbs, the names used by Perlmutter (1978) and by Burzio (1986) are not felicitous in the case of languages like Basque. Indeed, unergative verbs in Perlmutter's terminology are the verbs in which subject NPs receive the ergative suffix, and ergative verbs in Burzio's terminology are verbs in whose subjects NPs cannot receive the ergative suffix or cannot select the [+ERG] auxiliary. Since Basque shows a semantic split in the nontransitive verbs, the term *active* is not in contradiction with other uses it has in general linguistics; (cf. Dixon 1977, Harris 1981, 1982, Durie 1987).

- b. *Maddi-k bazkaldu du*  
 Mary- ERG lunch AUX  
 Mary had lunch
- c. *Sagarr-a- Ø erori da*  
 apple- DET-ABS fall AUX  
 The apple fell

The usual morphological analysis says that the absence of an overt suffix in nominal inflection corresponds to a morphological case ( $\emptyset$  suffix) called absolutive.<sup>8</sup> The implicit and, most often, explicit assumption underlying this analysis is that absolutive case is a single case, in fact one of the Basque grammatical cases<sup>9</sup> on a par with dative and ergative cases. This view clearly contradicts our proposal. However, for the sake of convenience, I will keep using the term in the usual way in this section. But it must be clear that absolutive case only means structural Case within the view adopted here. It can actually correspond to both nominative and accusative Cases.

### 1.2. Ergative morphology in verbal inflection

Besides nominal inflection, ergative morphology is also reflected in verbal inflection, both in Auxiliary Selection, and in person / number agreement marking within verbal inflection.

1.2.1. Auxiliary Selection is carried out in Basque in a way similar to Italian.<sup>10</sup> However this selection in Basque strictly corresponds to the presence or the absence of ergative agreement within the inflection. On one hand, ordinary transitive sentences and intransitive active sentences have a [+ERG] auxiliary, that is, an auxiliary which carries ergative agreement (e.g. \**edun* 'to have'). On the other hand, sentences with an unaccusative verb must have a [-ERG] auxiliary, that is, an auxiliary which excludes ergative agreement (e.g. *izan* 'to be'). The biunivocal correspondance between the type of auxiliary selected ([+ERG]) and ergative agreement makes Auxiliary Selection reflect ergative morphology. This is illustrated in (6):

- (6) *Auxiliary selection in Basque:*
- |        |   |
|--------|---|
| [+ERG] | aux: * <i>edun</i> 'to have', * <i>in</i> , * <i>ezan</i> →<br>transitive / intransitive active verbs |
| [-ERG] | aux: <i>izan</i> 'to be', * <i>edin</i> → unaccusative verbs  |

For example, for verbs which show the transitive (causative) / unaccusative (inchoative) alternation, each of the auxiliary types will correspond to one option. See (7) below with the verb *hil* 'to die, to kill' (Basque is a pro-drop language; dropped pronouns are not shown in the examples):

(8) The term *nominative* has also been traditionally used in Basque grammars. Such a name could be interpreted as linked to the Passivist Theory, where absolutive DPs are analyzed as subjects, even in transitive sentences.

(9) Grammatical cases are defined in Basque grammars as cases which carry verb agreement. They are opposed to instrumental and locative cases; see Euskaltzaindia (1985, 322).

(10) Most Basque verbs need an auxiliary for inflection. However, there are some verbs which can also be inflected without auxiliary (see the paradigms in (8) for an illustration). The morphology of agreement inflection doesn't change in both cases. When a verb can have synthetic inflection (i.e. without auxiliaries) it is unambiguously [+ERG] or [-ERG] in this use.

- (7) a. *bilen n—a—iz*  
 die.FUT 1sgA-PRES-AUX  
 [-ERG]  
 I will die
- b. *bilen n—a—u—zu*  
 kill.FUT 1sgA-PRES-AUX-2sgE  
 [+ERG]  
 You will kill me

1.2.2. Basque has multicase person agreement, and inflected verbs must agree in person with ergative and absolutive DPs. The examples in (7) above illustrate this point. In (7a) the inflected verb contains a 1st person absolutive prefix (*n-*); in (7b) it contains both a 1st person absolutive prefix (*n-*) and a 2nd person ergative suffix (*-zu*). Agreement is obligatory.<sup>11</sup>

Observe that the position and the form of the person agreement marker for the absolutive inside the inflection do not change in (7); the prefix *n-* in both inflected forms of (7) stands for the 1st person absolutive, which corresponds to the subject DP in (7a), and to the object DP in (7b). On the other hand, the subject DP is encoded as a prefix in the inflection in (7a), but as a suffix in the inflection in (7b). This is why Basque inflectional verb morphology is assumed to follow the ergative pattern.

This observation applies to most verb paradigms.<sup>12</sup> The verb paradigms below give an overview of Basque verbal morphology: in (8a) the root corresponds to the unaccusative verb *ibili* 'to walk'; in (8b) the root corresponds to the transitive form *erabili* 'to use'. The comparison between both paradigms, [-ERG] in (8a) and [+ERG] in (8b), confirms that, like in (7), person agreement in inflectional morphology does not reflect the syntactic ambiguity of absolutive DPs.

(8)	a.	<i>person</i>	(ABS)	<i>tense/</i>	<i>root /</i>	<i>number</i>	(ABS)	
		(1st sg)	<i>n</i>	<i>a</i>	<i>bil</i>	∅		Im walking
		((fam.)2nd sg)	<i>h</i>	<i>a</i>	<i>bil</i>	∅		You are walking
							(sg. fam.)	
		(3rd sg)	∅	<i>da</i>	<i>bil</i>	∅		He/She is walking
		(1st pl)	<i>g</i>	<i>a</i>	<i>bil</i>	<i>tza</i>		We are walking

(11) Dative person agreement is also required when absolutive person agreement is absent or has no overt realization, i.e. when it is 3rd person (not marked and glossed). See the example in (i) where the inflection shows agreement with the three argument NPs.

(i) *zuk eni sagar bat eman d—i—da-zu*  
 you.ERG me.DAT apple one.ABS given 3A-PRES-AUX-1D-2E  
 You gave me one apple

(12) However, sometimes person agreement morphology appears in a different way. These alterations appear for ergative agreement markers in non-present tense paradigms when there is no overt absolutive person agreement (3rd person absolutive, or no absolutive agreement at all). In this case ergative person agreement markers have the same position (prefixed) and the same form as absolutive person agreement markers. These forms have been analyzed sometimes as an illustration of split ergativity (cf. Trask 1979, and, for an analysis against this view, Laka 1988).

((non fam.) 2nd sg)	<i>z</i>	<i>a</i>	<i>bil</i>	<i>tza</i>	You are walking (sg. non fam.)
(2nd pl)	<i>z</i>	<i>a</i>	<i>bil</i>	<i>tza -te</i>	You are walking (pl.)
(3rd pl)	∅	<i>da</i>	<i>bil</i>	<i>tza</i>	They are walking
b. <i>person</i>	(ABS)/	<i>tensel</i>	<i>root</i> /	<i>number</i> (ABS)/	<i>person</i> (ERG)
(1st sg)	<i>n</i>	<i>a</i>	<i>rabil</i>	∅	<i>t</i> (1st sg)
((fam.)2nd sg)	<i>b</i>	<i>a</i>	<i>rabil</i>	∅	<i>k/n</i> (2nd sg fam.: masc./fem.)
(3rd sg)	∅	<i>da</i>	<i>rabil</i>	∅	∅ (3rd sg)
(1st pl)	<i>g</i>	<i>a</i>	<i>rabil</i>	<i>tza</i>	<i>gu</i> (1st pl)
((non fam.)2nd pl)	<i>z</i>	<i>a</i>	<i>rabil</i>	<i>tza</i>	<i>zu</i> (2nd sg non-fam.)
(2nd pl)	<i>z</i>	<i>a</i>	<i>rabil</i>	<i>tza -te</i>	<i>zu-e</i> (2nd pl)
(3rd pl)	∅	<i>da</i>	<i>rabil</i>	<i>tza</i>	∅- <i>te</i> (3rd pl)

*N-a-rabil—zu* You make use of me

*Z-a-rabil-tza-t* I make use of you.

...

These are the morphological data concerning the ergative part of ergaccusativity. Obviously, to be an ergaccusative language Basque must also satisfy the right side of (1), and must have an accusative syntax. I will not examine this point in detail now, since most of the authors today admit that Basque is an accusative language as far as syntax is concerned; for a review of different arguments, see Ortiz de Urbina (1989) and Salaburu (1989). However, I understand ergaccusativity here as including the consequences of Burzio's generalization for the analysis of unaccusative verbs.<sup>13</sup> The latter point is challenged in Levin (1983), but convincingly supported in my view by several authors (Hualde 1986, Eguzkitza 1986, Ortiz de Urbina 1989); see also 3.2.

As seen in (8a,b), besides person agreement, absolutive DPs have a specific and autonomous number agreement for all persons. Absolutive number agreement, like absolutive person agreement, does not distinguish between the syntactic functions of the absolutive DPs it agrees with. Thus, the absolutive number agreement (only overt with plural: *-tza-* in (6)) doesn't change when it agrees with a subject DP (8a) or with an object DP (8b). Thus, number agreement follows the ergative/ absolutive pattern.

### 1.3. *Syntactic accusativity*

The fact that Basque syntactic processes are sensitive to S-structure configurations and not to D-structure relations, or to morphological case marking, can be shown in several constructions. I will only mention two of them here: object incor-

(13) Obviously I do not assume Burzio's Generalization in its genuine formulation, since I claim that Basque verbs do not assign structural Case. I will keep however its basic descriptive insight: when there is no subject theta-role, accusative Case cannot be assigned (by AGR-O in our analysis). Within our proposal, this is the result of several constraints, including Extended Projection Principle, and constraints on structural Case marking; see below (32).

poration in nominalized sentences, and control structures. The first construction shows that some processes apply only to objects of transitive sentences (and not to all D-objects); the second one shows that some processes apply to subject DPs, whatever the morphological case they receive, either absolutive or ergative.

1.3.1. Non specific objects of nominalized transitive sentences can incorporate into the verb. This option is illustrated in (9a) below:

- (9) a. [*Zuk handik ur isurtzea*]-*k* *barritu*  
 you.ERG there.LOC water run.NOML.DET-ERG surprised  
*ninduen*  
 1A.AUX.3E  
 [You to run water from there] surprised me
- b. [*Zuk handik ura isurtzea*]-*k*  
 you.ERG there.LOC water.DET.ABS run.NOML.DET-ERG  
*barritu ninduen*  
 surprised 1A.AUX.3E  
 [You to run water from there] surprised me

In transitive sentences the object noun can incorporate (9a) or it may be realized without incorporating (9b). The syntactic incorporation illustrated in (9a) is restricted to transitive sentences. Indeed, as shown in (10a), noun incorporation is blocked in unaccusative sentences.

- (10) a. \* [*Handik ur isurtzea*]-*k* *barritu*  
 there.LOC water run.NOML.DET-ERG surprised  
*ninduen*  
 1A.AUX.3E  
 [To water-run from there] surprised me
- b. [*Ura handik isurtzea*]-*k*  
 water.DET.ABS there.LOC run.NOML.DET-ERG  
*barritu ninduen*  
 surprised 1A.AUX.3E  
 [The water to run from there] surprised me

It is obvious from the data above that object incorporation follows an accusative pattern, since only D-objects can incorporate in transitive sentences. On the contrary, absolutive case marking on object DPs is available in both kind of sentences (9b, 10b).

1.3.2. Obligatory control structures also correspond to an accusative pattern. Indeed the controlee of control verbs can only be the S-subject DP (no matter whether it is ergative or absolutive). Thus obligatory control is blind to morphological case marking. See the examples of obligatory control structures in (11-12):

- (11) *Ez dakit* [*zer-Ø egin*]  
 NEG PRES.know.1sgE what-ABS do  
 I don't know [what to do]

- (12) a. \*Ez        *dakit*                    [zer- Ø gerta]  
           NEG    PRES.know.1sgE    what-ABS happen  
           I don't know [what to happen]
- b. \*Ez        *dakit*                    [nor-k egin]  
           NEG    PRES.know.1sgE    who-ERG do  
           I don't know [who to do it]

The examples in (11-12) are control structures, where the controlee is the subject DP of the indirect question. In (11) the subject DP (non overt) is the controlee, and the sentence is well formed. On the contrary, in (12), the WH-words are S-subjects. Thus, there is no control on the subject DPs and (12a, b) are bad.

We conclude that the constructions discussed above<sup>14</sup> clearly show that Basque syntax and case morphology don't match, in the way illustrated in (1), and consequently that Basque is an ergaccusative language.

## 2. Ergative Case as an Inherent Case

In the literature, the Basque ergative case has been analyzed as (i) a kind of preposition (an option taken in Basque studies by linguists defending the Passivist Theory); (ii) a morphological case/Case assigned by I(nflection), see Goenaga (1980), Hualde (1986), Ortiz de Urbina (1989), and, within a multi-headed conception of Inflection along the lines of Laka (1988), Cheng & Demirdash (1990). There is another option which has not been developed within the Basque field, although it has been adopted for other ergaccusative languages; see for example Levin & Massam (1984), Williams (1987), Mahajan (1989, 1990) among others. This option, which I will defend here, claims that ergative case is an inherent Case assigned by V.<sup>15</sup>

I assume that Basque verbs assign theta-role to all the arguments they select within the lexical projection V, and that DP<sub>erg</sub> is base generated inside VP. The proposal that all the arguments of the verb are generated VP internally (including the 'external' argument) has received considerable support in the past few years (see Fukui & Speas 1986, Kitagawa 1986, Koopman & Sportiche 1988, Kuroda 1988, Diesing 1988, ...). Thus, this is not presumably a property of ergaccusative constructions.

In this section I first examine DP<sub>erg</sub>-movement (2.1.), and formulate a Condition on inherent Case marking that relates DP<sub>erg</sub>-movement to V-movement to AGR-S (cf. (17)) (2.2.); I also discuss the question of proper government of traces of moved DPs, using the notion of extended chain as defined by Chomsky (1986b), (2.3.). In (2.4.) I discuss the case of expletive ergative DPs.

(14) Among the other arguments which confirm that Basque is syntactically accusative, those referring to binding of lexical anaphors have also been mentioned by several authors, including Levin (1983), Salaburu (1986), Hualde (1986), Ortiz de Urbina (1989).

(15) See Cheng & Demirdash (1990) for another proposal where theta-roles are indirectly assigned to the argument NPs base generated outside VP. Within their proposal, although ergative is an inherent Case, DP<sub>erg</sub> is not VP internal at D-structure, because functional heads are both Case and theta-role assigners.



### 2.1. DPerg Movement

2.1.1. Following Chomsky (1986a) I give two properties that distinguish inherent Case from structural Case: (i) it is assigned at D-structure, contrary to structural Case which is assigned at S-structure, and (ii) it is straightforwardly linked to theta-role assignment, in the sense that the element which is the Case assigner also theta-marks the DP; on the contrary structural Case is assigned independently of theta-marking.<sup>16</sup>

Assuming that subject DPs are generated VP internally and that verbs are not structural Case assigners, D-structure subject DPs in nominaccusative constructions must move in order to satisfy the Case Filter. On the contrary, if ergative DPs are Case marked in their D-structure position (sister to V'), one could expect they need not move, because the Case requirement can be satisfied VP internally. However, the latter prediction is not fulfilled, since there is DPerg-movement in Basque.

2.1.2. DPerg movement in Basque is transparent, because ergative agreement is obligatory (see however section 4.2.). Consider (13):

- (13) *Liburuak amari nik ekarri \*zitzaizkion /*  
 books.ABS mother.DAT I.ERG brought 3A.AUX.plA.3D  
*nizkion*  
 (3A).1E.AUX.plA.3D  
 I brought the books to (my) mother

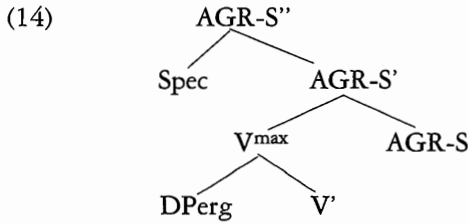
In (13) I give two auxiliary forms. The first one (*zitzaizkion*, [-ERG] auxiliary) agrees with the absolutive DP and the dative DP, but not with the ergative DP. The second one (*nizkion*, [+ERG] auxiliary) agrees with the absolutive, dative and ergative DPs. Only the latter auxiliary form is grammatical, because it has ergative agreement.

As we saw in section 1, ergative DPs are subject DPs. Within our analysis of sentence structure illustrated in (4), an S-subject occupies the [Spec, Sub-AGRS"] position (an L-related and, thus, an A-position). Thus, we assume that DPerg movement results in an A-chain.

### 2.2. Conditions on Inherent Case Marking

If the ergative case is an inherent Case, how can we account for DPerg-movement in a structure like (4), repeated here in a simpler configuration for convenience?

(16) Following Chomsky (1986a), I assume that inherent Case doesn't imply assignment of one and only one particular theta-role; (see also Williams 1987, Baker 1988). The reader must not infer from our analysis that ergative case (or dative case) assignment in Basque is linked to one specific theta-role (as these are usually identified in current works). This would be false, since ergative DPs can have agentive and also experiencer or instrumental theta-role, for example. The restrictions on the specific theta-role(s) related to ergative or dative case assignment is another (separate) issue that I will not discuss here (though I do admit that there are such restrictions); cf. the distinction between semantic Case and inherent Case in Baker (1988, 113-4).



Two kinds of proposals come to mind to explain why DPerg moves in (14). Within the first one, DPerg-movement is required from 'outside', that is, for reasons independent of DPerg itself. For example, it would be the consequence of the Extended Projection Principle, or the consequence of the fact that Inflection has an ergative agreement marker which would have to be satisfied (see for example the Principle of Agreement discussed by Fukui 1988). This view, conceptually, entails the idea that Case marking is fully accomplished at D-structure, since DPerg-movement results from other constraints. It is obviously in contradiction with the standard view that only heads of A-chains are Case marked.

The second type of explanation follows the standard analysis of DP-movement. Within this view, DPerg-movement results from requirements on the DPerg itself, and more specifically from conditions on Case marking. Obviously, this analysis implies that, even if the ergative is an inherent Case, Case marking is not fully accomplished at D-structure. The distinction which comes to mind here is the one discussed in Chomsky (1986a) between Case assignment and Case realization. This distinction suggests that under some conditions inherent Case realization is satisfied in a position different from the one where it is assigned.

Even though the case discussed in Chomsky (1986a) is different from DPerg, I will follow this idea, and will assume the (possible) compositional character of inherent Case marking (i.e. assignment at D-structure in position  $x$ , realization at S-structure in position  $y$ ;  $x$  and  $y$  being respectively the head and the tail of the same A-chain).

Two possibilities at least seem to be available to implement this idea. The first one is to formulate some conditions on inherent Case realization; the second one, to derive the solution from properties regarding the inherent Case assigner.

The first option is discussed in Mahajan (1989). Mahajan proposes that the realization of inherent Case for DPerg in Hindi is submitted to a condition on Case realization. There would be, for example, a Licensing Condition such as (15) below:

- (15) *Licensing Condition*: Inherent ergative Case is realized under government by T

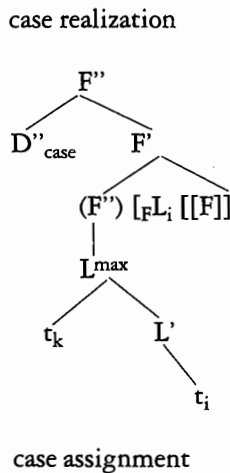
The licensing condition (15)<sup>17</sup> has the desirable effect of unifying DP-movement in nominaccusative languages, and DPerg-movement in ergaccusative languages.

(17) (15) is formulated for Hindi. Notice that under this formulation, the Licensing Condition is probably too weak in the case of Basque (assuming that after V-movement VP is not a barrier). However, I will not pursue this issue. See also Mahajan (1990) for another proposal, where Structural Case is added to inherent ergative Case. If the last suggestion were maintained, Case Theory ought to be revised.

However, it looks rather stipulative.<sup>18</sup> Furthermore, it implies that DPerg-movement is always obligatory (assuming that T doesn't govern DPerg inside VP, since otherwise (15) serves no purpose). This is not a desirable consequence, because it excludes the availability of ergative DPs within VP at S-structure. As we will see in section 4, some constructions in Basque seem to indicate that ergative DPs can be inherently Case marked without moving. Thus, I will propose an analysis of DPerg movement which follows the second perspective and links together DPerg-movement and inherent Case assigner-movement (i.e. V-movement).

The intuition behind our proposal is that movement of the inherent Case assigner can disrupt full accomplishment of inherent Case marking in the theta position (Case-assignment position and Case-realization positions being, thus, distinct positions). More precisely, I would like to suggest that head-movement of an inherent Case assigner can entail a correlated movement of the DP(s) it inherently Case marks.<sup>19</sup> The latter moves to the Spec position of the F-projection where the Case assigner moves. This can be illustrated by the diagram in (16), where L stands for a lexical head, F a functional head of L (say, T or AGR), and D''<sub>case</sub> an inherently Case marked DP:

(16)



DPerg movement is an illustration of compositional inherent Case-marking as shown in (16). The question arises whether the correlation between DP-movement and inherent Case assigner movement is obligatory, or whether it is restricted by (probably language dependent) constraints. I will assume that whenever a Spec of an

(18) If the Licensing Condition is formulated in such a way that it restricts licensing of DPerg to subject position, then, it is empirically similar to the proposal that inherently Case marked ergative DPs must receive structural Case; cf. Mahajan (1990).

(19) This can be analyzed as a kind of Government Opacity as opposed to the Government Transparency discussed by Baker (1988). Recall that the Government Transparency Corollary (Baker, 1988) only holds for incorporation into a lexical head.

L-related projection is available to  $DP_{case}$ ,  $DP_{case}$  movement must follow V-movement. In the case of  $DP_{erg}$  in ergaccusative constructions, this is always the case since the  $DP_{erg}$  is an S-structure subject (whether there is overt ergative agreement like in Basque or not, like, say, in Hindi). In the case of dative, language dependent variation has to be allowed.<sup>20</sup>

I formulate the conditions regarding compositional Case marking as in (17); see also, however, fn. 47:

(17) *Condition on inherent Case marking:*

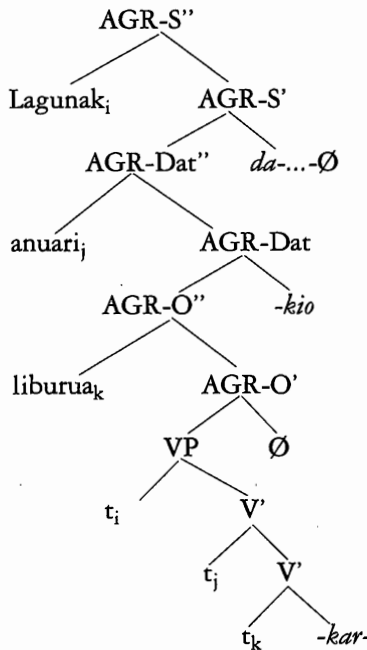
Let  $\alpha$  be an inherent Case assigner and  $\beta$  the head of an F-projection of  $\alpha$ ,  $\alpha$  Case-marks inherently  $\gamma$ , iff:

- i.  $\alpha$  theta-marks  $\gamma$ ;
- ii. where  $\alpha$  moves to  $\beta$ ,  $\alpha\beta$  and the chain  $[\gamma_i, \dots, \gamma_n]$  are coindexed.

Applying (17) to Basque, one obtains the representations of sentence structure given in (4). This is illustrated in (18), where the moved ergative DP, and in the same manner the dative DP, form an inherently Case marked A-chain.

- (18) a. *Lagunak anaiari liburua Ø-da—kar-kio-Ø*  
 friend.ERG brother.DAT book.ACC 3A-PRES-bring-3D—3E  
 The friend is bringing the book to (my) brother

b.



(20) In Basque, one interesting case is partitive. Assuming that partitive is an inherent Case (Belletti 1988), I will leave for further research the task of determining whether or not there is  $DP_{partitive}$ -movement.



element for A-bound traces under the concept of Minimality we are following; cf. Chomsky (1986b: 76).<sup>24</sup> We would like to make sure that the traces  $t_i$  and  $t_k$  are antecedent governed in (22):

- (22) [<sub>T'</sub> *Manexek*<sub>i</sub> [<sub>AGR-O</sub> *Maddi*<sub>k</sub> [<sub>V<sup>max</sup></sub>  $t_i$  [<sub>V</sub>  $t_k$   $t_i$  ] ]  $t'_i$  ] *dakus*]  
 John.ERG                      Mary.ACC                      3A.PRES.sec.3E  
 Johns sees Mary

(22) is a violation of the Minimality Condition, in the sense of Chomsky (1986b).<sup>25</sup> Under the narrow interpretation the immediate projection of V (V') is a barrier to antecedent government of  $t_k$ ; under the broader interpretation, both  $t_k$  and  $t_i$  violate ECP, since  $V^{\max}$  and AGR-O" also are barriers: thus, antecedent government of  $t_i$  by the ergative DP is blocked.

The concept of extended chain provides a good solution to this problem. It leaves the terminal position of an X<sup>0</sup>-chain ( $t_i$  in (23)) to be antecedent-governed by chain coindexing.

This solution has been put forward by Chomsky (1986b: 74-80) to account for DP-movement with raising verbs and passives.<sup>26</sup> It takes advantage of the agreement relation between I and [Spec, I] and assimilates chain coindexing and agreement indexing. Consider (23), (cf. Chomsky 1986b: 169):

- (23) *John*<sub>k</sub> [ <sub>$\alpha$</sub>  *seem-I* ] [<sub>VP</sub>  $t_i$  [<sub>IP</sub>  $t_k$  *to be intelligent* ] ]

In (23) VP is a barrier to antecedent government of  $t_k$  by *John* (by Minimality). However, the sentence is well formed. Suppose that agreement indexing and chain coindexing must not be distinguished. Thus,  $i=k$  in (23), and  $t_i$  antecedent-governs  $t_k$  by chain coindexing under government. Chomsky defines chain coindexing as in (24):

- (24) a. C = ( $\alpha_1, \dots, \alpha_n, \beta$ ) is an extended chain if ( $\alpha_1, \dots, \alpha_n$ ) is a chain with index  $i$  and  $\beta$  has index  $i$ .  
 b. Chain coindexing holds of the links of an extended chain.

The solution is consistent with our proposal about DPerg-movement, provided that a single final position ( $t_i$  in (22)) can belong to more than one (independent) extended chain, with different coindexing.

Returning to (22), there are two extended chains as shown in (25):

- (25) a. (*Manexek*<sub>i</sub>,  $t_i$ ,  $t_i$ ), where  $i=1$     b. (*Maddi*<sub>k</sub>,  $t_k$ ,  $t_i$ ), where  $k=1$

In both cases the traces of the DPs ( $t_i$ ,  $t_k$ ) are properly governed by  $t_i$ .

(24) Crucial in the sense that (under Rigid Minimality) theta-government is not sufficient to license the trace. The relevant example is super raising as in (i)

- (i) \* *a man seems there to be killed*  $t$

In (i)  $t$  is theta-governed, but, however, there is arguably an ECP violation. Within a framework using Relativized Minimality (Rizzi 1990), such a problem doesn't arise, but the whole concept of Relativized Minimality seems incompatible with our analysis.

(25) *Minimality Condition*: a is a barrier for b if a is a projection (broad interpretation)/ the immediate projection (narrow interpretation) of g, a zero-level category distinct from b. (Chomsky 1986b: 42). Our analysis is hardly compatible with the concept of Relativized Minimality proposed by Rizzi (1990).

(26) If the VP-internal-subject-analysis applies to nominaccusative languages, the concept of extended chain has to be used in the same manner (within the broad interpretation of the Minimality Condition).

2.4. *Lack of Nonargument Ergative Expletives*

The hypothesis of ergative as an inherent Case predicts the lack of nonargument ergative expletive DPs (see also Levin & Massam 1984). Indeed, since inherent Case marking implies theta-role assignment, nonargumental expletives cannot be inherently Case marked.

This prediction is fulfilled in Basque,<sup>27</sup> though one could consider the following cases as counterexamples:

- (26) a. *e euri egin du*  
           rain made AUX-3E  
           It rained
- b. *e irudi du [zerbait gertatu dela]*  
           seem Aux.3E smth happened 3A.AUX.COMPL  
           It seems [that something happened]

In (26a,b) *e* is an empty pronominal ergative, and it brings about verb agreement. This *pro* is not referential and cannot be overtly realized. But does this show Basque has nonargumental ergatives? No. In the case of (26a), an atmospherical expression, we can follow Chomsky (1986a) by admitting that the subject DP is a quasi-argument (i.e. that it is nonreferential, but does have a theta-role). I will show the same analysis can be provided for (26b) too.

The locution *irudi ukan* 'seem' is [+ERG].<sup>28</sup> In many languages *seem*-verbs are raising verbs. Raising verbs require the subject not to be theta-marked, since it is the basic requirement for DPs in embedded sentences to raise from a non Case-marked position. So if *irudi ukan* were a raising verb, *e* in (26b) would be a nonargumental ergative. But there is no evidence of DP-raising with *irudi ukan*. Moreover there is evidence that *irudi ukan* assigns theta-role to its subject argument, as it is shown in (27):

- (27) *zuk/pro irudi duzu [pro eri zarela]*  
       you-ERG seem AUX.2E sick 2A.AUX.COMPL  
       lit. You seem [you are sick]

In (27) the sentential complement of *irudi ukan* contains an inflected verb form which has 2nd person absolutive agreement. Thus the subject DP of the embedded sentence is an empty pronominal. The subject of the matrix sentence too is *pro* or *zuk* (2nd ergative). Therefore there is no DP-movement in (27), and the subject of the matrix sentence must have received its theta-role from the matrix verb *irudi ukan* (cf. for a similar view Salaburu 1988).<sup>29</sup>

(27) Basque uses quasi-argumental empty expletives similar to the one in (26) and which have 3rd sg verbal agreement, for example in atmospherical expressions.

(28) *Irudi* 'to seem' has two kinds of verbal use. Joined to *\*edun* in a locution or synthetically inflected, it is [+ERG]. As a derived verb (*iruditu*), with a periphrastic inflection, it is a [-ERG,+DAT] verb.

(29) I will not examine which theta-role is assigned by *irudi ukan*. I do not see why it would have to be different in (26b) and (27). The opposition between both examples lies on referentiality (in Chomsky's sense) rather than on thematic distinctions.

Even though *irudi ukan* and atmospherical (or time) expressions are not counter-examples to the predictions following from the ergaccusative hypothesis, one would like to find more positive evidence of the lack of ergative nonargumental expletives. Impersonal sentences offer us a possibility to test this prediction.

Impersonal sentences can be realized by lexical saturation of the subject argument (cf. Rizzi 1986, and for an application to Basque, Ortiz de Urbina 1989, and Oyharçabal 1989). Therefore the subject argument of impersonal verbs has no realization in syntax. See now what happens with monadic verbs, comparing the situation for active and unaccusative verbs.

Impersonal sentences with monadic verbs display the structure shown in (28):

(28) *Nonarg. expl. - Verb - AUX*

Even though the expletive in (28) has to remain empty in Basque, auxiliary selection helps us to determine whether the empty expletive in impersonal sentences is ergative or not. If ergative nonargumental expletives were allowed, we would have a [+ERG] auxiliary in impersonal sentences with active monadic verbs, just like we find [-ERG] auxiliaries with impersonal unaccusative sentences (29b). However in active intransitive sentences [+ERG] auxiliaries are not allowed as shown in (29a):

(29) a. *Holakoetan*,  $pro_{expl}$  *ihardokitzen* *da*  
withstand.ASP 3A. AUX [-ERG]. AUX  
/ \**du*  
[+ERG] . 3E

In such cases, one withstands

b. *Holakoetan*,  $pro_{expl}$  *joaten da* / \**du*  
go.ASP 3A.AUX [-ERG] AUX [+ERG].3E

In such cases, one leaves

Following previous assumptions, in both sentences of (29) the subject DP is a nonargumental expletive pronominal, required by the Extended Projection Principle (Chomsky 1981). Assuming that licensing of *pro* requires Case-marking (Rizzi, 1986),  $pro_{expl}$  is Case-marked in (29a,b). In fact, it receives structural Case from AGR-S" (see next section). Since ergative case is excluded in (29a) (like in (29b)), this confirms that nonargumental expletive DPs cannot be ergative: ergative is an inherent Case and must be theta-related.

### 3. Absolutive Case as Structural Case

Let us now consider absolutive DPs. The present analysis assumes that absolutive corresponds to structural Case. Structural Case is assigned to DPs that do not receive inherent Case at D-structure. In Basque structural Case is not phonologically realized, and there is no morphological evidence showing syntactic dichotomy. However the present analysis claims that both nominative and accusative Case are assigned by different structural Case-assigners: AGR-S and AGR-O (not V) respectively. Together with inherent ergative Case-marking, these elements will help us to provide



an account for Case-marking and some other related phenomena in Basque. In this section, I will discuss the following points:<sup>30</sup>

- Obligatory object-agreement and lack of nominaccusative constructions; 3.1.
- Syntactic dichotomy of DPs receiving the zero case (structural Case); 3.2.
- Parallelism between case morphology and D-structure grammatical relations; 3.2.<sup>31</sup>
- Structural Case requirement and verb-morphology; 3.4.

### 3.1. *Object-Agreement and Lack of Nominaccusative Constructions*

Let us consider the case of transitive sentences. Two different points must be accounted for: object agreement and lack of nominative DPs.

Assuming that V does not assign structural Case in Basque (a proposal that is formulated in (32)) object agreement follows straightforwardly from Case requirements. DPs which do not receive inherent Case must move to a position where they can satisfy the Case requirement. In a transitive sentence, if the object DP does not move to Spec of AGR-O", the sentence is ungrammatical:

- (30) \**Nik zu ikusi dut*  
 I.ERG you.ACC seen AUX.1E  
 I saw you

In (30) the inflected auxiliary does not agree with the 2nd person object. If the verb were able to assign structural Case, the object DP would not have to raise to get Case, and agreement would be optional. This is what happens in Hindi with long distance agreement. In this case, the infinitive (and then the matrix verb) can optionally agree with the embedded object, depending on object movement; see Mahajan (1990: 92).<sup>32</sup>

(30) Ortiz de Urbina (p.c.) observes that the analysis proposed here does not explain verb morphology, since, for example, subject agreement induces both prefixation (ergative) and suffixation (nominative), whereas, object agreement and subject agreement with unaccusative verbs display the same morphology (prefixation); see (8). This is obviously true. As for the first point (subject agreement), I think the two agreement types correspond to nominal morphology (ergative case and structural case). But as for the second point—in fact the hard core of ergativity—one could propose to extend what can be said for nominal morphology (i.e. that structural case is a zero-case) to agreement morphology. However, this remains somewhat artificial.

(31) One could propose that grammatical relations are directly encoded by case morphology in Basque. In this view, structural Case is only assigned to D-structure objects in both transitive and non-transitive sentences. This would be one interpretation of Levin's (1983) analysis. However, this implies that D-structure grammatical relations and thematic relations are related in a very fuzzy way, because thematic relations are not always reflected by case morphology; see fn. 43.

(32) The relevant examples are the following (Mahajan 1990: 87-8):

- (i) *raam ne roTii kbaanii caabii*  
 Ram (m.) erg bread (f.) eat (inf. f.) want (perf. pst. f.)
- (ii) *raam ne roTii kbaanaa caabaa*  
 Ram (m.) erg bread (f.) eat (inf. m.) want (perf. pst. m.)  
 Ram wanted to eat bread.

In (i) the infinitive and the matrix verb agree with the object (fem.). Mahajan assumes that the object of the lower clause moves to the higher AGR-O" through the lower AGR-O". On the contrary, in (ii) no agreement occurs, because the infinitive assigns structural Case and the object does not move.

The second question applies to the ungrammaticality of (31):

- (31) \**Manex Maddi ikusi Aux*  
 John.NOM Mary.ACC seen  
 John saw Mary

In (31) the subject DP does not have ergative case. However, since AGR-S can assign structural Case, one expects the subject DP to be Case marked in (31), and therefore the sentence to be well formed. But (31) is hopeless. Why can not structural Case be assigned to the raised subject DP in (31)?

As it is well known, several languages show split ergativity in nominal inflection. For instance, some languages, like Dyrbal (Dixon 1972: 49-50), do not have an ergative type inflection with pronouns, whereas they have it with nominals. Other languages, like Georgian (Harris 1981:41), split in accordance with Tense-Aspect distinctions. Thus, there is no general reason to exclude (31).

Baker proposed to base parameters of Case Theory depending on how many Cases of what type the verbs of a given language can assign (Baker 1988:167). Suppose now that these parameters must also include Case assignment by I, as it seems to be necessary. Thus, one could suggest that languages which do not show split ergativity in nominal inflection (like Basque) do not allow more than one argument with structural case (the D-object in unmarked cases, as we will see in 3.3.).<sup>33</sup> On the other hand, it could be said that true ergative languages (in Harris' 1982 sense) must have at least one argument with structural case.<sup>34</sup> The right formulation in such a case could be: [-Case<sub>struc</sub>] → [-ERG], meaning that in these languages ergative case is assigned only if there is an argument available for structural Case assignment.<sup>35</sup> (Observe that such a generalization does not exclude nominaccusative constructions for the very same language.)

(33) Mahajan (1990: 99) also mentions such a parameter for Hindi (limiting the restriction to assignment by inflectional heads).

(34) Tongan, for instance, satisfies this requirement. In this language all nontransitive verbs (unergative and unaccusative) must have an absolutive argument. Moreover when a transitive verb has only one argument in syntax (indefinite object deletion), the sentence is ambiguous between an active and a passive reading, as (i) below:

(i) 'oku ui 'a e f?fin? (Tchekhoff, 1978: 61)  
 PRES call Abs Det mother  
 The mother is calling / The mother is being called

Compare (i) with (ii) and (iii):

(ii) 'oku ui 'e he fa'? 'a e pep?  
 PRES call Erg Det mother Abs Det mother  
 The mother is calling the baby

(iii) \* 'oku ui 'e he fa'?  
 PRES call Erg Det mother

Dyrbal shows the same pattern; the sole argument is marked absolutive and the verb takes the reflexive suffix:

(iv) bayi yara dangaymarijnu (Dixon 1972: 90)  
 Abs man eat-REF

The man is eating (the reflexive reading is also possible, though pragmatically excluded).

(35) Notice that ergative case assignment is not conditioned by the sole selection of an object argument (in this case, we would obtain the reverse of Burzio's generalization). Indeed in these ergative languages, object arguments with an inherent case do not allow ergative case assignment. This can be seen in antipassives, (i):

(i) bayi yara bagul bargangu / bangul bargandu durgananu (Dixon 1972: 65-6)  
 Abs man Dar wallaby Inst. wallaby spear.PASS  
 The man is spearing wallaby (Man topic)

Following these views, I formulate the Basque option for the Case Parameter as in (32):

(32) *Basque option for the Case parameter:*

- (i) Structural Case is assigned by inflectional heads only;
- (ii) Structural Case is not assigned more than once.

In accordance with such a proposal, which, as we will see below, is independently motivated, suppose that in (31) the subject DP has structural Case. In that case, the object DP remains without Case, and the sentence is ruled out, as wanted.

However, (32) does not account for cases like (33):

- (33) a. \**Manex etsaiei ibardoki zaie*  
 John.NOM enemies.DAT resisted 3A.AUX.3plD  
 John resisted the enemies

In (33a) the non subject argument receives inherent case (dative), and the requirement that structural Case is assigned only once is satisfied. Therefore, if there were not any other constraints, the subject DP would be Case marked nominative, and the sentence would be well formed. See also (33b):

- (33) b. \**euskara orain arte irau da*  
 Basque.NOM now till last 3A.AUX  
 Basque has lasted until now

(33b) is not a transitive sentence, since it has a monadic verb. Thus, (32ii) does not rule out nominative assignment. However, the sentence is bad (*irau* 'last' appears as an active verb and assigns ergative to its argument).

I propose that the ungrammaticality in (33a,b) (and also (31), if we put aside other violations of Case Theory) follows from morphosyntactic restrictions on selectional properties of the verbs. *Ibardoki* 'resist' and *irau* 'last' select a DP that is assigned ergative case as major or sole argument. Failing to assign ergative case is enough to make (33a,b) ungrammatical, just like (33c) below, where the ungrammaticality results from failing to assign dative case to the second argument:

- (33) c. \**Manexek etsaiak ibardoki ditu*  
 John.ERG enemies.ACC resisted 3plA.AUX.3E  
 John resisted the enemies

I assume that each verb is associated with a theta-grid and is specified for case selection. Besides, verbs associate theta-roles and cases in a biunique fashion (Baker 1988: 113). In (33) the offending DP receives structural Case. However, since the sentence is ungrammatical, one may suggest that its theta-role is not visible at LF,

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In (i) the D-object receives morphological case (dative or instrumental). Therefore, the subject DP must receive structural Case,

That the generalization proposed must refer to Case (and not to thematic features) is also confirmed in dative shift constructions in these languages. When the patient takes an inherent case, the subject DP is still marked ergative, structural case being assigned to the recipient (Marantz 1984: 203-4).

because theta-role assignment for these arguments is linked to inherent case assignment. This does not mean we have to conform with unprincipled statements on lexical items to explain an ungrammaticality of this kind. Indeed, even if the restrictions on argument selection are tied to each predicator, one may think of some generalizations on the lexicon, specially in the way theta-roles and cases are related.<sup>36</sup> I will not pursue this issue here.

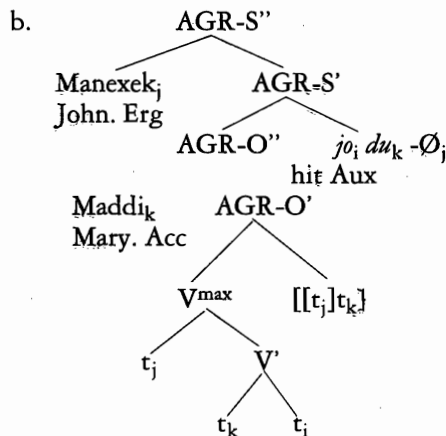
### 3.2. Syntactic Dichotomy of absolutive DPs

As indicated in the previous section, structural Case assignment by V is excluded in Basque. Obligatory object agreement in transitive sentences (along with obligatory subject agreement in unaccusative sentences) is the most obvious consequence of this constraint. So the analysis of zero-case we suggest assumes that structural Case is assigned at S-structure by AGR-Ps. Furthermore, we propose that AGR-S and AGR-O assign Case to subject and object DPs respectively.

This proposal follows from the basic features of ergaccusativity: (i) S-structure DPs show a regular and principled split depending on case marking; (ii) DPs that are not inherently Case marked are syntactically ambivalent at S-structure (though they are not so at D-structure, as we will see below). The analysis proposed here tries to capture these elements straightforwardly.

3.2.1. Let us consider the structure of a transitive sentence:

- (34) a. *Manex-ek Maddi-Ø jo du*  
 John-ERG Mary-ACC hit 3A.AUX.3E  
 John hit Mary



(36) If causativization is analyzed as a syntactic process, case marking on the causee in causative constructions creates some difficulties. In this case we have to admit some kind of case-substitution ergative-dative:

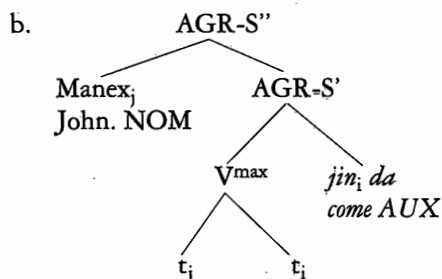
- (i) *Zuri lan egin arazi dizut*  
 you.Dat work CAUS AUX.2D.1E.  
 I made you work

I will leave open the question whether such an unusual case marking could be avoided. Baker (1988:193) observes that case assignment on the causee needs a special insertion rule. As he says: "the causee acts like it is neither structurally nor inherently Case-marked" (id.: 192).

In (34) the internal argument of the verb moves to [Spec, AGR-O"] where it receives accusative Case. It cannot raise to [Spec, AGR-S"], because this position is filled by the ergative DP.

Let us see now the case of an unaccusative sentence:

- (35) a. *Manex-Ø jin da*  
 John-NOM come 3A.AUX  
 John came



In (35) we admit that the moved DP raises up to the Spec of AGR-S". There is another alternative, which consists of making the DP move to the same position as in transitive sentences. This position is Spec of AGR-O" in (34), though, within this new option, the projection would have to be defined in another way: AGR-ABS" for instance (or Root" within Laka's 1988 proposal). Such an analysis would account for the syntactic ambivalence of structural Case, in an indirect way: although the subject DP would be the highest DP within the L-related complex (I keep on ignoring other inflectional heads), nevertheless it would fill different positions in active / transitive and unaccusative sentences.

Such an analysis would offer several advantages, specially by giving a more suitable account of verb morphology. However, I will dismiss it, because it would require two different positions for AGR-DAT with regard to AGR-ABS. In ditransitive sentences AGR-DAT is admitted to be higher than AGR-ABS (see Laka 1988, and in the same way (4a) in Section 1). This is reflected by the non marked word order: DPerg-DPdat-DPabs (S-IO-DO). On the contrary, there is strong evidence that in absolutive-dative sentences the absolutive DP is in a higher position than the dative DP. See the following examples:

- (36) a. *Haurrak elkarri hurbildu zaizkio*  
 children.ABS RECIP.D approached 3plA.AUX.3D  
 The children went near each other

- b. \**Elkar hurrei hurbildu zaie*  
 RECIP.ABS children.DAT approached 3A.AUX.3plD  
 Each other went near the children

In (36a) the DPabs binds the dative anaphor, whereas (36b) shows that the DPdat cannot bind an absolutive anaphor. This is accounted for if DPabs and DPdat

occupy asymmetric positions, where the former c-commands the latter. The same conclusion may be drawn from the following examples:

- (37) a. ??*Nori<sub>i</sub>        burbildu        zaizkio        bere<sub>i</sub> anaiak t<sub>i</sub>?*  
 Who.DAT    approached    3A.AUX.Apl.3D    his brothers.ABS  
 Who did his brothers go near?
- b. *Nor<sub>i</sub>        burbildu        zaie        t<sub>i</sub>        bere<sub>i</sub> anaiei?*  
 Who.ABS    approached    3A.AUX.3plD    his brothers.DAT  
 Who went near his brothers?

(37) illustrates classical Weak Cross-Over effects. In (37a) the dative WH-word A'-binds both its trace and *bere*. Therefore, the Bijection Principle is violated (see fn. 5). On the contrary, in (37b), *bere* is A-bound by  $t_i$ , and the absolutive WH-word A'-binds one variable only ( $t_i$ ). Thus, the variable and the operator being related in a biunique fashion, the Bijection Principle is not violated. Therefore there is strong evidence that the structure of absolutive-dative sentences is as shown in (4b).

These facts show that morphological likeness of nominative and accusative cases hides a structural difference.<sup>37</sup> The structures given in (34b) and (35b) capture this difference.

3.2.2. In order to make sure the zero case marked DP in (35) moves to [Spec, AGR-S"], and is not case marked accusative, some version of Burzio's Generalization must be admitted for Basque. Although accusative is not assigned by V in the present analysis, the same constraint as the one captured by Burzio's Generalization holds in Basque (i.e.  $T \rightarrow A$ , without taking into account the Case assigner). Thus we want to prevent sentences like (38) where the D-object does not raise to the subject position:

- (38) *pro<sub>expl</sub>    gizonak-Ø    etxera        doaz*  
 NOM    men-ACC    home.LOC    3plA.go  
 The men are going home

In (38) the argument DP receives structural Case from AGR-O. The Extended Projection Principle is satisfied since an expletive empty pronoun fills the subject position. However, since structural Case is assigned twice (nominative and accusative), (32ii) rules out representation (38); I repeat (32ii) for convenience below:

(32ii) Structural Case is not assigned more than once.

The examples in (39) below show that the argument DP in unaccusative sentences is an S-structure subject. When (38) is a sentential complement of *nahi ukan* 'want', the subject DP must be distinct from the subject DP in the matrix sentence (39a, b).

(37) Languages with split ergativity give a good illustration of such a dichotomy. In Georgian, where nominative is the zero-case, object DPs appear with the zero case in ergaccusative sentences. Harris (1981: 41) shows that case marking in Georgian sentences with verbs in Series II display the syntactic correspondances summarized below:

*Subject Direct Object Indirect Object*  
 Class 1, 3 verbs: ERGATIVE NOMINATIVE DATIVE  
 Class 2 verbs: NOMINATIVE DATIVE DATIVE

- (39) a. *Maddik nabi du gizonak etxera*  
 Mary.ERG want AUX.3E men.ABS home.LOC  
*doazen*  
 3A.go.Apl.COMPL  
 Mary wants the men to go home
- b. *Gizonek<sub>i</sub> nabi dute e\*<sub>i/k</sub> etxera*  
 men.ERG want AUX.3plE home.LOC  
*doazen*  
 3A.go.Apl.COMPL  
 The men want them to go home

If both subjects are coreferential there is a syntactic process of reconstruction in a manner similar to Italian (see Rizzi 1982, Burzio 1986). This process however is compulsory in standard Basque, as shown in (39b). Moreover, case marking properties of the embedded verb can be transmitted to the verbal complex produced by restructuring.

- (39) c. *Gizonak<sub>i</sub> nabi dira e<sub>i/\*k</sub> etxera joan*  
 men.NOM want AUX.3plE home.LOC gone  
 The men want to go home

If (38) were a well formed structure, restructuring would not be compulsory in (39c), and the starred option of (39b) would be erroneously allowed.

In the same way (32) predicts that D-objects of transitive sentences surface as subjects in impersonal detransitivized sentences:

- (40) a. *Sagarrak neguan biltzen dira*  
 apples.NOM winter.LOC gathering 3A.AUX.Apl  
 One gathers apples in winter

In (40a) the agentive theta-role is not borne by a realized argument. Ortiz de Urbina (1989: 193) adapts Rizzi's (1986) idea that arbitrary and canonical interpretation of arguments can be realized by lexical saturation. He suggests that this is what happens in impersonal sentences showing detransitivization. The agentive theta-role being lexically saturated is not realized in syntax as an argument. Thus, these impersonal sentences appear to be similar to unaccusative or passive constructions regarding the S-structure position of the D-object.

Within the present analysis the D-object in (40a) must move to get structural case. If it goes to AGR-O" as in ordinary transitive sentences, the subject position has to be filled, in order to satisfy the Extended Projection Principle. Ergative non-argument expletives are not available, as we saw before (2.4.), and, thus, only nominative case can be assigned to the subject. However, (32) prohibits that both the subject and the object receive structural Case. As above with unaccusative sentences, the sole remaining possibility involves raising the D-object to the subject position. Consequently, in restructuring constructions the D-object of the impersonal constructions is the S-subject of the complex predicate, as shown in (40b) below:

- (40) b. *Sagarrak bildu behar dira*  
 apples.NOM gathered need 3A.AUX.Apl  
 Apples must be gathered

### 3.3. *Parallelism Between Case Morphology and D-structure GR*

Levin (1983: 334) claims that Basque has a case marking system that reflects D-structure relations straightforwardly: absolutive DPs are identified as D-structure objects, and ergative DPs as D-structure subjects. She proposes then that D-objects are case marked accusative by V in their D-structure position, and that D-subjects are case-marked ergative by I.<sup>38</sup> I will not discuss this view, though it is obviously inconsistent with some of the major claims made in this paper. However, I would like to emphasize one basic element of Levin's proposal, and discuss another one related to it.

The basic observation of Levin I would like to highlight concerns the parallelism found between case marking and D-structure relations in Basque. Within the present analysis this parallelism is accounted for by the following generalization: all arguments except D-objects receive inherent case in Basque. Since structural case is zero-case, and inherent cases are phonetically realized, there is a narrow correspondance between D-structure relations and morphological case marks (see, however, fn. 42):<sup>39</sup>

- (41) ergative case → D-subject;  
 zero-case (structural Case) → D-object.

Related to this matter, Levin (1983) adds another hypothesis she calls *the NOR Verb Hypothesis* (where NOR means absolutive and NORK means ergative):

- (42) *The Nor verb Hypothesis* (Levin 1983: 298):
- Only verbs with a patient single argument are NOR verbs.<sup>40</sup>
  - Other verbs will not be NOR verbs.  
 (They might be NOR-NORK verbs or NORK verbs.)

This hypothesis seems inconsistent with the analysis we propose for Basque. Indeed, inherent Case being theta-related, one expects inherently non Case marked arguments (i.e. those receiving the zero case) to be the thematically non-marked ones, and their class to form the semantically open one. On the contrary, the NOR verb hypothesis states that this class is semantically entirely homogeneous. Let me make some brief remarks about this subject.

As it is well known, there are discrepancies between languages in the way they distinguish unergative and unaccusative verbs (Rosen 1984). So it is not easy to say according to which criterion one determines whether such or such a verb has to be taken cross-linguistically as unergative or unaccusative. Let us, however, consider Perlmutter & Postal's (1982) classification for unergative verbs:

(38) Levin (1983) assumes that neither Burzio's Generalization nor any other similar generalization applies in Basque.

(39) D-objects can receive inherent Case, but need not. For instance, partitive case (morphologically realized in Basque) may be assigned to D-structure objects.

(40) Levin also suggests an alternative form: *No verb with only an agent argument can be a NOR verb.*



(43) *Unergative verbs* (Perlmutter & Postal 1982):

- predicates describing willed or volitional acts (including manner-of-speaking verbs, and predicates describing sounds made by animals);
- involuntary bodily processes.

As observed by Levin, most of the verbs corresponding to these two classes are active verbs in Basque. However, the NOR verb hypothesis makes another prediction: it predicts that no verb belonging to these two classes appears as a NOR verb in Basque. The only exception, Levin says, is *mintzatu* 'speak'.

In fact, there are many others exceptions: other speech verbs (*solastatu* 'speak with', *elekatu*, *elestatu* 'chat', *bizkatu*, *bizketatu* 'converse'), meal verbs (*bazkaldu* 'have lunch', *afaldu* 'have dinner', *gosaldu* 'have breakfast', *askaldu* 'have a snack'), several other verbs having agentive arguments (*trabailatu* 'work', *jarraiki* 'follow (sb)', *mendekatu* 'take revenge', *jazarri* 'revolt', *oldartu* 'attack', *gudukatu* 'wage war on', *borrokatu* 'fight', *jostatu* 'play', *jokatu* 'to play games', etc...). All these verbs are NOR verbs (at least in eastern dialects and in standard Basque, see Sarasola 1978) and their sole or highest argument receives the zero case.<sup>41</sup>

Besides, there are several verbs that take two forms in the lexicon: one corresponding to the active pattern (compounds or verbal locutions of the form N + *egin* 'do'), the other one corresponding to the unaccusative pattern (derived verbs).<sup>42</sup> Here is a sample of these verbs:

(44) Lexically incorporated noun	Verbal locutions [+ERG]	Derived verbs [-ERG]
<i>ele</i> expression	<i>ele egin</i>	<i>elekatu</i> , <i>elestatu</i> to chat
<i>solas</i> expression	<i>solas egin</i>	<i>solastatu</i> to speak with
<i>borroka</i> fight	<i>borroka egin</i>	<i>borrokatu</i> to fight
<i>jolas</i> game	<i>jolas egin</i>	<i>jolastu</i> to play
<i>zintz</i> mucus	<i>zintz egin</i>	<i>zintzatu</i> to blow one's nose
<i>trufa</i> mockery	<i>trufa egin</i>	<i>trufatu</i> to laugh at

(41) Several of the verbs listed in the text appear as active verbs in some dialects. Notice however that when a verb shows dialectal variation, it belongs to the one of the two classes defined in (43). This is what is predicted if the NOR class is the semantically open class. The only exceptions I know of are a few motion verbs: *urten* / *irten* 'leave' and *igo* / *igan* 'go up, climb'. See also with respect to (44) the case of *irrist egin* / *irristatu* 'slide'. As it has been observed motion verbs are often ambiguous with respect to agentivity (Perlmutter & Postal 1982: fn.13).

As for verbs showing diachronic variation in their case marking system, it seems that the changing has been normally from absolutive to ergative case marking: *ekin* 'start doing', *jarraiki* 'follow', *atxiki* 'hold'...

(42) The systematic crossing can be explained if one admits that in one case the incorporating verbal morpheme (e.g. *egin* 'do') assigns inherent ergative case to the agentive argument, while in the other case the affix does not assign inherent case.

Observe that within the Uniformity of Theta Assignment Hypothesis (Baker 1988), the generalization in (41) ought to be revised, since the agentive argument of all verbs listed in (44) would occupy the same structural position at D-structure. The main argument against this proposal lies on partitive case, if one assumes partitive is only assigned to D-objects. Indeed all [-ERG] verbs, even those listed in (44), can assign partitive case to their argument.

The verbs listed in (44) are synonymous. However, N + *egin* locutions require ergative case marking, whereas in derived forms the agentive argument takes zero case. What is relevant here is the fact that verbs showing such an alternation belong to the classes defined in (43) for unergative verbs. The ergaccusative hypothesis does not directly deal with the way theta roles and cases relate. However, since it opposes ergative case which is theta related and zero case which is not theta related, it is consistent with the data shown in (44): the zero case corresponds to a semantically open class.

### 3.4. *Absolutive Case and Verb Morphology*

The present analysis does not require all inflected verbs to contain an absolutive agreement marker. This implicit claim contrasts with other views where absolutive is considered as an obligatory component of verb-morphology (Rebuschi 1984, Ortiz de Urbina 1989); see also the Case-discharge requirement in ergative languages (Levin & Massam 1984).

Only one piece of evidence is provided in order to assume that absolutive indexing within verb inflection is compulsory in Basque. This evidence follows from verb morphology. It is assumed that the prefixes *d-*, *z-*, *l-* in inflected verbs are 3rd person agreement markers.<sup>43</sup> Therefore all inflected verbs having ergative agreement are analyzed as taking transitive morphology, and showing (possibly vacuous) absolutive agreement. See the examples in (45):

- (45) a. *Urak diraki*  
 water.ERG PRES.boil.3E  
 The water is boiling
- b. *Et zuten irauenen*  
 NEG. AUX.3plE.PAST last.FUT  
 They would not last
- c. *Lanean ba-lekikete*  
 work.LOC AFF-know.MOD.3plE  
 They would know how to work

If *d-*, *z-*, and *l-* in (45a, b, c) are 3rd person absolutive agreement markers, they must be related to some object DP. Lafon (1975), for instance, proposes such a solution for (45a,b), suggesting that *iraun* 'last' and *iraki* 'boil' are causative verbs from *egon* 'remain' and *jaiki* 'get up'.<sup>44</sup> Therefore, he suggests, the absolutive marker corresponds to some deleted reflexive form in (45b), or to an indefinite canonical object in (45a). For instance, (45a) would be literally *the water is raising something*.

This analysis (which is also traditionally used for non-transitive uses of transitive verbs, and verbal locutions where a cognate noun is joined to a verb like *egin* 'do') is hardly consistent with the views defended in this paper. Therefore it is necessary to give another analysis of the *d-*, *z-*, *l-* prefixes.

(43) Putting aside imperative forms, every verb form that does not have a 1st or 2nd person prefix displays one of these consonants initially. As indicated in the text the distribution of these consonants correlates with Tense/Mood.

(44) The causative affix would be *-ra-*. For instance, *iraun* 'to last' > \**e-ragon* 'to make x remain'.

In fact, such a proposal has been put forward by Trask (1981). He proposes that the prefixes, *d-*, *z-*, *l-*, which correlate with tense and mood, are not 3rd person markers. Their distribution, he argues, corresponds to tense/mood distinctions and they are better analyzed as resulting from the absence of prefixed 1st or 2nd person. That is to say, either the absolutive 3rd person singular agreement is  $\emptyset$  (as is the case for ergative agreement) or there is no 3rd person agreement, (see also Euskalzaindia 1987: 143).

As discussed in Oyharcabal (1989), vacuous absolutive agreement is theoretically puzzling, because it entails the existence of nonargumental expletive objects. This, in turn, implies a new extension of the Extended Projection Principle, and in fact empties it of its substance. However, since *d-*, *z-*, *l-* can be analyzed as tense / mood markers, nothing prevents us from restricting structural Case assignment to unaccusative sentences, and to true transitive sentences.<sup>45</sup>

#### 4. Ergative Case Marking Without DPerg-Movement

The condition on inherent Case marking (17) establishes a tight relation between V-movement and DP-movement. However, following this view, in the case V does not move, it is predicted that inherent Case can be realized within the lexical projection itself. I would like to suggest that this is illustrated in passive-like constructions. Compare the following sentences:

(46) *Liburuak- $\emptyset$  Manex-ek erosi-ak dira*  
 book.PL-NOM John-ERG bought-RESULT.PL 3pl.AUX  
 The books have been bought by John

(47) \**Liburuak- $\emptyset$  Manex-ek erosi dira*  
 book.PL-NOM John-ERG bought 3pl.AUX  
 John bought the books

(46) looks like a passive, though the D-Structure subject takes the ergative case as it does in ordinary transitive sentences. However, it is not a transitive sentence, because the auxiliary is [-ERG], and agrees only with the zero-case marked DP, which is the S-Structure subject. The ergative DP can be omitted, and in some dialects ergative case can be substituted by instrumental case. The past participle receives a suffix (-*ak*). I analyze the latter as a resultative aspect marker.<sup>46</sup> This suffix corresponds to the article, and agrees in number with the zero case marked DP (nominative in (46)). As (47) shows, suffixation of resultative is compulsory in passives.

One can not analyze the resultative as a passive affix, because it can be used in

(45) The prefix *b-* is sometimes listed together with *d-*, *z-* and *l-*. It is used in imperative forms. I do not look upon it as a tense-mood marker, but rather as a complementizer.

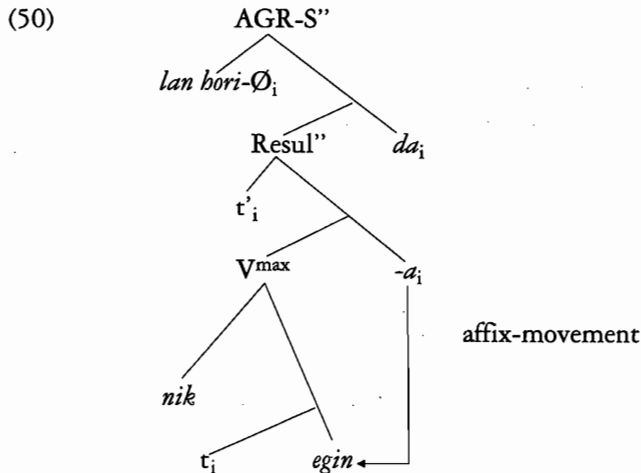
(46) Ortiz de Urbina & Uribe-Etxebarria (1990) offer another analysis for these sentences, assuming they are biclausal and consist of a participial clause predicated of the subject DP. For reasons of space, I will not discuss this proposal here.

transitive resultative sentences, as shown in (48), where the resultative suffix still agrees with the zero-case marked DP, now accusative:

- (48) *Liburuak-Ø Manex-ek erosi-ak ditu*  
 book.PL-ACC John-ERG bought-RESUL.PL 3plA.AUX.3E  
 John bought the books

I suggest that Basque passives are sentences where V movement to AGR-S neither occurs at S-structure nor at LF. Therefore, the resultative affix is joined to the past participle (affix movement), an option restricted to the sole resultative aspect marker. This analysis is illustrated in (50) below:

- (49) *Lan bori-Ø nik egin-a da*  
 work.this-NOM me.ERG made-RESUL 3A.AUX  
 This work has been done by me



Following the condition on inherent Case-marking (17), inherently Case marked DPs must remain in their D-structure position. Thus, the DPerg in (51a) cannot move out of  $V^{\max}$ . This is why the DPerg-V order in passive sentences cannot be changed; (compare with the transitive resultative sentence):

- (51) a. \**Manex-ek liburuak-Ø erosi-ak dira*  
 -ERG book.PL-NOM bought-RESUL.PL 3plA.AUX.3E  
 The books have been bought by John
- b. *Manex-ek liburuak-Ø erosi-ak ditu*  
 -ERG book.PL-ACC bought-RESUL.PL 3plA.AUX.3E  
 John has bought the books

(47) One could also propose that V movement can stop in the aspectual projection RESUL''. This would permit to avoid affix-lowering. Observe that in both cases Condition (17) has to be modified in order to permit inherent Case realization in situ after V-movement to RESUL'', either at LF, within the affix-movement hypothesis, or at S-structure, under the alternative option. Admitting that  $V^{\max}$  is not a barrier, inherent Case realization after movement of the inherent Case assigner would have to be allowed under government.

As shown in (51a), the unmarked Erg-Abs-V order is not available in passive sentences. In the same way, the ergative DP can not appear after V in passives (52a), whereas it can in ordinary transitives (52b):

- (52) a. \**Liburuak-Ø erosi-ak dira Manex-ek*  
 book.PL-NOM bought-Resul.PL 3plA.AUX. -ERG  
 The books have been bought by John
- b. *Liburuak-Ø erosi-ak ditu Manex-ek*  
 book.PL.ACC bought-RESUL.PL 3plA.AUX.3E -ERG  
 John has bought the books

Dative DPs, just like ergative DPs, must remain within  $V^{\max}$ . Thus, dative agreement is not available in passive sentences, while transitive resultative sentences can display dative agreement:

- (53) a. \**Liburuak-Ø Manex-ek eni eman-ak*  
 book.PL-ACC John-ERG me.DAT given-RESUL  
*zaizkit*  
 3plA.AUX.3E  
 The books have been given to me by John
- b. *Liburuak-Ø Manex-ek eni eman-ak*  
 book.PL-ACC John-ERG me.DAT given-RESUL.PL  
*dizkit*  
 3plA.AUX.1D.3E  
 John gave me the books

(53a) shows that passives do not allow dative agreement, unlike ordinary transitives (53b). This is directly accounted for by the analysis proposed, since dative DP-movement too has to occur under (17) and is associated to V-movement.

## 5. Conclusion

Given the analysis we have proposed, Basque sentences illustrate ergaccusative constructions as defined in (2): ergative is an inherent case, and absolutive is structural Case. Structural Case corresponds either to accusative or nominative, depending on whether the sentence is transitive or unaccusative. Since inherent case is theta related, D-subject arguments are generated within  $V^{\max}$ . In this view, case assignment and case realization for inherently case marked DPs occur in different positions whenever V-movement toward functional projections occurs (cf. (17)). We have also been assuming that the Basque option regarding structural Case marking has two main components: i) it is only assigned by functional heads, ii) it is not assigned more than once. This analysis accounts for the most salient features of Basque sentences: on the one hand, obligatory ergative and object agreement in finite sentences; on other hand, nominative Case assignment in unaccusative and detransitivized sentences. Besides, Basque passive sentences are analyzed as illustrating inherent case marking within  $V^{\max}$ , an option left open when V-movement does not occur.

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# Absolute and relativized locality in the binding theory

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## 1. Introduction\*

1.1. In spite of interesting distinct assumptions and conceptual differences, Huang's (1983) & Chomsky's (1986) BT models, which heavily rely on the non-complementary distribution of pronominals and anaphors (henceforth "PRONOUNS") as NP subjects, are built up in order to derive the following basic, or unmarked, "regularity": when a PRONOUN  $\alpha$  is the subject of the minimal  $X^{\max}$   $\delta$  which contains it and its governor, this  $X^{\max}$  is its Governing Category or GC if  $\alpha$  is a pronominal, but if it is an anaphor, its GC will have to be a larger  $X^{\max}$  – in Huang's terms, because  $\delta$  does not contain an accessible SUBJECT (the anaphor itself being the SUBJECT of this minimal  $X^{\max}$ ), and in Chomsky's terms, because  $\delta$  (renamed Complete Functional Complex or CFC) does not contain any potential binder for  $\alpha$  which would render their coindexation "BT-compatible" with  $\alpha$ 's anaphoric nature.<sup>1</sup>

The definition of GCs is therefore doubly "relativized": (i) with respect to the nature —anaphoric or pronominal— of the PRONOUN involved, and (ii) with respect to the specific position it occupies.

1.2. Recall too that a CFC contains a subject "by definition" (Chomsky 1986: 169); hence, the CFC or GC of an anaphor  $\alpha$  will necessarily contain a subject  $\beta$  distinct from it: if  $\alpha$  is not a subject, the subject  $\beta$  of the minimal CFC which contains  $\alpha$  and its governor will be a potential binder for  $\alpha$ ; but if  $\alpha$  itself is a subject, any

\* This paper globally deals with the same sort of data as those examined in Rebuschi (in press-ab). However, the solutions it proposes are, for the most part, totally new.

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(1) Huang's approach, which incorporates the LGB concept "accessible SUBJECT", also deals with the ungrammaticality of anaphors as tensed clauses' subjects in a fairly straightforward way: *Agtr/Infl is accessible to that subject*. As for Chomsky's story, it is much less clear: "To bar an anaphor in this position, then, we would appeal not to binding theory but rather to the principle ECP [...], which excludes the trace of *wh*-movement in this position in such sentences as \*'who do you think that *e* saw Bill.' We therefore associate anaphors of subjects of finite clauses not with bound pronouns but rather with variables." (*op. cit.*, 176). See section 3 and the discussion of example (40).

potential binder will have to belong to a wider CFC, as was said above, and this wider CFC will in turn possess a subject. Now, according to Huang, again by definition, the GC of an anaphor will contain a SUBJECT accessible to it, hence distinct from, and excluding, it.

Overlooking the empirical differences between these two systems —because they seem irrelevant to the purpose of this paper— we can provisionally conflate the correlations just observed by referring to a “distinct\* S/subject” to denote either a SUBJECT accessible to  $\alpha$  or a subject distinct from it. We are then in a position to crudely define two GCs for  $\alpha$ , an *absolute* minimal GC or AMGC, and a *relativized* minimal GC or RGC, independently of  $\alpha$ 's anaphoric or pronominal nature.

- (1) a. The AMGC of a PRONOUN  $\alpha$  is the minimal  $X^{\max}$  which contains  $\alpha$ , its governor  $\gamma$ , and a S/subject  $\beta$ .
- b. The RGC of a PRONOUN  $\alpha$  is the (possibly wider)  $X^{\max}$  which contains  $\alpha$ , its governor  $\gamma$ , and a distinct\* S/subject  $\beta$ .

We can now restate the principles A and B as in (2), and next express a prediction made by these relativistic approaches.

- (2) a. An anaphor must be bound in its RGC.
  - b. A pronominal must be free in its AMGC.
- (3) When the AMGC is distinct from the RGC (i.e. when a pronoun is the S/subject of its  $X^{\max}$ ), the former domain is irrelevant for the description of an anaphor's properties; more specifically:
    - a. an anaphor  $\alpha$  is not specified for the +/- value of the features [anaphoric, pronominal] it might have in its AMGC; or:
    - b. an anaphor  $\alpha$  may not be specified as [+ anaphoric] in its AMGC.

1.3. In section 2, I will use specific data borrowed mainly from Northern Basque to falsify both the weak version (a) of (3) and its strong version (b). As a consequence, it will appear that, although the identification of a GC admittedly depends on the specific position a PRONOUN (more specifically an anaphor) occupies, the other tenet of the relativistic approach, namely that the definition of a GC also depends on the nature —anaphoric or pronominal— of the PRONOUN involved, cannot be maintained: the original idea, which dates back to the late 70's and *LGB*, that anaphors and pronominals are basically in complementary distribution, should probably be sustained.

In section 3, I will propose a new definition of the binding domains “AMGC” and “RGC” which should account for the relevant facts as well as for better known ones. The basic idea will be to conceptually unify the two ideas that a GC (i) must contain a PRONOUN's governor, and (ii) must also correspond to a  $\theta$ -domain; the notion “Lexical Governor” will serve the purpose.

Finally, in section 4, I will show that my proposals help solve a long-standing problem in Basque syntax, viz. the fact that the “reflexive” genitive *bere* can, even in those dialects in which it is submitted to a locality constraint, and contrary to the reflexive possessives of Indo-European languages, specify the subject NP and take one of the object NPs as its antecedent.

## 2. Basque reflexives.

### 2.1. A first look at the "reflexive genitive" *bere*.

Northern Basque has two distinct unemphatic 3rd person genitives. One, *bere*, is traditionally known as a "reflexive possessive", and is furthermore inherently genitive. The other one is *haren*, the genitive of the deictic pronoun *hura*; it must be referentially distinct from all the arguments which can bind *bere*. (There is also an emphatic genitive *beraren*, which, although etymologically related to *bere*, has all the properties of the pronominal *haren*, cf. (4b) and (5b)). The fact that, for all practical purposes, *bere* apparently is a standard anaphor (an analysis which will be drastically modified in section 4) is illustrated below: (4) and (5) show that it must be coindexed with either the subject, or the direct or indirect object; in (6), where *beren* is the form *bere* takes when its antecedent is plural, a typical property of anaphors is illustrated: it cannot have split antecedents; finally, (7) shows that *bere* must be "locally" bound.

- (4) a. Peio*<sub>I</sub>*k Mayi*<sub>j</sub>* bere amari erakutsi dio  
 Peio-E Mayi-A *bere* mother-D shown AUX<sup>2</sup>  
 'Peio<sub>I</sub> has shown Mayi<sub>j</sub> to his<sub>I/\*K</sub> / her<sub>j/\*K</sub> mother'
- b. Peio*<sub>I</sub>*k Mayi haren / beraren amari erakutsi dio  
*haren beraren*  
 'Peio<sub>I</sub> has shown Mayi<sub>j</sub> to his<sub>\*I/K</sub> / her<sub>\*j/K</sub> mother'
- (5) a. Peio Mayiri bere amaz mintzatu zaio  
 P.-A Mayi-D *bere* mother-INS spoken AUX  
 'Peio<sub>I</sub> has talked to Mayi<sub>j</sub> about his<sub>I/\*K</sub> / her<sub>j/\*K</sub> mother'
- b. Peio Mayiri haren / beraren amaz mintzatu zaio  
*haren / beraren*  
 'Peio<sub>I</sub> has talked to Mayi<sub>j</sub> about his<sub>\*I/K</sub> / her<sub>\*j/K</sub> mother'
- c. Peio Mayiz bere amari mintzatu zaio  
 P.-A Mayi-INS *bere* mother-D spoken AUX  
 'Peio<sub>I</sub> has talked to his<sub>j/\*j/\*K</sub> / \*her<sub>[\*j/\*K]</sub> mother about Mayi<sub>j</sub>'
- (6) a. Peio*<sub>I</sub>*k Mayi Ø/\*beren amari erakutsi dio  
 Peio-E Mayi-A *beren* mother-D shown AUX  
 'Peio<sub>I</sub> has shown Mayi<sub>j</sub> to their<sub>I+j</sub> mother'
- b. Peio Mayiri Ø/\*beren amaz mintzatu zaio  
 P.-A Mayi-D *beren* mother-INS spoken AUX  
 'Peio<sub>I</sub> has talked to Mayi<sub>j</sub> about their<sub>I+j</sub> mother'
- (7) a. Haren / \*bere laguna joan da  
*haren bere* friend gone AUX  
 'His / her friend has gone'

(2) Beside the usual abbreviations, such as GC, etc, the following less conventional ones will be used: A: absolutive; AN: adnominalizing suffix; AUX: auxiliary; E: ergative; IN: instrumental.

- b. Peiok erran du [haren / \*bere laguna joan dela]  
 P.-E said AUX *haren bere* friend gone AUX+COMP  
 'Peio<sub>i</sub> has said that his<sub>i/j</sub> friend has gone'

According to the theories under discussion, *bere*(*n*), which is the S/subject of the minimal  $X^{\max}$  which contains it, is correctly bound in its RGC. However, this does not tell us anything about its properties within its AMGC: they may of course only be discovered in a context where the GCs are identical, i.e. when *bere* is *not* a S/subject. Such a context is provided by the *-t(z)e-* nominalizations, which allow a direct object to be in the genitive, cf. (8a):

- (8) a. Peiok Mireni [PRO Jonen ikusteko] erran zion  
 Peio-E Miren-D Jon-G to-see said AUX  
 'Peio told Miren to see Jon'  
 b. Peiok<sub>i</sub> Mireni<sub>j</sub> [PRO<sub>j</sub> \*bere / haren<sub>i/\*j/K</sub> ikusteko] erran zion  
 P.-E Miren-D *bere haren* to-see said AUX  
 'Peio told Miren to see him'

In such embedded non finite clauses, the PRO is at the same time a subject and a SUBJECT; what is more, in (8b), it is both distinct from *bere* and accessible to it. *Bere* should therefore be bound to it – at least if it had no specific property related to its narrow domain AMGC. In other words, if the binding theory has nothing to say about the behaviour of an anaphor like *bere* in its AMGC, the ungrammaticality of *bere* in (8b) cannot be explained away in non ad hoc terms. But suppose that *bere* is lexically specified as follows:

- (9) The Basque anaphor *bere* must be free in its AMGC as well as bound in RGC.

Obviously, it could not simultaneously satisfy this double requirement when the two domains happen to coincide – being governed, it cannot escape the paradox as PRO does. Consequently, the ungrammaticality of *bere* in (8b) is to be expected under this assumption. On the other hand, the possible coindexation of *haren* with the subject of the matrix clause follows if we admit (10):

- (10) The Basque pronominal *haren* must be free both in its AMGC and in its RGC.<sup>3</sup>

The freedom of *haren* in its AMGC in (8b) is as predicted by Huang, Chomsky and every other possible formulation of principle B of the Binding Theory; its freedom in its RGC is independently inferred from (4b) and (5b),

## 2.2. Secondary predications and the two Basque reciprocal expressions

More evidence will be given below concerning (9), as we will see that another Basque anaphor has the same property. But before we do, we must discuss the empirical content of the following generalization:

- (3) Such "middle-distance" pronominals are also widely attested in Indo-European languages, cf. the pairs *suus* ≈ *eius*, *sin* ≈ *hans* or *svoj* ≈ *jego* in Latin, Danish and Russian respectively.

- (11) The S/subject of a secondary predication is relevant for the determination of an anaphor's GC when this anaphor is inside a secondary predicate.

Let us therefore consider the data provided by example (12), which by and of itself raises intriguing theoretical questions, and its two equivalent counterparts in Northern Basque.

- (12) They<sub>I</sub> saw snakes<sub>j</sub> near each other<sub>I/j</sub>
- (13) a. Heiek<sub>I</sub> sugeak<sub>j</sub> elkarren<sub>\*I/j</sub> ondoan ikusi zituzten  
 they-E snakes-A *elkar*-G by-the-side seen AUX  
 'They<sub>I</sub> saw snakes<sub>j</sub> near each other<sub>\*I/j</sub>'
- b. Heiek<sub>I</sub> sugeak<sub>j</sub> bat bertzearen<sub>I/\*j</sub> ondoan ikusi zituzten  
*bat bertzea*-G  
 'They<sub>I</sub> saw snakes<sub>j</sub> near each other<sub>I/\*j</sub>'

The ambiguity of (12) might have at least three causes: (i) *contra* (11), the subject of a secondary predication is invisible for the Binding Theory; (ii) the two distinct interpretations (as they are made explicit by the Basque translations) correspond to two distinct structures; (iii) *each other* is not necessarily locally bound, whether locality is defined in terms of an AMGC or of an RGC.

On the one hand, (iii) is highly dubious, since even in those languages which have long distance anaphors (and English is hardly one such language), reciprocals never seem to be able to be extra-locally bound (see Van Riemsdijk 1985 for instance). On the other hand, the very complementary distribution of the two Basque reciprocal expressions as illustrated in (13a,b) also renders both hypotheses (i) and (ii) doubtful. *Re* (ii), in particular, it should be obvious that secondary predicates must be regarded as being predicated of either the (root) subject NP or the direct object NP, as (14) shows, where it clearly is only for extra linguistic reasons (our knowledge of the world as it is) that we "naturally" assign the predicates *raw* and *nude* to *the meat* and *John* respectively.

- (14) John ate the meat raw / nude

Moreover, note that if the existence of a phrase —a Small Clause— is felt to be necessary in order to account for the fact that *raw* is predicated of *meat*, one would probably also have to assume that another phrase is required to explain that *nude* can be predicated of *John*.<sup>4</sup>

What is more, against (i) but in conformity with (11), the subject of a secondary predication does play a role —at least in some cases— as indicated by (15):

- (4) Safir (1983: (19)) has explicitly made such a proposal:

- (i) John ate the meat [<sub>sc</sub> PRO naked]      (ii) John ate the meat [<sub>sc</sub> PRO raw]

However, since no indication is given of the structural position(s) where the Small Clauses may be located, and in the absence of a clear theory of Control, nothing much can be made of such an approach — note in particular that if the SC of (ii) may entertain the illusion that binary branching *à la* Kayne is possible, such a constraint seems pretty difficult to implement in the case of (i).

- (15) The children<sub>i</sub> do not consider those<sub>j</sub> [good pictures of them<sub>i</sub>]<sub>j</sub>

Yet, many native speakers of English also accept sentences such as the following:

- (16) a. The children<sub>i</sub> do not consider those<sub>j</sub> [good pictures of each other<sub>i</sub>]<sub>j</sub>  
 b. The fathers<sub>i</sub> ordered their sons<sub>j</sub> out of each other<sub>i/j</sub>'s rooms

We therefore have what looks like a paradox here, since the direct object NP *those* seems to induce a GC for *them*, but not for *each other*. Recall, however, that English *them* must be free in its AMGC, whereas *each other* need only be bound in its RGC. From a purely descriptive point of view, then, the most natural hypothesis is some version of the following principle:

- (17) The subject of a secondary predicate induces an AMGC, but it does not induce an RGC.<sup>5</sup>

It is significant that, whatever lies behind (17), we need the same sort of principle to account for the Basque data in (13). First, the reciprocal expression *elkar* in (13a) cannot be bound to the main predication subject *heiek* 'they', but must rather be bound by the secondary predication subject *sugeak* '(the) snakes'; *this anaphor then has to be bound in the narrow domain AMGC*, assumed here to correspond to a conservative VP (i.e. one which does not contain its own subject's trace).

Consider next the other reciprocal expression, *bat bertzea*, of (13b). Just as in the English example, the null hypothesis is that the structure is the same as in (13a); as a consequence, by (1b) and owing to the fact that *sugeak* is a "S/subject", we would expect the VP to also be *bat bertzea*'s RGC, and thence predict the ungrammaticality of (13b) with *bat bertzea* carrying the index *i*. But the expectation is not borne out. It follows that both in English and in Basque, (17) holds good.

### 2.3. A Typology for reflexives

Let us underline the following conclusion: just as we saw that *bere*'s behaviour falsifies (3a), since it has to be free in its AMGC, we must infer from *elkar*'s properties that they falsify (3b): here, we have an anaphor which must be bound in its AMGC *even when this domain is smaller than its RGC* – in other words, *elkar* is an anaphor which must be bound in the very domain which, according to Huang and Chomsky, *only* qualifies for pronominals. (Needless to say, this entails an ensuing falsification of principle A as it is formulated in (2a) too.)

More generally, and leaving real long distance anaphors aside, we have the following typology for "short- and middle-distance" anaphors:

- (18) a. Anaphors which may be bound or free in their AMGC, but must be bound in their RGC: English *each other*.

(5) Recall however that Lebeaux (1983) has shown that *each other* and the reflexives *himself*, etc. do not have the same distribution; compare for instance (15) and the following sentence, due to Williams (1989: (68b)) —I will return to this question—:

(i) \*John<sub>i</sub> considers that<sub>j</sub> [a picture of himself<sub>i</sub>]<sub>j</sub>

- b. Anaphors which must both be free in their AMGC and bound in their RGC: Basque *bere* (a reflexive) and Basque *bat bertzea* (a reciprocal).
- c. Anaphors which must be bound in their AMGC: Basque *elkar*.<sup>6</sup>

Other constructions illustrate those properties. Consider first the possessive use of genitives for example.

- (19) [Peio(k) eta Mirenek]<sub>i</sub> [bat bertzearen<sub>i</sub> / \*elkarren liburua] irakurri dituzte  
 P(-E) and M.-E *bat bertzea*-G *elkar*-G books-A read AUX  
 'Peio and Miren have read each other's books'

Why is *elkar* ungrammatical here? The answer should be obvious: if its binding domain is its AMGC, this domain will be the NP *elkarren liburua*, since it contains a S/subject, *elkar* itself.<sup>7</sup> Thus, although there is no potential binder for it there, the sentence is out. On the other hand, *bat bertzea* is trivially free in that NP, and correctly bound in its RGC, the entire sentence.

Recall now the argumentation concerning the ungrammaticality of *bere* in (8b). If it was on the right track, we can make the prediction that *bat bertzea* will behave in the same manner; and this prediction is borne out, as (20b) illustrates:

- (20) a. Guk<sub>i</sub> elkar<sub>i</sub> ikusi ginuen      b. \*Guk bat bertzea ikusi ginuen  
 we-E *elkar*-A seen AUX                      *bat bertzea*-A  
 'We saw each other'

Indeed, I need only repeat here what was said there: since the two GCs coincide, *bat bertzea* cannot satisfy its two distinct properties stated in (18b) simultaneously – hence the ungrammaticality of (20b), as opposed to the grammaticality of (20a).

Let us now introduce the typical argumental anaphor which corresponds to English *himself*; it is *bere burua*, lit. 'bere head' or 'his own head' – as (21b) shows, this expression may also have a literal reading.

- (21) a. Peio<sub>k</sub> [bere burua]<sub>i</sub> ikusi zuen  
 Peio-E *bere* head-A seen AUX  
 'Peio saw himself'<sup>8</sup>
- b. Peio<sub>k</sub> [bere<sub>i</sub> burua]<sub>j</sub> ikusi zuen  
 'Peio<sub>i</sub> saw his<sub>j</sub>/\*<sub>j</sub> (own) head'

Observe now *bere burua*'s inability to act as a possessive under "normal" circumstances in (22b), or its inability to be bound by the main predication subject in sentences similar to (13) in (23b).

(6) It is quite plausible that the English reflexives also belong under (18c): see Lebeaux's (1983) examples, or the contrast between (15) and Williams' sentence quoted in the preceding footnote.

(7) The impossibility for English reflexives to appear in the genitive case would then follow for the same reasons that forbid *elkarren* in (19).

(8) One might wonder whether *bere burua* as a whole and *bere* inside it are simultaneously submitted to the binding principles which constrain them. In fact, there is no problem here, since *bere* is both trivially free within its AMGC – the global expression *bere burua* itself – and bound in its RGC, the next domain up.

- (22) a. Peiok [bere xakurra] jo du  
 Peio-E bere dog-A beaten AUX  
 'Peio<sub>i</sub> has beaten his<sub>i/\*j</sub> dog'  
 b. \*Peiok [bere buruaren xakurra] jo du  
 bere burua-G
- (23) a. Peiok aberastasun handiak [bere baitan] baditu  
 Peio-E wealth big-PL-A bere within he-has-them  
 'Peio<sub>i</sub> has great qualities in him<sub>i/\*j</sub>'  
 b. \*Peiok aberastasun handiak [bere buruaren baitan] baditu  
 bere burua-G

In either case, it is as if the finite verb's subject is too far away from *bere burua* to properly bind it. Given the hypotheses put forth here, a straightforward explanation for such data is possible: it is the direct object NP itself which is the AMG of *bere burua* in (22b), and the VP (as the minimal  $X^{\max}$  which contains a secondary predication, hence a S/subject) in (23b) (I will slightly modify this analysis later on). In conclusion, then, *bere burua* patterns like *elkar*, so that the distributional complementarity already described for *elkar* and *bat bertzea* carries over to the pair *bere*  $\approx$  *bere burua*. Moreover, the properties of *bere burua* corroborate the foregoing empirical falsification of both versions of (3) and of Chomsky's idea that principle A of the BT only makes sense in a local domain which displays at least a potential binder for an anaphor.

### 3. Absolute and relativized locality

#### 3.1. Copular constructions and the \*i/i filter

We may now take a closer look at the properties of the two GCs. To begin with, note that, although complementary distribution still obtains, the grammaticality of the reflexive and reciprocal pairs *bere burua*  $\approx$  *bere* and *elkar*  $\approx$  *bere burua* is reversed in such contexts as the following:

- (24) a. Iñaki [[bere buruaren] etsaia] da b. Iñaki [\*bere etsaia] da  
 I.-A bere burua-G enemy-A he-is  
 'Iñaki<sub>i</sub> is [his own]<sub>i</sub> enemy'<sup>9</sup>
- (25) a. Iñakik<sub>i</sub> [Jon<sub>j</sub> [bere<sub>i/\*j</sub> etsaitzat]] dauka  
 I.-E J.-A bere enemy-for he-holds-him  
 'Iñaki<sub>i</sub> considers Jon<sub>j</sub> his<sub>i/\*j/\*k</sub> enemy'  
 b. Iñakik<sub>i</sub> [Jon<sub>j</sub> [[bere buruaren]<sub>\*i/j</sub> etsaitzat]] dauka  
 I.-E J.-A bere burua-G enemy-for he-holds-him  
 'Iñaki<sub>i</sub> considers Jon<sub>j</sub> his<sub>\*i/j/\*k</sub> (own) enemy'

(9) In English, neither *himself's* nor even *his* are acceptable here; so perhaps the sequence "pronominal + *own*" must be considered a suppletive form of the latter — cf. Chomsky (1986: 176-177) on *own*, and Williams (1987: 157) for a different approach — which, admittedly, would be more problematic for the suggestion made here that English reflexives and Basque *elkar* or *bere burua* pattern alike.



- c. Mutikoek [neskatxak [elkarren lagun hoberenak] dauzkate]  
 boys-E girls-A *elkar*-G friend best-PL they-hold-them  
 'The boys<sub>i</sub> consider the girls<sub>j</sub>; each other<sub>\*i/j</sub>'s best friends'
- d. Mutikoek<sub>i</sub> [neskatxak<sub>j</sub> [bat bertzearen lagun hoberenak] dauzkate]  
 boys-E girls-A *bat bertzea*-G friend best-PL they-hold-them  
 'The boys<sub>i</sub> consider the girls<sub>j</sub>; each other<sub>i/\*j</sub>'s best friends'

Consider the contrast between (22) and (24) for instance. We have already seen that the domain in which *bere burua* must be bound is its AMGC – the one which corresponds to (English-like) pronominals. How is it possible then for the same item to be ungrammatical in (22b), and grammatical in (24a)? Conversely, we have seen that *bere* must be free in its AMGC, and bound in its RGC; consequently, our story – or Chomsky's – holds good for (22a), as expected, but, again, fails to account for (24b).

One possible way to handle *bere*'s case would be to indirectly follow Chomsky (1981) and Huang (1983) and have recourse to the *\*i/i* filter. Assuming furthermore that a predicative NP is coindexed with the subject – see Williams (1980) – ungrammaticality would ensue in (24b), since coindexing *bere* with the subject would induce an *\*i/i* filter violation, as shown in (26) – but not in (22a), for obvious reasons.

(26) *\*(Iñaki)<sub>i</sub> [bere<sub>i</sub>; etsaia]<sub>i</sub> da*

There are, however, several strong objections to this approach.

(i) It seems strange that other anaphors, such as *bere burua* or *elkar*, should not be submitted to the same constraint: cf. (27a), which corresponds to (24a), and (27b,c), which correspond to the relevant portions of (25b,c).

- (27) a. OK (Iñaki<sub>i</sub>) [[bere buruaren]<sub>i</sub>; etsaia]<sub>i</sub> da  
 b. OK ... (Jon<sub>j</sub>) [[bere buruaren]<sub>j</sub>; etsaitzat]<sub>j</sub>;  
 c. OK ... (neskatxak<sub>j</sub>) [elkarren<sub>j</sub>; lagun hoberenak]<sub>j</sub>;

(ii) More generally, as far as the complex reflexive expression *bere burua* itself is concerned, the *\*i/i* filter must anyhow be deactivated – otherwise, the configuration (28) would be ruled out, and no such expression could ever be used at all, although in many unrelated languages (e.g. Georgian, Hebrew, etc.) it is an expression of the same type which translates *himself*.

(28) OK (Peiok<sub>i</sub>) [bere<sub>i</sub>; burua]<sub>i</sub>; ikusi zuen [see (21a)]

(iii) Example (7b), a simplified version of which is repeated below as (29a), shows that a potential violation of the filter is not in itself a counter-opacity factor allowing a Basque PRONOUN to look for an antecedent farther away if its coindexation with the local subject is not possible: if it were the case, the sentence should be grammatical with the subject of the matrix clause binding *bere* (which is correctly free in its AMGC), but it is not. Likewise, sentence (29b) is excluded in the variety

of Basque studied here, whatever the index on *bere* may be, although its coindexation with the embedded subject NP is ruled out by the filter, and its coindexation with the matrix subject NP is, on the contrary, licit with respect to that filter.

- (29) a. \*Peiok erran du [bere laguna joan dela]  
 P.-E said AUX *bere* friend gone AUX+COMP  
 'Peio has said that his friend has gone'
- b. \*Iñakik erran daut [Jon [bere laguna] dela]  
 I.-E told AUX J.-A *bere* friend he-is-Comp  
 'Iñaki has told me that Jon is his friend'

It is therefore clear that the \*i/i filter cannot be used here – as one could have expected anyhow, since many of the examples discussed are concerned with the AMGC, not the possibly wider RGC, of the PRONOUNS, and since the filter's essential syntactic function is to *enlarge* the grammatical GC of a PRONOUN, cf. *LGB*. It also follows that neither the notion "accessible SUBJECT" (which is directly built on the \*i/i filter), nor its twin notion "distinct subject" can be operative for the items that must be bound in their RGC: (i) what was said above of the \*i/i filter and the coindexation with a subject NP as in (29) directly carries over to the corresponding "accessible SUBJECT", with the same empirical consequences. (ii) As for the notion "distinct subject", although it does work for (29b), where the embedded subject NP *Jon* is distinct from (the NP which contains) *bere*, it definitely does not in (29a)'s case.

### 3.2. Towards a definition of the AMGC

3.2.1. Let us accordingly give up accessibility and the \*i/i filter, and, in order to account for the facts under discussion, adopt the idea, also due to Williams (1980), that an N has an "external argument" just as a V does, but that this external argument (which is assigned the  $\theta$ -role *R*) is only realized in the syntax when the NP is predicative: the *R* role is then realized by the subject of the predication. It follows that when an NP is argumental (i.e., non predicative), all the realized arguments of its head N (if it has any apart from *R*) are internal to the NP, and consequently contained in it. On the contrary, when the NP is predicative, it necessarily has a realized external argument.

Returning to the examples (19) through (25) and (29), we observe the following phenomena – without the least exception:

(i) When they are contained in an NP, the genitives *elkarren* and *bere buruaren* are grammatical if and only if this NP is predicative; moreover, they are then bound to the subject of the predication in question.

(ii) Conversely, *bat bertzearen* and *bere* are grammatical when contained in an argumental NP – at least, if there is a binder "close enough"; furthermore, if they are contained in a predicative NP, they may never be bound to the subject of the predicate which contains them; consequently, they are either bound by a distinct NP, if there is one "close enough", or ruled out.

To account for these cases, then, we might informally say that *elkar(ren)* and *bere burua(ren)* are bound in the minimal syntactic category which contains them and all

the realized arguments of the head N, whilst *bere* and *bat bertzea(ren)* must be free in that same domain. Thus, one might be tempted to generalize this description as follows:

- (30) A PRONOUN  $\alpha$ 's AMGC is the minimal syntactic category/projection<sup>10</sup> which contains  $\alpha$ , the head H of which  $\alpha$  is an argument, and all the other *realized* arguments of H.

There is a difficulty, however: (30) works properly only insofar as the PRONOUN is the subject of the minimal category which contains it. Indeed, when it is not, (30) is not valid, since the object NP in the examples below contains  $\alpha$ , its governor, and all the arguments of the head —respectively *picture*, *harremanak* or *solasaldiak*— but does not qualify as the anaphors' GC:<sup>11</sup>

- (31) a. John<sub>i</sub> bought [<sub>NP</sub> a picture of him<sub>\*i</sub> / himself<sub>i</sub>]  
 b. Jon-E and Peio-E [<sub>NP</sub> *elkarrekilako harremanak*] *hautsi dituzte*  
 Jon-E and Peio-E *elkar-G*-with-AN exchanges-A broken AUX  
 'Jon and Peio have broken off (their mutual) relations'  
 c. Heiek [*elkarren arteko solasaldiak*] *beti euskaraz dituzte*  
 they *elkar-G* between-AN chats always Basque-IN they-have-them  
 'They always have their conversations in Basque'

In other words, it seems impossible to do without the stipulation that a GC must contain a subject. Let us thus redefine the absolute MGC for a PRONOUN as in (32):

- (32) A PRONOUN  $\alpha$ 's AMGC is the minimal syntactic category/projection which contains  $\alpha$ , its governor  $\gamma$ , the head H  $\alpha$  is an argument of, all the realized arguments of H, and a subject.

3.2.2. Admittedly, (32) is somewhat "heavy". It does seem necessary, though, to keep all its ingredients – but not its specific formulation, as we will shortly see. Let us adopt the following abbreviations: D(H) is the minimal syntactic domain which contains  $\alpha$  and all the realized arguments of the head of which  $\alpha$  is an argument (either lexically determined by the  $\theta$ -grid of that head, or structurally determined, as in the case of "possessive" genitives); D(G) is the minimal syntactic domain which contains  $\alpha$  and its governor (to be revised later); D(S) is the minimal syntactic domain which contains  $\alpha$  and a subject (not necessarily distinct from  $\alpha$ ). To justify the empirical content of (32), then, we need only show that there are good reasons to maintain the three domains D(H), D(S) and D(G) distinct.

(10) The expression "category/projection" is used so as to allow a reformulation of the definitions which would incorporate the idea that subjects are base-generated in the VP: in this case, the GC which corresponds to a secondary predicate and its subject (the object NP of the V) would not be the VP itself, but, assuming there is no Small Clause, the minimal projection of V which contains the object and its predicate, the main subject's trace being left out. See Williams (1987, 1989) for a rewording of the  $\theta$ -criterion which does not block such an approach.

(11) I do not include examples such as *They bought* [<sub>NP</sub> *pictures of each other*] here, since *each other*, contrary to *elkar*, need only be bound in its possibly wider RGC.

(i.a) D(S) may be wider than D(H); we have just noted that all the realized arguments of the head H of which  $\alpha$  is an argument need not always include a subject (the angled brackets <, > indicate the boundaries of the actual GC):

- (33) <Heiek [elkarrekilako harremanak] hautsi> dituzte  
 they *elkar*-G-with-AN exchanges-A broken AUX  
 'They have broken off (their mutual) relations' [cf. (31b)]

(i.b) Conversely, there may be a closer subject than the external argument of the head H=N – typically, the genitive PRONOUN itself in such structures as (24b), repeated here, and (34b):

- (34) a. <Iñaki [\*bere etsaia] da>  
 \*'Iñaki<sub>i</sub> is his<sub>i</sub> enemy' [cf. (24b)]  
 b. <Heiek [elkarren etsaiak] dira >  
 they-E *elkar*-G enemies they-are  
 'They are each other's enemies' [cf. (25c)]

Therefore, the argumental domain of the head and the domain of a subject may simply overlap, and it is their union that counts.<sup>12</sup>

(ii.a) D(G) is wider than D(S) in the case of ACI (or ECM) constructions. True enough, there are no such structures in Basque, but the case is widely attested in other languages, where it is easily shown that they do not imply "middle-distance binding" (i.e. in the RGC), since pronominals which must be free in their AMGC are out, as in:

- (35) <They<sub>i</sub> expect [them\*<sub>i</sub> to win]>

(ii-b) In its turn, D(S) may be wider than D(G), as (31b) or (33) illustrate.

(iii.a) D(G) vs. D(H). Although the head H and the governor  $\gamma$  often coincide (as in (13) or (20)), they do not always do so: in ECM structures, the governor's domain is wider than that which contains all the realized arguments of the head which  $\alpha$  is an argument of, cf. (35); moreover, if "Nominal expressions" are DPs, the genitive PRONOUN is governed by  $\delta$  while being a lexically determined, or purely structural, argument of the N.

(iii.b) Conversely (34a,b) are instances of the case when D(H) wider than D(G). So, here again, one cannot say that the argumental domain of the head H always includes  $\alpha$ 's governor's domain or *vice versa*.

3.2.3. However, it should be possible to tighten up (32), concentrating on point (iii) — the question just examined. On the one hand, in ECM structures, the reference to the Governor entails that all its arguments are potential (contra-)antecedents for the PRONOUN. See for instance (35), where, clearly, it is not sufficient to refer to the

(12) The explicit reference to the *realized* arguments of the head H also helps eliminate the need of a specific description of PRONOUNS when they happen to be in a predicate – hence to eliminate the "Predicate Opacity Condition" and the associated definition of "Argument complex" of Williams (1980, 1989) two notions that must be independently stipulated otherwise.

minimal projection which contains the Governor (i.e. the matrix VP) to identify the (AM)GC of *them*.

On the other hand, a PRONOUN may be related to a lexical governor with a  $\theta$ -grid only indirectly; two cases are possible: (a) the governor  $\gamma$  is higher than the lexical head H (e.g. in DPs with a genitive PRONOUN or in ECM structures); (b)  $\gamma$  is lower than the head H (e.g. when the P or K which directly governs the PRONOUN has no argumental structure, but is subcategorized for by a V).<sup>13</sup> In both cases, it would seem useful to relate the PRONOUN to that lexical head H, so as to unify the two domains D(G) and D(H). One way of doing so is the following.

- (36) Let CGL be a chain of governors "L-related" in the sense that the chain of governors  $(\gamma_0, \gamma_1, \dots, \gamma_n)$  is such that:
- a. each governor  $\gamma$  is non-lexical except either the first one,  $\gamma_0$ , or the last one,  $\gamma_n$ , and
  - b. each  $\gamma_i$  locally governs the maximal projection of  $\gamma_{i+1}$ .

We could then define a PRONOUN's "L-governor"  $\Gamma$  as in (37), and the AMGC of any PRONOUN  $\alpha$  as in (38):

- (37) A PRONOUN  $\alpha$ 's L-governor  $\Gamma$  is:
- a. its governor  $\gamma$  if  $\gamma$  is lexical *or*
  - b. the lexical governor  $\Gamma$  which is either the head or the tail of the CGL which contains  $\alpha$ 's governor  $\gamma$  if the latter is non lexical.
- (38) A PRONOUN  $\alpha$ 's AMGC is the minimal syntactic projection which contains  $\alpha$ ,
- a. all the realized arguments of its L-governor  $\Gamma$  and
  - b. a subject.<sup>14</sup>

(13) Of course, I am not suggesting that such Ps or Ks are functional – given the recent developments in X-bar theory, it would be quite odd; it suffices to say that a head is lexical if it has a  $\theta$ -grid or argument structure; otherwise, it is non-lexical.

(14) Although the presence of a subject is necessary for languages as strikingly different as English and Basque, it is quite possible that it is not universally required in the definition of an AMGC; for instance, the binding properties of Italian *se stesso* in (i), from Giorgi (1987: (7)), seem to imply that although this anaphor, like *bere burua*, *elkar* or perhaps *himself* must typically be bound in its AMGC rather than its RGC, the presence of a subject must crucially be excluded:

- (i) \*[la sua<sub>i</sub> [lettera di Maria a se stesso<sub>i</sub>]]  
 the his letter from M. to s.s.  
 'his [possessor] letter by/from Maria to himself'
- (ii) [la sua<sub>i</sub> [lettera di Maria a lui<sub>i</sub>]]  
 the his letter from M. to him  
 'his [possessor] letter by/from Maria to him'

However, the inacceptability of (iii) below —her example (i.a), (footnote 6)— shows that the situation might be more complex:

- (iii) \*il suo libro di se stesso  
 the his book from/by s.s.  
 'his book by himself'

### 3.3. *The RGC*

Turning to the Relativized Governing Category, let us remember the discussion at the end of section 3.1: there, it was noted that neither the notion "accessible SUBJECT" nor the notion "distinct subject" were really operative to describe the Basque facts. I would now like to suggest the following, only slightly distinct, hypothesis:

- (39) A PRONOUN  $\alpha$ 's RGC is the minimal syntactic projection which contains  $\alpha$ ,
- a. all the realized arguments of its L-Governor  $\Gamma$ , and
  - b. a SUBJECT  $\beta$  *distinct from, and excluding,  $\alpha$* .

The crucial idea is (i) to require the presence of a SUBJECT rather than that of an ordinary subject (as in (32)) – thereby replacing the subject NP of a tensed clause by its Infl/Agr, and excluding the NP subjects of secondary predications<sup>15</sup> and (ii) to specify that it be distinct from, rather than accessible to,  $\alpha$  (compare (1b)).

Many positive consequences follow from this slight change in the definition of the RGC. First, in the case of examples like (29), the embedded clause will by definition constitute the RGC of *bere*, since, in a tensed or inflected clause, there always is a SUBJECT, and since this SUBJECT is always distinct from the subject NP and therefore from any material contained therein. More generally, this hypothesis accounts for the fact that, generally, languages do not offer "accessibility effects" (cf. Yang 1982).

Second, it also accounts for the problem which was rather dismissed than really dealt with in Chomsky (1986) — see footnote 1 —, namely the problem of anaphors which directly instantiate the subject position in an embedded tensed clause, as in:

- (40) \*The boys expect [that [each other will win]]

Clearly, the ungrammaticality of this sentence has nothing to do either with BT-compatibility or with accessibility. But if the requirement is simply for the syntactic category/projection to possess a distinct SUBJECT, as suggested here, we predict the ungrammaticality of (40) – and the non-operativeness of the accessibility effect in this specific construction.

(15) The reason why secondary predication subjects are excluded from the list of SUBJECTS (cf. the generalization (17)) should be clear by now: in such structures, there is no functional head — such as Infl — that would establish a non-lexical link between the predicative phrase and the subject phrase. Interestingly enough, PRO does not have the same properties according to whether it is the subject of an infinitival clause, as (i), or the subject of a secondary predication, as in (ii):

- (i) *???*They<sub>i</sub> ordered the children<sub>j</sub> PRO<sub>i</sub> to get out of each other<sub>j</sub>'s bedrooms
- (ii) OK/*?*They<sub>i</sub> ordered the children<sub>j</sub> out of each other<sub>j</sub>'s bedrooms

This difference in relative acceptability might thus well be attributable to the fact that the PRO in (i), but not that in (ii), has an Infl node associated with it, thereby transforming it into a proper SUBJECT (see also Manzini & Wexler (1987) for the relevance of untensed Infl in the determination of GCs). As for the contrast between (i), (ii) and (iii) below, it is suggested in Rebuschi (in press-b) that (iii) is altogether out because *each other* may only be bound in its RGC (as in the first two examples) above when it cannot be bound in its AMGC i.e. [*each other's bedrooms*]; but here, it can be bound in it.

- (iii) \*They<sub>i</sub> ordered the children<sub>j</sub> PRO<sub>i</sub> to kiss each other<sub>j</sub>;

### 3.4. A few applications

3.4.1. Interestingly, many more Basque structures behave in conformity with the lexical specifications (18) and the definitions (38) and (39). Let us first consider examples in which the Basque PRONOUNS are governed by a P (a postposition in Basque). In all the examples given so far, the Ps are locative—in other words, they have an argumental or  $\theta$  structure: the complement they govern denotes a place, but that place is the place occupied by some other item—an entity which, with respect to that Locative  $\theta$ -role, is a “Theme”. Now this Theme may of course never be expressed inside the PP.<sup>16</sup> It ensues that this Theme is the P’s external argument.<sup>17</sup> In this perspective, let us look back on the examples (13) and (23), repeated here as (41) and (42) respectively.

- (41) a. Heiek<sub>i</sub> sugeak<sub>j</sub> elkarren<sub>\*i/j</sub> ondoan ikusi zituzten  
 they-E snakes-A *elkar*-G by-the-side seen AUX  
 ‘They<sub>i</sub> saw snakes<sub>j</sub>; near each other<sub>\*i/j</sub>’  
 b. Heiek<sub>i</sub> sugeak<sub>j</sub> bat bertzearen<sub>i/\*j</sub> ondoan ikusi zituzten  
*bat bertzea*-G  
 ‘They<sub>i</sub> saw snakes<sub>j</sub>; near each other<sub>i/\*j</sub>’<sup>18</sup>
- (42) a. Peio<sub>i</sub> aberastasun handiak [bere baitan] baditu  
 Peio-E wealth big-PL-A *bere* within he-has-them  
 ‘Peio<sub>i</sub> has great qualities in him<sub>i/\*j</sub>’  
 b. \*Peio<sub>i</sub> aberastasun handiak [bere buruaren baitan] baditu  
*bere burua*-G

We noted *supra* that in such cases the VP (or some lower projection of V) was the relevant syntactic segment as far as the identification of the AMGC was concerned. We are now in a position to give a principled account for this fact: in the examples above, the AMGC of the anaphors is again the minimal projection which contains (i) *all, and only, the realized arguments* of their L-governor  $\Gamma$ , and (ii) a subject.

Another typical instance is provided by the following contrast:

- (43) a. Iñaki bere buruarekin mintzo da  
 I.-A *bere burua*-G-with talking AUX  
 ‘Iñaki is talking to himself’  
 b. \*Iñaki berekin mintzo da

(16) See however Rebuschi (*in press-a*), who tentatively proposed to insert a PRO specifier in the PPs, after Chomsky’s (1986) suggestion that NPs may also have PRO subjects. The empirical results of this section are indistinct (because the identification of the external argument of the L-governor of the PRONOUN is intuitively equivalent to Control), but it is to be hoped that the conceptual difficulties the PRO approach is bound to meet are now avoided. Yet a third variant might be devised after Safir’s multiple Small Clause approach – see footnote 4.

(17) In spite of the many similarities between Giorgi’s (*in press*) approach and the one put forth here, I must underline that we radically differ on the  $\theta$  status of PPs: for her (just as for Napoli 1989) a preposition *never* assigns an external  $\theta$ -role.

(18) Giorgi (1984: 64a,b) reports the same type of contrast with Italian reflexives: *se stesso* thus seems to behave like *bere burua* and *elkar*, and *sé* like *bere* and *bat bertzea*.

- c. Iñaki harekin      mintzo da  
       *burua*-G-with  
 'Iñaki is talking to him(\*self)'

Let us assume that the postposition *-kin*, which governs the genitive, is a two-place relator too, hence a lexical head and L-governor for the PRONOUNS; its external Theme role will be realized in such cases by the subject of the V 'talk', whence the grammaticality of *bere burua* in (43a), the ungrammaticality of *berekin* in (b) – the two domains AMGC and RGC coincide, as in the case of (8b) and (20b) – and the disjoint reference that obtains in (c) – recall that *haren* must be free in its RGC (cf. (4b) and (5b)).

But what if *-kin* is a P without argumental structure? If it were the case, the PRONOUN it governs would be an argument of the V, which would then be its L-governor; as a consequence, the same results would be predicted: (i) *bere burua* would be correctly bound in its AMGC, (ii) *bere* would be out because the two GCs coincide, and (iii) *haren* would again have to be free in the clause.

Is the structure of (43) to stay ill-defined then? Note that if a direct object intervenes, as in (44), the two analyses make different predictions. If *-kin* is a lexical head with an argument structure, the direct object NP will count as its external argument, and the following (correct) configurations and indexations will obtain, since the AMGC of *bere* and *bere burua* will be some projection of V – the minimal projection of V which contains the direct object NP and the PP (perhaps the VP itself as suggested here for simplicity's sake); as a consequence, the only possible interpretation for *bere burua* in (44b) is one which does not make much sense extra-linguistically.

- (44) a. Iñakik <[<sub>VP</sub> haurra berekin eramán] > du  
       I-E            child-A *bere*-with taken      AUX  
       'Iñaki<sub>i</sub> has taken the child<sub>j</sub> away with him<sub>i/\*j/\*k</sub>'  
       b. ?Iñakik [<sub>VP</sub> haurra bere buruarekin eramán] du  
       I-E            child-A *bere burua*-G-with taken-away AUX  
       ?'Iñaki<sub>i</sub> has taken the child<sub>j</sub> away with himself<sub>\*i/j</sub>'

On the other hand, if *-kin* had no lexical structure, its complement would be an argument of the verb; the subject NP would therefore belong to the PRONOUN'S AMGC: one can easily see that the consequences would be contrary to the facts, since *bere* should be ungrammatical in (a), and *bere burua* should accept *Iñaki(k)* as a possible antecedent in (b).

To conclude this section devoted to PPs, let us finally observe the following sentences ((45a) is from Salaburu 1986).

- (45) a. Heiek elkarren ondoan      egin dute lo  
       they-E *elkar*-G by-the-side done AUX sleep  
       'They have slept side by side' [lit. 'on each other's side']  
       b. \*Heiek elkarren oheetan egin dute lo  
       they-E *elkar*-G beds-in done AUX sleep  
       'They have slept side in each other's beds'



The difference in grammaticality is obviously due to the fact that *elkar* is the complement of the P *ondoan* in (a), whereas it is the subject of the direct object NP in (b): it follows that the full clause is the anaphor's AMGC in the former case, whereas it is the object NP in the latter.

3.4.2. A quick look at adjectival complements within predicates will suffice to further illustrate the system proposed here. The English and Basque data are parallel: first, the PRONOUNS never are direct complements; second, they are nonetheless an *internal* argument of the adjectival head; finally, the external subject of that head is always realized, thereby necessarily coinciding with the subject which enters into the definition of the AMGC, and with the "distinct SUBJECT" which characterizes the RGC. The following data need therefore no further comments (again, the angled brackets indicate the AMGCs of the PRONOUNS).<sup>19</sup>

- (46) a. <Ian<sub>i</sub> is afraid of himself<sub>i</sub> / him<sub>\*i/j</sub>>  
 b. <Iñaki bere buruaren / \*bere beldur da>  
     I.-A bere burua-G bere afraid he-is  
     'Iñaki is afraid of himself'  
 c. <Iñaki haren beldur da>  
     haren  
     'Iñaki<sub>i</sub> is afraid of him<sub>\*i/j</sub>'

#### 4. Consequences and conclusion: a second look at *bere*

We have seen in section 2.1 that *bere* apparently has all the defining properties of an anaphor. In particular, it requires a "local" antecedent – in its RGC, admittedly, but this is precisely the sort of binding domain the Chomskyan approach defines for an anaphor. But we have also seen that it has a less expected property: it is submitted to the requirement (9) that it be *free* in its AMGC. Therefore, it might be said to have both anaphoric *and* pronominal properties, in spite of the fact that it does not admit of split antecedents.<sup>20</sup> The question must therefore be asked: Is *bere* basically an anaphor, which also happens to marginally be a pronominal – or *vice versa*?

The absolute ungrammaticality of *bere* in (8b) points towards a fundamentally pronominal nature of *bere* – as opposed to the nature of *bat bertzea*: (20b) is much less deviant, and instances of this structure are even attested in 16th century Basque.

(19) The Italian case illustrated hereafter (Giorgi 1984: (64c)), for which I have not been able to find a Basque equivalent without a tensed relative clause, shows that when an AP is inside a complex NP/DP, the head NP/DP (*il professore* below) functions like a subject, but not like a SUBJECT – whence the grammaticality of *sé* with both indices *i* and *j* (the brackets are mine).

- (i) Osvaldo<sub>i</sub> ha visto [<sub>NP</sub> [il professore]<sub>j</sub>] [contento di sé<sub>i/j</sub>]  
 Osvaldo has seen the professor pleased of sé  
 'O. has seen the professor pleased with himself'

This situation is reminiscent of the status of secondary predication subjects with respect to the extensional definition of SUBJECTS: here again, there is no functional head implied in the relation between the head NP and the anaphor's L-governor.

(20) See Walli & Subbarao (1990) for another case of non correspondance between anaphoricity and the no split antecedent requirement.

Another argument is provided by the following fact: contrary to what happens in the Indo-European languages which have both reflexive and non-reflexive possessives, *bere* can specify a subject NP/DP and have a direct or indirect object NP as its antecedent, as in (47a), and (47b,c), respectively – but cannot have a “non-term” as its antecedent, as shown by (47d).

- (47) a. Bere amak Peio maite du  
*bere* mother-E Peio-A loves  
 ‘His<sub>i/\*j</sub>; mother loves Peio<sub>i</sub>’
- b. Bere ama Peiori mintzatu zaio  
*bere* mother-A Peio-D spoken AUX  
 ‘His<sub>i/\*j</sub>; mother has talked to Peio<sub>i</sub>’
- c. Bere amak Peiori dirua eman dio  
*bere* mother-E Peio-D money-A given AUX  
 ‘His<sub>i/\*j</sub>; mother has given Peio<sub>i</sub> the money’
- d. \*Bere ama Peioz mintzatu da  
*bere* mother-A Peio-INS spoken AUX  
 ‘His<sub>i</sub>; mother has talked about Peio<sub>i</sub>’

To account for these facts, I proposed in Rebuschi (1986, 1989) a non-configurational analysis of clause structure in Basque: if there is no VP, an object NP can bind *bere* inside the subject NP just as the subject VP can bind *bere* inside a non subject NP (or a PP). However, that approach entailed the recognition of two distinct representations: Constituent Structure on the one hand, and Lexical Structure on the other (cf. Mohanan 1984) since anaphors like *elkar* ‘each other’ or *bere burua* ‘himself’ were ungrammatical as subjects; *bere* was then supposed to be bound in CS, and *elkar* or *bere burua* at LS.

As there was not too much independent evidence for this dual analysis, and some pretty telling evidence to the contrary —i.e. in favour of the existence of a VP in Basque CS—, Ortiz de Urbina (1989) has suggested that *bere* is simply an emphatic pronominal, which must be bound or licensed by a personal affix in the inflected verb.

However, the idea that the Agr affixes could bind PRONOUNS can be easily dismissed: if it were the case, non emphatic pronominals would never be allowed as subjects or objects in tensed sentences at all: they would always be bound, thereby systematically violating whatever version of BT Principle B one might think of. But those affixes are not licensers either: emphatic pronominals are licit even when they are not subjects or objects (i.e. are not cross-marked in the inflected verb form). Furthermore, in the northern dialects, the paradigms of “reflexive” genitives such as *bere* and of emphatic genitives are consistently distinct (cf. *bere* in (5a) vs. *beraren* in (5b); for more details, see Rebuschi 1988).

Associated with this descriptive problem was a more theoretical one; as Sportiche (1986) put it, “natural languages never seem to impose locality requirements not involving c-command”. In other words, we have here something that looks like a paradox: *bere* is submitted to some locality constraint (recall (29a,b)); however, if there is

a VP, no c-command requirement governs its distribution.

This paradox, however, might well turn out to be a false one; indeed, as shown in detail in Rebuschi (1991), when *bere* is c-commanded by its antecedent, it induces either a strict identity reading, or a sloppy identity interpretation, as shown in (48b,c) respectively, whereas it never induces sloppy identity when its antecedent does not c-command it, cf. (49).

- (48) a. Iñakik bere laguna ikusi du, eta Koldok ere bai  
Iñaki-E *bere* friend-A seen AUX and Koldo-E also so  
'Iñaki<sub>i</sub> has seen his<sub>i/\*j</sub> friend, and Koldo (has ...) too'
- b. '...and Koldo<sub>k</sub> has seen his<sub>i</sub> friend too' [*strict identity reading*]  
c. '...and Koldo<sub>k</sub> has seen his<sub>k</sub> friend too' [*sloppy identity reading*]
- (49) a. Bere lagunak Iñaki ikusi du, eta Koldo ere bai  
*bere* friend-E Iñaki-A seen AUX and Koldo-A also so  
'His<sub>i/\*j</sub> friend has seen Iñaki<sub>i</sub>, and Koldo too'
- b. '...and his<sub>i</sub> friend has seen Koldo<sub>k</sub> too' [*strict identity reading*]  
c. \*'...and his<sub>k</sub> friend has seen Koldo<sub>k</sub> too' [*sloppy identity reading*]

It therefore seems clear that when *bere* is technically "bound" (i.e. c-commanded by the NP it is coindexed with), it behaves like a bound pronominal rather than like an anaphor (since real anaphors normally only induce sloppy identity readings)<sup>21</sup> – and that when it is inside the subject NP, it is just not bound at all, i.e. it behaves (almost) like an ordinary pronominal – "almost" because, contrary to what usually happens crosslinguistically, it remains submitted to a special constraint – the constraint that it be *coindexed* (although not bound!) in its RGC.

Now this is not too costly, from a theoretical point of view, once it has been noticed, as we have done, that *bere* must be free in its Absolute Minimal Governing Category – and that it is only in its wider, *Relativized* Governing Category that it is submitted to that somewhat exotic constraint.

There is, however, a less exotic consequence to the foregoing description: we have to accept the idea that what I have called the RGC is *not* basic – i.e. that the really *local* condition which is, in Sportiche's words, universally constrained by c-command, is what I have called the AMGC. In other words, such facts suggest that we return to a pre-LGB format, when Chomsky (1979: 23-25)<sup>22</sup> considered that *each other* in such examples as (50a,b) represent "a case where the general theory is relaxed, to yield marked constructions".

(21) Compare Bouchard's (1985) words "false anaphors". It is worth noting that long distance binding seems always to induce *either* sloppy *or* strict identity, i.e. that long distance would-be anaphors really are bound pronominals, in fact. Here is a Japanese example from Kawasaki (1989: footnote 5) which is all the more revealing as the antecedent is a quantified phrase (See however Saito & Hoji (1983: 257) for a contrary view):

(i) John-dake-ga [zibun-ga tasukar-u-to] omotte i-ta  
J.-only-NOM *zibun*-NOM be-saved-Pres-Comp think-past  
'Only John believed that he would survive' [*sloppy or strict*]

(22) Quoted in Botha (1989: 85).

- (50) a. They read [each other's books]  
 b. They heard [stories about each other]

In fact, if the final definition of the AMGC (38), repeated as (51) below, is on the right track, only (50a) should be considered a marked case; but if the reference to a subject is already in itself a (counter-)opacity factor, as suggested by Koster (1987) and in footnote (14), both sentences really belong to the "periphery".

- (51) A PRONOUN  $\alpha$ 's AMGC is the minimal syntactic projection which contains  $\alpha$ , all the realized arguments of its L-Governor  $\Gamma$ , and a subject.

Moreover, the study of the various Basque PRONOUNS undertaken here, and in particular that of the pseudoreflexive genitive *bere*, can help us better understand the crucial distinction Bouchard (*op. cit.*, 124) has established between "semantic anaphors" (entities that need "a linguistic antecedent, because they cannot refer extralinguistically") and "syntactic" ones (items which "bear a specific relation with their antecedent, this relation being obligatory, one-to-one, local, and structurally conditioned"). From this point of view, we can suggest that although northern Basque *bere* is clearly a *semantic* anaphor, it is not a *syntactic* one; in a sense, it is even the perfect antithesis of Dogrib *ye* – a syntactic anaphor which is at the same time a semantic pronominal (see Enç 1989).

Yet, many questions remain unanswered, which clearly deserve further research. Let me simply mention the following two, which seem particularly important:

(i) Can the presence of the "distinct SUBJECT" required in the definition of the RGC (39) be derived from more general principles, or is it only a particular realization, in English and in Basque, of the more general hierarchy of counter-opacity factors propounded by Manzini & Wexler (1987)?<sup>23</sup>

(ii) What independent evidence is there —outside BT-related facts— in favour of our thesis that many Ps, just as Vs, Ns and As, have external arguments – and, more generally, for the operativeness of the notion "(minimal syntactic projection which contains all the arguments of the) PRONOUN's L-governor" — at least, inasmuch as it is empirically distinct from the minimal domain Koster (1987) derives from his Bounding Condition on the one hand, and from "θ-domains" on the other?

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(23) Of course, a SUBJECT will always help define a syntactic domain at least as wide as a subject NP – cf. Manzini & Wexler's (1987) results: tense and agreement always function as counter opacity factors. But that is hardly a theoretical answer (see footnote 15 for a possible direction for future research).

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# Patterns of V<sup>o</sup>-raising in Long Head Movement, and Negation: Serbo-Croatian vs. Slovak

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## 0. Introduction\*

This paper is a report of research in progress in the area of *Long Head Movement* (LHM), or the extraction of a Verbal-like head across an intervening Aux-head to the Complementizer, or C<sup>o</sup>. This process creates V-second phenomena which differ in appearance from those of Germanic, but have parallel formal properties. Section 1 summarizes the main properties of LHM established in earlier research on Balkan, Old Romance, and Southern Slavic languages (see Rivero 1988b, and Lema and Rivero 1989a-b in particular). Section 2 separates two types of LHM languages not distinguished in earlier papers, namely the ones where Neg blocks LHM vs. those where it does not. Section 3 outlines properties of the first group, considering specific characteristics of Serbo-Croatian, and section 4 studies how the second group differs from the first, in view of the properties of Slovak LHM, which are given in detail. The main hypothesis is that contrasts between the two groups of LHM languages derive from the position of Negation within the clause. In the first group, which is extensive, Neg is higher than Tense, c-commanding it in the syntactic representation, similar to languages like Italian. In the second LHM group, which is less common, Neg is lower in the tree, similar to English, and does not c-command Tense in syntax. Nevertheless, in both groups, Neg is the head of a maximal phrase, and LHM does not cross it, as already hypothesized in earlier work on the basis of the first group of languages exclusively.

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## 1. Long Head Movement: an overview

The recent literature in the Government and Binding framework distinguishes two types of verbal fronting: (a)  $X^{\max}$ -movement or VP-Preposing, the process which extracts a main V with its complements, as in (1), and (b)  $X^0$ -movement, or the fronting of  $V^0$  or  $Aux^0$  in isolation, as in Germanic (2a-b), where it is commonly assumed that *lesen* "read" and *are* have raised to the Complementizer position ( $C^0$ ). According to Chomsky's assumptions (1986), these extractions represent the two different options allowed by Universal Grammar. Namely, maximal projections or their heads may move, but not intermediate projections.

(1) Mary had to read the book, and [read the book] she will

- (2) a. Lesen Sie das Buch?  
b. Are you reading the book?

The two processes contrast in their locality effects. On the one hand, VP-Preposing moves the  $X^{\max}$  containing the V with Argument or Thematic structure, crossing a sequence of Auxiliaries, with an apparent unbounded effect, as in (3a-b). Also, VP-Preposing escapes Inner Island effects (Ross 1983) like Theta-governed complements (Rizzi 1989), as shown by Spanish (4). Pattern (4a) represents extraction from both a Factive and a Negative Island, while (4b) is an Extraposition Island also with a Negation, and (4c), a *Wh*-Island.

(3) a. Mary had to read the book, and [read the book] she may have.

- b. [Einer Kuchen backen] wird er doch wohl können  
A cake bake will he presumably can  
"Presumably, he can bake a cake" (Webelhuth 1985)

(4) a. [Leer el libro] siento no haber podido

"I regret that I have been unable to read the book"

b. [Leer el libro] no ha debido sin duda poder

"Undoubtedly, he must have been unable to read the book"

c. [Leer el libro] me pregunto cuándo podrá

"I wonder when he will be able to read the book"

On the other hand, Head-movement has been thought to be strictly local, in the sense exemplified by Germanic, so sensitive to Islands. For instance, a common GB analysis of (2a) consists of first moving  $V^0$  to Inflection ( $I^0$ ), to constitute the finite form with Tense/Agreement (*les-en*), with the subsequent movement of the complex as  $X^0$  to  $C^0$ . As shown by (5), this locality extends to Auxiliaries; since only the first  $Aux^0$  below  $I^0$  raises, it must be the only item available for the subsequent movement to  $C^0$ . Thus, raising a second  $Aux^0$  to  $C^0$ , as in (5b), or the main  $V^0$  across  $Aux^0$ , as in (5c), leads to (violent) ungrammaticality:



- (5) a. Has Mary been reading the book?    c. \*Reading you are the book?  
 b. \*Been Mary has reading the book?

The locality of Head-movement depicted in (5) is attributed to the Head Movement Constraint (HMC) (Travis 1984), making an X<sup>o</sup> move into the Y<sup>o</sup> which properly governs it, that is, one step only. According to Baker (1985, 1988) and Chomsky (1986), the HMC is not an independent condition in UG, but derives from the Empty Category Principle (ECP), requiring an EC to be properly governed.

The properties of Head-movement of V<sup>o</sup> and/or Aux<sup>o</sup> in present Southern Slavic, Balkan, and Old Romance languages differ from those of Germanic in important ways, as recent work shows (Lema and Rivero 1989a-b, 1990, Rivero 1988b, 1989b).

To this effect, consider two different aspects of Bulgarian word order —the first concerning main Vs, and the second Auxiliaries in sequence—, which are the result of X<sup>o</sup>-raising.

First, in Perfect patterns with preverbal Subject, the order is as in (6a), parallel to its English gloss, or to Spanish *Pedro ha leído el libro*: NP1 Aux V NP2. However, the ordinary unmarked order for independent or main clauses with null Subject is (6b), with V preceding Aux, in contrast with the deviant English (5c): V Aux NP2. The word order Aux V NP2 is ungrammatical, (6c), in contrast with the null subject option in Spanish, *Ha leído el libro*. Also, regardless of the presence/absence of NP1, fronting of V and NP2 is disallowed, as shown in (6d-e), identical to Spanish *\*Leído el libro Pedro ha* and *\*Leído el libro ha* in this particular respect.

- (6) a. Petur e pročel knjigata                    c. \*E pročel knjigata  
       Peter has read book+the                d. \*[Pročel knjigata] Petur e  
       “Peter has read the book”            e. \*[Pročel knjigata] e  
 b. Pročel e knjigata  
       Read has book+the  
       “He has read the book”

The traditional Slavic explanation for word orders like (6b) is Wackernagel's law (without using the specific label). Namely, in such constructions, attention focuses on the Aux as Clitic exclusively: it cannot be initial, so a constituent must precede it. To the GB eye, a much more intriguing issue is the process moving the non-finite V, a topic which has not concerned traditional Slavicists; in other words, triggering factors aside, what is the rule behind the word order in (6b)?

This Bulgarian pattern is reserved for root environments, much like Germanic (2), and does not result from VP-Preposing. Thus, in the cited papers it is argued that the V<sup>o</sup> *pročel* moves to C<sup>o</sup> bypassing the intermediate finite Aux *e* in I<sup>o</sup>, as an instance of LHM. When C<sup>o</sup> is filled, as in embedded clauses with a Complementizer, V<sup>o</sup>-raising fails to apply. From this perspective, the movement in (6b) is parallel to Germanic (2) both in typology and landing site, and unlike (3-4); however, it differs from Germanic Head-movement in the transported item.

LHM as in (6b) goes against the HMC, because an Aux<sup>o</sup> in the movement path is skipped by V<sup>o</sup>. In consequence, Lema and Rivero (1989a-b) conclude that this constraint is descriptively inadequate for V<sup>o</sup>-raising, the core case behind its motivation, and must be abandoned, joining other voices doubting its viability on the basis of perhaps less clear cases (Chomsky 1988, Ouhalla 1988 and see Baker and Hale 1990 for Incorporation in violation of the HMC too).

Head-movement including LHM may escape the strict adjacency imposed by the now dispensable HMC, but is still subject to the locality required by the ECP, the essential condition. The nature of this locality is shown by the properties of Bulgarian constructions with sequences of Auxiliaries.

The Bulgarian Renarrated Mood for opinions of a third party is formed on the Perfect Indicative by parallel Auxiliaries, as in the Present (7a), with the finite Perfect Aux followed by a "repeated" Aux as Participle, preceding the main V as Participle too. In (7a) the Subject is initial, so word order is canonical, similar to English *I have been reading the book* in the relevant sense. With no subject, unmarked word order is as in (7b), so the Aux after the finite one *must* front, and cannot remain in situ, (7c). In fact, the word order in (7b) represents the only grammatical option, as main V and object cannot front, (7d), and the main V alone cannot be extracted either, (7e). As a result, it can be reiterated that the process in (6b-7b) is not VP-Preposing, and its output differs from that of Germanic Head-Movement, as the contrast between (7b) and deviant (5c) shows.

- |     |  |  |
|-----|--|--|
| (7) | a. Az sŭm bil četjal knigata<br>I have+1s had read book+the  | c. *Sŭm bil četjal knigata                               |
|     | b. Bil sŭm četjal knigata<br>Had have+1s read book+the<br>"According to someone,<br>I am reading the book" (= (7a-b)). | d. *Četjal knigata sŭm bil<br>e. *Četjal sŭm bil knigata |

For Lema and Rivero (1989a-b) the finite Aux *sŭm* in (7b) functions as a link in the chain of coindexation allowing the Aux *bil* in C<sup>o</sup> to antecedent-govern its trace, so the structure complies with the ECP. Elements which lack finiteness, as determined by Tense but not necessarily Agreement (Number/Gender/Person), and intervene in the movement path, such as the Participle *bil* in (7e), interrupt the chain. Likewise, the V in C<sup>o</sup> in (6b) antecedent-governs its trace in the VP, across the Aux *e*.

Tense seems to be essential for the formation of LHM chains, but Agreement appears irrelevant. For instance, Slavic Participles including Bulgarian agree in Number and Gender with subjects, so in (7a-b) the finite Aux and the two Participles show (identical) Number. However, the presence of this shared feature has no effect on LHM, and the movement chain never extends beyond the item which complements the finite Aux. In consequence, I will omit mention of Agr and its location(s) in this paper (but see Chomsky 1988, Iatridou 1990, Ouhalla 1990, Pollock 1989 for different positions in this respect).

In brief, Head-movement is not as strictly local as required by the HMC, but it is still a short-range movement, sensitive to Islands.

Based on the above results, Roberts suggests (1990) that the LHM finite Aux does not “count” in a sense relevant for Relativized Minimality (Rizzi 1989), because it forms an A°-complex, which an A°-bar movement like LHM can cross with no conflict. While Rizzi (1989) had assumed that Head-movement was sensitive to the HMC=ECP exclusively, Roberts concludes that it is subject to Relativized Minimality too, within the A-head vs. A-bar head distinction. In this discussion, I will adopt the general idea that Relativized Minimality plays a role in Head-movement, without spousing a specific formulation of the factors blocking LHM, a topic requiring research beyond the scope of this paper (and see Baker and Hale 1990 and Li 1990 too). In 4.1, I will return to locality in relation to Slovak, which offers interesting parametric variations with other LHM languages in this area.

In languages with VP-Preposing and LHM such as Rumanian, Auxiliaries allowing LHM (a) are exclusively Aspectual/Temporal, that is functional like I° (and also C° and Det°)—such as Perfect *a* “he has” in (8a), or also Future *va* “he will” and Conditional *ar* “he would”, which I do not exemplify—, and (b) disallow VP-Preposing, as seen in (8b).

- (8) a. Cîtit- a cartea!                      b. \*[Cîtit cartea]      Maria nu a  
       Read has book+the!                    Read    book+the Mary not has  
       “He read the book!”

In contrast, a Modal like *a putea* “can” allows VP-Preposing, as shown in (9), and is lexical like V°, due to its additional lexico-conceptual structure.

- (9) [Cîti cartea] Maria nu poate                      “Read the book Mary cannot”  
       Read book+the Mary not can

Thus, on the one hand a functional Aux° cannot contribute to the proper government of a VP-trace, as (8b) indicates, but is a transparent head in the formation of the LHM chain, as shown by (8a); this property is found without exception in Auxiliaries allowing LHM in all languages having the process. On the other hand, a lexical Aux° has the opposite characteristics, so it can be concluded that it is parallel to a Theta-marking V° in relation to its complement and extraction properties, as shown for Spanish *poder* “can” in (4).

As to the existence of LHM in natural language, the process has been thought impossible in view of Germanic, but it is very common in Bulgarian, Czech, Slovenian, Slovak, and Serbo-Croatian, and can be found in Albanian and Rumanian. In my view, each of these languages shows the core properties of LHM outlined above for Bulgarian, and also interesting parametric variations, in view of non-shared characteristics. In this paper, I will be concerned with properties of Slovak and Serbo-Croatian LHM in relation to Negation, and how they fit into the general analysis summarized in this section.

In Old Romance, LHM is documented in all major languages, excluding French. It survives until the 17th century in Spanish, and the 19th in European Portuguese,

in root constructions traditionally labelled Analytic Futures/Conditionals. For instance, in Old Spanish (10), the main V is initial, the (pronominal) Clitics, Aux, and phrasal complements follow, like in Bulgarian (although the examples cited above lack Pronominal Clitics, Bulgarian is parallel to Old Spanish in this area). LHM locates *dezir* in C°, bypassing the Aux *bedes* in I°, so as to avoid having the Clitic *lo* as clause-initial item, that is, for a Wackernagel effect found in present Southern Slavic too. Under this approach, *lo* is not infix-like, but the first constituent following C°.

- (10) *Dezir lo hedes al rey?* Zifar p. 124  
 Tell it will+2s to+the king? "Will you say it to the king?"

In the medieval period, LHM constructions like (10) contrast in syntactic distribution with the Synthetic Futures in (11) still current today, with the pronominal Clitic preceding the V-complex. These result from short Head-movement instead, or the Incorporation (Baker 1985, 1988) of V° (*dar-*) into Aux° (*-edes*) (Lema 1989), the more familiar process in current discussions of X°-movement.

- (11) *A quién nos daredes por cabdiello?*  
 To who us give+will+2s as leader?  
 "Who will you give us as leader?" Zifar p. 163

In Slavic, LHM as in (6b-7b) does not alternate with Incorporation, a characteristic of Old Romance. The contrasting syntax of Old Spanish LHM vs. Incorporation is studied in detail in Lema and Rivero (1990), but will not be discussed any further in this paper. However, Old Romance Incorporation, and the locality of LHM in (7b) doubly motivate the claim that the LHM Aux is an intervening head, not the Specifier of the VP whose V° moves, as pointed out in Lema and Rivero (1989b). In particular, Incorporation is Head-to-Head Movement (Baker 1985, 1988) not Head-to-Specifier raising. Slovak will motivate this aspect further (§4.2).

In view of the widespread geographic distribution of LHM, it is tempting to visualize medieval European V-second phenomena within a North-South dichotomy. In root environments, Northern languages, including Old French, show Germanic Short Head-movement, with the finite V or Aux in C° (and another item often in the Spec-of-CP). In this same environment, Southern languages from Portugal to the Black Sea may show LHM as just discussed, with a non-finite V or Aux in C°, and the finite Aux lower in the tree. Triggers for Short and Long Head Movement behind these V-second phenomena appear equally puzzling at times, as the many proposals in the literature suggest, but a wide range of cases of LHM seem to follow from Wackernagel's Law requiring support for Clitics—whether Pronominal or Auxiliary items—, as the tradition has maintained.

With this background in mind, I turn to further refinements of LHM in view of languages not considered in the previous papers, once I distinguish two types of languages in relation to Negation and LHM in §2.

## 2. Negation and two groups of LHM languages

Languages with LHM fall into two groups in relation to Negation. In a first group examined in the cited works by Rivero, and Lema and Rivero, the presence of Neg clearly blocks LHM. In a second group not considered in those papers, LHM applies unimpeded by Neg in extremely common patterns. This section outlines the characteristics of the two groups, proposing that the contrast follows from the different syntactic position of Neg in the two types of LHM languages. Section 3 provides additional motivation for the analysis given previously for the first group, by examining new Serbo-Croatian data. Section 4 explores the syntax of Negation in the second group, by studying in detail the properties of Slovak.

2.1. *Italian-type languages and LHM.* On the one hand, a first group of languages disallows Negation within LHM constructions. Grammatical word order patterns are exclusively affirmative, as seen above, and negative patterns are clearly ungrammatical, as pointed out in Rivero (1988b). The Bulgarian examples in (12) exemplify this situation, with (12a) the negative pattern with overt subject, (12b) the null subject version, and (12c-d) two imaginable patterns with LHM in the presence of Neg.

- |                            |                 |                            |
|----------------------------|-----------------|----------------------------|
| (12) a. Az ne sŭm          | pročel knjigata | b. Ne sŭm pročel knjigata  |
| I not have+1 s             | read book+the   | c. *Pročel ne sŭm knjigata |
| "I have not read the book" |                 | d. *Ne pročel sŭm knjigata |

This first group is very extensive, including among extant languages not only Bulgarian, but Rumanian, Serbo-Croatian, and Slovenian. According to available data, that is, absence of positive information, the major Old Romance languages with LHM fall into this category too, with European Portuguese grammarians stating the point explicitly, at a time when LHM constructions were almost current. In view of the typology of its Negation, Albanian should be within this group, but I lack data as to its status.

Rivero (1988b) and Lema and Rivero (1989a-b) argue that in this first group of languages, Negation heads a maximal projection taking Tense as complement, much like in the major Romance languages with the exception of French (and see Ouhalla 1990, Pollock 1989, Zanuttini 1989 for relevant discussion). In other words, Negation c-commands Tense in this set of languages, so following Zanuttini's terminology, I label this group the Italian-type (perhaps to the surprise of Slavicists). Given its position as intervening head, Neg° creates a barrier for LHM of the main V° to C°, blocking the process, which accounts for the ungrammaticality of LHM negative patterns, or the absence of such patterns in historical materials in Italian-type languages. In view of this situation, Roberts (1990) proposes that Neg is an A-bar head, with LHM an A-bar movement for heads; so a V° crossing Neg° in LHM violates Relativized Minimality.

However, as the tradition has maintained, it could be argued that *ne* "not" in (12b), or NegP in the Italian-type language, is located in such a way that it counts

as the first constituent in the clause supporting the clitic-like Aux *šim*, so that LHM becomes inapplicable, irrespective of the nature of Neg as head. Under this view, patterns like (12c-d) do not necessarily show that NegP is a barrier in the movement path of LHM, which is important in view of the existence of the second group of languages. Nevertheless, specific properties of Serbo-Croatian discussed in §3 will be crucial in motivating the proposed blocking effect of Neg<sup>o</sup> in the first group.

2.2. *English-type languages and LHM.* On the other hand, the West Slavonic languages Czech and Slovak allow negative LHM patterns with clear grammatical status, as seen in the common Slovak word order in (13), which is parallel to deviant Bulgarian (12d) in the relevant sense. Thus Negation has no blocking effect in this second group.

- (13) Ne- napísal som list  
 Not-written have+1 s letter  
 "I have not written the letter" or "I did not write the letter"

I will show that in this less extensive group, Neg is located differently, that is, immediately below Tense (and Aspect), as discussed in §4.2, as first proposed for English by Pollock (1989), but closer to the analysis in (Ouhalla 1990) in particular, so I will label this second group the English-type, perhaps to the surprise of Slavicists too. In brief, in this type of LHM language, Negation does not c-command Tense in syntax, and I will show that Neg<sup>o</sup> heads a NegP into which V<sup>o</sup>/Aux<sup>o</sup> raises, forming a complex which undergoes LHM to C<sup>o</sup>.

In conclusion, LHM languages may belong to the Italian-type or the English-type as to the location of Neg, accounting for their different behavior in LHM. Although LHM does not bypass Neg<sup>o</sup> in either group, two different strategies are observed: (1) in Italian-type languages, LHM fails to coexist with Negation, and (2) in the English-type language the effect of Negation is neutralized through Incorporation.

### 3. LHM and Negation in Serbo-Croatian

The aim of this section is to show that Negation is not crossed in LHM, as it is a blocking head, and that this situation applies irrespective of whether Neg is the first constituent in the clause or not, as shown by Serbo-Croatian. The section is organized as follows. In §3.1, I establish that Serbo-Croatian shows LHM with the characteristics described in Rivero (1988b), and Lema and Rivero (1989a-b) in particular. In §3.2 I establish the barrierhood of Serbo-Croatian Neg<sup>o</sup> for LHM.

3.1. *Serbo-Croatian LHM.* In Serbo-Croatian, LHM is found with the Perfect (=Past), Future, and Conditional Aux in root clauses, as in (14b-16b). This is also the situation in Rumanian, and Slovenian, and close to what is found in Czech and Slovak (Perfect and Conditional), and Old Romance (Future and Conditional). Notice that the fronted item can be a Participle, (14b-16b) or an Infinitive, (15b), as in other LHM languages too.

- (14) a. Ja sam čitao knjigu                    b. Čitao sam knjigu  
           I have+1s read book                    "I have read the book"
- (15) a. Ja ću čitati knjigu                    b. Čita ću (= Čitatis ću) knjigu  
           I will+1s read book                    "I will read the book"
- (16) a. Ja bih čitao knjigu                    b. Čitao bih knjigu  
           I would+1s read book                    "I would read the book"

As is the case for functional Aux<sup>o</sup> in LHM languages, the previous Serbo-Croatian Auxiliaries disallow VP-Preposing, as in (17). This is mentioned explicitly, but without naming the process, in Browne (1975), and informant judgments are clear-cut in this and other areas I discuss.

- (17) a. \*[Čitao knjigu] sam    b. \*[Čitati knjigu] ću    c. \*[Čitao knjigu] bih

Also, the locality of LHM targeting the head complementing the finite Aux, as in Bulgarian (7b), is applicable to Serbo-Croatian too, as deduced from the properties of the future formed with *da*, as in (18).

- (18) a. Ja ću da čitam knjigu  
           I will+1s PRTC read+1s book  
           "I will read the book"

On the basis of proposals in Rivero (1988b) for Balkan languages, the Serbo-Croatian Future Aux can receive the following treatment. It may take a VP-complement, as in (15a), or a sentential (IP or CP) complement with finite V, as in (18), within a structure frequent in Albanian, Bulgarian, Macedonian, Modern Greek, and Rumanian too. In (18), *da* is the X<sup>o</sup> heading the complement of the Aux. In this sense, it is similar to C<sup>o</sup>, or rather, I<sup>o</sup>, such as English *to* in *I have to read the book*.

We have already seen that a Bulgarian non-finite intervening head blocks LHM, preventing antecedent-government of the resulting trace. Likewise, the Serbo-Croatian null subject version of (18) with *čitam* extracted to the matrix C across an intervening *da* is ungrammatical, (19a). This situation confirms Rivero's earlier result based on Rumanian (1988b) that Balkan Inflectional Particles, unlike functional Auxiliaries, are barriers to LHM.

In view of Roberts' ideas (1990) in relation to Relativized Minimality in Head-movement, it can be assumed that such particles are A-bar heads which cannot be bypassed by LHM as A-bar Head-movement. These results appear compatible with Li's proposals (1990) for Short Head-Movement too, or a different view on related topics. Li assumes that Incorporation in the sense of Baker (1985, 1988) is possible out of VP-complements, but not sentential ones, as Baker proposes. Oversimplifying Li's view, the Head-movement chain should contain only A-positions, and not A-bar positions, so as to avoid a violation of Principle C of the Binding Theory by having a trace which is a variable but A-bound in the domain of its chain. Since C<sup>o</sup> and I<sup>o</sup> are A-bar positions, Head-movement out of sentential complements through C and I is barred. In LHM too, extraction is possible out of VP-complements, and across a

functional Aux which must count as an A-head under Li's approach, but not across the type of I<sup>o</sup>-head which may lead to an A-bar dependency. In §4.1. I return to this topic.

Also, since Future Aux is functional, allowing LHM out of its VP-complement, as in (15b), it disallows X<sup>max</sup>-Preposing, as in (19b) from Browne (1975), who mentions this point explicitly.

- (19) a. \*Čitam ću da knjigu      b. \*[Da čitam knjigu] ću

The locality of LHM can be observed in Passive constructions too. Example (20a) contrasts with (20b), showing LHM of the Passive Aux, or the X<sup>o</sup> heading the complement of the finite functional Aux *će*. This last pattern is parallel to the Old Spanish Passives with LHM in Lema and Rivero (1989a, 1990).

- (20) a. Kuća će biti prodana      b. Biće (=biti će) prodana  
       House will+3s be sold      "It will be sold"  
       "The house will be sold"

In brief, Serbo-Croatian LHM has the properties expected in view of previously studied LHM languages. It is a local process licensed by functional Auxiliaries; it is reserved for root contexts; it escapes the HMC, is subject to an ECP sensitive to Relativized Minimality via antecedent-government, and differs from VP-Preposing.

3.2. *The blocking effect of Negation on LHM.* In Serbo-Croatian, Negation is placed before the finite V in simple tenses, (21a), and the finite Aux in compound tenses, (22a), like in Italian-type languages, as seen in Spanish (21b-22b).

- (21) a. (Ja) ne čitam      b. (Yo) no leo  
       I not read+1s      "I do not read"
- (22) a. (Ja) nisam čitao      b. (Yo) no he leído  
       I not+have+1s read      "I have not read"

In view of this, it can be assumed that Serbo-Croatian Negation heads NegP (as first proposed for Japanese by Kitagawa 1986, and later by several others), and takes Tense as the complement it c-commands, also as in other Italian-type languages. Remember that I omit all mention of Agreement.

Serbo-Croatian is one of the languages where Neg blocks LHM, as in (23c). As a consequence, LHM patterns are affirmative, as seen in (14b-15b-16b), a point often noted in descriptions of this language.

- (23) a. Ja nisam čitao knjigu      c. \*Čitao nisam knjigu  
       b. Nisam čitao knjigu      "I have not read the book"

The proposal that Neg<sup>o</sup> as intervening head blocks the movement of V<sup>o</sup> to C<sup>o</sup>, while the functional Aux<sup>o</sup> alone obviously does not, accounts for the contrast in grammaticality between (14b) and (23c). However, if *ni* "not" is either the first item in the clause, or exempts the Aux *sam* from clitichood when blending with it, as the tradition maintains, LHM would not apply irrespective of the formal status of Neg<sup>o</sup>.



Therefore, to establish that Neg<sup>o</sup> has a blocking effect on LHM, as hypothesized, a different set of Serbo-Croatian patterns is required.

In Serbo-Croatian (and Slovenian), Clitics must appear in second position in the clause, as discussed in detail in Browne (1974, 1975), in contrast with Bulgarian. In both languages, Pronouns and Auxiliaries as Clitics cannot be first in the clause, and must be supported by an initial constituent. However, in Serbo-Croatian they must obligatorily "seek" a second position, as in (24). In (24a) the complex *ne vidim* is the first constituent, and *ga* "him" is in second position; in (24b) the pronominal Clitic follows the initial Adverb, and is not linearly adjacent to the finite V, and in (24c) the clitic *im* "to them" follows the first *wh*-phrase and precedes the second. Such phenomena are absent in Bulgarian.

- (24) a. Ne vidim ga                      c. Koliko        im        ko        daje?  
       Not see+1s him                      How+much to+them who gives?  
       "I do not see him"                      "Who gives how much to them?"
- b. Sad ga ne vidim  
       Now him not see+1s  
       "Now I do not see him"                      (Rudin 1988)

Thus, Bulgarian and Serbo-Croatian (and also Slovenian) Clitics are sensitive to different versions of Wackernagel's law. A similar dichotomy is found in Old Romance, where pronominal Clitics cannot be initial as the general case; in addition, in Old Portuguese and Spanish, they may (optionally) appear in the second position in the clause, away from V or Aux, in the phenomenon labelled Interpolation (and see Rivero 1986, 1990 for discussion). As a consequence, Serbo-Croatian patterns like Old Spanish and Portuguese, with (24b-c) parallel to Old Spanish (25) in the relevant respect; in (25) the Clitics follow the *wh*-phrase and precede the Negation.

- (25) Por qué me lo non dices?                      *Calila* p. 284  
       Why me it not say+2s                      "Why don't you say it to me?"

Serbo-Croatian pronominal Clitics may precede the Negation while still requiring the support of a first constituent in the clause, as shown in (22b). In the absence of an initial Adverb or a preverbal Subject, the required first constituent could in principle be the V<sup>o</sup> moved to C<sup>o</sup> through LHM. Such movement would cross Neg<sup>o</sup>, no longer a first constituent, in order to provide support for the otherwise initial Clitics. However, as I now show, in such a situation LHM produces an ungrammatical result, motivating the hypothesis that Neg<sup>o</sup> is a blocking intervening head in Italian-type languages.

To this effect, consider the word order variation between affirmative and negative versions of the Perfect with pronominal Clitics (Conditional and Future show similar alternations):

- (26) a. Ja sam        mu        se        predstavio  
       I    have+1s to+him myself introduced  
       "I have introduced myself to him"

- b. Ja mu se nisam predstavio  
 I to+him myself not+have introduced  
 "I have not introduced myself to him"
- c. \*ja sam mu se (nipredstavio/ne predstavio)

In the affirmative (26a), the Clitic complex *sam mu se* is in second position in the clause. In the negative version, the pronominal Clitics *mu se* precede the Negation *ni*; without proposing an analysis, this suggests that these Clitics cross Neg<sup>o</sup> to reach the second position in the clause. The crossing option is not available to the Aux, which "ceases" to be a Clitic according to the tradition, as the deviance of (26c) shows. In my view, such Aux is unable to cross Neg<sup>o</sup>, like other verbal-heads, and appears to incorporate into Neg<sup>o</sup>, an aspect I return to in §4.2.

The null subject version of (26a) involves LHM, as in (27a), but the LHM order in (27b), corresponding to (26b), is ungrammatical. In brief, while LHM can cross Auxiliaries and Clitics, it cannot cross the Negation, even when this item is not initial, and Clitics require a first constituent for support.

- (27) a. Predstavio sam mu se  
 Introduced have+1s to+him myself  
 "I have introduced myself to him"
- b. \*Predstavio mu se nisam

Slovenian should behave along the lines of Serbo-Croatian in this respect, because it combines (a) LHM, (b) the Italian-type Neg, and (c) second-position requirements on Clitics, as shown in the Perfect pattern cited in de Bray (1980), parallel to Serbo-Croatian (26b). However, I have not obtained the relevant data, and cannot establish the point.

- (28) Jàz ga níssem vídel  
 I him not-have+1s seen  
 "I have not seen him"

In Old Spanish, Interpolation of Clitics across Negation combined with LHM is not documented either (Lema and Rivero 1990), and must have been ungrammatical.

In conclusion, in Italian-type languages, Neg<sup>o</sup> as intervening head blocks LHM of V<sup>o</sup> to C<sup>o</sup>, as already proposed in (Rivero 1988b).

#### 4. LHM and Negation in Slovak

This section examines the properties of English-type languages, those with Neg in a basic position which does not c-command Tense, in relation to LHM, as represented by Slovak (Czech is quite similar). Because this language is seldom discussed, the first part of this section is a detailed description of LHM, as it appears in the speech of my informant, a young adult speaker of the standard language (as spoken on TV), who left Czechoslovakia three years ago. In the second part I turn to Negation, and its interaction with LHM in relative detail too.

*4.1. Slovak LHM.* In Slovak, all the patterns or tenses involving LHM contain the Auxiliary *be/have*, which is used in the formation of the Perfect (=Past), the Conditional, and the Past Conditional, as we shall see. Grammars mention a Past

Perfect formed with this Aux too, but this tense is unknown to my informant, so it must be completely obsolete. The Slovak Perfective Future is a simple tense like the modern Romance Future: *napišem* "I will write".

The perfect (=Past) has the by now familiar properties of the parallel construction in all the Slavic and Balkan languages with LHM. As seen in (29b), V<sup>o</sup> fronts leaving object NP in situ, with VO-Preposing ungrammatical, (29c), as expected at this point.

- (29) a. Ja som      napísal list                      b. Napísal som list  
       I have+1s written letter                    c. \*[Napísal list] som  
       "I wrote the letter"

Pattern (30) shows the usual variation in word order between root and non-root clauses. In the matrix, LHM has placed *spytal* "asked" in the vacant C<sup>o</sup>, preceding the Aux *sa* "he has"; in the embedded clause, the order is Complementizer +Aux+ V+ NP, since V<sup>o</sup> *napísal* "written" remains in situ.

- (30) Spytal som sa či      si                      napísal list  
       Asked have-1s Refl if have-2s written letter  
       "I asked if you wrote the letter"

The Conditional and Past Conditional show LHM, but syntactically differ in interesting ways from corresponding tenses in other LHM languages, including Czech, which is otherwise quite close to Slovak.

The Slovak Conditional is a Present Perfect preceded by the invariable *by* glossed COND, as in (31). In contrast, the Serbo-Croatian Conditional, as in (16), is formed by a special functional/LHM Aux, showing Person/Number, which is also true in Rumanian and Old Romance.

- (31) Ja by            som      napísal list  
       I    COND have+1s written letter  
       "I would write the letter"

The Slovak Past Conditional shows the same invariable *by* followed by the Present *have/be*, a Past Participle of this same Aux, and a Past Participle of the main V, as in (32).

- (32) Ja by            som      bol                      napísal list  
       I    COND have+1s have+Participle written letter  
       "I would have written the letter"

In LHM within these two Conditionals, the head of the complement of the finite Aux moves, namely the main V *napísal* in the structure corresponding to (31), (33a), and the Auxiliary Participle *bol* in the structure corresponding to (32), that is, (33b). Thus the presence of *by* is immaterial, or, in traditional terms, this item is also a clitic, or does not exempt *som* from clitichood. The word orders in (33) are the only grammatical options, as VP-Preposing is excluded, and *napísal* in (32-33b) cannot be fronted alone. As in other Slavic languages, Participles agree in Gender and

Number with subjects, so in (33) *napísal* and *bol* are Masculine and Singular; however, as stated previously for Bulgarian, this Agreement relation does not extend the LHM chain, which must stop with the complement of the tensed Aux.

- (33) a. *Napísal by som list*  
 Written COND have+1s letter  
 "I would write the letter"
- b. *Bol by som napísal list*  
 Have+Participle COND have+1s written letter  
 "I would have written the letter"

The above two patterns raise two important contrastive issues for the typology of LHM.

On the one hand, if we abstract from the presence of *by*, Slovak exhibits the same LHM locality conditions as Bulgarian or Serbo-Croatian, since (33b) is parallel to the Bulgarian Renarrated Mood in (7a-b), with the item immediately to the right of the finite Aux moving, or to the Serbo-Croatian Passive in (20b), with similar characteristics. So the question is why Slovak *by* is immaterial for LHM, being bypassed and not computed in the movement chain.

On the other hand, when *by* is taken into consideration, Slovak differs clearly from Bulgarian and Rumanian, which disallow LHM in apparently identical configurations.

To this effect, consider the Bulgarian Future Perfect in (34a). It is formed with the invariable Future particle *šte* glossed FUT, followed by the Present Perfect Auxiliary *sŭm* "I have", and the main V *pročel* "read" as Participle; thus this Bulgarian Tense appears structurally parallel to the Slovak Conditional in (31), formed by an invariable Particle, Present Aux and Past Participle too. However, the Bulgarian Future Perfect cannot undergo LHM, in contrast with the Slovak Conditional, so (34b) is the grammatical null subject version, and (34b) with LHM is deviant.

- (34) a. *Az šte sŭm pročel knigata*    b. *Šte sŭm pročel knigata*  
 I FUT have+1s read book+the    c. *\*Pročel šte sŭm knigata*  
 "I will have read the book"    "(I) will have read the book"

Therefore, what is the difference between Bulgarian *šte* and Slovak *by*? The traditional explanation is that Bulgarian *šte* is a non-clitic providing support for *sŭm* while Slovak *by* is itself a clitic requiring support. However, can that idea be maintained in view of the Bulgarian Past Perfect, or the Rumanian situation?

First, the Bulgarian Past Perfect Aux, such as *bjax* "I had" in (35a), is not clitic-like and may stand in initial position. However, it allows LHM too, as in (35b). Thus, there is an important formal distinction between the non-clitic *šte* and non-clitics like *bjax* which traditional approaches fail to capture: namely, the first is opaque to LHM while the second is not.

- (35) a. *Bjax pročel knigata*    b. *Pročel bjax knigata*  
 Had+1s read book+the    "I had read the book" (=35a-b)

Second, consider the Rumanian Past Subjunctive, when used in root environments, as in (36a). Like the Bulgarian Future Perfect and the Slovak Conditional, it is formed by an invariable Particle, *să*, an Auxiliary, *fi*, and the main V as participle. As shown in (36b), this structure is parallel to the Bulgarian one and unlike the Slovak patterns in disallowing LHM, as pointed out in Rivero (1988b).

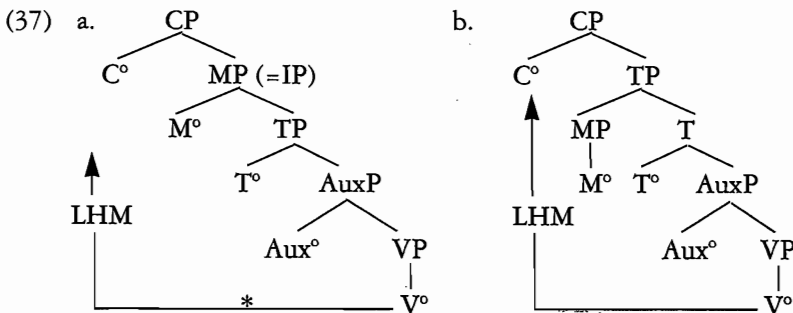
- (36) a. *Să fi adunat el atîția bani?*      b. \**Adunat să fi el atîția bani?*  
 SUBJ has collected he so+much money? (Mallinson 1986: 291)  
 "Could he really have collected so much money?"

Rumanian LHM is similar to English Subject-Aux Inversion in being restricted to questions and exclamations, therefore, it does not apply to create a Wackernagel effect for Auxiliaries or Pronominal Clitics, which can stand in initial position with no problems. Thus, the blocking effect of *să* must receive a different account.

At this point, it could be proposed that Balkan particles are A-bar heads for Relativized Minimality, as in Roberts (1990), or for the formation of a movement chain for Condition C of the Binding Theory, as in Li (1990), while Slovak *by* is an A-head. However, this move is as taxonomic as the Slavic traditional approach listing items which count as Clitics and those which do not.

Instead, I propose that the contrast follows from the different structural treatment of modal-like invariable particles in the Balkans vs Slovak: Head in the first case, and Specifier in the second.

On the one hand, Balkan Particles function as heads of a Modal Phrase taking Tense as complement (Rivero 1988b), as in (37a), where MP corresponds to IP in this early paper. They cannot be bypassed in LHM because as tenseless c-commanding items, they project a barrier. To use Roberts's terminology (1990), the Balkan M° is an A-bar head parallel in its effect to Neg° in the first group of LHM languages. On the other hand, Slovak *by* is the Specifier of Tense, corresponding to M° in (37b), and does not intervene in the movement path of LHM.



In (37a) and (37b), the functional Aux° amalgamates with T°, however, V° is able to cross this complex to reach C° only in the second case. Under this hypothesis, Slovak LHM has the familiar local properties of other languages, in that the

movement chain includes a tensed Aux, and no other c-commanding intervening item.

Finally, I suggest that the factor behind the difference between Slovak and the Balkan languages is COMP-INFL Agreement, as discussed in Rivero (1988a, 1989a). First, Balkan particles satisfy, directly or indirectly, subcategorization and selection properties of matrix Vs, as they encode the Indicative/Subjunctive distinction seen in Balkan Complementizers too, when overt. Second, as heads of MP=IP, Balkan particles make the finite clauses they introduce non-islands accessible to processes reserved for Infinitives in most European languages, such as Control or Raising. The Slovak particle does not play such head-roles.

With this analysis as background, in §4.2 I first consider the location of Negation in Slovak, and then how Neg interacts with LHM.

4.2. *Negation in Slovak.* When considering the position of sentential Negation in Slovak, two situations must be distinguished. On the one hand, in simple tenses, as in the Present in (38) and the Future in (39), *ne* “not” precedes the verbal complex, similar to Italian, Spanish, and the first group of LHM languages, but unlike English.

- (38) a. Volá “He calls, he is calling”  
 b. Nevolá “He does not call, he is not calling”
- (39) a. Napíšem “I will write” b. Nenapíšem “I will not write”

On the other hand, in compound tenses, Negation follows the finite Aux, similar to English, and unlike Spanish, Italian, and the first group of LHM languages. In this respect, the Slovak Perfect (=Past) in (40a) is equivalent to its English gloss, and the Slovak Conditional in (40b) is also equivalent to this English Perfect, given the previous analysis of the Modal particle *by*. Also, the Slovak Past Conditional in (40c) has the Negation in the same relative position as English *I have not been reading*, with *by* as the equivalent of the (putative) Specifier of English *have*. Notice that the tradition is to write *ne* and the following item as one word, a spelling convention with a linguistic motivation in view of the analysis I propose. The affirmative patterns corresponding to (40a-c) are (29a), (31), and (32) respectively.

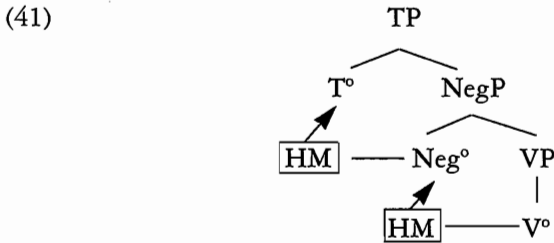
- (40) a. Ja som nenapísal  
 I have+1s not+written “I have not written”  
 b. Ja by som nenapísal  
 I COND have+1s not+written “I would not write”  
 c. Ja by som nebol napísal  
 I COND have+1s not+had written “I would not have written”

To account for (a) the above distribution, and (b) the properties of Negation under LHM discussed later, in a unitary way, I assume that Slovak Neg is the head of NegP, similar to Neg in Italian-type languages; however, Slovak NegP is the syntactic complement of the Tense/Aspect complex, rather than taking TP as

complement, in contrast with Neg in the Italian-type language. In addition, Slovak Neg as head is an affix, that is, a prefix, so the head of its complement incorporates into it, forming an X°-complex available for further Head-movement, be it short or long, as we shall see.

The analysis I propose for Slovak has many points of contact with Ouhalla's (1990) treatment of English Neg (and see Zanuttini 1989 too). However, other than the strict locality of Head-movement for V°/Aux° Ouhalla adopts and I abandon in view of LHM, I assume that in the English-type language, Neg is selected by Tense/Aspect but need not select VP, contra Ouhalla. Thus, Neg follows the Aspectual Aux, but may precede subsequent Auxiliaries, as in (40c), or the English Perfect with Progressive (*I have not been reading the book*).

Within the above tenets, the simple tenses in (38b-39b) have the basic structure in (41), omitting all mention of Agr(eement)(s), as before.

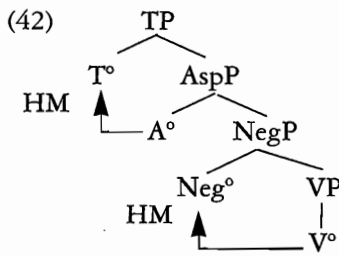
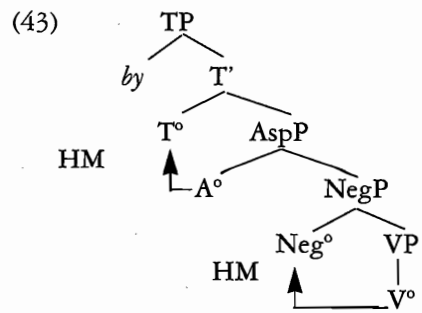


*Slovak Negative Simple Tense*

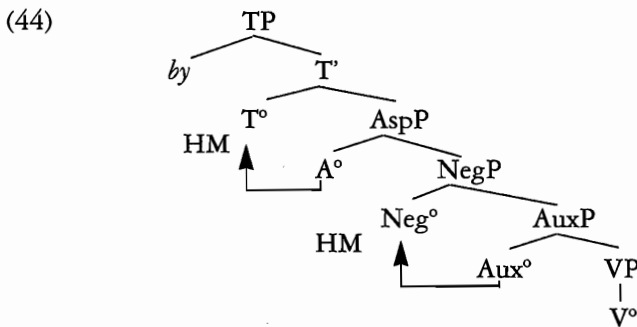
In (41), V incorporates into Neg, a prefix, and the complex raises to T, a suffix, so the forms in (38b-39b) result from two successive applications of short Head-movement. Because Neg triggers Incorporation, the negative Slovak simple tense is apparently identical to a negated simple tense in Italian-type languages, such as Serbo-Croatian *Ne vidim* "I do not see", but in the last case the hypothesis is that Neg is higher in the tree, and remains in situ throughout the derivation.

For the compound tenses in (40), I locate NegP below the Aspectual Aux treated as a projection distinct from Tense, as in (42-44). However, it could also be that T is headed either by an affix, as in (38-9), or by a stem with a strictly temporal value (=Past), with (38-9) and (40) having parallel basic structures. In this respect, it is perhaps significant that the rich aspectual distinctions of Slavic are often encoded in verbal prefixes, and that the Slavic Auxiliaries of the *have/be*-type are temporal, rather than strictly aspectual, markers.

The Perfect in (40a) corresponds to (42). The Aspectual Aux raises to T, and the main V incorporates into Neg, which is the complement of Aspect. Because a two-word sequence is formed, rather than a complex word as in simple tenses, the basic site of the Negation is apparent, and similar to English. The Conditional in (40b) has a similar derivation, with the addition of the Modal marker *by* as Specifier of Tense, (43).

*Slovak Negative Perfect**Slovak Negative Conditional*

Finally, the Past Conditional in (40c) is as in (44). TP includes the Specifier *by*. Neg is the complement of the Aspectual Aux and takes as complement another Aux, followed by the main VP. The Aspectual Aux raises to T, and the following Aux incorporates into Neg. Again, these processes are familiar instances of short Head-movement.

*Slovak Negative Past Conditional*

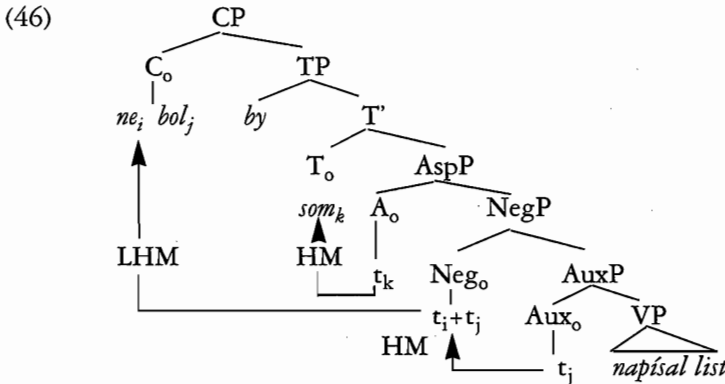
The application of LHM to negative patterns confirms the proposed analysis from an additional point of view.

In each case, Neg° and the non-finite incorporated X° originating as the head of the complement of NegP form the head-complex which undergoes LHM to C°. Thus, the Null Subject versions of the patterns in (40a-b-c) are (13), repeated as (45a) for ease of exposition, and (45b-c) respectively, as the only grammatical word order options. In the Perfect (45a), Neg and main V undergo LHM, and the same is true in the Conditional in (45b), in the presence of the Specifier *by*, which fails to intervene in the relevant sense, as stated. In the Past Conditional in (45c), Neg and the first Aux *bol* following the Aspectual head form the X° fronted by LHM, again across the Aux° which raises to T°, but not across the Specifier *by*, in the relevant sense. The derivation proposed for (45c) is given in (46).

- (45) a. *Nenapísal som list*  
 Not+written have+1s letter  
 "I have not written the letter" or "I did not write the letter"



- b. *Nenapísal* by som list  
Not+written COND have+1s letter  
“I would not write the letter”
- c. *Nebol* by som napísal list  
Not+had COND have+1s written letter  
“I would not have written the letter”



The patterns in (45-6) combined with the previous word order phenomena in simple and compound tenses with no LHM justify the claim that Negation is a head, and complements the tensed functional Aux (or, Aspect, in the proposed treatment), as this is the only X<sup>o</sup> that can be bypassed in LHM.

Furthermore, Incorporation into Neg, with subsequent LHM of the complex to C<sup>o</sup>, as in (45-6), motivates the hypothesis that the item following Neg functions as the head of a complement too, and not, for instance, as the Specifier of the main VP. In particular, under this approach, *bol* in (45c-6) must be an intermediate Aux<sup>o</sup> heading a maximal projection taking the VP headed by *napísal* as main V; thus, *bol* as head incorporates into the c-commanding Neg, and the complex is moved to C, giving the observed word order.

Thus, Slovak Incorporation of Aux<sup>o</sup> into Neg<sup>o</sup>, and the Old Romance Incorporation of V<sup>o</sup>/Aux<sup>o</sup> into a functional Aux<sup>o</sup>, forming synthetic Futures (Lema 1989, Lema and Rivero 1990), as in (11), are different facets which show that in LHM languages Auxiliaries are not Specifiers, unlike the Conditional marker *by* in Slovak, but head maximal projections which take AuxP or VP as their own complements.

Before concluding, an additional question must be answered in relation to Italian-type languages and LHM. In these languages, Neg c-commands Tense and the functional Aux is transparent to LHM. Thus, in view of the incorporation into Neg just seen in the English-type language, a possible derivation for LHM with Neg in Italian-type languages is as follows, but must be excluded: (a) the X<sup>o</sup> complementing the functional Aux<sup>o</sup> bypasses this category by LHM, (b) incorporates into Neg<sup>o</sup> as c-commanding head, and (c) subsequently, the head-complex thus formed moves to C<sup>o</sup>. Under this type of derivation, where Neg<sup>o</sup> is not bypassed by another X<sup>o</sup>, LHM in a negative Perfect Tense gives identical outputs in Italian and

English-type languages: namely, deviant Bulgarian (12d) in the first case (i.e. \**Ne pročel sŕm knjigata*), and grammatical Slovak (13=45a) in the second.

I suggest that the outlined option is not available in the Italian-type LHM language, not because Neg is intrinsically different in the two groups, but because the functional Aux<sup>o</sup> itself incorporates into the c-commanding Neg<sup>o</sup>, precluding the LHM Incorporation of the X<sup>o</sup> heading its complement. In brief, in both types of languages Neg may function as incorporating head.

In §3.2, I presented Serbo-Croatian phenomena which motivate this view. First, notice that Serbo-Croatian Neg undergoes phonological changes (*ni* rather than *ne*) when preceding the functional Aux, as in (22a), with the spelling tradition taking Neg and Aux as one word, much like the Slovak tradition treats Neg and the following item as one word too, even though the relative position of Neg is quite different. So Neg and Aux form a unit.

More importantly, while pronominal Clitics seek the second position in the clause, as in (26b), and bypass Neg, the functional Aux remains attached to it. In the absence of Neg, the Aux is like another Clitic, as in (47), where *je* “has” has moved to a position between the two wh-phrases, which Rudin (1988) suggests is adjunction to IP.

- (47) Ko je ŕto kome dao? (Rudin 1988: 462)  
 Who has what to+whom given? “Who gave what to whom?”

Thus, the fact the Aux does not bypass Neg (parallel to other verbal heads), while pronominal Clitics do, the phonological factors, and the impossibility to have LHM in patterns parallel to (12d) support the idea that the functional Aux<sup>o</sup> incorporates into Neg<sup>o</sup>.

Finally, it is a general property of Italian-type languages that in Subject-Verb inversion patterns, the finite Aux or V is preceded by Neg, as in Spanish *No estŕ Juan cantando?* “Isn’t John singing?”. If such order is the result of movement to C<sup>o</sup>, the patterns suggests Incorporation of the finite V/Aux to Neg<sup>o</sup> too, with subsequent movement of the complex to C<sup>o</sup>. In Italian-type LHM languages, this solution accounts for the observed LHM properties at the same time, while analyzing Neg simply as Clitic, a common idea, does not.

## 5. Summary and Conclusions

Long Head Movement is the process which raises an X<sup>o</sup> —Aux or V— to C<sup>o</sup>, bypassing an intervening tensed functional Aux<sup>o</sup> which does not interrupt the Head-movement chain. Because the landing site of LHM is C<sup>o</sup>, LHM constructions, which are common in Balkan and Southern Slavic languages and existed in Old Romance, share the characteristics of V-second patterns in Germanic. Although this movement has been considered impossible because it is not documented in Germanic, LHM complies with the ECP subject to Relativized Minimality as applied to X<sup>o</sup>-movement. All LHM languages fulfill identical ECP locality requirements, even though they may differ in specific characteristics for LHM constructions, as shown

for the contrasts due to the different role of Inflectional Particles between Slovak and Balkan languages in §4.1.

LHM can never bypass Negation, because Neg functions as an intervening head within its own maximal projection and blocks the formation of the required X<sup>o</sup>-chain, leading to an ECP violation, as shown by the properties of Serbo-Croatian in §3.

Nevertheless, LHM languages fall into two different types as to the interaction between Head-Movement and Neg.

On the one hand, in languages where Neg c-commands Tense and the functional Aux, or the Italian-type, negative LHM patterns are ungrammatical. LHM does not coexist with Neg because this item can never be crossed, and is not available for LHM Incorporation, since the functional Aux<sup>o</sup> incorporates into Neg<sup>o</sup> instead (i.e. short Head-Movement), as discussed in §4.2 in view of Serbo-Croatian. LHM Italian-type languages are numerous, including the major Old Romance languages with the exception of Old French, Bulgarian, Serbo-Croatian, Slovenian, Rumanian (and probably Albanian).

In languages where Tense and the functional Aux c-command Neg, or the less frequent English-type, Neg<sup>o</sup> undergoes LHM to C<sup>o</sup> together with the X<sup>o</sup> which incorporates into it, as seen for Slovak in §4.2. English-type LHM languages are less numerous, including Czech and Slovak.

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# Comparison and Coordination

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## 0. Introduction\*

In this paper, we will analyze the relation between coordination structures and operators. For concreteness, we will study those coordination configurations only possible when an operator of a certain sort is present. For instance, constituents coordinated by the Spanish coordinator *ni* 'nor' require a negative operator *no* 'not' to be present, as the contrast between (1a) and (1b) shows:

- (1) a. Juan *no* comió manzanas *ni* peras.  
Juan not eat-past-3sg. apples nor pears.  
'Juan did not eat apples nor pears'.  
b. \*Juan comió manzanas *ni* peras.

Throughout the article we will use examples with the Spanish comparative *que* 'than', which, in some specific contexts, we will consider to introduce a coordinate constituent dependent on the presence of the operator *más* 'more'. In section 1, we will give some arguments supporting the idea that *que* actually involves coordination. This section distinguishes two types of *más-que* determiners depending on the number of properties subcategorized for. Thus, *más-que*<sub>1</sub> projects a property into a set of pairs of properties, and *más-que*<sub>2</sub> projects a pair of properties either into a set of single properties or into a set of pairs of properties. This split will have some consequences in the syntax. These consequences are analyzed in section 2, where we formulate some *ad hoc* principles (a c-command constraint and two locality constraints) which will try to capture the relevant aspects concerning the relations between *más* and *que*. Section 3 is devoted to derive those ad hoc principles from just one independently motivated principle. Three facts will be crucial in order to do that: first, the syntactic evidence in favor of the conclusion that *que*, in *más*<sub>1</sub> contexts, is obligatorily coordinating two sentences, whereas, in *más* contexts, it is coordinating either two sentences or merely the two restrictors subcategorized by *más*; second, the notion of "absorption" (cf. Higginbotham and May 1981); third, Pesetsky's (1982)

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proposal on ellipsis in coordination structures. These three facts will allow us to propose ECP as the relevant principle underlying the phenomena under discussion. The aim of section 4 is to find out some evidence in favor of the formation of complex operators through absorption in these comparatives. We suggest that some special Spanish comparatives exhibiting subdeletion and object preposing are actually involving the movement of two operators, which gives support to the idea that absorption of several constituents is taking place. First, we will analyze one of such movements, the one undergone by an operator of the category QP. We argue that, for a sentence to be grammatical, the movement of just QP (without any kind of Pied-Piping) is required in contexts involving ellipsis. But, since a further constituent seems to be adjacent to the QP in subdeletion comparatives with object preposing, it is necessary to propose that there has been absorption of two independently moving operators in these cases. This is the second part of section 4, where we try to capture the difference between Spanish and English as far as object preposing superlatives and comparatives is concerned. That is, the fact that superlatives exhibiting object preposing exist/do not exist in Spanish/English will be related to the fact that subdeletion comparatives with object preposing exist/do not exist in those languages either. So, the conditions under which object preposing is possible in superlatives will also be attributed to the structure of the subdeletion comparatives with object preposing. This amounts to saying that such comparatives do not exhibit coordination, which will be shown by using the arguments which were built in section 1 to prove the coordinate structure of subdeletion comparatives without object preposing.

## 1. Comparison as Coordination

In this section we will give some arguments in favor of considering coordination as a possible structure in the domain of comparative sentences. The first subsection focusses on Keenan's (1987) arguments, but with the aim of arriving at slightly different conclusions. The second subsection offers some data suggesting that coordination underlies the comparison sentences under discussion.

### 1.1. *Two types of más-que*

Keenan (1987) makes two remarks about the status of English *more-than* in those cases where it combines two common noun phrases, that is to say, in NPs like *more students than teachers*:

- (2) a. although such noun phrases are coordinated, *than* is not a coordinator;
- b. *more-than* is a two-place determiner (that is, a Det<sub>2</sub>).

Throughout the article, Keenan makes use of the notion *conservativity*, which imposes a strong condition on the possible Det denotations a child must choose from in learning the meanings associated with Det's. Keenan considers Det's to denote a function *f* that associates a set of properties with another property (the one denoted by the restrictor N' that Det modifies). For example, the function denoted by *every*

associates with a property  $p$  (for example, *dog*) the set of all those properties  $q$  such that every individual that is a dog must also share them (*quadruped*, and so on).

A test to know whether Det's are conservative or not is the following:

- (3) A Det<sub>1</sub> (a one-place Det)  $d$  is semantically *conservative* iff for all N's  $P$  and  $Q$ , ( $dPs$ ) are  $Qs$  if and only if ( $dPs$ ) are both  $Ps$  and  $Qs$ .

*Every*, for example, is conservative, since (4a) has the same truth values as (4b):

- (4) a. Every student is a vegetarian.  
b. Every student is a student and a vegetarian.

Keenan claims that *more-than* is also conservative if it is analyzed as a two-place Det. So, in order to know whether (5) is true, it has to be known whether the number of students who are vegetarian is greater than the number of teachers who are vegetarian. We need know nothing concerning individuals who fail to be either students or teachers. (3) gives rise to (6):

- (5) More students than teachers are vegetarian.  
(6) More students are students and vegetarian than teachers are teachers and vegetarian.

As a result, Keenan needs to propose that both *students* and *teachers* in the NP with Det *more than* are heads of such an NP, in order to satisfy the conservativity of Det, since it is the head of NP that imposes the domain of predication. He rejects structures such as (7a, b) for comparative heads, and proposes (7'a, b):

- (7) a. NP<sub>[Det1]</sub>[more students than]<sub>N'</sub>[<sub>N</sub>[teachers]]]  
b. NP<sub>[Det1]</sub>[more ... than teachers]<sub>N'</sub>[<sub>N</sub>[teachers]]]  
(7') a. NP<sub>[Det2]</sub>[more than]<sub>N'</sub>[<sub>N</sub>[students]]]<sub>N'</sub>[<sub>N</sub>[teachers]]]  
b. NP<sub>[Det2]</sub>[more than]<sub>X</sub>[<sub>N'</sub>[<sub>N</sub>[students]]]<sub>N'</sub>[<sub>N</sub>[teachers]]]

(7a, b) shows only one head in the NP, which wrongly predicts that (5) and (8) are equivalent:

- (8) More students than teachers are both students and vegetarian.

Furthermore, Keenan considers *more-than* to be a lexical item that subcategorizes for two common nouns. Therefore, he rejects Napoli's (1983) hypothesis assigning *than* the category *coordinator*, and considers *than* to take part of Det. However, a closer look at comparative and coordinate sentences will lead us to conclude not just that the coordinating status of *than* can be preserved (along the lines of Napoli 1983) but also that *more-than* can be not just a two-place Det, but also a one-place Det.

Indeed, Keenan pays attention to those cases of comparatives where *more-than* is a function that takes two properties as arguments (in (5), *students* and *teachers*). Let us now analyze those cases, not taken into account by Keenan, where the restrictor is one-headed:

- (9) Más estudiantes son músicos que vegetarianos.  
 more students are musicians than vegetarian.  
 'More students are musicians than vegetarian.'

In (9), as in (5), there is a copulative clause with a subject and a predicate. Whereas in (5) both *más* and *que* take part of the subject, in (9) *que* seems to take part of the predicate.

As said above, Keenan considers *more-than* to be a lexical item that subcategorizes for two common nouns, in analogy with verbs such as *give*, that subcategorize for two arguments. This leads Keenan to reject Napoli's hypothesis assigning *than* the category of coordinator, and to consider it to take part of Det. However, (9) shows that such a treatment cannot be fully satisfactory.

Two phenomena are relevant in (9). On the one hand, *más* only takes one argument (*estudiantes*). On the other hand, *que* is present in a position out of the NP headed by this argument. If *que* were generated in the same position as *más*, it would be a problem to explain how it could reach the position between *músicos* and *vegetarianos*.

Let us assume Napoli's proposal that *than* is a coordinator. Keenan points out that this would mean that *than* is generated under N', hence giving rise to cases of overgeneration. For example, why should (10) not be possible?:

- (10) \*Every student than teacher.

However, I will suggest that overgeneration does not exist if the coordinator *than* is considered to be a polarity item, so that *more* is required to be present. The Spanish coordinator *ni* behaves in a similar way, since it requires a negative operator to be present, as shown in (1) above, which we reproduce again:

- (1) a. Juan *no* comió manzanas *ni* peras.  
 Juan not eat-past-3sg apples nor pears.  
 'Juan did nt eat apples nor pears'.  
 b. \*Juan comió manzanas *ni* peras.

(10) is ungrammatical because *than* requires the presence of the operator *more*. We think that this polarity relation accounts for the dependence between *more* and *than*, so as to make it a discontinuous constituent while preserving the idea that *than* is a coordinator.

Therefore, it will be possible to think that, in (5), *than* coordinates the N *students* and the N *teachers*, and that, in (9), it coordinates the AP *músicos* and the AP *vegetarianos*. This is why, in the first case, *más/more* operates on one property. In the first case, the discontinuous function *más-que/more-than* projects a pair of properties on a set of single properties, whereas in the latter case it projects a single property (*p*) on a set of pairs of properties, that is to say, every pair of properties ( $q_1 q_2$ ) such that the subset of individuals of *p* that share  $q_1$  is greater than the subset of individuals of *p* that share  $q_2$ . To be brief, we will call the former instance of *más-que* *más-que<sub>2</sub>*, and the latter *más-que<sub>1</sub>*.



### 1.2. Subdeletion

In section 1.1. we have proposed that there are two types of *más-que*: *más-que*<sub>1</sub> is a function which projects a single property on a set of pairs of properties, and *más-que*<sub>2</sub> is a function which projects a pair of properties on a set of single properties. However, notice that (11) shows that *más-que*<sub>2</sub> can project a pair of properties (*manzanas* and *peras*) on a set of pairs of properties (in this case, the property of *being bought by Juan* and the property of *being sold by Pedro*).

- (11) Juan compró más manzanas que Pedro vendió peras.  
 Juan bought more apples than Pedro sold pears.  
 'Juan bought more apples than Pedro sold pears'.

This asymmetry shows that the crucial contrast between *más-que*<sub>1</sub> and *más-que*<sub>2</sub> simply relies on the number of restrictors taken by *más*. *Que* is merely the element which determines, in each case, whether the range of the function is constituted either by single properties or by pairs of properties. Cases such as (11), that is, classic comparatives with subdeletion, are related to comparatives such as (5) by the fact that, in both cases, *más-que*<sub>2</sub> plays a role, but they are identical to examples such as (9) as far as the range determined by *que* is concerned, the only difference being the category of the constituents coordinated by *que*, that is, two AP's in (9) (12a) and two sentences in (11) (12b) (for the sake of clarity, throughout the article we will use a prelinearized representation of coordinate structures):

- (12) a.  $_{IP}$ [más estudiantes son  $_{AP}$ [músicos]]  
           que  
            $_{AP}$ [vegetarianos]]  
 b.  $_{IP}$ [Juan compró más manzanas]  
       que  
        $_{IP}$ [Pedro vendió peras]

Some phenomena concerning these subdeletion cases in Spanish reveal that it is a coordination of two sentences that is at work here. These phenomena are listed in the following subsections.

1.2.1. If the NP introduced by *más* is inside a PP, the sentence is ungrammatical:

- (13) \*Pedro vió a Bogart en más películas que Luis leyó libros.  
 Pedro saw Bogart in more films than Luis read books.  
 'Pedro saw Bogart in more films than Luis read books'.

The ungrammaticality is the same as in ordinary cases of coordination with gapping. For example, (14) (with gapping) cannot be an answer to a question such as 'What did Pedro and Luis do in Spain?':

- (14) Pedro visitó a sus amigos en Cuenca y Luis \*(visitó) Burgos.  
 Pedro visited his friends in Cuenca and Luis visited Burgos.  
 'P. visited his friends in Cuenca and Luis visited Burgos'.

Notice that no problem concerning recoverability arises in (14), since it is just the verb that is missing in the second coordinate.

1.2.2. The restrictors cannot be in a more deeply embedded clause, while keeping *que* as a coordinator of the two main clauses:

- (15) a. \*Juan compró más manzanas que Pedro dijo que Luis vendió  
 Juan bought more apples than Pedro said that Luis sold  
 peras.  
 pears.  
 'J. bought more apples than P. said that L. sold pears'.  
 b. IP[J. compró NP[más N[manzanas]]]  
 que  
 IP[P. dijo CP[que Luis vendió N[peras]]]

This is also the case in examples of coordination with gapping:

- (16) a. \*J. compró manzanas y P. dice que L. peras.  
 J. bought apples and P. says that L. pears.  
 'J. bought apples and P. says that L. pears'.  
 b. IP[J. compró NP[manzanas]]  
 y  
 IP[P. dice CP[que L. NP[peras]]]

1.2.3. Comparatives with subdeletion are sensitive to Across-the-Board (ATB) phenomena (17), just as in the case of coordinate sentences (18):

- (17) a. A quién compró Pedro más manzanas que vendió Juan peras?  
 whom bought Pedro more apples than sold Juan pears?  
 'Whom did Pedro buy more apples to than John sold pears to?'  
 b. \*A quién compró Pedro más manzanas que vendió Juan peras a Luis?  
 'Whom did Pedro buy more apples to than Juan sold pears to Luis?'  
 (18) a. A quién compró Pedro manzanas y vendió Juan peras?  
 'Whom did Pedro buy manzanas to and Juan sold pears to?'  
 b. \*A quién compró P. manzanas y vendió J. peras a Luis?  
 'Whom did P. buy manzanas to and J. sold pears to L.?'

1.2.4. Jackendoff (1971) distinguishes between Gapping (19) and Conjunction Reduction (20) in the following way: in Gapping sentences, it is the verb that is deleted (19a), whereas in Conjunction Reduction sentences it is the right side (19b) or the left side (19c) of the sentence that is deleted:

- (19) a. Peter bought potatoes and Luis (bought) pears.  
 b. Juan bought (postcards) and Luis sold postcards.  
 c. Juan bought apples and (Juan bought) pears.

So, (20) is ungrammatical, since, according to Jackendoff, there are no rules deleting something which is neither the verb nor the left/right side of the sentence:

- (20) \*Juan sent a present to Luis in the summer and Pedro gave a book in the winter.

These constraints are mirrored in comparative sentences:

- (21) a. J. compró más manzanas que P. (compró) peras.  
 J. bought more apples than P. pears.  
 'J. bought more apples than P. pears'.  
 b. Más chicos compraron (postales) que chicas vendieron  
 More boys bought (postcards) than girls sold  
 postales.  
 postcards.  
 'More boys bought than girls sold postcards'.  
 c. Juan envió más regalos a Luis en verano que Pedro \*(le)  
 Juan sent more presents to Luis in summer than Pedro to him  
 dió libros en invierno.  
 gave books in winter.  
 'Juan sent more presents to Luis in the summer than Pedro gave him books in the winter'.

1.2.5. We have said the relevant difference between *más-que*<sub>1</sub> and *más-que*<sub>2</sub> is the number of arguments subcategorized by *más*: one in the former case, two in the latter. So, if coordination is at work in subdeletion sentences, we now derive the ungrammaticality of (22a), whose prelinearized representation (22b) makes clear that *más*<sub>2</sub> is actually subcategorizing for three restrictors:

- (22) a. \*Juan compró más manzanas que Luis vendió peras y José  
 Juan bought more apples than Luis sold pears and José  
 comió bananas.  
 ate bananas.  
 'Juan bought more apples than Luis sold pears and José ate bananas'.  
 b. IP[Juan bought NP[more N'[apples]]]  
 than  
 IP[Luis sold N'[pears]]  
 and  
 IP[José ate N'[bananas]]

1.2.6. The coordination hypothesis also accounts for the ungrammaticality of (23a). The restrictors play different roles in each coordinate sentence: *mujeres* is the agent of an intransitive verb, its external argument, whereas *hombres* is the internal argument of an accusative verb:

- (23) a. \* Más mujeres trabajaron que el ejército reclutó hombres.  
 more women worked than the army recruited men  
 'More women worked than the army recruited men'.

- b. IP[  
 than  
 IP[the army recruited  
 NP[more N[women]] worked]  
 N[men]]]

Assuming that the restrictors have to raise by QR at LF, these examples can be considered to be instances of ATB asymmetries, which affect coordinate sentences in general:

- (24) \*Quién trabajaba y Pedro vió?  
 who worked and Pedro saw?  
 'Who worked and Peter saw?'

1.2.7. Let us now consider sentence (25a), whose S-structure is (25b):

- (25) a. \*La retirada de más soldados por Francia que los USA  
 the withdrawal of more soldiers by France than the USA  
 retiraron marines fue un tema controvertido.  
 withdrew marines was a topic controversial.  
 lit: 'The withdrawal of more soldiers by France than the USA  
 withdrew marines was a controversial topic'.  
 b. NP[la retirada de NP[más N[soldados]] por F.]  
 que  
 IP[los USA retiraron N[marines]]  
 fue un tema controvertido.

In (25b), the constraint which says that only two identical constituents can be coordinated (cf. Williams 1981) is violated, since, in this case, the constituents are an NP and an IP.

1.2.8. The use of subjunctive mood is very common in Spanish comparative clauses where it is apparent that subordination at SS is at work (in (26a), the preposition *de* introduces a clause headed by *las que*, a wh-element), but this is not the case in the comparative clauses studied here (26b):

- (26) a. Juan compró más manzanas de las que Luis haya  
 Juan bought more apples than what Luis have-subj.  
 podido comprar.  
 can-past. participle buy  
 'Juan bought more apples than Luis could buy'.  
 b. \*Juan ha comprado más manzanas que Luis haya vendido  
 Juan has bought more apples than Luis have-subj. sold  
 peras.  
 pears  
 'J. bought more apples than L. bought pears'.

The unavailability of modality contrasts between clauses is commonly related to coordination, as (27) shows:



2.2 *The locality constraints*

Consider now (32a, b), which are instances of *más-que*:

- (32) a. Viajé con más dólares que marcos.  
 I travelled with more dollars than marks  
 'I travelled with more dollars than marks'.  
 b. Viajé con más dolares que con marcos.

If polarity relations involved c-command at SS, it would be easy to account for the contrast in (32a, b): in (32a), *más* c-commands *que* (33a), but not in (32b) (33b):

- (33) a. NP[<sub>Spec</sub>[más]<sub>N'</sub> [N[dólares]]]  
           que  
           N[marcos]  
 b. PP[P[con]<sub>NP</sub> [<sub>Spec</sub>[más] N'[dólares]]]  
           que  
           PP[P[con]<sub>NP</sub> [ N'[marcos]]]

These structures also show why such examples cannot be instances of *más-que*<sub>1</sub>: in both cases, *más* subcategorizes for *dólares* and *marcos*, that is to say, it operates on two properties.

However, in the last subsection we have seen that c-command at SS is not a requirement for sentences with *más-que*<sub>1</sub>. The following examples show that this is also not required for sentences with *más-que*<sub>2</sub>:

- (34) a. Juan compró más manzanas que Luis vendió peras.  
 Juan bought more apples than L. sold pears.  
 'John bought more apples than Luis sold pears'.  
 b. IP[Juan compró NP[<sub>Spec</sub>[más] N'[manzanas]]  
           que  
           IP[Luis vendió N'[peras]]

Notice that the situation in (34) is almost the same as in (32b). In (34) there is an occurrence of *más-que*<sub>2</sub>, since *más* is subcategorizing for two properties (*manzanas* and *peras*), and *que* is coordinating two constituents that contain the ones referring to the properties. Therefore, *más* is not c-commanding *que* at SS. However, the ungrammaticality arises again if the properties subcategorized by *más* are more deeply embedded, as in (35):

- (35) a. \*Viajé con más dólares que viajé con marcos.  
 'I travelled with more dollars than I travelled with marks'.  
 b. IP[viajé PP[P[con]<sub>NP</sub> [más] N'[dólares]]]  
           que  
           IP[viajé PP[P[con]<sub>NP</sub> [ N'[marcos]]]

The problem has not only to do with the occurrence of a PP node; in (36), it is the presence of an NP projection that seems to be responsible for the ungrammaticality:

- (36) a. \*Juan conoce un chico más alto que conoce un chico bajo.  
 Juan knows a boy more tall than knows a boy small  
 'Juan knows a taller boy than he knows a small boy'.  
 b. IP[Juan conoce NP[un chico AP [ Spec[*más*] A'[alto]]  
 que  
 IP[pro conoce NP[un chico AP[ A'[bajo]]]]

These facts seem to be independent of whether or not *más* c-commands *que* at SS, since in (32b), (34), (35) and (36) *más* does not c-command *que*, and, nevertheless, there is a sharp difference in grammaticality between (34) and the other examples. Moreover, in all these examples the principles (30a, b) are fulfilled, that is to say, *más* is c-commanding *que* at LF:

- (37) a. (32b) IP[*más*<sub>i</sub> IP[*viajé* PP[p[con] NP[e<sub>i</sub> N'[dólares]]]  
 que  
 PP[p[con] NP[ N'[marcos]]]  
 b. (34) IP[*más*<sub>i</sub> IP[J. compró NP[e<sub>i</sub> N'[manzanas]]]  
 que  
 IP[pro compró N'[peras]]  
 c. (35) IP[*más*<sub>i</sub> IP[*viajé* PP[p[con] NP[e<sub>i</sub> N'[dólares]]]  
 que  
 IP[*viajé* PP[p[con] NP[ N'[marcos]]]]  
 d. (36) IP[*más*<sub>i</sub> IP[J. conoce NP[un chico AP[e<sub>i</sub> A'[alto]]]  
 que  
 IP[pro conoce NP[un chico AP[ A'[bajo]]]]

However, we observe a sharp difference between (37b) and (37a, c, d). In (37a, c and d), the relation between *que* and the restrictors is established through boundaries that share the property of disallowing extraction of wh-elements in Spanish. In (37a, c), the offending boundary is PP, whereas in (37d) there is a combination of boundaries, NP and AP. (38a, b) show that these boundaries do not allow wh-movement in Spanish:

- (38) a. Quién<sub>i</sub> te casaste PP[con e<sub>i</sub>]]?  
 who you married with  
 'Who did you marry?'  
 b. De quién<sub>i</sub> conociste NP[ un chico AP[muy orgulloso e<sub>i</sub>]]  
 of who you knew a boy very proud  
 lit: 'Who did you know a boy very proud of?'

As a consequence, we can propose the following (merely descriptive) principle:

- (39) *Que* and the restrictors introduced by *más*<sub>2</sub> cannot be separated by a boundary or combination of boundaries which do not allow wh-extraction.





- (45) De quién has visto más films?  
lit: 'By whom did you see more films?'

Moreover, we also predict that, in English, where *wh*-extraction from inside certain PP's is possible (46), a sentence equivalent to (40a) can be correct (47a), unlike in Spanish (47b):

- (46) Who did you give the book to?  
(47) a. More boys gave a book to J. than L.  
b. \*más chicos dieron un libro a J. que L.

### 3. The reduction of the constraints to independent principles

#### 3.1. *The reduction of the locality principles to ECP*

In this section, we will try to refine the principles introduced so far, namely, (39) for *más-que*<sub>1</sub> and (42) for *más-que*<sub>2</sub>. We will propose that they can both be integrated into a more general principle concerning coordinate constructions. This will be a piece of evidence for our hypothesis that the sentences under discussion are actually cases of coordination.

##### 3.1.1. *Constituents coordinated by que*

Let us consider (48):

- (48) Juan dio un libro a Pedro.  
Juan gave a book to Pedro.  
'Juan gave a book to Pedro'.

We can say that this is the unmarked order of the Spanish sentence, with the direct object *un libro* preceding the indirect object *a Pedro*. However, the opposite order is also correct in Spanish:

- (49) Juan dio a Pedro un libro.

Now, we "convert" (49) into a sentence with *más-que*<sub>1</sub>:

- (50) a. Juan dio a más chicos un libro que un lápiz.  
Juan gave to more boys a book than a pencil.  
'Juan gave more boys a book than a pencil'.  
b.  $_{IP}$ [Juan dio  $_{PP}$ [a más chicos]  $_{NP}$ [un libro]]  
que  
 $_{NP}$ [un lápiz]

In (50b), *que* is coordinating two NPs. That is, the structure would be like the one in (51b), corresponding to the sentence (51a):

- (51) a. Juan dio a Pedro un libro y un lápiz.  
'Juan gave Pedro a book and a pencil'.  
b.  $_{IP}$ [Juan dio  $_{PP}$ [a Pedro]  $_{NP}$ [un libro]]  
y  
 $_{NP}$ [un lápiz]





holds just for the constituents referring to the properties subcategorized by *más*<sub>2</sub> (in (61), the N' *marcos*), and not to the remnant constituent in the ellipsis context (in (61), *con marcos*). In fact, there can be no ellipsis context and, nevertheless, the reference to the status of "major constituent" holds, as in (35) (repeated below):

- (35) a. \* Viajé con más dólares que viajé con marcos.  
 'I travelled with more dollars than I travelled with marks'.  
 b. IP[viajé<sub>PP</sub>[p[con] NP[<sub>Spec</sub>[más] N'[dólares]]]  
 que  
 IP[viajé<sub>PP</sub>[p[con] NP[ N'[marcos]]]]

So, it seems that we are dealing with a phenomenon not specifically related to comparatives, but to coordinate constructions in general. This phenomenon shows up in the requirement of "being a major constituent" within the coordinate structures. The problem now is to find out which theoretical principle underlies such a requirement. It seems that, under Pesetsky's (1982) view of coordinate constructions, ECP turns out to be such a principle.

Pesetsky, following suggestions by Sag (1976), proposes that the correspondents in a coordinate structure (62a) move to Comp at LF (62b), just as *wh*-in-situ constituents in an interrogative sentence do (63):

- (62) a. John bought the book, and Mary, the record.  
 b. CP[John<sub>i</sub> the book<sub>j</sub> ; IP[e<sub>i</sub> bought e<sub>j</sub>]]  
 and  
 CP[Mary<sub>k</sub> the record<sub>m</sub> [e<sub>k</sub> bought e<sub>m</sub>]]  
 (63) a. Who bought what?  
 b. CP[who<sub>i</sub> what<sub>j</sub> ; IP[e<sub>i</sub> bought e<sub>j</sub>]]

Notice that, in each case, the two constituents moved at LF undergo absorption (cf. Higginbotham and May 1981), that is, they are independent operators which come to form a single *n*-ary (in this case, binary) operator. Pesetsky offers several arguments in favor of his movement hypothesis. Let us then assume that the correspondents have also to move in the coordinate comparatives. This immediately allows us to cover the facts for which (42) was postulated. Indeed, the LF representations of (40a) and (41a) will no longer be (59a, b), but rather (64a, b):

- (64) a. IP[más<sub>i</sub> NP[R.]<sub>k</sub> IP[...PP[con NP[e<sub>i</sub> amigos]] PP[p[en] e<sub>k</sub>]]  
 que  
 IP[ NP[P.]<sub>m</sub> e<sub>m</sub>]]  
 b. IP[ más<sub>i</sub> NP[de Ch.]<sub>j</sub> IP[e<sub>i</sub> chicas vieron NP[el film e<sub>j</sub>]]  
 que  
 IP[ NP[de K.]<sub>m</sub> e<sub>m</sub>]]

In both sentences there has been Preposition Stranding, a movement precluded in Spanish. By contrast, in English, where Preposition Stranding is possible, movement will take place (47). (44) can be ruled out on the same grounds, the specific NP precluding the extraction of constituents from inside.

As far as principle (39) is concerned, it can also be derived from the perspective just adopted. We have said that correspondents in coordinate structures have to undergo movement at LF when clausal coordination is involved, since they are correspondents. Thus, the LF of (35a) will no longer be (37c), but rather (65):

$$(65) \text{ IP}[\textit{m\acute{a}s}_i \text{ N}'[\textit{d\acute{o}lares}]_j \text{ IP}[\textit{viaj\acute{e}} \text{ PP}[\textit{con NP}[e_i e_j]]]] \\ \text{que} \\ \text{IP}[\text{ N}'[\textit{marcos}]_m \text{ IP}[\textit{viaj\acute{e}} \text{ PP}[\textit{con NP}[e_m]]]]]$$

Once more, the example is ruled out because Preposition Stranding does not exist in Spanish. In (32a) there is no problem, since no clausal coordination is involved. In (32b) the problem is just the same as in (35a) (that similar examples are also ruled out in English can be due to the fact that, in this case, it is not the movement of a constituent NP that leaves the preposition stranded, as happens in normal cases in English, but the movement of N'). On the other hand, the ungrammaticality of (36a) arises because of the presence of an NP-boundary, which does not allow extraction. By contrast, (34a) is correct because *peras* did not cross any problematic boundary while adjoining to IP.

Therefore, (39) and (42) can be substituted by the ECP, hence no special principle being necessary. All we have to accept is Pesetsky's (1982) proposal that correspondents in coordinate structures have to raise at LF.

### 3.2. The reduction of the c-command constraint to Absorption

Let us now consider the constraint (30b), which was proposed in section 2.1. The main motivation for (30b) was example (29a), repeated below:

- (29) a. \* Juan dijo que t<sub>u</sub> eres m<sup>a</sup>s listo a Jos<sup>e</sup> que a Luis.  
 Juan said that you are more clever to Jos<sup>e</sup> than to Luis.  
 'Juan said that you are cleverer to J. than to L.'

Once QR affects *m<sup>a</sup>s* (according to (30a), which is not even a principle, but rather an instance of the logical requirement which holds of every quantifier at LF) as well as the correspondents of the coordination (according to the conclusions of the last section), the LF of (29a) will be (66):

$$(66) \text{ IP}[\text{PP}[a J.]_k \text{ IP}[\text{J} \text{ dijo}_{\text{CP}}[\textit{que IP}[\textit{m\acute{a}s}_i \text{ IP}[\dots \text{AP}[e_i \textit{listo}]]]]] e_k]] \\ \text{que} \\ \text{IP}[\text{PP}[a L.]_m \text{ IP}[\dots \text{AP}[e_m]]]] e_m]]$$

The problem in (66) is likely to be the following. In the last sections, we have said that absorption holds of the correspondents of coordination, in such a way that they all gather in order to give rise to an n-ary operator. However, nothing has been said thus far about the relation between these correspondents and the quantifier *m<sup>a</sup>s*, which also underwent QR at LF. It is likely to be the case that the correspondents have to also meet *m<sup>a</sup>s* at LF as a part of the absorption process. The resulting cluster will turn out to be essential for the interpretation of comparative sentences. So, (66) will be ungrammatical due to the fact that the correspondents cannot gather

*más* at LF, since *más* could only raise to the IP corresponding to the most deeply embedded clause.

This hypothesis also accounts for the ungrammaticality of (67a), whose LF is given in (67b):

- (67) a. Más chicos dijeron que L. compró un libro que una pluma.  
 more boys said that L. bought a book than a pen.  
 'More boys said that L. bought a book than a pen'.  
 b.  $IP[más_i IP[e_i \text{ chicos} \dots \text{que}_{IP} [ NP[\text{un libro}]_j IP[L \dots e_j]]]]$   
 que  
 $IP[ \dots NP[\text{una pluma}]_k e_k ]]]$

In (67), the operator *más* is adjoined to the main IP, but the correspondents of the coordination could only reach the most deeply embedded IP, hence the formation of the comparative complex operator at LF is impossible. Notice, by the way, that (67b) is a clear counterexample to (30b), since *más* is c-commanding *que* at LF and, nevertheless, the sentence is ungrammatical, no other principle being likely to be violated (indeed, QR of the correspondents at LF fully meets ECP requirements).

Let us now consider (68a), whose LF is (68b):

- (68) a. \* Más ingleses vieron ese film en Londres que franceses dijeron  
 more English saw that film in London than French said  
 que Pedro lo vio en Madrid.  
 that Pedro it saw in Madrid.  
 'More English saw that film in London than French said that Pedro saw it in Madrid'.  
 b.  $IP[más_i N[\text{ingleses}]_j PP[\text{en L.}]_k IP[e_i e_j \dots e_k]]$   
 que  
 $IP[ N[\text{franceses}]_m IP[e_m \dots IP[PP[\text{en M.}]_n IP[\dots e_n]]]]$

This sentence is ungrammatical under the reading according to which just the restrictors and the locatives are relevant in the formation of the amounts under comparison (reading represented by (68b)). The reason is that, under such an interpretation, the PP *en Madrid* could not reach the main IP by QR in order to form a complex operator together with the other single operators staying there. Of course, (68a) is grammatical under the reading where the whole VP, and not just the locative complements, are relevant for the formation of the complex amount operator. This last reading is represented in (69), where QR affects the VP's of both main clauses:

- (69)  $IP[más_i \text{ ingleses}_i VP[\text{vieron ese film en L.}]_k IP[e_i e_j e_k]]$   
 que  
 $IP[\text{franceses}_m VP[\text{dijeron que P. lo vio en M.}]_n IP[e_m e_n]]$

This is also the case in an example like (70), where ellipsis of the most deeply embedded IP forces the reading (68b):

(70) \* Más ingleses vieron ese film en Londres que franceses dijeron que Pedro en Manchester.

'More English saw that film in L. than French said that P. in M'.

Again, notice that, in (68) as well as in (70), no problem arises concerning (30b).<sup>2</sup>

#### 4. Some evidence for the operator "más-correspondents" at LF

In the following sections we give some support to the claim, made in previous sections, that, at LF, a constituent such as *más peras* splits in a certain way, that is, the quantifier (*más*) raises independently from the restrictor (*peras*), which also raises when a correspondent is present in a coordination configuration.

In section 4.1. we give some arguments related to Preposition Stranding in Spanish. The relevant data force a situation where *más* has to raise alone at LF. Section 4.2. focusses on an apparently paradoxal paradigm, which will only be clarified under the view that *más* raises in the main clause, leaving behind the restrictor. Such a paradigm contains some examples where, at first glance, it seems that a movement of quantifier and restrictor together is taking place at SS, as an overt manifestation of a process which takes place at LF in other languages. However, thanks to evidence provided by superlatives, these apparent counterexamples are analyzed as actually involving independent movement of the bare quantifier, plus a later adjunction of the restrictor to it. No movement of the whole NP is at work. Hence they can be considered as a new instance of overt absorption between quantifier and restrictor. The advantages of such an analysis will be more evident not only when taking into account superlative sentences, but also the contrasts between English and Spanish in relation to these phenomena.

##### 4.1. Independent movement of quantifier *más*

Thus far, we have been talking about *más*-movement at LF, but we have not yet given any argument to prefer this hypothesis to one saying that what actually raises at LF is the constituent formed by *más* plus the restrictor. Here, we will argue that *más* moves independently of the restrictors. This will be the first step for us to be able to show that at LF the formation of a complex operator *más*-correspondents takes place.

Let us first consider the following example:

(71) Juan vio ese film en *más cines de los que te piensas*  
 Juan saw that film in more cinemas than what you think  
 'J. saw that film in more cinemas than you think'.

We will focus on the italicized clause. Two possible categories can be assigned to the wh-element *los que*: QP or NP. Assuming that the right category is NP, the LF

(2) We think that the representation assigned to the sentences in this section could be compatible with the logical structures proposed by Heim (1985) for superlatives and phrasal comparatives in the following sense: the comparative operator (*más*) as well as the compared items are placed to the left of the whole sentence.

of the underlined sentence (once reconstruction of the Null Complement Anaphor (NCA) has taken place) will be (72):

(72)  $de_{NP}[\underline{los\ que}]_i\ te\ piensas_{IP}[J.\ ha\ visto\ ese\ film\ pp[en\ e_i]]$

However, notice that (72) is a case of Preposition Stranding at LF. This should be definitely ruled out in Spanish, as the ungrammaticality of examples such as (40a) (whose structure is (64a)) shows:

(40) a. \* *Estuve con más amigos en Roma que Paris.*

(64) a.  $IP[más_i\ NP[R.]_k\ IP[\dots pp[con_{NP}[e_i\ amigos]]_{PP}[p[en\ e_k]]]]$   
           que  
            $IP[NP[P.]_m\ e_m]]$

Therefore, we should assume that the category of the *wh*-element in (71) is QP, that is, it corresponds to a quantifier in the Spec position of an NP. Thus, the LF of (71) will be (73):

(73)  $IP[QP[más_i]\ IP[J.\ vio\ ese\ film\ pp[en_{NP}[e_i\ cines]]]]\ de_{QP}[\underline{los\ que}]_i\ tú\ te\ piensas_{IP}[J.\ ha\ visto\ ese\ film\ pp[en_{NP}[e_i\ cines]]]]$

The relevant aspect of (73) is the following. Since *los que* is a QP, it has to bind a QP-variable at LF once reconstruction of the NCA takes place. Thus, since it is the main clause that has to be copied in the NCA, *más* has to undergo QR in order to provide the reconstruction process with a QP-variable which will be bound by *los que* in the embedded clause. It cannot be the whole constituent *más cines* that raises at LF, since this would create an NP-variable, which could not be bound by the QP *los que*. One of the consequences of all these processes is that no Preposition Stranding takes place at LF.<sup>3</sup>

#### 4.2. Overt Absorption in Spanish

Comparatives such as (71) have nothing to do with the comparatives which we have studied thus far, and which we have assigned a coordinate structure to. (71) is rather a relative clause introduced by *las que*, and we can well agree with Bresnan (1973) on the idea that such clauses are complements of *más*. Thus, in these comparatives *más* is the only constituent that raises at LF, since there are no such things as "correspondents". In the following subsections we will show that this fact accounts for the following asymmetry between the paradigms in (74a, b, c) and (75a, b, c):

(74) a. *Juan compró más manzanas de las que compró Luis.*  
           Juan bought more apples than what bought Luis.  
           'Juan bought more apples than Luis bought'.

(3) Of course, we would have now to face the problem of why a configuration such as the one in (73) is not possible at SS. This possibility can be precluded if we assume that the Left-Branch Condition derives from the requirement that an empty category be head-governed, and the assumption that such a requirement holds at PF (cf. Aoun, Hornstein, Lightfoot and Weinberg 1987).



- b. Juan compró más manzanas de las que se piensa María que  
 Juan bought more apples than what thinks María that  
 compró Luis.  
 bought Luis.  
 'J. bought more apples than M. thinks that L. bought'.
- c. Juan compró más manzanas de las que se piensa María.  
 Juan bought more apples than what thinks María.  
 'J. bought more apples than M. thinks'.
- (75) a. Juan compró más manzanas que peras compró Luis.  
 Juan bought more apples than pears bought Luis.  
 'J. bought more apples than Luis bought pears'.
- b. Juan compró más manzanas que peras se piensa María que  
 Juan bought more apples than pears thinks María that  
 compró Luis.  
 bought Luis.  
 'J. bought more apples than M. thinks that L. bought pears'.
- c. \* Juan compró más manzanas que peras se piensa María.  
 Juan bought more apples than pears thinks María.  
 lit: 'J. bought more apples than pears M. thinks'.

#### 4.2.1. Examples in (74)

Example (74c) can be accounted for by recalling the account given of (71). Thus, (74a, b) will also be instances of NCA. In these cases, the NCA will have the category NP, and will appear immediately to the right of the verb *comprar*. Since *más* raised at LF, the reconstruction of the NCA will give rise to the configuration in (76), where the QP operator *las que* binds a QP variable:

(76)  $las\ que_i \dots NP[QP[e_i]_N[manzanas]]$

#### 4.2.2. (75) are not instances of coordination

As far as the examples in (75) are concerned, we will first give some arguments supporting the idea that, in spite of the fact that they seem to be identical to coordinate sentences such as (11) (with the only particularity that the object constituent has been preposed, perhaps by topicalization), the structure underlying (75a), for example, is actually the same as in (74a), that is, there is no coordination, but rather a relative construction. Some of the arguments given in section 1.2 to show that (11) is a coordinate structure will allow us to show now that coordination does not underlie (75a). We proceed to briefly offer the relevant data related to each of the arguments.

##### 4.2.2.1. Unlike (13), (77), where *libros* is preposed, is grammatical:

(77) Pedro vio a Bogart en más películas que libros leyó Luis.

##### 4.2.2.2. Unlike (15), in (78) the second restrictor can be generated in a more deeply embedded context before being raised:

(78) Juan compró más manzanas que peras dijo Pedro que vendió Luis.

4.2.2.3. Unlike (17b), (79) is not sensitive to ATB phenomena:

(79) A quién compró Pedro más manzanas que peras vendió Juan a Luis?

4.2.2.4. Unlike (22a), where *más* is subcategorizing for three restrictors, (80) is grammatical, since we are saying that these embedded clauses are actually complements of *más*, so an infinite amount of them can be coordinated.

(80) Juan compró más manzanas que peras vendió Luis y bananas comió José.

4.2.2.5. Unlike (23a), the fact that the restrictors play different roles in each sentence does not lead to ungrammaticality in (81):

(81) Más mujeres trabajaron que hombres reclutó el ejército.

4.2.2.6. In contrast to what happens in (25), the fact that the comparative clause appears embedded in an NP in (82) does not lead to ungrammaticality:

(82) La retirada de más soldados por Francia que marines retiraron los USA fue un tema controvertido.

4.2.2.7. The use of subjunctive mood in (83) is possible, unlike what happens in (26b):

(83) Juan ha comprado más manzanas que peras haya podido vender Luis.

4.2.2.8. (84) seems to suggest that sentences like (75a) accept gapping, just as (21a) does:

(84) Juan compró más manzanas que peras Pedro.

However, several facts suggest that (84) is just like (21a), but with the subject inverted:

(85) Juan compró más manzanas que (compró) peras Pedro.

4.2.2.8.1. Like (17b), those sentences are sensitive to ATB:

(86) \* Quién compró más manzanas que peras Luis?  
 who bought more apples than pears Luis  
 'Who bought more apples than Luis pears?'

4.2.2.8.2. The fact the two restrictors play different roles in each clause is relevant in these sentences:

(87) \* Más chicos vieron a Juan que chicas Pedro.  
 more boys saw Juan than girls Pedro  
 'More boys saw Juan than Pedro girls'.

4.2.2.8.3. These sentences cannot appear inside an NP, as was the case in (23a):

(88) \*La retirada de más soldados por Francia que marines los USA fue un tema controvertido.

#### 4.2.3. (75) are instances of relativization

Thus far, we have shown that (75) drastically differs from (11). In this section we argue that the structure which actually underlies (75) is the same as in relative constructions. In other words, the structure of (75a) is the same as the one in (74a). It is on these grounds that we can take the examples in (74)-(75) as evidence of an asymmetry. Indeed, several arguments suggest that the constituent which introduces these comparatives is similar to the wh-element *cuantos* 'whatever', which introduces Spanish amount free relatives. In the following sections we will offer those arguments. Notice that each argument allows us to also discard a possible topicalization-based account of (75).

4.2.3.1. In Spanish, there is a difference between indefinite NP's (89) and bare NP's (90):

- (89) Yo no he comprado un libro. (90) Yo no he comprado libros  
 I not have bought a book 'I did not buy books'.  
 'I did not buy a book'.

This difference shows up as a difference in quantifier scope. (89) has the following readings:

- (91) a. —Ex, x=libro, yo he comprado x.  
 b. Ex, x=libro, —yo he comprado x.

However, in the case of bare NP's, there is no ambiguity. (90) has only the interpretation (91a). The interpretation where the existential quantifier has wide scope over negation is not possible.

Lees pointed out that it is impossible for a negative element to appear within the second member of a comparative:

- (92) \*I know him better than she doesn't.

This is also true in Spanish:

- (93) \*Luis compró más manzanas que Pedro no vendió peras.  
 Luis bought more apples than Pedro not sold pears.  
 'L. bought more apples than P. didn't sell pears'.

(93) contrasts with (94), where there is no negative operator

- (94) Luis compró más manzanas que Pedro vendió peras.  
 'Luis bought more apples than Pedro sold pears'.

Notice that, in (93) and (94), *peras* is in postverbal position, unlike the comparatives in (75).

Probably, (93) is ungrammatical because a comparison is made between constituents that do not have identical referential status: some apples exist, and they have been bought, unlike the pears, that lack a referential index.

Negative operators are possible in comparatives where *peras* occurs in preverbal position:

- (95) Luis compró más manzanas que peras no vendió Pedro.  
lit: 'Luis bought more apples than Pedro did not sell pears'.

In this case, *manzanas* and *peras* have identical referential status, since *peras*, occurring in a more prominent syntactic position, receives wide scope over the negation. This is what happens in amount free relatives, as illustrated in (96):

- (96) A mí me gustarán cuantos films no detestes tú.  
I will like whatever films not hate you  
'I will like whatever films you will not hate'.

In (96), the high syntactic position of *cuantos* gives rise to its wide scope over the negative operator. Assuming that *cuantos* is in the Spec of CP, we could then conclude that in (95) (as well as in (75)) there is also a quantifier phrase which occurs in such a position, unlike in (93) (and (94)). Such a quantifier phrase would be an empty operator which introduces a free relative.

Notice that a topicalization-based account would not be satisfactory, since a bare NP in a topicalized position has no referential status when a negative operator is present. Thus, the only reading available for (97) is one of the sort of (91a):

- (97) Libros yo no he comprado.  
'Books I didn't buy'.

4.2.3.2. Rivero (1980) discusses the contrast between (98) and (99):

- (98) \*¿Qué preguntas quién tiene?  
what you wonder who has  
lit: 'What do you wonder who has?'
- (99) Dinero, preguntan quién tiene.  
money, they wonder who has  
'Money, they wonder who has'.

She deduces from this contrast that topicalization does not entail wh-movement. However this construction can be accounted for, the fact is that the presence of a wh-element in the Spec of a more deeply embedded CP gives rise to ungrammaticality:

- (100) \* Juan compró más manzanas que peras preguntaste tú por qué  
Juan bought more apples than pears wonderedc you why bought  
compró Luis.  
Luis.  
lit: 'Juan bought more apples than you wondered why Luis bought  
apples'.

Thus, (100) behaves like (98) (wh-element), not like (99) (topicalization). As expected, amount free relatives behave like (98) and (100):

- (101) \* Me gustaron cuantos invitados te preguntabas por qué vinieron.  
 I liked whatever guests you wondered why came  
 lit: 'I liked whatever guests you wondered why came'.

4.2.3.3. Topicalization does not trigger V-Preposing (102), whereas the movement of *peras* in (75) does; this is also the case in amount free relatives (103):

- (102) Libros María suele comprar.  
 books María uses to buy  
 'Books, María uses to buy'.
- (103) a. ?? Compré cuantos libros Luis vendía.  
 I bought whatever books Luis sold  
 'I bought whatever books Luis sold'.  
 b. Compré cuantos libros vendía Luis.

4.2.3.4. Campos (1986) analyzes certain examples where an emphatic *sí* can preserve the relation between an empty operator (Op) (Chomsky 1982) and the variable it binds, despite an intervening complex NP:

- (104) question: Quién trajo cerveza a la fiesta?  
 who brought beer to the party  
 'Who brought beer to the party?'  
 answer: a. \* No conozco al chico que trajo.  
 don't know the boy who brought  
 'I don't know the man who brought'.  
 b. Conozco al chico que *sí* trajo.  
 'I know the boy who *sí* brought'.

Topicalization exhibits the same phenomenon:

- (105) a. \* Cerveza, no conozco al chico que trajo.  
 beer not know the boy who brought  
 'Beer, I don't know the boy who brought',  
 b. Cerveza, conozco al chico que *sí* trajo.  
 'Beer, I know the boy who *sí* brought'.

However, *sí* does not improve a complex NP constraint in cases such as (75), and, as expected, the same happens in amount free relatives (107):

- (106) \* Compraste más café que cerveza conozco al chico que  
 you bought more coffee than beer I know the boy who  
*sí* trajo.  
 brought  
 lit: 'You brought more coffee than beer I know the boy that *sí*  
 brought'.
- (107) \* Compré cuantos libros conozco al chico que *sí* compró.  
 I bought whatever books you know the boy who bought  
 lit: 'I bought whatever books you know the boy that *sí* bought'.

4.2.3.5. Chomsky (1982) proposes the following parasitic gaps (PG) licensing principle:

(108) A PG is licensed by a variable that does not c-command it.

In (109), an amount free relative, (108) is satisfied:

(109) Recuperé cuantos libros tiró Juan tras haber leído.  
I recovered whatever books threw down Juan after have read.  
'I recovered whatever books J. threw down after having read'.

In the comparatives under discussion, the variable licensing parasitic gap also shows up, probably because wh-movement took place, as in amount free relatives:

(110) Luis compró más manzanas que libros tiró Juan tras  
Luis bought more apples than books threw down Juan after  
haber leído.  
have read  
'Luis bought more apples than Juan threw books down after having read them'.

By contrast, topicalization does not allow a parasitic gap to occur:

(111) \*Libros, Juan tiró tras haber comprado.  
Books, Juan threw down after have bought  
'Books, Juan threw down after having bought them'.

4.2.3.6. Object preposing in (75) could be related to object preposing in Spanish superlative sentences (112b):

(112) a. Pedro es el que compró más peras.  
Pedro is who bought most pears  
'It is Peter that bought the most pears'.  
b. Pedro es el que más peras compró.

The fact that English lacks sentences similar to (75a) and (112b) supports this connection between (75a) and (112b). Indeed, were (75a) and (112b) just instances of wh-movement, sentences like (113a, b) should be grammatical, which is not true:

(113) a. \* Juan bought more apples than apples Luis bought.  
b. \* It is Pedro that most pears bought.

Therefore, properties of (112) could help us to find out properties of (75a).

First, notice that a wh-operator is required for a superlative to be possible (there is another interpretation for (114a) which does not concern us here):

(114) a. \* Juan compró más peras.      b. ¿Quién compró más peras?  
'Juan bought more pears'.      who bought more pears  
'Who bought the most pears?'

For (114a) to be correct, it is necessary to introduce what seems to be a wh-operator in situ (italicized in (115)). This operator can agree in gender and number features with the subject, just as the ordinary relative operator *el que* does:

- (115) Ellas/Juan compraron/ó *las que* / *el que* más peras.  
 they-fem. who-fem.pl. who-masc.sg.  
 'They/Juan bought the most pears'.

However, a second requirement exists for object preposing to take place: the wh-element which triggers the preposing is the one which shows up in relatives (112b), not the interrogative one (116):

- (116) \*¿Quién más peras compró?  
 who more pears bought  
 'Who bought the most pears?'

Movement of *más peras* in (112b) to the position occupied by the relative operator could be considered as an instance of absorption: *más peras* has to form a cluster together with the relative wh-operator, and such cluster is a binary operator binding two variables at the same time. The ungrammaticality of (116) suggests that such an absorption process can take place only when the wh-operator is generated in situ, as seems to be the case in Spanish relatives, where resumptive pronouns are always possible (117a) and verb preposing never takes place (117b):

- (117) a. Un chico al que le vi a menudo.  
 A boy who him saw often.  
 'A boy that I often saw'.  
 b. Un chico al que Juan vio a menudo.  
 'A boy whom Juan often saw'.

A third requirement for object preposing to take place in superlatives is suggested in (118):

- (118) a. Era a Felipe a quien más ciudadanos admiraban.  
 was Felipe whom most citizens admired  
 'It was Felipe that the most citizens admired'.  
 b. Es a Felipe a quien más ciudadanos quiere el PSOE que admiren.  
 is Felipe whom most citizens wants the PSOE that admire  
 lit: 'It is Felipe that the PSOE wants that the most citizens admire'.  
 c. \* Es el PSOE el que más ciudadanos quiere que admiren a Felipe.  
 is the PSOE who most citizens wants that admire Felipe  
 lit: 'It is the PSOE that wants that the most citizens admire Felipe'.

In (118b), the wh-element of the Pseudocleft moves from the object position of a more deeply embedded sentence. The *más*-constituent moves from the subject position. In (118c), the *más*-constituent moves as in (118b), but the original position of the wh-element is in the higher clause. The fact that this sentence is ungrammatical suggests that movement of a *más*-constituent to a higher clause is only possible when adjunction to a wh-element in the Spec of its own CP is done. The *más*-constituent cannot raise by itself directly to the higher clause for the same reason why movement of quantifiers at LF is limited to the sentence where they appear at SS (recall that we are considering these overt movements to be an SS reflect of something

which is commonly at work at LF). Therefore, we consider the steps of the derivation of (118b) to be the following (the symbol “+” stands for “adjunction”, that is, the step where absorption is taking place):

- (119) a. ...quiere<sub>CP</sub>[wh<sub>i</sub> IP<sub>[NP[más...]]</sub>; admiren pro<sub>i</sub>]  
 b. ...quiere<sub>CP</sub>[wh<sub>i</sub>NP[más...]]<sub>i</sub>[e<sub>j</sub> admiren pro<sub>i</sub>]  
 c. CP[wh<sub>i</sub>NP[más...]]<sub>i</sub>IP[...quiere<sub>CP</sub>[IP[e<sub>j</sub> admiren pro<sub>i</sub>]]

(119a) means that the wh-element is generated in the Spec of the lower CP (recall that the possibility of base-generating wh-elements in relatives accounts for the contrast between (112b) and (116), as well as for the ungrammaticality of (113a, b)), binding a pro in object position. Next, the *más*-constituent adjoins to the wh-element, just as it happens in (112b). Finally, the complex constituent raises to the Spec of the higher clause.

In (118c), the formation of the complex operator is not possible, since the wh-element is too far away from the *más* constituent.

In case we decide not to front the *más*-constituent, there will still be a contrast between those sentences where the wh-element is a clausemate of the *más*-constituent and those where it belongs to a higher clause:

- (120) a. Es a Felipe a quien quiere el PSOE que admiren más ciudadanos.  
 b. \*Es el PSOE el que quiere que más ciudadanos admiren a Felipe.

The reason for this is that, at the LF of (120a), the *más*-constituent can adjoin to the trace left by the wh-element in the Spec of the lower CP, thus giving rise to the complex operator necessary for the interpretation of the superlative, whereas at the LF of (120b), no trace of the wh-element is available in that position. Thus, a sentence like (121a) is also ungrammatical, unlike (121b):

- (121) a. \*¿Quién quiere que más ciudadanos admiren a Felipe?  
 ‘Who wants that the most citizens admire Felipe?’  
 b. ¿A quién quiere el PSOE que admiren más ciudadanos?  
 ‘Whom does the PSOE want that the most citizens admire?’

Summarizing, the analysis of object preposing in superlatives allows us to find some properties which can be relevant for the analysis of the structure underlying comparatives such as (75a):

- (122) a. a wh-operator is needed (evidence in (114)).  
 b. the wh-operator must be base-generated in an A<sup>2</sup>-position, which is only possible in relatives (evidence in (112b)/(116)).  
 c. the *más*-constituent has to adjoin to the wh-operator, which must then be locally related to it, since it cannot perform long movement (evidence in (119)-(120)).

We can then propose the structure (123) for the comparative clause in (75a):

- (123) que<sub>CP</sub>[OP<sub>i</sub>NP[peras]<sub>j</sub> IP[compró Luis NP[e<sub>i</sub> e<sub>j</sub>]]]



*Op* is a wh-operator which introduces a relative clause. Then, no relevant difference exists between (74a) and (75a). The two cases are instances of relative clauses.

#### 4.2.4. The ungrammaticality of (75c)

In the last sections we have arrived at the following conclusions:

- (124) a. *más* raises independently at LF in (74) (section 4.1.).  
 b. (75) are not coordinate sentences, but instances of the structures underlying (74) (sections 4.2.2. and 4.2.3.).

We can then conclude that, in (75c), what raises at LF in the main clause is *más* (the restrictor does not raise, since no coordination is at work). Then, the LF of (75c), namely (125), tells us now why this sentence is ungrammatical:

- (125) CP<sub>IP</sub>[QP[más]<sub>i</sub> IP<sub>Juan compró</sub><sub>NP</sub>[QP[e]<sub>i</sub> N<sub>′</sub>[manzanas]]]] que  
 CP<sub>QP</sub>[QP<sub>OP</sub>]<sub>k</sub>N<sub>′</sub>[peras]<sub>m</sub> IP<sub>se piensa María</sub><sub>IP</sub>[Juan compró]<sub>NP</sub>[QP[e]<sub>k</sub>  
 N<sub>′</sub>[manzanas]]]]

Notice that, after reconstruction, *Op* correctly binds its own variable (a sloppy copy of the variable in the main clause has taken place). However, the problem of vacuous quantification is still not solved, since no variable has been copied for *peras* to bind. Had both *más* and *manzanas* raised at LF, the sentence should be grammatical, since a variable of category N<sub>′</sub> (the one corresponding to *manzanas* in the main clause) could have been reconstructed at LF for *peras* to bind. Lastly, it is important to keep in mind that the object preposing in (75a,b) is not an indication that a similar raising is affecting the restrictor in the main clause at LF, but rather it illustrates the overt absorption phenomenon in Spanish, which also takes place in superlatives.

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# The Syntax of Movement in Basque

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## 1. The Puzzle<sup>1</sup>

Traditional Basque grammars have noted the following peculiar fact about question formation in this language:<sup>2</sup> The *Wh*-phrase must be left-adjacent to the verb—we will make this more precise as we go along. This yields structures of the form *Wh-S V O*, *O Wh-S V*, *Wh-O V S*, *S Wh-O V*, and so on, in a language which underlyingly is SOV.<sup>3</sup> Crucially, the sequence *Wh V* does not appear to be broken. For this the arguments can be displaced in different directions, left or right. They can even be dropped completely (the language is pro-drop in all major arguments, subject, object, and indirect object, since it shows verbal agreement with all three). What is not found is instances where, say, a *Wh-O S V* order arises:

- (1) \*Zer zuk edango duzu  
what you drink-will III-aux-II

This is much easier to describe than to explain. To see this, consider the type of account provided by Eguzkitza (1986). Following similar analyses for a comparable paradigm in Hungarian,<sup>4</sup> Eguzkitza proposes that *Wh*-questions in Basque move to a special Focus position, left-adjacent to the verb. Indeed, focalization, like question formation, is subject to adjacency restrictions of the sort just pointed out. Thus, for instance, (2) is not a well-formed answer to the question raised in a grammatical version of (1) above:

(1) I am grateful to A. Barss, N. Chomsky, A. Eguzkitza, P. Goenaga, K. Hale, K. Johnson, Ch. Jones, R. Kayne, T. Kroch, H. Lasnik, J. Ormazabal, J. Ortiz de Urbina, B. Oyharçabal, G. Rebuschi, P. Salaburu, I. Sarasola, E. Torrego, M. Uribe-erxebarria, and very especially I. Laka (who is more than anything a co-author) for data, insights, discussion, scepticism, etc. Thanks also to J. Lakarra for his constant interest in getting this article in print for almost half a decade, in spite of my procrastination. As usual, I claim errors and misinterpretations.

(2) The first to study the phenomenon systematically is Altube (1929). In recent years, several accounts have been proposed, including Eguzkitza (1986), Laka and Uriagereka (1987), Uriagereka (1987), and Ortiz de Urbina (1989).

(3) This is obvious from tests on intonation patterns, and semantic considerations having to do with emphasis of marked orders, presumably arising via scrambling, dislocation, topicalization and so forth. Several syntactic arguments have been provided for the unmarked order by many, following explicitly or implicitly De Rijk (1978), Levin (1984), Salaburu (1986), Uriagereka (1987), Ortiz de Urbina (1989).

(4) See Horvath (1981), Kiss (1987).

- (2) \*ARDOA zuk edango duzu  
WINE you drink-will III-aux-II

First, note that this entails proposing a parameter to divide the class of natural languages between those which are like Basque (and possibly Hungarian, etc.) and those which are, say, like English. In general, we want to avoid this move whenever possible, short of reproducing the problems that systems of rules raised in the sixties. More importantly, we have to ask how it would be possible for the Basque child to set the relevant parameter. Of course, no negative description of the sort mentioned above is available to infants. Further, the actual data are compatible with an analysis that would tell the child that the language s/he is learning is, in the relevant respects, like English. Thus, as pointed out by Uriagereka (1987) the (a) examples below can be analyzed roughly as in (b), simply by using devices of Universal Grammar:

- (3) a. *Wh-S V O*  
b. [<sub>CP</sub> Wh-S<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> [ [<sub>pro</sub><sub>j</sub> V] O<sub>j</sub> ]]]
- (4) a. *O Wh-S V*  
b. [<sub>TOP</sub> O<sub>j</sub> [<sub>CP</sub> Wh-S<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> [<sub>pro</sub><sub>j</sub> V]]]]
- (5) a. *Wh-O V S*  
b. [<sub>CP</sub> Wh-O<sub>j</sub> [<sub>IP</sub> pro<sub>i</sub> [ [<sub>VP</sub> t<sub>j</sub> V] S<sub>i</sub> ]]]
- (6) a. *S Wh-O V*  
b. [<sub>TOP</sub> S<sub>i</sub> [<sub>CP</sub> Wh-O<sub>j</sub> [<sub>IP</sub> pro<sub>i</sub> [t<sub>j</sub> V]]]]

This entails that, if Eguzkitza's position is to be maintained, we cannot allow UG to be as we usually assume. In other words, Basque must be the *unmarked* option, with standard Wh-movement being learned by positive data of the sort impossible in Basque (e.g., a grammatical *Wh-O S V*). Notice also that several languages in the world allow Wh-in situ. But this option will not do for Basque either, since in an SOV language that should most definitely allow, at least, *Wh-S O V* structures.<sup>5</sup> In a nutshell, all the languages that we have investigated thus far are marked, and Basque (and Hungarian, etc.) provide the truly unmarked Wh-option. This seems unlikely.

Researchers aware of this fact try to link the setting of the parameter in question to an alleged non-configurationality of the language at issue.<sup>6</sup> Eguzkitza does not try this for Basque for good reasons: there are innumerable tests that argue that Basque is as configurational as a language can be. Some of the tests are standard Binding, Crossover, Incorporation, Control effects.<sup>7</sup> Others are more current: Laka (1988) shows that there is no simple way of explaining the morphology of the Basque auxiliary unless configurationality is assumed; Cheng and Demirdash (forthcoming) pro-

(5) In fact, these do appear in traditional Basque texts, as will be discussed below, but are ungrammatical for some modern speakers.

(6) This is clear, for instance, in the Hungarian literature mentioned above.

(7) All the references mentioned thus far either present explicit arguments for configurationality or analyses that presuppose it. Occasional evidence to the effect that Binding of anaphors in "subject" position is possible from "object" position in Western dialects is irrelevant, in light of the recent literature on binding from scrambled sites, including Weibelhuth (1988), Mahajan (1990).

vide a clausal analysis coherent with Laka's auxiliary which is crucially configurational, and directly mapped from the Thematic Hierarchy. Also, just as before, the hypothesis of non-configurationality (even if the facts did not deny it) is just impossible for the child to set, for a non-configurational analysis is entirely compatible with a configurational one which makes generous use of *pro*, in a language with rich agreement all over, a point also raised in Uriagereka (1987). Thus we would have to claim that the null hypothesis is non-configurationality. But this yields a worse result: the child learning, say, English, would hypothesize that the language *s/he* is learning is non-configurational, and no data would correct this wrong assumption. Given the freedom of word order of non-configurationality, it must be the *marked* option. This suffices for the child not to have to take it in the case that concerns us, provided that an unmarked alternative is available. To link then the Wh-facts in question to configurationality would have devastating effects, for in fact we should either not have these facts at all, or else have idiosyncratic variation among speakers (assuming some children may choose randomly the marked option).

Within current assumptions about phrase structure, movement, and so on, the analysis in question does not stand a chance, either, in as much as it entails lowering of phrases to V adjunction. That should violate at least the ECP and the Structure Preserving Hypothesis, not to go into further technical details.<sup>8</sup> Also, *some kind of scopal movement* is going to have to take place prior to interpretation, short of failing to create variables for the relevant Logical Structures.<sup>9</sup> Presumably, in instances of *wonder*-type verbs, selecting a Wh-phrase, this scoping would have to be to the spec of CP—unless we want to invoke a further parameter here. Then the obvious question is: why does Basque have to take the cumbersome route of lowering Wh-phrases down to the mysterious position, if in any case these elements are going to have to be moved to the regular spec of CP? Two answers only come to mind: either there is something deeply wrong with all our analyses of Wh-movement in the last twenty years, or else there is something deeply wrong with the proposal under scrutiny. At least for concreteness, here we shall entertain seriously only the second possibility.

Another analysis addresses all of the theoretical problems above, and offers an intriguing alternative that is worth exploring seriously. This is Ortiz de Urbina (1989), which describes the phenomenon in question in terms (mostly) of well-attested properties of UG. Ortiz de Urbina equates Basque to Spanish, as in Torrego's (1984) analysis of Wh-questions. For Torrego, Wh-questions in Spanish entail movement of V to the pre-sentential periphery, for reasons she does not discuss.<sup>10</sup> This of course results in the Wh-phrase in spec CP being adjacent to the displaced V, yielding the

(8) See Chomsky (1986).

(9) This fact is indeed noted by Eguzkitza, and the solution that follows is explicitly proposed.

(10) There are at least two respects in which Torrego's specific analysis differs from Ortiz de Urbina's. First, for Torrego verb-movement is adjunction to IP, whereas for Ortiz de Urbina, it is movement to C. However, it is easy to recast Torrego's analysis in Ortiz de Urbina's terms—arguably a more principled approach. (This, of course, would entail reviewing Torrego's arguments for not having movement to C.) More complex is the fact that in Spanish, when an auxiliary is present, just the auxiliary needs to move (although the whole verb sequence, apparently, can). In Basque, in contrast, the whole verb sequence appears to be in a displaced position. Since it is not clear what motivates either process, this descriptive fact is hard to analyze coherently. I return to this below.

now familiar *Wh-V* sequence that concerns us here. That is, crucially, in a language that is head-first. A problem for Ortiz de Urbina's analysis is that Basque is head-last. This means that movement of *V* to *C*, which he explicitly proposes in fact should *maximally separate Wh-* from *V*. Ortiz de Urbina is well aware of this, and for it he stipulates that, in spite of the otherwise clear regularity in Basque heads, *Comp* is first. The evidence he adduces for this is scarce, and rather questionable.<sup>11</sup> Chief among his difficulties, though, is the fact that overt Basque Comps *are last*:

- (7) Zer [edango duela] esan du  
 what drink III-will-III-that said III-have-III  
 'what has he said that he will drink'

This is an instance of a well-known observation: *Wh*-movement is always to the left, even in head-last languages where a traditional analysis would expect it to be to the right.<sup>12</sup>

Ortiz de Urbina claims that the element *la*, and similar complementizers are mere features in *Infl*, which is indeed last. Somewhat mysteriously, these features surface in the right periphery of *Infl*.<sup>13</sup> The child must override the obvious option of analyzing this peripheral element (which otherwise has all the properties of *Comp*) as a true *Comp*, and furthermore must *not* come up with the obvious generalization that, since Basque is uniformly head-last, it is so in this instance as well.<sup>14</sup> The only evidence to learn said structures is the one in point. But as we have shown, said ev-

(11) For instance, he notes that certain "complementizers" may appear first, e.g., *nola* 'how'. This is not surprising: said elements are not obviously in the head of *CP*. Thus, 'how' is a typical marker in many languages of a complement clause with a *de dicto* interpretation:

- (i) A student of Pitagoras demonstrated how the square root of two is not a rational number

Typically, complement clauses of this sort are islands:

- (ii) what did he demonstrate that/\*how the square root of two is

This follows if said elements are in the spec of *CP*, not in the head.

(12) Hence the proposal of having *Wh*-phrases move to the spec of *Comp*, not to *Comp* itself. See Koopman (1984) for discussion.

(13) Notice that this fact is directly explained in Baker's (1988) terms if *Comp* is last, even assuming that the element *la* is part of the morphology of the auxiliary —as it probably is. That is, for Baker *Infl* will be able to incorporate to *Comp*, leaving the latter in its periphery. This is the sort of analysis that Laka (1988) proposes for the auxiliary —and is indeed the tacit or explicit assumption for virtually everyone else in the field. Another possibility is that *Comp* lowers, in the way affix-hopping takes place, presumably, in English (see Chomsky 1989).

(14) Laka (1990), in the spirit of Pollock (1988), claims that negative elements are heads in Basque, and argues that they are furthermore head-first. It is questionable, however, whether Pollock is right in that phrases headed by *Neg* exist. Since the matter is under current scrutiny and remains highly controversial, I will not address it for now. I do believe, personally, that Negative operators are syncategorematic, and apply to any predicate (regardless of syntactic category) as modifiers. Heads are seldom, if ever, this free, having much more strict sub-categorization restrictions. For this and related discussion, see Hornstein, Rosen and Uriagereka (in progress). I should also point out that Basque is not the only known language which, being head-last uniformly, has negative and emphatic operators triggering a *V-2* effect (i.e., attracting the auxiliary to second position). For instance, some Uto-Aztecan dialects which are otherwise uniformly head-last nevertheless show sentence negation and modals regularly in second position. I suspect that a unified account should be possible without invoking the notion head (thereby breaking the otherwise clear regularity of the head parameter). What I have in mind is a semantic principle that demands of (certain) operators that they be first —with the intuitive import of "it is not the case that [sentence]". I will not pursue this here.

idence is perfectly compatible with an analysis that does not have Ortiz de Urbina's properties. Therefore his analysis would have to be the unmarked one. Again, it is hard to see how this can be the case: the prediction is that all languages should look like Basque (and perhaps Spanish), even in embedded clauses—which is clearly not true. Thus, for instance, the English child does not have the option of moving embedded verbs; the analysis with verb movement in those sites must then correspond to a marked option triggered by positive data—the paradox, then, follows.

Deeper than this paradox still is the question, again, of why Basque—or for that matter Spanish—takes peculiar routes. It should perhaps be emphasized that the structures in question are indeed more peculiar than Ortiz de Urbina (or Torrego in her article) imply. There is a vague sense in which these are equated with Verb-second phenomena. The comparison, however, is not accurate on three counts: (i) Verb-second happens only when some other process, typically Wh-movement or Topicalization, also happens, with few exceptions—in languages where verb fronting is obligatory in all declarative sentences; in contrast, what we see here is a rather *free* “verb movement”, which becomes necessary only when Wh-movement and similar processes happen. (ii) Verb-second is generally a root clause phenomenon—that is, verb movement in embedded clauses is not even an option;<sup>15</sup> in contrast, the one in question is a “verb movement” that *can* happen in embedded clauses, again regardless of whether Wh-movement or topicalization is at issue. (iii) the “verb movement” under discussion is in fact *obligatory* in embedded questions and similar circumstances, which is rarely the case in typical Verb-second languages.<sup>16</sup>

In general, to show, even if convincingly, that a mystery that holds in a language, holds also in others, is not an explanation, and is subject to the twists and turns of new analyses of the supporting evidence. Thus, in Torrego and Uriagereka (in progress) we reanalyze the data in Torrego (1984) without making use of the Verb-movement hypothesis, by way of a generous use of *pro*, null operators, and related devices. The point is, once Torrego's analysis is recast in these terms, the weak motivation for Ortiz de Urbina's disappears. In particular, there is no reason any more why the verb should go leftwards, his main concern. In any case, one should emphasize Ortiz de Urbina's attempt as definitely the most serious ever within the grammar of Basque to provide a solution to this puzzle.

## 2. Extending the Data

There are at least three sets of data that escaped the consideration of traditional linguists, all of which contradict the generalization in point. Consider first (8), a kind of example observed by Mitxelena (1981), described by Laka (1985):

(15) With few exceptions. In the Germanic languages, for instance, embedded V-2 is possible in constructions of saying, and so on, when the complementizer is missing; but these constructions are presumably “root” in nature. Languages like Greek, on the other hand, are much freer, even in embedded clauses—like Spanish and Basque. Also, the phenomenon in point is rather free in relative clauses, which is another typical domain where V-2 is not apparent.

(16) All of this is not to imply, incidentally, that we have a good explanation of Verb-second; rather, the descriptive generalizations traditionally given for this phenomenon do not fit the ones in point.

- (8) zergatik zaldunak herensugea hil zuen  
 why knight-the dragon-the kill III-has-III  
 'Why did the knight kill the dragon'

Here we have an event adjunct not adjacent to the verb. Examples like these are hard to judge in modern dialects: they range from perfect for some speakers to marginal (or rhetorical) to others. In fact, Ortiz de Urbina does note that such exceptions exist, and compares them to similar exceptions in Spanish, noted by Torrego. Thus, a translation of (8) into Spanish is fine:<sup>17</sup>

- (8') por qué el caballero mató al dragón

Of course, lacking an explanation as to why the rule (assuming it exists) applies, it is hard to know why the exception applies.

A further wrinkle to the data above, first pointed out in Uriagereka (1987), is shown in (9):

- (9) a. zergatik P. esan du ardoa edango duela  
 why P. say III-has-III wine drink-will III-aux-III-that  
 'Why does P. say he will drink wine?'  
 b. por qué Pedro dice que beberá vino  
 why Pedro says that will-drink wine  
 'Why does Pedro say he will drink wine?'

The sentences in (9) are possible only if *why* modifies the matrix, not the embedded clause in each instance. (In other words, these are questions about Pedro's reasons for saying such-and-such, not his reasons for drinking wine.) Now the presence of an intervening subject has a mysterious effect indeed, at least from the point of view of the traditional pattern and the analyses presented thus far: it does not block extraction of a matrix adjunct, but it blocks extraction of an embedded adjunct.<sup>18</sup>

Laka also notes that the presence of event adjuncts between the Wh-phrases and the verb does not seem to affect the initial generalization for many speakers:

- (10) a. nor honela etorri da  
 who thus come is  
 'Who has come this way?'  
 b. zer adorazione-mota hemen kondenatzen da  
 what adoration-kind here condemned is  
 'What kind of adoration is condemned here?'  
 (Leizarraga, 16th cent.)

The same hedges as above apply for modern speakers, with different speakers varying in their judgements. Again it is easy to see that this fact is not amenable to a description by either of the theories above.

(17) Uribe-Etxebarria (1990) discusses whether the presuppositions of each kind of example, with the subject intervening or not, vary in each instance. My view is that they do, but I am not convinced this affects the matter at issue.

(18) The relevant reading is possible if the matrix subject is not present.



Finally, consider (11):

- (11) a. nork ardoa edaten du  
 who wine drink III-have-III  
 'Who has drunk wine'
- b. nork mahaia bedeinkatuko du  
 who table-the bless-fut III-aux-III  
 'Who will bless the table?'  
 (Mogel, 19th cent.)

(I purposely leave sentences like these, first discussed in Laka and Uriagereka (1987), without judgements.) It turns out that, at least for some speakers, (11) is far from terrible. What is more important, Ibon Sarasola (personal communication) has provided a good number of examples in the written texts of the relevant format: *Wb-S O V*. Said texts are part of the corpus of the Basque dictionary he is editing, thus belong mostly to older dialects, prior to the reunification of Basque carried on in the late sixties. I have no intention here of conducting a philological analysis of this, but simply will trust Sarasola's observation that the exception in question does not extend to the format *Wb-O S V*.<sup>19</sup> Modern speakers do have varying judgements with respect to (8); again Sarasola notes this kind of example is more usual in modern Eastern dialects than in Western ones, where the construction is clearly stigmatized. Be that as it may, this seems like a piece of data that deserves a non-trivial explanation.

Notice, incidentally, that an incorporation analysis of the direct object in (11), of the sort proposed by Uriagereka (1987) for constructions as in (12a), is not immediately obvious across the board. Thus, whereas *lan egin* in (12a) has a compositional meaning roughly equivalent to "work", this is not the case in (12b), where *lana*, crucially, bears an article, thus is an argument of the verb:

- (12) a. nork lan egin du  
 who work make III-have-III  
 'Who has worked'
- b. nork lana egin du  
 who work-the make III-have-III  
 'Who has done the work'

(19) With the usual hedges; some examples of this sort do appear in the texts:

- (i) zer horrek esan nahi du  
 what that-erg say want aux  
 'what does that mean?'

(Thanks to Miriam Uribe-Etxebarria and Javier Ormazabal for bringing this instance to my attention.) This is a particularly tricky example, for it involves a modality which may be introducing —at least arguably— an embedded clause. If so, in rigor (i) may be an instance of long —distance movement, which as shall be seen below involves rather special mechanisms— see (26). At any rate, to falsify my claim something more than one counterexample has to be found: a whole tendency is necessary. Lacking explicit data in this respect, I will explore the present generalization without further comment, emphasizing that a serious philological survey is necessary.

In other words, *lana* in (12b) has not incorporated to V to form a complex predicate, which would make it lose its referential properties. It is thus clear in this instance that the direct object intervenes between the Wh-phrase and the verb. Needless to say, this kind of example cannot be explained by either of the theories above.

I am willing to accept that none of the examples presented in this section is completely perfect, or even mildly acceptable for many speakers. This is not the point. The issue is whether, even for these speakers, there are significant contrasts between examples of this sort and ungrammatical instances of the sort seen in (1) above. In as much as these exist, the account cannot be unified. This may seem unwelcome to some, particularly to those who defend models of grammar which allow for construction-specific rules. Within the GB framework, however, this array of facts is entirely plausible, and furthermore welcome. The hope of accounting for this phenomenon if traditional grammarians were right in their observations is practically null, at least within current versions of the theory. However, if the thread that Mixtelena began to pull leads somewhere, it is perfectly possible that the phenomenon under discussion results from the typical conspiracy of interacting principles, in a rich deductive way.

### 3. An Analysis

A natural approach to a portion of the facts above was proposed in Uriagereka (1987), some of whose mechanisms were discussed in Laka and Uriagereka (1987). The main idea comes from assuming the characterization of *barrier* explored by Fukui and Speas (1987), later on pursued by Uriagereka (1988) as in (13):

- (13) A is a blocking category only if A is a functional category morphologically specified.

This characterization is taken within the system of barriers in Chomsky (1986):

- (14) a. G is a blocking category for B [if]<sup>20</sup> G is not L-marked and G dominates B.  
 b. G is a barrier for B iff (i) or (ii):  
 (i) G immediately dominates D, D a blocking category for B;  
 (ii) G is a blocking category for B [, G not IP].  
 c. A L-marks B iff A is a lexical category that Theta-governs B.

To this, the natural assumption that *pro* is not a lexical specifier was added.<sup>21</sup> For concreteness, assume that *pro* is not indexed until its reference is set, whenever and

(20) Of course, Chomsky's was an "if-and-only-if" statement, which we have to weaken now in light of the added proviso in (13). Needless to say, by incorporating (13) into (14a), we can turn the —if—, again, into an —if-and-only-if—. We will leave things as stand, though, for clarity.

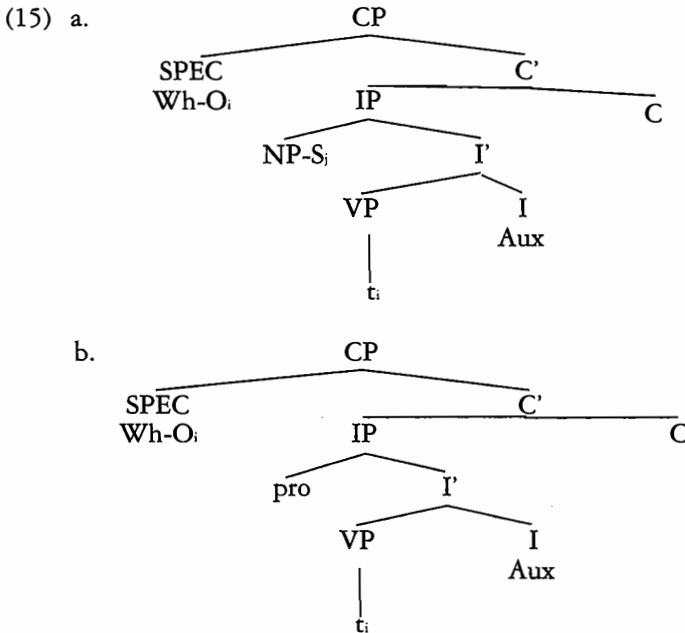
(21) The first one to suggest this view is actually Chomsky (1986). When discussing the well-known paradigm in (i) and related examples, he notes:

- (i) a. ?? which car did John tell you [how Bill fixed t]  
 b. which car did John tell you [how PRO to fix t]

"It may be that the [...] variation involves not the distinction tense vs. infinitive but [...] perhaps some factor involving nonrealized subject." (p. 39.)

however that happens.<sup>22</sup> From this point of view, all that we have to do is substitute "indexed" for "morphologically specified" in (13) above. The intuition is that unspecified functional categories (and for us, categories specified by unindexed *pro* are unspecified) provide a "window in time", so to speak, for extraction across them.<sup>23</sup>

The ungrammaticality of (15a), vis-a-vis the grammaticality of (15b) is now accounted for, assuming with many recently that IP *can* be a barrier in languages with rich inflection (contra the exception noted in (14bii)).<sup>24</sup> Notice that what this means, in effect, is that for the languages in point we can substitute the word "barrier" for "blocking category" in (14) above. The analysis is then straightforward:



Below we return to the specific principle of grammar being violated (whether Subjacency or the ECP) —for now, assume that movement across a barrier is impossible. If this is the case, and blocking categories are taken as in (13), then IP is a barrier in (15a), not in (15b), where it is not morphologically specified.

In this account, thus, (i) a well-behaved structure for Basque phrases, coherent with what we know about them and learnable by the child, is postulated; (ii) a standard treatment of *Wh*-movement is assumed; (iii) the descriptive facts follow from

(22) Either by a generalized rule of Control, of the sort in Huang (1984), or by some sort of discourse closure, as in Heim (1982).

(23) This view of bounding (or some version of it), apart from being useful in the contexts cited, is crucial in accounting for completely unrelated sets of data, such as the ones in Fukui (1987), Tiedeman (1989), Raposo and Uriagereka (1990), Boyd (1991), and several others recently.

(24) For instance, Ambar (1989), Rizzi (1990), etc. make this point. This, of course, should be the null hypothesis, for having IP being an exception to the system of barriers needs further assumptions. In fact, Chomsky was always rather clear in pointing out the defective nature of IP *in English*, admitting that parametric variation could exist (as it obviously does, morphologically) in the IP system.

independently attested properties of the language, such as the possibility of pro arguments. The analysis is radical in that it takes the surface adjacency between the Wh-phrase and the verb to be a trivial, PF phenomenon, not a deep property of syntactic structures. But this is only radicalism from a traditional point of view; from a GB point of view, the analysis is extremely conservative and, in fact, rather standard.

For completeness, we also have to worry about examples like (16) and the like, where a direct object moves over an indirect object, also ungrammatical:

- (16) \*zer pro Joni bidali dio  
       what Jon sent III-have-III-III  
       'What has he sent to John?'

For this we will assume current research within datives stemming from Kayne (1984), which equates them to subjects (e.g., Larson 1988). Torrego (in progress) goes even further: for her, said elements are specifiers of a functional category. Given this assumption, the rest follows. (We return below to a specific characterization of Basque VPs.)

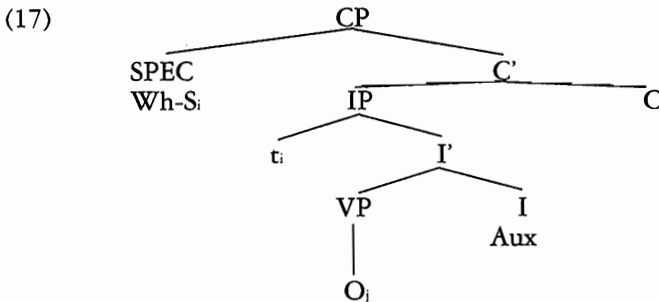
In turn, this approach explains directly why movement across event adjuncts is fine (cf. (10)): these simply are not specifiers, hence no barrier is crossed.<sup>25</sup> As for why movement of event adjuncts is fine (cf. (9)), we will assume the analyses in Uriagereka (1988) and Hornstein, Rosen and Uriagereka (in progress), where it is argued that said elements do not involve trace variables, but rather event variables.<sup>26</sup> This, incidentally, may seem to decide that the issue at stake is the ECP, for this principle would be vacuously satisfied if no traces are at issue. However, Uriagereka (1988) argues specifically that true adjuncts do not need to undergo Wh-movement,

(25) In Hornstein, Rosen and Uriagereka (in progress) we argue that certain so-called adjuncts are specifiers of sorts, maybe differing parametrically from language to language—a view advocated, for instance, by Zagana (1988). These typically are unique, rather fixed with respect to where they are generated, and often show certain agreement with the verbal chain—e.g., temporal adverbs “agree” in tense specifications with the verb. It is possible, in fact likely, that said adverbs do induce a specificity effect of the sort noted here for subjects and indirect objects—this matter, though, is beyond my scope here.

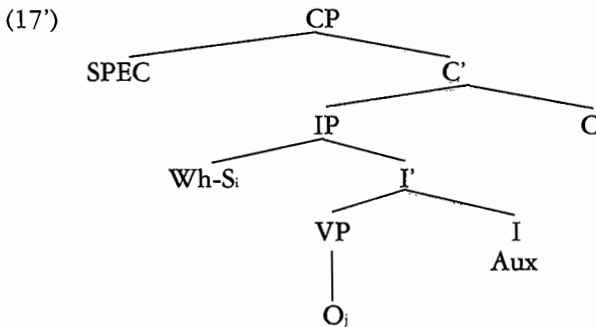
(26) Event adjuncts do not specify the event, the way other argument-adjuncts do. (Incidentally, “Event” here is used in a vague davidsonian way, to denote actual events, states, and so on.) Thus, if we say that John left the room at 5 o'clock, we are clearly specifying that event in a unique way. Hence, for instance, John cannot leave the room at 5 o'clock at 6 o'clock. In contrast, if we say that John left the room because he was tired, nothing prevents us from saying that he left the room because he was tired because he reached the conclusion that whenever he is tired he should leave the room (where this clause does not modify the reasons for being tired, but the leaving because John was tired). There is a beautiful infinite regress that Lewis Carroll constructed essentially this way, where the Turtle told Achilles that Socrates is mortal because Socrates is human and humans are mortal, because it is true that if Socrates is human and humans are mortal, then it is true that Socrates is mortal. If the argument seems fallacious to you (which is not, if Gödel is right!), consider the version: Socrates is mortal because Socrates is human and humans are mortal, because logic dictates that if Socrates is human and humans are mortal, then Socrates is mortal. Needless to say, we can add that it is true that logic dictates that if... and that it is true that it is true that logic dictates... And so on; all of these can be turned into causal statements, and we then have an infinite set of causes for a simple copulative statement—and the language obviously allows this. Of course, these are somewhat artificial examples, but more natural examples can be constructed whenever we have a system with rich causal implications. The point is, causal relations do not specify an event, they only add properties that this event (or this event modified by a cause, and so on) has. Thus, we want to treat them rather differently from other event dependents involving variables.

but can be base-generated in the spec CP. If this is possible, then a Subjacency explanation could also be invoked, at least in principle: there simply is no movement here. We shall return to these matters.

The most interesting case of all is now (11)—in fact a case that has not been successfully analyzed in the literature. Note, first, that our theory would seem to predict why examples of this sort are possible: the moved Wh-phrase does not appear to cross any barriers if analyzed as follows:



In Laka and Uriagereka, we analyzed the case in point as in (17), which created all sorts of technical problems for our analysis. This was the case, too, with minimal differences of detail, in Uriagereka (1987), again with problematic consequences.<sup>27</sup> These were all mistakes. We can show indeed that an analysis as in (17) would be incorrect, and definitely not predicted by our theory. Consider (17) *prior* to movement:



(27) Inherited in the analysis in Cheng and Demirdash, who propose exactly the same solution as the one in the paper in point. To simplify matters, the logic goes like this: Principle P demands that the verb be in a configuration that allows head government of the trace of the subject. This is, for cumbersome reasons I do not want to go into, impossible in these instances. The problem is *what follows* from this. Both Cheng and Demirdash on the one hand, and Uriagereka previously, concluded that the sentence should be marginal, since it only violates Principle P, whereas ungrammatical examples like (1) violate *both* P and whatever the relevant principle is that (1) violates anyway—ECP or Subjacency, let us say. Therefore, we all concluded, this sentence is “less bad”. Unfortunately, as Chomsky (personal communication) pointed out, this is not at all what seems to be happening. If Sarasola’s observation is correct, for some speakers, or perhaps even for some dialects, sentences of this sort are fine, not marginal. For others, they are marked—again, not bad in any clear sense. It could be added, in fact, that for some speakers, or perhaps even for some dialects, these sentences are clearly as bad as (1). No principle of grammar should yield these results. The solution below avoids these difficulties.

Here we can see that the *Wh*-phrase is clearly specifying IP. Movement from there, if IP is a barrier, should simply be impossible (essentially the same point was raised by Rizzi (Class Lectures, Fall 1987, MIT) for Italian.)

To see how the analysis now been rejected was indeed an oversight of both Uriagereka (1987) and Laka and Uriagereka (1987), consider versions of (18) in any language:

(18) \*[what [did you ask [who [t wondered [who [t saw t]]]]]]

Sentences of this sort are quite bad, even in languages that allow rather free extraction. Now notice: if it is the case that IPs specified by traces cannot be blocking categories, the sentence in (18) should not violate a thing. The IPs are not blocking categories, hence cannot be barriers inherently. The CPs are L-marked, hence cannot be barriers inherently. The CPs are not barriers by inheritance either, since by hypothesis they do not immediately dominate a blocking category: IP. Of course, if IP is indeed a blocking category in these instances, then the ungrammaticality follows, with degrees varying depending on the status of IP itself, and other parametric matters having to do with CP, etc. But if IP is a blocking category, then the analysis in (17') should yield an ungrammatical result in a language where IP can be a barrier, like Basque.

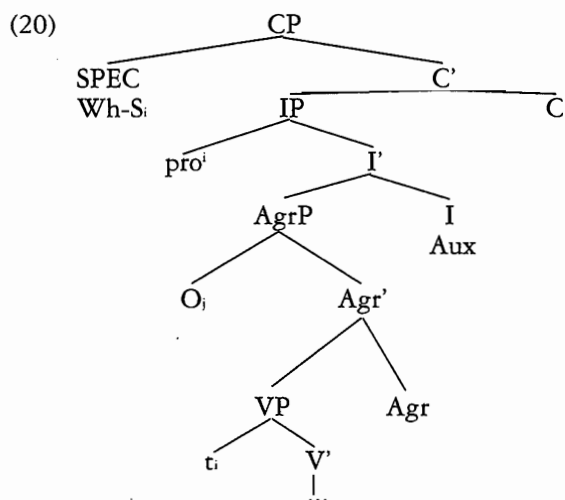
Rizzi uses exactly this kind of reasoning to argue that extraction of subjects in Italian is always from a VP internal position (with an expletive *pro* being in [NP, IP] in (19) below, co-superscripted to the subject trace), and not from the specifier of IP. Suppose this is correct. Then, minimally, we should be extracting subjects from a site as in (19) for the derivation to stand a chance, details aside:

(19)  $_{CP} [Wh-Si \text{ } _{IP} [pro^i \text{ } _{VP} [...DO...V...t^i] \text{ } Infl ] \text{ } Comp]$

What we have to ask ourselves now is what *exactly* is the position occupied by the direct object.

The interesting point here is that objects in Basque agree with the verb. Already in Uriagereka (1987) it was pointed out that, if agreement relations of this sort are head-spec relations, then it should be the case that objects occupy some kind of agreement marker. It was further pointed out that the shape of the auxiliary in Basque mirrored the shape of the arguments, an observation that, according to Laka (1988), is as old within Basque studies as early grammatical analyses of the 19th century. This observation is relevant because, in the spirit of Baker's (1988) work, it points out to a clear hierarchy within VP, to map the correct morphological shape. This is what Laka (1988) does. Cheng and Demirdash pursue Laka's analysis to propose an explicit syntax for clauses in Basque, which we shall review below. Suffice it to say, for now, that provided that agreement with object is shown, this element is in the specifier of an AgrP (see Chomsky 1988 for discussion of this kind of proposal).

The only point that should concern us at this stage, details aside, is that if there is indeed an AgrP of some sort, and it is lexically specified by the direct object, this phrase must constitute a potential barrier. The reason why this is relevant is that, for many speakers, the sentence in question is indeed bad. This follows if, apart from the impossible analysis in (17'), an analysis as in (20) is *also* ungrammatical:



As explicitly proposed in Uriagereka (1987), and developed fully in Laka (1988), the Agr element ends up being part of the auxiliary. (The operations are even more complex in dyadic predicates; we return to the details of the whole process in the next section.) But at this level, AgrP is indeed a barrier for the trace of the subject in its VP internal site. Therefore, there is no way of generating the relevant sentence... Or is there?

#### 4. Vacuous Movement

Well, if there is not, we are in trouble explaining the dialects or idiolects where this kind of sentence appears to be fine. The answer to this puzzle comes from the Vacuous Movement Hypothesis of George (1980), discussed in Chomsky (1986). The structure in question is as in (17'), but not at an intermediate level; rather, (17') is an *S-structure*. Chomsky (p. 48-50) raises the following issue:

...a language may have either syntactic Wh-movement (English), LF Wh-movement (Chinese, Japanese), or both (French). Considerations of language acquisition suggest another possible option. [...] Example (104b) [equivalent to S-structure (17')] ... is consistent with the assumption that [syntactic Wh-movement] does not take place. [...] We might suppose that the unmarked case for a language with overt Wh-movement is that it always takes place at S-structure, so that nonmovement of subject in English [and Basque] would have a somewhat marked character. [Underscore added.]

If this approach is correct, we expect the peculiarity and apparent randomness of these structures, and that in as much as they are possible they will appear only with declarative order. This last point turns out to be extremely hard to test. Needless to say, one obvious way, at least in principle, would be to move *long distance* a subject Wh-phrase, to make sure that actual movement has indeed taken place, thus preventing a vacuous movement analysis. As we shall see, however, this has further complications.

Notice, first, that another peculiarity of Basque can be explained in terms of the assumption about where direct objects are expanded in this language. Goenaga (1984) noted that extraction from nominals is impossible in this language, even when the nominals in question are in object position:<sup>28</sup>

- (21) a. \*nori esan duzu  
           who-dat said III-have-II  
           [t buruzko istorioak] entzun dituzuela  
           about stories heard III-have-II-comp  
           ‘Who have you said that you heard stories about?’
- b. \*noren esan du  
       who-gen said III-have-III  
       [t istorioak] entzun dituzuela  
       stories heard III-have-II-comp  
       ‘Who have you said that you heard stories of?’

As Uriagereka (1988) notes, Goenaga’s observation follows naturally if arguments in Basque are in spec positions, therefore are “subjects” of sorts—in technical terms, explicitly advocated by Cheng and Demirdash, external arguments. As is well-known, extraction from subjects (more generally specs) is normally barred. This follows if said elements are not L-marked, unlike complements, which are directly Theta-marked by the verb.<sup>29</sup>

Comparable facts hold in Spanish, and a comparable explanation is possible if Torrego (in progress) is correct that certain direct objects in this language are externalized: precisely those which are introduced by the marker *a*. Thus, we see the minimal contrasts between (22) and (23):

- (22) ?Juan es el tipo de quien conozco varios críticos t  
       Juan is the guy of whom know-I several critics
- (23) ?\*Juan es el tipo de quien conozco a varios críticos t  
       Juan is the guy of whom know-I to several critics

It is significant (crucial in her account) that in many dialects of Spanish it is the elements which can take *a* that may invoke clitic doubling. Arguably, clitic doubling is an abstract form of agreement, and the grammar is treating both phenomena alike.

(28) Uriagereka (1988) observes that there can be nothing wrong in principle with the relevant questions, for they appear when *wh*-in-situ is invoked in multiple questions:

- (i) nork esan du  
       who said III-have-III  
       [noren istorioak] entzun dituzuela  
       whose stories heard III-have-II-comp  
       ‘who has said that you heard stories of whom?’

(29) On the other hand, Javier Ormazabal notes that the sentences in (21) are truly terrible (worse than those in (22) and (23) below in Spanish)—so it is entirely possible that, apart from the violation in point, something else is at issue as well.



This, note, should predict that extraction from *any* argument, including clausal ones, is impossible in Basque. Obviously, this is not true; just extraction from *nominal* arguments yields ungrammatical results, thus the perfect instances of extraction from completive clauses in (24):

- (24) a. nor etorri dela esan duzu  
 who come II-is-comp say III-have-II  
 'Who have you said has come?'  
 b. nor esan duzu etorri dela

In (24a), it can be argued that the whole embedded clause has been pied-piped, a proposal made explicitly by Ortiz de Urbina (1989) —clausal pied-piping being a process that he and others motivate independently for languages like Quechua. But this analysis is impossible for (24b). There, it is only the operator *nor* that has moved, the CP having been right-dislocated prior to movement. The dislocation, per se, cannot be enough to devoid the completive clause of its barrier status, or else we will rule in the incorrect examples in (21), where some kind of right-dislocation of the object has taken place. But another question is in order: is it clear that this structure involves movement of the question element *nor*?

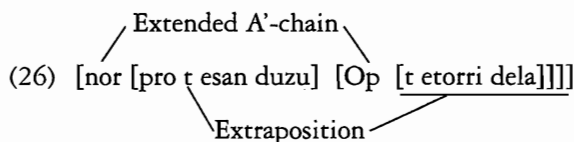
If Torrego and Uriagereka (in progress) are correct in their analysis of *apparent* extraction from indicative clauses, this need not be the case. In particular, we argue that an empty operator  $Op$  may move internal to islands up to their periphery, where it can hook-up to a 1-subjacent scope-marker to form an "extended X'-chain", in the sense that Chomsky (1986) gives to these elements.<sup>30</sup> This way, we analyze among several others the sort of German data discussed in McDaniel (1989):

- (25) wie hat er gesagt, wie er malen würde  
 how has he said how he paint would  
 'How did he say he would paint'

(25) is a matrix scope question, yet Wh-movement proper takes place only in the embedded clause. The rest is an extension of the chain (*wie, t*) to the matrix scope marker *wie*. Torrego and Uriagereka argue that this sort of analysis is always a (marked) option when extraction from islands is at issue, with many languages not displaying overtly the real operator (thus giving the illusion that actual movement out of an island has taken place). Of course, the process is not entirely free, but rather is constrained to domains where 1-subjacency between the scope marker and the real operator is possible (i.e., presence of no more than 1-barrier; —in other words, adjacent domains).

It is thus possible to analyze (24b) as in (26), the paradigmatic instance of extraction from indicative clauses in Torrego and Uriagereka:

(30) Chomsky uses this notion to account for parasitic gap constructions. Browning (1987) extends the idea to other constructions, and explores their implications. The crucial property of extended X'-chains that concerns us here is that they involve locality between the empty operator and the overt element which serves as a scope marker (and in instances of parasitic gaps is itself an overt operator).



Assuming that the extraposed clause is an island, no other island can intervene between *nor* and Op; thus, we predict correctly that the subject of the matrix sentence must be *pro*, etc. The reason why this analysis does not extend to the ungrammatical (21) must be that, unlike clauses, which have the specifier of CP as an operator site, NPs lack this site. We know this to be true independently, as the contrasts in grammaticality in (27) show:

- (27) a. ?who did you hear yesterday that John will marry  
 b. \*who did you hear yesterday a rumor that John will marry

(27a) is, at worst, marginal. Again, the strategy proposed in Torrego and Uriagereka should be available here, even if, for whatever reason, extraposed clauses of this sort are islands.<sup>31</sup> However, if this strategy were operative in a displaced NP as in (27b), then this sentence should be good, which it is not.<sup>32</sup>

Now we are ready to construct our test Case for the Vacuous Movement analysis of (17') above. Consider first (28):

- (28) *nork esan duzu lana egin duela*  
 who said III-have-II work-the make III-have-III-Comp  
 'Who have you said has done the work?'

This sentence does not seem bad at all. However, we have no simple way of knowing whether *lana* has indeed stayed in its A-position, or whether, instead, it is displaced in some peripheral position. But now we can control for this. Take (29):

- (29) \**nork ez dakizu nori liburua bidali dion*  
 who not III-know-II who-dat book-the sent III-have-III-III  
 'Who don't you know to whom sent a book?'

The key element here is *nori*. If it has moved at S-structure, the extended chain (*nork*, Op, *t*) cannot be formed, for the specifier of the embedded clause is taken by *nori*. But suppose that, as we are assuming, *nori* has indeed the option of staying put, just as we are claiming *nork* does in a sentence like (17'). Now we have trapped *liburua* in its A-position! And the sentence is quite terrible, as expected. The problem is, in particular, the one raised in the analysis of (20): *nork* is moving over an AgrP specified by *liburua* in its A-position. Therefore we conclude that Vacuous movement is

(31) See Johnson (1985) for extensive discussion.

(32) Notice that Case assignment to *rumor* cannot be an issue, for when no extraction from this element is taking place, the result is perfect:

(i) I heard yesterday a rumor that John will marry Sue

In general, heavy NP-shift seems to void the adjacency requirement for Case assignment which operates in English. Note, finally, that when the object is not dislocated, extraction out of it is only marginal:

(ii) ?who did you hear a rumor that John will marry *t*

indeed the explanation for examples like (17') (and only those), for people who allow for this strategy to begin with.<sup>33</sup>

### 5. The Realization of Arguments in Basque

Crucial to the analysis above is a certain array of arguments in Basque which involves externalization of what in many languages is usually an internal argument. We should preface these comments by saying that we are only beginning to understand what constitutes an internal argument. The view that only the thematically higher argument is external is untenable in light of recent investigations, at least if by "external to XP" we mean something with the import of "not-being-governed-within-XP". This is not to say that there is no designated "highest" argument with a peculiar set of "subject" properties; whatever the answer to this is, it does not entail that the rest of the arguments are necessarily "complement"-like. Here is a domain where a great deal of linguistic variation arises, although within certain interesting limitations. For instance, for the most part it seems that languages obey the Thematic Hierarchy in terms of externalizing arguments. In turn, it appears that certain implications apply, such as: if a language externalizes a low argument, all higher arguments must be externalized as well; and so on. We study these matters in Raposo and Uriagereka (in progress).

Recently, Cheng and Demirdash have studied the properties of Basque VPs, and argued that all arguments in this language are external to this phrase. Actually, they consider two possibilities: that the arguments are indeed external at S-structure is quite straightforward; but are they also external at D-structure? Cheng and Demirdash argue that this is indeed the case, but their arguments on this are extremely theory internal and, as it turns out, rather weak. Their specific proposal goes as follows: (i) All arguments are base-generated in the specifier of AgrPs. (ii) The arguments of the verb are projected according to the Thematic Hierarchy. (iii) All arguments are indirectly Theta-marked. (iv) Case is assigned by the Agr markers.

It is easy to see that, in principle, (ii) is straightforward and (iv) can be true even if arguments, instead of being base-generated in the specifiers of AgrPs (i), move there by S-structure. Part of their motivation for keeping (iv) as such is that they are following (loosely) Levin (1984) in arguing that all Case in Basque is assigned inherently; therefore, they must find a way in which Case assigners are identified with Theta-markers (hence, (iii)). However, the spirit of Chomsky's (1986b) inherent Case is clear: this process is an implementation of the traditional idea of lexical Case; in a nutshell, certain heads bear an idiosyncratic Case relation with respect to their s-selected argument, which Chomsky wants to capture at D-structure. He explicitly proposes, following a long tradition, that only internal arguments are s-selected.<sup>34</sup>

(33) This answer is of course possible within Ortiz de Urbina's analysis; it is harder to motivate for Eguzkitza's, though, since his assumptions about Wh-movement are entirely different.

(34) Chomsky goes as far as to saying that "if D-structure is to be regarded as a pure representation of theta structure, it would be reasonable to suppose that lexical items appear at this level in a "reduced" form lacking inflectional elements that do not affect theta-marking and do not enter into s-selection." (p. 157) If this is interpreted literally, as has been the case by many recently, either such elements are not present at D-structure *at all*, or if they are, they have nothing to do with thematic relations. (Of course, Chomsky's quote leaves the door open for certain inflectional elements that do in fact affect theta-marking; this, however, is not the null hypothesis, and needs independent evidence.)

This being the Case, the Cheng-Demirdash proposal of having all arguments in Basque being external at D-structure essentially entails, contrary to what they state, that no inherent Case should be assigned to verbal arguments in this language.

Facts with respect to Case turn out to be a bit more complex than what Cheng and Demirdash assume, and Levin, among others, was well aware of this. The central reason for Chomsky's having inherent Case at D-structure is that it is Theta-related. But consider the following data from Laka and Uriagereka (1987):

- (30) a. Marik atea ireki zuen  
 Mari-erg door-the-abs open aux  
 'Mari opened the door'
- b. giltzak atea ireki zuen  
 key-the-erg door-the-abs open aux  
 'The key opened the door'
- c. Marik atea giltzaz ireki zuen  
 Mari-erg door-the-abs key-the-instr open aux  
 'Mari opened the door with the key'
- d. Jonek pardela jaso zuen  
 Jon-erg package-the-abs receive aux  
 'Jon received the package'
- e. Joni pardela bidali zioten  
 Jon-dat package-the-abs send aux  
 '(They) sent the package to Jon'
- f. hitzaldiak Joni probetxu egin zion  
 talk-the-erg Jon-dat benefit do aux  
 'The talk instructed Jon'
- g. Joni hitzaldia gustatu zitzaion  
 Jon-dat talk-the-abs like aux  
 'Jon liked the talk'

At first glance at least, in the examples above many arguments which are arguably receiving the same Theta-role are nevertheless getting different case endings (e.g. *giltzak* 'the key-ERG' *giltzaz* 'the key-INST'); conversely, many arguments receiving the same case endings are satisfying very different Theta-roles (*Mari-K* is an agent in (20a), *giltza-K* is an instrumental in (20b), *Jone-K* is a goal in (20d), *hitzaldia-K* is a cause in (20f)). Of course, one could argue that, in spite of appearances, examples of the first sort involve *different* theta roles, whereas examples of the second sort involve *the same* theta role; this, though, apart from begging the question, would essentially render studies on Argument Structure entirely vacuous. Alternatively, one may argue that inherent Case has nothing to do with *specific* Theta-roles, but rather with the process of assigning *some* Theta-role or other to a given argument. The effects of this would render vacuous the entire motivation for inherent Case as a lexical Case. In either instance, we would also have to give up a principle implementing universal

alignment of the sort pursued by Perlmutter and Postal (1983), such as Baker's (1988) UTAH within GB.<sup>35</sup>

There are other reasons to conclude that not all Cases in Basque are inherent. Consider (31), cited in Uriagereka (1988):

- (31) a. JRek Bobi Pam joerazi zion  
 JR-erg Bobby-dat Pam-abs hit-cause aux  
 'JR caused-hit Pam to Bobby'  
 b. JRek Bobbyk Pam jo zezan egin zuen  
 JR-erg Bobby-erg Pam-abs hit aux make aux  
 'JR caused that Bobby hit Pam'

(31a) is a standard causative construction. There is no clear sense in which the subject *Bob-I* of the event caused by JR is theta-related to anything other than this very event. When the sentence is expressed in a bi-clausal form (31b), this fact is obvious (note that in this instance the case ending in *Bobby-K* is ergative). Yet in the Cheng-Demirdash account the element in point must be receiving dative case from the agreement element encoded in the main event auxiliary. In fact, the case received by *Bobby* in (31a) appears to have little to do with its Thematic status —either this, or we would have to give up a bi-clausal analysis of (31a) of the sort proposed elsewhere by Baker for similar instances.

There are other arguments that can be constructed against the Cheng-Demirdash interpretation of Levin's work with respect to Case; however, since a coherent picture of Case assignment is not at issue here —and at any rate, seems far from focused at this point— we should rather concentrate on what all of this tells us about the part of their account that has to do with the externalization of arguments. In essence, what we have seen vanish is part of the motivation for said externalization taking place at *D-structure*. The spirit of their proposal lives on a hunch that many have toyed with in the past: that objects in Basque are not lexically governed, which they explicitly propose. Data of the sort discussed in (12), extended now, argue against this view:

- (32) a. Jonek lana egin du  
 Jon-erg work-the-abs make III-have-III  
 'Jon has done the work'  
 b. Jonek lan egin du  
 Jon-erg work make III-have-III  
 'Jon has worked'  
 c. lanak nekatu nau  
 work-the-erg tired I-have-III  
 'Work has tired me'  
 d. \*lan(ek) nekatu nau  
 work-erg tired I-have-III  
 ('work-tiring has happened of me')

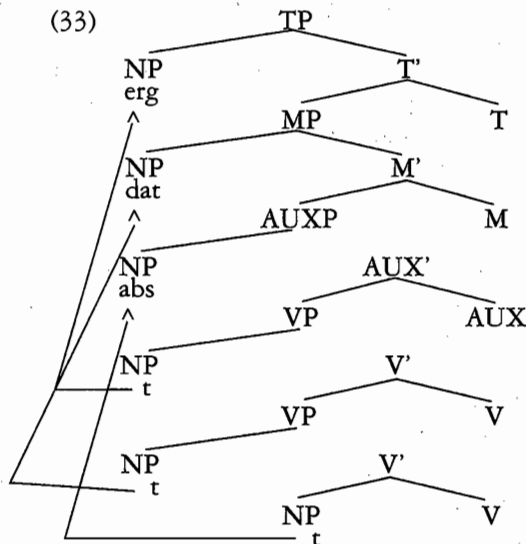
(35) Crucially, the same Thematic relations would be expressed via different D-structure positions, and the same D-structure positions would be expressing different Thematic relations.

Noun incorporation from subject position is impossible, as is usually the case. In Baker's theory of Incorporation this fact follows from the subject not being head governed by the target of its incorporation. If, in turn, the object can indeed incorporate (as shown in (32b)), then it must be that this argument is indeed head governed at the level when incorporation proceeds —i.e., presumably in the mapping from D-structure to S-structure.<sup>36</sup>

The specific reasons that Cheng and Demirdash give for why arguments are not externalized only at S-structure in Basque are the following. "First, how do we ensure that the NPs end up in precisely the spec positions where they get the right Case and trigger the right agreement?" The only answer to this question that they consider is stipulating that each agreement element is restricted to the right kind of argument. Raposo and Uriagereka (in progress), following many others recently, argue that all clitic/agreement elements start within the VP projection, as determiners heading DPs of which the actual argument is the specifier and pro the complement (for the details and source of this idea, see Torrego (in progress), and below). If this is correct, the undesirable stipulation is rather a natural D-structure fact: the NPs end up in precisely the correct spec positions because *there* is precisely where they start (we will make this more precise soon). The other difficulties that they raise are essentially two technical versions of the question above. One is too cryptic even in their paper to be discussed seriously;<sup>37</sup> the other one, though, merits some careful attention.

## 6. Specifiers, Agreement, and Auxiliaries.

Consider the structure they discuss and reject (their (13)):



(36) Alternatively, of course, Baker may be wrong, but that needs independent evidence.

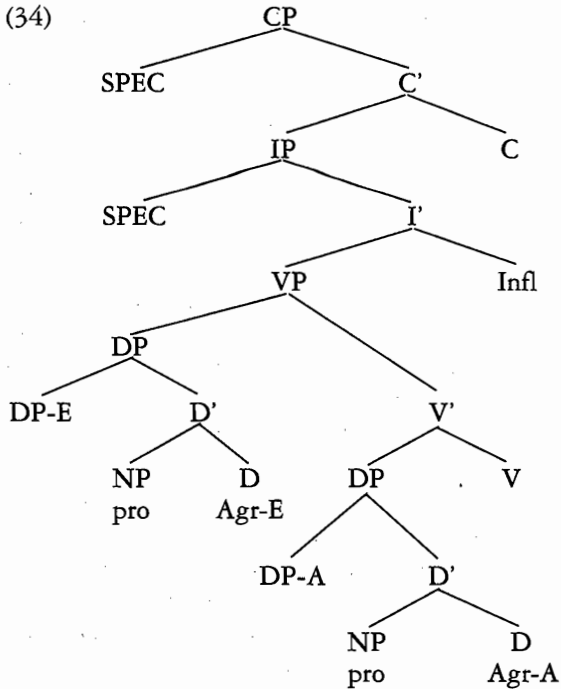
(37) "NP-movement of all the arguments leads to Crossing Paths. Pesetsky (1982) has argued that crossing paths are only relevant to A'-movement. However, with the proliferation of functional categories and the VP-internal hypothesis, we have a proliferation of A-positions (i.e., positions in which Case or a Theta-role are assigned). Hence, the question of whether crossing is relevant for A-positions only arises now." (sec. 3)

Here is their worry: "NP-movement in [33] entails ECP violations: the relations between the traces in [33] and their antecedents are not local. The intervening traces/NPs will act as specified subjects. In other words, they induce minimality violations." There is indeed an issue here, internal in fact to our analysis of (20) above. Recall that we want to prevent Wh-movement of a subject internal to VP over an object in an agreement projection (in terms of (33), Cheng and Demirdash's AUXP, following Laka); how then is it possible for the subject to A-move to subject position?

There are several matters to discuss here. First, we have to address a serious conceptual difficulty with (33) and much related work. What does it mean to say that an ergative (subject) phrase can specify a T(ense)P(hrase)? What does it entail that a dative phrase can specify a M(odal)P(hrase)? What is the mapping of the semantics going to look like in instances of this sort? The notion specifier is first used consistently for phrasal purposes in Chomsky (1970), where it has a clear (and obvious) semantic correlate. In Jackendoff (1977), there are rules of correspondence between syntactic specifiers and semantic specifiers. What the latter do, essentially, is take the reference of the XP they are related to —typically, some sort of set— and operate on it to yield a subset; thus, say, *the (unique) picture* takes the set Picture (x) and yields the singleton set ('x) [Picture (x)]. Needless to say, the more transparent the relation is between a syntactic specifier and its head, the more straightforward the mapping to a semantic specification is going to be. From this point of view, it should be obvious that a Tense Phrase, if this notion is going to carry any weight—that is, essentially, that this is a phrase and it expresses, when computed semantically, say, tensed actions— cannot be specified by an entity like *John*, although it may be specified by a temporal adverbial like *yesterday* or whatever. Similarly, a Modal Phrase may be specified by an adverb of mood, and so on. Zagana (1988), among others, takes this route recently for some auxiliaries in English.<sup>38</sup> I am not interested in questioning now whether in fact syntactic specifiers *have to be* transparent—though I think there are several arguments to this effect—and rather will simply propose that a more plausible approach to the matter at stake is that, although the geometrical shape of (33) is essentially correct, the labeling is not. In a sense, this is a minor point, then, which can be used to our benefit.

Suppose that, as hinted at above, the relevant structure is rather of the form in (34)—simplified now to transitive structures:

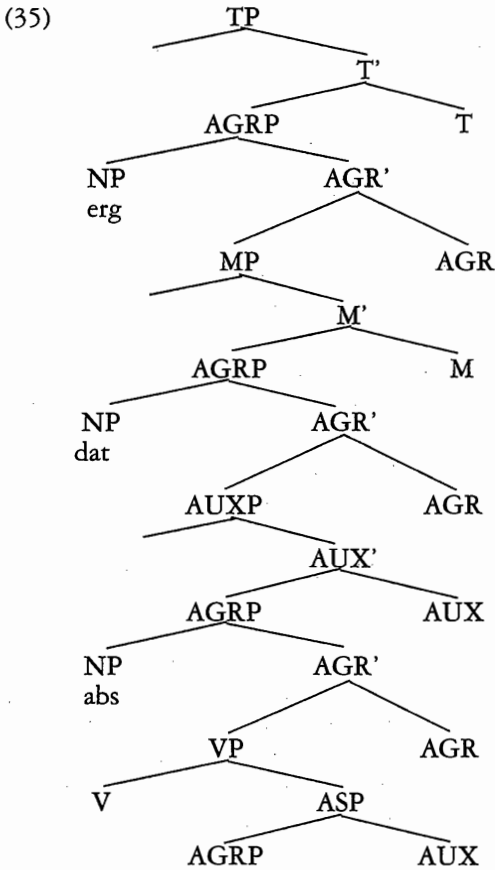
(38) In fact, the idea goes back to Tomas of Erfurt in the thirteenth century, who in a brilliant move argued that certain circumstantial dependents agree with the verbal projection much like adjectives agree with the nominal projection (see Covington 1984).



I return shortly to a more accurate representation of Infl. To have agreement markers discharging Thematic roles, following the analysis of clitics by Torrego that goes back to Postal (1969), is rather natural. Torrego, in fact, makes the insightful proposal that agreement markers seen as determiners with their own projection provide a direct solution to the difficult problem of clitic doubling: doubled phrases are occupying merely the specifier of the DP headed by the clitic. Several recently have extended this view to Agreement in general, to unify it to an analysis that was implicit in Rizzi (1982) within this framework, and is in fact in line with well-known traditional observations about clitics and agreement markers and their diachronic and synchronic correlations. (Among several discussing this approach, see Fernandez 1988, Galves 1990).

(34) is mapped into S-structure (or intermediate levels) by way of an operation of incorporation—in effect, analogous to clitic placement to Infl in Romance. If Laka is correct in her analysis of the auxiliary system, it is likely that this incorporation is going to be non-trivial, with different agreement markers landing in different functional categories. What I am not convinced about is that these categories are the ones she specifically has in mind. Let us be precise on this. The structure that Cheng and Demirdash propose differs from Laka's in that, in theirs, AGREEMENT phrases are postulated:





This is probably correct, except that I am suggesting these agreement phrases start not where Cheng and Demirdash expand them, but rather VP internally. Another question remains, though: what exactly are TP, MP, AuxP and the like? Laka had these categories for two reasons: (a) because they seem to play a role in determining the morphological shape of the auxiliary; (b) because she needed specifiers for her arguments. Cheng and Demirdash in a sense trivialize this last point by invoking their Agreement Phrases the way they do. If however we ship these phrases back to D-structure, then it still is an open question whether Laka's specifiers are to be used, and if so why.

The latter is a very tricky question, which sends us into a marage of proposals in the last few years concerning the "davidsonian" and/or aspectual structure of clauses. If Higginbotham (1985) is correct in bringing Davidson's (1966) proposals about events to bear on the syntax of clauses, and in particular Infl, Laka's inflectional categories may have to be evaluated within this light. Some of these categories may have nothing to do with the obligatory expansion of predicates; thus, I am suspicious that, in particular, Tense may have to be relativized to whether the sentence under analysis is in fact tensed (internally or depending on another Tense, as in comple-

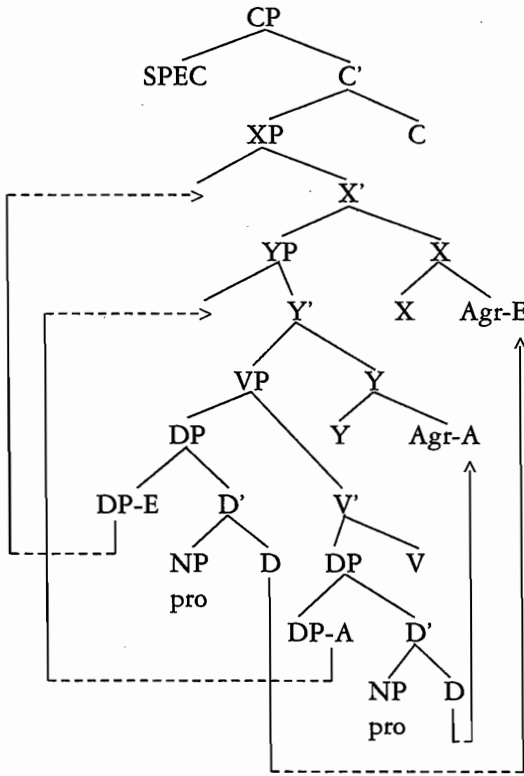
ment infinitivals) or rather is somewhat nominal in character (as in subject infinitivals, and other comparable structures). The same could be said about M(odal), perhaps. At any rate, regardless of whether Laka's specific categories bear the names to be expected in an obligatory expansion of a canonical clause, *some* category must do the job. Basque is rather straightforward in invoking in productive verbs obligatory auxiliaries *have* and *be* for transitive and unaccusative structures. Therefore, at least these auxiliary elements must be there, and if they are one wonders what their task is. I do not plan to give an exhaustive answer to this here,<sup>39</sup> and rather I will simply conjecture that these obligatory functional categories in fact introduce davidsonian structure. In this, I am essentially following Higginbotham, although I will extend his proposals to claiming that  $n$ -adic predicates in Basque invoke  $n$  auxiliaries, and hence  $n$  davidsonian arguments. Intuitively, the happening structure of a clause will differ depending on the nature of the predicate. Roughly speaking, a (true) monadic predicate of an unaccusative sort will invoke a davidsonian argument introducing, say, a *situation* (which can be of different sorts, as in the ontology of Pustejovsky 1988) by way of an auxiliary like *be*.<sup>40</sup> In turn, a dyadic predicate will invoke a situation plus some kind of, say, *relationship* (for lack of a better term for states, events, and so forth), the latter being again another davidsonian argument introduced this time by an auxiliary like *have*. And so on; this is obviously nothing but a sketch of the notions involved, which surely will have to be explored more seriously.

Given this davidsonian structure, verbal arguments would move to the specifiers of the relevant auxiliaries; this specification would now have a straightforward semantic consequence, something I am not interested in exploring here in detail. That is, we would not be talking about weird specifiers now, but such simple-minded ones as *Nero* singling out a given *destruction of Rome* from the set of said destructions in *Nero's destruction of Rome*, etc. Essentially, then, we are dealing with structures as in (36) —again, simplified to transitive structures:

(39) But see Uriagereka (in progress).

(40) In this sense, a pure intransitive would not be monadic, which as Hale and Keyser (1986) note is easy to motivate for Basque, where these verbs show agreement with two arguments, even if the internal one is not explicit.

(36)



There are of course many matters here where I am not committing myself —only the obvious one being not giving specific names to auxiliaries. That can be fixed with fairly straightforward research. More challenging, it seems to me, is why it is that agreement markers (clitics in general) climb to the placement-sites they do. Or why it is that davidsonian arguments, when used sententially, appear to need to be specified (the Extended Projection Problem can be interpreted this way). Assuming there are answers to all of these intriguing questions, the structure above seems plausible. Note that the fact that what starts being a specifier of the object in D-structure ends up being in S-structure the specifier of the auxiliary to which the object has raised is natural, and probably follows from Full Interpretation (in other words, standard compositionality of the appropriate sort). Crucially, notice, all expansions above invoke reasonable types. That is, surely one can conceive of an auxiliary as something (perhaps a category shifter of the sort discussed in Partee 1988 and elsewhere) that, say, takes an action and turns it into a completed action or an action in progress, and other, more intriguing operations. It is not clear that agreement markers have any role to play in this clausal skeleton: they do not lift the type of anything, they simply encode (perhaps) the reference of the arguments that enter into the clausal skeleton.

## 7. Extended A-Chains

Now we are ready to answer the question that triggered all this discussion: why is the movement, for instance, of DP-E to XP permitted, even if it is presumably across YP specified by DP-A? The answer to this question is in terms of Chomsky's (1986a) analysis of A-chains. For Chomsky, there is co-indexation between V and I, as a form of what he calls head-head agreement. He needs this device to analyze, for instance, standard raising structures, as in (37):

- (37) a. John seems [t to be intelligent]  
 b. John<sub>i</sub> A[seem-I] [<sub>VP</sub> t<sub>i</sub> [<sub>IP</sub> t<sub>i</sub> to be intelligent]]

Chomsky associates the subject of IP with its head I; he then assimilates chain coindexing with the feature sharing of agreement. It then follows that  $i=j$  in (37b), since *John* is co-indexed with its trace and agrees with *seem-I* (note that *seem* has raised to I from  $t_{-j}$ ). The point he makes is then the following:

In [37], then,  $t_{-j}$  is governed by and coindexed with  $t_{-j}$ , the trace of the raised V. Under a slight extension of the notion of antecedent government, it would follow that  $t_{-i}$  is antecedent governed by  $t_{-j}$ , thus properly governed by it. Suppose that we now extend chain coindexing to include this case, in effect treating  $t_i$  as the final element of an extended chain—in other words, allowing the chain itself, via its terminal element, to properly govern  $t_i$  by antecedent government. We thus define “chain coindexing” as follows:

- (38) a.  $C = (A_1, \dots, A_n, B)$  is an extended chain if  $(A_1, \dots, A_n)$  is a chain with index  $i$  and B has index  $i$ .  
 b. Chain coindexing holds of the links of an extended chain.  
 [p. 75]

Chomsky then worries (p.76-77) about NP-movement over modals and other aspectual auxiliaries; the obvious step he takes is to assume that “independent of raising, there is head-head agreement (index sharing) between I and the aspectual verbs; [...] hence, there is (indirect) agreement between the subject and each aspectual verb of VP. [...] This assumption will suffice to permit NP movement” in the instances Chomsky discusses, and obviously, in ours too, so long as the auxiliaries X, Y, etc. are equally co-indexed. For a thorough discussion of Chomsky's analysis and expansions, see in particular Zagona (1988).<sup>41</sup>

Needless to say, this extension of chains does not carry over to instances of A'-movement—in other words, C and Infl cannot be co-indexed in this extended sense, or else A-movement in Chomsky's sense would be extended all over. How and why this is is a matter which does not concern me here. I do want to point out, though, that regardless of Chomsky's technical implementation (clearly, there might be others),

(41) It might be argued that, provided that, say, DP-E ends up in the specifier of X, and DP-A, in the specifier of Y, X must bear the index of DP-E and Y, that of DP-A—presumably, these indices at least may be different. However, this is an entirely technical matter, solvable in various ways. It could be, first, that categories may bear n-tuples of indices, or that these devices are more complex than usually assumed. Alternatively, it could be that spec-head co-indexation only holds for unindexed categories.

what is at issue is rather straightforward: the verbal projection constitutes a unit of sorts, with various consequences; among these is that of allowing NP movement within it. The good instances of movement that we are forced to posit (or for that matter, anyone analyzing sentential arguments as coming from within VP) are contained within the extended projection of the verb via auxiliaries, all the way up to the top-most inflectional element. Comp has to be left aside from all of this; it clearly is the beginning of a new, independent skeleton with well known opacity characteristics, semantically and syntactically. The impossible movements to the specifier of Comp that we have seen in this paper —impossible, that is, for they are crossing lexically specified sub-projections of Infl— are nothing but garden variety instances of this opacity.

To conclude, note that taking Chomsky's approach essentially commits us to an analysis of the matters discussed in this paper in terms of the ECP, assuming that the principle at issue is something along the lines of (39):

(39) A trace is antecedent-governed.

Where government cannot proceed across any barriers, etc. This of course is also a technical issue, and there may be ways around it; for instance, one could void A-movement from being subject to the Subjacency condition, and similar results would be achieved. The important point, aside from these technicalities, is that Basque clauses are in fact rather standard, in all of their properties. Their quirks are nothing but a consequence of the parametric options they take, including, we now see, the externalization of all verbal dependents. These parameters, though, are trivial to set.

## 8. Conclusions.

Some researchers puzzle over facts like those presented in this paper, and try to find an answer that reduces the puzzle to the often perverse workings of universal grammar, showing through the quirks of a core-grammar set from various parameters. Others like to present facts like these as paradoxes for our present (or global) conception of principles, parameters, and so on. It takes a bit of an aesthetic impulse to choose either approach; at the present stage of our research, perhaps, little more can be presented as conclusive evidence, for evidence is easily produced in well-behaved labs... This is all to say that the present article should be taken with a grain of salt, a piece of advice which is perhaps unnecessary for some already sceptical audiences. Now, once suspension of disbelief is granted for a model instantiating universal principles and variational dimensions, it must be admitted that the approach presented here offers some progress over previously existing accounts, if these are seen in the light in question. Thus, I have tried to show that everything that is peculiar to Basque Wh-movement is peculiar to Basque in a more general way: as a result of set parametric options, where these dimensions of variation are independently attested for other languages. In turn, certain apparent peculiarities of Basque actually cease to be so when the system of universal grammar is appropriately (and somewhat naturally) modified to include these facts, in a way that does not apparently alter the predictions that we make for other languages. This is, I believe, the part of

the account which needs no more spices. But the salt is arguably to be expected in those domains which deserve further empirical investigation. For instance, a serious philological and dialectal research is needed for purely observational reasons with respect to some recalcitrant data discussed here. Descriptively, also, other complications arise in contexts where negative and emphatic operators introduce expressions, which induce further effects not explored here. After these ingredients are added to the pie, maybe some of my conclusions will have to be rethought. Nevertheless, even if new evidence points in new directions, I think that the present approach is internally consistent and elegant within the sub-theories it touches. In this respect, empiricist disclaimers aside, the analysis explores thoroughly a region of possible linguistic space —thus constituting progress even if it is only to reject contentfully an idea which is explicit, coherent, and plausible.

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# On the Structural Positions of the Subject in Spanish, their Nature and their Consequences for Quantification

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This paper presents a study of the structural positions that the subject can occupy at S-Structure in Spanish, their nature and the set of implications that the location of the subject in such positions has for a wide range of quantificational phenomena.<sup>1</sup>

I first discuss the Obligatory Inversion Rule proposed in Torrego (1984) and the VSO sequences attributed to its application, arguing for a distinction of two different processes and the dissociation of this rule from successive cyclicity. Based on the discussion in section 1, I then study the nature of the two positions available for the subject in Spanish, SPEC/VP and SPEC/IP, arguing for the characterization of SPEC/IP as an A'-position in that language. On the basis of the different nature of these positions, an explanation is given for the asymmetric behaviour displayed by subject quantifiers that depends on whether this element occupies the preverbal or the postverbal position at S-Structure. The analysis will also prove to be valid to account for some contrasts in scope displayed by quantified subjects in English and Spanish, extending moreover to explain some preverbal quantified subject/quantified adjunct asymmetries in Spanish. The location and scope possibilities of Wh-subjects in Spanish will be also captured in a unified way.

Section 3. further shows that the structural position of the subject affects Wh-ex-

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traction as well as the scope of other quantified phrases, conditioning at the same time the semantic import of the sentence, which is understood as presupposed and takes scope over the matrix predicate when the subject sits in SPEC/IP. To finish, I offer an account of the set of scopal asymmetries examined through the paper that relies on the assumption that, unlike clauses with VP internal subjects, the subordinate clauses with preverbal subjects have to undergo movement at LF in order to get their characteristic scope.

## 1. On the Position of the Subject in Spanish

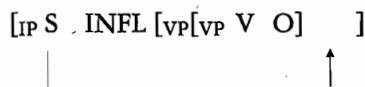
### 1.1 *The Obligatory Inversion Rule*

It is a well known fact that under certain circumstances various Romance languages, among them Italian and Spanish, allow some word orders in which the subject appears to the right of the sentence (as in the Spanish example in (2)), in opposition to the regular cases with SVO orders in which this element appears sentence initially (1):

- (1) SVO    Antonia    leyó los    libros  
              'Antonia    read the    books'
- (2) VOS    Leyó los    libros    Antonia  
              Read the    books    Antonia

Cases like (2) with a VOS word order have been considered the result of an optional rule of *Free Subject Inversion* (FSI) (or, *Subject Postposing*) that moves the subject NP adjoining it to the right of VP, as represented in (3):<sup>2, 3</sup>

- (3) Subject Postposing:

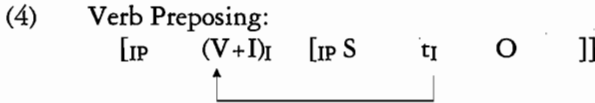


However, as Torrego (1984) observes, all the cases of postverbal subjects in Spanish cannot be analyzed as a unified phenomenon. Thus, in addition to the optional FSI represented in (3), there is a second process, what she calls *Obligatory Inversion Rule* (OIR), (or, *Verb Preposing*), that also creates sequences in which the subject appears after the inflected verb. A major difference between the two processes is that, whereas in the optional rule of Subject Postposing the subject is the element that moves (see (3)), according to Torrego the subject does not move in

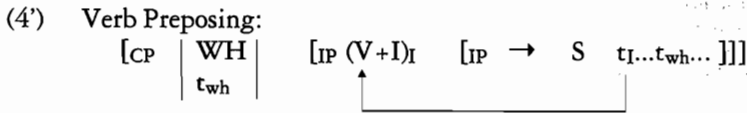
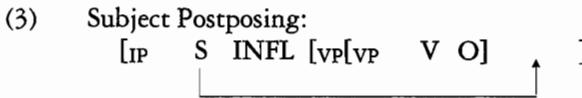
(2) For discussion on this topic, its connection to Wh-extraction and related discussion see, among others, Kayne & Pollock (1978), Rizzi (1982), Belletti & Rizzi (1982), Jaeggli (1980), Burzio (1981) and Jaeggli (1984, 1985).

(3) Subject postposing does not seem to be a uniform phenomenon (or, at least, to involve the same requirements) in all Romance languages, the conditions applying to each case being different. Thus, for instance, while the phenomenon seems to be highly constrained in Italian (where subordinate clauses do not usually allow that order (see Rizzi 1982), or it is limited in French to contexts involving overt operator movement (see Kayne & Pollock 1978 for extended discussion), it seems to be quite free in Spanish (see Torrego 1984).

Verb Preposing, but rather it is the complex head  $[V+I]_I$  that does, as (4) represents.<sup>4</sup>



Moreover, while the Free Subject Inversion Rule (Subject Postposing) in (2) is optional, the Obligatory Inversion Rule (Verb Preposing) has to apply obligatorily in certain well-defined contexts. In particular, this rule has to take place necessarily in the case of finite clauses when, as the result of a syntactic movement at S-Structure, a Wh-element or its trace appears in COMP;<sup>5</sup> consequently, this obligatory rule will apply both in main and embedded sentences.<sup>6</sup> Thus, from a descriptive point of view, the configuration in which this rule applies as well as the resulting structure of its application should be more correctly represented as in (4'). Observe that a relevant property that derives from the application of Verb Preposing as Torrego characterizes it is that the Wh-element or its trace and the inflected verb will be immediately adjacent to each other (a property that I will refer to as the *adjacency requirement*).



(4) According to Torrego (1984), the landing site for the movement of this complex head would be either an adjoined position to IP or to COMP. For expository purposes, Torrego represents this adjunction operation as adjunction to S although, she observes, nothing in her analysis conflicts with the view that this operation is an adjunction to the complementizer rather than to S. According to her, the S-node created by the adjunction operation of V to S does not count for government or Subadjacency.

Following current approaches to the topic, we could redefine this operation in slightly different terms as movement from INFL to COMP. Fronting of the Wh-phrase to COMP should also be understood in modern terms as movement to SPEC/CP. These characterizations would offer us an explanation of the strict adjacency requirement that can be observed between the tensed verb and the Wh-phrase in the relevant configurations. See related discussion below.

(5) This property also distinguishes Verb Preposing from Verb Second phenomena in Germanic languages or Subject Auxiliary Inversion (SAI) in English. Thus, while the latter restricts its domain of application to main sentences, the Verb Preposing rule under analysis affects not only main clauses but also embedded ones, as exemplified in (i):

- (i) a. \* Yo no sé qué María dijo t en la conferencia  
I don't know what Mary said in the conference
- b. Yo no sé qué dijo María t en la conferencia  
I don't know what said Mary in the conference

(6) To be precise, Torrego argues that not all types of Wh-phrases require inversion. Thus, two major groups need to be distinguished among Wh-elements with respect to this property: a) Wh-elements that trigger obligatory inversion, in concrete the thematic arguments of the verb and the subject of S (that is, internal and external arguments); b) Wh-elements that do not require obligatory inversion as, for instance, *en qué medida* ('to what extent', literally 'in which measure'), *por qué* ('why'), *cuándo* ('when'), *cómo* ('how').

For the time being, I will abstract from this difference using only examples with argumental Wh-elements. I will come back to this issue in section 3, below.

It then follows that while in the Subject Postposing cases the subject appears to the right of the argumental elements in VP (since it is right adjoined to this maximal projection), it appears following the moved  $[V+I]_I$  complex head but to the left of the argumental NPs in VP when Verb Preposing applies.<sup>7</sup> In this paper, I will be only concerned with the structures resulting from what Torrego calls the Obligatory Inversion Rule, disregarding the optional Subject Postposing rule.

Considering the properties of Verb Preposing described above, Torrego argues that it is possible to retrace the movement of an argumental Wh-phrase via this rule. Thus, following her line of reasoning, the derivation of (5b) from (5a) (Torrego's (19a,b) respectively), shows that the Wh-element in the highest COMP has moved COMP-to-COMP in its way up from the most embedded sentence, which provides further support for successive cyclic movement:<sup>8</sup>

- (5) a. Juan pensaba que Pedro le había dicho que la revista  
 Juan thought that P. him-D had told that the journal  
 había publicado ya el artículo  
 had published already the article  
 'J. thought that P. had told him that the journal had published the  
 article already.'

(7) These major differences are exemplified in (ii) and (iii), where (ii) is the result of the application of the optional rule of Subject Postposing (FSI), and (iii) of the obligatory rule of Verb Preposing (OIR); the failure of the application of the OIR yields the ungrammatical sentence in (iiib). The sentence in (i), on the other hand, displays what is considered the regular surface word order in Spanish: that is, SVO.

- (i) SVO Julia dió los libros a Irene  
 'Julia gave the books to Irene'  
 (ii) VOS Dió los libros a Irene Julia  
 Gave the books to Irene Julia  
 (iii) VSO a. A quién dió Julia los libros?  
 To whom gave Julia the books  
 'Who did Julia give the books to?'  
 b. \* A quién Julia dió los libros?  
 To whom Julia gave the books

As Torrego observes, free subject inversion is always available in Spanish; (iv), (Torrego's (6)), exemplifies a case where both the obligatory Verb Preposing and the optional Subject Postposing have applied:

- (iv) A quién prestó el diccionario Juan?  
 To whom lent the dictionary Juan  
 'To whom did Juan lend the dictionary?'

(8) Recall that, as mentioned above, Torrego considers Verb Preposing obligatory in every instance in which a Wh-phrase or its trace is in COMP (but see fn. (6) above); the tensed verb of that clause has to be preposed over the subject in SPEC/IP for the sentence to be grammatical. However, if a Wh-phrase skips a COMP on its way up (a possibility to be allowed in the case of argumental WH-s as far as Subjacency and the ECP are respected), no Verb Preposing will apply in the clause whose COMP has been jumped over, since the structural conditions for the rule to apply (namely, the presence of a Wh-phrase or a Wh-trace in COMP) are not fulfilled.

It should be kept in mind that the possibility just mentioned of skipping a COMP without violating Subjacency reduces to the possibility of skipping the first COMP. Following the analysis presented by Torrego, this is so because (as argued by Rizzi 1982 for Italian), S' but not S counts as a bounding node for Subjacency in Spanish. Thus, in her terms, the behaviour of Spanish in this respect provides further support for Rizzi's (1982) analysis of Subjacency.

The interrogation mark used in Spanish at the beginning of interrogative sentences is systematically skipped throughout the paper to avoid confusion with grammaticality judgements.



If, as Torrego (1984) proposes, the VSO orders in both clauses containing a Wh-trace and a Wh-phrase resulted from the application of the same Verb Preposing rule, the prediction would be that the VSO sequences display the same set of core properties and obey the same set of restrictions; in concrete, the very same adjacency requirement mentioned above would be expected to hold in both cases, as represented in (4') (to avoid unnecessary repetitions, let us call this hypothesis *hypothesis 1*). On the other hand, under a hypothesis like the one presented here that takes the instances of VSO sequences in these two type of structures as reflecting two different phenomena (which just happen to produce the same surface order), some different behaviour can be expected to show up that distinguishes them from one another. (This hypothesis, I will call *hypothesis 2*).

The following paragraphs offer an analysis of the two types of structures under consideration in the light of the adjacency requirement alluded to previously. As will be shown, the two structures display different behaviour in this respect, which suggests that *hypothesis 2* should be favored over *hypothesis 1*.

Observe, first of all, that a proposed WH requires strict adjacency with the inflected verb;<sup>11</sup> that is, the verb has to immediately follow the Wh-phrase and no element (including adverbials) is allowed to intervene between the interrogative element and the complex head [V+I]<sub>I</sub>.<sup>12, 13</sup>

- (7) a. QUE le-HA DADO a veces Elena t a Mamen?  
 What her(D)-has given sometimes E. t to M.  
 'What has Elena given to Mamen sometimes?'  
 b. \*QUE a veces le-HA DADO Elena t a Mamen?  
 c. \*QUE Elena le- HA DADO a veces t a Mamen?
- (8) a. QUE DICE a veces Marina que le ha dado Elena  
 What says sometimes M. that her(D)-has given E.  
 t a Mamen?  
 to M.?  
 'What does Marina say sometimes that Elena gave to Mamen?'  
 b. \*QUE a veces DICE Marina que le ha dado Elena t a Mamen?  
 c. \*QUE Marina DICE a veces que le ha dado Elena t a Mamen?

The same sort of evidence that has been used to prove the adjacency requirement in clauses with a Wh-phrase in SPEC/CP proves that this requirement does not exist

(11) Recall that this is also true when a WH sits in the SPEC/CP of an embedded sentence; see examples in fn. (5) above.

(12) The only exceptions are clitic elements such as *le* in (7a) in the text or *te* in (i) below, where the clitics have moved together with the tensed verb:

- (i) QUE te HA DADO Arantza?  
 What you-D has given A.  
 'What has Arantza given to you?'

(13) I make use of capital letters for the Wh-phrase and the inflected verb in these examples to make it easier to locate the relevant elements and check the adjacency requirement. No focalization intention should therefore be attributed to the use of different fonts unless explicitly indicated.

for clauses with a posited Wh-trace in that position.<sup>14</sup> Compare some relevant examples, displayed in (9) below; while (9a) with the adverbial *a veces* ('sometimes') located between the WH and the inflected verb is ungrammatical (the adjacency requirement not being obeyed), (9b) with *a veces* appearing in between the Wh-trace and the embedded tensed verb is, on the contrary, grammatical.<sup>15</sup>

- (9) a. \* A QUIEN *a veces* LE-DICE MariPaz eso t ?  
 To whom sometimes him-says M.P. that  
 'To whom does MariPaz say that sometimes?'
- b. QUE DICE MariPaz [CP t [C' que *a veces* CREE Juanjo  
 [CP. t [C' que *continuamente* HACE Javi t ]]]?  
 'What does M.P. say that J. sometimes believes that J. does  
 continuously?'

The fact that certain adverbial expressions can precede the verb in sentences containing a Wh-trace in SPEC/CP raises some interesting questions as to what positions the inflected verb and the subject occupy in these cases.<sup>16</sup> Observe that in

(14) Recall that, as observed in fn. (4), the adjacency requirement follows from the movement of the tensed verb from INFL to COMP, under a modern reinterpretation of the Verb Preposing rule, and the fact that the Wh-phrase moves to SPEC/CP.

(15) With respect to sentences like (9b), it should be noted that they could be considered a little bit unnatural by some speakers, since they involve too many temporal modifications, but that abstracting from unnaturalness they are absolutely grammatical.

(16) It should be observed here that *a veces* ('sometimes') is not a parenthetical expression in any of these examples; thus, the sentences above do not necessarily involve any stop or change in the intonation pattern preceding or following the adverbial element. Moreover, even as a parenthetical expression, the adverbial element *a veces* ('sometimes') is not allowed to break the adjacency requirement between a fronted Wh-phrase and the inflected verb, as the ungrammatical sentences in (7)-(9) above and degraded example in (i) show:

- (i) ?? \* QUE, a veces, HA COMPRADO Cristina?  
 What, sometimes, has bought Cristina  
 'What has Cristina bought sometimes?'

Furthermore, in the relevant examples *a veces* cannot be in SPEC/CP either, since it follows but it cannot precede the complementizer *que*, as shown by the ungrammaticality of the following example:

- (ii) \* A quién ha dicho MariPaz [ a veces que ha dado Juanjo dinero t ]?  
 To whom has said M.P. [ sometimes that has given J. money ]  
 'To whom has MariPaz said that J. has given money sometimes?'

The only available reading for this sentence is when *a veces* is interpreted in the higher clause.

It could be argued that the adverbial element *a veces* is located in a "recursive CP", whose existence has been sometimes proposed to explain sentences like (iii) below, where the interrogative Wh-element follows the complementizer *que* ('that'):

- (iii) Juanjo nos preguntó QUE CUANDO había venido MariPaz  
 J. we-D asked that when had arrived MariPaz  
 'Juanjo asked us when MariPaz had arrived'

Observe however that this possibility would not be available either, since this adverbial can appear preverbally (as in (iv)) even in those cases in which 'recursive CP'-like structures are not allowed, as in (v):

- (iv) QUE SOSPECHA MariPaz QUE *a veces* HACIA Juanjo por las tardes?  
 What suspects M.P. that sometimes did J. in the evenings  
 'What does MariPaz suspect that Juanjo used to do in the evenings?'
- (v) \* MariPaz sospecha que quién había venido  
 M.P. suspects that who had come

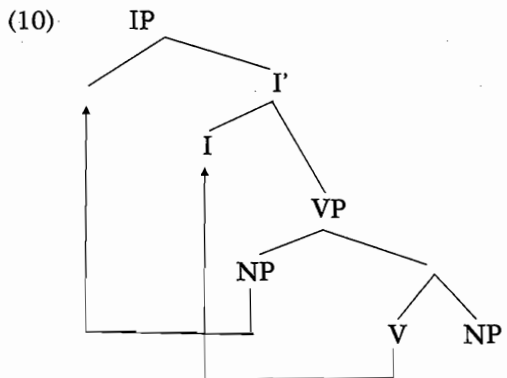
Related to these issues, it is worth mentioning that Bonet (1989) suggests an analysis for Catalan that can be extended to Spanish in which the SPEC/IP could be an available landing site for Wh-phrases. According to her proposal, there is no need to appeal to a 'recursive CP' for sentences like (ii) above, since *que* would be located in Comp and *cuándo* ('when') in SPEC/IP. See also Diesing (1988) for a similar proposal suggesting that Wh-phrases move to SPEC/IP in Yiddish in certain configurations. I will come back to this proposal later on; see fn. (54) in section 2.

the relevant cases of subordinate clauses containing a Wh-trace the adverbial element follows the complementizer *que* ('that'). Since the null hypothesis is that the complementizer *que* is in COMP, the adverbial *a veces* ('sometimes') has to be located in a maximal projection lower than CP, that is, somewhere under IP. If this is correct, we are then forced to conclude that in the subordinate clauses with no overt Wh-phrase in SPEC/CP (see (9b) above) the inflected verb is in INFL and no Verb Preposing (or INFL-to-COMP movement, under our reinterpretation of this phenomenon) has taken place.<sup>17</sup>

Given that in these cases the subject follows the inflected verb and this is located in INFL, an immediate consequence is that the postverbal subjects in the embedded clauses in (9b) are not located in the SPEC/IP, contrary to the Verb Preposing analysis of the *hypothesis 1* summarized above.<sup>18</sup>

If only the SPEC/IP position is available for the subject in Spanish, it is difficult to explain how the facts in (9) above can be accommodated. A solution to this otherwise puzzling situation is possible within the so-called *VP Internal Subject Hypothesis*.<sup>19</sup>

Suppose, as advanced above, that the position where the postverbal subject in the sentences at stake appears is its base generated position, i.e. the specifier of VP. The SVO word order that sentences with preverbal subjects display in Spanish would be accounted for by a syntactic movement of the subject from its base-generated position in VP to the SPEC/IP, as represented in (10):<sup>20</sup>



(17) Under a characterization of Verb Preposing as adjunction to IP, it could be argued that the verb has been preposed even if it appears after *a veces*. But observe that even if this is so, the fact is that, contrary to the cases in (9a) and (i) in fn. (16), the lack of adjacency requirement between the trace in COMP and the verb does not yield an ungrammatical result, and therefore the structure does not seem to qualify as an instance of the Verb Preposing Rule in the relevant sense.

(18) Of course, leaving apart the possibility of dislocation of all the elements following the verb, an issue which is not relevant here since we are not concerned with the optional rule. I will come later on to this possibility to ensure that these sequences are not the result of an optional rule of right dislocation. See fn. (20) below for related discussion.

(19) Cf. Zagona (1982), Kuroda (1986), Kitagawa (1986), Fukui and Speas (1986) and Koopman & Sportiche (1988), among others.

(20) A question that can come to mind is how to ensure that in the relevant examples the subject and the following arguments are not dislocated, which would obviously undermine the hypothesis defended here. Bonet (1989) discusses several ways to distinguish dislocated elements in Catalan that, when carried over to the Spanish cases under analysis, can help us clarify the issue.



This allows us to explain the different properties that the VSO sequences show by characterizing and distinguishing two different processes that create this particular word order. One of them is the Verb Preposing rule as analyzed in Torrego (1984) and summarized above; the other one is the absence of syntactic movement of the subject from its base-generated position and the lack of movement of the inflected verb to COMP. Thus, while the tensed verb has to move to COMP whenever a Wh-phrase is in the SPEC/CP of its clause, this seems not to be the case in sentences where a Wh-trace, instead of the Wh-element itself, is in that position; in those cases the tensed verb need not raise from INFL to COMP, and the reason why the subject is postverbal is because it stays in its base-generated position in VP.<sup>21, 22</sup>

Further support for *hypothesis II* is obtained when the placement possibilities of negative polarity items and other adverbials that require strict adjacency with the verb are taken into consideration.

Some languages, among them Spanish, present a well-known phenomenon in

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To begin with, in contrast with cases involving elements dislocated to the right (as (i)), there is no necessary intonation break or change of the intonation pattern before the postverbal subject in the examples considered above:

- (i) Right Dislocation:  
 Qué dices que ha hecho, Asier en la biblioteca?  
 What say-you that has done, Asier in the library

Furthermore, whereas sentences containing dislocated elements like (ii) allow continuations in which the dislocated elements can be contrasted, this is not allowed in the regular cases analyzed above of the type in (iii), unless accompanied by the special intonation that characterizes dislocation.

- (ii) Qué dices que a veces lee, Ana en la biblioteca y no Luis en el autobús?  
 What say-you that sometimes reads, Ana in the library and not Luis in the bus.  
 (iii) ??\* Qué dices que a veces lee Ana en la biblioteca, y no Luis en el autobús?

In the same line, dislocated negative polarity items, not allowed whenever dislocated and not c-commanded by Neg, are permitted in the structures at stake:

- (iv) a. \* No ha leído los libros, por esta razón, ninguno  
 Not has read the books, for this reason, nobody  
 b. Qué dices que no ha hecho ninguno por esa razón?  
 What say-you that not has done nobody for that reason?  
 'What do you say that nobody has done for that reason?'

Finally, and as brought to my attention by Javier Ormazabal (p. c), whereas extraction from inside of dislocated complements is usually degraded, it is perfect when the object follows the postverbal subject in sentences of the relevant type above, which provides further support for the idea that the subject is not dislocated in the cases under study.

- (v) a. ??\* De quién dices que leyó Sorkunde el año pasado, novelas t?  
 Of whom say-you that read S. the last year, novels  
 b. De quién dices que leyó Sorkunde novelas el año pasado?

For an interesting discussion of these and other related topics see Bonet (1989).

(21) For the time being, I leave open for further research how to accommodate this work to the possible existence of intermediate maximal projections between VP and IP, as originally proposed in Pollock (1989) and developed in several recent works.

(22) Note that this makes Spanish closer to English in the sense that Verb Preposing is not triggered by the presence of a Wh-trace, in the same way SAI is not. Recall however that, as observed in fn. (5), Verb Preposing is triggered by the presence of a Wh-phrase not only in matrix clauses but in embedded ones too, this distinguishing Verb Preposing from Verb Second phenomena in Germanic languages or Subject Auxiliary Inversion (SAI) in English. But see Den Besten (1983) for evidence that Verb Second can occur within embedded sentences in certain cases; see also Travis (1984) and Platzack (1986) for discussion.

which a specific set of elements<sup>23</sup> (*nadie* 'nobody', *nunca* 'never', *apenas* 'hardly', *en modo alguno* 'in any way', etc.) pattern as if they had double nature: on the one hand they act as regular polarity items requiring negation to be licensed (as *nadie* 'anybody', *nada* 'anything',...) while, on the other hand, they can be used as universal negative quantifiers (as *nadie* 'nobody', *nada* 'nothing', etc.) with a negative meaning of their own.<sup>24</sup>

- |  |   |
|--|---|
| (11) a. María nunca viene<br>'Mary never comes'      | (12) a. Nada quiere María<br>'Nothing loves Mary'       |
| b. María no viene nunca<br>'Maria doesn't come ever' | b. No quiere nada María<br>'Mary doesn't want anything' |
| c.* María viene nunca<br>(Maria comes ever)          | c.* Quiere nada María<br>(Maria wants anything)         |

When they work as universal negative quantifiers, these elements are heavily constrained with respect to the syntactic configurations where they can show up; thus, they have to be placed immediately before the verb and only one such n-word is allowed to appear in that preverbal position.<sup>25</sup>

Given that both Wh-phrases and preverbal n-words require strict adjacency with the verb, some conflict is expected in this respect in clauses containing both a Wh and a preverbal n-word; since both adjacency requirements cannot be satisfied at the same time and the adjacency requirement of the preverbal n-word interferes with the adjacency requirement between the Wh-phrase and the inflected verb in inter-

(23) For expository purposes, I will follow Laka (1990) in calling these elements *n-words*, the name coming from the fact that in Spanish most of them begin by *n-*.

(24) Cf., among many others, Rizzi (1982), Bosque (1980), Laka (1990), and references therein.

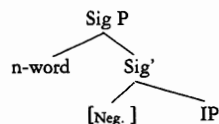
(25) To capture this 'double behaviour' under an analysis that maintains a unique negative-polarity-item nature for these elements and explains at the same time the series of requirements mentioned above, Laka (1990) proposes an account based on the existence of a further maximal projection, the Sigma P (SigP), which she independently motivates. She proposes that this maximal projection (that, following her, appears higher than IP in Spanish and Basque but lower than IP in English) can be headed either by the Negation head, the Affirmation head or the Emphatic Affirmation.

According to Laka, the cases of preverbal n-words acting as universal negative quantifiers can be accounted for by a syntactic movement analysis of both the n-word and the inflected verb to the specifier and head of Sig P respectively, this movement operation explaining the adjacency requirement observed between the n-word and the inflected verb. The motivation for the raising of the inflected verb would follow, under this analysis, from an S-Structure condition, the *Tense C-Command Condition*, which states that 'Tense must c-command at S-Structure all inflectional heads of its clause'; since the Sig P is headed by an inflectional head that is higher than Tense in the structure in Spanish, Tense has to move up to c-command this head.

Following this approach, the restriction that only one n-word can precede the verb is explained under the consideration that only one element can occupy a specifier position. On the other hand, the negative meaning that these n-words seem to have on their own is explained by the agreement relation that the n-word in the specifier position and the inflectional negative head maintain. According to Laka, the structure for sentences like (i) with preverbal n-words would be as in (ii):

- (i) Nunca viene Pedro a casa  
Never comes Pedro home

(ii)



See Laka (1990) for further details.

rogative clauses, we expect preverbal n-words not to be allowed in those circumstances, a prediction that indeed is borne out:

- (13) \* QUE nunca HA HECHO Marivi?  
 What never has done M.

Keeping in mind that preverbal n-words are not allowed whenever the Obligatory Inversion Rule has to apply, let us now consider the following cases of long distance extraction, where in addition to a fronted Wh-phrase in the most deeply embedded clause an n-word appears preceding the verb in the intermediate CP:<sup>26</sup>

- (14) QUE LIBRO<sub>i</sub> oyó Ana que NUNCA supo el librero A QUIEN<sub>j</sub> había vendido Jon t<sub>i</sub> t<sub>j</sub>?  
 Which book heard A. that never knew the librarian to whom had sold J.  
 'Which book did A. hear that the librarian never knew to whom Jon had sold?'

In this example, the Wh-phrase *qué libro* has been extracted from the most embedded clause. Consider now the derivation of this sentence: the most embedded SPEC/CP is occupied by a Wh-phrase, therefore *qué libro* has to skip it. Following the line of reasoning developed above, the n-word appearing before the verb shows that in the case of the intermediate CP the Obligatory Inversion Rule has not applied, even if the subject appears post-verbally. Now, if the OIR is linked to the appearance of a Wh-trace in SPEC/CP, given that this rule has not applied in the intermediate clause, it means that this intermediate SPEC/CP has also been skipped over by the Wh-phrase on its way up. But if so, the Wh-phrase would have passed over two CPs in one single step and the sentence should constitute a Subjacency violation. Since it is not, this suggests that the Wh-phrase has made use of the intermediate SPEC/CP. If this argument is correct, we conclude that the Obligatory Inversion Rule is independent of the appearance of a Wh-trace in SPEC/CP.

The same conclusion is reinforced by an observation in Torrego (1984). It is claimed in that work that a difference between the output of the optional Free Subject Inversion rule (FSI) and the obligatory Verb Preposing rule (=OIR) relates to the possibility of adverb placement. Thus, certain adverbs can occupy sentence

(26) It is worth noting that, even though the speakers I have consulted, including myself, consider sentences like (14) with a Wh-object extracted out of a Wh-island grammatical, some speakers find them degraded (see Torrego 1984 and Jaeggli 1985, for Spanish and Picallo 1984 for Catalan). Thus, in the analysis of this particular type of structures developed in Torrego (1984) sentences like the one in (i) are ruled out as ECP violations:

- (i) \* Qué diccionario no sabías a quién había devuelto Celia?  
 'What dictionary didn't you know who Celia had returned to?'

According to that analysis, the presence of an argumental Wh-phrase in the lower COMP triggers Verb Preposing obligatorily; since it is assumed there that the trace of the moved verb cannot properly govern the trace of the Wh-object, and given that antecedent government from the embedded COMP is not possible (the COMP being already occupied by the Wh-phrase *a quién* 'to whom', the trace of the object is not governed and the sentence results in an ECP violation.

Looking at the grammaticality judgements it seems that, apparently, two different dialects of Spanish are at work here. It would be extremely interesting to find out the exact ways in which they diverge as well as the consequences of this divergence for the grammar. I leave this question open for further research.

initial position if Free Subject Inversion applies, but this option is not allowed if Obligatory Inversion does ((15)=Torrego's (4)):<sup>27</sup>

- (15) a. SIEMPRE LEE lo mismo María  
 always reads the same M.  
 'Mary always reads the same'
- b. \* QUE siempre LEE María?  
 What always reads M.
- c. QUE LEE María siempre?

If this adverb cannot occupy sentence initial position when obligatory inversion takes place, we can indirectly know when this rule has applied by looking at the placement possibilities of this adverbial element. Consider the following sentence, which involves long distance extraction of an object:<sup>28</sup>

- (16) A QUIEN piensa Teresa que SIEMPRE dice Josu que SIEMPRE ve Joserra t en  
 el monte?  
 Whom thinks T. that always says J. that always sees J. in the mounts  
 'Who does Teresa think that Josu always says that Joserra always sees  
 in the mounts?'

Observe that if, as Torrego suggests, the appearance of *siempre* sentence initially is a symptom of the non-application of the obligatory inversion rule and in turn if a Wh-trace in SPEC/CP triggers Verb Preposing obligatorily, this sentence should involve a Subjacency violation, since following this hypothesis the Wh-phrase has crossed two CPs in its way up. Since the sentence is grammatical, we conclude that Subjacency has not been violated and, therefore, that Verb Preposing has to be

(27) Observe that *siempre* also requires adjacency of the verb when it appears sentence initially, as shown in (i):

- (i) a. Siempre come Kepa manzanas  
 Always eats K. apples
- b.\* Siempre Kepa come manzanas  
 Always K. eats apples

If this requirement is susceptible of being analyzed on the lines of Laka (1990) (see fn. (25)), then the argumentation in the text would reduce to the previous one with preverbal negative polarity items.

(28) As observed with respect to some of the examples above, this sentence can be considered a little bit unnatural due to the repetition of *always*, but to my ears it is grammatical. Further, observe that even a regular affirmative sentence involving no Wh-extraction like (i) is already quite unnatural:

- (i) Teresa piensa que Josu siempre dice que Joserra siempre ve a Arturo en el monte.  
 T. thinks that J. always says that J. always sees A. in the mounts.

That the unnaturalness of some examples has to do with the repetition of the adverbial element seems to be supported by the fact that examples like (16) improve in naturalness when the adverbial element alternates:

- (ii) QUE piensa Julio que SIEMPRE dice Inma que NUNCA hace Igor?  
 What thinks J. that always says I. that never does I.  
 'What does Julio think that Inma always says that Igor never does?'

Thus, the use of *siempre* and *nunca* instead of the repetition of the same token makes the example much more natural, despite the fact that both cases would involve the same structure if the case involving sentence initial *siempre* can be analyzed in terms of the Sig P (see fns. (25) and (27)).

dissociated from the presence of intermediate traces in long distance movement and, ultimately, from successive cyclicity.<sup>29, 30</sup>

Summarizing, the discussion in this section has shown that, contrary to what was assumed in the classical account, the VSO order in interrogative constructions is not due to a single obligatory process of Verb Preposing. Based on the location of negative polarity items and some adverbial elements, it has been shown that the strict adjacency that necessarily holds between a Wh-phrase in SPEC/CP and the inflected verb in COMP is not obeyed when SPEC/CP is occupied by a Wh-trace. I have proposed that the VSO order in clauses with Wh-traces in SPEC/CP follows from the fact that the subject can remain in its base-generated position in VP and the inflected verb does not raise from INFL to COMP. If these conclusions are correct, long distance Wh-extraction of an argument is then independent of the position of the verb, and Verb Preposing has to be dissociated from successive cyclic movement.

Given that two different positions (SPEC/IP and the base-generated VP internal position) are available for the subject to be located at S-Structure, an immediate question arises as to what consequences follow from its placement in one location or the other. This and related issues are addressed in the following sections, where the relevance of the location of the subject at S-Structure is studied in the light of quantificational scope phenomena and the semantic import of Wh-questions.

## 2. On the Relevance of the Subject Position and its Consequences for Certain Asymmetrical Quantificational Scope Effects

From the previous discussion we concluded that there are two positions available for the subject at S-Structure in Spanish: SPEC/VP and SPEC/IP. This section studies the nature of these positions and, based on their differences, presents an account of a set of scopal asymmetries that preverbal and postverbal quantified subjects display in that language. The analysis proposed to account for the Spanish

(29) Since in the relevant examples the location of the subject in its base-generated position in VP was based on the placement of the adverbial *a veces* ('sometimes') in IP, the reader might wonder what ensures that this element appears in fact in that position and not in Sig P, as proposed by Laka for the cases of preverbal n-words. It should be kept in mind however that there is a crucial difference between the examples involving *a veces* ('sometimes') and the ones involving n-words and *siempre* ('always'). As described in the text, when n-words and *siempre* appear preverbally they have to be immediately followed by the inflected verb, which under Laka's account is explained in terms of movement of these two elements to Sig P. However, this is not the case with *a veces*; thus, this element does not have to be adjacent to the verb when preverbal, as shown by the following example:

- (i) Cristina a veces come en casa  
C. sometimes eats at home  
(ii) A veces Cristina come en casa

Notice that, furthermore, no stop has to follow the adverbial in (i), (ii) or in the examples used above where this element follows the complementizer in embedded clauses. Therefore, we can conclude that the examples with *a veces* involve different structures than those containing n-words or *siempre* and that unlike those elements *a veces* is in IP and the subject is in VP, as proposed above.

(30) At this point, one could wonder whether argument Wh-phrases necessarily move successive-cyclically through intermediate SPEC/CPs, if the conclusion in the text is correct. In fact, these intermediate traces never contribute to the semantic interpretation of the Wh-chain (but see fn. 39); and, if Lasnik, Saito (L & S) (1984) and Chomsky (1986, 1989) are correct, these traces can freely delete (in fact, under the more restrictive theory in Chomsky (1989) *have to delete*) before LF. The ramifications and consequences of this problem, though, are far reaching and go beyond the scope of this paper.

asymmetries will also prove to extend to some differences in scopal behaviour displayed by quantified subjects in English and Spanish.

Before introducing the mentioned asymmetries, let us examine the extraction of Wh-subjects and the different behaviour that Spanish (as well as other Romance languages) and English display in this respect. Consider the following examples, where (17a,b,c) correspond to (18a,b,c), respectively:

- (17) a. Who bought what?  
 b. \* What did who buy?  
 c. Who do you say (\*that) bought a computer?
- (18) a. Quién compró qué?  
 b. Qué compró quién?  
 c. Quién dices que compró un ordenador?

As (18a-b) show, when a subject and an object Wh-phrase are present in an interrogative clause in Spanish, either one of them can be fronted at S-Structure, the result being grammatical. English, on the contrary, exhibits Superiority effects and sentences like (17b) in which the Wh-subject remains in situ and it is the object Wh-phrase that moves, are bad. Furthermore, while English shows *that-trace* effects in sentences where the embedded subject moves at S-Structure (as in (17c)), the parallel Spanish counterparts as (18c) are grammatical.

These differences have been accounted for by assuming that whereas the trace left by the subject can only be governed by antecedent government in English, the subject 'seems to behave' like an object in languages like Italian and Spanish and its trace can be properly governed by other means in configurations in which antecedent government is not possible.<sup>31, 32</sup> Rizzi and Jaeggli pursue an account of this

(31) See Brandi & Cordin (1989), Rizzi (1982), Belletti & Rizzi (1981), and Jaeggli (1984, 1985), among others, for Romance languages. See also Kenstowicz (1989) for independent evidence that in some Arabic dialects the subject is extracted from postverbal position whenever the complementizer is present.

(32) The ungrammaticality of (17b) has been generally accounted for as an ECP violation (see, among others, Jaeggli 1980, Chomsky 1981, Kayne 1981 and L & S 1984). The trace left by the movement of *who* to COMP cannot be antecedent governed from this position, COMP being already occupied by *what*. Further, since the trace of the subject is not lexically governed, lexical government also fails.

A different account to the problem is pursued in L & S (forthcoming), motivated by the difference of grammaticality of examples like the ones in (i) and (ii):

- (i) a. \* Who<sub>2</sub> do you think that t<sub>2</sub> left?  
 b. ? Who<sub>1</sub> t<sub>1</sub> thinks that who<sub>2</sub> left?
- (ii) a. \* Who<sub>2</sub> do you wonder whether t<sub>2</sub> left?  
 b. ? Who<sub>1</sub> t<sub>1</sub> wonders whether who<sub>2</sub> left?

As (ia) shows, whenever the embedded Wh-subject moves to the higher COMP at S-Structure and the complementizer *that* is present, the sentence is ungrammatical. However, as given in (ib), if the very same WH moves in LF the sentence improves dramatically. L & S (1984) accounted for this difference by arguing that the complementizer *that* deletes at LF; then, INFL moves to COMP at LF, and being coindexed with the subject, it can antecedent-govern the trace left by the subject at LF. However, as recognized in L & S (forthcoming), this account is no longer available when pairs like the one in (ii) are considered. In this case the improvement in grammaticality of (iib) cannot be explained by appealing to the same mechanism, since the complementizer *whether* has lexical content and cannot be deleted at LF. Under their new account, INFL would not move to COMP but rather it would adjoin to S. Being a head, and further, being coindexed with the subject, it can antecedent-govern the trace left by *who<sub>2</sub>* at LF in (ib) and (iib), which explains their better status.

Considering this, they argue that (17b) cannot any longer be ruled out as an ECP violation, but rather, it should be accounted for as a Superiority Condition violation, an independent condition that should be kept distinct from the ECP.

based on the possibilities that these Romance languages display with respect to subject inversion.<sup>33</sup> Thus, following them, in those languages the subject is extracted not from the preverbal position but rather from the postverbal one, which is usually assumed to be an adjoined position to VP as well as a governed position.

An extremely interesting analysis in this direction is presented in Jaeggli (1985), where it is shown that Superiority Effects (which he assimilates to the ECP) are also present in the grammar of Spanish when the relevant structural conditions are met.<sup>34</sup> Consider the following examples, which involve multiple interrogation and instances of Wh-phrases in situ (from Jaeggli 1985):

- (19) a. Quién dijiste que compró qué?  
Who you-said that bought what  
'Who did you say bought what?'
- b. Qué dijiste que compró quién?  
What you-said that bought who  
'What did you say that who bought?'
- c. \* Qué dijiste que quién compró?  
What you-said that who bought  
'What did you say that who bought?'
- d. Qué dijiste que Mario compró?  
What you-said that Mario bought  
'What did you say that Mario bought?'

In (19a) the object Wh-phrase remains in situ at S-Structure and raises to the matrix SPEC/CP occupied by *quién* at LF; since the traces left by the Wh-phrases are properly governed the sentence is grammatical.<sup>35</sup> With respect to (19b), where the subject is extracted from the postverbal position at LF, Jaeggli concludes that the necessary licensing requirements are also met, since the sentence is grammatical with *quién* having scope in the matrix clause. Interestingly enough, example (19c) is ungrammatical. Jaeggli observes that this ungrammaticality cannot be attributed to the failure of Verb Preposing, since the example in (19d) where the subject appears preverbally and Verb Preposing has not applied constitutes a grammatical utterance.<sup>36</sup> This strongly suggests that (19) is ungrammatical because the trace left at LF by the preverbal subject QUIÉN does not satisfy the ECP.

(33) See references above.

(34) Still, he suggests that not all the Superiority Conditions Violations are analyzable under the ECP; concretely, *Pure Superiority* cases such as (i) still remains a problem for the ECP account:

(i) \* What did you tell who(m) that Peter bought?

(35) See Jaeggli (1985) for the concrete proposal of how government and proper government should be defined as well as the government requirements to be obeyed at each syntactic level of representation and at PF.

(36) Jaeggli follows Torrego (1984) in assuming that the lowermost COMP can be skipped by the WH, which being an argumental phrase can move in a single step without violating Subadjacency or the ECP. Recall that, as mentioned in fn. (8) above, the possibility of skipping the first COMP without violating Subadjacency follows from the fact that S' but not S counts as a bounding node in Spanish with respect to this condition.

Jaeggli's observation seems to be related to a further set of phenomena that, as far as I know, has not received a satisfactory account in the literature. Consider the following set of examples, which involve Wh-extraction out of an embedded sentence and postverbal quantified embedded subjects:<sup>37</sup>

- (20) a. A quién dices que amaba cada senador t ?  
 Who say (you) that loved each senator  
 'Who do you say that each senator loved?'  
 b. Qué dices que ha comprado todo dios t ?  
 What say (you) that has bought everybody  
 'What do you say that everybody bought?'

As expected, the sentences in (20) are ambiguous in Spanish, allowing two different readings. According to one possible interpretation, the WH has wide scope over the embedded postverbal subject; thus, an appropriate answer for these examples could be: 'It is Jon that each senator loved', and 'It is this computer that everybody bought'. This construal would be roughly represented as in (21):

- (21)  
 a. [CP Whom<sub>j</sub> [IP you say [CPthat [IP each senator<sub>i</sub> [IP loves t<sub>i</sub> t<sub>j</sub>]]]] ]  
 b. [CP What<sub>j</sub> [IP you say [CPthat [IP everybody<sub>i</sub> [IP bought t<sub>i</sub> t<sub>j</sub>]]]] ]

Under the second interpretation, the embedded subject can have wide scope over the Wh-phrase, as represented in (22):<sup>38, 39</sup>

(37) A word is in order with respect to the quantifiers used in the discussion. It is hard to find a good counterpart in Spanish for quantifiers like *everybody* or *everyone*. One of the closest ones, which I use in some of the examples, is the colloquial *todo dios* (lit. 'every god'); however, there is a tendency for some speakers to interpret it with a group reading. See fn. (40) for some remarks on *cada* ('each').

(38) Observe that in the representations in (22) the Wh-phrase is higher than the quantified NP; still, the latter is allowed to have wide scope over the Wh-phrase. This is so because in May's system adjunction to S' is prohibited; thus, the quantifier has to necessarily adjoin to the matrix S. The possibility of the wide scope reading of the quantified expression over the Wh-phrase obtains from the fact that the two elements govern each other, the quantified NP not being exhaustively dominated by the matrix S as the result of the adjunction operation.

L & S (forthcoming) pursue a different analysis of this particular example. In the new approach, it is claimed that LF configurations unambiguously represent scope relations, as in May (1977). Considering this, the reading where the quantified NP has wide scope over the WH results from the adjunction operation of the first element to the matrix CP, as represented in (i); this possibility, as just mentioned, is disallowed in May (1985).

(i) [CP everyone<sub>2</sub> [CP who<sub>1</sub> [IP do you think [CP[IP t<sub>2</sub> saw t<sub>1</sub> at the rally]]]]]

See May (1985) and L & S (forthcoming) for relevant discussion and argumentation.

(39) Juan Uriagereka (personal communication) observes that there exists a difference between complements in indicative mood and complements in subjunctive mood with respect to the possibilities of quantificational scope. According to him, whereas in sentences like (i) below with a subjunctive complement the quantified NP can be interpreted as having scope over the matrix verb, in sentences like (ii) with an indicative complement the matrix verb has scope over the quantified NP. That is, indicative complements seem to behave as islands in this respect. Interestingly, pair readings are possible in both cases.

(i) Qué quieres que haga todo dios t ?  
 what want-you that do- subj. everybody  
 (ii) Qué crees que ha hecho todo dios t ?  
 what believe-you that has done everybody



- (22) a. [<sub>CP</sub>Who<sub>i</sub> [<sub>IP</sub>each senator<sub>i</sub> [<sub>IP</sub>you say [<sub>CP</sub>that [<sub>IP</sub>loved t<sub>i</sub> t<sub>j</sub>]]]]]  
 b. [<sub>CP</sub>What<sub>i</sub> [<sub>IP</sub>everybody<sub>i</sub> [<sub>IP</sub>you say [<sub>CP</sub>that [<sub>IP</sub>bought t<sub>i</sub> t<sub>j</sub>]]]]]]

Under the wide interpretation of the quantified phrase, pair readings can be obtained; in this way, a possible answer to these questions would be: 'Senator Smith loved Gary Cooper, senator Brown loved Ava Gardner,...', or 'Mary bought a computer and Susan bought a book'.

However, when the quantified subject appears preverbally in SPEC/IP (as in (23)), one of the readings disappears, and the only available interpretation is that in which the Wh-phrase has necessarily wide scope over the quantified subject, as previously represented in (21).<sup>40, 41</sup>

He suggests that a possible explanation for this could be that whereas the quantified expression can move to the matrix IP in the first case, this is not possible in the second. The fact that even in (ii) pair readings are possible could be accounted for if the relevant relation between the Wh-phrase and the quantifier is not established by these two elements directly, but rather holds between the Wh-trace left by the Wh-phrase in the embedded COMP and the quantifier, which would adjoin to the embedded IP without getting out of the embedded indicative complement. (Observe that for this to be correct we have to assume: a) that the Wh-phrase has moved through the embedded SPEC/CP even if movement in a single step would be allowed in this particular case in Spanish (see fn. (8)); and b) that the intermediate trace does not freely delete (at least in this particular case), as might be expected). Even if highly interesting, this hypothesis seems to cope with some difficulties to account for a further set of scopal asymmetries, studied in detail in section 3. below.

Uriagereka (1988) refers to Torrego & Uriagereka (in progress) for an analysis that accounts for the opacity and other relevant properties that indicative complements of epistemic verbs display. Thus, they argue that indicative complements of epistemic verbs differ from subjunctive complements of volitional verbs in that the former are taken to be "(probably adjectival) subordinates" of a posited DP, which would be the true argument of the epistemic verb, whereas the volitional complements would be the true complements of the volitional verb. If this analysis proves to be correct, the difficulty in getting a wide scope interpretation of the quantified phrase that Uriagereka observes might relate to a structural difference.

In the case of other speakers I have consulted, however, even if the relevant reading seems to be easier to obtain with subjunctive complements, it is still possible (with various degrees of difficulties) to get the intended reading with indicative ones in the relevant examples in the text.

I have no clear account for why the difficulties in the readings vary from some speakers to others. The issue of how quantified NPs inside indicative complements take scope might be more complex than what it looks at a first glance, as will be seen in section 3, and it seems that some other factors apart from the difference in mood are playing a role.

Since at this point is not clear to me whether the difficulty in the extraction of quantifiers out of indicative complements is only dependent on the mood of the subordinate clause and, moreover, other speakers still seem to be able to get the relevant reading finding some contrast in the scope of quantified NPs embedded in indicative complements, I will tentatively continue assuming a representation of the embedded indicative complements of the traditional sort, though acknowledging that the issue deserves a more detailed study than the one I can offer here; I leave this open for further research.

(40) Some authors avoid the use of *cada* ('each') because it has been observed that it tends to get wide scope. However, notice that if this is true the lack of distributive readings in (23) and, especially, its contrast with (20) become especially interesting, providing further support for the point I am trying to show. See also section 3. below for some further examples where *each* cannot get wide scope.

(41) The point to be raised also holds for subjects of unaccusative verbs, as for instance:

- (i) a. A dónde dices que fué todo dios?  
 Where say-you that went everybody  
 'Where do you say that everybody went?'  
 b. A dónde dices que todo dios fué?

While *todo dios* in (ia) can take either narrow or wide scope, it can only take narrow scope in (ib).

- (23) a. A quién dices que cada senador amaba?  
 b. Qué dices que todo dios ha comprado?

What this suggests is that the quantified NP only can raise to adjoin to the highest IP when it is extracted from the postverbal position, but that this movement is ruled out when the subject is extracted from SPEC/IP at LF; in this case the subject only has scope over the embedded IP.

This situation is reminiscent of the one observed and discussed by Jaeggli with respect to the data in (19). Thus, keeping in mind Jaeggli's account, the first analysis that comes to mind is that in (23) the wide scope of the preverbal subject is impossible because when this element moves at LF to adjoin to the matrix IP, the derivation is ill-formed and results in an ECP violation, as in the case of sentence (c) in (19). However, there exist some cases that cast some doubts on the appropriateness of this account; consider the following example:

- (24) Qué cuenta Charo que sus amigos han visto en cada ciudad?  
 What tells Charo that her friends saw in each city  
 'What does Charo tell that her friends saw in each city?'

The example in (24) is parallel to those in (23) in the sense that it involves the extraction of the embedded Wh-object, which moves at S-Structure to the main clause, and a quantified phrase (in this case an adjunct QP) in the embedded clause. What is crucial in this example is that, as in the case of movement of the subject from preverbal position, the trace left by the moved quantified adjunct at LF has to be antecedent-governed. It seems logical to expect that since antecedent government does not hold in the case of preverbal quantified subjects when they move to the matrix IP at LF it will not hold for the adjunct case either. However, the sentence in (24) allows a reading in which *en cada ciudad* takes scope in the matrix sentence too; therefore, we are led to the conclusion that there is a correct derivation for that movement and that the traces left by the adjunct are properly governed. Since a subjacency violation in the case of adjuncts yields an ECP violation (antecedent government being necessary), each element of the adjunct chain in the derivation must be subjacent to the next one, all the traces being properly governed. From this we can conclude that the trace left by the adjunct when it adjoins to the embedded IP on its way up is also licensed and, further, that this step is in its turn used to govern the immediately anterior trace.<sup>42</sup> But, then, a question arises as to what rules out the derivation in which the quantified preverbal subject has matrix scope too.

(42) One might wonder what ensures that it is the whole PP *en cada ciudad* that moves at LF. In other words, what ensures that preposition stranding does not take place at LF and that it is just the NP *cada ciudad* that moves, its trace being then lexically governed by the 'stranded' preposition *en* 'in'. Interestingly, preposition stranding is ungrammatical in Spanish. Observe that this may not be definite to rule out the possibility of preposition stranding at LF if S-Structure and the level of Logical Form can behave differently in this respect. However, if the analysis of comparative constructions in Spanish proposed by Sáez (1990) is correct, there is some independent evidence that this process is not allowed at LF either.

In any case, observe that even if *cada ciudad* could be lexically governed by *en* at LF (which, if section 3. is correct, doesn't seem to be the case), this would not undermine the main line of reasoning pursued in this section, since the crucial case is the difference of scopal properties of quantified preverbal subjects in English and Spanish. See related discussion in section 3.

Observe that the first step in the derivation of the subject includes adjunction to the embedded IP, exactly the same as in the case of the adjunct QP chain. From here on, the chain created by the movement of the preverbal subject is exactly on a par with that created by the movement of the adjunct. But if adjunction to IP serves to govern the previous trace in the adjunct chain, it remains mysterious what prevents government of the initial trace by the same mechanism in the subject one.

May (1985) presents an example which is in all respects structurally identical to those in (23), but that crucially differs from the Spanish cases in that it is ambiguous and allows the reading where *everyone* takes scope in the matrix clause:

- (25) a. Who do you think everyone saw at the rally?  
 b. [<sub>S</sub> Who<sub>2</sub> [<sub>S</sub> everyone<sub>3</sub> [<sub>S</sub> you think [<sub>S</sub> [<sub>S</sub> e<sub>3</sub> saw e<sub>2</sub> at the rally]]]]]

Given that the Spanish examples in (23) and the English one in (25) are identical and that both will involve the same S-Structure and LF structure (where both quantified subjects are in SPEC/IP and are extracted from that position), it is unclear what prevents the wide scope reading for the subject in Spanish and allows it in English if the relevant fact involved is an ECP violation; that is, given that the quantifier chain in (25b) does not violate the ECP, what makes the quantifier chain violate the ECP in the Spanish examples in (23) if the derivation is exactly identical to the English case?

I have just claimed that the examples in (23) and (24) on the one hand, and (23) and (25) on the other seem to be similar in all relevant respects. However, when we look at the examples in more detail we observe that there is an important difference with respect to the elements compared in each pair under consideration. Thus, differing from adjuncts, we have seen that in Spanish there exists a double possibility for the position of this subject at S-Structure: SPEC/IP or its base-generated position in VP; on the other hand, when we compare the relevant elements involved in the examples in (23) and their English counterparts of the type represented in (25), the same differences arise again since the subject in English can only appear in one position at S-Structure (namely, in SPEC/IP), and lacks the double placement possibility of its Spanish counterpart. Let us explore in more detail what the consequences of this are and how it can be related to the phenomena under analysis.

It is generally assumed that the SPEC/IP position behaves as an A-position, since it can be an A-binder and it is a position that can be the potential recipient of a  $\theta$ -role.<sup>43</sup> However, if the hypothesis of the VP internal base-generation of subjects is correct and the subject is assigned its  $\theta$ -role in VP, it is difficult to maintain the assumption that the SPEC/IP position is an A-position. A possible way to reconcile the VP internal subject hypothesis and the assumption that SPEC/IP is an A-position could be done along the following lines: suppose that  $\theta$ -role assignment is linked to Case assignment in the sense that only Case marked NPs will be visible with respect to the theta-role they bear; if so, whereas the object will be visible in its D-Structure position where it is assigned accusative Case, the subject will only be visible once nominative Case has been assigned to it and needs therefore to raise to

(43) Chomsky (1981) defines an A-position as follows: "An A-position is one in which an argument such as a name or a variable may appear in S-Structure; it is a potential  $\theta$ -position".

SPEC/IP, where it receives Case through SPEC-head agreement with INFL. This would allow us to redefine an A-position so as to include that position in which an NP becomes visible with respect to its  $\theta$ -role.<sup>44</sup> But observe that even if we make the definition of A-position dependent on Case, we still do not guarantee that the SPEC/IP is an A-position in all languages, since in those languages that allow other ways to Case mark the subject apart from the mentioned SPEC-head agreement with INFL, the SPEC/IP position could behave as an A'-position. Let us assume that this is correct and explore its consequences in the light of the phenomena under analysis.

There seems to be quite general agreement with respect to the fact that subjects can only be Case marked nominative in SPEC/IP in English; following the line of reasoning sketched above, the SPEC/IP will behave as an A-position in English. On the other hand, when the properties of this position in Spanish are considered, the same does not seem to hold since, as we have seen in section 1, this language presents instances in which the subject does not move to SPEC/IP to get Case and remains in its base-generated position within VP. Since those sentences are grammatical, an immediate conclusion is that the subject NP can receive Case and comply with the Visibility Condition in its base-generated position,<sup>45</sup> which suggests that SPEC/IP will behave as an A'-position in Spanish. If this move is correct, the prediction is that both languages should display some asymmetries in this respect. In the remainder of this section, I will suggest that, in effect, this is so and that it is precisely the asymmetrical behaviour that arises from the different properties of SPEC/IP in these two languages that accounts for the phenomena exemplified in (20)-(25).<sup>46</sup>

If, as suggested, SPEC/IP behaves as an A'-position in Spanish, movement to this

(44) For related discussion on this issue see, among others, Deprez (1989) and Mahajan (1990).

(45) For some possible ways to Case mark the subject in this configuration see, among others, Koopman & Sportiche (1988) and Raposo & Uriagereka (1990).

(46) Needless to say, some asymmetries should also arise with respect to Binding if the SPEC/IP position differs in the two languages; more concretely, if SPEC/IP is an A'-position in Spanish, we would expect it not to count as an A-binder. It is, however, a difficult task to construct examples with the relevant configuration to check whether this is correct. Note, first of all, that in single clauses with a preverbal subject (that is, where the subject has moved to SPEC/IP) its trace in SPEC/VP can count as the relevant A-binder; the relevant cases, thus, should be examples where the potential bindee is somewhere higher than SPEC/VP, so that it is not c-commanded by the A-trace in that position, but it is c-commanded by SPEC/IP. Juan Uriagereka (p. c.) suggests the following test:

- (i) a. Qué artículo dice María que él<sub>i</sub> (no ella) va a publicar porque Juan<sub>i</sub> es famoso?  
Which article says Mary that he<sub>i</sub> (not she) is going to publish because Juan<sub>i</sub> is famous
- b. Qué artículo dice María que a él<sub>i</sub> (no a ella) van a publicarle porque Juan<sub>i</sub> es famoso?  
Which article says Mary that to him<sub>i</sub> (not to her) are (they) going to publish because Juan is famous
- (ii) a. Qué artículo dices que cada estudiante va a publicar porque él/su propio padre es famoso ?  
Which article say-you that each student is going to publish because he/his own father is famous
- b. Qué artículo dices que a cada estudiante le van a publicar porque él/su propio padre es famoso?  
Which article say-you that to each student (they) are going to publish because he/his own father is famous

In (ia) the subject *él* has moved to SPEC/IP; in (ib) the embedded indirect object *a cada estudiante* has been dislocated from its base-generated position. None of their traces c-command *Juan*; the subject in the embedded adjunct, but let us assume that this subject is c-commanded by both *él* and *a cada estudiante* from their final position. We can further assume that the position to which the embedded indirect object has moved is an A'-position. Considering this, if there were a contrast between (ia) and (ib) ((ia) being ungrammatical), we could speculate that this is so because the subject in SPEC/IP counts as an A-binder, yielding a Condition C violation.

position will count as relevant for those elements that need to move for scope reasons; that is, SPEC/IP in Spanish will be a position from which scope can be taken, while it will not in English. Suppose that once an element takes scope at S-Structure this scope cannot be changed at LF.<sup>47</sup> In the case of English, a quantified subject NP will have to move at LF even if it has already moved to SPEC/IP at S-Structure, since it has to take scope. In Spanish, however, movement at LF will be possible only when the subject has not moved to SPEC/IP at S-Structure since otherwise the scope created at S-Structure would be altered at LF.

Keeping this in mind, let us turn back to the conflicting cases under analysis, repeated here for convenience. Consider first the ambiguous examples in (20):

- (20) a. A quién dices que amaba cada senador t?  
 Who say (you) that loved each senator  
 'Who do you say that each senator loved?'  
 b. Qué dices que ha comprado todo dios t?  
 What say (you) that has bought everybody  
 'What do you say that everybody bought?'

In these sentences the postverbal subject has not moved out from VP to SPEC/IP; therefore when it moves in LF it can move up to the highest IP, this fact accounting for the ambiguity of scope between the Wh-phrase and the quantifier. In any case it moves from an A-position and as far as the derivation is correct, both possibilities are available. Consider now example (24):

- (24) Qué dices que los amigos han visto en cada ciudad?  
 What say-you that the friends have seen in each city  
 'What do you say that the friends have seen in each city?'

In (iia) on the other hand, if the pronominal *él/su propio* could be interpreted as a variable bound by the quantifier, the 'true' variable would have to be in a position where it c-commands the pronominal; thus, there would be an A-trace in SPEC/IP c-commanding the pronominal at LF; (iib), on the other hand, should display cross-over effects. Though the judgements are quite murky, there does not seem to be any substantial difference with respect to the grammatical status of the clauses in each pair, and speakers find all the examples (at best) degraded. It should be noted, however, that there might be, in addition, some independent factors —related to the tendency to avoid the use of overt pronominals and the asymmetry between subjects and indirect objects in backward pronominalization, among others— that interfere with the possibilities of coreference in the structures under analysis and obscure the relevant tests. It seems therefore difficult to reach any definite conclusion from here, and I will leave this as an open issue.

(47) This issue has received a particular attention in the literature, especially with regard to Wh-movement since, as is well known, the scope of Wh-phrases that undergo syntactic movement is determined at S-Structure and cannot be altered at LF. Different hypotheses have been entertained in the literature trying to explain this descriptive generalization. To cite a couple of them: Aoun, Hornstein and Sportiche (1981) argue that LF Wh-movement can only originate from A-positions. Lasnik & Saito (1984, forthcoming) pursue an account that appeals to the mechanism of COMP indexing. However, as Saito (1989) observes, the COMP indexing explanation cannot cover topicalization cases like (i) (from Saito 1989):

- (i) \* Mary thinks that [the man that bought what]<sub>j</sub> John knows who<sub>i</sub> t<sub>j</sub> likes t<sub>i</sub>

According to Saito, the ungrammaticality of (i) follows from the fact that the topicalized phrase, having determined its scope at S-Structure, cannot move further at LF. When movement of *what* to the lowest COMP takes place at LF, its trace violates the Proper Binding Condition. See related discussion in the text and in fns. (51) and (53) below.

As in the case of the postverbal subject the quantified adjunct is in its base-generated position; consequently, it will have to move at LF in order to create a variable. Therefore, insofar as the movement of the adjunct quantifier independently obeys all the necessary requirements (and, in particular, the ECP), this element can raise and get scope over the Wh-phrase.<sup>48</sup>

Consider now the Spanish examples in (23), where the wide scope reading of the subject is not allowed, while comparing it with the English example in (25), which is structurally identical and allows the wide scope reading of this element.<sup>49</sup>

(25) Who do you think everyone saw at the rally?  
 [<sub>S</sub> Who<sub>2</sub> [<sub>S</sub> everyone<sub>3</sub> [<sub>S</sub> you think [<sub>S</sub> [<sub>S</sub> e<sub>3</sub> saw e<sub>2</sub> at the rally]]]]]]

(23) A quién dices que cada senador amaba?  
 \*[[<sub>CP</sub> Who<sub>j</sub> [<sub>IP</sub> each senator<sub>i</sub> [<sub>IP</sub> you say [<sub>CP</sub> that [<sub>IP</sub> t<sub>i</sub> loved t<sub>j</sub> ]]]]]]]

As mentioned previously, there is no way to rule the English derivation in while ruling the Spanish one out, since they are identical; the only way to find a difference between both cases is if, as proposed, the movement of the subject to SPEC/IP in Spanish counts as a valid movement for the quantifier in terms of scope, whereas the English case differs in that respect.<sup>50</sup> If this is correct, the absence of the wide scope reading in (23) follows from the fact that the subject has already moved in the relevant sense to an A'-position at S-Structure and cannot therefore move again at LF. Thus, the Spanish preverbal subject can only take the scope that corresponds to the movement it realized at S-Structure. In the English case, on the other hand, the

(48) See section 3. for extended discussion on this particular example.

(49) For expository purposes, I will use just one of the Spanish examples, the argumentation applying equally to the other one.

(50) Under a theory like L & S (forthcoming), it could be argued that a difference between the English case and the Spanish one is that, whereas INFL raises at LF in English (see fn. (32)), it does not in Spanish and, thus, the trace left by the preverbal subject at LF is not properly governed. If this were correct, it would undermine the hypothesis defended in the text, which attributes the difference between the languages to the different properties of the SPEC/IP position in each of them. Then, an ECP account would still be possible for the Spanish cases.

However, if the movement of INFL is required for an appropriate interpretation at the semantic level one can imagine that this cannot be language particular, but rather it has to be universal, in the same way we assume that even those languages with no overt Wh-movement have to have it at LF to satisfy the necessary requirements for semantic interpretation. If this is correct, the alternative hypothesis presented in the text would be superior to an ECP account.

Mamoru Saito (p.c.) suggests an interesting way to explain why Spanish might lack INFL raising: it might be precisely because the subject can stay in VP in Spanish that INFL does not raise in LF in this language. We could relate Saito's suggestion to May's (1985) observation that scope domains must range over complete argument structures, and not their proper subparts, which May encodes as (i):

(i) If an operator *O* c-commands a predicate *P*, then it must c-command all the thematic argument positions of *P*.

If so, it might be that the LF movement of INFL in English has to do with the need of this inflectional element of being higher than SPEC/IP, if this is the position where the subject becomes visible with respect to its  $\theta$ -role in that language. This might leave open an ECP account of the English/Spanish asymmetries at stake.

I will continue assuming the analysis in the text, based on some asymmetries explored in detail in section 3. that seem to favor this approach over one that appeals to the ECP as the result of the difference in INFL raising at LF in these two languages. It is however worth noting that the choice of the analysis in the text does not falsify Saito's suggestion in relation with INFL movement. I leave this open for further research.

movement of *everyone* to SPEC/IP counts as an A-movement, and the quantifier is free to move (in fact, it has to) to an A'-position at LF to take scope.<sup>51</sup>

If this approach is correct, it allows a reinterpretation of the data introduced by Jaeggli, with the further advantage that it incorporates both, the restrictions on Wh-subjects and quantified subjects, in a unified way. Let us review Jaeggli's examples in the light of the discussion developed above; recall that the crucial case was (19c) since, following Jaeggli, it demonstrates that similar to English, Spanish shows Superiority effects too, the derivation where the subject Wh-phrase moves at LF being ruled out by the ECP.

- (19) a. Quién dijiste que compró qué?  
Who you-said that bought what  
'Who did you say bought what?'
- b. Qué dijiste que compró quién?  
What you-said that bought who  
'What did you say that who bought?'
- c. \*Qué dijiste que quién compró?  
What you-said that who bought  
'What did you say that who bought?'
- d. Qué dijiste que Mario compró?  
What you-said that Mario bought  
'What did you say that Mario bought?'

Under the analysis developed above the movement of the Wh-subject from its base-generated position to SPEC/IP counts in all respects as movement to an A'-position. However, contrary to those cases involving quantified phrases, there is a further requirement to be met in this case by the Wh-phrase: in concrete, it has to be in a [+Wh] COMP at LF.<sup>52</sup> Since the Wh-phrase *quién* has already moved in the

(51) Howard Lasnik (personal communication) brings to my attention the following English paradigm discussed in Lasnik & Uriagereka (1988):

- (i) Someone thinks that Mary solved every problem  
(ii) Someone thinks that every problem, Mary solved

In (i) the quantifier in the embedded clause can marginally take wide scope in the matrix clause. Interestingly, when the quantifier is topicalized (that is, adjoined to IP) in the embedded sentence (as in (ii)), the matrix scope reading of *every problem* disappears and it can only take scope in the embedded clause. The explanation suggested by L & U (1988) to account for this is the same as the one proposed above to explain the Spanish cases under analysis: once an operator is in a scope-type position at S-Structure it cannot move further at LF.

As observed in the mentioned work, this can also provide an account of the following cases involving negative polarity items if it is assumed that any such element has to undergo Quantifier Raising (QR) at LF and move up to its licensing element.

- (iii) I don't think that Mary solved any problems  
(iv) \*I don't think that any problems, Mary solved

While in (iii) *any problems* can raise at LF and satisfy its licensing requirements, in (iv) it is in a position in which these requirements cannot be satisfied unless movement takes place. However, since this possibility is disallowed (*any problems* being in a scope-type position at S-Structure), the sentence will be ruled out.

The reader is referred to the discussion immediately below in the text for the extension of the analysis to similar cases involving Wh-phrases in Spanish. For considerations of the English cases and their parallelism to the Spanish ones see fn. (53), which summarizes the discussion of those cases in L & U (1988).

(52) Observe that this is needed to force movement at LF of Wh-phrases in situ at S-Structure.

syntax to an A'-position in (19c), it cannot move further at LF; therefore, the sentence is ruled out not because the trace left at LF by the WH cannot be properly governed, since in fact it will not move, but rather because it violates the [+WH] requirement imposed on Wh-phrases.<sup>53, 54</sup>

Summarizing, in this section I have presented an analysis of certain constructions involving quantified subjects. It has been shown that some asymmetrical scope facts arise that are conditioned by the different positions the quantified subject can occupy at S-Structure. In concrete, in the case of embedded sentences containing a quantified subject the possibilities for this element to take matrix scope have been

(53) I am thankful to Mamoru Saito for bringing to my attention the relevance of this fact and to Howard Lasnik for pointing out to me the similarity of the Spanish cases considered above and the English cases in Lasnik & Uriagereka (L & U) (1988) presented immediately below. (See also fn. (46) and (50)).

L & U (1988) examine the following examples which are directly related to the discussion presented in the text, and seem to lead to a similar conclusion.

- |     |                                |                                 |
|-----|--------------------------------|---------------------------------|
| (i) | a. Who thinks that I like John | c. Who thinks that I like who   |
|     | b. Who thinks that John I like | d. * Who thinks that who I like |

The examples in (ib,d) involve embedded topicalization (that is, adjunction to IP) of the objects of the embedded clause, the NP *John* and the Wh-phrase *who*. Interestingly, while (ib) is grammatical, (id), where the topicalized element is the object Wh-phrase, is not. It is suggested there that a possible explanation for this fact (apart from the descriptive generalization that a Wh-phrase cannot be topicalized) is that the topicalized Wh-phrase cannot undergo further movement at LF. This disallows movement of the Wh-phrase to the matrix [+WH] COMP where it should receive its appropriate scope. I interpret this as the impossibility of *Who* in the IP-adjoined position to fulfill the [+WH] requirement, and not as the impossibility of the WH of taking scope from that position, since regular quantifiers can in fact do so when topicalized (as in the case of *Someone thinks that every problem, Mary solved* discussed in fn. (51) above). The parallelism of (19c) and (id) strongly indicates that the conclusion arrived at in L & U (1988) as well as in this work is on the right track. It also provides further support for considering SPEC/IP as an A'-position in Spanish.

It is worth noting, however, that there seem to exist certain apparent exceptions to the hypothesis defended above that any scope determined at S-Structure cannot be altered at LF. Thus, to give just an example, it has been noticed that in Japanese, while being an S-Structure A'-movement, scrambling can be undone at LF. (See Saito (1989) and references therein); some other seemingly problematic cases are also pointed out in L & S (1984). The reader is referred to Saito (1989) for some suggestions and speculations on how to derive the Japanese facts on the basis of the nature of the position to which a scrambled phrase adjoins in Japanese. For discussion and suggestions on how to accommodate some related Polish facts, see Mahajan (1990).

(54) In fn. (16) section 1, I referred to a proposal by Bonet (1989) to the effect that SPEC/IP could be a landing site for Wh-movement in Catalan. Further, as mentioned there, Bonet suggests that this could account for structures like (i):

- (i) Juanjo nos preguntó QUE CUANDO había venido MariPaz  
 J. we-D asked that when had arrived MariPaz  
 'Juanjo asked us when MariPaz had arrived'

As pointed out to me by Lisa Cheng, this hypothesis might pose a problem for the analysis of Jaeggli's data just presented in the text. However, the possibility of having a Wh-phrase following *que* ('that') in embedded sentences is almost restricted to the verb *preguntar*. In this sense, this type of construction does not constitute the general case, but rather, the exception. Further, as brought to my attention by Javier Ormazabal, not only a Wh-phrase but also *si* ('whether') can follow *que* ('that') in this type of constructions, as (ii) bears witness:

- (ii) Preguntó que si María leyó el libro  
 asked that whether Mary read the book  
 '(S)he asked whether Mary read the book'

Given that it is improbable that *si* is in SPEC/IP, this casts some doubt on the hypothesis that the Wh-phrases following *que* in the other apparent problematic cases are in SPEC/IP. Since this type of construction is highly constrained and, further, since it is not clear what their structure is or where the interrogative elements following *que* are, I assume that the account appealing to the [+WH] requirement is basically correct. The reader is referred to Uriagereka (1988) for relevant discussion on this type of structure.



seen to be directly dependent on whether it appears in SPEC/VP or in SPEC/IP: only quantified subjects in SPEC/VP can take matrix scope under the appropriate circumstances, this reading being unavailable for those that have moved to SPEC/IP at S-Structure. This has been contrasted with the possibilities of taking matrix scope that quantified adjuncts in Spanish and preverbal subjects in Spanish and English respectively show in the same configurations. I have argued that while SPEC/VP in Spanish and SPEC/IP in English are A-positions, SPEC/IP is an A'-position in Spanish. Considering this and the assumption (independently argued for in the literature) that once an element moves to an A'-position at S-Structure it cannot undergo further movement at LF, I have presented an analysis that accounts for all the cases under consideration. This condition makes the right empirical distinction between quantifiers remaining in their original position at S-Structure (VP-subjects in Spanish, objects and adjuncts) or A-moved elements (e. g., subject raising to SPEC/IP in English) from movement to an A'-position at S-Structure (e. g. Wh-movement to SPEC/CP, topicalization in English and movement to SPEC/IP in Spanish). Thus, while the former are free to move at LF the latter cannot move further at that level, since the relevant movement to an A'-position has already taken place in the syntax. Finally, the approach defended here has proved to account for those cases involving Wh-phrases presented by Jaeggli (1985) as Superiority Condition violations in Spanish, with the advantage of deriving the restrictions operative on Wh-subjects and quantified subjects in SPEC/IP in a unified way.

In the next section, I turn to the different implications of the hypothesis with respect to (long distance) extraction of Wh-elements and the semantic import of Wh-questions. Some further phenomena regarding quantificational scope will be also considered.

### 3. On the Interaction of Preverbal Subjects and the Scope of Quantifiers

The previous section has shown that the position that a quantified subject occupies at S-Structure has some implications with respect to the scope possibilities of this element. In this section I will show that, in addition to the possible construals for the subject itself, the position that this element has at S-Structure has further implications for some other elements of its own clause as well as for the semantics of the clause in which it is contained.

Section 1. presented an analysis of constructions involving Wh-questions; recall that, as was discussed there, the regular word order in these cases is VSO.<sup>55</sup> Let us now turn to some interrogative sentences displaying the SVO word order; under our analysis, interrogative sentences where the subject has moved to SPEC/IP. Consider the following contrast:

- (26) (?) Qué dice Juan que María ha dicho que Ana ha comprado t?  
 What says Juan that María has said that Ana has bought  
 'What does Juan say that Mary said that Ana bought?

(55) It should be remembered that we proposed two different structures to account for the VSO sequences; see section 1. for discussion.

(27)

- a. Por qué dice Juan que ha dicho María que ha comprado Ana el coche t ?  
 Why says Juan that has said María that has bought Ana the car
- b.\* Por qué dice Juan que María ha dicho que Ana ha comprado el coche t ?  
 Why says Juan that María has said that Ana has bought the car

While the long distance extraction of an argumental Wh-phrase out of sentences with preverbal subjects is grammatical, the corresponding case of extraction of an adjunct Wh-phrase is not good.<sup>56</sup> Interestingly, sentences like (26) with preverbal subjects in the embedded clause present a subtle difference in meaning with respect to their counterparts with the embedded subject in VP, like (28):

(28)

- Qué dice Juan que ha dicho María que ha comprado Ana t ?  
 What says Juan that has said María that has bought Ana  
 'What does Juan say that Mary said that Ana bought?

Although abstracting from the position of the embedded subjects the two sentences (26) and (28) are syntactically identical, there is a slight difference in their interpretation, having to do with the presuppositional force of the embedded sentences. The consideration of some other relevant examples will shed some light on this subtle semantic difference.

Parallel to the impossibility of downstairs readings in long distance Wh-extraction in examples like (27b), examples of short distance extraction of adjuncts also reveal a contrast with respect to the possible source of the extraction of the Wh-phrase, which is in turn dependent on the location of the embedded subject, as the examples in (29) illustrate:

(29)

- a. Me pregunto COMO ha mandado JUAN a su hijo a ese colegio privado  
 (I) wonder how sent Juan his child to that private school  
 I wonder how John sent his child to that private school
- b. Me pregunto COMO JUAN ha mandado a su hijo a ese colegio privado  
 (I) wonder how (come) Juan sent his child to that private school  
 I wonder how (come) John sent his child to that private school

In (29a), where the subject of the subordinate clause remains in its base generated position, the speaker is requesting information on the way in which Juan sent his

(56) It is worth noting that Torrego (1984) presents different grammaticality judgments with respect to Wh-adjunct extraction. According to her, long distance extraction of adjuncts out of clauses with preverbal subjects is grammatical. Her explanation is that a Wh-adjunct moves successive cyclically COMP-to-COMP but that, differently to argumental Wh-phrases, it does not trigger Verb Preposing obligatorily (see fn. (6)). This apparent contradiction with respect to the empirical data might have to do with the intonation pattern in which these sentences are uttered. Thus, it seems that the downstairs reading of (27) is possible with a particular kind of intonation, which is very similar to the typical intonation of echo-questions (a matter which I will not discuss here). With regard to the long distance extraction of Wh-arguments, on the other hand, in that work it is considered more degraded than what I do here. See Torrego (1984) for discussion. See also Uriagereka (1988) for additional cases where the downstairs reading of an adjunct Wh-phrase in the uppermost SPEC/CP at S-Structure in examples involving double embedding depends on the lexical specification of the SPEC/IP of the intermediate clause.

child to that private school. In (29b), with the embedded subject in SPEC/IP, it is presupposed that Juan sent his child to that private school and the question reflects a 'surprised reaction' or, loosely speaking, a rhetorical question from the part of the speaker, roughly as in the English sentence 'I wonder how come John sent his child to that private school'; that is, how come that happened.<sup>57</sup> Thus, the fact that the subject appears in SPEC/IP has the consequence that this clause is interpreted as presupposed. The contrast in meaning pointed out above between (26) and (28) parallels the difference in presuppositional force that we have just seen distinguishes (29a) from (29b) and, in the same way as in (29b), the preverbal position of the embedded subjects in (26) triggers the presuppositional reading of their clauses.

Kiparsky & Kiparsky (1971) argue that presuppositions are constant under negation; by this we can interpret that presuppositions have wider scope than negation. If this is correct, given the contrast observed in the previous examples, some asymmetries should be expected with respect to the scope between a sentential complement and a matrix negation conditioned by the location of the subject in SPEC/IP or SPEC/VP. In effect, this prediction is borne out; consider the following examples:

(30)

- a. Los periódicos no han publicado que ha comprado la gente máscaras de gas  
 The journals not published that bought people gasmasks  
 'The journals did not publish that people bought gasmasks'
- b. Los periódicos no han publicado que la gente ha comprado máscaras de gas

The sentences in (30) are again parallel in all respects except for the position of the embedded subject; in both cases the matrix clause is a negative sentence but, while the subject of the sentential complement remains in its base-generated position in (30a), it has raised to SPEC/IP in (30b).<sup>58</sup> When the meaning of these

(57) There seems to be general agreement on the fact that in (29a) *cómo* can be interpreted either as requesting information on a VP-adjunct or on an IP-adjunct. In the case of (29b), it is also clear that the VP-adjunct reading disappears and that the question has a 'how come' meaning. However, there exists some discrepancy with respect to the possibilities of the IP-adjunct reading. Thus, whereas for most speakers I have consulted this reading is not available, Juan Uriagereka (p.c.) informs me that it is still possible for him.

Interestingly, the IP reading of the Wh-adjunct in short distance extraction of clauses with preverbal subjects, if possible, is probably only available when the interrogative sentence is an embedded clause. See Uribe-Excebarria (in progress) for discussion.

(58) An interesting question arises here as to what ensures that the preverbal subject is in SPEC/IP and not, say, in the SPEC of the Sig P proposed by Laka (1990) (see fn. (25)). (The question is relevant especially when Laka's suggestion that the nature of Sig P could be characterized in terms of the speakers presupposition is taken into account). There seems to be some evidence that that is not the case. Observe that if Laka is correct only one XP can be fronted to the SPEC/Sig P and the inflected verb immediately follows the moved XP, having itself moved to the head position of SigP. However, relevant cases as the one in (i) can be constructed where an adverb appears in between the subject and the verb, which goes against the strict adjacency requirement observed between material in SPEC/SigP and the head of SigP, and suggests that the subject is not located in the specifier of that projection:

- (i) Los periódicos no han publicado que la gente frecuentemente compra máscaras de gas  
 The journals not have published that people frequently buys gasmasks  
 'The journals haven't published that people frequently buy gasmasks'

As in the other relevant cases with preverbal subjects, the embedded clause in this type of examples is equally presupposed and has scope over negation.

sentences is considered in detail the expected asymmetry arises: whereas (30a) is neutral with respect to the truth value of the complement CP, the reading of (30b) can be paraphrased as 'the fact that people bought gasmasks has been omitted by the journals'. In this case the sentential complement has scope over the matrix negation, as roughly represented in (30'b).

(30'b) [Ex: people bought gasmasks] the journals didn't publish x

That it is the different structural position of the subject that has to do with the presuppositional reading is shown by the contrast between examples like (31a) and (31b).

(31)

- a. No sé POR QUE quería JUAN ir a ese concierto; aunque, en realidad,  
(I) don't know why wanted Juan to go to that concert; though, to be honest,  
no estoy segura de que quisiese ir  
I am not positive he wanted to go
- b. \*No sé POR QUE JUAN quería ir a ese concierto; aunque, en realidad,  
(I) don't know why Juan wanted to go to that concert; though, to be honest,  
no estoy segura de que quisiese ir  
I am not positive he wanted to go

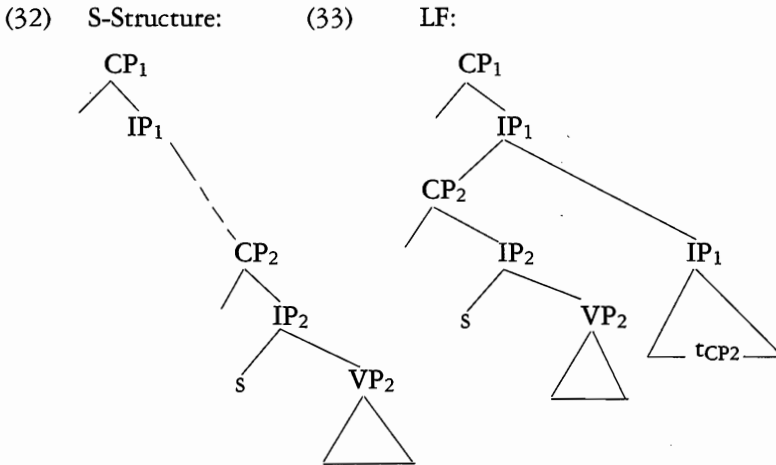
Both sentences are identical except for the location of the subject *Juan*. Crucially, whereas (31a) is grammatical, (31b), with *Juan* preceding the verb, is ungrammatical. The reason for this is that the preverbal placement of the subject in (31b) involves a presupposition (namely, that Juan wanted to go to that concert) that is immediately denied by the following clause, yielding a contradiction.

From what we have seen so far the location of the subject in SPEC/IP triggers a presuppositional reading of the clause in which it is contained, which in that case takes scope over the matrix clause. Furthermore, the position of the subject is also directly related to the possibilities of long distance Wh-extraction; as we have seen, arguments can be extracted out of clauses with preverbal subjects but adjuncts cannot, which seems to point to an analysis in terms of the classical asymmetry of arguments vs. adjuncts with respect to the ECP. In addition, the range of readings of some adjunct Wh-phrases in short distance extraction has also been shown to depend on the surface position of the subject. Since the presupposed embedded clauses with preverbal subjects take scope in the matrix clause, I will take this to be a distinctive property of these constructions and explore its consequences, as well as the way in which this characteristic can account for the cluster of phenomena that we have mentioned here.

### 3.1. *The Adjunction Hypothesis*

We have just seen that the clauses under consideration take scope in the matrix clause. Let us assume, then, that as in the case of simpler quantificational expressions their scope is obtained in relation to the position they occupy at LF. Since the position the clauses under analysis occupy at S-Structure is different from the one that corresponds to their scope taking position, the embedded clause with preverbal

subject will have to move at LF. In the simplest case, the one with a single level of embedding and a preverbal embedded subject, the S-Structure and LF representations will look like (32) and (33) respectively:<sup>59</sup>



As (33) displays, the hypothesis to be worked out in more detail through this section captures the scope differences of the sentential complements by the movement and adjunction operation of the presupposed sentence to the immediately dominating IP. As the result of this movement, the subordinate clause is in a position in which it can take scope over the matrix predicate, as is typical of the semantics of these constructions.<sup>60</sup>

(59) Higginbotham (1985) observes that nominals like the one in brackets in (i), have the property that their use implies the truth of the sentence corresponding to the nominal:

- (i) Mary persuaded me of [John's lack of talent]

As he observes, the reason for this cannot be in the verb 'persuade', which is non factive both when its object is sentential or an NP:

- (ii) a. Mary persuaded me [that John lacks talent]
- b. Mary persuaded me of something (false)

He suggests that the property of such abstract nominals can be accommodated under an analysis of the type in Higginbotham (1982) for the 'naked infinitive' complements to verbs of perception and causation. In that work, it is argued that 'naked infinitive' complements are indefinite descriptions of individual events. Taking advantage of the event position proposed by Davidson for action verbs, Higginbotham proposes that the apparent clausal structure of 'Mary leave' in (iii) below should be represented as in (iv), where an implicit existential quantifier quantifies over events. The logical form representation proposed for (iii), then, would look like that (v).

- (iii) I saw [Mary leave]
- (iv) (∃x: x is an event & leave (M, x))
- (v) [∃x: x is an event & leave (Mary, x)] John sees x

Following Higginbotham, this would account for the ungrammaticality of sentences like (vi), since at the level of LF this sentence would have the representation in (vii), a typical Proper Binding Condition Violation:

- (vi) \*John<sub>i</sub> was seen t<sub>i</sub> leave
- (vii) [leave t<sub>i</sub>]<sub>j</sub> John<sub>i</sub> was seen t<sub>j</sub>

Considering this analysis, the structure proposed for (i) would be:

- (viii) [∃x: lack(John, talent, e)] Mary persuaded me of e

If factivity is related to the existence of an event, the analysis in the text, while different in many respects, is reminiscent to the one proposed by Higginbotham. See Hegarty (1990) for discussion on how to accommodate the event type analysis of Higginbotham to factive phenomena.

(60) Note in passing that the trace left by the movement of the sentential complement will be lexically governed by the trace of the verb.

Having briefly seen the adjunction mechanism and the resulting structure at LF for the simplest case, let us now turn to a more complicated one, involving double embedding. This would be the case of the examples (26) and (27b), repeated here for convenience:<sup>61</sup>

- (26) (?) Qué dice Juan que María ha dicho que Ana ha comprado t ?  
 What says Juan that María has said that Ana has bought  
 'What does Juan say that Mary said that Ana bought?

- (27b) \*Por qué dice Juan que María ha dicho que Ana ha comprado el coche t ?  
 Why says Juan that María has said that Ana has bought the car

(61) Sentences involving a single level of embedding show a parallel contrast with respect to the downstairs reading of the Wh-adjunct and its relation to the structural location of the embedded subject; consider (i) and (ii):

- (i) Por qué ha dicho Juan que ha venido María?  
 Why has said J. that has come M.  
 (ii) Por qué ha dicho Juan que María ha venido?  
 Why has said J. that M. has come

Thus, whereas example (i) seems to be ambiguous, most speakers show a tendency to find (ii) unambiguous, interpreting *por qué* in the higher clause. Nevertheless, according to some of them, there are some cases in which it is possible to recover from the unique unambiguous reading and interpret the Wh-adjunct in the lower clause. The judgements are, for the most part, quite subtle and several facts seem to obscure the relevant empirical facts. In some of those cases, although the possible answers look as if the adjunct is being read in the embedded sentence, this is not necessarily so; consider the following example:

- (iii) Q: Por qué piensas que María ha venido?  
 Why you-think that M. has come  
 A: Porque tenía un examen  
 Because she had an exam

At a first glance the answer seems to correspond to a downstairs reading of the adjunct Wh-phrase; observe, however, that it is also compatible with a matrix reading, if (iii-A) is considered equivalent to (iv,a) rather than to (iv,b), as seems to be the case:

- (iv) a. I think that because she has an exam  
 b. She came because she has an exam

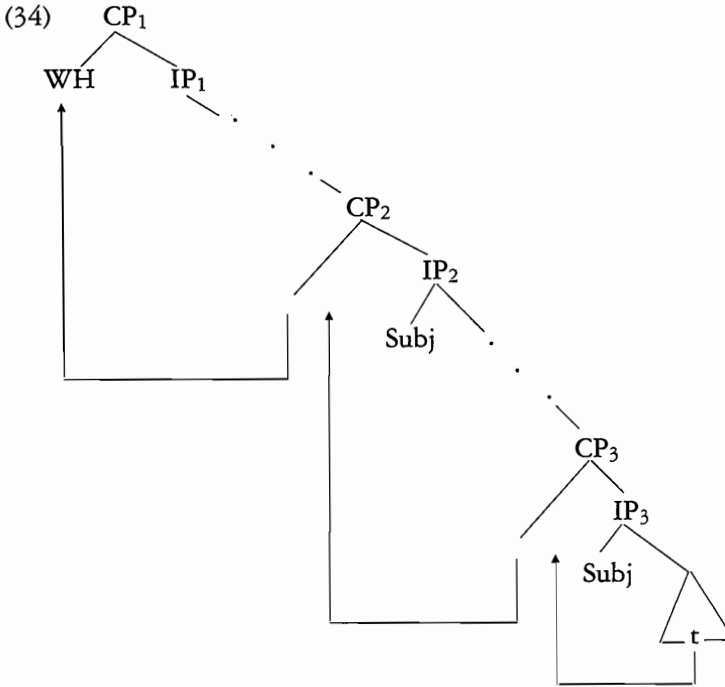
Some further factors might also be playing a role, as for instance, the aspect and tense of the verbs. Thus, the downstairs reading of the adjunct, available in (v,a) and (vi,a) where the embedded subjects are postverbal, is probably harder to be recovered in (vi,b), where the embedded verb is in the future tense, than in (v,b).

- (v) a. Cuándo han anunciado que ha llegado María?  
 When did they/was announce(d) that has arrived M.  
 b. Cuándo han anunciado que María ha llegado?  
 (vi) a. Cuándo han anunciado que llegará María?  
 When did they/was announce(d) that will arrive M.  
 b. Cuándo han anunciado que María llegará?

Interestingly, the downstairs reading seems to be precluded when two levels of embedding are involved. Thus, most speakers consistently reject that the most deeply embedded clause can be an extraction source of the Wh-adjunct in (27b).

As mentioned above, the judgements are quite subtle and it is sometimes difficult to know whether the downstairs reading is really possible or just apparent with one single level of embedding, though it is very clear that the speakers I have consulted find it much harder when the embedded subject is preverbal. A possible explanation, if the downstairs reading can be somehow recovered, could be that there is somehow a way to override the presuppositional reading of the clause with the preverbal subject, avoiding in this way the raising of this sentence at LF. It would also be worth exploring whether this state of affairs is related to the possibility of quantifier lowering in clauses with one level of embedding (as (vii)), and to the impossibility of double lowering (as (viii)), if in fact the lowering can be analyzed in an alternative way involving raising, a matter that I cannot consider here. (Examples (vii) and (viii) are taken from Aoun 1990).

In this case, the two subordinate clauses have preverbal subjects and, in addition, a Wh-phrase has been extracted from the most deeply embedded one. The corresponding S-Structure representation of these two examples will look roughly like (34).



Consider the case in which the extracted Wh-phrase is an argument, as in (26) above. The Wh-argument will move successive cyclically up to the matrix SPEC/CP. Notice that the Wh-movement between D-Structure and S-Structure represented in (34) is identical to the one of the Wh-argument when the embedded subjects are postverbal, given that at this point the whole structure has not been affected by the LF raising of the embedded (presupposed) sentences. Since the extracted WH is an argument, the trace left in its base-generated position is lexically governed by the verb and assigned [+ $\gamma$ ] at S-Structure.

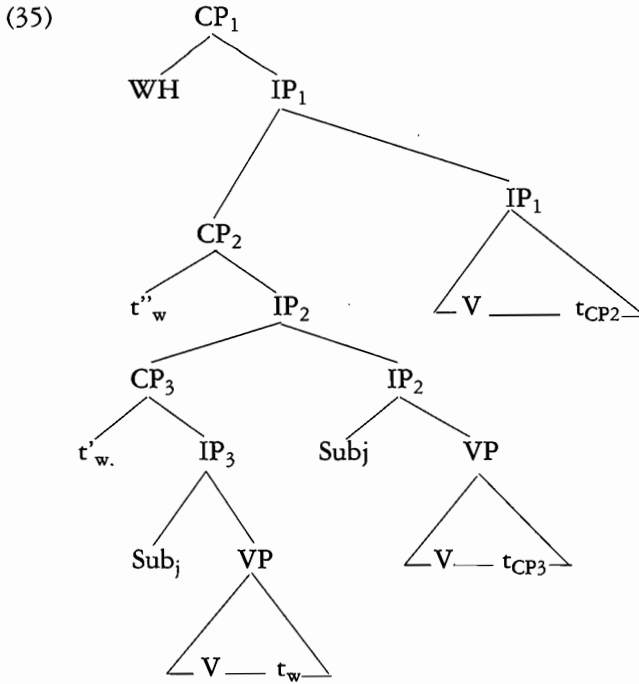
Suppose now that the extracted WH is an adjunct, as in example (27b). The Wh-movement to the highermost SPEC/CP would take place as in the case of the Wh-argument considered just now; that is, as represented in (34). However, there is a crucial difference between the two cases, since now the Wh-phrase is an adjunct and its

(vii) Some politician is likely to address John's constituency

(viii) Some politician seems to be likely to address John's constituency

In what follows, I will therefore assume that the downstairs reading of the Wh-adjunct is not possible when the embedded subject is preverbal, but admitting that some alternative strategies could be available in some cases to override the presuppositional reading of the embedded clause. See fn. (67) for an alternative hypothesis if Wh-movement is approached from a different theoretical position.

traces will not be  $\gamma$ -marked until LF; by then, the presupposed clauses have already raised adjoining to the immediately higher IP; consequently, the relevant configuration when  $\gamma$ -marking of the adjunct-traces takes place is (35) rather than (34):<sup>62</sup>



Observe, however, that the CP where the traces of the adjunct are embedded is in a typical CED configuration:<sup>63</sup> having adjoined to IP, this CP is not L-marked by the verb.<sup>64</sup> Following arguments that go back to Huang (1982), L & S (1984), and Chomsky (1986), the adjoined CPs thus constitute a barrier for antecedent-government.<sup>65</sup> In the adjunct chain under consideration, there are two traces in the chain ( $t''_w$  and  $t'_w$ ) that fail to be governed; this is so because these traces in the specifier positions of the adjoined CP<sub>2</sub> and CP<sub>3</sub> respectively are not subjacent to their antecedents ( $t''_w$  and the Wh-phrase, respectively) and thus these traces cannot be governed by them. (See fn. (73) for considerations on the initial trace). Since, crucially,  $\gamma$ -marking of the adjunct takes place at LF after all the transformational component, all the traces of the adjunct are needed, and the LF-representation in (35) violates the ECP.<sup>66, 67</sup>

(62) For ease of exposition, I am abstracting here from the movement of the Verb to INFL.

(63) The discussion here owes much to suggestions by Mamoru Saito.

(64) It is the trace left by the moved CP that is an argument and that is L-marked.

(65) See Fiengo et al. (1988) for related discussion and conclusions.

(66) See L & S (1984, forthcoming) for details.

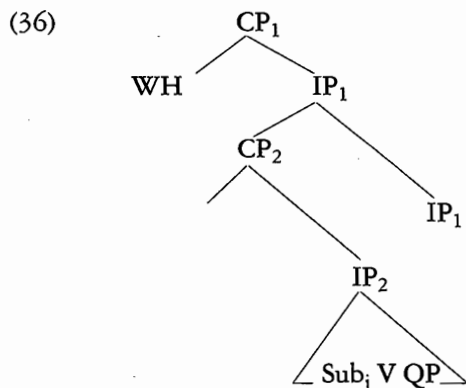
(67) Observe that the adjunction hypothesis might also be worked out if adjunct Wh-movement does not leave traces, as proposed by Uriagereka (1988) and Hegarty (1990). Suppose, along the lines in Uriagereka (1988), that Wh-movement of adjuncts does not leave traces and that we can distinguish scope from modification; suppose further



The LF adjunction analysis allows us to account satisfactorily and in a simple manner for several of the properties observed above; in concrete, the scope facts and the asymmetry that adjuncts and arguments display with respect to Wh-extraction. However, the conclusion reached just now with respect to Wh-extraction of adjuncts might seem to be in contradiction with some of the scope facts analyzed in section 2. Recall that, as we saw there, quantified adjuncts in embedded sentences with preverbal subjects allow matrix scope under certain circumstances; the case discussed in the previous section is repeated here for ease of exposition:

- (24) Qué dices que los amigos han visto en cada ciudad?  
 What say-you that the friends have seen in each city  
 'What do you say that the friends have seen in each city?'

As mentioned before, *en cada ciudad* can take scope in the matrix clause and pair readings are possible. This case clearly contrasts with the impossibility of extraction of the Wh-adjuncts in (27b), explained immediately above, and could be a possible problem for the argument. Let us reanalyze this apparently troublesome example in detail in the light of the LF-adjunction hypothesis: in this case too, the embedded clause will move at LF, adjoining to IP<sub>1</sub>; the resulting structure is represented in (36).

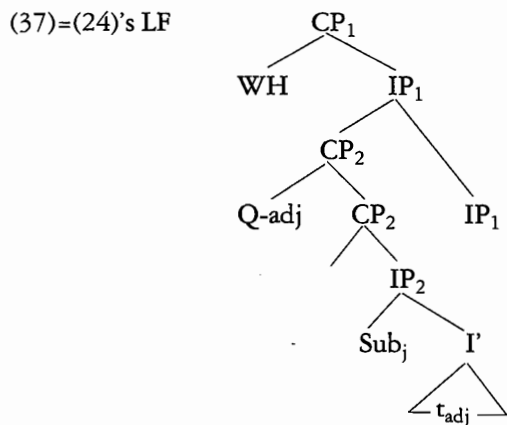


The Wh in the SPEC/CP<sub>1</sub> does not raise a problem, since it is an argument, and its trace has been  $\gamma$ -marked at S-Structure. The quantified adjunct, however, has to

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that, as Hegarty proposes, Wh-adjuncts need to be governed by a [+Q] at LF and that they can move downstairs from their S-Structure position and be appropriately interpreted in their final LF position as far as they are still governed by the [+Q] COMP at that level. If so, in the structure in (35), the reading of the Wh-adjunct in the lowermost clause would still be ruled out since the adjunct would have to move to a position where it can modify this clause and it would not get governed by the matrix [+Q] COMP in this final position (CP<sub>2</sub> would always be a barrier). A further question is whether the Wh-adjunct could be interpreted as modifying the intermediate clause CP<sub>2</sub> in (35), which relates to the discussion in fn. (61). If the Wh-adjunct moved at LF and adjoined to IP<sub>1</sub> it would still be governed by the matrix [+Q] COMP; further, it can modify IP<sub>1</sub> (to which CP<sub>2</sub> is adjoined) from that position. This might derive the possibility of the downstairs reading with a single level of embedding discussed in fn. (61) and observed by some speakers, although, then some other explanation is needed to account for why this reading is still impossible in some of those cases with the same structural configuration. See also Epstein (1991) for related discussion.

move at LF from its base-generated position to take scope. The narrow scope interpretation is immediately accounted for if the quantifier moves and adjoins to IP<sub>2</sub>. For the wide scope construal, however, the quantifier has to move higher than IP<sub>2</sub>. Let us then suppose that the quantifier moves adjoining to CP<sub>2</sub>, the resulting LF representation being as in (37):<sup>68</sup>



Observe that the quantifier has not moved out of the adjoined CP<sub>2</sub>, which would be a barrier for antecedent government of the trace. Let us now consider the scope of the quantified adjunct (Q-adj) in (37) in more detail. Assuming as a departure point May's (1985) theory of quantification, the scope of the quantifier is determined by the following rule:<sup>69</sup>

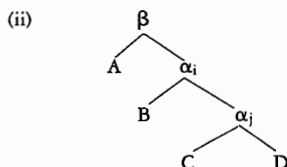
(38) The scope of  $\alpha$  is the set of nodes that  $\alpha$  c-commands at LF.

(68) It is generally assumed that adjunction to CP is not possible; this assumption is needed in order to account for several island effects that, under most theories, would be wrongly predicted to be avoided by Wh-elements using this adjunction mechanism. Chomsky (1986), following a suggestion by K. Johnson, speculates on the possibility of deriving this restriction from  $\theta$ -theory, if adjunction to a maximal projection prevents the  $\theta$ -relation between that maximal projection and its  $\theta$ -role assigner. In the structure at stake, however, the moved CP is not in a position where it has to receive a  $\theta$ -role, but rather it is its trace that is assigned the  $\theta$ -role by the verb. If this line of reasoning is correct, there is nothing to prevent adjunction of the quantifier to the moved CP<sub>2</sub>.

(69) The definition of c-command is stated as follows:

(i)  $\alpha$  c-commands  $\beta$  = every maximal projection dominating  $\alpha$  dominates  $\beta$ , and  $\alpha$  does not dominate  $\beta$ .

With respect to *dominance*, May argues that to be dominated by an occurrence of a projection has to be understood as 'being dominated by all the members of that projection'. This means that a phrase that has been Chomsky-adjoined to a given projection is *not* dominated by that projection, but only by part of it. Thus, in a structure like (ii),



the  $\alpha$ -projection dominates C and D but not B, which is dominated by  $\beta$ . See May (1985) and Chomsky (1986) for related discussion.

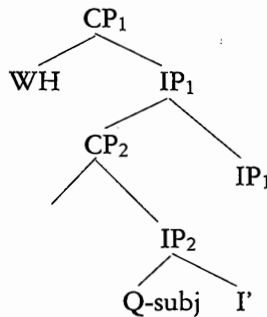
Assuming the definition of *dominance* to be as in May (see fn. (69)), the quantifier phrase will take scope over IP<sub>1</sub>, the same as the Wh-phrase. This is so because, according to May's definition, neither CP<sub>2</sub> nor IP<sub>1</sub> dominates the quantified phrase Q-adj; although this element is not excluded by CP<sub>2</sub> nor IP<sub>1</sub>, there is at least one segment of each projection that does not dominate it. Given this parallelism of scope between the two quantificational elements, pair readings are possible. This result is, indeed, the correct one and we can properly account for the scope properties of the adjunct QP in (24). What is more important, our hypothesis explains the otherwise striking asymmetry between adjunct wh-phrases and quantifiers in a unified way; the crucial distinction is that while the Wh-phrase has to be extracted out of CP<sub>2</sub> and move up to the Spec of CP<sub>1</sub>, the quantifier does not get out of CP<sub>2</sub> and, adjoining to CP<sub>2</sub> and being not exhaustively dominated by this maximal projection, it is in the appropriate structural configuration to take matrix scope.

Moreover, this hypothesis can easily extend to explain also the observed scope asymmetries between adjunct and preverbal subject quantifiers discussed in section 2. with respect to examples (23) and (24). Consider again the sentence in (23a), analyzed previously in section 2:

- (23) a. A quién dices que cada senador amaba t?  
Who(m) say-you that each senator loved

As we mentioned above, the quantified NP in SPEC/IP can only get narrow scope (scope in the embedded IP) and pair readings are not possible. We accounted for this fact arguing that SPEC/IP is an A'-position in Spanish and that once an element moves to that position at S-Structure it cannot move further at LF. As I will show now, the explanation appealed to above is compatible with the LF-adjunction hypothesis argued for in this section, and together they derive the correct result for the scopal properties of this example. Consider (39), which displays the LF structure of (23) once adjunction has taken place at LF.

(39)=(23)'s LF



Since the quantified NP has raised to SPEC/IP at S-Structure it has to remain there at LF. If so, a clear difference of the quantified subject in (23) with respect to the quantified adjunct in (37) is that, sitting in the specifier of IP<sub>2</sub>, the quantified subject is exhaustively dominated by both IP<sub>2</sub> and CP<sub>2</sub>;<sup>70</sup> therefore, it will have to restrict its scope to IP<sub>2</sub>, without the possibility of taking matrix scope. As a

(70) See fn. (69) above.

consequence of this, the WH in the matrix COMP will always have scope over the quantifier in SPEC/IP<sub>2</sub>, and no pair reading will be possible, as is indeed the case.

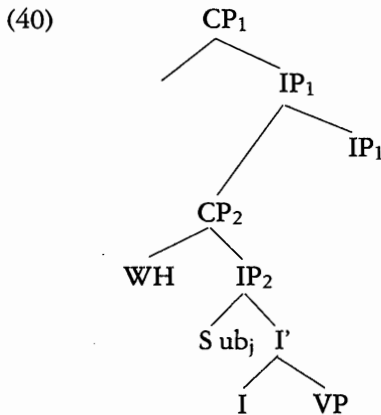
After having shown how the LF-adjunction hypothesis can derive the correct results for all the relevant cases examined in detail in this section, I turn now to a more problematic example which will lead us to reconsider the appropriateness of this hypothesis from a different point of view. Based on this case, I will present and discuss an alternative account, what I will call the *SPEC/IP hypothesis*, which instead of deriving the phenomena under analysis by appealing to an LF-adjunction operation, explains them on the basis of the barrierhood triggered by SPEC/IP. I will then discuss some alternative ways to account for part of the data without appealing to the *SPEC/IP hypothesis* as well as some striking parallelism between Wh-extraction out of factive domains in English and the asymmetries just discussed here that the *SPEC/IP hypothesis* cannot explain. Further consideration of a (partially new) set of interesting scope asymmetries not expected under the *SPEC/IP hypothesis* will also suggest that the originally proposed *Adjunction hypothesis* is, after all, on the right track.

### 3.2. The SPEC/IP Hypothesis

Let us now turn back to an example introduced at the beginning of this section when we discussed the cases of short distance extraction of Wh-adjuncts in clauses with preverbal subjects.

- (29b) Me pregunto COMO JUAN ha mandado a su hijo a ese colegio privado  
 (I) wonder how (come) Juan sent his child to that private school  
 'I wonder how (come) Juan sent his child to that private school'

As mentioned above, in this case the interrogative clause takes the *how come* meaning, and the VP and IP adjunct readings are lost.<sup>71</sup> Assuming the hypothesis above, the CP<sub>2</sub> would raise at LF, resulting in a configuration like (40):



(71) But see fn. (57) and (73).

The crucial point of this example is that the WH has not been extracted out to the matrix SPEC/CP but rather, it is inside the adjoined CP<sub>2</sub>. Still, some of the possible readings disappear. The possibility of appealing to the lack of antecedent government from an external COMP to explain the lack of the relevant construals is no longer available. Since (29a), the parallel counterpart of this example but with the embedded subject in VP, presents those readings that get lost when the subject is preverbal, it seems that the absence of the relevant readings is once again conditioned by the position occupied by the subject in the subordinate clause. In the spirit of Fukui & Speas (1986), this could be explained under the assumption that whenever the specifier of a functional projection is occupied that maximal projection becomes a barrier.<sup>72</sup> Since in (29b) the embedded subject sits in SPEC/IP, the VP-adjunct Wh-phrase would have to cross IP (a barrier under this analysis) and it would not be able to antecedent-govern its trace. Since the trace is not lexically governed either, it is not governed at all and that reading is ruled out.<sup>73</sup>

Note, however, that if the line of argumentation followed in section 1. is correct, there might be an alternative reason to account for the absence of certain readings in (29b). Thus, as we saw there, Verb Preposing seems to be obligatory in Spanish in every instance in which a Wh-phrase occupies SPEC/CP. This seems to be a necessary requirement for the clause to be taken as a regular well-formed Wh-question. In (29b), however, Verb Preposing has not taken place in the embedded interrogative, as can be gathered from the fact that the subject is preceding the verb, and therefore the clause does not qualify as a regular Wh-question. The explanation for the *how come* reading that (29b) presents would follow if it is assumed that in this case *cómo* is directly base-generated in COMP without binding a trace in IP, as has been proposed for the English *how come* by Collins (1990).<sup>74</sup>

Note, however, that even if we can satisfactorily account for the absence of certain readings in cases as (29b) involving short distance extraction by appealing to the need of Verb Preposing, the *Verb Preposing hypothesis* is not available in cases of long distance extraction of adjuncts, such as (27b). Observe that in that case Verb Preposing takes place in the matrix clause, whose specifier is occupied by the Wh-phrase; further, following section 1, Verb Preposing is not necessary in the intermediate and the most deeply embedded clause. Since the downstairs reading of the adjunct disappears when the embedded subjects are preposed, we could still appeal to the *SPEC/IP hypothesis* to account for this type of example. If we appeal to the *SPEC/IP hypothesis*, however, a question arises as to the need for LF-adjunction to explain the relevant facts. Note that the phenomena of Wh-extraction covered by the *Adjunction hypothesis* so far can be accommodated within the *SPEC/IP hypothesis*,

(72) I will not make precise this possible analysis in its whole here.

(73) A possible explanation, suggested to me by Juan Uriagereka (p. c.), for the fact that the adjunct reading is still possible for some speakers would be to assume that the IP adjunct is higher than SPEC/IP in D-Structure. Thus, when extracted, it does not cross over the subject and moves without crossing a barrier.

(74) If Collins's analysis can be extended to Spanish examples like (29b), there might be an account for the absence of Verb Preposing in this case, as brought to my attention by Michael Hegarty (p. c). In effect, since *cómo* would be sitting in COMP the verb cannot move to that position.

The preverbal position of the embedded subject in that example might have to do with the fact that *cómo* ('how (come)') presupposes the truth of its complement, as has been argued for *how come* by Collins. See Collins (1990) for the details.

given that the subject is always preposed in the relevant cases of long distance extraction. Consider the following structure, representative of the long distance extraction cases:

(41) [CP WH<sub>adj</sub> V [IP ... [CP t [IP S V [CP t [IP S V t ]]]]]]

The movement of the WH from the most deeply embedded clause to the matrix COMP would have to cross over two IPs where the subject is in preverbal position. Since, following the *SPEC/IP hypothesis*, the presence of the subject in SPEC/IP creates a barrier, the derivation in (41) would be prevented by the failure of antecedent government to hold, yielding an ECP violation. In the case of Wh-arguments, since the initial trace is lexically governed the derivation would still be allowed.

This second analysis, thus, could correctly derive the arguments vs. adjunct asymmetry with respect to the Wh-extraction. What is not so clear however is how the scope properties of the clauses with preverbal subjects can be accounted for under this hypothesis. Recall that one of the motivations for the *Adjunction hypothesis* was precisely to provide an explanation to the fact that these clauses take scope in the matrix IP.

Furthermore, although the two theories overlap to some extent and are somehow redundant with regard to Wh-extraction of adjuncts in Spanish, there are some striking similarities between the Spanish Wh-movement of adjuncts analyzed above and some English examples where the S-Structure position of the subject does not seem to be relevant. Thus, in opposition to its Spanish counterpart in (29b), the Wh-phrase in the English sentences in (42) can be interpreted either with the IP-adjunct reading or with the VP-adjunct one. The same is true in long distance extraction cases when the adjunct Wh-phrase can move successive cyclically, as in (42):

- (42) a. I wonder how John sent his child to that private school  
 b. Why do they think [that she bought the book t ]

As just said, the presence of the subject does not affect the possible readings within the embedded clause of the adjunct Wh-element.<sup>75</sup> Now, when we consider the extraction facts of Wh-phrases out of sentential complements of factive verbs in English and compare them to the Spanish cases with preverbal subjects discussed above, a surprising parallelism arises:

- (43) a) Extraction of Wh-adjunct  
 \* Why did they { admit } [ that she bought the book t ]  
 { forget}  
 b) Extraction of Wh-object  
 What did they { admit } [ that she bought t ]  
 { forget}  
 c) Extraction of Wh-subject  
 ? Who did they { admit } [ t bought the book ]  
 { forget}

(75) If the characterization of SPEC/IP in English and Spanish is correct, this might indicate that the relevant factor for creating barrierhood is not just whether the specifier of an inflectional category is occupied but rather whether an A'-specifier is, which indirectly points in the same direction as the hypothesis defended here.

As the examples show, the argument vs. adjunct asymmetry observed above in the Spanish examples also holds in English. In this case, however, the ungrammaticality of (43a) cannot be accounted for by appealing to the *SPEC/IP hypothesis*, provided that the downstairs reading of the adjunct in (42b) is available. What is relevant here is that the Spanish cases with preverbal subjects and the English cases in (43) all share an important property: that the clausal complement is equally interpreted as presupposed. If we appeal to the *SPEC/IP hypothesis* to account for the Spanish facts a clear generalization is missed, since this hypothesis has nothing to say about the English case: notice that (42b), identical to the ungrammatical (43a) except for the lexical verb chosen in the main clause, does not lose the downstairs reading of the adjunct. The *Adjunction hypothesis*, on the other hand, can provide an unified account with the need of no further assumption.<sup>76</sup>

### 3. 3. *The Adjunction Hypothesis Revisited*

In the remainder of this article I will show that it is not clear how some scopal properties of quantified phrases can be accounted for unless an LF movement of the subordinate clauses under analysis takes place. For this, we will have to turn back and reanalyze the interaction holding between the position of the subject and the scopal facts. We have already seen that quantified adjuncts contained in subordinate clauses with preverbal subjects can take matrix scope in those cases where a Wh-argument extracted from the embedded clause is in the matrix COMP. The relevant example, the one under (24), has already been discussed extensively in section 2. and at the beginning of this section. For ease of the exposition, it is repeated here again.

- (24) Qué dices que los amigos han visto en cada ciudad?  
 What say-you that the friends have seen in each city  
 'What do you say that the friends have seen in each city?'

The important fact to note is that if the subject of the embedded sentence remains in its D-Structure position within VP instead of raising to IP (as in (24)), the matrix scope construal of the adjunct QP disappears and, consequently, pair reading answers are not possible.

- (44) Qué dices que han visto los amigos en cada ciudad?  
 What say-you that have seen the friends in each city  
 'What do you say that the friends have seen in each city?'

To say it in a different way, only when the embedded subject is preverbal is the matrix scope available for the quantified adjunct. The reason why this should be so is not trivial. Some possible ways out of this problem could be suggested.

Let us consider in the first place a hypothesis where the absence of matrix scope

(76) Needless to say, the topic of factivity is too complex to be considered in its whole here. However, if the approach taken here is correct, it might open a promising way of research of these structures. For a recent and interesting approach to the topic from a different point of view, the reader is referred to Hegarty (1990). See also references in fn. (59).

in (44) is due to the assumption that the adjunct QP is clause bound.<sup>77</sup> This assumption by itself, however, would leave unexplained the possibility of matrix scope in (24), since we should have to admit that 'clause-boundedness' can be violated under certain circumstances. In section 2. fn. (39), a difference was mentioned with regard to the distinct scopal properties of QP that some speakers note in subjunctive and indicative complements. It was suggested there that the difference could be attributed to the islandhood that indicative complements display in this respect. A suggestion was presented in that footnote to account for the possibilities of pair readings that QPs inside indicative complements present despite the islandhood of indicative subordinates. Following that line of reasoning, it might be argued that the quantified adjunct in (24) is clause bound but it can get a wide scope reading because of the relation established between the raised quantified phrase (which would adjoin to the embedded IP at LF) and the trace left by the extracted WH in the embedded SPEC/CP. If this hypothesis were correct, an immediate prediction would be that the same procedure is available for the adjunct QP in (44): under this analysis, the adjunct would raise at LF and adjoin to the embedded IP; the relation between the moved quantified phrase and the trace left by the WH in the embedded SPEC/CP would be the same as that established in the case of (24). Consequently, we would expect for the adjunct QP in (44) the same matrix scope reading available for it in (24). However, as has already been said above, this prediction is not borne out. To finish, if the approach is taken that *en cada ciudad* is not clause bound, we will get into the same kind of difficulties we ran into before to account for the different scopal properties of (24) and (44), since there is no obvious way to find any relevant difference between the derivation that the adjunct QP would have in (24) and the one in (44). On the other hand, if we follow the *SPEC/IP hypothesis*, there is no way to explain the properties at stake either. Observe that it is precisely in those sentences with the preverbal subject that the matrix reading is possible, which means that the adjunct QP can avoid the barrierhood of the embedded IP by adjoining to it in its way up. But if this derivation is correct, it remains mysterious what prevents the same derivation for the QP-phrase in (44).

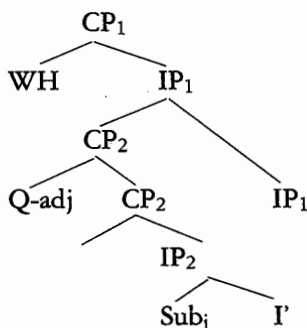
Summarizing, it seems therefore that none of the alternative accounts explored so far can give a satisfactory explanation of the different behaviour that (24) and (44) display with respect to the scopal facts, whether by considering the quantifier clause bound or not. The *Adjunction hypothesis*, on the other hand, provides an elegant explanation of the phenomena under analysis.

From the scopal properties observed so far it seems that the quantified adjunct is clause bound, since otherwise it might be able to move to take matrix scope independently of the location of the subordinate subject. Let us assume that this is correct, while keeping in mind that it is only when the embedded subject is in SPEC/IP that the quantifier can take wide scope. Recall the structure proposed by the *Adjunction hypothesis* to account for the scopal properties of (24), previously given in (37):

(77) For some discussion on this topic see, among others, May (1977, 1985, 1988), Aoun & Hornstein (1985), Williams (1988), Mahajan (1990) and references therein.

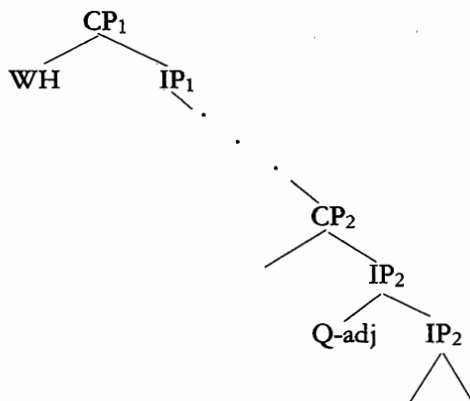


(37) LF Representation of (24):



As was argued for above, the wide scope and pair reading answer possibilities follow from *Q-adj* not being exhaustively dominated either by CP<sub>2</sub> or by IP<sub>1</sub>. Consider now the LF representation of (44), the counterpart of (24) but with VP internal subject. Since the subject has not moved to SPEC/IP, no LF movement of the embedded clause will take place.

(45') LF representation of (44):



Observe that in this LF configuration the quantifier is exhaustively dominated by CP<sub>2</sub>, which prevents it from taking matrix scope, a desired result. With this hypothesis, the scopal properties of this example and its contrast with (24) follow straightforwardly.<sup>78</sup>

(78) While, for most speakers I have consulted, the scope properties of the embedded adjunct is clearly dependent on the position of the subordinate subject, the grammaticality judgments with regard to the wide scope construal of a quantified object in clauses with postverbal subjects is not a clear matter, and raises a whole set of interesting questions. Consider the following representative pairs:

- (i) a. Qué dices que Pedro ha dado a cada amigo  
 What say-you that Peter has given to each friend  
 'What do you say that Peter has given to each friend'
- b. Qué dices que ha dado Pedro a cada amigo  
 What say-you that has given Peter to each friend  
 'What do you say that Peter has given to each friend'

In this section I have argued that the structural position of the subject has implications for a wide range of quantificational phenomena and conditions, at the same time, the semantics of the sentence. It has been shown that Wh-extraction of adjunct phrases and its range of meaning possibilities is dependent on the appearance of the subject in SPEC/IP, while Wh-extraction of arguments is always allowed. It was observed that preverbal subjects trigger a reading in which the sentence to which they belong is understood as presupposed; further, in the case of subordinate sentences with preverbal subjects, the embedded clause typically takes scope over the matrix clause. To account for the phenomena under discussion I proposed that subordinate clauses with subjects in SPEC/IP move at LF to take scope and adjoin to the immediately higher IP.<sup>79</sup> This hypothesis proved to be correct to account for all the scopal properties of the relevant data. An alternative hypothesis that appealed just to the barrierhood of IPs with specified subjects was then examined, and we compared and discussed both hypotheses; in the light of the scopal properties of clauses with preverbal subjects, the parallelism of the Wh-extraction facts out of factive complement in English the Spanish data under analysis and, to finish, the impossibility of wide scope that subordinate adjunct QPs present in this language in sentences with postverbal subjects, we concluded that the Adjunction Hypothesis seems to be, after all, independently needed.

- (ii) a. A quién dices que Pedro (le) ha dado cada libro  
 To whom say-you that P. ((s)he-D) has given each book  
 'Who do you say that Peter has given each book to'
- b. A quién dices que (le) ha dado Pedro cada libro  
 To whom say-you that ((s)he-D) has given P. each book  
 'Who do you say that Peter has given each book to'

For those speakers I have consulted the quantified object in the embedded sentence in (ia) and (iia) (those with the preverbal subject) can take matrix scope. Interestingly, there is some divergence with regard to the possibilities of the wide construal in (ib) and (iib). Thus, while some speakers accept the reading where the quantifier takes matrix scope some others do find some difficulties. Further, any classificatory attempt gets complicated by the fact that, as explained in section 2, postverbal quantified subjects in VP can always take matrix scope in opposition to those that move to SPEC/IP at S-Structure and only have a narrow reading. The relevant pair is repeated here:

- (20) a. A quién dices que amaba cada senador t ?  
 Who say (you) that loved each senator  
 'Who do you say that each senator loved?'
- (23) a. A quién dices que cada senador amaba t ?

It seems therefore that we have a three way distinction: (i) quantified adjuncts are always dependent on the position of the embedded subject; (ii) quantified subjects in VP can always get wide scope, those in SPEC/IP only get embedded scope; (iii) quantified objects can always take wide scope for some speakers but are dependent on the position of the subject for others. It is not clear how to account for this state of affairs and some additional assumption seems to be necessary in order to explain the whole paradigm above. I leave this open for further research.

(79) Within the *Adjunction hypothesis* there is a second alternative which, though left unexplored for the time being, I would like to briefly point out. Thus, it might be that, instead of the whole subordinate clause with the preverbal subject, it is just the IP immediately dominating the preverbal subject that moves. Under this hypothesis, the Wh-arguments/Wh-adjuncts asymmetry would also come from the different levels at which  $\gamma$ -marking of their traces takes place, as above, and the impossibility of adjunct extraction would follow from a violation of the Proper Binding Condition in the resulting configuration once adjunction at LF takes place. The other asymmetries would derive in the same way as proposed above. Observe that, under this hypothesis, the presupposition would follow as the semantic result of a syntactic pied-piping operation at LF. Some further relevant data have to be considered and different problems be solved before we can evaluate the two alternatives in their whole. This is left open for further investigation.

Summarizing, this paper has studied the structural positions available for the subject at S-Structure in Spanish, their nature and properties, and the relevance that the placement of the subject in those locations has for a wide range of quantificational phenomena.

We have first analyzed the VSO sequences of clauses involving (long distance) Wh-extraction. It has been shown that this word order, which following the classical analysis results from the uniform application of a single rule of Verb Preposing, underlies two different processes and structures, which accounts for the distinct properties displayed with respect to the adjacency requirement by the Wh-phrase/verb and Wh-trace/verb pairs respectively; this led us to disregard Verb Preposing as relevant evidence for successive cyclicity. The study of the different properties of the two positions available for the subject, namely SPEC/VP and SPEC/IP, and the characterization of SPEC/IP as an A'-position allowed us to account for a set of scopal asymmetries displayed by preverbal and postverbal quantified subjects in Spanish. The analysis was extended to cover some further asymmetries between preverbal quantified subjects in English and Spanish with the need of no further assumption. The behaviour of Wh-subjects in Spanish was also accounted for in a unified way.

It has been also shown that, in addition, the location of the subject in SPEC/IP has some further implications affecting Wh-extraction, the possible readings of other quantified phrases in the clause and the semantic import of its own clause, which is understood as presupposed and takes scope in the the matrix clause. We have offered an account of all these properties and asymmetries by proposing that the S-Structures of subordinate clauses with preverbal subjects do not directly match their semantic interpretation, and that a scope induced movement of the embedded clause is necessary in the mapping from S-Structure to LF. Needless to say, much remains to be done and further investigations will, no doubt, lead us to some revisions of the hypothesis; but if the basic tenets of the analysis prove to be correct, it opens an alternative and, I believe, promising way to explore the properties of quantification and to relate them from a purely syntactic perspective to a broader set of phenomena.

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# Tense-Binding and the Construal of Present Tense

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This study examines the contributions of INFL, VP and CP to logical forms relevant to the construal of simple tenses in Spanish and English. Hornstein (1981) and Enç (1987) have argued for a "relational" approach to tense construal. Unlike Tense Logic approaches, relational frameworks analyze times as "entities" in the grammars of individual languages, and propose to express certain generalizations bearing on temporal construal as deriving from grammatical principles of the LF component. Informally stated, the "relational" character of construal means that tense is interpreted as involving a relation between times. For example, the construal of tense for the sentences in (1) can be said to involve a relation between two times, the time of speech and the time of John's singing:<sup>1</sup>

- |     |                     |      |  |
|-----|---------------------|------|--|
| (1) | a. John sang.       | (1') | a. Juan cantó. 'J. sang.' <sup>2</sup> |
|     | b. John will sing.  |      | b. Juan cantará. 'J. will sing.'       |
|     | c. John is singing. |      | c. Juan canta. 'J. sings/is singing.'  |

In (1a.-b.), a precedence relation obtains. In (1a), the time of John's singing precedes the time of speaking, while (1b) the time of speech precedes the time of singing. In (1c), neither time precedes the other. In this study, I will assume the correctness of the "relational" approach to tense construal.

In Zagona (1988) it is proposed that 'Times' are expressed syntactically as TEMPORAL ARGUMENTS of a clause. Motivation for that proposal is presented below in Section 1. The central claim of this study, developed in Section 2, is that the range of readings for simple tenses should be expressed in terms of coreference and disjoint reference between temporal arguments of a clause. The primary argument for this

(1) The evaluation time is often referred to as the "moment of speech", symbolized by S. The evaluated predicate is often referred to as "the time of the event", symbolized by E. It should be noted however that many predicates do not involve the assertion of an event, due sometimes to aspectual properties of the verb ("Fred resembles Bill."), or to modal/tense properties of the clause ("Bill might sing." versus "Ellen is singing."). In the present study, no specific semantic content is attributed to the distinction between S and E. Adopting the approach of Reichenbach (1947), Hornstein (1977) and (1981) assumes an additional time, often referred to as "R" (Reference Point.)

For further discussion of "R", see Zagona (1988) and (1989b).

(2) For considerations of space, English and Spanish examples which are equivalent in relevant respects will be given as in (1) and (1'). That is, the English examples can be taken as glosses of the Spanish examples.

approach is its ability to predict the availability of "present moment" readings for simple present tense in the Spanish sentence (1'c.) above, versus the absence of this reading in the corresponding English simple present tense ("John sings."). It is shown that the contrast follows from the possibility of satisfying Principle A of Binding Theory for temporal arguments in Spanish, resulting in temporal anaphora. Section 3 examines the effects of lexical aspect, focusing specifically on contrasts between interpretations of Activity predicates and of State predicates.

### 1. Temporal Argument Structure.

This section supports the claim that clauses express temporal argument structure. In other words, the times that are related by Tenses are represented in syntactic structures as two distinct temporal arguments subcategorized by INFL (or more specifically the head of the [+/-Finite] Phrase of a clause).<sup>3</sup> INFL has a temporal theta-grid, and assigns a temporal role to its complement (VP), and a role to its external argument. Following Enç (1987), I will take the external time to be in CP. Thus, a tensed clause is temporally transitive, as illustrated in (2):

$$(2) \quad [_{CP} \text{Arg}_i \text{C}^0 [_{IP} \text{NP} [_{I'} \text{I}^0 \text{Arg}_j (=VP)]]]$$

In (2), the specifier of CP contains the temporal "Subject" of the clause, which functions as the evaluation time or "moment of speech" with respect to which the VP is evaluated. The VP is the internal temporal argument. These temporal arguments constitute a complete functional complex, which is subject to Binding Theory, as will be discussed in Section 2.<sup>4</sup>

#### 1.1. VP as an internal temporal argument

The *Barriers* analysis of Chomsky (1986) offers an initial suggestion of the notion that VP is in some sense thematically a true argument of INFL. The analysis of head movement of V-to-INFL is based on this suggestion. Theta-marking of VP by INFL allows head-movement to satisfy ECP. In a structure such as (3),

$$(3) \quad [_{IP} \text{NP} [V_i + \text{INFL}] [_{VP} \dots t_i \dots]]$$

the trace of V is properly governed by its antecedent as long as VP is not a barrier to government. It is not a barrier on the assumption that VP is theta-marked by INFL, and once movement takes place, VP is L-marked, so it is not a Blocking Category, hence not a Barrier to antecedent government of the trace.<sup>5</sup>

(3) Zagona (1989b) argues that the Fukui and Speas (1986) partition between lexical and functional categories, which analyzes INFL as a functional category, is in fact more compatible with the present approach, once AGR and [+/-Finite] categories are separate. The AgrP is argued to uniformly exhibit functional properties, while FP exhibits lexical properties. For purposes of exposition, here I will treat these two as an amalgamated head at S-structures in both English and Spanish.

(4) The indexing of the temporal arguments in (2) follows from theta marking, which is assumed to imply assignment of a (temporal) referential index as well as a thematic role, following Stowell (1981), Zubizarreta (1985) and later work. The external argument represented in CP will be assumed to be indexical (in at least matrix clauses), and will be argued to bear the features [+pronominal] [-anaphor].

(5) Once FP and AgrP are separated, this holds of movement to F, thus raising the question of how proper government for 'short movement' —to Agr-O— satisfies ECP. This may be handled in a manner similar to the treatment of X<sup>0</sup> chains of the *Barriers* analysis. In other words, AGR-O might be analyzed as a base adjunction of VP so that the maximal projection AP does not exclude the governor. The issue does not arise for present discussion, since neither English nor Spanish appears to exhibit short movement effects.

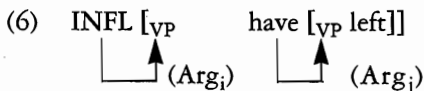


The Barriers proposal is, however, paradoxical, since VP is an argument position for head movement, and yet is a non-argument with respect to adjunction. Thus, a theory-internal argument for analyzing VP as a temporal argument of INFL is that it resolves this paradox, and in fact, may explain its effects. If VP is an argument with respect to the temporal argument structure of the clause, movement of its head is analyzable as A-movement as in Barriers. However, VP is a predicate (i.e., non-argument) with respect to the nominal arguments that it selects.<sup>6</sup>

There is evidence relevant for the construal of tenses which also supports the analysis of VP as a temporal argument. This derives from the analysis of periphrastic aspect, as in perfective clauses such as (4)-(5):

- (4) a. Juan ha salido. (=5a.)  
 b. Juan habrá salido (a las tres). (=5.b)  
 c. Juan ya había salido (cuando llegamos). (=5.c)
- (5) a. John has left.  
 b. Juan will have left (at 3:00).  
 c. Juan had already left (when we arrived).

In dialects of Spanish which pattern with English in differentiating preterite and perfect in both Past and Present tenses (cf. French, Italian and Catalan), it is necessary to express two independent sets of temporal relations: (a) the relation between the moment-of-speech and the reference time (=have), and (b) the relation between the reference time and the event. Under the present analysis, the treatment of times as syntactic constituents leads to the expectation that the second relation holds independent of the first by virtue of the presence of a second Verb Phrase. The perfective verb *have* is thus understood as a head which also subcategorizes a temporal argument:<sup>7</sup>



Analyses which assume that construal is based on syntactic relations, but which do not analyze those relations as involving syntactic constituents, cannot express the generalization that a second temporal relation is possible only where there is a separate syntactic constituent of the type shown in (6). Reducing both tense and aspect features to a single type expressed in INFL predicts that languages express morphologically simple tenses with past-perfect and future-perfect readings with the same prevalence as they exhibit simple tenses. Although such cases do exist, they are not possible either in Spanish or in English.

(6) See Zagona (1988) for discussion of syntactic effects of the dual role of VP. It is argued there that VP requires licensing under both clauses of the Principle of Full Interpretation, i.e., by Subcategorization and Predication.

(7) The External time S could be assumed to be "raised" from the external argument position of *have* in this case, although I know of no empirical effects of this decision. Notice, however, that unlike auxiliary *be*, perfective *have* must be an immediate complement of INFL. For further discussion of the relation between *have* and INFL see Takezawa (1984).

### 1.2. *The External Temporal Argument.*

All frameworks of tense construal assume an evaluation time, which, in the preceding discussion, as is conventional, has been informally referred to as the moment of speech. The point to be made here is that this time should be analyzed as a separate argument in the syntax. As mentioned above, I assume the correctness of relational approaches which analyze tense construal as involving syntactically determined relations, based on the fundamental claim that times are "entities" in languages. Given this assumption, the argument may be stated quite simply: tense relates two times, and those times may be disjoint in reference, as in (7). The temporal arguments for (7) are shown in (8):

- (7) John left.            (8) [<sub>CP</sub> Arg<sub>i</sub> [<sub>IP</sub> John I° Arg<sub>j</sub>]]

In order to express the disjointness of the two times in (7), there must be two referential indices present. By analogy with assumptions that hold for nominal argument structure, referential indices are present only by virtue of theta-marking. If "times" are treated as arguments in the syntax, it follows that the two indices represent distinct arguments. It is then expected that each one is initially assigned an independent referential index, so disjoint reference is derived unproblematically.

This conclusion differs from the Tense-Anchoring approach of Enç (1987), where the evaluation time is analyzed as a determiner of a (single) temporal argument of a clause. Weighing against that approach is the observation that the evaluation time does not have the semantic character otherwise associated with determiners. Semantically, a determiner maps a common noun (or property) to a Noun Phrase, which is a referring expression (see, for example, Keenan 1987). Thus, the whole expression, determiner+N', can have reference. This approach correlates with the assumption of X'-Theory that only maximal projections appear in non-head positions of a phrase, and thus only maximal projections will be assigned referential indices when theta-marked. A simple NP, consisting of a determiner plus N' does not contain two independently referring expressions, unless a further instance of Theta-marking occurs.

The central empirical consequence of the present approach is that a tensed clause contains a complete temporal functional complex. As a result, if temporal arguments are subject to binding, the domain within which binding is expected to apply is the clause.<sup>8</sup> I turn to this topic in section 2.

## 2. The Clause as a Temporal Governing Category.

For the following discussion, I will assume parallel treatments of external nominal and temporal arguments. Following Fukui and Speas (1986), I will assume that subjects may be generated as sisters to a theta-marking X', but they must move to

- (8) The Tense-Anchoring analysis permits inter-clausal binding in (i):

- (i) John heard that Mary was pregnant.

Under a reading of (i) where Mary's pregnancy holds at the time that John heard about it (referred to as the "simultaneous" reading) Enç analyzes the embedded INFL as bound by the matrix INFL:

- (ii) John PAST<sub>i</sub> [hear [that [Mary PAST<sub>i</sub> [be pregnant]]]]

Under the present analysis, the embedded clause contains a temporal Subject so binding of the embedded VP by anything outside the embedded clause would constitute a violation of Principle A.

the Specifier of a functional head for grammatical licensing. The landing site of this movement is the A-position for purposes of Binding. For the NP subject of a clause, this means that generation under VP is possible (as argued by Koopman and Sportiche 1988), but movement to the Spec of a functional category is necessary for Case assignment. For the temporal subject of a clause, generation as a sister to  $\bar{I}$  is possible in principle, but movement to the specifier of CP—the functional category for Tense—is necessary in order for the null temporal argument to be either ungoverned or properly governed:<sup>9</sup>

(9)  $[_{CP} \quad [_{IP} \text{Arg}_i \text{ } [_{\bar{I}} \text{INFL Arg}_j (=VP)]]]]$  (D-Structure)

(10)  $[_{CP} \text{Arg}_i \text{ } [_{IP} \text{NP } [_{\bar{I}} \text{INFL Arg}_j (=VP)]]]]$  (S-Structure)

### 2.1. The Temporal Governing Category

I will assume (11) as the definition of Minimal Governing Category, and Binding as in (12):

(11) Minimal Governing Category: the minimal XP containing  $\alpha$ , a governor for  $\alpha$ , and a subject, i.e., a “complete functional complex”. (Chomsky 1986b: 169.)

(12) Principle A: An anaphor must be bound in its MGC.  
Principle B: A pronominal must be free in its MGC.  
Principle C: An r-expression is free (in the domain of the head of its chain).

(13) Bound: coindexed with a c-commanding A-position.

The application of these principles can be illustrated for construal of PAST (preterite) in simple clauses. The preterite Past is never overlapping with the evaluation time, and I will claim that it is a (definite) r-expression, subject to Principle C (for convenience of exposition, I will abbreviate the temporal subject as  $T$  in examples from now on):

(9) I will assume that CP may bear both nominal and temporal indices, so that in cases of WH-movement, the Spec of CP may be occupied by a phrase bearing nominal features, and still be temporally indexed without conflict. This is illustrated in (i)

(i) a.  $[_{CP} \text{What}_{[a,i]} \text{ did}_k \text{ } [_{VP} \text{t}_k \text{ } [_{\text{see}} \text{e}_i]]]$     b.  $[_{CP} \text{When}_{[a,i]} \text{ did}_k \text{ } [_{VP} \text{t}_k \text{ } [_{\text{leave}} \text{e}_i]]]$

In (ia), the WH-phrase bears the index of its trace and a temporal index. This simply implies that the evaluation time of “which  $x$ ” is the evaluation time. The variable bound by this operator is included in VP, which is past. In other words, the seeing of  $x$  is past, but the operator-variable relation is linked to the evaluation time of the question. In (ib), the construal of *when* is entirely parallel. Since *when* is not a temporal argument, it has no temporal index, and it is syntactically licensed as a nominal-type VP adjunct, presumably by a null preposition following Emonds (1985). The evaluation of *when* is linked to the present, but the variable itself is included within the past time of VP. (Temporally, it picks out a time in the interval of the PAST at which John’s leaving occurred.) This predicts that VP itself cannot be WH-moved to the Spec of CP:

(ii) \*What<sub>i</sub> did they e<sub>i</sub>?

implying that VP-Preposing is a Topic structure with a null operator, as argued in Zagana (1988). Notice that *what* can bind a null VP in (iii):

(iii) They said they would leave, which<sub>i</sub> they did e<sub>i</sub>.

- (14) *María cantó* [CP T<sub>i</sub> [NP TNS+AGR VP<sub>j</sub>]] (14') *Mary sang.* [CP T<sub>i</sub> [NP TNS+AGR VP<sub>j</sub>]]

The structures in (14) satisfy Principle C straightforwardly, since VP bears an index that is disjoint from that of the external argument.

The imperfect Past, on the other hand, may be analyzed as an indefinite. It satisfies Principle C as long as it is disjoint from "NOW", but it additionally undergoes QR, adjoining to IP:

- (15) *María cantaba.* [CP T<sub>i</sub> [VP<sub>j</sub> [NP TNS+AGR e<sub>j</sub>]]] (15') *Mary used to sing.* [CP T<sub>i</sub> [VP<sub>j</sub> [NP TNS+AGR e<sub>j</sub>]]]

The reading provided by the LFs in (15) is of indefinite past instance(s) of singing.<sup>10, 11</sup>

### 2.2. *Temporal Anaphora and Readings of Simple present Tense.*

In (16)-(19) are shown the range of readings of the simple present tense for Activity verbs:

- |   |  |
|---|--|
| <p>(16) FUTURE:<br/> a. <i>María canta mañana.</i><br/> b. <i>Comemos a las siete.</i><br/> c. <i>Miramos la televisión esta noche.</i></p> <p>(17) "DEONTIC MODAL":<br/> ¿Qué sabe hacer?<br/> a. <i>Canta.</i><br/> b. <i>Escribe poesía.</i><br/> c. <i>Ya anda.</i></p> <p>(18) GENERIC (Habitual):<br/> a. <i>María canta (siempre).</i><br/> b. <i>Esa chimenea humea.</i><br/> c. <i>Come muy poco.</i></p> <p>(19) PRESENT MOMENT:<br/> a. <i>María canta (en este momento).</i><br/> b. <i>Comen.</i><br/> c. <i>Elena mira la televisión.</i></p> | <p>(16') FUTURE:<br/> a. <i>Mary sings tomorrow.</i><br/> b. <i>We eat at 7:00</i><br/> c. <i>We watch TV tonight.</i></p> <p>(17') "DEONTIC MODAL":<br/> What can she do?<br/> a. <i>She sings.</i><br/> b. <i>She writes poetry.</i><br/> c. <i>She walks already.</i></p> <p>(18') GENERIC (Habitual):<br/> a. <i>Mary (always) sings.</i><br/> b. <i>That chimney smokes.</i><br/> c. <i>She eats very little.</i></p> <p>(19') PRESENT MOMENT:<sup>12</sup><br/> a. <i>Mary sings (+right now).</i><br/> b. <i>They eat (+right now).</i><br/> c. <i>Helen watches TV (*right now).</i></p> |
|---|--|

(10) The past progressive is not construed identically, since it asserts a specific occurrence of the activity during a past interval. I will assume it to be a Past equivalent of the Present periphrastic progressive: ("María estaba cantando cuando entramos". "Mary was singing when we came in".)

(11) Unlike English, Spanish imperfects can be counterfactual, as pointed out by M. Suñer (personal communication):

- (i) *Juan cantaba, pero le cancelaron la función.*  
J. sing+imperf., but they cancelled(Pret.) the event on him  
J. was to sing, but they cancelled the event on him.

I have no explanation for this, but it seems that it may be related to the availability of deontic, or "root modal" readings with main verbs. (See 2.2)

(12) The adverb *right now* in these examples can have a future reading. The reading that is excluded is the true ongoing-present reading, as is possible in English present progressives such as "Mary is singing right now."

The analysis to be developed claims that Present-tense is not name-like as is the Preterite. Rather, it is underspecified, so that its construal is partially dependent on its binding-theoretic relation to other clausal constituents. This discussion will be primarily concerned with the readings in (18)-(19), which assert the occurrence of an activity in a non-precedence relation with the evaluation time. Before turning to these, let us consider briefly the readings in (16) and (17), which are in a sense non-present readings. The future construal of (16) involves subsequence of the activity to the evaluation time. In Zagona (1989), it is argued that present tense can be construed as future time (as in (16)) if there is a modally construed A-bar binder for it. The readings in (17) do not assert an event at all, but rather the ability of the subject to perform the specified activity. I return to the latter briefly below in connection with the Generic present. For purposes of exposition, I continue to show TNS and AGR as an amalgamated head of IP.

Returning to the readings in (18) and (19), I will show that the former readings can be derived by satisfying Principle B, and the reading in (18), Principle A. I begin with the analysis of (18), a reading which is possible in Spanish, but not in English. Consider first the S-structure of (19'a), shown in (20):

(20) [<sub>CP</sub> T<sub>i</sub> [<sub>IP</sub> Mary<sub>[I</sub> (does)] [<sub>VP</sub> sing]<sub>j</sub>]]

The proposed account of the absence of a present-moment reading for (20) is that the internal temporal argument cannot be anaphoric, since the external temporal argument is not accessible as a binder. The inaccessibility of the temporal subject is suggested to follow from the interaction of temporal and nominal functional complexes. Specifically, if both functional complexes are taken into account, the smallest available MGC for VP in (20) will be IP, rather than CP. Consequently, the temporal subject for VP is outside the VP's MGC, and VP cannot be A-bound by its temporal subject. Temporal anaphora is thus not possible. Let us assume for the moment that both functional complexes are taken into account in defining a MGC for the VP. To further evaluate the hypothesis that the present-moment reading is excluded in English in this way, let us examine the S-structure for the corresponding example (19) in Spanish, shown in (21):

(21) [<sub>CP</sub> T<sub>i</sub> [<sub>IP</sub> María [<sub>canta<sub>j</sub></sub>]<sub>VP</sub> e<sub>j</sub>]]

On the assumption that Spanish main verbs freely move to INFL, the availability of the present-moment reading for (21) may be derived, if the VP is understood to inherit a temporal (co-)index from its head. In this case, the MGC for the X<sup>o</sup> chain is CP, since CP is the minimal category which contains a governor for V+INFL. Since CP also contains the temporal subject, VP can satisfy Principle A, and an anaphoric reading is possible. I will stipulate that VP inherits its feature specification in this way, by agreement with its head. The hypothesis for English is thus supported, in that there is a configurational difference between the S-structures subject to Principle A in the two languages. To the extent that there is a correlation between V-fronting and the availability of Present-moment readings across languages, which appears to hold at least for Romance and Germanic, versus Chinese and Korean, the hypothesis is further supported.<sup>13</sup>

(13) The fact that this does seem to hold quite generally for languages with V-movement was originally pointed out to me by Rex Sprouse (p.c.)

The wider availability of Generic and Deontic present readings can be derived by satisfying Principle B, where IP is taken as the MGC:

- (22) *María canta.* (22') *Mary sings.*  
 $[_{CP} T_i [_{IP} \text{María } I^{\circ} VP_j]]$   $[_{CP} T_i [_{IP} \text{Mary } I^{\circ} VP_j]]$

In (22), one possibility that can be immediately excluded is that VP has no governing category (i.e., is temporally PRO). This must be excluded since VP has a governor: INFL. Also excluded is the possibility that VP is temporally an anaphor. Within its governing category, the only A-antecedent is the subject, *Mary*. Since *Mary* does not have a temporal index, VP cannot satisfy full interpretation unless it is anaphoric to a temporal argument. Thus, the two options in (22) are that VP satisfy Principle B or Principle C. The only means of satisfying Principle C would be to take [-PAST] VP as an indefinite, so that it undergoes QR at LF:

- (23)  $[_{CP} \text{NOW}_o [_{IP} VP_i [_{IP} \text{María } I^{\circ} e_i]]]$

I will not exclude this possibility, but will show that it is not necessary. Suppose VP were to be analyzed as a temporal equivalent of a pronominal, so that it satisfies Principle B by being free in IP. In this case, the external temporal argument is outside the MGC, and may be taken as an A-bar position relative to VP. If the IP is construed as an open sentence, the temporal subject can bind the VP predicationally:

- (24) a.  $[_{CP} T_i [_{IP} \text{María } I^{\circ} VP_k ]]]$  (S-structure)  
 b.  $[_{CP} T_i [_{IP} \text{María } I^{\circ} VP_i ]]]$  (LF')

The deontic reading may then be characterized as an absence of such a predication relation, such that no event is asserted.

To summarize, generic and deontic readings are claimed to be interpreted temporally under Principle B, with the "pronominally" construed time either predicated of NOW, deriving present generic readings, or predicated internally of the nominal subject, deriving Deontic readings. Only in case of movement of V-to-I (TNS), can VP have a present moment reading, since V-to-I expands the GC for VP, so that Principle A can be satisfied.

### 3. States

A potential counterexample to the above claim as to the syntactic distribution of temporal anaphora is the construal of "States", which are exemplified in (25):

- (25) a. *That box contains the papers.* (25') a. *Esa caja contiene tus papeles.*  
 b. *Fred seems foolish.* b. *Pedro parece bobo.*  
 c. *Martha resembles Susan.* c. *Marta y Susana se parecen.*  
 d. *Henry is tired of studying.* d. *Enrique está cansado de estudiar.*

Vendler (1967) claims that States are parallel to the activities discussed above in two respects. First, they have duration, or occur over time (unlike "Achievements" such as *reach the top*, *spot something*); second, they are said to differ from accomplishments such as *draw a circle*, *read a book*, in that any moment in the interval of the predicate is homogenous with the whole. For example, if it is true that the boxes contain the

papers at one moment in a specified interval, the predicate is true. Similarly with activities: any moment of singing makes singing true. By contrast, accomplishments can only be true at the final moment in the interval, at which the event is finished. During the interval of drawing a circle, you haven't "drawn a circle" until you're done, i.e., the last moment in the interval. Thus, any previous moment in the interval is not true, but the whole may be true.

Based on the similarities between Activities and States with respect to homogeneity of the interval with moments that it contains, it is expected that both may be construed as anaphoric to speech-time. It is in fact sometimes assumed that States entail present-moment truth. However, if Vendler's claim is correct, the proposed account of Present Moment readings based on the availability of V-movement is problematic, since States such as (25a-c) which involve main verbs cannot be treated as anaphors, since main verbs in English do not move to INFL. I must therefore account for the generalization that States hold of the present moment without deriving this effect under Principle A. I will claim that States and Activities are differentiated as in (26):

- (26) a. States hold for every moment in the interval of VP.  
 b. An activity holds for some moment(s) in the interval of VP.

At a descriptive level, the contrast in (26) is based on discussion of Gabbay and Moravcsik (1980), who observe the following properties particular to States, as opposed to non-states:

- (27) a. States: Do not imply specific changes in the subject; do not have gaps or interruptions.  
 b. Non-states: May imply change in the subject; may be punctual rather than durative, may be repetitive; may imply subintervals of activity, may allow gaps between instances of activity.

The contrast with respect to gaps/interruptions is illustrated by comparing the following:

- (28) a. Martha was a doctor.    b. Martha walked.

In (28a), Martha's being a doctor is true for every moment in an arbitrary past interval. She didn't cease to be a doctor when she was sleeping. However, the interval of walking in (28b) can still be true if she wasn't walking during every moment of the interval. She may have paused then continued, and the interval is still described as walking. Exactly how these differences should be represented syntactically is beyond the scope of the present discussion. However, the interpretation of States as universally quantified temporal arguments is consistent with the informal generalization noted above. If activities can be quantified, it is at least plausible to analyze them as taking existential quantification over individual moments within the interval linked to their VP.

The informal generalization outlined above may be translated to syntactic terms by analyzing the VP dominating a main verb State as intrinsically subject to QR.

Following Chomsky (1986b), let us assume that QR adjoins constituents either to VP or to IP:

- (29) a. That box contains your papers.  
       b.  $[_{CP} T_i [_{IP} VP_j [_{IP} \text{that box INFL } e_j]]]$   
       c.  $[_{CP} T_i [_{IP} \text{that box INFL } [VP_j [e_j]]]]]$

Furthermore, as in the case of generic/deontic readings discussed above, suppose that IP can be treated as an open sentence. In (29b), the variable bound by the temporal subject is the VP; in (29c) it is IP. Thus, as with Activity verbs which permit either Deontic or Generic readings, the same should, in principle, be possible for States. However, truth at the present moment derives not from anaphora satisfied under Principle A, but rather by the quantification structure.

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