

ON THE RELATIONSHIP OF THE LEXICON TO SYNTAX

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ABSTRACT

One of the major topics of inquiry in syntax is the relation between lexical properties and syntactic structures. This thesis is intended to be a contribution to this investigation.

In Chapters I and III, we argue that two types of predicates are to be distinguished: main-predicates and adjunct-predicates. The semantic relations induced by them may be identical in content but are formally distinct. For example, in It is obvious that Mary will pass the exam and Obviously, Mary will pass the exam the content of the relation between the adjective obvious and the S (a predicate-argument relation) and between the adverb obviously and the S (a modification relation) is the same, but they are syntactically realized in different ways. Both are defined in terms of X-theory. Nonetheless, they differ crucially in the directionality of the categorial dependency involved. A predicate-argument relation between X and Y in some domain D is typically a relation of the form "Y is a dependent of X", with X the head of D and Y some other category (crucially, not the head of D). On the other hand, a modification relation between X and Y in some domain D is a relation of the form "Y is a dependent of X" with X distinct from the head of D and Y some projection of the head of D.

We show that th-roles assigned by adjunct-predicates are invisible for the Th-Criterion -- a well-formedness condition which applies at every syntactic level and insures that every th-role is assigned to one and only one argument and every argument bears one and only one th-role. Thus, an argument may be assigned a th-role both by a main-predicate and an adjunct-predicate. For example, in John intentionally has seduced Mary both the main verb seduce and the adjunct-predicate adverb intentionally assign a th-role (an argument th-role and an adjunct th-role, respectively) to the argument in subject position. Another property of adjunct th-roles, related to the one mentioned above, is that they are assigned at LF. Thus, sentences with a subject-oriented adjunct-predicate change meaning under passive. Compare Mary intentionally has been seduced by John with its active counterpart above.

In Chapter II, we show that some types of main predicates take, either optionally or obligatorily, an adjunct subject (or more precisely, an adjunct external argument, as defined in Chapter I). These are raising predicates, which assign an adjunct *th*-role at LF to an argument selected by the verb in their clausal complement. The possibility for predicates to take adjunct external arguments derives from the fact that the subject, unlike the object, is not a subcategorized position. It is suggested that the existence of this type of predicate has implications for the typology of non-overt NPs.

While adverbs function uniquely as adjunct-predicates and adjectives function either as main- or adjunct-predicates, verbs are main-predicates "par excellence". Nevertheless, as argued in Chapter III, there is a class of verbs, namely the modals and aspectuals, which can function in certain languages as adjunct-predicates. For example, while in French modals are main verbs, in English they are adjunct-predicates (as shown by well-known syntactic tests). This demonstrates once more that semantic relations are not solely identified by their content, but also and above all by their form.

Furthermore, we argue that there are other languages -- like Spanish and Italian -- in which modals and aspectuals may be analyzed simultaneously as main verbs and "syntactic affixes". As affixes they function as adjunct-predicates: i.e., as modifiers of the verb to which they are bound. A number of peculiar properties of these verbs (the so-called "restructuring" verbs) are thus accounted for. In accord with the Projection Principle, which asserts that syntax is a projection of the lexicon, we propose that the "double-lexical properties" of modals and aspectuals in Spanish and Italian are expressed by means of parallel-syntactic analyses. Thus, sentences containing these verbs may be associated with a pair of structures -- at all syntactic levels of representation.

Further motivation for parallel or simultaneous syntactic analyses is given in Chapter IV based on the Romance causative construction. It is shown that in many Romance languages, causatives, although they are argument-taking predicates, may also function as affixes, i.e., as heads of a complex-predicate. As such they may alter the argument-structure of the verb to which they are bound. Several phenomena are thus explained, in particular, the fact that causatives in these languages appear to behave as "intransitivizers".

The analysis of modals and aspectuals in Spanish and Italian and the analysis of the Romance causatives mentioned above implies that there is no one-to-one relation between morphology and syntax. These elements are morphologically full predicates which behave as syntactic affixes. Conversely, morphological affixes -- like the Japanese causative suffix sase (discussed briefly in Chapter I) -- may behave syntactically as autonomous predicates.

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Chapter I: Syntax as a Projection of the Lexicon

I.1 The core-semantic relations and their syntactic realization

In the early work on generative grammar, it was assumed that grammars consisted of complex rules that were meant to derive all and only the grammatical sentences of languages. In such systems, rules explicitly stated the structural context in which they applied and the structural changes that they accomplished. Much investigation was hence dedicated to the details of the formulation of rules and their order of application. It was then realized that since rules had common properties, they could be reduced to a minimal format and the conditions on their application could be factored out as general principles formulated as conditions on derivations. Later, with the development of trace-theory it became possible to state these principles as conditions on representations rather than as conditions on derivations. The derivational history of sentences became virtually irrelevant. The analysis of sentences is now conceived as a set of phrase-markers, each corresponding to a distinct level of representation. Investigation then shifted from the study of rules to the study of principles which determine or characterize the set of well-formed syntactic structures.

One of the major Principles -- and probably the one with the most far-reaching consequences -- is the Projection Principle put forth by Chomsky in Lectures on Government and Binding. It states that syntactic dependencies are the

projection of lexical dependencies. These dependencies are realized or represented in a structural configuration defined by \bar{X} -theory. In effect, in a configuration of the form:

- (1) a- [γ ... α β ]
 b- [γ ... β α ]

- (i) α = a lexical category (V, A, N, P)
 (ii) $\gamma = \bar{\alpha}$ and immediately dominates β and α
 (iii) β = a position

β is a syntactic dependent of α (i.e. a complement of α). Hence, β must also be a semantic or thematic dependent of α (i.e. an argument of α). This relation is referred to as th-marking (th for thematic). Then, in (1) we say that α th-marks β . Th-marking is understood to be a lexical property of a lexical item. A verb, adjective, noun or preposition th-marks a position if and only if it assigns a th-role (agent, patient, theme, source, goal, location, etc.) to the content of that position. Consider the following examples:

- (2) a- John hit the ball.
 b- John thinks that Mary left.
 c- John is fond of Mary.
 d- The Barbarian's destruction of Rome
 e- John gave a book to Mary.

- f- John put the book on the table.
 g- John did the homework with Mary.

In (2)a and (2)b the verbs hit and think th-mark the [NP, VP] position because they assign a th-role to the NP the ball and to the S that Mary left respectively. Likewise, in (2)c and (2)d fond and destruction th-mark the positions occupied by Mary and Rome: [NP, AP] and [NP, \bar{N}] respectively (of = genitive case). The verb give in (2)e th-marks two positions in the VP since it assigns two th-roles: one to a book, another to Bill (to = dative case). In (2)f the prepositional phrase as well as the NP are obligatory. Put assigns a th-role to the book and put on assigns a compositional th-role to the table (cf. Rouveret & Vergnaud 1978). We may then say that put th-marks [NP, VP] and put on compositionally th-marks [NP, PP]. In (2)g, on the other hand, the prepositional phrase is optional. Did assigns a th-role to homework and with assigns a th-role to Mary. Following Williams 1981, we will refer to these arguments as internal arguments. Unlike the verbs in (2)a-g, verbs like work and run in (3)a-b do not take an internal argument. Hence they do not th-mark a position inside the VP.

- (3) a- John worked.
 b- John ran.

In short, the configuration in (1) defines the structure in which a lexical head and its internal arguments are syntactically realized.

Unlike the presence of an object position, the presence of a subject position is independent of the particular semantic properties of a lexical item. If a verb takes an external argument, it is syntactically realized in the subject position as in examples (4)a-b:

- (4) a- That Mary arrived late surprised John.
 b- John believes that Mary is foolish.

But if a verb takes no external argument the subject position is still present. It is filled by an expletive lexical item:

- (5) a- It seems that Mary is sick.
 b- It is believed that Mary will not come.

Furthermore, as pointed out in Chomsky 1981a, the obligatory presence of the subject is a property of the clause. In an NP the subject is optional as shown in (6).

- (6) a- The Barbarian's destruction of Rome
 b- The destruction of Rome

The subject position is then a syntactic property of the clause -- given by the phrase-structure rule in (7).

(7) S \rightarrow NP INFL VP

The structural relation illustrated in (1) between α and β is part of a more general structural notion known as government. Government is the core concept of the Government-Binding theory. It plays a crucial role in th-assignment, case-assignment, and in defining the principles of the Binding theory. Government is defined as follows: (Cf. Aoun and Sportiche, forthcoming)

(8) In the configuration:

[β ... γ α γ ]

(i) $\alpha = X^0$

(ii) where β is a maximal projection, β dominates α if and only if β dominates γ .

α governs γ .

If we assume VP to be a maximal projection (possibly a parameter), it is then the case that while a verb governs the positions in which its internal arguments are syntactically realized, it does not govern the position in which its external argument is realized -- i.e., the subject position. Consequently, it is considered that a verb indirectly assigns a th-role to the subject through the VP. We may then say that a verb indirectly th-marks the [NP, S] position. As noticed in Chomsky 1981a, a consequence of the structurally external status of the subject is that it may be assigned a compositional th-role by

the VP. Thus, not only the verb but also its internal arguments may play a role in determining the type of th-role assigned to the subject. For example, in John broke Peter's arm the subject is unambiguously interpreted as an agent but in John broke his arm the subject can be interpreted either as an agent (if John and his are not coreferential) or as a theme (if John and his are coreferential). Another consequence of this subject/object asymmetry, pointed out by D. Carter (ms), is that there can be Verb-Object idioms but not Subject/Verb idioms. Cf. Fiengo 1974, Higgins 1974, Vergnaud forthcoming for a discussion of idioms. Vergnaud suggests that the literal meaning of the nominal lexical item in a V-NP idiom is to function as an object. For example, the literal meaning of the bucket in kick the bucket is to be a formal dependent of kick: [kick ____]. The same may be said of tabs in keep tabs. The difference between kick the bucket and keep tabs is that in the former case the lexical items are completely vacated of their meaning and an idiomatic non-compositional meaning is assigned to it while in the case of keep tabs a metaphorical interpretation is assigned to it on the basis of the meaning of its parts. If something along this line is correct then it follows that Subject-Verb idioms cannot exist since the subject is not a dependent of the verb. Another subject/object asymmetry is that a verb determines the categorial specification of the object but not that of the subject. Thus, an object may be either an NP or an S but the subject is always an NP as implied by rule (7). In effect, as argued

convincingly by Koster 1978, sentential subjects do not exist. Those that appear to be cases of sentential subjects are in fact cases of topicalization. This hypothesis, besides accounting for a number of puzzling facts as shown by Koster, also provides an explanation of why there is no object-to-subject S movement. Thus the contrast between *That John left seems and That John left is obvious follows from Koster's hypothesis and the assumption that seem selects a proposition as an internal argument while obvious selects a proposition as an external argument.

Although the presence of the subject position is not derivable from the Projection Principle, it can be integrated by including the VP (or possibly XP-maximal) in condition (i) in (1):

- (9) a- $[\gamma \dots \alpha \dots \beta \dots]$
 b- $[\gamma \dots \beta \dots \alpha \dots]$
 (i) a- $\alpha = V, N, A, P$ and $\gamma = \bar{\alpha}$
 or
 b- $\alpha = VP$
 (ii) γ immediately dominates β and α
 (iii) $\beta =$ a position.

The case where γ is a projection of α is now a subcase of the th-marking configurations (cf. (9)(i)a). The positions defined in (9) are referred to as A-positions.

Note that phrase-structure rules -- except for (7) -- are partly derivable from the Projection Principle. Implicit in this statement is that a phrase-marker defines two types of formal relations at once: the left-to-right ordering of the categories and their hierarchical organization. Grammatical relations (subject-of, object-of) are defined in terms of the latter. Cf. Aspects of the Theory of Syntax. (We are here using the notions subject-of and object-of synonymously to external and internal argument respectively.) While the Projection Principle characterizes to a large extent the well-formed dominance relations, the order relations are stated in terms of independent statements such as:

X° is left-most/right-most

VP is left-most/right-most

and possibly an adjacency condition on case-marking in the case of very fixed word-order languages like English. Hence, structures may be generated freely. Those not compatible with the lexical properties of the lexical items in question will simply be filtered out by the Projection Principle. Likewise, structures not compatible with the particular ordering statements of the language will be ruled out and those that do not obey the adjacency condition on case-marking in languages that have such condition will be filtered out by the Case Filter which requires that every Noun be case-marked (cf. Chomsky 1978, Rouveret and Vergnaud 1978).

The existence of free-word order languages like Japanese strongly suggests that the grammatical and ordering relations be characterized independently from each other. To illustrate, consider the following case in Japanese:

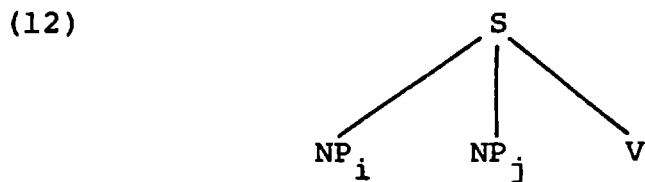
(10) NP_i NP_j tabe

$(i, j) = (1, 2)$ or $(2, 1)$, tabe is the verb 'to eat'.

On the one hand, the structure of (10) has the following properties:

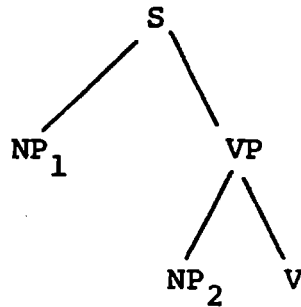
- (11) a- there is no VP constituent
 b- the subject and the object both must precede the verb (but are unordered with respect to each other)

In other words, the structure of (10) is the tree in (12).



On the other hand, the structure of (10) must include a representation of the set of grammatical relations involved: it will have to indicate that NP_1 bears the relation $[NP_1, S]$ to S and that NP_2 bears the relation $[NP_2, VP]$ to VP. (10) must then have the structure in (13).

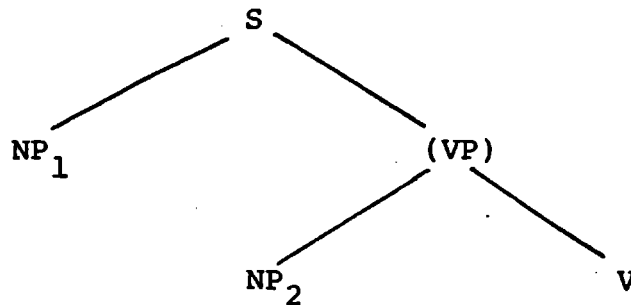
(13)



where NP_1 and VP, and NP_1 and NP_2 , are unordered.

The syntactic analysis of (10) is hence the union of the two structures (12) and (13). Cf. Chomsky 1980, 1981a. This union can be represented by the parenthesized tree in (14).

(14)



where NP_1 and VP, and NP_1 and NP_2 are unordered.

The tree that includes the parenthesized VP (i.e. (13)), we shall call the virtual projection of (14) and the tree that does not include VP (i.e. (12)), its actual projection. Since VP is only part of the virtual projection, we may refer to it as a virtual VP. The grammar of Japanese will then contain the following two conditions: VP is virtual and V is rightmost. (More precisely, V is rightmost in the first non-virtual category above it -- namely S. But this need not be stated if it is the case that ordering statements apply to the actual

projection only.) What the above case illustrates then is that we have two sets of statements. The first set, which defines the domination relations in the tree, is (15).

- (15) S immediately dominates NP and VP
 VP immediately dominates NP and V

The second set is reduced to the following statement:

- (16) V is the right-most constituent in S.

The essential questions that then arise are:

1. What is the formal characterization of (15) -- namely, how are dominance relations characterized independently of the usual concatenation along the time axis of speech?

2. What is the formal characterization of (14) -- namely, what is the formal status of VP in Japanese?

For an answer to these questions we refer the interested reader to Vergnaud and Zuaizarreta 1981. It is shown there that the formalism chosen to characterize (15) provides a natural answer to the second question raised above. We will briefly illustrate the same point (i.e. that phrase-structures encode two separate set of statements) with another example: the Japanese causative construction.

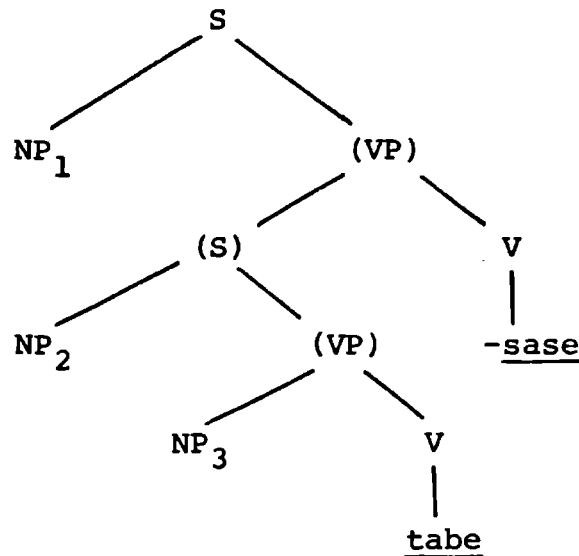
(17) NP_i NP_j NP_k V-sase

(i, j, k) = some permutation of (1, 2, 3).

V is tabe ('to eat'), sase is the causative morpheme.

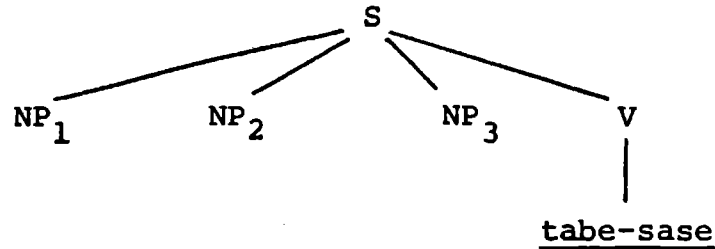
-sase functions thematically as a main verb. As such, it selects a proposition as argument -- as all causatives do. But phonologically -sase is a bound morpheme. Hence, its complement S is a virtual category. (17) then has the structure in (18).

(18)



where the ordering of all the categories except tabe-sase is free and where the parenthesized categories are the virtual categories. Recall that in Japanese V is rightmost; namely, rightmost in the first non-virtual category above it -- i.e. the matrix S in (18). This condition is met since -sase is not an independent word: rather, tabe and -sase form a single unit. The actual projection of (18) is as in (19).

(19)



where NP_1 , NP_2 , NP_3 are unordered.

There are arguments that tabe-sase is not a thematic unit but only a phonological unit. For example, in (18) if the passive morpheme -rare is attached to tabe-sase, $[NP_2, S]$ may be mapped onto $[NP_1, S]$ but $[NP_3, VP]$ may not be mapped onto $[NP_1, S]$. If tabe and -sase are thematically independent predicates as assumed in (18), these facts are straightforwardly accounted for by the Binding Principles (cf. Chapter II, section 4.1). See Kuroda 1981 for other arguments.

In English, unlike Japanese, the actual and virtual core-structures are identical (by core-structure we mean the structure defined in (9)). In the next section, we shall suggest though that there is a mismatch in English between the actual structure and the virtual structure which expresses certain adjunct semantic relations.

Coming back to the Projection Principle, another of its implications is the existence of traces. Consider a simple, passive sentence:

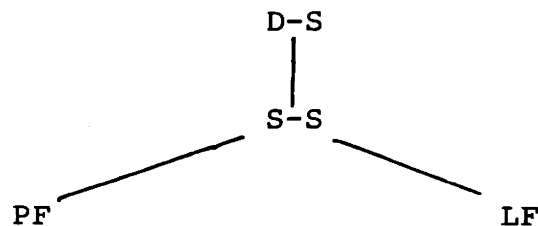
(20) John was killed (by the police).

The verb kill has an internal th-role. In the active form it also has an external th-role which is mapped onto subject position. Passive morphology alters the argument-structure of the verb: the external th-role is "internalized" (in the sense of Williams 1981) and it is optionally realized in a by-phrase.¹ Consequently, the passive verb killed has two internal arguments but no external argument.² If the Projection Principle is correct, then killed must govern an NP category. Hence (20) has the structure indicated in (21).

(21) John was killed [_{NP} e] (by the police).

The Extended-Standard theory as developed in Chomsky 1981a,b and references cited therein postulates a level of phonetic form (PF) and a level of logical form (LF). The former is an abstract representation of sound and the latter is an abstract representation of meaning. The PF and LF of sentences are mediated by a bracketed-indexed structure: S-Structure. Furthermore, another level -namely D-Structure- is postulated which is equal to S-Structure abstracting away from movement. The organization of the grammar is illustrated by the schema in (22).

(22)



A strong version of the Projection Principle stated as in (23) puts severe constraints on the possible mappings between D-S, S-S, and LF.

(23) Extended Projection Principle (EPP)

If α th-marks β --directly or indirectly-- in γ at L_i (cf. the configuration in (9)), it does also at L_j .

This means that at every syntactic level D-S, S-S, and LF, the complement structure of a lexical category is a projection of its thematic structure. It means moreover that the argument-structure is not altered in the course of a syntactic derivation. (23) has non-trivial implications. For example it implies that:

1. There is no rule of subject-to-object raising.

I.e., there is no derivation of the type:

- (24) a- D-S: John believes [_{β} Peter to be a fool]
 b- S-S/LF: John believes [_{α} Peter] [_{β} to be a fool]

At S-S and LF --but not at D-S-- α is a th-marked position with respect to believe. Hence this derivation constitutes a violation of the Extended Projection Principle.

2. There are no structure-building rules at LF. For example, structure (25)a cannot be converted into structure (25)b at LF:

- (25) a- D-S/S-S: John considers [_{α} Peter] [_{β} foolish]
 b- LF: John considers [[_{α} Peter] [_{β} foolish]]

At D-S and S-S --but not at LF-- α is in a th-marking configuration with respect to considers, in violation of the Extended Projection Principle. For believe and consider (24)a and (25)b are the correct syntactic structures at every syntactic level since they both th-mark one single position in the VP, i.e., they both take only one internal argument.

3. There are no S-pruning transformations. No complex sentential structure like (26)a may be converted into a simple sentential structure like (26)b:

(26) a- D-S: S_1 [NP_1 V_1 S_2 [NP_2 V_2 NP_3]]

b- S-S/LF: S_1 [NP_1 V_x [V_1 V_2] NP_3]

(or alternatively, b': S_1 [NP_1 V_{VP} [V NP_3]])

At D-S --but not at S-S and LF-- S_2 is in a th-marking configuration with respect to V_1 . At D-S NP_3 is in a th-marking configuration with respect to V_2 and at S-S and LF it is in

a th-marking configuration with respect to a new-formed verb: V_x . The mapping between (26)a and (26)b hence violates the Extended Projection Principle.

In short, the Extended Projection Principle only allows for substitution and adjunction transformations -- neither of which alters the core-structure of a sentence.

The Projection Principle is supplemented by a well-formedness criterion of LF:

(27) The th-Criterion

Each argument bears one and only one th-role, and each th-role is assigned to one and only one argument.

Arguments are NPs (terms) and Ss (propositions) like the ones in examples (2)a-g and (4)a-b as well as in examples (28)a-c below:

- (28) a- John reported Peter to be sick.
 b- John imagined Peter taller than he is.
 c- That Peter did not come surprised us.

On the other hand it in examples (5)a-b is not an argument.

The argument status of the subject of weather verbs and of French y avoir (cf. il y a) and English be in there is NP is less obvious.

- (29) a- It snows.
 Il neige.
 b- Il y a du pain.
 There is bread.

They behave as arguments in that they are possible controllers:

- (30) a- Il ne neige jamais sans e pleuvoir.
 It never snows without e raining.
 b- Il ne peut pas y avoir du vin sans e y avoir
 de l'eau.

(Word by word translation: There must never be wine without there being bread.)

Compare (30)a-b with (31)a-b, where the subject is an expletive il:

- (31) *a- Il pourrait sembler que Pierre est déprimé sans
 s'avérer qu'il est malade.

(It could seem that Peter is depressed without turning out that he is sick.)

*b- Il ne peut pas exister de vie sans exister d'eau sur cette planète.

(There cannot exist life without there existing water.)

In English there is no control counterpart to the French (30)b. Cf. (32). This may be due to an independent reason. Avoir (have) assigns accusative case while be doesn't. The post-verbal NP bread in (29)b is marked nominative although it is not in a nominative case-marking position. Let's assume that there transmits nominative case to the post-verbal position via a special rule. The presence of there is then crucial for the post-verbal NP to get case. In the without-clause in (32) there is absent. Hence the post-verbal NP water is not case-marked. The ungrammaticality of (32) is thus explained if lexical NPs must be case-marked (cf. Chomsky 1978, Rouveret & Vergnaud 1978, Chomsky 1981a).

(32) * There must never be wine without ___ being water.

Another piece of data that shows that the subject of weather verbs is an argument comes from certain Northern Italian dialects, noticed by Luciana Brandi and Patrizia Cordin (ms 1981). In Trentino subjects which are arguments --phonologically realized or not--coexist with a clitic in tensed sentences.

- (33) a- i- La ven. ii-* ven.
 (She comes.)
- b- i- { La Maria } la ven. ii-* { La Maria } ven.
 { Ela }
 ({ Mary } comes.)
 { She }

There is no subject clitic present when the subject position is not occupied by an argument.

- (34) a- Par che el Mario el sia partí.
 (Seems that Mario cl -left).
- b- *El par che el Mario el sia partí.

Interestingly enough, in the case of weather verbs a subject clitic is obligatorily present.

- (35) a- El piove
 (It rains.)
- b- *Piove
 (Rains.)

In standard French the generic subject pronoun ça can only appear in an argument position at D-S. Thus compare

(36)a with (36)b:

- (36) a- Les colis, ça arrive par la poste.
 (A parcel, it arrives by mail.)

b- *Ça arrive les colis par la poste.

Compare (36)b with: Il arrive des colis par la poste.
Arriver is an ergative or unaccusative verb. It has an internal argument but no external argument. Cf. Perlmutter 1978, Burzio 1981. As expected, the generic pronoun ça can appear in the subject position of weather verbs:

(37) a- Ça pleut.

(It rains.)

b- Ça neige.

(It snows.)

Intuitively, it makes sense to say that the subject of weather verbs has semantic content. "It rains" is understood as "Something is raining." In fact, in Spanish the following sounds perfectly well-formed to us:

(38) a- Llueven grandes gotas de agua.

(Thick drops of water are raining.)

b- Qué llueve? Llueve granizo.

(What rains? Hail rains.)

Concerning il y a and there is it is not semantically counter-intuitive to think of the subject as an abstract location. As for idioms, if they are semantically empty (cf. the discussion above) it may be assumed as suggested in Chomsky 1981a that

they are quasi-arguments.

A word of caution with respect to the one and only one condition in the statement: Each argument bears one and only one th-role (cf. 27). A th-role is not defined as being uniquely agent or theme: i.e., there is no biuniqueness relation between a th-role and these semantic notions. A th-role may be a combination of these notions or of other more primitive notions. For example, in (39)a-b John is the theme of the action but it may also be interpreted as the agent or causer of the action. (The examples are from Bowers 1973.)

(39) a- John rolled down the hill.

b- John turned into a pumpkin.

In effect, under one interpretation sentences (39)a and (39)b are synonymous to (40)a and (40)b respectively:

(40) a- John rolled himself down the hill.

b- John turned himself into a pumpkin.

Th-roles are assigned to referential indices. If only clauses and terms are referential in some abstract mental domain, then it follows that only Ss and NPs bear th-roles: i.e., only Ss and NPs are arguments. More precisely, it may be assumed that th-roles are assigned to chains. The members

of a chain are identified by an index. For example, in (21), which has the indexed-structure (41):

(41) [_{NP_i} John] was killed [_{NP_i} e] (by the police).

killed th-marks a position with an index i. Hence, it assigns a th-role to the chain i (John, e). The th-role is born by the argument member of the chain, namely John in (41).

While the Projection Principle -- as stated in (23) -- is concerned with the structural positions in a syntactic configuration, the th-Criterion is concerned with the content of these positions. For example, the th-Criterion excludes sentences where there is an argument in a non th-position which is not coindexed with a th-position or an expletive in a th-position as in (42)a and (42)b-c respectively:

- (42) *a- John _{VP} [seems that he will come]
 *b- It _{VP} [went to Paris] (where it is not referential).
 *c- Bill _{VP} [encountered it] (where it is not referential).

The VP in (42)a assigns no external th-role. Hence the argument John does not bear a th-role. The VP in (42)b assigns an external th-role. Consequently it requires an argument -- not an expletive -- in subject position. Besides assigning an external th-role, encounter assigns an internal th-role. Hence (42)c requires an argument in object position.

Also, the Th-Criterion blocks movement into a th-position:

- (43) *a- John_i believes [_S e_i foolish]
 *b- Bill_i believes [_S e_i to be likely [_S e_i to call]]

In (43)a both believe and foolish assign a th-role to the index i. Hence, the chain i (John, e) has two th-roles. In (43)b be likely does not assign an external th-role but believe and call do. Consequently, two th-roles are assigned to the chain i (Bill, e, e). (43)a and (43)b are hence ruled out by the Th-Criterion -- which can be reformulated as a well-formedness condition on chains.

- (44) Each chain must contain one and only one argument and must bear one and only one th-role.
 Each th-role must be assigned to one and only one chain.

The Th-Criterion insures that if α has the lexical property of assigning a th-role to the content of β , then it does so obligatorily. Recall that α th-marks β if and only if α assigns a th-role to the content of β . Hence, it follows from the Extended Projection Principle that the Th-Criterion applies not only at LF but also at D-S and S-S. If the Th-Criterion applies at all syntactic levels, th-role assignment must already take place at D-Structure. Since there is no indexing at D-Structure or more precisely no coindexing which expresses antecedent-trace relation, this syntactic level is a pure representation of thematic relations.

S-structure and D-structure are mapped onto each other via (or mediated by) the rule Move α .

Th-marking to a large extent subsumes subcategorization. As defined in Aspects, subcategorization explicitly specifies both position and categorial type of a complement. But th-marking, as we have seen, is concerned only with positions. It makes no reference to the category occupied by these positions. A theory that assumes the mechanism of th-marking instead of subcategorization will then not specify the categorial type of a complement (NP, S, AP ...) -- in the unmarked case. Such information will only be specified in the lexical entry of a verb when it is not predictable on independent grounds. For example, it is unnecessary for the grammar to specify that the object of eat is an NP and not an S. This follows from our knowledge of the world: "propositions" are not edible things. But since this is a very poorly studied area, just which cases are predictable and which are not is an open question. Hence, throughout this thesis we shall continue to use the term "subcategorization" (or "categorial selection") as if it were a primitive lexical property -- although we believe that it is not (in the unmarked case at least). See Pesetsky 1982 for discussion of this issue.

I.2 Adjunct-semantic relations and their syntactic realization

In section I.1 we discussed the constraints that govern the projection of the semantic relations that are realized in terms of \bar{X} -theory. The case of the semantic

relation NP-VP was included by adding VP to statement (i) in (9). But there are other semantic relations which are not expressed in terms of \bar{X} -theory. A case in point is that of Adverbials.

We will put aside the case of obligatory adverbials discussed in Jackendoff 1972 -- as in the following examples in which an adverbial of some sort is required to be present in the VP in final position.

- (45) a- John worded the letter carefully.
 b- John worded the letter in such a way as to confuse everyone.
 *c- John worded the letter.
- (46) a- The job paid us handsomely.
 b- The job paid us enough that we could knock off work for a few months.
 *c- The job paid us.

Note that adverbs are not arguments -- i.e., th-role bearing lexical items. Consequently, according to the theory sketched in the previous section the underlined adverbials in (45) and (46) cannot be complements of word and paid respectively. If they are not complements then they must be part of the predicate. They may be considered to form with the verb a discontinuous complex-predicate: word...Adv, paid...Adv. The objects the letter and us in (45) and (46) are assigned a

th-role compositionally by the complex-predicates word-Adv and paid-Adv respectively.

The cases that are of relevance to our discussion are the optional adverbials. We will refer to them as adjunct-predicates. The optional, productive -- i.e., not lexically determined -- adverbials are found under S in initial, final, and Aux position -- and in the VP -- in initial and final position. The following discussion is based on Jackendoff's study which gives the following classification of adverbs. The semantic structure of sentences containing adjunct-predicate adverbs fall into three major types:

I. Neutral or Speaker-Oriented Adverbs:

Let S' denote the sentence resulting from removing the Adverb from S. In the paraphrase of S, S' appears as the sentential complement of a monadic predicate-adjective. Cf. (i) versus (ii) below.

- (47) a- (i) Evidently, Frank is avoiding us.
 (ii) It is evident that Frank is avoiding us.
 b- (i) Certainly, Frank is avoiding us.
 (ii) It is certain that Frank is avoiding us.

(Evident, like seem, may have a dative object -- which we will ignore since it is not obligatory. Cf. It is evident (to me) that S. It seems (to me) that S.)

II. Subject-Oriented Adverbs

The second type of interpretation has a paraphrase in which S' appears as the sentential complement of a dyadic predicate adjective. The subject of the predicate adjective is identical to the subject of S. Compare (i) with (ii) below:

- (48) a- (i) Carefully, John poured the milk into the pan.
 (ii) John was careful in pouring the milk into the pan.
 b- (i) Clumsily, John poured the milk into the pan.
 (ii) John was clumsy in pouring the milk into the pan.

III. Manner, degree, time Adverbs

The paraphrase in this case consists of a prepositional phrase -- manner, extent, time -- which is added to S' and which then functions as the pivotal element in a relative clause and as subject of a predicate adjective.

- (49) a- (i) Dave speaks eloquently.
 (ii) The manner in which Dave speaks is eloquent.
 b- (i) Bob walks his pet giraffe infrequently.
 (ii) The times at which Bob walks his pet giraffe are infrequent.
 c- (i) Ted ate his Wheaties completely.
 (ii) The extent to which Ted ate his Wheaties was complete.

Roughly, adverbs of the semantic type I and II appear in initial and in pre- and post-auxiliary position. The third

type appears in post-auxiliary and final position. The semantic type -- or types -- to which an adverb belongs is a lexical property of each particular adverb.

The function of the paraphrase is to bring out the semantic relations between the adverb and the clause -- or parts of the clause -- to which it is attached. The paraphrases in I show that there is a semantic relation between the adverb and the S. The paraphrases in II show that there is a semantic relation between the adverb and the S and with the subject of S. The paraphrases in III show that there is a semantic relation with the VP of the sentence. Moreover in the case of manner Adverbials there is a semantic relation with the agent of S. For example (49)a-i implies that 'Dave is eloquent.' More will be said below about the VP manner adverbials.

What is the nature of these semantic relations? The generative-semanticists, in their reductionist approach, proposed to derive adverbs from adjectives. Thus, within this analysis the adverbs in examples (47)a(i)-b(i), (48)a(i)-b(i), (49)a(i)-b(i) are derived from the predicate adjectives in (47)a(ii)-b(ii), (48)a(ii)-b(ii), (49)a(ii)-b(ii) respectively. This analysis, besides being unmotivated syntactically, has numerous problems. Cf. Jackendoff 1972, Chapter 3 for a detailed critique. We will assume with Jackendoff that adverbs are inserted in their surface structure position.³ Moreover, we suggest that the fact that the lexical properties of an adverb are not syntactically realized in terms of \bar{X} -theory is not an accident. They are not expressed in terms

of \bar{X} -theory simply because adverbs are not main predicates, they are adjunct-predicates and the relations induced by them are adjuncts to the S or VP. Note that VP is not an argument: i.e., it is not a recipient of th-roles but it is a recipient of adjunct-semantic relations. (We will use the term ARGUMENT-relation to refer to all types of semantic relations.)

Recall that in the examples considered above there is a semantic relation (1) between the adverb and the S or VP which dominates it and (2) between the adverb and an argument of the clause in the case of subject-oriented adverbs and VP-manner adverbs. As for the first semantic relation, i.e., between the adverb and the S or VP, it is worthwhile to recall the traditional intuition that adverbs are related to sentences or verb phrases as adjectives are to noun phrases in constructions like (50)a-b.

- (50) a- the beautiful painting
 b- the careful speech

As has often been noticed, their distribution are remarkably similar. For example, Jackendoff writes: "it seems no accident that the surface position of adjectives in noun phrases is between the determiner and the head, exactly parallel to auxiliary position of adverbs in sentences. In particular, the parallelism between adjectives in derived nominals and adverbs in gerunds is striking."

- (51) a- John's rapid reading of the letter
 b- John's rapidly reading the letter

Furthermore, Jackendoff notices that "those adjectives that can appear only prenominal, such as mere, are paralleled by adverbs that can appear only preverbally, such as merely." (Jackendoff 1972, pp. 59-60).

Following the terminology of traditional grammar, we shall refer to the semantic relation between the Adverb and S or VP and between the Adjective and the Noun in structures like (50)a-b as modification. The semantic relation of modification is realized in the syntactic configuration defined in (52).

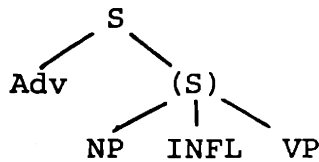
- (52) In the configurations: $[\gamma \dots \alpha \dots \beta \dots]$,
 $[\gamma \dots \beta \dots \alpha \dots]$, where
- (i) γ = a projection of β
 - (ii) γ immediately dominates α and β
 - (iii) α = Adj, Adv.

α modifies β . (We will then say that β is in the scope of α .)

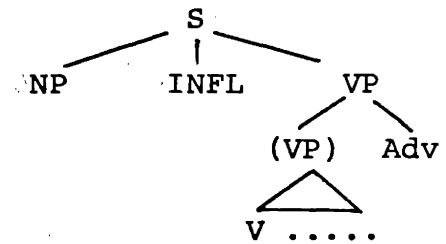
Consequently, in the constructions under discussion the Adverb must be adjoined to the node that it modifies. Since the Adverb in surface structure is not always in constituent-initial or constituent-final position, we suggest that there is a mismatch between the virtual and actual positions of Adverbs. Recall that in English, unlike a free word-order

language like Japanese, the virtual structure which encodes the core-semantic relations (cf. I.(9)) is identical to the actual structure which expresses surface linear order. Cf. the discussion in section I.1. But suppose that in English the virtual projection which encodes adjunct-relations is not identical to its corresponding actual projection. In effect, the S and VP in parenthesis in (53)a and (53)b are virtual categories. The actual projections of (53)a and (53)b are (53)c and (53)d respectively.

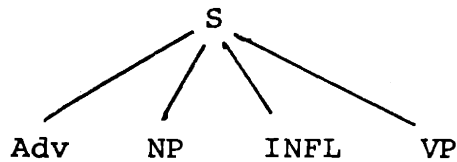
(53) a-



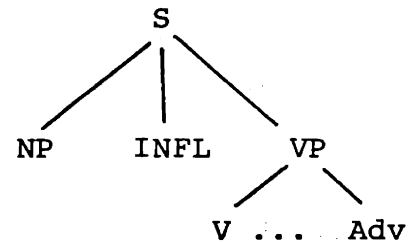
b-



c-



d-



Suppose moreover that ordering statements in English (i.e. x^0 is the leftmost constituent in XP and VP is the rightmost constituent in S) apply only to the core-structure. In (53)a/c the Adverb will then be unordered with respect to NP, INFL, and VP and in (53)b/d it will be unordered with respect to V and the sister-nodes of V. All of the attested orders are then obtained:⁴

- (54) a- [_S Adv NP INFL (Aux) VP]
 b- [_S NP Adv INFL (Aux) VP]
 c- [_S NP INFL(Aux) Adv VP]
 d- [_S NP INFL(Aux) VP Adv]
 e- [_S NP INFL(Aux) [_{VP} Adv V...]]
 f- [_S NP INFL(Aux) [_{VP} V...Adv...]]
 g- [_S NP INFL(Aux) [_{VP} V....Adv]]

Does the relation of modification obey the Extended Projection Principle -- i.e. does the semantic relation defined in configuration (52) hold at every syntactic level? Since we do not have any evidence that the relation of modification does not obey the Extended Projection Principle, we will assume that it does (i.e. the null hypothesis). Hence we restate the Extended Projection Principle (cf. (23)) as follows:

- (55) If α th-marks β -- directly or indirectly -- in γ at L_i (cf. the configuration in (9)) or if α modifies β in γ at L_i (cf. the configuration in (52)), it does also at L_j .

Let us now turn to the relation between the Adverb and the Noun Phrase (argument of the clause). To illustrate, consider Jackendoff's example:

- (56) Voluntarily, John rolled down the hill.

(56) implies (57):

(57) John intended to roll down the hill and John rolled down the hill.

John is assigned a th-role by roll and a th-role by voluntarily. The argument John then bears two th-roles. This implies that the th-role assigned by the Adverb is invisible for the Th-Criterion. We shall refer to the th-role assigned by adjunct-predicate Adverbs as adjunct th-role and to the th-role assigned by lexical heads (N, V, A, P) and VP as argument th-role. Since the Th-Criterion applies only to argument th-roles, we restate (44) as follows:

(58) The Argument Th-Criterion

Each chain must contain one and only one argument and must bear one and only one argument th-role.

Each argument th-role must be assigned to one and only one chain.

Jackendoff notices that there is a difference in meaning between the active and passive sentences containing Subject-Oriented Adverbs.

(59) a- The doctor cleverly has examined John.
 b- John cleverly has been examined by the doctor.

- (60) a- The police carelessly has arrested Fred.
 b- Fred carelessly has been arrested by the police.

- (61) a- Joe intentionally has seduced Mary.
 b- Mary intentionally has been seduced by Joe.

The cleverness or carelessness or intention is attributed to the surface subject. This shows that the Adverb - Noun Phrase relation is not defined across all levels of representation. The Adverb - argument relation is established at S-S and/or LF. If the relation holds both at S-S and LF, it would be somewhat unusual that it did not hold also at D-S. Let us then assume that an adjunct-predicate Adverb assigns a th-role only at LF. Note that this property of adjunct th-roles is coherent with the property established above: namely, that adjunct th-roles are invisible for the Argument Th-Criterion, which, recall, applies at all levels of representation.

Jackendoff notices that VP-manner Adverbials -- unlike the Subject-Oriented Adverbials -- do not exhibit a change of meaning under the passive. They attribute a manner to the subject in the active or to the by-phrase in the passive.

- (62) a- The doctor examined John carefully.
 b- John was examined carefully by the doctor.

- (63) a- The police arrested Fred carelessly.
 b- Fred was arrested carelessly by the police.
- (64) a- Joe seduced Mary intentionally.
 b- Mary was seduced intentionally by Joe.

(Carefully, carelessly, intentionally function as Subject-Oriented Adverbs when in the scope of S. Cf. (48)a(i), (60), (61). They function as manner Adverbials when in the scope of VP. Cf. (62)-(64). As expected, they are ambiguous when they are in between Aux and the VP. Cf. for example: John was intentionally examined by the doctor.)

Adverbs -- like other predicates -- impose selectional restrictions on their arguments. Carefully, carelessly, intentionally, as well as voluntarily, assign an agent role. Hence they cannot select an ARGUMENT which cannot bear an agent th-role.

- (65) *a- Intentionally/voluntarily, the rock rolled down the hill.
 *b- Carefully/carelessly, the glass broke.
 *c- The boat sank carefully/carelessly.
 *d- The bomb exploded intentionally/voluntarily.

This shows once more that there is a semantic relation between the Adverb and an argument of the clause.

But note that the by-phrase in (62)b, (63)b, and (64)b may be absent:

- (66) John was examined carefully.
- (67) Fred was arrested carelessly.
- (68) Mary was seduced intentionally.

As in (62)b, (63)b, and (64)b, (66)-(68) imply that the agent (i.e. the understood agent in the latter case) of examine, arrest, and seduce is careful, careless or had an intention. This means that VP-manner adverbials do not assign an adjunct th-role to a syntactic position. Instead, the Manner Adverb's th-role is combined with the agent th-role of the verb, which may be realized either as the external argument as in (62)a, (63)a, (64)a, as an internal argument as in (62)b, (63)b, (64)b or it may not be realized at all as in (66), (67), (68).⁵ Hopefully, the fact that S-Adverbs' target is the subject position and the VP-Adverbs' target is the Verb's Agent argument th-role will follow from independent considerations. At present, we have no illuminating suggestion to make.

Finally, note that the ungrammaticality of (65)a-d shows that adjunct th-roles must be assigned. Hence, we suggest that the following well-formedness criterion for adjunct th-roles applies at LF:

(69) The Adjunct Th-Criterion

An adjunct th-role must be combined with an argument th-role.

To summarize, we have established three types of semantic relations:

1. argument th-relations defined in (9)
2. modification relations defined in (52)
3. adjunct th-relations

The first type of semantic relations is induced by argument-taking predicates. The second type of semantic relations is induced by adjunct-predicates. The difference between the two does not lie in the content. For example, certain in It is certain that John will come and certainly in Certainly, John will come do not differ in meaning. Likewise, beautiful in the beautiful painting and the painting is beautiful have exactly the same meaning.⁶ The difference between the relation of modification and the argument th-relation lies in how they are formally realized. Semantic relations are directional and the direction is different in the two cases. The relation of modification defined in a domain γ is a relation from a non-head of γ to a projection of the head of γ . The argument th-relation defined in a domain γ is a relation from the head of γ to a non-head of γ .

Besides having a relation with an S or VP, certain classes of Adverbs also have a relation with an argument contained in the modified S or VP. This is the third type of semantic

relation, which we refer to as adjunct th-relation. Unlike argument th-relations, adjunct th-relations need to be satisfied at LF only. And hence, as expected, adjunct th-roles are invisible for the Argument Th-Criterion which, recall, applies at every syntactic level.

Footnotes to Chapter 1

1) When the "internalized" external th-role is not realized in a by-phrase, it is still present at LF as shown by the following contrast (pointed out by Manzini 1980 and Marantz 1981).

a. The factory was burnt to collect the insurance.

*b. The factory burnt to collect the insurance.

In the passive construction the non-realized agent of burn controls the subject of collect. In the anti-causative construction burn has no external agent th-role. Hence, there is no agentive argument to control the subject of collect and the sentence is ruled out at LF. Strictly speaking, the passive construction with no by-phrase is a violation of the Th-Criterion given in (27). But see f.n. 7 in Chapter III.

2) Note that another plausible hypothesis is that passive morphology does not alter the argument structure of a verb. It simply blocks the mapping of the external argument onto subject position. The external argument is optionally realized in a by-phrase adjoined to the VP (i.e., it is still "external" to the VP). Cf. Marantz 1981, Chomsky 1981a. See Chapter IV for arguments in favor of the "internalization" hypothesis.

3) S-Adverbs may occur initially, before and after the auxiliary, and finally. VP-Adverbs occur before the verb, finally, and at various places in between. Adverbs may not

appear between the verb and its direct object in English. This is probably due to an independent reason: the adjacency condition on case-assignment (cf. Stowell 1981).

4) Recall that in English Adverbs cannot occur between a verb and its object. This means that in English the actual structure is relevant to case-assignment if Stowell 1981 is correct. Cf. footnote 3.

5) The facts in (66)-(68) constitute further evidence that when the "internalized" external th-role is not realized in a by-phrase, it is still present at LF. Cf. footnote 1.

6) Adjectives state an attribute of the target noun. But as is well-known, when an adjective functions as a modifier it may serve to fix the reference of the noun. This is not due to an intrinsic property of the adjective but to the referential property of the noun. Thus, in one reading the beautiful painting is synonymous to the painting is beautiful (the "pure" attributive meaning). In another reading beautiful not only states an attribute of painting, it furthermore serves to fix the reference of painting (i.e., which painting among the set of paintings the NP refers to).

Chapter II: External-ARGUMENTS: argument- and adjunct-subjects

In this chapter we will argue that there are predicates which assign either an argument th-role or an adjunct th-role to the subject position. Still, there are others that obligatorily assign an adjunct th-role to the subject. Note that the property of subjects to be either an argument th-position or an adjunct th-position is not too surprising since the subject, unlike the object, is not a subcategorized position as we have seen in I.1. We will furthermore suggest that the lexical property of a class of predicates to take an adjunct external-ARGUMENT have implications for the typology of non-overt NPs.

II.1 Control and Raising Verbs: Some differences.

There are some well-known and some less well-known differences between structures of type 2 (raising structures) and structures of type 1 (control structures).

- (1) a- Peter decided [e to leave]
 b- Peter tried [e to leave]
- (2) a- Peter seems [e to be sick]
 b- Peter is likely [e to be sick]

1.1 The distribution of expletives and idioms

An expletive may appear in the matrix subject position of (2) but not of (1).

- (3) * a- It decided to be obvious that Peter had already left.
 * b- It tried to turn out that Peter had already left.

- (4) a- It seemed to be obvious that Peter had already left.
 b- It was likely to turn out that Peter had already left.

Objects of idioms may appear as the surface subject of (2) but not as the surface subject of (1).

- (5) * a- Headway decided to be made.
 * b- Tabs tried to be kept on John.
- (6) a- Headway seems to have been made.
 b- Tabs are likely to be kept on John.

The contrast between (3) and (4) and between (5) and (6) is related to the fact that verbs in (1) and verbs in (2) have a different lexical property: the verbs in (1) assign an argument th-role to the subject as a lexical property whereas those in (2) do not. As we have seen in Chapter I, given this lexical difference between the verbs in (2) and the verbs in (1) it follows from the Argument Th-Criterion that an expletive may appear in the subject position of the former but not in the subject position of the latter. Likewise, given the lexical difference between the verbs in (1) and the verbs in (2), it follows from the Extended Projection Principle that an argument in the matrix subject position in a raising construction but not in a control construction is the D-Structure subject of the verb in the embedded clause. In effect, in (2) Peter is not the D-Structure subject of seem/is likely and in (1) Peter is the D-Structure subject of decide/try. In (2) but not in (1) Peter has been moved from

the embedded subject position into the matrix subject position. Recall that the object of idioms may only appear in object position at D-Structure (cf. section I.1.). Hence, the object of idioms can only serve as antecedent to a position from which it has been moved. This explains the contrast between (5)a-b and (6)a-b. The D-Structures of (2)a-b and (6)a-b are then (7)a-b and (8)a-b respectively. They are mapped onto S-Structures (9)a-b and (10)a-b via Move α .

- (7) a- [_S [e] seems [_S Peter to be sick]]
 b- [_S [e] is likely [_S Peter to be sick]]
- (8) a- [_S [e] seems [_S [e] to have been made headway]]
 b- [_S [e] are likely [_S [e] to be kept tabs on John]]
- (9) a- [_S Peter_i seems [_S [e]_i to be sick]]
 b- [_S Peter_i is likely [_S [e]_i to be sick]]
- (10) a- [_S Headway_i seems [_S [e]_i to have been made [e]_i]]
 b- [_S Tabs_i are likely [_S [e]_i to be kept [e]_i on John]]

The matrix and embedded subject positions are then members of one same th-chain in the raising construction while the matrix and embedded subject positions in the control construction constitute two independent th-chains.

1.2 The distribution of the pronoun ça

The distribution of the pronoun ça in French, like the idiom-facts discussed above, shows that an argument in the matrix subject position in the raising construction is selected by the verb in the embedded clause.

As we have seen in Chapter I the pronoun ça may only appear in argument position. It may refer to a proposition. Thus, it can appear as the subject of ennuyer, impressionner but not as the subject of sembler, s'avérer.

(11) a- Que Jean parte m'ennuie/m'impressionne.

(That John left bothers/impresses me.)

b- Ça m'ennuie/m'impressionne que Jean parte.

*c- Il m'ennuie/m'impressionne que Jean parte.

(12) *a- Que Jean est parti semble/s'avère.

*b- Ça semble/s'avère, que Jean est parti.

c- Il semble/s'avère que Jean est parti.

(It seems/turns out that John left.)

As expected, if a verb with a propositional subject is embedded under sembler (s'avérer...), then ça can appear in the subject position of sembler (s'avérer...).

(13) a- Que Pierre parte semble t'ennuyer.

(That Peter leave seems to bother you.)

b- Ça semble t'ennuyer, que Pierre parte.

Note that both ça and the expletive il can appear in the subject position of predicative adjectives: possible, probable, évident ...

- (14) a- Que Jean ait à partir est possible/probable/évident.
 (That John has to leave is possible/probable/obvious.)
- b- C'est possible/probable/évident, que Jean ait à partir.
- c- Il est possible/probable/évident que Jean ait à partir.

This means that predicate Adjectives, unlike Verbs, may assign an argument th-role either internally or externally. In effect, (14)b and (14)c do not have the same structure. In (14)b que S is in dislocated position and in (14)c it is in complement position. This is shown by the following fact: wh-extraction is possible from (14)c but not from (14)b.

- (15) a- Qui est-il évident/possible/probable que Jean ait vu?
 (Who is it obvious/possible/probable that John saw?)
- *b- Qui {est-ce
 cela est-il} évident/possible/probable, que Jean ait vu?

(In English (14)b and (14)c cannot be distinguished because in English the referential pronoun that corresponds to French ça and the expletive pronoun have the same morphological form: it.)

1.3 Quantifier-scope

May 1977 has pointed out that a quantifier in the matrix subject position in a control structure may only have wide scope with respect to the matrix predicate but in a raising structure it may also have narrow scope.

(16) Nobody tried to leave.

(17) Nobody seemed to have left.

In effect, (18) is a contradiction but (19) is not.

(18) Nobody tried to leave but somebody tried to leave.

(19) Nobody seems to have left but somebody seems to have left.

(19) may be translated as follows:

(20) ($\forall x$ (x does not seem to have left)) but
(seems ($\exists x$ (x have left)))

In the first part of (20) -- but not in the second part -- seem is predicated of x: i.e., in the first part seem has narrow scope, in the second part seem has wide scope.

Likewise, a quantifier in the embedded clause of a raising construction may have scope over the matrix surface subject. Thus, sentence (21) is three-ways ambiguous as shown in (22).

- (21) Some politician is likely to address every rally in John's district.
- (22) a- There is a politician, e.g. Rockefeller, who is likely to address all of the rallies in John's district.
- b- It is likely that there is some politician (or other) who will address all of the rallies.
- c- It is likely that for each of the rallies, there is some politician who will address it (i.e., there may be a different politician for each rally.)

On the other hand, in a control structure "the matrix quantifier is always construed as having scope wider than the quantifier in the complement clause." (May 1977, p. 201). Thus, (23) is unambiguous.

- (23) Some politician decided to address every rally in John's district.

In order to represent the scope of quantifiers, May 1977 suggested a rule of Quantifier Raising (QR) which adjoins a quantifier to S in LF. Thus the ambiguity of (24)a is represented as in (24)b and (24)c:

- (24) a- Some politician will address every rally in John's district.

b- $[_S [\alpha \text{ Some politician}] [_S [\beta \text{ every rally in John's district}]]$

$[_S \alpha \text{ will address } \beta]]$

c- $[_S [\beta \text{ every rally in John's district}] [_S [\alpha \text{ some politician}] [_S \alpha \text{ will address } \beta]]]$

In (24)b β is in the scope of α : i.e., the reference of β is dependent upon the reference of α . In (24)c the reverse is true. α is in the scope of β : i.e., the reference of α is dependent upon the reference of β .

The rule of QR is clause-bounded. Hence sentence 23, repeated as (25)a, is unambiguous. It cannot have representation (25)c for example. It may only have representation (25)b in which β has narrow scope.

(25) a- Some politician decided to address every rally in John's district.

b- $[_S [\alpha \text{ Some politician}] [_S \alpha \text{ decided } [_S [\beta \text{ every rally in John's district}] [_S \text{ NP* to address } \beta]]]]$

c- $[_S [\beta \text{ every rally in John's district}] [_S [\alpha \text{ Some politician}] [_S \alpha \text{ decided } [_S \text{ NP to address } \beta]]]]$

But recall that raising constructions like (17) and (21) are ambiguous. To account for the narrow scope interpretation of (17) and for the interpretations (22)b and (22)c of (21), May proposes a rule of Quantifier Lowering (QL). QL

puts a quantified NP back in its D-Structure position and it is then raised by QR. The wide-scope interpretation of (17) corresponds to representation (26)b -- where QL has not applied -- and the narrow scope interpretation of (17) corresponds to representation (26)c -- where QL has applied.

- (26) a- Nobody seemed to have left. (= (17))
 b- [_S [_α Nobody] [_S α seemed to have left]]
 c- [_S α seemed [_S [_α Nobody] [_S NP* to have left]]]

Interpretation (22)a corresponds to representation (27)b. Interpretations (22)b and (22)c correspond to representations (27)c and (27)d respectively.

- (27) a- Some politician is likely to address every rally in John's district. (= (21))
 b- [_S [_α Some politician] [_S α is likely [_S [_β every rally in John's district] [_S NP* to address β]]]]
 c- [_S α is likely [_S [_α some politician] [_S [_β every rally in John's district] [_S NP* address β]]]]
 d- [_S α is likely [_S [_β every rally in John's district] [_S [_α some politician] [_S NP* to address β]]]]

May attributes the impossibility of QL in control constructions (cf. (16), (23)) to the following well-formedness condition:

- (28) Every variable in an argument position of a predicate must be c-commanded by an antecedent.

Since the subject of a control verb is an argument position, a variable in this position must be c-commanded by an antecedent. Hence, a quantified subject of a control verb must be moved to a position which c-commands its trace: i.e., it may be raised but not lowered.

But QL encounters some difficulties. Namely, it makes a wrong prediction with respect to the scope of negation. Like Adverbs, the negative lexical item not may have scope over VP or over S.¹ Thus (29)a is ambiguous. It may have interpretation (29)b (where not modifies the VP) or interpretation (29)c (where not modifies S and consequently the subject of S).

- (29) a- Everyone will not come.
 b- (x (x will not come))
 c- Not (x (x will come)) (i.e., Only some will come).

But (30)a is not ambiguous contrary to what QL predicts (cf. (30)b). (This fact was brought to my attention by N. Chomsky.)

- (30) a- Everyone is likely not to come.
 *b- [_S α_i is likely [_S Not [_α everyone_i] [_S NP*_i to come]]]

(30)a does not have the interpretation: It is likely that not everyone will come. Not may not have scope over everyone.²

In any case, whatever the correct representation of quantifiers' scope in raising constructions turn out to be, May's intuition remains. In effect, the scope ambiguity in these constructions is due to the fact that the matrix subject position is not a th-position and is a member of the same th-chain that the embedded subject is. This constitutes the basis for some sort of reconstruction.

Another example, formally similar to the ones discussed above, that illustrates the difference between a control and a raising construction is given in Burzio 1981. Compare (31)a and (31)b.

- (31) a- One interpreter each seems to have been assigned to the visiting diplomats.
- *b- One interpreter each tried to be assigned to the visiting diplomats.

Burzio also points out the contrast between (32)a and (32)b and between (33)a and (33)b.

- (32) a- They assigned one interpreter each to the visiting diplomats.
- *b- They sent one interpreter each with the visitors.

(33) a- One interpreter each was assigned to the visiting diplomats.

*b- One interpreter each talked to the visitors.

From these facts Burzio concludes that each in the one N each construction behaves as an anaphor at LF. He proposes that the output of the rule which assigns -- by coindexing -- a plural antecedent to each is subject to the Binding Conditions. Cf., II.4.1 for a discussion of the Binding Theory. This means that at LF each must be c-commanded by its plural antecedent. This requirement is fulfilled in (32)a (considering to to be a case-marker) but not in (32)b since the antecedent the visitors is contained in a Prepositional Phrase. Nor is the c-command requirement fulfilled in (33)b. On the other hand, in the passive sentence (33)a the subject and object positions are part of the same th-chain, which allows for some kind of reconstruction to take place and the c-command requirement to be fulfilled. Similarly in the raising sentence (31)a -- but not in the control sentence (31)b -- the matrix subject, the embedded subject, and the embedded object positions are members of the same th-chain. Consequently, in (31)a but not in (31)b the c-command requirement may be fulfilled via reconstruction.

But there is another property of the one N each construction which must be accounted for and which probably is also at the basis of the contrast between (31)a and (31)b. Note

that there is a contrast in meaning between the one N each construction and a sentence with the quantifier each in the specifier position.

- (34) a- One interpreter each was assigned to the visiting diplomats.
 b- One interpreter was assigned to each visiting diplomat.

In (34)a there is exactly a one-to-one mapping between the set of interpreters and the set of visiting diplomats. This is not necessarily true in (34)b. In this case one same interpreter may be assigned to more than one visiting diplomat. In (34)a, but not in (34)b, the reference of one interpreter is dependent on the reference of visiting diplomats and vice-versa: i.e., they are referentially mutually dependent. The mutually dependent interpretation is undoubtedly due to the structure of one N each. In (34)a each is bound to visiting diplomats. But each is also a specifier of the NP one interpreter or more precisely, it is a specifier of the specifier one (Parallel to too many in one N too many -- cf., Bresnan 1973). Hence the indexed structure of (34)a is as in (35).

- (35) [[One_k interpreter] each_k] was assigned to [_k the visiting diplomats.]

Whatever the correct representation of mutual referential dependencies might be, it may be assumed to be clause-bounded as other cases of referential dependencies between quantified NPs are. In effect, in (31)a -- but not in (31)b -- one interpreter in the matrix clause may be referentially dependent on visiting diplomats in the embedded clause because one interpreter is not in a th-position and it belongs to a th-chain contained in the same clause that visiting diplomats is. Hence, once more a chain with a quantified NP in a non th-position serves as the basis for some sort of reconstruction, thus allowing the mutual referential dependency interpretation to be realized in (31)a.

1.4 The distribution of the genitive clitic 'en' (I)

Ruwet 1972 noticed that verbs like être, devenir, sembler, paraître, rester, avoir l'air, se révéler, s'avérer, se trouver, and passives allow en-cliticization from the adnominal complement of their surface subject.

(36) a- La porte de la cathédrale paraît/semble ouverte.

(The door of the cathedral appears/seems open.)

b- La porte en paraît/semble ouverte.

(37) a- Le livre de Zola devient intéressant à partir du deuxième chapitre.

(Zola's book becomes interesting starting from the second chapter.)

b- Le livre en devient intéressant à partir du deuxième chapitre.

(38) a- La préface du livre est flatteuse.

(The introduction to the book is flattering.)

b- La préface en est flatteuse.

(39) a- La lecture de ce livre a été conseillée aux étudiants par le professeur.

(The reading of this book has been advised to the students by the professor.)

b- La lecture en a été conseillée aux étudiants par le professeur.

(40) a- La solution du problème semble avoir été publiée.

(The solution to the problem seems to have been published.)

b- La solution semble en avoir été publiée.

(41) a- Le chef de la bande s'est avéré/révéle/a l'air d'être magnanime.

(The chief of the band turned out/revealed himself/appears to be magnanimous.)

b- Le chef s'est avéré/révéle/a l'air d'en être magnanime.

Couquaux 1979 suggested that the common property of verbs that allow en-cliticization from their surface subject is that they do not take an external argument: they are raising verbs. In the case of the passive (cf. (39)) movement is from object to subject position. In the other cases movement is from subject to subject position. In effect, the verbs être, devenir, sembler, etc. may be considered to subcategorize for a small clause (cf. examples (36), (37), (38)). In fact all of these verbs except for être and devenir subcategorize for a non-small clause (cf. examples (40), (41)). The surface subject in examples (36), (37), and (38) as well as in examples (40) and (41) is the D-Structure subject of the predicate of the clausal complement. Thus, the above examples contrast with the following simple and control sentences:

- (42) a- L'eau de la rivière coule doucement.
 (The water of the river runs smoothly.)
 *b- L'eau en coule doucement.
- (43) a- Les missiles de la NASA ont atteint leur cibles.
 (The missiles of the NASA hit their targets.)
 *b- Les missiles en ont atteint leur cibles.
- (44) a- Le chef de la bande a décidé d'être magnanime.
 (The chief of the band decided to be magnanimous.)
 *b- Le chef a décidé d'en être magnanime.

- (45) a- L'auteur de ce livre a oublié d'être à l'heure.
 (The author of this book forgot to be on time.)
 *b- L'auteur a oublié d'en être à l'heure.

Verbs like couler, atteindre, décider, oublier do assign an argument th-role to the subject.

Note that in neither (40), (41) nor in (44), (45) may the genitive clitic en cliticize onto the matrix verb.

- (46) *a- Le chef s'en est avéré/révéle/a l'air d'être magnanime.
 *b- La solution en semble avoir été publiée.
 *c- Le chef en a décidé d'être magnanime.
 *d- L'auteur en a oublié d'être à l'heure.

How should the distribution of en be characterized? This question will be addressed in section II.4.3.1. For the time being it is sufficient to keep in mind that at least one of the relevant factors in characterizing the phenomenon of en-cliticization from subject position is the argument status of this position.

To summarize, in section II.1 we have seen how the distribution of expletives, idioms, of the pronoun ça, and the genitive clitic en as well as the scope of quantifiers may distinguish raising from control constructions. We saw that the relevant difference between the two is that raising verbs do not select an argument subject while control verbs do. In

the raising construction the NP in the matrix subject position is an argument of the embedded verb. Consequently, the matrix and embedded subject positions are members of the same th-chain. On the other hand, in the control construction the matrix and embedded subjects belong to different th-chains. The two positions are only referentially related.

Before discussing a mixed class of verbs which enter in both raising and control constructions, some preliminary remarks on the nature of non-overt NPs will be made.

II.2 Types of Non-overt NPs (I). A Distinguishing Feature: + th-role.

The non-overt NPs in (1)a-b and (2)a-b are interpreted as co-referential with the matrix subject. In effect, the reference of these non-overt NPs is fixed by their antecedents -- just like themselves fixes its reference on the basis of the reference of its antecedent they in (47).

(47) They_i wanted for themselves_i to leave.

Hence, (2)a-b have indexed-structures (9)a-b and (1)a-b have indexed-structures (48)a-b.

(48) a- Peter_i decided [[e]_i to leave]
b- Peter_i tried [[e]_i to leave]

The question that then arises is: are the non-overt NPs in (9)a-b and (48)a-b of a different nature or not? Is there more than one type of non-overt NP?

It is to be noticed that the non-overt NPs in both (9)a-b and (48)a-b may be considered to contain features like person, number, and gender which are not phonologically realized. This is shown by examples like (49)a-c and (50)a-b.

- (49) a- You_i seem [NP_i^{*} to admire yourself_i]
 b- She_i is likely [NP_i^{*} to kill herself_i]
 c- The boys_i want [NP_i^{*} to wash themselves_i]

- (50) a- Maria_i quiere [NP_i^{*} ser presentada al director]
 (Mary wants to be introduced (fem-sing))
 b- Los niños_i parecen [NP_i^{*} estar enfermos]
 (The boys seem to be sick (masc. pl.))

In (49)a-c, the reflexive agrees in person, number, and gender with the non-phonologically realized subject of its clause, and so does the past-participle in (50)a and the adjective in (50)b. The non-overt subject in turn agrees with its antecedent in subject position.

Another piece of evidence that non-overt NPs have features is found in Icelandic. The facts are discussed in Thráinsson 1979 (based on work by Avery Andrews). In Icelandic a non-overt NP contains not only person, number, and gender features but also case feature. In the case of

controlled non-overt subjects there is often more than one possible choice of case, depending on the class of verb and on the controller in the matrix sentence.³ The following examples are sufficient to make our point. Consider (51)a-b.

- (51) a- María bað þá að vera góðir/goða/*goðum.
 (Mary asked them (m. pl. Acc.) to be good (m. pl. Nom/Acc/*Dat))
- b- Ég sagði henni að vera fljót/fljótri/*fljóta.
 (I told her (f. sg. Dat.) to be quick (f. sg. Nom/Dat/*Acc))

The predicative adjective agrees (overtly) with its subject in gender, number, and case. The case of the non-overt subject is either the unmarked nominative case or the case of the matrix controller: accusative in (51)a and dative in (51)b. In Icelandic there is a class of verbs whose subjects have inherent (non-nominative) case (vanta (need, lack), reka (drift) with accusative subject, lika (like) with dative subject, etc. Cf. Levin 1980 for an illuminating discussion of these verbs. When these verbs are embedded in a control construction their non-overt subject either has the controller's case (but not always) or it has its inherent case. Consider the following examples: (The word einn (one, alone) shows the same sort of agreement as adjectives.)

(52) a- Ég (nom) vonast til að vanta ekki einn/einan/*einum efni í ritgerðina.

(I hope not to lack alone (m. sg. Nom/Acc/*Dat) material for the thesis.)

b- Ég (nom) hlakka ekki til að reka aleinn/aleinan/*aleinum á land.

(I don't look forward to drifting alone (m. sg. Nom/Acc/*Dat) ashore.)

The same phenomenon can be observed in the so-called impersonal passives where a non-accusative object is passivized and stays genitive or dative.

(53) a- Henni var neitað um það.

(She (dat.) was denied it.)

b- Mín var vitjað.

(I (Gen.) was visited.)

(54) a- Hún vonast til að verða ekki neitað *ein/einni um það.

(She hopes not to be alone (*Nom/Dat) denied it.)

b- Ég hlakka til að verða vitjað *aleinn/aleins à morgun.

(I look forward to be visited alone (*Nom/Gen) tomorrow.)

(In these cases the nominative is not acceptable for some reason.)

In the Arbitrary control structures, the non-overt subject also bears case in Icelandic.

- (55) [*Ad vanta einan skó*] en furðalegt.
 (To lack alone (Acc. masc. sing.) shoes is terrible.)

Consider finally some raising examples:

- (56) a- *Eg tel [Maríu vera goða].*
 (I believe Maria (Acc) to be good (Acc))
 b- *María er talin vera goð/*goða.*
 (Mary (Nom) is believed to be good (Nom/*Acc).)
 c- *Pennan bát er talid hafa rekið einan að landi.*
 (This boat (Acc) is believed to be drifting
 alone (Acc) to shore.)

The adjective and einn in (56)a-b and (56)c respectively agree not only in person, number, and gender features with the embedded non-overt subject but also in case. The non-overt subject in (56)b and (56)c in turn agrees with its antecedent in matrix subject position.

We may conclude then that person, number, gender, and case features do not distinguish one non-overt NP from another. But the non-overt NPs in raising and control structures are different. One respect in which they are different -- implicit in the discussion in section II.1 -- is that the non-overt NP in a control construction bears a th-role while the non-overt NP in a raising construction does not. In effect, recall that in a raising construction the non-overt NP and its antecedent are members of the same th-chain. The non-overt NP is in an

argument position. Hence, it is assigned an argument th-role. Its antecedent is an argument in a non-argument position. The non-overt NP must consequently transmit its th-role to its antecedent. In conclusion, one feature distinguishing among non-overt NPs is \bar{t} th-role. For a discussion of other distinguishing features of non-overt NPs see section II.4.1.

II.3 VP as an Adjunct th-role Assigner

In section II.1 we discussed verbs that assign an argument th-role to the subject position and verbs that do not assign a th-role to the subject position. In this section we will show that there are verbs that assign an adjunct th-role to the subject position.

3.1 Mixed Verbs: Raising and Control

Ruwet 1972 discusses a class of verbs that have mixed lexical properties with respect to the status of their subject. These verbs have both properties of raising verbs -- i.e., their D-Structure subject may be empty -- and properties of non-raising verbs -- i.e., their S-Structure subject may be their D-Structure subject.

Consider the following examples:

- (57) a- Pierre nous menace de mort.
 (Peter threatens us with death.)
- b- Pierre nous menace de nous tuer.
 (Peter threatens us to kill us.)

- c- La course aux armements menace la paix.
(The arms race threatens the peace.)
- d- La course aux armements menace de provoquer une guerre.
(The arms race threatens to provoke a war.)
- e- Le chef de la bande menace d'être impitoyable.
(The chief of the band threatens to be merciless.)
- (58) a- Je vous promets une belle surprise.
(I promise you a nice surprise.)
- b- Je vous promets de vous faire une belle surprise.
(I promise to give you a nice surprise.)
- c- Les pommiers promettent beaucoup de fruits cette année.
(The apple trees promise a lot of fruit this year.)
- d- Les pommiers promettent de donner beaucoup de fruits cette année.
(The apple trees promise to give a lot of fruit this year.)
- e- Le chef de la police promet d'être magnanime.
(The chief of police promises to be magnanimous.)
- (59) a- Le chef de la police exige une récompense.
(The chief of police demands a reward.)
- b- Le chef de police exige d'être payé pour ses services.
(The chief of police demands to be payed for his services.)

- c- Ce livre exige une lecture soigneuse.
(This book demands a careful reading.)
- d- L'histoire de la révolution exige d'être écrite.
(The history of the revolution demands to be written.)
- (60) a- Ce livre mérite une publication rapide.
(This book deserves a rapid publication.)
- b- La préface de ce livre mérite d'être publiée rapidement.
(The preface to this book deserves to be published immediately.)
- c- L'auteur de ce livre mérite le Prix Nobel.
(The author of this book deserves the Nobel Prize.)
- d- L'auteur de ce livre mérite de gagner le Prix Nobel.
(The author of this book deserves to win the Nobel Prize.)

In the simple sentences (57)a, (57)c, (58)a, (58)c, (59)a, (59)c, (60)a, (60)c the subjects are clearly arguments of menacer, promettre, exiger, and mériter. We may then assume that the subjects in the complex sentences (57)b,d-e, (58)b,d-e, (59)b,d, and (60)b,d are also arguments of menacer, promettre, exiger, and mériter: i.e., they are control structures.

But Ruwet notices that these verbs share several properties of raising predicates. First, the object of idioms (cf. (62)a and (62)b) may appear as the surface subject of these verbs.⁴

- (61) a- Grand cas promet/mérite d'être fait des derniers évènements en Pologne.
(A big deal promises/deserves to be made of the last events in Poland.)
- b- Parti menace/exige d'être tiré de cette situation.
(Advantage threatens/demands to be taken of this situation.)
- (62) a- Justice menace/exige d'être rendue dans ce pays.
(Justice threatens/demands to be made in this country.)
- b- Assistance mérite/promets d'être portée aux hommes de ce pays.
(Assistance deserves/promises to be given to the men of this country.)

Second, the adnominal complement of the surface subject in sentences (57)e, (58)e, (59)d, and (60)b may cliticize onto the verb of the embedded clause.

- (63) a- Le chef menace d'en être impitoyable.
b- Le chef promet d'en être magnanime.
c- L'histoire exige d'en être écrite.
d- La préface mérite d'en être publiée rapidement.

Moreover, note that menacer, promettre, mériter, and exiger select a non-propositional external argument as shown

in (64)a and (65)a. But a propositional argument may appear in their subject position just in case their complement's verb takes a propositional subject as shown in (64)b and (65)b. This indicates that the subject of these verbs may be selected by the embedded verb.

- (64) *a- Que Jean parte menace l'équilibre de la famille.
 (That John leaves threatens the equilibrium of the family.)
 b- Que Jean parte menace de t'ennuyer.
 (That John leaves threatens to bother you.)
- (65) *a- Que Jean est idiot mérite de la publicité.
 (That John is stupid deserves publicity.)
 b- Que Jean est idiot mérite de devenir évident.
 (That John is stupid deserves to become obvious.)
Ça menace de devenir évident, que Jean est idiot.

Given the above facts we could simply assume that verbs like menacer, promettre, mériter, exiger optionally assign an argument th-role to their subject. Thus, they may function both as control and raising verbs. But the facts are somewhat more complex. It has been noticed by Rouveret & Vergnaud 1978 that these verbs do not have all the properties of raising verbs.

First, an expletive may not appear in the subject position of these verbs. Compare (66) with (67).

- (66) a- Il semble falloir partir.
 (It seems necessary to leave.)
- b- Il semble s'avérer que Jean est idiot.
 (It seems to turn out that John is a fool.)
- c- Il semble {avoir été arrêté beaucoup de monde.
 {être venu
 (It seems to have {been arrested many people.)
 {come

(sembler, s'avérer, falloir, the passive arrêté, and the ergative venir are verbs with no external th-role.)

- (67) *a- Il menace/promet de falloir partir.
- *b- Il promet/exige de s'avérer que Jean est idiot.
- *c- Il menace/promet de venir beaucoup de monde.
- *d- Il exige/mérite d'être arrêté un grand nombre
 d'hommes.

Second, a quantifier in the subject position of these verbs may only have wide scope. Compare (68)a and (68)b, and (69)a and (69)b.

- (68) a- Personne ne semble être venu, mais quelqu'un semble être venu.
 (Nobody seems to have come, but somebody seems to have come.)
- b- Personne ne mérite/menace de venir, mais quelqu'un mérite/menace de venir.
 (Nobody deserves/threatens to come, but somebody deserves/threatens to come.)

(68)a is not a contradiction but (68)b is a contradiction.

(69) a- Un interprête chacun semble avoir été assigné aux diplomates.

(one interpreter each seems to have been assigned to the diplomats.)

*b- Un interprête chacun promet/exige d'être assigné aux diplomates.

(One interpreter each promises/demands to be assigned to the diplomats.)

In (69)a but not in (69)b chacun may be bound to les diplomates.

Let us first consider the facts in (67). An expletive may not appear in the subject position of menacer, mériter, exiger, promettre. Recall that an expletive can only appear in positions with no semantic content. The fact that an expletive cannot appear in the subject position of these verbs then indicates that this position has semantic content -- i.e., a th-role. On the other hand, the idiom facts (cf. (61)-(62)), the distribution of the genitive clitic en (cf. (63)), as well as the selection facts (cf. (64)-(65)) show that there is movement into this position. This means that we are dealing here with a semantic role which is invisible for the Argument th-Criterion. We have seen in Chapter I that such a semantic role does exist: the adjunct th-role. We conclude then that menacer, promettre, mériter, exiger (or more precisely the VP which is a projection of these

verbs) always assign a semantic role, which may be either an argument th-role or an adjunct th-role. When these verbs assign an argument th-role to the subject, it is an agent th-role. But when these verbs take an external adjunct-ARGUMENT, they do not put selectional restrictions on its content (but see footnote 5).

Note that, interestingly enough, the il of weather verbs and of il y a may appear as subject of these verbs, thus confirming their argument status.⁵

(70) a- Il menace/mérite de pleuvoir.

(It threatens/deserves to rain.)

b- Il promet de neiger.

(It promises to snow.)

(71) a- Il menace/mérite d'y avoir beaucoup de gens.

(There threatens/deserves to be many people.)

b- Il promet d'y avoir plus d'hommes que de femmes.

(There promises to be more men than women.)

When menacer and promettre take a direct or indirect complement besides a clausal complement as in (72)a-b, the VP obligatorily assigns an argument th-role, as indicated by the ungrammaticality of (73) and (74). This shows once more that the internal arguments may play a role in determining the nature or type of th-role assigned to the subject position (cf. I.1).

(72) a- Le chef de la bande menace la ville d'être impi-
toyable.

(The chief of the band threatens the city to be
merciless.)

b- Le chef de la police promet aux révoltés d'être
magnanime.

(The chief of police promises the insurgents to be
magnanimous.)

(73) *a- Tort menace la ville d'être donné aux habitants.

(Wrong threatens the city to be done to the innabi-
tants.)

*b- Justice promet aux révoltés d'être rendue.

(Justice promises the insurgents to be made.)

(74) *a- Le chef menace les révoltés d'en être impitoyable.

*b- Le chef promet aux révoltés d'en être magnanime.

(where en is the adnominal complement of the subject.)

As for the Quantifier-scope facts (cf. (68)b, (69)b),
"reconstruction" is not possible because although the matrix
subject and the embedded subject belong to the same argument
th-chain, the matrix subject position is a semantic position,
namely an adjunct th-position. In effect, these facts corro-
borate May's intuition that "reconstruction" is not possible
from a semantic position.

Other verbs that belong to the mixed class are s'apprêter à (get ready) se préparer à (to prepare oneself).

3.2 Cases of obligatory Adjunct th-role assignment

The predicate Adjectives susceptible and foutu allow idioms or semi-idioms in subject position.

- (75) a- Grand cas est susceptible/foutu d'être fait de ces évènements.
 (A big deal is liable to/capable of be made of these events.)
- b- Assistance est susceptible/foutue d'être portée aux malades.
 (Assistance is liable/capable of be given to the sick people.)

They also allow the genitive clitic en -- adnominal complement of their surface subject -- to cliticize onto the verb of their clausal complement.

- (76) a- Le chef de la bande est susceptible/foutu d'être magnanime.
 (The chief of the band is liable to/capable of be/being magnanimous.)
- b- Le chef est susceptible/foutu d'en être magnanime.

But these predicates do not allow an expletive il in their subject position.

(77) *a- Il est susceptible/foutu d'ê[^]tre publié que Jean a commis ce crime.

(It is liable to/capable of be published that John committed that crime.)

*b- Il est susceptible/foutu de venir beaucoup de gens.

(It is liable to/capable of come many people.)

Nor do they allow the quantifier chacun (each) adjoined to the matrix subject to find its antecedent in the lower clause.

(78) * Un interprê[^]te chacun est susceptible/foutu d'ê[^]tre assigné aux diplomates.

The above facts indicate that the subject position of ê[^]tre susceptible de/ê[^]tre foutu de is a semantic position. We think though that these predicates are different from mixed verbs like menacer in that they never take an external argument. These predicates are very close in meaning to monadic predicates like probable, likely, can In effect sentence (79)a entails (79)b and sentence (80)a entails (80)b.

(79) a- Pierre est susceptible de venir.

(Peter is liable to come.)

b- It is probable/likely that John will come.

- (80) a- Pierre est foutu de venir.
 b- Peter can come.

(In Chapter III we will argue that modals do not assign an argument th-role.)

Recall that predicate Adjectives have the property of being able to externalize their clausal complement. Interestingly enough, être susceptible de and être foutu de are exceptions to this generalization as shown below.

- (81) *a- Que Jean parte est susceptible/foutu.
 (That John leaves is liable/capable.)
 *b- De partir est susceptible/foutu.
 (To leave is liable/capable.)

- (82) * C'est susceptible/foutu, { que Jean parte.
 de partir.

This follows immediately from the fact that these predicates assign two th-roles: an argument th-role and an adjunct th-role -- the latter to the subject position and the former to the object position since only arguments may appear in subcategorized positions.

In conclusion, être susceptible de and être foutu de assign obligatorily an adjunct th-role to their subject.

3.3 Summary. A classification of verbs in terms of
+External Semantic role and +Obligatory Semantic
role.

To summarize, we have argued that there are verbs that take an external adjunct-ARGUMENT as a lexical property -- a fact which is not surprising since the subject is not a sub-categorized position. Recall that while the head-complement relation is governed entirely by the Projection Principle, the subject-VP relation is not. The formal subject-VP relation is present at all levels of representation whether or not it encodes a semantic relation. If it does encode a semantic relation and it is an argument th-relation, then it is governed by the Extended Projection Principle: it must hold at every syntactic level. If it is an adjunct th-relation, then it is not governed by the Extended Projection Principle: it only holds at LF (or, crucially, it does not hold at D-S).

If a VP may or may not assign a semantic role to the subject position - either an argument or adjunct th-role, obligatorily or optionally, depending on the lexical properties of the verb of which the VP is a projection -, then the following classification of verbs should hold.

- (83) 1- - External Semantic Role
sembler, s'avérer, se révéler,⁶, ergatives,
passives.

2- + External Semantic RoleA. + Obligatory

- 1) argument th-role: transitive verbs (among them control verbs) and intransitive verbs.
- 2) argument th-role or adjunct th-role:
menacer, promettre, se préparer à,
- 3) adjunct th-role: susceptible de, foutu de

B. -Obligatory

- 1) adjunct th-role: the modals (to be discussed in Chapter III)
- 2) argument th-role: commencer, risquer

The verbs commencer and risquer may appear in simple transitive sentences, which shows that these verbs can take an external argument.⁷

- (84) a- Pierre commence le livre.
(Peter starts/begins the book.)
- b- Pierre risque sa vie.
(Peter risks his life.)

They can also appear in complex constructions:

- (85) a- Pierre commence à lire le livre.
(Peter starts/begins to read the book.)
- b- Pierre risque de perdre sa vie.
(Peter risks to loose his life.)

In this case the subject position may not be a semantic position, as shown by the fact that an expletive may appear in this position.

- (86) a- Il risque de devenir évident que Pierre est idiot.
 (It risks to become obvious that Peter is a fool.)
- b- Il commence à être publié beaucoup de livres en anglais.
 (It begins/starts to be published many books in English.)

They also allow the one-each interpretation.

- (86') Un interprète[^] chacun risque de/commence à être assigné aux diplomates.

Note that if there existed predicates that assigned optionally either an argument or an adjunct th-role to the subject position, they would not be distinguishable from B.2. And finally note that although we have classified seem as -External Semantic Role, it might be the case that it belongs to class B.1. In effect, seem might be thought of as having both a "root" and an "epistemic" sense -- like the modals -- although the semantic difference is much more subtle in the case of seem. Compare (87)a and (87)b.

- (87) a- The doctor seems to have examined John.
 b- John seems to have been examined by the doctor.

In the "root" sense seem is predicated of the doctor in (87)a and of John in (87)b. Thus the conjunction of (87)a and the negation of (87)b is not a contradiction. It might in fact be the case that there are no raising predicates that are -External Semantic Role: i.e., all predicates classified as such might belong, like seem, to class B.1.

II.4 Non-overt NPs

4.1 Types of non-overt NPs (II). Other distinguishing features: ⁺-pronominal, ⁺-anaphor.⁸

In section II.2 we have seen that one distinguishing feature of non-overt NPs is ⁺th-role. It distinguishes non-overt NPs in the embedded subject position in raising constructions and non-overt NPs in the object position of passives from the non-overt NPs in the subject position in control constructions. The latter but not the former bear a th-role.

There are two other distinguishing features shared by both overt and non-overt NPs: ⁺-anaphor, ⁺-pronominal. The value of these features is fixed for a given NP on the basis of two factors: first, its referential properties and second, the Binding Principles in the way that will be discussed below.

It is a fact that languages have lexical NPs with different referential properties. Anaphors like himself and each other have no independent reference. Their reference is fixed on the basis of the reference of their antecedent. Cf. II(47). Pronouns like he, they ... may or may not have

independent reference. In a sentence like John thinks that he will leave where he is understood as coreferential with John, he has no independent reference. Its reference is fixed by its antecedent John. In the case of deictics, pronouns have independent (i.e., linguistic-independent) reference. Finally names like John, children, tables, the dog ... have independent reference. Pure anaphors (himself, each other) are +anaphor, -pronominal. Pure pronouns (he, they ...) are +pronominal, -anaphor. Names are -anaphor, -pronominal. There are no overt cases of +pronominal, +anaphor, for reasons that will be given below.

We have seen above how NPs are classified as $\bar{+}$ anaphor and $\bar{+}$ pronominal depending on their semantics: i.e., on the basis of their referential properties. Furthermore, their anaphoric and/or pronominal status depends on the domain in which they must or may find their antecedent. This is stated by the Binding Principles: (cf. Chomsky 1981a, 1981b).

(87') A. Anaphors must be bound in their governing category.

B. Pronominals must be free in their governing category.

α_i binds β_i if α_i c-commands β_i .

c-command is defined as follows (from Aoun & Sportiche, to appear):

- (88) α c-commands β ($\alpha \neq \beta$) iff $\forall \emptyset, \emptyset$ a maximal projection
 \emptyset dominates $\alpha \Rightarrow$
 \emptyset dominates β .

The notion governing category is defined as in (89).

- (89) α is a governing category for β if and only if
 α is the minimal category containing β , a governor
of β , and a SUBJECT accessible to β .

(See the next section for a discussion of the notion of accessibility.)

The Binding Principles state that anaphors must be bound where pronominals must be free. In effect, anaphors and pronominals are generally in complementary distribution. For the sake of illustration consider a few examples.

Consider the object position of a verb.

- (90) [_{S*} John thinks [_S that [_S Peter should shave
himself/him]]]

himself/him is governed by the verb shave. So its governing category is S. Hence, himself must be bound to Peter. It cannot be bound to John. And him must not be bound to Peter but it may be bound to John.

Consider next the subject position of an infinitival
 -- as in the two marked constructions (91)a and (91)b.

- (91) a- [_{S*} They would prefer [_{S̄} for [_S each other/them
 to win]]]
- b- [_{S*} They believe [_S each other/them to be foolish]]

In (91)a the subject position is governed (and assigned case) by for. So its governing category is S*. An anaphor in this position must be bound to the matrix subject while a pronominal in this position must not be bound to the matrix subject. In (91)b the embedded subject position is governed (and assigned case) by believe. (Believe has the lexical property of inducing the \bar{S} -node of its complement to be deleted. For further discussion on \bar{S} -deletion see the next section.) So again S* is the governing category in which each other must be bound and them must be free.

Finally consider the subject position of a finite sentence.

- (92) [_{S*} They think [_{S̄} that [_S each other/them will win]]]

The embedded subject position is governed by Inflexion. So its governing category is S. Consequently, a pronominal but not an anaphor may appear in this position.

Let us now turn to the non-overt counterparts of pronominal and anaphoric Noun Phrases. A [+anaphor, -pronominal]

non-overt NP -- as its overt counterpart -- must fulfill at least two requirements: it must not have independent reference and it must be bound in its governing category. A case in point are the non-overt NPs found in the object position of passives and in the subject position of the complement of raising verbs which trigger \bar{S} -deletion:

- (93) a- Peter thinks [\bar{S} that [S John_i was killed $__i$]
 b- [S^* John_i was believed [S $__i$ to have been killed $__i$]
 c- [S^* John_i seemed [S $__i$ to be angry]

In (93)a-c, the non-overt NPs are bound in their governing category: i.e., S in the case of the objects and S* in the case of the subjects.

A [+pronominal, -anaphor] non-overt NP must meet at least the following two conditions: it must be able to have or not to have independent reference and it must be free in its governing category. It is found in the subject position of tensed clauses in languages like Spanish and Italian:

- (94) a- $__i$ trabaja duramente.
 (He works hard.)
 b- Pedro piensa que [S $__i$ trabaja demasiado]
 (Peter thinks that he works too hard.)

and possible in the object position of languages with object clitics:

- (95) a- Jean l'a vu —_i.
 (John saw him.)
- b- Jean lui a parlé —_i.
 (John spoke to him.)

(See section II.4.3.1 for further discussion.)

Finally, consider a non-overt NP with the features [+anaphor, +pronominal]. Recall that with respect to their semantics, anaphors have no independent reference while pronominals may or may not have independent reference. Hence, an NP which is both anaphoric and pronominal will have no independent reference (i.e., the overlapping property of pronominals and anaphors). With respect to the Binding Principles, recall that anaphors are bound in their governing category and pronominals are free in their governing category. Consequently, to avoid contradiction, pronominal anaphors must not have a governing category: i.e., they are ungoverned. Pronominal anaphors are found in control constructions:

- (96) a- non-arbitrary control: Peter_i decided [_S —_i to leave]
- b- arbitrary control: It is unclear what [_S —_i to do]

(In (96)b there is no independent (specific) reference: i.e., the non-overt NP refers freely to any (animate) object in some abstract mental domain.) The domain in which pronominal anaphors may find their antecedents is determined by the theory

of Control, which possibly can be integrated (at least partly) into the Binding Theory as suggested by Manzini 1982.

Overt pronominal anaphors do not exist -- including in languages like Icelandic which has a mechanism to assign case to pronominal anaphors. Cf. section II.2. The reason might be a functional one: for a lexical item to exist it must be able to appear in a wide variety of positions. But pronominal anaphors may only appear in the subject of non-finite clauses -- too restrictive a distribution for a lexical item.⁹

If non-overt NPs bear the features $^+$ -anaphor, $^+$ -pronominal, $^+$ -th-role, then there are a priori 8 types of non-overt NPs.

(97) 1-	+th-role +anaphor -pronominal	5-	+th-role +anaphor +pronominal
2-	-th-role +anaphor -pronominal	6-	-th-role +anaphor +pronominal
3-	+th-role -anaphor -pronominal	7-	+th-role -anaphor +pronominal
4-	-th-role -anaphor -pronominal	8-	-th-role -anaphor +pronominal

Type 1 is presumably non-existent. See section II.4.3 for discussion. Type 2 is the non-overt NP found in sentences

like (93)a-c. It is referred to as trace. Type 5 is the non-overt NP found in sentences like (96)a-b. It is referred to as PRO. Type 6 will be discussed in the next section. It will be suggested there that this type of non-overt NP is found in the "menacer-construction." It has mixed properties. On the one hand, it is like a trace in that it bears no *th*-role and on the other hand, it is like a PRO in that it is un-governed. Consequently, like PRO, it falls under the theory of Control. Type 7 is found in the subject position of sentences like (94)a-b in languages like Spanish and Italian and possibly in object position in sentences like (95)a-b in languages with object clitics. Type 8 is also found in the subject position in sentences with no external argument in languages like Spanish and Italian:

- (98) a- __ parece que Pedro vendrá.
 (It seems that Peter will come.)
- b- __ puede ser que Pedro venga.
 (It may be the case that Peter will come.)

The non-overt NPs of Type 7 and 8 are referred to as pro. The former is an argument pro, the latter an expletive pro. (Note that overt pronominals have the same property, ⁺*th*-role.)

Finally a word must be said about the non-overt NPs known as variables. Variables are locally \bar{A} -bound. That is, their antecedents are in a position which is not an A-position,

namely in Comp. They have no independent reference. The range of their reference is fixed by an operator:

- (99) a- Who_i did John see ____i?
 b- The book which_i John bought ____i is interesting.

Moreover, variables have name-like denoting properties (yet to be made precise) and like names they must bear a th-role. Variables are then non-overt NPs of Type 3. Type 4 is non-existent since variables -- like names -- are arguments.

A [+anaphor, -pronominal] variable is excluded by Principle A of the Binding Theory in so far as S and not \bar{S} is defined as a governing category, but a [-anaphor, +pronominal] variable is a possibility allowed by the grammar. And in effect, in languages with a resumptive-pronoun strategy, pronouns may function as variables. On the other hand, [+anaphor, +pronominal] variables seem to be non-existent. The non-existence of this type of non-overt NP might be related to the non-existence of overt pronominal anaphors, but it is not clear how. We leave this problem unsolved.

4.2 Co-superscripting, \bar{S} -deletion, and the i-within-i Condition

It is well-known that there are predicates which like seem do not assign an argument th-role to their subject but which unlike seem do not allow subject-to-subject movement: necessary, possible, probable, obvious,

- (100) a- It is necessary that John leave.
 b- It is necessary to leave.
 *c- John is necessary to leave.

It is moreover well-known that predicates like seem are obligatorily subject-to-subject raising predicates when they take an infinitival complement.

- (101) a- It seems that John is sick.
 *b- It seems to be sick.
 c- John seems to be sick.

The contrast between sentences like (100)b and sentences like (101)b is characterized in the following way (cf. Rouveret & Vergnaud 1978, Chomsky 1981a):

- (102) The seem-class of predicates trigger \bar{S} -deletion; the necessary-class of predicates do not trigger \bar{S} -deletion.

Thus, seem, but not necessary, governs the subject of its clausal complement since no maximal category intervenes between the two. The non-overt NP in (100)b is hence PRO: it bears a th-role and it is ungoverned. The non-overt NP in (101)b cannot be PRO because it is governed. It cannot be trace because it bears a th-role and it is not bound in its governing category (in effect, it is not bound at all). Hence, it must

be pro: it bears a th-role and it is free in its governing category. But there is a further condition on pro -- to be discussed in the next section -- which is not satisfied in (101)b. The sentence is consequently ruled out.

Since there is no verb seem* identical to seem which appears in both structures (101)b and (101)c, we may conclude that \bar{S} -deletion is not an optional property of raising predicates. But recall that \bar{S} -deletion only applies to infinitival complements. Cf. (101)a. Why? \bar{S} -deletion implies Comp deletion. Suppose that Comp contains the [+tense] feature in a tensed sentence, as suggested by den Besten 1978. The impossibility of \bar{S} -deletion in tensed clauses might then be attributed to the principle of recoverability of deletion because it implies non-recoverable deletion of the [+tense] feature. Note that in It seems John is sick, Comp has not been deleted. In English, as is well-known, there is optional that-insertion in the Comp of the complement of a certain class of verbs. In French complementizer-insertion is obligatory. Consequently, the French counterpart is ungrammatical: *Il semble Jean est malade. In conclusion, if a raising verb is [+ \bar{S} -deletion], then \bar{S} -deletion applies obligatorily up to recoverability.¹⁰

But why is (100)c, as well as (103)a-f, ungrammatical?

- (103) *a- John_j was tired [\bar{S} e_j to be polite]
 *b- John_j was unclear [\bar{S} how [e_j to answer the question]]
 *c- John_j was wanted [\bar{S} e_j to leave]

*d- There_j was tried [_S e_j to be a policemen on every street]

*e- Jean faut [_S e_j partir]
(John is necessary to come.)

*f- Juan_j es posible [_S que [e_j venga]]
(John is possible that will come.)

In (100)c and (103)a-f the NP in the matrix subject position has been raised from the subject position in the embedded clause. Note that the ungrammaticality cannot be due to the Argument Th-Criterion since the matrix predicates in these sentences do not select an external argument. Before we provide an explanation for the ungrammaticality of (100)c and (103)a-f, a brief digression is necessary.

Chomsky 1981a has suggested that the agreement relation between the AGR element generated under Inflexion and the subject be expressed by a co-superscripting notation. He suggested moreover that the subject position of a predicate with no external argument th-role be co-superscripted with a post-verbal complement. This is illustrated in (104).

(104) Itⁱ AGRⁱ seems [_S _i that John is sick]

What is the meaning of the co-superscripting relation between It and the clausal complement? A not implausible hypothesis is that every A-position must be thematically identified. A position is thematically identified if it is a semantic

position or if it is linked to a semantic position. The object is always thematically identified in a trivial way since it follows from the Projection Principle that an object position is present if and only if it is an argument position. On the other hand, the subject-position is present whether or not it is a semantic position. Hence, the subject position is thematically identified in one of two ways: either (1) the VP has the property of assigning a semantic role (either an argument th-role or an adjunct th-role) to the subject position (i.e., [NP, S] is a dependent of a VP with the feature +Semantic Role) or (2) the subject position is linked to a semantic position by co-indexing. In (104) the matrix subject position is thematically identified because it is co-superscripted with a semantic position, namely the post-verbal complement position. (It is reasonable to assume that co-superscripting is strictly local: i.e., clause internal).

Chomsky 1981a proposed moreover the following condition on co-indexing:

(105) The i-within-i Condition

*[_{χ} ... _{δ} ...], where χ and δ bear the same index.

The notion of accessibility is defined in terms of the i-within-i Condition. (Recall that the notion of accessible subject plays a role in defining the notion of governing category. Cf. II.(89)).

- (106) α is accessible to β if and only if β is in the c-command domain of α and assignment to β of the index of α would not violate the i-within-i Condition.

The notion of accessibility as defined in (106) explains the contrast between sentences like (107)a and (107)b.

- (107) a- They think it is a pity that pictures of each other are hanging on the wall.
 *b- They think he said that pictures of each other are hanging on the wall.

In (107)a it is co-superscripted with the clause that contains pictures of each other. Consequently, it is not an accessible subject for each other since coindexing between it and each other would violate the i-within-i Condition. Hence, the governing category for each other is the matrix clause, which contains a subject accessible to each other. On the other hand, in (107)b he is a subject accessible to each other. The S-complement of think is then the governing category for each other. Since each other (a lexical anaphor) does not have an antecedent within this domain, the sentence is ruled out because it violates Principle A of the Binding Theory. The i-within-i Condition also explains the ungrammaticality of the following constructions:

- (108) *a- [_{NP_i} the friends of [_i each other's] parents]
 *b- [_{NP_i} the friends of [[_i their] parents]]

each other and their may not be coreferential with the NP containing them.

In Zubizarreta 1981 the impossibility of wh-subject extraction from factive complements in English, French, and Portuguese as well as other phenomena is explained in terms of the i-within-i Condition. See Chapter IV, Part II for a brief discussion of some of these facts.

Let us come back to our initial question. Why are (100)c and (103)a-f ungrammatical? Recall that every A-position must be thematically identified. Let us further assume that an A-position must be thematically identified at every level of representation -- including D-Structure. This means that if a subject position is not a semantic dependent of a VP, it must be co-superscripted with an argument position at D-Structure. Now recall that the subject position of was tried, was unclear, is necessary, was wanted, falloir, es possible are not argument th-positions. Consequently, it will be co-superscripted with the post-verbal clausal complement. When the embedded subject moves into the matrix subject position, every element in the chain j will inherit the superscript. (103)a-f and (100)c will then have the following indexed structures, which clearly violate the i-within-i Condition.¹¹

- (109) *a- John_jⁱ was tried [_Sⁱ e_jⁱ to be polite]
- *b- John_jⁱ was unclear [_Sⁱ how [_S e_jⁱ to answer the question]]
- *c- John_jⁱ is wanted [_Sⁱ e_jⁱ to leave]
- *d- There_jⁱ was tried [_Sⁱ e_jⁱ to be a policeman on every street.]
- e- Jean_jⁱ faut [_Sⁱ e_jⁱ partir]
- *f- Juan_jⁱ es posible [_Sⁱ que [_S e_jⁱ venga]]
- *g- John_jⁱ is necessary [_Sⁱ e_jⁱ to leave]

In Lectures on Government and Binding, the ungrammaticality of (109)a-f is accounted for by another principle of grammar: The Empty Category Principle (ECP).

(110) A trace must be properly governed.

α properly governs β if and only if α governs β and $\alpha \neq \text{AGR}$.

Thus, ECP excludes sentences (109)a-f because the trace in subject position is not properly governed. But since we have an independently motivated principle, i.e. the i-within-i Condition, which accounts for the ungrammaticality of (109)a-f, we can dispense with ECP for these cases.¹²

Verbs like seem allow subject-to-subject raising because they trigger \bar{S} -deletion. Deletion of \bar{S} avoids a violation

of the i-within-i Condition.

(111) a- John_jⁱ seems [_{\bar{S}^i} [_S e_jⁱ to be sick]]

After \bar{S} -deletion:

b- John_jⁱ seems [_S e_jⁱ to be sick]

Hence, we may assume that the "raison d'êtré" of \bar{S} -deletion in the case of raising constructions is to avoid a violation of the i-within-i Condition. We may assume moreover that lexical properties of a functional nature are non-vacuous. This would mean that among the raising predicates, only those that do not assign a semantic role obligatorily to the subject position may be \bar{S} -deletion predicates. In effect, since the function of \bar{S} -deletion in the case of raising predicates is to delete an \bar{S} which bears a superscript and recall that a complement is co-superscripted with the subject position only when the subject is not thematically identified, \bar{S} -deletion will be a non-vacuous property of a raising predicate only if the predicate in question does not obligatorily assign a th-role to the subject position.

Now recall that the menacer-class of verbs assign obligatorily either an argument or adjunct th-role to the subject position and être susceptible and être foutu assign obligatorily an adjunct th-role to the subject position. Consequently, there is no co-superscripting between the subject position and the post-verbal complement in the constructions that contain these

predicates. In these cases then, subject-to-subject raising creates no violation of the i-within-i Condition. Assuming the suggestion in the preceding paragraph to be correct, the menacer-class of verbs as well as the être susceptible-class of predicates will then not be \bar{S} -deletion predicates. The non-overt NP in the subject position of the complement of these raising predicates will consequently have the following mixed properties: it is trace-like in that it does not bear a th-role (it transmits a th-role) and it is PRO-like in that it is ungoverned. This is exactly the non-overt NP of type 6 in II.(97). In what follows we shall give evidence that the non-overt NP in the raising menacer-type construction is a pronominal anaphor -- i.e., it is ungoverned. Note that this indirectly lends support to the non-vacuity assumption made above.

4.2.1 An argument for the existence of [-th-role, +anaphor, +pronominal] non-overt NPs.

It has been noticed that there is another property that distinguishes raising constructions from control constructions in Romance languages. This is the impersonal se-passive or middle se, which will be discussed in more detail in Chapter III. Some examples of se-passive are given below.

(112) a- Ces vêtements se lavent facilement.

(These clothes wash easily.)

b- Des enfants pareils s'invitent avec plaisir.

(Children like these ones are invited with pleasure.)

The se-passive may appear in the complement of raising verbs but not in the complement of control verbs -- as shown by the following examples.

- (113) a- Ces vêtements semblent [_S t se laver facilement.]
 (These clothes seem to wash easily.)
 b- Des enfants pareils peuvent [_S t s'inviter avec plaisir.]
 (Children like these ones may be invited with pleasure.)

- (114) *a- Il faut [_S NP* s'arrêter le matin]
 (It is necessary to be arrested in the morning.)
 b- Il est impossible [_S NP de se mettre en prison avec plaisir]
 (It is impossible to be put in jail with pleasure.)
 *c- Les hommes ne veulent généralement pas s'inviter à ce genre de réunion.
 (Men normally do not want to be invited to this type of meeting.)

(The reflexive readings are irrelevant.)

Compare (114)a-b with the past-participle passives, which are grammatical:

- (115) a- Il faut [_S PRO être arrêté le matin]
 b- Il est impossible [_S PRO d'être mis en prison avec plaisir]

- c- Les hommes ne veulent généralement pas [_S PRO être invités à ce genre de réunion]

Belletti 1980 proposes that the impersonal se is generated under Inflexion. Following this proposal, Rizzi 1980b suggests that the difference between (113) and (114) is due to the status of se as a governor. If se is a governor it can coexist with a trace (as in examples (113)a-b) or with pro in subject position. But it cannot coexist with a pronominal anaphor. Hence, in (114)a-c NP* cannot be a pronominal anaphor because it is a governed position. It cannot be trace because it would violate Principle A of the Binding Theory. Why can't NP* be pro? This question will be answered in the next section.

Interestingly enough, the se-passive cannot appear in the clausal complement of the menacer-class of verbs (in neither the control nor the raising construction) nor in the complement of the être susceptible-class of predicates.

- (116) *a- Ces vêtements menacent/promettent de se laver fréquemment.

(These clothes threaten/promise to be washed frequently.)

- *b- Ce fromage exige/mérite de se manger avec un bon vin.

(This cheese demands/deserves to be eaten with a good wine.)

- *c- Ces vêtements sont susceptibles/foutus de se laver facilement.

(These clothes are liable/can be washed easily.)

Compare (116)a-c with the past-participle counterparts which are grammatical.

- (117) a- Ces vêtements menacent/promettent d'être lavés fréquemment.
 b- Ce fromage exige/mérite d'être mangé avec un bon vin.
 c- Ces vêtements sont susceptibles/foutus d'être lavés facilement.

The ungrammaticality of (116)a-c is just what we expect since a pronominal anaphor may not be governed. From this point of view the raising menacer-class of predicates is predicted to behave like control verbs, and the prediction is borne out.

Note that while subject-to-subject raising from a tensed clause is ruled out by the i-within-i Condition in the case of predicates like es posible which assign no th-role to the subject position (cf. (109)f), it is unclear why there are no predicates in the menacer-class which allow subject-to-subject raising from a tensed clause: i.e., why can't a [+pronominal, -anaphor, -th-role] appear in the embedded subject position in sentences like (118)b?

- (118) a- Los manzanos prometen dar buenos frutos este año.
 (The apple trees promise to give good fruits this year.)
 *b- Los manzanos prometen que darán buenos frutos este año.
 (The apple trees promise that will give good fruits this year.)

When the complement clause is finite, prometer assigns an argument th-role and the matrix subject must be agentive.

To summarize, in this section we have suggested that the function of \bar{S} -deletion is to avoid a violation of the i-within-i Condition and that among the raising predicates only those that do not assign obligatorily a th-role to the subject may be [+S-deletion]. Hence, the raising menacer-class of predicates are not [+S-deletion] since they obligatorily assign an adjunct th-role. Consequently, the non-overt NP in the clausal complement of these predicates are trace-like in that they do not bear a th-role (they transmit a th-role to their antecedent) but are PRO-like in that they are ungoverned. Some evidence for their pronominal anaphor status was given based on the distribution of the middle se.

4.3 On the identification of non-overt NPs.

Chomsky 1981b suggests that for non-overt NPs to be fully identified they must have person, number, and gender features (and possibly also case in languages like Icelandic). Pronominal anaphors have intrinsic features. That this is so is indicated by the fact that the features of PRO may vary across languages. For example, in Italian an arbitrary PRO is plural while in Spanish it is singular. Recall also that in Icelandic PRO may have intrinsic case feature. Wh-traces, NP-traces, and pro, on the other hand, are assigned person, number, gender features by some local element. We suggest that this element must be a member of the same th-chain to which the identified

non-overt NP belongs. (Motivation is given below). This implies that we must define the notion of th-chain to include \bar{A} -positions. Thus, a wh-trace or wh-word in Comp will be part of a th-chain and will identify a wh-trace in an A-position with which it is coindexed. The AGR element and clitics will also be part of a th-chain and will identify the pro with which they are coindexed. Note that the requirement that the element which assigns person, number, gender features and the identified non-overt NP be part of the same th-chain explains why a non-overt anaphor which bears a th-role does not exist (cf. type (1) in II(97)). If an anaphor bears a th-role, then the anaphor and its antecedent are not members of the same th-chain. Consequently, the non-overt anaphor will not be correctly identified. Further motivation for the above-mentioned requirement will be given in Chapter III.

The locality condition on the identification of NP-traces is furthermore determined by Principle A of the Binding Theory. In the case of wh-traces, locality is determined by Subjacency -- assuming that a wh-operator may transmit features to the variable to which it is bound through intermediary traces in Comp. (Subjacency is a condition on movement which forbids a moved element to cross over more than one bounding node. Cf. Chomsky 1973. Bounding nodes are \bar{S} and NP. S is a weak bounding node and possibly a parametrized one.) In the following sub-section the locality condition on the identification of pro will be stated.

4.3.1 Condition on the identification of pro. The distribution of the genitive clitic 'en' (II).

Consider the following sentences.

- (119) a- Pierre \underline{l}_i a vu [_{NP} e]_i.
 (Peter him-saw.)
- b- Pierre $\underline{\text{lui}}_i$ a parlé [_{NP} e]_i.
 (Peter to him-talked.)
- c- Pierre $\underline{\text{en}}_i$ a vu [_{NP*} l'ami [_{NP} e]_i]_j
 (Peter gen. cl. (=his) saw the friend.)

Borer 1981 argues that the clitic is not a syntactic position (of the type [_V cl [V]]) as has been suggested by Kayne 1975). She argues that the clitic is a bundle of person, number, gender, and case features on the verb and that the non-overt NP linked to the clitic must be governed by cl-Verb. This latter statement is a bit too strong as shown by examples like (119)c. It will be slightly modified below.

We will assume in this thesis that the non-overt NP to which the clitic is linked is a pro and not a trace. The clitic identifies the pro in object position much like AGR identifies the non-overt subject in languages with "missing" subjects like Spanish and Italian. We make this assumption for the following reason. Recall that, as we have seen in II.1.4, the

genitive clitic en may cliticize from the subject position onto a verb which does not c-command the subject. And recall that anaphors must be c-commanded by their antecedents.

J. Guéron has noticed that en-cliticization from subject position has the same semantic constraints that PP-extraposition does. For example, stative predicates but not active predicates allow en-cliticization from subject position.

(120) a- L'auteur du livre est célèbre/riche.

(The author of the book is famous/rich.)

b- L'auteur en est célèbre/riche.

(121) a- L'auteur du livre est furieux/déçu.

(The author of the book is furious/disappointed.)

*b- L'auteur en est furieux/déçu.

We do not think though that en undergoes extraposition before cliticizing onto the verb because the PP-extraposed counterpart of (120) is ungrammatical.

(122) * L'auteur est célèbre/riche du livre.

The contrast between (119)c and (123) might suggest at first sight that the clitic-e relation must be regarded as an antecedent-anaphor relation.

- (126) a- Ho messo [^{NP} la sorella di Gianni_i] [^{PP} accanto a lui_i].
 (I put Gianni's_i sister next to him_i.)
- b- Gli_i ho messo Maria accanto e_i.
 (I to him-put Maria next.)
- *c- Gli_i ho messo [la sorella di Gianni_i] [accanto e_i].

Following Borer 1981 we may assume that it is the chain i(cl - e) which bears the th-role. In effect cl-e may be viewed as a discontinuous element. In (126)c gli-e is a discontinuous pronominal and it is natural to assume that each element in the chain is subject to the general structural condition that governs the coreference relation between pronominals and their antecedents: neither the clitic nor the argument position to which it is linked may c-command an NP with which the chain is co-indexed.

As is well-known, the relation between the clitic and the non-overt NP to which it is linked is local -- as shown by the following examples.

- (127) *a- Pierre lui_i a décidé de parler e_i.
 (Peter to him-decided to speak.)
- *b- Pierre en_i a vu la maison de l'ami e_i.
 (Peter gen. cl. (=his) saw the house of the friend.)

But the locality condition cannot be simply that pro must be governed by the element which identifies it. In effect, in (119)c en-V does not govern the position identified by the

- (129) a- [_{NP*} La préface [e]_i]_j en_i est [_{sc} e_j flatteuse]
- b- [_{NP*} La lecture [e]_i]_j en_i a été conseillée e_j]
- c- [_{NP*} La solution [e]_i]_j semble [_S e_j en_i avoir été
publiée e_j]]
- d- [_{NP*} Le chef [e]_i]_j menace [_S e_j d'en_i être [_{sc} e_j
impitoyable]]

(Irrelevant details omitted.¹³)

In all of the above examples pro_i is governed by the lexical head of NP_j^{*} and the th-position in the chain j is governed by en_i-V.

On the other hand, (128) excludes en-cliticization from subject position in non-raising constructions. Cf. II(42)b, (43)b, (46)c-d, (44)b, (45)b.

- (130) a- [Les missiles [e]_i]_j en_i ont atteint leur cibles.
- b- [_{NP*} Le chef [e]_i]_j a décidé [_S e_j d'en_i être
[_{sc} e_j magnanime]]

In (130)b en_i-V governs e_j but e_j and NP_j^{*} belong to different th-chains.

(128) also excludes raising sentences like II(46)a-b. We repeat II(46)b below.

- (131) [La solution [e]_i]_j en_i semble [_S e_j avoir été publiée e_j]

In (131) \underline{en}_i -V governs a position in the chain j but not the th -position in the chain j as required by condition b in (128). The requirement that \underline{X} governs the th -position in j also accounts for the impossibility of \underline{ne} -cliticization from a post-posed subject in Italian (discussed in Burzio 1981) modulo certain assumptions. Following Belletti & Rizzi 1980, we may assume that if α governs β , then α governs the head of β . Let us furthermore assume that the referential index of a category γ percolates down to its head.¹⁴ (See chapter IV for further motivation for index-percolation). Now consider (132)b:¹⁵

(132) a- \underline{e}_j hanno telefonato molti ragazzi $_j$.

(Have telephoned many children.)

*b- \underline{e}_j [_{VP} [_{VP} \underline{ne}_j hanno telefonato] [molti e_j]] $_j$

In (132)b \underline{ne}_j -V governs \underline{e}_j in post-verbal position but not the th -position in the chain j , i.e., the subject position.

Finally note that \underline{en} -cliticization from the subject position of many ergative verbs is impossible:

(133) *[L'auteur e_i] $_j$ \underline{en}_i est arrivé e_j hier.

(The author gen. cl. (=of it) arrived yesterday.)

Likewise, raising sentences like (134) where the embedded VP contains a non-stative predicate are ungrammatical:

- (134) * $[L'auteur e_i]_j \underline{en}_i$ semble [_s e_j travailler beaucoup.]
 (The author gen. cl. (=of it) seems to work a lot.)

Presumably sentences like (133) and (134) will be excluded by the same semantic constraint that accounts for the ungrammaticality of (121)b.

Footnotes to Chapter II

1) It may be assumed that not, like Adverbs, is either adjoined to S or to VP. If it is adjoined to S, it modifies S; if it is adjoined to VP, it modifies VP -- in conformity with the definition of modification given in Chapter I.

2) A similar problem for QL is found in French. Compare a and b:

a- Personne n'est venu.

*b- Personne semble n'être venu.

3) Although the controlled NP has case in Icelandic it cannot be phonologically realized. See section II.4.1 for further discussion of this issue.

4) We distinguish idioms from semi-idioms in that the latter but not the former seem to have some semantic content. Unlike idioms, semi-idioms may (marginally) function as controllers.

? a- Justice vient d'être rendue aux officiers sans être rendue aux soldats.

? b- Assistance vient d'être portée aux enfants sans être portée aux malades.

Compare a and b with c and d.

* c- Grand cas a été fait de la situation en Pologne sans être fait de la situation au Salvador.

* d- Parti a été tiré de la situation en Pologne sans être tiré au Salvador.

But like idioms, justice and assistance may only be generated determiner-less in object position (of rendre/demander and porter respectively).

5) While menacer, promettre, mériter put no selectional restriction on its adjunct-ARGUMENT, exiger does. It does not allow the external-arguments (or quasi-arguments) of weather verbs and of y avoir to appear in its subject position.

*a- Il exige de pleuvoir.

*b- Il exige d'y avoir plus d'hommes que de femmes.

6) (68)a, which we repeat below, contrasts with 1:

(68)a: Personne ne semble être venu, mais quelqu'un
semble être venu.

1. Personne ne s'avère/se révèle être venu mais quelqu'un s'avère/
se révèle être venu.

(68)a is not a contradiction but 1 is. This is due to the fact that s'avérer and se révéler, unlike sembler, are assertive verbs. In effect, 2a entails 2b but 3a does not entail 3b.

2. a- Pierre s'avère/se révèle être venu.

b- Pierre est venu.

3. a- Pierre semble être venu.

b- Pierre est venu.

7) Note that commencer and risquer assign obligatorily an argument th-role to the subject when it takes an accusative object. Cf. Burzio 1981 who noticed that in general verbs that assign accusative case take an external argument.

*a- Il commence le livre. (where Il is non-referential)

*b- Il risque sa vie. (" " " ")

Commencer may also function as an intransitive.

c- Le spectacle a commencé à 8 heures.

(The show started at 8:00.)

8) The typology and identification of non-overt NPs is currently an intensively debated issue. Several different approaches are proposed and discussed in the current literature. The one sketched out in this section was suggested to us by N. Chomsky.

9) But if there are languages where the subject position of infinitivals bears case, the question of why names may not appear in this position remains unanswered. A possible explanation is that languages with case-marked PROs use case in control constructions as an obviation mechanism as suggested by Simpson 1982. And, of course, it makes no sense to apply obviation to names: since names have intrinsic reference they do not search for an antecedent.

10) Although (101)b does not exist in Romance either, when seem takes a dative object it may function as a control verb as shown in a.

- a- Il me_i semble [_S PRO_i être malade]
 b- Pierre_i me semble [_S t_i être malade]

Romance would then represent the marked case and English the unmarked case.

11) Note that constructions with a passive or ergative verb will have indexed-structures 1a-b if NP-movement applies and indexed structures 2a-b if no NP-movement applies. (We omit AGR.)

1. a- Trois bateaux_jⁱ ont été coulés e_jⁱ. (3 boats were sunk.)
 b- Trois hommes_jⁱ sont arrivés e_jⁱ. (3 men arrived.)
 2. a- Ilⁱ a été coulé trois bateaux_jⁱ. (It was sunk 3 boats.)
 b- Ilⁱ est arrivé 3 hommes_jⁱ. (There arrived 3 men.)

The indexed-structures in 1a-b are innocuous but the indexed-structures in 2a-b are in fact necessary in order for the post-verbal NP to get nominative case by the following rule: If an NP is co-superscripted with AGR, it is case-marked nominative. The same remarks apply to raising constructions where no NP-movement has taken place (cf. 3b).

3. a- Trois hommes_jⁱ semblent [_S e_jⁱ être arrivés e_jⁱ]
 b- Ilⁱ semble [eⁱ être arrivé trois hommes_jⁱ]

12) Chomsky 1981a suggests that the well-known *that-t phenomenon may be accounted for by ECP. Cf. (a) Who_i do you think that e_i left versus (b) Who_i do you think [e_i [e_i left]]. In

order to accomplish this, a more complicated definition of government is needed: α governs β in [$\beta \dots \gamma \dots \alpha \dots \gamma \dots$], where

- (a) $\alpha = X^0$ or is coindexed with γ
- (b) where \emptyset is a maximal projection, if \emptyset dominates γ then \emptyset dominates α .
- (c) α c-commands γ .

13) Note that in sentences like (129) the subject position will be co-superscripted with the post-verbal small clause at D-Structure (cf. the discussion in II.4.2). We may assume that adjectival small clauses are $\overline{\overline{AP}}$ at D-Structure as shown in (i)a and later undergo bar-deletion as shown in (i)b. We may furthermore assume that bar-deletion also deletes the superscript.

- (i) a- [La préface e_i] $_j^k$ en $_i$ est [$\overline{\overline{AP}}^k$ e_j^k flatteuse]
- b- [La préface e_i] $_j^k$ en $_i$ est [\overline{AP} e_j^k flatteuse]

Note furthermore that movement in (i) is obligatory because être does not assign case and for an NP to be case-marked nominative it must be co-superscripted with AGR. Cf. footnote 11. If a verb that takes a small clause complement assigns case, like considérer (consider), then the subject of the small clause need not move in order to be case-marked.

- (ii) a- Pierre considère la préface de ce livre flatteuse.
 b- Pierre en considère la préface flatteuse.

If considérer is passivized, it no longer assigns case and the subject of the small clause must move in order to be case-marked.

- (iii) [La préface e_i]_j^k en_i est considérée [_{AP} e_j ^k flatteuse]

14) The i-within-i Condition must then be modified as follows:

* [\mathcal{Y} δ ], where \mathcal{Y} and δ bear the same index unless δ is the head of \mathcal{Y} .

(15) (132)b contrasts with ergative verbs, where the surface subject is a D-Structure object (cf. Burzio 1981, Perlmutter 1978).

- a- Molti ragazzi sono arrivati.
 (Many children arrived.)
 b- Ne_j sono arrivati [molti e_j]_j.

In b ne_j-V does govern the th-position of j.

Chapter III: Verbs as Adjunct-Predicates*

In Chapter I we have seen that Adverbs function unambiguously as adjunct-predicates and that Adjectives may function both as argument-taking predicates and as adjunct-predicates. On the other hand, Verbs are argument-taking predicates 'par excellence'. Only a semantic class of verbs which includes modals and aspectuals may function, in certain languages, as adjunct-predicates. In this chapter we will discuss English modals and French modals: the former are modifiers and the latter are argument th-role assigners. Still, in other languages like Spanish and Italian, it will be argued that modals as well as some aspectual verbs may function simultaneously as argument-taking predicates and as adjunct-predicates.

III.1 Modals as adjunct-predicates and as argument-taking predicates. English versus French.

It is well-known that certain verbs called modals have two distinct senses: the 'root' sense and the 'epistemic' sense.

	<u>Root</u>	<u>Epistemic</u>
<u>must</u>	obligation, requirement, or necessity	logical entailment (probability, certainty, or inevitability)
<u>can</u>	ability, capacity	possibility
<u>may</u>	permission	possibility or likelihood
<u>should</u>	obligation, necessity	supposition
<u>won't</u>	refusal	future nonoccurrence

In Modern English modals do not behave like main verbs in a number of ways. Cf. Chomsky 1957, Jackendoff 1972, Lightfoot 1979, Akmajian, Steele & Wasow 1979.¹

1. Modals do not occur together.

* (1) I should can use two modals in a row if they are verbs.

Compare (1) with (2).

(2) I should be able to use two modals.

The ungrammaticality of (1) follows from the fact that modals in English are Auxiliaries and that Aux is not a recursive node.

2. Modals do not appear in gerunds and infinitives.

* (3) I want to may leave.

* (4) I don't like musting use modals in gerunds.

Compare (3) and (4) with (5) and (6).

(5) I want to be allowed to leave the room.

(6) I don't like having to use modals in gerunds.

(Examples (1)-(6) are from Jackendoff 1972.)

3. Modals undergo Subject-Aux inversion, precede not, and block do-support. Cf. Syntactic Structures.

Modals have a semantic relation with the clause which immediately contains them as shown by the entailments below.

- (7) a- John must arrive at two.
 b- (i) It is necessary/required that John arrive at two.
 (ii) It is required of John that he arrive at two.
 John has the obligation [_S to arrive at two.]
 ('root' sense)
 c- It is probable/certain that John arrives at two.
 ('epistemic' sense)
- (8) a- Peter can come earlier.
 b- Peter is able [_S to come earlier.] (root)
 c- It is possible that Peter will come earlier. (epistemic)
- (9) a- Peter may come earlier.
 b- (i) X permet que Pierre vienne plus tôt.
 (ii) John is permitted/allowed [_S to come earlier.]
 (root)
 c- It is likely/possible that Peter will come earlier.
 (epistemic)

Can, in its root sense, also has a semantic relation with an argument of the clause, namely with the argument in subject position as shown in (8)a-b. Must and may, in their root

sense, may also have a semantic relation with the argument in subject position as shown by the entailments in (7)a-b(ii) and (9)a-b(ii). But they need not have -- as shown by the entailments in (7)a-b(i) and (9)a-b(i). ((9)b(i) is given in French since in English permit/allow do not take a tensed clause as complement.) In their root sense then must and may take an NP optionally as an ARGUMENT. (We use the term ARGUMENT to refer to all types of recipients in a semantic relation.)

What is the nature of these semantic relations? If modals in English are not main verbs -- i.e., argument-taking predicates -- then they must be adjunct-predicates. Hence, the relation between the modal and the S is a relation of modification. Recall that a modifier-modifiee relation is a relation from a non-head to a projection of a head. Cf. I(52) which we repeat below.

I(52) α modifies β in the configurations

a- [γ ... α ... β ...]

b- [γ ... β ... α ...]

if

(i) γ = a projection of β

(ii) γ immediately dominates α and β

(iii) α = Adj, Adv, Verb

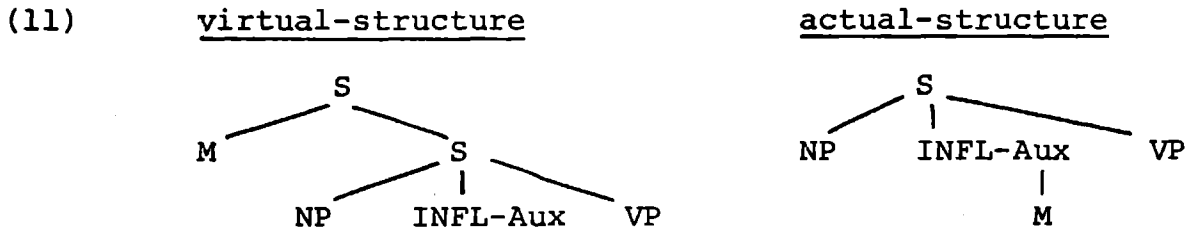
(The category Verb is now included in the definition of modification.)

This raises the following question: what is the structural position of modals in English? The VP-deletion test exemplified below suggests that they are not generated under the VP.

- (10) a- Peter must/may/can solve this problem and you must/may/can, too.
- b- *Peter solved the problem and you solved, too.
Peter solved the problem and you did, too.

They must then be generated under S -- as suggested by Chomsky in Syntactic Structures. This is exactly what the Projection Principle predicts given that modals select a proposition as ARGUMENT as shown by the entailments in (7)-(9). More precisely, we may assume that modals are generated adjoined to INFL -- the head of S. In this case, the definition of modification must be slightly changed such that α not only modifies β in configurations a and b in I(52) but also the projections of β . Thus, a modal in English will modify INFL and the projection of INFL -- i.e., the S which immediately contains it. Assuming that semantic relations are not reflexive, the modal will modify the content of S except for itself. Alternatively, it may be assumed that like Adverbs, modals in English are adjoined to the S which they modify in virtual structure. In actual structure they appear attached to Inflexion -- just like the Japanese affix sase, which appears as the head of VP

in virtual structure and appears bound to the verb of its complement clause in actual structure. Cf. the discussion in section I.1.



In this case, we may leave the definition of modification given in I(52) unchanged. (We suspect that the second alternative is on the right track.)

Note that unlike the modals, the auxiliaries have and be may be generated either under S or under the VP as shown by the VP-deletion test.

(12) John couldn't have been studying Spanish, but Bill could (have (been)).

(from Akmajian, Steele & Wasow 1979)

In effect, have and be may be assumed to modify either INFL or V. Hence they may be adjoined to either one.²

If modals in English function as adjunct-predicates, then the relation between the modals and the argument in subject position in the root sense of must, may, and can must be an adjunct th-relation. Recall that adjunct th-relations are not constrained by the Extended Projection Principle. Adjunct

th-roles are assigned at LF and they are invisible for the Argument Th-Criterion. As in the case of S-Adverbs, we then expect that the "orientation" of modals may change under passive. The following examples (from Jackendoff 1972) show that this is the case.

- (13) a- The doctor may/must/won't examine John.
 b- John may/must/won't be examined by the doctor.

In both (13)a and (13)b the surface subject is understood as having permission, being under obligation, or refusing.

Newmeyer 1970 (cited by Jackendoff) noticed that a 'root' modal need not change meaning under passive. Moreover, if the deep object is inanimate it does not change meaning under passive.

- (14) a- Visitors may pick flowers.
 b- Flowers may be picked by visitors.

- (15) a- Sam must shovel the dirt into the hole.
 b- The dirt must be shovelled into the hole by Sam.

But this is not surprising given that may and must, like permit and require, optionally select an animate ARGUMENT. Hence, we need not conclude from the fact that the root sense is available in both a and b in (14) and (15) that the modal has a semantic relation with the by-phrase. This conclusion

would not be any more warranted than concluding from the entailments in (16)a-b and (17)a-b that permit and require have a semantic relation with the agent in the embedded clause in (16)a and (17)a.

(16) a- X permet que les fleurs soient cueillies par les visiteurs.

b- X permet aux visiteurs de cueillir les fleurs.

(17) a- It is required that Sam shovel the dirt into the hole.

b- It is required of Sam that he shovel the dirt into the hole.

Recall that can, on the other hand, has obligatorily a semantic relation with the surface subject in its capacity or ability sense. Hence, as expected, (18)a but not (18)b has the capacity or ability sense.

(18) a- Peter cannot solve this problem.

b- This problem cannot be solved by Peter.

In conclusion, modals in English are adjunct-predicates. They modify the S which contains them. They may assign an adjunct th-role to the argument in subject position. In this case only the root sense is available. More precisely, like allow and require, the root may and the root must optionally select an animate NP ARGUMENT. On the other hand, the root

can -- like is able -- obligatorily selects an animate NP ARGUMENT.

In French, as opposed to Modern English, modals (pouvoir and devoir) behave like main verbs and not like auxiliaries.

1. They may occur together.

(19) Jean devrait pouvoir partir à l'heure.
(John should can-inf. -leave-inf.-on time.)

2. They occur in infinitives (cf. (19)) and in gerunds.

(20) N'ayant pas pu arriver à l'heure, ...
(Not being able to arrive on time, ...)

3. They contrast with Auxiliaries with respect to null complement anaphora. (The following examples are from Edmonds 1978.)

(21) a- Pierre doit renverser ces tables, mais il ne peut pas.
(Peter has to turn over these tables, but he can't.)
b- Il dit que je pourrais manger ces chocolats, mais je ne dois pas.
(He says I could eat these chocolates, but I must not.)

(22) *a- Marie a visité le musée, mais moi, je n'ai pas.

(Mary visited the museum, but me, I didn't.)

*b- Vous avez pris des vacances, et nous avons aussi.

(You have taken a vacation, and we have too.)

(In French there is no VP-deletion as indicated by the ungrammaticality of (22)a-b).

4. With respect to cliticization, modals clearly behave like main verbs and not like auxiliaries. Compare (23) and (24) with (25) and (26).

(23) a- Pierre peut la voir.

(John can acc.cl. - see.)

*b- Pierre la peut voir.

(24) a- Le chef du group doit être juste.

(The head of the group must be fair.)

b- Le chef doit en être juste.

*c- Le chef en doit être juste.

(25) Pierre l'a vu.

(Peter acc.cl. - have seen.)

(26) a- La lecture de ce livre a été conseillée aux étudiants.

(The reading of this book has been recommended to the students.)

b- La lecture en a été conseillée aux étudiants.

Given that clitics attach onto auxiliaries: avoir, être (cf. (25)-(26)), it is reasonable to assume that in French Aux is generated under VP, adjoined to the main verb as suggested by Emonds 1978. See also footnote 2. In fact, if Aux is only generated under the VP in French, this would also explain the absence of VP-deletion in French. Cf. the contrast between the French examples (22)a-b and their English counterparts.

Modals in French are then main verbs. They take a clausal complement. They do not assign an argument th-role to the subject. In effect an expletive il and idioms may appear in their subject position.

(27) a- Il peut/doit s'avérer que Jean est idiot.

(It can/must turn out that John is a fool.)

b- Parti doit/peut être tiré de cette situation.

(Advantage must/can be taken of this situation.)

The VP of which they are a projection optionally assigns an adjunct th-role to the subject. As in English, if the argument in subject position is assigned an adjunct th-role, only the root sense is available.

Modals in French are raising verbs. (28)b is derived via Move α from (28)a.

- (28) a- [e peut/doit [γ Pierre partir]
 b- [Pierre_i peut/doit [γ e_i partir]
 (Peter can/must leave.)

As expected, en-cliticization from the subject position of devoir/pouvoir onto the verb of its clausal complement is also possible. Cf. (24)b.

Recall that when the subject position is not a th-position, it is co-superscripted with a post-verbal complement. In such constructions, subject-to-subject raising is only possible if the verb is + \bar{S} -deletion. \bar{S} -deletion avoids a violation of the i-within-i Condition. Cf. the discussion in sub-section II.4.2. Since the modals in French do not obligatorily assign a semantic role to the subject and yet they allow subject raising, they must be \bar{S} -deletion verbs: i.e. γ in (28)b must be S. We would then expect the se-passive to be able to appear in the clausal complement of modals. Cf. II.4.2.1. The prediction is borne out.

- (29) a- Ces vêtements peuvent se laver fréquemment.
 (These clothes can be washed frequently.)
 b- Ces fleurs doivent se cueillir avant l'hiver.
 (These flowers must be picked before winter.)

To summarize, modals in French are argument-taking predicates. In English they are modifiers. Note that modals in the two languages are semantically equivalent -- i.e., they

have the same meaning. But the semantic relation induced by modals with respect to the clausal ARGUMENT is formally realized in a different way in the two languages: in English as a modification relation, in French as an argument th-relation. This is not an uninteresting fact. It shows once more (cf. Chapter I) that semantic relations cannot be identified solely by their content. They are above all identified by their form.

III.2 Modals and Aspectual Verbs as simultaneously Adjunct- and Argument-taking Predicates. Spanish and Italian.

2.1 The Problem

As in French, modals in Spanish and Italian behave like main verbs and unlike auxiliaries with respect to a number of tests.

1. Null-complement anaphora.

(30) a- Juan podría/debería visitar a María y Pedro también podría/debería.

(John could/should visit Mary and Peter could/should also.)

*b- Juan ha visitado a María y Pedro también ha.

(John has visited Mary and Peter did also.)

2. Placement of negation.

(31) a- Pedro podría/debería no contestar la carta.

(Peter could/should not answer the letter.)

- *b- Pedro ha no contestado la carta.
 (Peter had not answered the letter.)
 Pedro no ha contestado la carta.

3. Cliticization.

- (32) a- Pedro puede/debe contestarlaa.
 (Peter can/must answer-acc.cl.)
 *b- Pedro ha contestadolaa. (cf. Pedro la ha contestado.)
 (Peter has answered - acc.cl.)

Rizzi 1978 shows that in Italian modals behave like main verbs with respect to a number of tests like Cleft-formation, Right-node raising, Heavy-NP shift, Wh-movement.

Note that the null-complement anaphora and cliticization data suggest that in Spanish, as in French, auxiliaries are generated under VP, adjoined to the main verb. The same remarks hold for Italian.

As is well-known, modals in both Spanish and Italian may also behave as non-main verbs.

(33)

1. With respect to cliticization.

- (34) a- Pedro le pudo/debió hablar personalmente.
 (Peter dat.cl. - could/must talk personally.)
 b- Gianni gli ha dovuto/potuto parlare personalmente.

Compare (34) with (35).

(35) *a- Pedro le prometió hablar personalmente.

(Peter dat. cl. - promised to talk personally.)

*b- Gianni gli ha promesso di parlare personalmente.

2. With respect to impersonal se-passive (to be discussed in the following sub-section).

(36) a- Estos libros se deberían/podrían comprar ya.

(These books can/may be bought now.)

b- Questi libri si dovrebbero/potrebbero comprare già.

Compare (36) with (37).

(37) *a- Estos libros se prometieron comprar.

(These books were promised to be bought.)

*b- Questi libri si promisero di comprare.

3. In Italian a phenomenon known as Auxiliary Change is attested with these verbs (to be discussed at length in sub-section III.2.4.1): the following verb may determine the choice of Aux preceding the modal.

(38) Mario ha/è potuto/dovuto tornare a casa.

(Mario has/"is" can/may return home.)

Compare (38) with (39).

- (39) Mario ha/*è promesso di tornare a casa.
 (Mario has/"is" promised to return home.)

(potere and promettere are avere (have) verbs; tornare is an essere (be) verb.)

When these verbs behave as non-main verbs with respect to any of the above three phenomena, they also behave as non-main verbs with respect to Cleft-formation, Right-node raising, Heavy-NP shift, Wh-movement. Cf. Rizzi 1978. They also behave as non-main verbs with respect to null-complement anaphora:

- (40) *Juan podría/debería visitar a Maria y Pedro también la podría/debería.

and with respect to placement of negation:

- (41) *Juan la podría/debería no contestar.

There are other verbs that exhibit this double behavior. The list is given below.

- (42) Modals
 poder (can, be able, may)
 deber (must, should)
 querer (to want)
 saber (can, be able to)

Aspectuals

soler (to usually do)
 tener que (to have to)
 empezar a (to begin, to start)
 comenzar a
 llegar a (to arrive at doing)
 volver a (to begin anew, to start again)
 acabar de (to just finish)
 estar por (to be about to)
 seguir (to keep on, continue)
 continuar

The phenomenon described above has been studied by many linguists. Among them Aissen & Perlmutter 1976, Rizzi 1978, Strozer 1976, Burzio 1981. Our discussion is to a great extent based on their work.

How should the double behavior of the verbs in (42) be accounted for in the grammar? One solution that immediately comes to mind is to treat them both as main verbs and as auxiliaries. This solution has been explicitly proposed by Strozer 1976. We find this hypothesis unconvincing for the following reasons.

1. The verbs in (42) may co-occur even when they function as non-main verbs.

- (43) a- Pedro la debería poder visitar.
 (Peter acc. cl. - could must visit.)
- b- Pedro la querría poder comenzar a escribir.
 (Peter acc. cl. - would want - can - start - to write.)
- c- Pedro la tiene que estar por acabar de leer.
 (Peter acc. cl. - have - to be about - to finish -
 to read.)

- d- Pedro la querría poder volver a empezar a leer.
 (Peter acc. cl. would want - can - to begin anew -
 to start - to read.)

Recall that this was not the case with the modals in English.
 Aux is normally not a recursive node.

2. In Italian there exists a rule of Aux-preposing.
 This rule does not apply to modals. Compare (44)a-b with (44)c.

- (44) a- Essendo state le mele mangiate ...
 (Having been the apple eaten ...)
 b- Essendosi le mele mangiate ...
 *c- Essendosi potute le mele mangiate ...
 (Being-se pass. can (past. part.) the apple eat ...)

3. Why should the "main verb" determine the choice of auxiliary which precedes the modal or aspectual verb? Moreover, it is not obvious how the complex phenomenon of Auxiliary Change (to be discussed in III.2.4.1) would be accounted for under this hypothesis.

If the modals are neither main-verbs nor auxiliary verbs in (33)1-3, what are they? Rizzi 1978 suggested that they are main verbs at D-Structure and part of a complex verb at S-Structure. D-Structure is mapped onto S-Structure by a restructuring rule which converts a bi-sentential structure into a simple structure:

- (45) a- $[\bar{S}_1 [S NP_1 [VP V_1 [\bar{S}_2 [S NP_2 [VP V_2 Z]]]]]]$
- b- $[\bar{S}_1 [S NP_1 [VP [V_x V_1 V_2] Z]]]$

However, a fundamental principle of the theory that we are assuming is the Projection Principle, which puts severe constraints on deformation of structure. Recall that it only allows adjunction and movement rules that do not change the relation between the terms of a structure. In particular, it does not allow structural changes like the one illustrated in (45). In (45) the relation between V_1 and S_2 is destroyed and a new relation is established -- between the newly formed complex verb V_x and Z . Thus, the restructuring rule destroys and creates structure in violation of the Extended Projection Principle which requires that a relation that exists at LF exists at all levels of representation, namely at D-Structure and S-Structure.³

Within the general framework adopted here we must reject this analysis. On the other hand, we must find a way of expressing the fact that V_1 and V_2 constitute one verbal unit with respect to the various phenomena discussed above. But before working out a solution to this problem, certain phenomena pertinent to the issue at hand must be discussed: the Romance se and Aux-selection in Italian.

2.2 The Romance SE

As anyone acquainted with Romance syntax knows, the morpheme se has multiple functions. A brief discussion follows.

1. The Reflexive se

The reflexive se is a clitic linked to either a direct or indirect object position and interpreted as coreferential with the subject.

- (46) a- Pierre_i se_i peigne ____i.
 (Peter combs himself.)
- b- Pierre_i s_i 'est fait un cadeau ____i.
 (Peter gave himself a present.)

Recall that we assume that the clitic and the non-overt pro to which it is linked is a discontinuous element. In the case of the reflexive se, we may think of it as an anaphorizer, similar in function to self in himself. Thus, se_i ... pro_i functions as an anaphor, which must be bound in its governing category (cf. Principle A of the Binding Theory discussed in section II.4.1).

It is well-known that the reflexive se must be bound to a D-Structure subject. It cannot be bound to a derived subject.

- (47) a- Pierre_i s_i 'est présenté ____i à Marie.
 (Peter introduced himself to Mary.)
- *b- Les enfants_i se_i sont présentés ____i ____i par la directrice.
 (The children were introduced to each other by the director.)

- c- Pierre_i me_j semble ____j (____i malade).
(Peter seems to me sick.)
- *d- Pierre_i se_i semble ____i (____i malade).
(Peter seems to himself sick.)
- e- Pierre_i me_j semble ____j (____i être malade).
(Peter seems to me to be sick).
- *f- Pierre_i se_i semble ____i (____i être malade).
(Peter seems to himself to be sick.)

Why are b, d, and f ungrammatical? Note that se_i-V governs the two distinct th-positions which bear the index i. Consequently, se_i identifies two positions (cf. II(128)). Assuming that a clitic obligatorily forms a th-chain with a position that it identifies, then b, d, and f are ruled out by the Argument Th-Criterion. In effect, the chain i(Pierre, se, e, e) bears two th-roles since it contains two th-positions.⁴

2. The Impersonal se

The impersonal se is found in Spanish and Italian but not in French.

- (48) a- Se vende manzanas.
(ARB subject-sells apples.)
- b- Se trabaja poco en esta oficina.
(ARB subject-works little in this office.)

Se when linked to the subject position is arbitrary in interpretation, like a pronominal anaphor. Recall that pronominal anaphors are singular in Spanish and plural in Italian.

Likewise, the impersonal se is singular in Spanish and plural in Italian.

(49) a- No se está contento.

(ARB subject-is not happy (sing).)

b- Non si e' piu' facilmente contenti.

(ARB subject- is not anymore easily happy (plural)).

(from Belletti 1980).

It is furthermore to be noticed that the impersonal se cannot be linked to the object position except in a passive sentence.

(50) *a- Pedro se ve.

(Peter sees ARB object.)

b- En calles como ésta, se puede ser atacado facilmente.

(In streets like these ones, one can be attacked easily.)

Following Belletti 1980, we will assume that the clitic se in sentences (48)a-b, (49)a-b, (50)b is generated under Inflexion. Along with the rest of Inflexion, it later cliticizes onto the verb. Recall that Inflexion contains an AGR element when it is +tense. Suppose that AGR is +pronominal. And recall that se is an anaphorizer, i.e., the discontinuous

se_i-e_i is an anaphor. Then se in sentences like (48)a-b may be considered to be pronominal by virtue of being part of an INFL which contains the +pronominal feature. Thus, se_i-e_i in these sentences functions as a pronominal anaphor. This means that the subject position in these cases is ungoverned. In effect, recall that according to the Binding Theory pronominal anaphors are ungoverned (cf. II.4.1). But the sentences above contain an AGR element under INFL. Then how is it that the subject position is interpreted as ungoverned? It is interesting to notice in this respect that in sentence (49)b the subject, which is plural, agrees with the adjective contenti but does not agree with the verb e', which is singular. This may be taken as an indication that the subject position is not governed by AGR in these sentences. There are several plausible ways in which this idea can be instantiated. We will mention one of them. Assume that positions must be uniquely identified. In this case se, which forms a discontinuous element with the NP subject, and not AGR will function as the identifier. This means that se and not AGR is coindexed with the subject position. Suppose furthermore that AGR functions as a governor with respect to the subject only when they are coindexed. Then in the impersonal se construction the subject position will be ungoverned. As suggested by Belletti, the inflexional AGR which appears on the verb may be considered to be the unmarked option: third person singular.

In the passive sentence (50)b, se is generated under INFL and with the non-overt NP in object position it is part of a

discontinuous element -- i.e., it is coindexed with the object position at D-Structure. The non-overt NP in object position is mapped onto subject position via Move α , which, as required by the Binding Theory, is an ungoverned position. The inexistence of sentences like (50)a is now explained. The pronominal anaphor se cannot be part of a discontinuous element with an NP in object position at S-Structure because this is a governed position.

The impersonal se cannot appear in infinitivals.

- (51) *a- [Parece [trabajarse duramente]]
 S S
 (It seems ARB subj-work (inf.) hard.)
- *b- Juan cree [[trabajarse duramente]]
 S S
 (John believes ARB subj-work (inf.) hard.)

This is just what we expect since se only functions as a pronominal anaphor when it is part of an INFL which contains an AGR element. Note furthermore that since nominative case is only available when AGR is present, se will not be case-marked. If all overt nominal morphemes are required to be case-marked, then this is another reason why the clitic se cannot appear in (51)a-b.

3. The Impersonal se-passive

As we have seen in Chapter I, past-participle passive morphology alters the argument structure of the verb to which it is affixed: it internalizes the external th-role, which

may be optionally realized in a by-phrase. It also blocks accusative case assignment. The impersonal passive se may be viewed as having a similar function. Hence, as in the case of the passive construction, the D-Structure object may surface as the S-Structure subject since the subject position is not a th-position.

- (52) a-(i) On lave les vêtements fréquemment.
 (ARB subj. washes the clothes frequently.)
 (ii) Les vêtements se lavent fréquemment.
 (The clothes are washed frequently.)
 b-(i) On mange le fromage avec du vin.
 (ARB subj. eat cheese with wine.)
 (ii) Le fromage se mange avec du vin.
 (Cheese is eaten with wine.)

The se-passive, as the past-participle passive, may coexist with an agentive adverbial:

- (53) a- Le vin a été bu volontairement.
 (The wine was drunk voluntarily.)
 b- Du bon vin se boit volontairement.
 (A good wine is drunk voluntarily.)

As in the case of by-phraseless participial passive constructions, the implicit agent of a se-passive construction may function as a controller in certain cases.⁵

- (54) a- L'usine a été brûlée pour toucher l'assurance.
 (The factory was burnt to collect the insurance.)
 b- Une usine, ça se brûle pour toucher l'assurance.

But, as has often been noticed, the impersonal se-passive, unlike the past-participle passive, cannot coexist with a by-phrase in the Romance languages.⁶ We may assume then that while the past-participle passive alters the argument structure of the verb to which it is attached (i.e., the external th-role becomes an internal th-role and as such it can be assigned to an internal argument), se-passive morphology simply blocks assignment of the external th-role to the subject position. The external th-role is not internalized, i.e., it does not become an internal th-role. Hence, although it is present at LF it cannot be assigned to an argument. We can amend the Argument Th-Criterion (cf. I(58)) in the following way in order to make it compatible with the se-passive construction:

- (55) The Argument Th-Criterion (revisited)
 Each chain must contain one and only one argument and must bear one and only one argument th-role.
 Each argument th-role must be assigned to one and only one chain -- unless lexical morphology indicates the contrary.

The verbal affix se indicates that the external th-role must not be assigned. Hence, the se-passive construction does not violate the Argument Th-Criterion.⁷

Recall that we assumed in Chapter II that the passivizing morpheme se is generated under INFL. This assumption was crucial in explaining the impossibility of having the passive se in the embedded clause of control constructions and in certain types of raising constructions. Cf. II.4.2.1. This means that the verbal affix se is not attached to the verb in the lexicon. It is affixed onto the verb in the syntax. Now recall that the Extended Projection Principle (EPP) -- as defined in I(55) -- insures that the Argument Th-Criterion applies not only at LF but also at S-S and D-S. If the verbal affix se is attached to the verb at S-S and LF but not at D-S, then the Argument Th-Criterion (as formulated in (55) above) will license non-assignment of the external th-role in the se-passive construction at S-S and LF but not at D-S. Consequently, the formulation of EPP must be slightly modified so that the Argument Th-Criterion will not apply in this case at D-S.

- (56) If α th-marks β -- directly or indirectly -- in γ at LF or if α modifies β in γ at LF, it must do so also at the other syntactic levels.

Given this formulation of EPP, it is sufficient that se be attached to the verb at LF for the grammar to license non-assignment of the external th-role to the subject position at D-S.

Based on the fact that the se-passive cannot coexist with a by-phrase, Belletti 1980 has suggested that the impersonal se and the passive se be considered as functionally non-distinct. She suggested that in these cases the external th-role is assigned to se, which is generated under INFL, and not to the subject position [NP, S]. The sole difference between the se in (49)a-b and the se in (52)a(ii) and (52)b(ii) is that in the former case se bears the case provided by AGR (i.e., nominative case) while in the latter case se bears the case provided by the verb (i.e., accusative case). We think though that the impersonal se and the passive se are functionally distinct because there are languages in which one but not the other exists.⁸

For example, Trentino, a Northern Italian dialect, has the impersonal se but not the passive se. (Patrizia Cordin, p.c.). Consider the simple sentences:

- (57) a- Le castagne se le magna col vin caldo.
 (The walnuts imp.se - obj. cl. - eat with hot wine.)
- *b- Le castagne se magna col vin caldo.
 (The walnuts are eaten with hot wine.)

In (57)a le castagne is in topic position, not in subject position. le is the resumptive object clitic, not a subject clitic. (Trentino, like many Northern Italian dialects, has subject clitics. Brandi & Cordin 1981 suggest that they are inflectional AGR elements.) Although they are morphologically

non-distinct, it is possible to tell them apart because quantified NPs may appear in subject position but not in left-dislocated position due to the definite character of the resumptive object clitic.

- (58) a- Tanti putei i laora nei campi.
 (Many boys subj. cl. work in the fields.)
- *b- Tanti putei i ciamo.
 (Many boys (I) obj. cl. call./'Many boys I call them.')

Compare (57)a with (59).

- (59) * Tante castagne se le magna col vin caldo.
 (Many walnuts imp. se - obj. cl. - eat with hot wine./
 'Many walnuts ARB subj. eats them with hot wine.')

The se in (57)a is then the impersonal se and not the passive se. Recall that the impersonal se may appear in the infinitival complement of certain raising verbs.

- (60) Debe comerse se las castañas con vino caliente.
 (Must eat-pass. se walnuts with hot wine./'Walnuts
 must be eaten with hot wine.')

Compare (60) with its counterpart in Trentino, which is ungrammatical.

- (61) *a- Debe magnarse se le castagne col vin caldo.
 b- Se debe magnar le castagne col vin caldo.
 (ARB subj. must eat the walnuts with hot wine.)

The ungrammaticality of (57)b, (59), and (61)a clearly shows that Trentino lacks the passive se.

Also, as we shall see later, the verbs with an impersonal se attached to it and the se-passive verbs behave differently with respect to Auxiliary Change.

In conclusion, we assume that both the impersonal se and the passive se are generated under INFL but are functionally distinct. The impersonal se is a nominal clitic which forms a discontinuous element with the non-overt NP in subject position. The passive se is a verbal affix which is attached to the verb in the syntax and blocks th-role assignment to the subject position and accusative case assignment to the object position.

4. The ergative se and the inherent se (discussed by Ruwet 1972, Burzio 1981 among others.)

The ergative se, like the passive se, is a verbal affix which functions as an intransitivizer.

- (62) a- Pierre a cassé le verre.
 (Peter broke the glass.)
 b- Le verre s'est cassé.
 (The glass broke.)

As pointed out by Burzio 1981, the surface subject in (62)b is the D-Structure object as shown by the following example.

- (63) Il s'est cassé trois verres.
(There broke three glasses.)

(Compare (63) with *Il a téléphoné 3 garçons (There phoned three boys.))

In this respect, the ergative se+V patterns with the passive se+V and contrasts with the reflexive se+V. Recall that in the latter case the S-Structure subject is the D-Structure subject.

- (64) a- Il se mange beaucoup de viande dans ce pays.
(There-is eaten-a lot of meat in this country.)
*b- Il s'est tué beaucoup de gens dans ce pays.
(There themselves-killed many people in this country.)

How is the ergative se different from the passive se? Unlike the passive se, the ergative or anti-causative se deletes the external th-role of the verb to which it is attached. Thus, the ergative se-V cannot coexist with an "agentive" adverbial. Compare (65) with (54).

- (65) * Le verre s'est cassé volontairement.
(The glass broke voluntarily.)

In an ergative construction, there is no implicit agent to function as a controller. Compare (66) with (55).

- (66) * Le verre s'est cassé pour embêter Marie.
 (The glass broke to bother Mary.)

Moreover, as pointed out by Ruwet 1972, the se-passive, like the past-participial passive, is productive. On the other hand, the ergative se may attach to certain transitive verbs but not to others, i.e., it is idiosyncratic. The ergative se-Verbs may be assumed to be lexically derived.⁹

Other examples of ergative verbs derived from transitive verbs by attachment of the morpheme se are: (from Burzio 1981) accumularsi (accumulate), muoversi (move), dividersi (divide), liquefarsi (liquify), sporcarsi (dirty) ...

There are a number of ergative verbs which have the morpheme se attached to them but which are not derived from transitive verbs. This se is known as the inherent reflexive se.

- (67) a- Trois enfants se sont évanouis.
 (Three children fainted.)
 b- Il s'est évanoui trois enfants.
 (There fainted three children.)
 *c- On a évanoui trois enfants.
 (We fainted three children.)

Other examples of inherent reflexive se are: se suicider (commit suicide), s'imaginer (imagine), se reposer (rest), se fâcher (get angry)....

To summarize, there are basically three types of se. One of them is a nominal clitic. It functions as an anaphorizer, similar to self in himself. The discontinuous element se-e is consequently an anaphor. The nominal clitic se is generated either attached to the verb or under INFL. If it is generated attached to the verb, se-e functions simply as an anaphor. This is the reflexive (or reciprocal) se. But if it is generated under INFL and INFL also contains the pronominal AGR element, the discontinuous element se-e functions as a pronominal anaphor. This is the impersonal se. The other two types of se are verbal affixes. One of them, the ergative or anti-causative se, deletes the external th-role of the verb to which it is bound. The ergative se-V is lexically derived. The other verbal affix se is the passive or middle se. It blocks external th-role assignment to subject position (but does not delete it). It is generated under INFL and attached to the verb in the syntax. The se-passive is then syntactically derived.

2.3 Auxiliary Selection

In Italian and French there are two auxiliaries to form the past tense: essere/être (be), avere/avoir (have). Which verbs take which auxiliary is to a large extent

predictable, more so in Italian than in French. In what follows we will only be concerned with Italian auxiliaries. Our discussion is based on Burzio's detailed work on the subject.

In standard Italian a verb selects its auxiliary according to rule (68), putting lexical idiosyncracies aside.

- (68) A. A verb selects the auxiliary essere if
1. it does not assign an argument th-role to the subject
 2. the nominal clitic si (or the 1st or 2nd person counterpart of si) is attached to it.
- B. Otherwise, a verb selects the auxiliary avere.

The cases that fall under Part A.1 of rule (68) are the following. First, the passive: both the past-participial passive and the impersonal passive formed by affixation of the morpheme si. Examples are given in (69).

- (69) a- Maria e'stata accusata.
(Mary has been accused.)
- b- Quei libri si sono letti volentieri.
(Those books have been read willingly.)

Second, the ergatives or unaccusative verbs: both the intrinsic ergatives like arrivare (arrive), sembrare (seem), parere (appear), risultare (turn out).... and the ones formed by an

anti-causative lexical rule like accumularsi (accumulate), muoversi (move), dividersi (divide), rompersi (break) ...

- (70) a- Maria e'arrivata.
 (Mary has arrived.)
- b- I ragazzi erano sembrati uscire di corsa.
 (The children had seemed to get out in a hurry.)
- c- Il vaso si e' rotto ieri.
 (The vase broke yesterday.)

Only a few exceptions are found in Italian to part A.I. of rule (68), among the raising verbs: dovere, potere, cominciare. In French many more exceptions are found, including among the ergative class of verbs.

The cases that fall under part A.II of rule (68) are the impersonal nominal clitic si and the reflexive nominal clitic si.

- (71) a- Si e' telefonato Giovanni.
 (ARB subj. has phoned John.)
- b- Maria si e' accusata.
 (Mary has accused herself.)

We suspect that Part A.I represents the core case of essere-selection. It is sensitive to the argument structure of the verb, a transparent and meaningful phenomenon. Moreover, the fact that among the verbs in A.I. there are some which are

intransitivized via attachment of the morpheme si leads us to suspect that part II of the essere-selection rule is a parasitic extension of part I. In effect, essere-selection might have simply generalized to all verbs with the morpheme si (or its 1st or 2nd person counterpart) attached to it. This suspicion finds some support in the following facts:

1. If a reflexive pronoun is used instead of a reflexive clitic, then avere is selected instead of essere. Compare (71)b with (72).

(72) Maria ha accusato se stessa.

As far as we can see, the thematic structure of the verb accusare in both sentences are identical.

2. In the dialect of Padua the verbs which have an impersonal clitic se or a reflexive clitic se attached to them select avere and not essere.¹⁰ (The Paduan facts were brought to my attention by G. Cinque.)

Burzio 1981 formulates the essere-selection rule in the following way.

(73) "The Aux will be realized as essere when a binding relation exists between the subject and a nominal constituent of the predicate. An element is a constituent of the predicate if and only if 1- it is either part of the verb morphology [i.e. si (MLZ)] or 2- it is governed by the verb." (p. 148)

(73) needs to be further qualified in order to account for the contrast between (71)b and (72). The binding relation referred to in (73) must be "a relation between elements which do not have independent th-roles." (Burzio p. 150)

Rules (68) and (73) are empirically equivalent for Standard Italian. They both recognize that there are two parts to essere-selection (parts I and II in (68), 1 and 2 in (73)). We choose rule (68) over (73) for two reasons. First, it is stated in a more meaningful way. Second, to know which Aux a verb selects, it is sufficient to look at the verb as (68) claims. It is unnecessary to look at the whole clause which contains the verb as (73) claims. That the syntactic domain S seems to be relevant for Aux-selection is an artifact of the way in which the rule is formulated in (73). Furthermore, if (73) were the correct formulation of essere-selection the difference between Standard Italian and the Paduan dialect would be quite puzzling.

Like Burzio we will assume that Aux-selection does not apply in the lexicon. This is crucial since we assume that se-passives are syntactically derived (i.e., the passive morpheme se attached to the verb in the syntax and not in the lexicon). As we shall see, the phenomenon discussed in III.2.1 constitutes another argument against application of Aux-selection in the lexicon. Since Aux-selection is sensitive to the argument-structure of the verb, it is very unlikely that it should belong to PF. We will hence assume that it applies at LF (or at S-S).

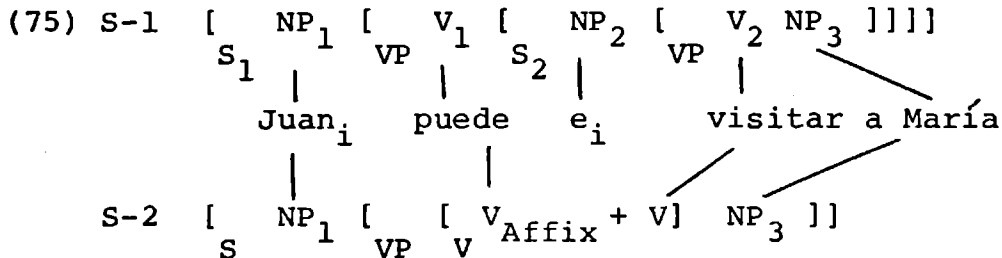
2.4. A Solution: Simultaneous analyses.

In sub-section III.2.1, we have seen that the verbs in (42) may behave as non-main verbs with respect to the processes discussed in (33)1-3 and that the phenomenon cannot be readily accounted for by treating the verbs in (42) as auxiliaries. Hence, following Rizzi's suggestion, we will assume that the verbs in (42) are verbs that may function as part of a complex verbal unit. But we have also seen that the restructuring rule (45) which forms a complex verb:
$$\left[\begin{array}{c} V_1 \\ V \end{array} V_2 \right]$$
 from two autonomous verbs V_1 and V_2 is incompatible with the Projection Principle. Our solution to the problem is outlined below. The analysis has two aspects. First, it will be assumed that the dependency between V_1 and V_2 is that of an affix with respect to a verb to which it is bound and which it modifies. (In fact, in some languages many of the verbs in (42) are morphologically affixes.) We do not think though that this affixation process in Spanish and Italian belongs to the lexicon since the two verbs -- namely the verbal affix and the verb to which it is attached -- function as autonomous words with respect to lexico-morphological rules. Moreover, an auxiliary may appear between the two verbs.

- (74) María lo podría haber conocido.
 (Mary him-could have met.)

Hence, the affixation must be syntactic.

Second, to make the affixation analysis compatible with the Projection Principle, namely to avoid encountering the same problem as the restructuring rule in (45), there is but one hypothesis. The verbs poder, deber, querer, etc. in sentences like (34), (36), (38), (43)a-d are simultaneously affixes and main verbs. This implies that these sentences have two parallel structures, i.e., two simultaneous analyses, as exemplified in (75).



In (75) poder is both an argument-taking predicate (it assigns an argument th-role to S₂) and it is a verbal affix which modifies the verb visitar.¹¹ More precisely, what we are suggesting is that there is no rule which accounts for the "non-main verb behavior" of the class of verbs in III (42). The "non-main verb behavior" is due to a double lexical property of these verbs: [___ S, (___ V)]. They may function simultaneously as autonomous verbs and as bound verbs, i.e., as part of a complex thematic predicate. Consequently, the sentences which contain these verbs may have simultaneous syntactic analyses. At each syntactic level: D-S, S-S, and LF, these sentences may be associated with a pair of structures.

And, it is the "reduced" structure (S-2 in (75)) which is mapped onto PF.

Note that according to the definition of modification given in I.(52), the verbal affix is not the head of the complex verb in (75). The head of the complex-verb is the verb to which the affix is attached. Hence, we disagree with Williams 1981 and Marantz 1981 who argue that affixes are always the head of a lexical category. Affixes may or may not be interpreted as the head depending on their functional role. If they function as modifiers, they are not heads by definition. As we shall see, the phenomenon of Aux-selection provides some evidence that this is so. On the other hand, affixes which have the function of changing the feature specification or the argument-structure of a category are interpreted as heads since according to \bar{X} -theory it is the head which determines the features and lexical properties of the constituent of which it is a projection.

Before discussing how "parallel structures" interact with cliticization, se-passive, and auxiliary selection, we will briefly consider the following issue: what is the characterization of the class of verbs that trigger the phenomenon under discussion? This is a question which has often been considered uninteresting for the following reason. There is a core-class of verbs, namely the one given in (42), which undergo clitic-climbing, se-passivization, and auxiliary change. But, as has often been remarked, on the periphery of this core-class there are individual cases which vary from speaker

to speaker. From this it has often been concluded that there is no lexical uniformity to the process under discussion. But there is an alternative, more fruitful way of looking at the facts. The grammatical cases are represented by the core-class in (42). The peripheral cases are not grammatical. We may attribute their existence to analogy. In fact, the analogy seems to work only for the "clitic-climbing" phenomenon, it works at most marginally for the se-passive, and not at all for Aux-selection -- as shown in (76).¹²

- (76) a- Mario lo trató de leer. (OK for some speakers.)
 (Mario it-tried to read.)
- ?? b- Estos libros se tratan de leer con cuidado.
 (These books are tried - to read carefully.)
- c- Mario avrebbe/*sarebbe cercato di andare a sciare.
 (Mario would have/"be" tried to go skiing.)
 (Example (76)c is from Burzio 1981.)

Moreover, as noted in Strozer 1976, when embedded in more complex constructions, sentences like (76)a often become unacceptable.

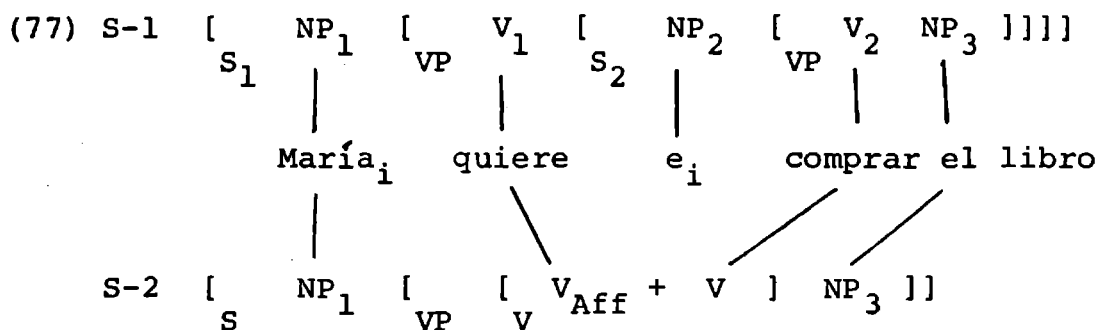
Assuming then that the class of verbs that may function both as main verbs and as affixes is a well-defined class, namely the one in (42), how can it be characterized? Recall that verbs are argument-taking predicates 'par excellence'. Only a small class of verbs that includes modals and aspectuals

may function, in certain languages, as adjunct-predicates. In English only certain modals may function as adjunct-predicates. In Spanish and Italian both modals and aspectuals may function as adjunct-predicates. At present we cannot give a semantic characterization of these verbs, but we can offer a clear definition of adjunct-predicate: a lexical item can function as an adjunct-predicate if and only if:

1. it can function as a modifier and
2. any external th-role that it assigns is an adjunct th-role.

This means concretely that if a verb has the lexical property of assigning a th-role to the subject, when functioning as an adjunct-predicate, this th-role must be interpreted as an adjunct th-role.

To illustrate, consider the case of querer/volere which is known to be a control verb when it functions purely as a main verb. In (77) the embedded clause is an argument of querer, el libro is an argument of comprar, María is the external argument of comprar. Querer modifies comprar and it assigns an adjunct th-role to María. (77) is then a raising-structure, not a control structure. NP₂ is trace-like in that it does not bear a th-role and PRO-like in that it is ungoverned. Cf. II.4.1 and II.4.2.



(Mary wants to buy the book.)

To recapitulate, querer in (77) has a dual "internal" relation: with the embedded clause and with the embedded verb. It also has an "external" relation, namely with the argument in subject position -- which is an adjunct th-relation. The th-role assigned by querer in a control structure and the th-role assigned by querer when it functions as an adjunct-predicate are not different content-wise -- no more than the th-roles assigned by able and by the "root" can are. They are different with respect to the constraints to which they are sensitive. Recall that argument th-roles obey the Argument Th-Criterion which applies at every syntactic level. Adjunct th-roles do not obey the Argument Th-Criterion. They obey the Adjunct Th-Criterion which requires that an adjunct th-role be combined to an argument th-role at LF.

As in the case of subject-oriented adverbs, meaning changes under passive, as shown in (78)a and (78)b.

(78) a- María les quiere presentar a Juan.

(Mary to them-wants to introduce John.)

- b- Juan_j les quiere ser presentado —_j.
 (John to them-wants to be introduced by Mary.)

This is due to the fact that in (78)a querer assigns an adjunct th-role to Maria, and in (78)b querer assigns an adjunct th-role to Juan.

An argument in support of the hypothesis that verbs in (42) function as adjunct-predicates, and hence as adjunct th-role assigners to the subject, is found in Italian. But before presenting the argument a brief digression is necessary.

Languages with "null-subjects" like Spanish and Italian allow free subject-postposing -- unless there is interference from some independent factor as in the case of Portuguese (cf. Zubizarreta 1981).

- (79) a- Molti ragazzi hanno telefonato.
 (Many children have phoned.)
 b- Hanno telefonato molti ragazzi.

What is the status of the non-overt NP in the subject position in (79)b? From the point of view of the typology of non-overt NPs discussed in section II.4, it is +pronominal and -anaphor because it is governed and free (i.e., it is not c-commanded by an antecedent). Furthermore, it is -th-role. In effect, it is the NP adjoined to the VP molti ragazzi which bears the external th-role of telefonare. The non-overt subject in (79)b is hence an expletive pro. Following Chomsky 1981a, we will

assume that the non-overt NP in subject position and molti ragazzi in sentences like (79)b are members of the same th-chain. The subject position, which is an argument th-position, transmits the th-role to the argument molti ragazzi which is in a non th-position -- i.e., adjoined to the VP. The question that then arises is why are the French and English counterparts of (79)b ungrammatical?

(80) *a- It phoned many people.

*b- Il a téléphoné beaucoup de gens.

Our suggestion is that while in (79)b the expletive *pro* in subject position forms a th-chain with molti ragazzi, in (80)a-b it/il does not form a th-chain with many people/beaucoup de gens. In both cases the expletive pronominal in subject position is co-superscripted with the post-verbal NP but only in (79)b does co-superscripting define a th-chain. Why? Recall from the discussion in section III.4.3 that AGR identifies the non-overt NP with which it is co-superscripted in "null-subject" languages. (Presumably a language may have "null-subjects" when its AGR element is "strong" enough to function as an identifier, as suggested by T. Taraldsen.) And recall moreover that the AGR or clitic and the identified *pro* with which it is coindexed form a th-chain. In the case of AGR, this means that the superscript defines a th-chain: AGR and all the positions co-superscripted with it are members of the same th-chain. In conclusion then the suggestion is that

only when the AGR element functions as an "identifier" does its index (i.e., its superscript) define a th-chain. (The same can probably be said about clitics. Namely, in the clitic-doubling constructions the clitic will not be part of the th-chain.) Consequently, in (79)b the non-overt NP in subject position and the post-verbal NP are members of the same th-chain. The former transmits the external th-role to the latter. But in (80)a-b the pronoun and the post-verbal NP do not form a th-chain. Hence, the external th-role of phone/téléphoner is borne by the pronoun in subject position and not by the argument NP in post-verbal position. Sentences (80)a-b are then excluded by the Argument Th-Criterion.

Now recall the contrast between ergatives and intransitives with respect to ne-cliticization (cf. II.4.3.1 and footnote 15 in Chapter II). We repeat below.

- (81) *a- Ne_j hanno telefonato molti ____j. (intransitive)
 b- Ne_j sono arrivati molti ____j. (ergative)

The sentences (81)a and (81)b have the following indexed-structures:

- (82) a- [_S pro_jⁱ [_{VP} [_{VP} ne_j - hanno telefonato] [molti pro_j]_jⁱ]]
 b- [_S pro_jⁱ [_{VP} ne_j - sono arrivati [molti pro_j]_jⁱ]]

In both (82)a and (82)b, the NP in post-verbal position form a th-chain with the non-overt NP in subject position; but the pro in post-verbal position in (82)a is not correctly identified, as required by the condition in II.(128), because in (82)a ne_j-V does not govern the th-position in the chain j. In (82)b, on the other hand, ne_j-V does govern the th-position in the chain j, namely the object position. Interestingly enough, the contrast between intransitives and ergatives is also attested with volere when it functions as a modifier as shown below. (These facts were noted by Burzio 1981).¹³

- (83) *a- Ne_j vorrebbero telefonare molti ____j (intransitive)
 (Of them-would want to phone many.)
- b- Ne_j vorrebbero intervenire molti ____j. (ergative)
 (Of them-would want to intervene many.)
- *c- Vorrebbero intervenirene_j molti ____j.

In (83)b molti pro is the object of intervenire which forms a th-chain with the embedded subject and the matrix subject. Hence, the matrix subject position may transmit the adjunct th-role assigned by volere to molti pro. In (83)a molti pro also forms a th-chain with the embedded and matrix subjects but the argument th-position in this chain is the embedded subject position: i.e., the subject of telefonare. (83)a is then ungrammatical for the same reason that (81)a is, i.e., pro_j is not correctly identified because ne_j-V does not govern the th-position in the chain j. In (83)c volere functions solely as a main verb as indicated by the fact that

"clitic-climbing" has not applied. Hence, volere functions as a control verb. (83)c is then ungrammatical for the same reason that *Vorrebbero molti ragazzi intervenire is: the lexical NP in the embedded sentence is not case-marked. Thus, within this analysis the explanation for the grammaticality of (83)a relies crucially on the fact that when volere functions as an adjunct-predicate (i.e., as a modifier) it is a raising-predicate: it does not assign an argument th-role to the subject. It assigns an adjunct th-role which, recall, is invisible for the Argument Th-Criterion.¹⁴

Note that it follows from the parallel-structures analysis that S-1 in (77) cannot be a control construction, i.e., the embedded subject may not be PRO. If it were, it would mean that comprar would th-mark two distinct arguments: PRO and María. It would th-mark NP₂ (=PRO) because it functions as the complement's main verb in S-1 and it would th-mark NP₁ (=María) because it functions as head of the complex predicate in S-2. This would constitute a violation of the Projection Principle and the Argument Th-Criterion because comprar selects one and only one external argument. (In effect, it is a general property of lexical categories that they may take at most one external argument.) One might then ask: how come querer may simultaneously assign an argument th-role to the embedded clause S₂ and modify comprar in (77)? How is this dual semantic relation compatible with the Projection Principle? It is compatible with the Projection Principle because comprar is part of the content of the propositional argument S₂. This

dual semantic relation is in effect the same semantic relation content-wise realized in two forms: (1) as an argument th-relation with respect to the proposition S_2 and (2) as a modification relation with respect to a sub-part of S_2 , namely with respect to the predicate V_2 .

In Italian, or at least in some dialects of Italian, there are two verbs of movement andare and venire which allow clitic-climbing and se-passive but curiously enough they do not allow change of auxiliary as shown in (84).

- (84) Giovanni e'/*ha andato/venuto a prendere il libro.
 (John "is"/have went/came to fetch the book.)
 (andare, venire select essere; prendere select avere.)

A not implausible hypothesis is that these verbs are not members of the list in (42), they do not function as adjunct-predicates. In Italian, or in some dialects of Italian, venire and andare can function as auxiliaries on the basis of analogy with the non-movement auxiliaries venire and andare which exist independently in the grammar of Italian.

- (85) a- Questo libro vi e' andato perduto.
 (This book locative clitic - "is" went lost./ This book got lost there.)
 b- Questo libro vi venne letto da tutti.
 (This book there-was read by everybody.)

As expected, with respect to ne-cliticization the auxiliaries venire/andare pattern with volere and contrast with the main verbs venire/andare, which are ergative verbs.¹⁵

(86) *a- Glie_ine_j sono andati/venuti a parlare ____i molti ____j.
(To him-of them went/came to speak many.)

*b- Glie_ine_j vogliono parlare ____i molti ____j.
(To him-of them want to speak many.)

(87) Ne_j sono andati/venuti molti ____j a parlargli_i ____i.
(Of them-went/came many to speak-to him.)

Note that the main verbs andare/venire cannot function as bound verbs -- i.e., as affixes -- for principled reasons. Andare and venire in (84) take two internal arguments (an NP and an \bar{S}) but no external argument. The object NP surfaces as the S-Structure subject. But an argument in object position cannot be the recipient of an adjunct th-relation. Recall that the object position, unlike the subject position, is a subcategorized position. It is generated only if it is an argument position. Consequently, andare/venire can only function as control predicates; they cannot function as raising predicates as the affixation-analysis requires. Another piece of evidence that the movement verbs andare and venire may behave like auxiliaries is that andare/venire - Verb behave as transitive verbs with respect to the "fare ... da" construction (to be discussed in the next chapter). Only

transitive verbs may be inserted in this construction. (This fact is pointed out in Burzio 1981. p. 663.)

- (88) María si fa venire a prendere/aiutar da suo fratello.
 (Mary made herself come to pick up/help by her
 borther./'Mary has her borther come to pick her up/
 help her.')

Compare (88) with the following "fare ... da" construction which contains an ergative or intransitive verb:

- (89) *María fa lavorare/venire da suo fratello.
 (Mary made work/come by her brother./ Mary made her
 brother work/come.)

There is another verb which behaves like andare and venire: stare per (to be about to). It allows clitic-climbing and se-passive but no Aux-change:

- (90) a- Piero gli_i sta per parlare ___i.
 (Peter dat.cl. is about to talk.)
 b- Le mele si stanno per servire.
 (The apples are about to be served.)
 *c- Piero ha stato per parlare.
 (Peter has been about to talk.)
 (parlare selects avere; stare per selects essere if
 it can coexist with an auxiliary at all.)

But interestingly enough, this verb cannot be preceded at all by an auxiliary, at least in the relevant cases: when clitic-climbing and se-passive have applied, as shown below.

(91) *a- Giovanni gli_i e'stato per parlare ____i.

(John to them was about to talk.)

*b- Le mele si sono state per servire.

(The apples were about to be served.)

Consequently, the impossibility of Aux-change with stare per is irrelevant to the phenomenon under study.¹⁶

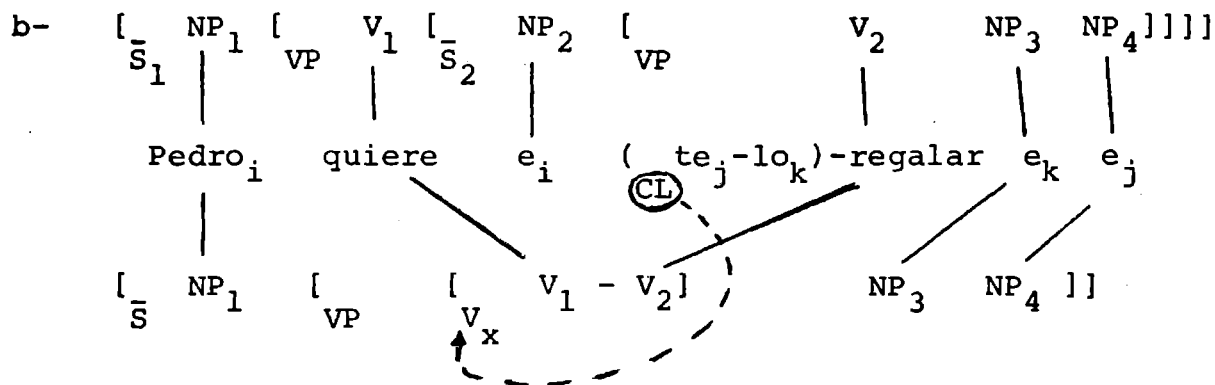
After these remarks on the nature of the relevant class of verbs, we shall now turn to the account of clitic-climbing, se-passive, and auxiliary-selection within the parallel-structures analysis.

2.4.1 Clitic-climbing, se-passive, and Aux-selection within a parallel-structures analysis.

Within this analysis clitic-climbing is equal to clitic-percolation. Clitics are generated on the verb which functions as head of the verbal complex. They percolate up to the V node projection of the verbal head. For example in (92) the clitics te, lo are generated on regalar. They percolate up to V_x. Linearization then takes place in the phonology.

(92) a- Pedro te lo quiere comprar.

(Peter to you-it-wants to buy.)



In (92) the clitics correctly identify the pro with which they are coindexed: the complex verb V_x to which the clitics are attached at S-Structure govern the th-positions in chains k and j . (Cf. II.(128))

We shall consider next the phenomenon known as Aux-change: i.e., auxiliary selection by the complex verb. We repeat the rule of Aux-selection below for ease of reference.

- II.(68) A. A verb selects the auxiliary essere if
- I. it does not assign an argument th-role to the subject
 - II. the nominal clitic si (or the first or second person counterpart of si) is attached to it.
- B. Otherwise, a verb selects the auxiliary avere.

In the case of the complex verb, the auxiliary may appear attached to the verb which functions as head, as in example (93)a. Or it may appear attached to the projection of the head, namely to the complex verb, as shown in (93)b. In effect, aux may either modify the head of the complex verb or the complex verb itself. The auxiliary may not appear twice as shown in (93)c. This is just what we expect since (93) has two simultaneous analyses and in one of these analyses dovere and comprare constitute one lexical unit. A verbal unit may contain at most one Auxiliary node. (For a tentative structure of Aux in Italian see f.n. 16.)

- (93) a- Giovanni lo dovrebbe aver comprato.
 (John it-should have bought.)
- b- Giovanni lo avrebbe dovuto comprare.
- *c- Giovanni lo avrebbe dovuto aver comprato.
- (94) Giovanni avrebbe dovuto aver-lo comprato.

But if in one of the analyses of (93)a potere and comprare constitute one lexical item, how come an auxiliary may intervene between them? We may assume that auxiliaries may undergo the same affixation process as potere and the other verbs in (42), i.e., auxiliaries may also function as bound verbs.

If Aux is attached to the verbal head, the choice is determined by the head itself as expected. For example, in (93)a the verbal head comprare selects avere. It falls under

Part B of rule II.(68). In (95) the verbal head tornare selects essere, as determined by Part AI of rule II (68).

- (95) Giovanni vorrebbe essere tornato a casa piu presto.
(John wanted to have returned home earlier.)

If Aux is attached to the complex verb as in (93)b, it is the complex verb which determines the choice of auxiliary. Selection in this case is also governed by rule II.(68). Recall that the lexical properties of a complex verb, namely its argument structure, is determined by its head. Consequently, if the verbal head has the lexical property of assigning an argument th-role to the subject, the complex verb will inherit this property. Thus, if the verbal head is an ergative verb the complex verb will select the auxiliary essere as shown in (96).

- (96) Giovanni sarebbe voluto tornare a casa.

Consider now the case of the impersonal si-passive. Recall that we assume that the passivizing morpheme si, as well as the impersonal nominal clitic subject si, are generated under the Inflexion node. In the parallel-structures constructions, si must be generated under the matrix Inflexion node in order for it to be attached to the complex verb in the syntax as shown in (97).

- (99) *Estos libros son podidos/queridos comprar.
 (These books were must/wanted to be bought.)

This follows from the fact that the impersonal se-passive verb is syntactically derived while the past-participial passive verb is lexically derived. Since poder/querer function as raising verbs in (99), they may not be passivized (i.e., passivization may not apply vacuously).

We shall consider next the cases of auxiliary selection that fall under Part AII of rule II.(68). Consider the case of the impersonal si in (100)a-b.

- (100) a- Li si sarebbe dovuti comprare.
 (Them-ARB subj.-would have to buy.)
 b- Li si dovrebbe aver comprati.

If Aux is attached to the verbal head, as in (100)b, the selected auxiliary is avere as expected. In effect, the choice of auxiliary is determined by comprare. If Aux is attached to the complex verb, as in (100)a, the selected auxiliary is essere. Again, this is what we expect since the nominal clitic si is attached to the complex verb, and recall that part B of II (68) is an "elsewhere" rule. Note that the contrast between (98)b and (100)b supports the hypothesis assumed in III.2.2, namely that the se in the se-passive construction and the impersonal se are functionally distinct.

Consider next the case of the reflexive clitic si. It contrasts minimally with the case of the impersonal clitic si just discussed. In the case of the reflexive si, the selected auxiliary is essere whether it is attached to the complex verb as in (101)a or to the head of the complex verb as in (101)b.

- (101) a- I ragazzi si_i sarebbero voluti vedere e_i.
 (The kids would have wanted to see each other.)
- b- I ragazzi si_i vorrebbero essere visti e_i.
 (The kids would like to have seen each other.)

The contrast is due to the fact that the reflexive si, unlike the impersonal si, originates on the verb which functions as head of the verbal complex. By percolation it is then attached to the complex verb.

Recall that Aux-selection takes place at LF (or S-S), after percolation has applied. This means that percolation must be thought of as not simply a "transfer" of features but as a "sharing" of features or properties. More precisely, if \bar{X} is a projection of the head X, \bar{X} and X share all the lexical properties and features of X: for example the predicate-argument structure, clitics which are bundles of case, person, number, gender features. Hence, clitics which originate on the verbal head, like the reflexive si, although phonologically realized on the complex verb, are still features of the head. If a rule alters a feature of \bar{X} , it alters

simultaneously the corresponding feature in X. Thus, if a rule attaches the passive morpheme si to the complex verb and blocks assignment of its external th-role, it in effect blocks assignment of the external th-role of the head of the complex verb. On the other hand, if a rule applies which adds features to \bar{X} , like the impersonal nominal clitic si, it does not affect X. In effect, the impersonal nominal clitic si does not become part of the head of the complex verb.¹⁷

2.4.2 Quantifiers and the parallel-structures construction

Burzio 1981 noticed the following contrast between potere/
dovere and volere.

- (102) a- Un interprete ciascuno potrebbe essere assegnato
a quei visitatori.
(One interpreter each could be assigned to those
visitors.)
- *b- Un interprete ciascuno vorrebbe essere assegnato
a quei visitatori.
(One interpreter each would like to be assigned to
those visitors.)

Note that an analysis which assumes the restructuring rule (45) cannot account for the contrast between (102)a and (102)b. In this analysis both sentences have the same structure at LF. On the other hand, the analysis that we have proposed in this section, which assumes that modals in Italian may function

simultaneously as main-predicates and as adjunct-predicates, can account for the above contrast. In effect, recall that volere, unlike potere/dovere, obligatorily assigns a semantic role to the subject, both when it functions as a main verb and as an adjunct-predicate. In (102)b, volere functions as a main-predicate but it also functions as an adjunct-predicate. Hence, it assigns an adjunct th-role to the subject. In II.1.3 we saw that "reconstruction" is not possible from a semantic position. Hence "reconstruction" is not possible in (102)b and the sentence is ruled out because ciascuno will not be c-commanded by its antecedent quei visitatori at LF. Moreover, since "reconstruction" is not possible, the clause-boundedness condition on referential dependency relations between quantified Noun Phrases may be fulfilled in the monosentential structure but not in the bisentential structure. If both structures must fulfil this condition, then the mutual referential dependency relation between un interprete and quei visitatori (which is required in the one N each construction) will not be established. In (102)a, on the other hand, "reconstruction" is possible since potere/dovere optionally assigns an adjunct th-role to the subject. Consequently, ciascuno will be c-commanded by its antecedent, and the clause-boundedness condition will be met by the bi-sentential structure. As expected, (102)b only has the epistemic reading.

2.2.3 Why affixes and not auxiliaries?

We have argued that modals as well as certain aspectual verbs function simultaneously as main verbs and as verbal

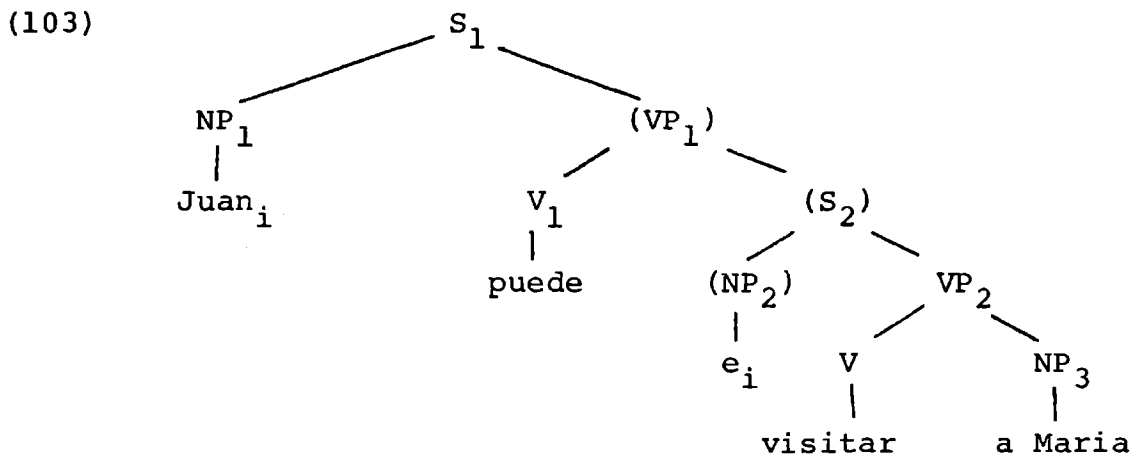
affixes in Spanish and Italian. A legitimate question is why the grammar of these languages have recourse to an affixation mechanism and a parallel-structures analysis? Why didn't the grammar of these languages simply treat these verbs as auxiliaries, much as English treats the modals? A plausible answer to this question is the following. Recall that in English Aux may be generated under S. In the Romance languages, on the other hand, the auxiliaries are generated under VP, attached to the main verb. Now according to the definition of modification given in I.(52), the modals if generated under the VP will modify the verb, not the S. But recall that a lexical property of modals is that they have a semantic relation with a proposition. That is, they select a proposition as ARGUMENT as indicated by the entailments in III.(7), (8), (9). As we have seen, in English this relation is realized as a modification relation. In French, this relation is realized as a predicate-argument relation. In Spanish and Italian the modals may function as modifiers as in English but they cannot function as S-modifiers because in these languages Aux is generated under the VP. The double-structure strategy provides a way for the modals in these languages to function simultaneously as argument-taking predicates, thus fulfilling their selection requirement by taking a proposition as argument, and as modifiers -- namely as verbal modifiers -- by functioning as bound verbs.

2.2.4 On the nature of parallel-structures. Speculation and Implications.

In this section we will attempt to make precise the idea of parallel-structures or simultaneous-analyses and make explicit some of its implications.

Recall that in Chapter I it was suggested that for languages like Japanese the grammar generates parenthesized phrase-markers, from which two different projections can be read off: 1- the virtual projection, which is the structure with parenthesized nodes and 2- the actual projection, which is the reduced structure. The former encodes semantic relations and the latter encodes ordering relations. Which nodes are parenthesized follows from language-particular statements like "VP is virtual" or "S is virtual".

Suppose we also viewed the parallel-structures in Spanish and Italian as two projections of a parenthesized phrase-marker. Thus, for example, S-1 and S-2 in (75) may be viewed as the two projections of the parenthesized phrase-marker in (103).

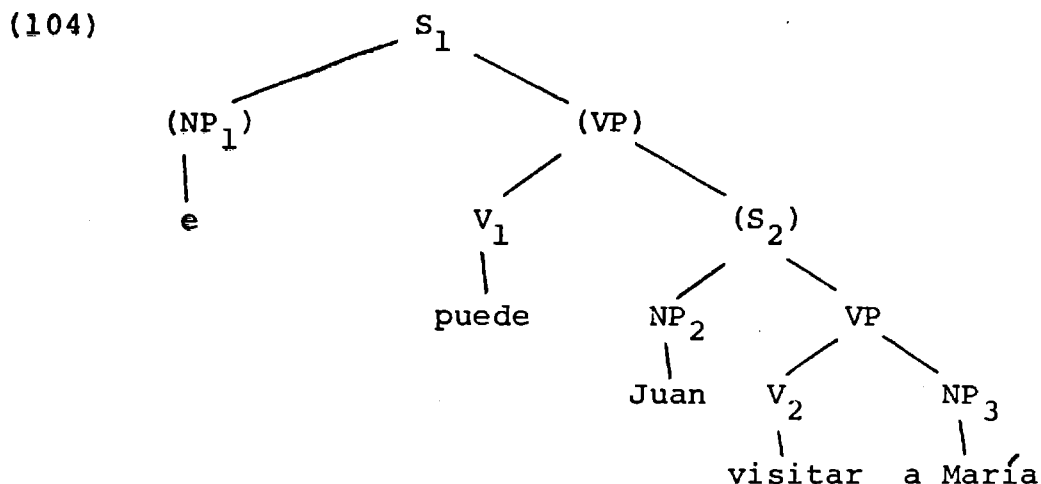


The projection which includes the nodes in parenthesis is the "autonomous thematic-predicates" projection (i.e., S-1 in (75)) and the one without the nodes in parenthesis is the "complex thematic-predicate" projection (i.e., S-2 in (75)). In effect, unlike Japanese, in this case both projections -- the maximal and the reduced expansions of the parenthesized phrase-marker -- encode meaningful semantic relations. The (internal) semantic relation induced by the modal or aspectual verb is realized as an argument th-relation on the "autonomous-predicates" projection and as a modification relation on the "complex-predicate" projection. Furthermore, recall that the Aux-selection facts constitute evidence that the complex-predicate is a thematic unit, given that the choice of auxiliary is, in its core-part, determined by the argument structure of the verb in question.

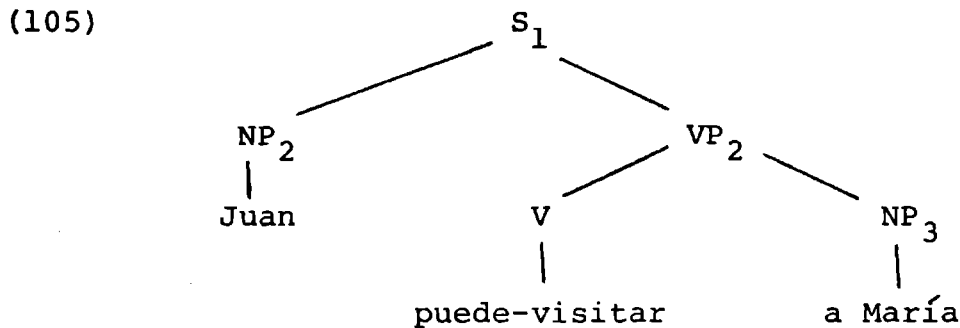
In the cases under discussion, which nodes are parenthesized depends to a great extent on the lexical requirements of the lexical items in question. In effect, parallel-structures, in so far as they express semantic relations, are constrained by the Projection Principle. For example, consider (103). It follows from the lexical property of poder that VP_1 and S_2 are parenthesized -- i.e., are not projected at S_2 . Recall that poder besides functioning as a main verb also functions as an affix as indicated in its subcategorization frame. As a syntactic affix, it is not the head of a VP nor does it take an S argument. Consequently, the S-2 projection contains one S and one VP: S_1 and VP_2 . Since poder functions

syntactically as an affix, V_1 will be interpreted as bound to V_2 in S-3 in much the same way that -sase is interpreted as bound to tabe in structure I.(18) by virtue of being morphologically an affix. Furthermore, the reduced structure must have one [NP,S] position since clauses have one and only one subject (related, undoubtedly, to the fact that verbs take at most one external argument). Cf. rule I(7). The question that then arises is: which of the two [NP,S] positions is parenthesized? Let us assume that nodes which dominate lexical material may not be parenthesized. In effect, every morpheme must be part of both structures. Consequently, NP_2 -- and not NP_1 -- is parenthesized in (103) as desired.

(103) is the parenthesized phrase-marker at S-Structure of the sentence Juan puede visitar a María. With what parenthesized phrase-marker is it associated at D-Structure? Recall that all the verbs in II(42) are raising predicates, at least when they function as adjunct-predicates. (103) is hence associated with the D-Structure in (104).



In (104) NP_2 dominates lexical material. Hence it cannot be parenthesized. Instead NP_1 , which does not dominate any lexical material, is parenthesized. Note that in the reduced projection of (104) NP_2 is immediately dominated by the first non-parenthesized node above it, namely S_1 (in conformity with the well-formedness conditions on domination relations given in Vergnaud & Zubizarreta (1981)). The reduced projection of (104) is then as in (105).



Note that the existence of structures like (104) at D-Structure implies that morphemes may be unordered with respect to each other at D-Structure. We may then assume that it is only at S-Structure that morphemes must be ordered since it is S-Structure that maps onto PF and a string may only be interpreted phonologically if the morphemes in the string are ordered with respect to each other. (Possibly, order might also be relevant at LF in languages in which order is relevant for the identification of grammatical relations). In conclusion, the suggestion is that D-Structure is simply a pure representation of thematic relations. Order is irrelevant at this level. S-Structure, besides encoding thematic relations, also

encodes ordering relations. Hence, ordering statements as well as the adjacency condition on case-assignment in languages which have such condition apply at S-Structure, not at D-Structure. D-Structure is equal to S-Structure abstracting away from movement and from order.

The formalism suggested in this section to represent parallel-structures, as well as its relation to the formal objects discussed in Vergnaud & Zubizarreta 1981 in relation to Japanese, is yet to be investigated more thoroughly and to be made more precise. We leave this topic for further research.

Finally, note that in so far as parallel-structures encode semantic relations and are consequently constrained by the Projection Principle, they will not create structures which are normally excluded by the Projection Principle. For example, parallel-structures will not allow subject-to-object mapping. In order for this to be possible there would have to exist a verb, such as believe*, which has the double-subcategorization frame: [___S, ___NP VP], but such a verb cannot exist because VPs are not arguments. Recall that we assume that only NPs and Ss are arguments.

To summarize, it was proposed that modals as well as some aspectual verbs in Italian and Spanish may function as adjunct-predicates. Specifically, the semantic relations induced by them may be of the same type as the semantic relations induced by adverbs. The proposal that modals may be related to adverbs is not new. It was put forth by Jackendoff 1972 who proposed

that the same rules of semantic interpretation apply to modals and adverbs in English. Modals select a proposition as ARGUMENT, undoubtedly a universal property of this class of verbs. In English this ARGUMENT relation is realized as a modification relation; in the Romance languages it is realized as an argument th-relation. Modals also have the potential lexical property of being able to function as bound verbs. This property is realized in some languages but not in others. As bound verbs, they modify the verb onto which they are affixed, which means that as affixes they behave as non-heads. Although there are, perhaps, languages in which this affixation is lexical, in Spanish and Italian it is syntactic. This implies that there is no one-to-one relation between morphology and syntax. Morphological affixes like the Japanese -sase (cf. section I.1) may function syntactically as autonomous predicates; and conversely, verbs that are full lexical items morphologically may function as syntactic affixes, like the verbs in II(42) and the Romance causative to be discussed in the next chapter. The dual status of these verbs -- as main verbs and as affixes -- is expressed by means of simultaneous syntactic analyses. We suggested that parenthesized phrase-markers (coupled with certain interpretative statements) might be an adequate formalism to represent parallel-structures. Its implications with respect to the nature of D-Structure were briefly addressed.

Footnotes to Chapter III

*We are grateful to Adriana Belletti and Rita Manzini for help with the Italian data in this chapter.

1) Lightfoot 1979 argues convincingly that modals in Old English are main verbs.

2) Suppose we assume the strong hypothesis that syntax is the projection of the lexicon, namely that every syntactic relation except for [NP,S] - VP (subject-VP relation) always corresponds to a meaningful semantic relation. This would mean that the structure [$\begin{matrix} V \\ VP \end{matrix}$ VP] does not exist since it is not semantically meaningful. It does not correspond to any of the semantic relations defined in Chapter I. Recall that we assume that only NPs and clauses (i.e., terms and propositions) are arguments: i.e., may bear argument th-roles. Hence, there is but one possible structural position for Aux when generated under the VP -- namely adjoined to the main verb.

3) Aissen & Perlmutter 1976 and Burzio 1981 also analyze modals and aspectual verbs as main verbs.

Aissen & Perlmutter 1976 propose a clause-union operation which is meant to account for their status as non-main verbs. Since the analysis is within a different theory -- i.e., relational grammar -- which makes different types of assumptions, we will not discuss it here.

To account for the phenomena in (33)1-3, Burzio 1981 proposes a VP-movement rule which moves the VP of the embedded clause into the VP of the matrix clause.

a-
$$\left[\bar{S}_1 \text{ NP}_1 \left[\text{VP } V_1 \left[\bar{S}_2 \text{ NP}_2 \left[\text{VP } V_2 \text{ Z } \right] \right] \right] \right] \longrightarrow$$

b-
$$\left[\bar{S}_1 \text{ NP}_1 \left[\text{VP } V_1 \left[\text{VP}_i \text{ V}_2 \text{ Z } \right] \left[\bar{S}_2 \text{ NP}_2 \text{ VP}_i \right] \right] \right]$$

Concerning this analysis we have the following comments:

1. It is unclear why structure b allows for V_2 to determine the auxiliary which precedes V_1 .

2. The VP-movement rule which maps a onto b also violates the Projection Principle. Unlike Rizzi's restructuring rule, the VP-movement analysis does not destroy the relation between V_1 and S_2 but it creates a new relation: namely, between the matrix V and the embedded VP.

3. As we have suggested in footnote 2, it is unclear whether the structure $\left[\text{VP } V \text{ VP} \right]$ exists at all.

4) Note that the sentence below -- where the direct object has not been preposed -- is as ungrammatical as (47)b.

i- Il s_i 'est présenté les enfants $_i$ ---_i par la directrice. Suppose we modify slightly the definition of c-command given in II(88).

ii. α c-commands β ($\alpha \neq \beta$) iff $\forall \emptyset$, \emptyset a maximal projection and $\beta \neq \text{head of } \emptyset$, \emptyset dominates $\alpha \implies \emptyset$ dominates β .

According to this definition of c-command, les enfants in the sentence above does not c-command se in so far as the clitic is part of V and V is the head of the maximal projection VP. If we assume moreover that each element in the chain i(cl-e) is subject to the Binding Principles, as suggested in II.4.3.1, then sentence i above is ruled out by Principle A since i(se-e) is an anaphor but se is not c-commanded by the NP les enfants with which it is coindexed. But note that this still leaves unexplained the contrast between i- above and iii- below (where the subject is post-posed and adjoined to the VP).

iii- Se afeito' Juan.

(himself-shaved John.)

5) There are cases where a past-participle passive is not possible in a control construction and the se-passive is not possible either. (Examples provided by M.R. Manzini.)

*a- I ragazzi furono minacciati di mandarli via.

(The children were threatened to send-them away./ The children were threatened to be sent away.)

*b- I ragazzi si minacciarono di mandarli via.

6) But it appears that in 18th century French the se-passive could coexist with a by-phrase: Cela se dit par le peuple. (This is said by the people.) This fact is noticed in Ruwet 1972, who cites Martinon 1927.

7) In fact we may assume that past-participle passive morphology can either block assignment of the external th-role to the subject position or internalize the external th-role. In the latter case the internalized th-role is realized in a by-phrase. In the former case, as in the se-passive construction, the external th-role does not become an internal th-role and hence it remains unassigned. The by-phraseless passives will then not violate the Argument Th-Criterion, as reformulated in III(55).

8) French has the passive or middle se but no impersonal se. Belletti 1980 suggests that this may be attributed to the fact that Modern French is not a null-subject language. But Modern French has the impersonal clitic on which behaves in all relevant respects like the impersonal clitic se.

9) In French the se-passive or middle se, as opposed to the ergative se, may only appear in present or imperfect tense and with a VP modifier (PP or Adverb.)

10) On the other hand, the verbs which have the 1st or 2nd person counterpart of the reflexive clitic se attached to them (me, te...) select either avere or essere. The analogy-explanation does not account for this difference between 3rd and 1st/2nd persons.

11) The suggestion that a sentence can have two simultaneous analyses was first proposed by Rouveret & Vergnaud 1978 for French causative constructions: one structural and one expressed by coindexing. Williams 1980 suggested that Rouveret & Vergnaud's idea of co-analysis can be conceived of as two parallel-structures. We adopt and develop William's suggestion for the phenomenon under discussion.

12) The processes in (33)1-3 were also attested in earlier stages of French. It is interesting that "clitic-climbing" seems to be the last of the three processes to be lost. In effect, it appears that in 17th century French Aux-change is no longer attested, while examples of "clitic-climbing" are still abundant.

13) Burzio judges (83)a as marginal. He attributes the difference in judgement between (81)a -- which is * -- and (83)a -- which is ?? -- to the interaction of two factors: 1- the judgements concerning the ne-cliticization facts, although real and clear, are subtle in nature. 2- the structure in (83)a is more complex than the structure in (81)a. Consequently, sentence (83)a is more difficult to judge. What is relevant is that speakers do agree that there is a difference in status between (83)a and (83)b. Hence, we disregard the difference between (81)a and (83)a.

14) Note that the explanation for the contrast between *a- Il menace de venir beaucoup de monde. (cf. Chapter II) and b- e ne vorrebbero intervenire molti relies crucially on the fact that il and beaucoup de monde in a- do not form a th-chain while e and molti pro in b- are members of the same th-chain.

15) (86)a and (86)b were given marginal status by the speaker we have consulted. The reasons for ?? instead of * are given in footnote 13. We should also point out that according to Burzio's judgements there is a difference between (86)a, which he considers fully grammatical, and (86)b, which he considers questionable. We can account for Burzio's judgements on the basis of analogy (cf. the discussion of (76)a) and the subtlety of the judgements on ne-cliticization (cf. f.n. 13).

16) It might be that the impossibility for stare per to be preceded by an auxiliary is due to the fact that stare per in (90)/(91) is itself an auxiliary. If this were the case, the Aux rule in Italian would be:

$$\text{Aux} \longrightarrow \left\{ \begin{array}{l} \text{essere} \\ \text{avere} \\ \text{stare per} \end{array} \right\}_1 \left\{ \begin{array}{l} \text{venire} \\ \text{andare} \\ \text{essere} \end{array} \right\}_2$$

(Aux₂ selects either essere or stare per but not avere.)

17) There are some not too straightforward cases of Aux-selection which we have not discussed.

The passives:

a- Mario gli e'/*ha stato presentato da Gianni.

(Mario to him-has been introduced by John.)

b- Mario gli ha/*e' voluto esser presentato da Gianni.

(Mario to him-wanted to be introduced by John.)

c- Mario gli vorrebbe esser/*aver stato presentato da Gianni.

Predicate Phrases:

d- Mario ha/?e' voluto essere gentili con gli ospiti.

(Mario wanted to be nice with the guests.)

We think that a better understanding of the relation between Aux₂ on the one hand and the past-participle and adjective on the other as well as between Aux₁ and Aux₂ (cf. f.n. 16) would shed light on b and d above.

Chapter IV: Causatives

Part I: The Causative as an intransitivizerIV.1 The Romance Causative as a bound verb

In Chapter III we have seen that certain bound verbs may function as modifiers and hence as non-heads: the modals and aspectual verbs in Spanish and Italian. In this section, we shall examine bound verbs that function as heads and which induce alterations in the argument structure of the verb to which they are attached: the causative verbs in the Romance languages. We will discuss French but the same comments and analysis hold for Spanish and Italian.

Consider the following sentences:

- (1) a- Le général a fait détruire la ville par ses soldats.
 (The general had destroy the city by the soldiers./
 The general had the city destroyed by the soldiers.)
- b- Pierre a fait photographier ses enfants par Marie.
 (Peter had photograph his children by Mary./
 Peter had his children photographed by Mary.)

Kayne 1975 and others have shown that although passive morphology is lacking in the faire-par construction (cf. (1)a-b), it behaves like the passive in many ways.

First, nonpassivizable idioms may not occur in the faire-par construction.

- (2) a- Sa famille a cassé la croûte.
 (His family had a snack.)
- *b- La croûte a été cassée par sa famille.
- *c- Pierre a fait casser la croûte par sa famille.
 (He had his family have a snack.)

- (3) a- Son fils fera le malade.
 (His son will play sick.)
- *b- Le malade sera fait par son fils.
- *c- Il fera faire le malade par son fils.
 (He will have his son play sick.)

On the other hand, passivizable idioms may also occur in the faire-par construction.

- (4) a- Son fils te prêtera assistance.
 (His son will lend you assistance.)
- b- Assistance te sera prêtée par son fils.
- c- Il te fera prêter assistance par son fils.
 (He will have you lent assistance by his son.)
- (5) a- Son client portera plainte.
 (His client will bring suit.)
- b- Plainte sera portée par son client.
- c- L'avocat fera porter plainte par son client.
 (The lawyer will have suit brought by his client.)

Second, objects which are inalienable possessions of the subject may not be passivized and they may not occur in the faire-par construction either.

- (6) a- Jean levera la main.
 (John will raise his hand.)
 *b- La main sera levée par Jean.
 *c- Elle fera lever la main par Jean.
 (She'll have John raise his hand.)

The same restriction holds for overt possessives.

- (7) a- Jean_i apprendra son_i rôle.
 *b- Son_i rôle sera appris par Jean_i.
 *c- Tu feras apprendre son_i rôle par Jean_i.
 (You'll have Jean learn his role.)

Third, verbs compatible with passives in de can occur in a faire-de construction.

- (8) a- Marie est haïe de tout le monde.
 (Marie is hated by everybody.)
 b- Marie est arrivée à se faire haïr de tout le monde.
 (Marie managed to get herself hated by everybody.)

Verbs that cannot take passives in de cannot appear in a faire-par construction.

(9) *a- Jean sera tué de ce garçon.

(John will be killed by that boy.)

*b- Jean se fera tuer de ce garçon.

(John will have himself killed by that boy.)

Fourth, verbs that cannot undergo passivization cannot occur in the faire-par construction.

Transitives with a locative object:

(10) a- Jean quittera la maison demain.

(Jean will leave the house tomorrow.)

*b- La maison sera quittée par Jean demain.

*c- Je ferai quitter la maison par Jean demain.

(I'll have Jean leave the house tomorrow.)

Intransitives:

(11) a- Jean travaille.

(John works.)

*b- Il a été travaillé par Jean.

*c- On a fait travailler par Jean.

(We had John work.)

Fifth, the par-phrase in the faire-par construction as in the passive construction is optionally realized.

- (12) a- La ville a été détruite (par les soldats).
 (The city was destroyed (by the soldiers).)
 b- Le général a fait détruire la ville.
 Cf. (1)a.

In conclusion, it appears that the faire-par construction functions like a passive construction but curiously enough passive morphology is absent.

The Romance causative construction has another curious property which we think is related to the phenomenon discussed above. Recall that in Romance many verbs are intransitivized by attachment of the morpheme se. Cf. III.2.2.4. The anti-causative or ergative rule is a lexical rule which deletes the external th-role of a verb and removes the verb's accusative-case assigning property. Some examples:

- (13) a- Pierre a cassé le verre.
 (Peter broke the glass.)
 b- Le verre s'est cassé hier.
 (The glass broke yesterday.)
 *c- Le verre est cassé hier.
- (14) a- La chaleur a brisé l'assiette.
 (The heat cracked the dish.)
 b- L'assiette s'est brisée hier.
 (The dish cracked yesterday.)

*c- L'assiette est brisée hier.

(15) a- Le vent a éteint le feu.

(The wind put out the fire.)

b- Le feu s'est éteint tout de suite.

(The fire went out immediately.)

*c- Le feu est éteint tout de suite.

Note that the anti-causative or ergative form of casser, briser, éteindre without the morpheme se are impossible. Cf. (13)c, (14)c, (15)c. But interestingly enough the morpheme se may be absent when the anti-causative verb is embedded under faire.

(16) La pression a fait casser le verre.

(The pressure made the glass break.)

(17) La chaleur a fait briser l'assiette.

(The heat made the dish break.)

(18) Le manque d'oxygène a fait éteindre le feu.

(The absence of oxygen made the fire go out.)

There are other transitive verbs whose anti-causative counterparts do not have the morpheme se attached to them.

(19) a- Pierre a coulé le bateau.

(Peter sank the boat.)

b- La bateau a coulé hier.

(The boat sank yesterday.)

(20) a- Pierre a cuit le poulet.

(Peter cooked the chicken.)

b- Le poulet a cuit vite.

(The chicken cooked fast.)

When these verbs are embedded in the faire-construction, the sentence is ambiguous.

(21) a- Pierre a fait couler le bateau.

b- Pierre a fait cuire le poulet.

(21)a and (21)b have interpretations (22)a-b and (23)a-b respectively.

(22) a- Peter had somebody sink the boat.

b- Peter sank the boat.

(23) a- Peter had somebody cook the chicken.

b- Peter cooked the chicken.

Interpretations (22)a and (23)a correspond to the faire-par construction with a non-realized par-phrase and (22)b and

(23)b correspond to the anti-causative readings. Cf. (19)b, (20)b.

We know that passivization and anti-causativization are very similar processes. They both prevent the external argument of a verb from being realized. The difference between them is that in passives the external th-role is "internalized" in the sense of Williams 1981b: i.e., it is realized inside the VP in a par-phrase or it remains unassigned (see footnote 7 in Chapter III), while in the anti-causatives the external th-role is deleted. The fact that a verb need not bear passive morphology nor anti-causative morphology in order to prevent its external th-role from mapping onto subject position strongly suggests that faire itself is accomplishing this task in the constructions under discussion. In order for faire to induce alterations in the argument structure of another verb, they must form one lexical unit. More precisely, faire must function as a verbal affix.

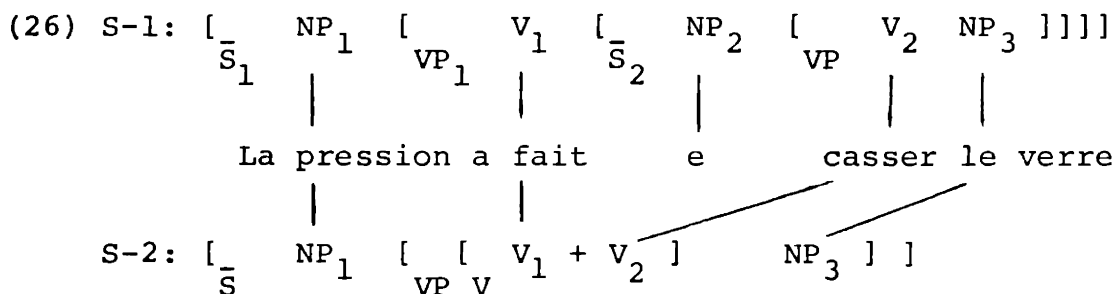
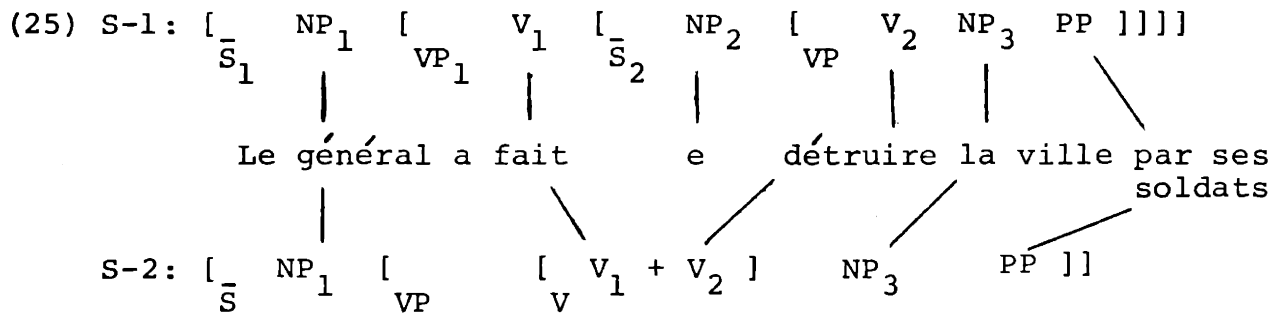
But faire behaves as an autonomous lexical item with respect to lexico-morphological rules. Moreover, as an autonomous predicate it takes a proposition as internal argument as shown by the entailments below.

- (24) a- Pierre a fait cueillir les fleurs par les enfants.
 (Peter made pick the flowers by the children./
 Peter had the children pick the flowers.)

b- Pierre a fait que les enfants cueillent les fleurs.

(Peter made that the children pick the flowers.)

Hence, faire in the constructions discussed in this section functions both as an autonomous predicate and as a bound verb. Thus, sentences like (1)a and (18) have a double-analysis as shown below.



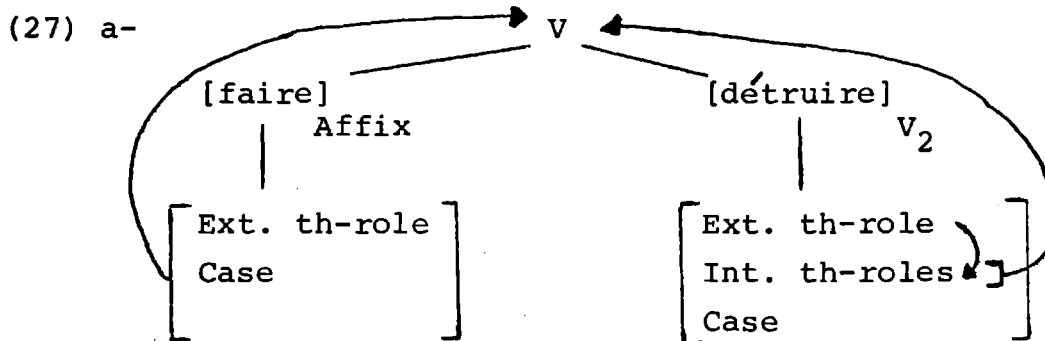
In (25) the external th-role of détruire is realized in a par-phrase inside the VP. In (26) the external th-role of casser is deleted. Hence, NP₂ in (25) and (26) is not an argument position. e is free, ungoverned, non-referential, and does not bear a th-role: i.e., it is an expletive pronominal anaphor.

But how exactly does faire prevent the external th-role of détruire and casser from being realized in subject position? It certainly does not achieve this result in the same way that passive or anti-causative morphology does. The lexical function of these morphemes is to function as intransitivizers: i.e., they carry the features [-Ext. th-role, -Acc. case]. This is clearly not true for faire. Faire has both an external argument and case-assigning property.

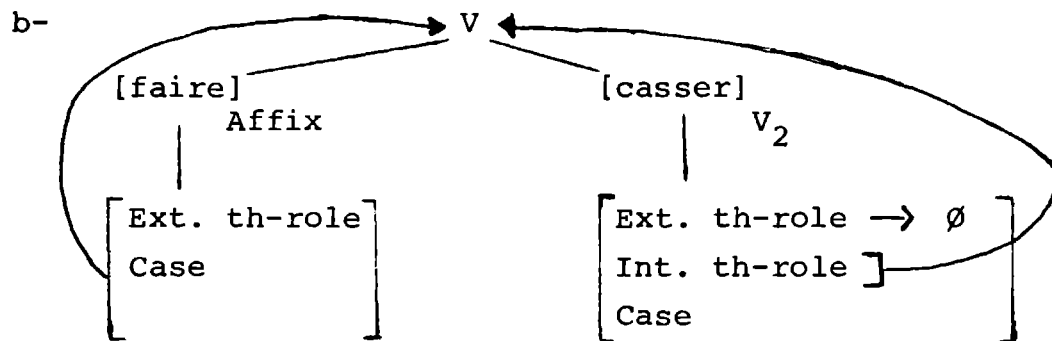
At this point a more precise specification of the percolation convention is in order. Recall that if the affix functions as the head of a lexical category, the features of the affix take precedence over the features of the root. But if the affix is unspecified for the value of some feature, that feature of the root percolates up to become the value of the affix+root category. Cf. Lieber 1980, Marantz 1981.

Unlike the modals and aspectuals discussed in Chapter III, faire functions as the head of the complex verb. As a bound verb, faire has the features [Ext. th-role, Acc/Dat case]. Since faire functions as the head of the complex verb, its external th-role and case features percolate up, thus preventing the external th-role and case features of the verb to which it is attached from being realized. The external th-role of the embedded verb is either internalized and mapped onto a by-phrase or remains unassigned (as in the case of passives) or it is deleted (as in the case of anti-causatives). On the other hand, since faire as a bound verb does not take internal arguments, the internal th-roles of the

"root"-verb percolate up to the complex verb. Thus, the complex verbs in (25) and (26) have structures (27)a and (27)b respectively.



The arrow indicates that the external th-role becomes an internal th-role, as in the case of passives. The "internalized" external th-role percolates up to **V** as an internal th-role. It is then syntactically realized inside the VP as a by-phrase.¹



As in the case of anti-causatives, the external th-role deletes. As is well-known, there are certain verbs that may have their external th-role deleted but not others. This is a lexically determined property.

In (12)b, unlike (25), the external th-role of the "root"-verb is not internalized and hence it remains unassigned. Cf. footnote 7 in Chapter III. What crucially distinguishes sentences like (25) and (12)b from sentences like (26) is that the external th-role (whether realized in a by-phrase or not) is present at LF in the former but not in the latter case. Thus, sentences like (25) and (12)b but not sentences like (26)c may coexist with an "agentive" adverb.

- (28) a- L'architecte a fait tracer le plan méticuleusement
(par son associé).
(The architect had the plan drawn carefully/meticulously (by his partner).)
- b- Pierre a fait éteindre le feu méticuleusement (par Marie).
(Peter had the fire put out carefully/meticulously (by Mary).)
- *c- Le vent a fait éteindre le feu méticuleusement.
(The wind made the fire go out carefully/meticulously.)

When an inherent reflexive is embedded under faire, the morpheme se may also be absent.

- (29) a- Pierre s'est évanouie.
(Peter fainted.)
- *b- Pierre est évanouie.

c- La peur a fait évanouir Pierre.

(Fear made John faint.)

This requires some clarification of the nature of the morpheme se in s'évanouir. Recall that s'évanouir may function like an ergative verb. Cf. III.2.2.4. Recall also that s'évanouir has no évanouir counterpart, which raises the question of whether se has any function at all. The contrast between (29)b and (29)c suggests that it does. Otherwise, it would remain a mystery why the se in s'évanouir can be absent just in case it is embedded under faire. Consequently, we will analyze the so-called inherent reflexives in the following way. Verbs like évanouir are obligatorily reflexive when they function as transitives (undoubtedly due to their meaning). Hence, in this case, se in s'évanouir is a nominal clitic, part of an argument th-chain. But the transitive évanouir may also undergo anti-causativization. In this case, se in s'évanouir is the ergative or anti-causative morpheme.

Now consider the clitics in the faire-par construction.

(30) a- i- Pierre le lui a fait écrire par Jean.

(Peter it-to him-had write by John./ Peter had John write it to him.)

*ii- Pierre a fait le lui écrire par Jean.

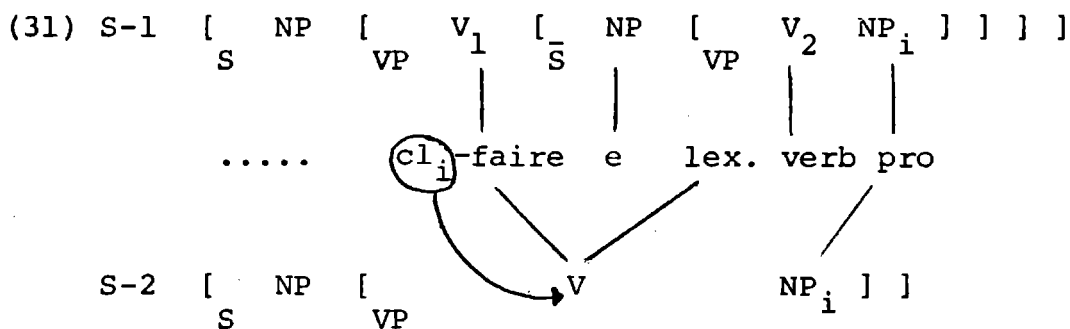
b- i- La chaleur l'a fait fondre.

(The heat it-made melt./ The heat made it melt.)

*ii- La chaleur a fait le fondre.

- c- i- Jean s'est fait raser par Marie.
 (John himself-had shave by Mary./ John had
 Mary shave him.)
- *ii- Jean a fait se raser par Marie.

Recall that clitics are bundles of case, person, number, and gender features. Given that faire is the head of the complex-verb in the constructions under discussion, its Accusative and Dative case-features percolate up to the complex verb: i.e., they take precedence over the case-features of the verb to which faire is attached. We may then assume that the clitics in (30)a-i, b-i, and c-i originate on faire. They then percolate up to the complex verb. (Linearization takes place in the phonology.) Note that the clitics in these sentences correctly identify the non-overt pronominals with which they are coindexed at S-2 (the monosentential structure), but not at S-1 (the bisentential structure).



(irrelevant details omitted.)

In effect, requirement b in the Condition on Identification of pro -- which we repeat below -- is not fulfilled at S-1.

II(128) \underline{X} identifies a position \underline{i} in:

$j \dots\dots\dots X \dots\dots\dots j$

iff a- $\underline{X} = \text{AGR}$ or $[\text{cl} - \underset{V}{V}]$, where AGR/cl
bear the index \underline{i}

b- \underline{X} governs the th-position in the chain \underline{j}

c- 1) $\underline{j} = \underline{i}$ or 2) the lexical head in the chain \underline{j}
governs \underline{i} .

On the other hand, if the clitics are generated on V_2 they correctly identify the positions with which they are coindexed at S-1 but not at S-2. Since faire's features take precedence over those of V_2 , if the clitics originate on V_2 they may not percolate up. Consequently, $\underline{\text{cl}}_{\underline{i}-V_2}$ will govern NP_i at S-1 but not at S-2. This case is exemplified in (30)a-ii, b-ii, c-ii. Now since a-i, b-i, and c-i are grammatical while a-ii, b-ii, and c-ii are ungrammatical, we conclude that condition II(128) must be satisfied at S-2. It is this structure, i.e., the one that maps onto phonology (PR), namely, the reduced structure, which must satisfy the Condition on Identification of pro.

The above conclusion raises the question: what is the "raison d'être" of condition II(128)? We suspect that it plays some role in recovering the LF structure from the PF structure. More precisely, like word-order in some languages and case in others, condition II(128) is probably relevant in identifying grammatical relations.

As example (30)c-i shows, reflexive clitics may appear in the faire-par construction but, recall, they may not appear in the passive construction. Cf. III(47) *Les enfants_i se_i sont présentés —_i —_i par la directrice. The reason is that the S-Structure subject in the faire-par construction, unlike the S-Structure subject in the passive construction, is its D-Structure subject. Cf. the discussion in III.2.2.1.

In the constructions under discussion the complex verb faire-V₂ selects avoir (have) and not être (be) as an auxiliary. Cf. (1)a-b, (16), (17), (18), (21)a-b. This is just what we expect since although V₂ in faire-V₂ does not have an external argument, the complex verb faire-V₂ does.

If the complex verb's external th-role is blocked from mapping onto subject position by attachment of the passive morpheme se (i.e., the middle se), the selected auxiliary is essere (be).

(32) Quei brani si erano fatti leggere (da Giovanni).

(These passages were made-read (by John).)

(from Burzio 1981)

Likewise, if passive morphology is attached onto fare, the complex verb will be intransitivized. In effect, the features [-Ext. th-role, -Acc case] percolate up to the complex verb blocking both accusative case assignment and assignment of fare-V's external th-role to the subject position. As expected, the selected auxiliary is essere.

b- Un poulet, ça se fait cuire rapidement.

(A chicken, it is made to cook fast.)

On the other hand, past-participial passive is impossible in French in the faire-V construction for some unknown reason.

(36) *Ces passages ont été fait lire (par Jean). (= (33)).

(The same remarks hold for Spanish.)

Another causative verb which behaves like faire in all relevant respects is laisser (let). Hence, laisser, like faire, may be assumed to have a double lexical entry. It may function simultaneously as an autonomous predicate and as a bound verb.

In conclusion, the causative constructions discussed in this section constitutes independent motivation for parallel-structures representation in so far as this analysis provides a unified account of the properties of faire-par, the absence of anti-causative morphology, the distribution of clitics, se-passivization, and the choice of auxiliary.

IV.2 The Japanese Passive

In the previous section we have seen that the Romance causative may function as an intransitivizer by virtue of functioning as an affix. As an affix, it carries an External th-role and case features. Since it functions as the head

of the complex verb the causative's features take precedence over the features of the verb to which it is bound, thus preventing the external th-role of the non-head verb from mapping onto subject position.

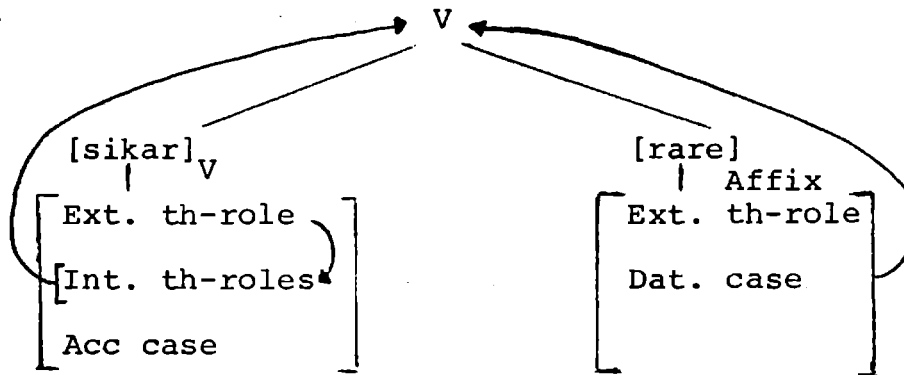
A formally similar case is found in the Japanese "indirect" passive construction. In these constructions the bound morpheme -rare adds an argument to the lexically derived verb and causes the external argument of the non-head verb to surface as an internal argument with dative case. (The examples are from Kuroda 1979).

- (37) a- Taroo-wa sensei-ni Hanako-o sikar-are-ta.
 (Taro (top) teacher (dat) Hanako (acc) scold-passive-past./ Taro had Hanako scolded by the teacher.)
- b- Boku-wa kodomo-o sensei-ni home-rare-ta.
 (I (top) child (acc) teacher (dat) praise-passive-past./ I had my child praised by the teacher.)
- c- John-ga ame-ni hur-are-ta.
 (John (nom) rain (dat) fall-passive-past./ It rained on John.)
- d- John-wa kodomo-ni sin-are-ta.
 (John (top) child (dat) die-passive-past./ John's child died on him.)

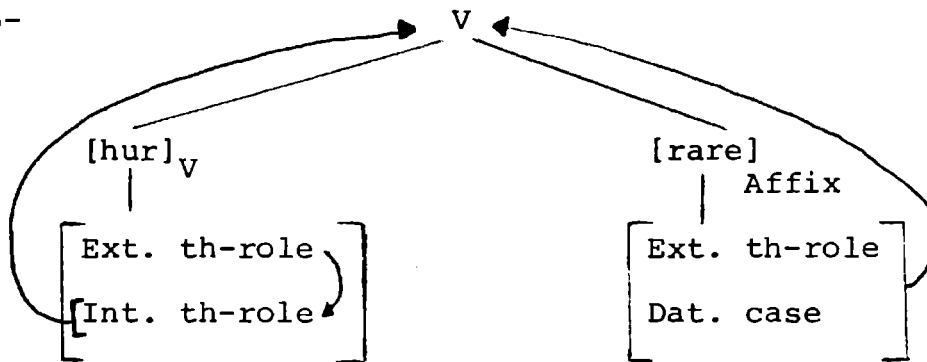
As the affix faire, the bound verb -rare has an external th-role. Moreover, it carries dative case. Consequently, its

external th-role and case feature take precedence over the external th-role and case feature (if it has one) of the verb to which it is bound. The external argument of the latter becomes an internal argument. For example, the complex verbs in (37)a and (37)c have the following structures (putting tense aside).

(38) a-



b-



(The arrow indicates "internalization" of the external th-role.)

On the other hand, in the "direct" passive -rare functions as a canonical intransitivizer. It may only be attached to transitive verbs. The D-Structure object appears as the S-Structure subject: i.e., it is case-marked nominative. The external th-role surfaces as an internal argument with dative

case or in a ni yotte phrase (by-phrase). (Kuroda 1979 argues that the ni-direct passive, like the ni-indirect passive and unlike the ni yotte-direct passive, carries a connotation of affectivity.)

- (39) a- Taroo-wa sensei-ni sikar-are-ta.
 (Taro (top) teacher (dat) scold-passive-past./
 Taro was scolded by the teacher.)
- b- John-ga Bill-ni yotte hihan sare-ta.
 (John (nom) by Bill criticize-passive-past./
 John was criticized by Bill.)

In conclusion, the affix -rare has two different lexical entries: 1- [Ext. th-role, Dat case] and 2- [-Ext. th-role, -Acc case, (Dat. case)]. In the former case it is functionally similar to the bound verb faire. In the latter case it functions as a "pure" intransitivizer like the past-participle passive in Romance and English. The external th-role either remains unassigned or is internalized.

Part II: The Acc/Dat Causative Construction

IV.3 Differences between the faire-par and the Acc/Dat Causative Construction

In the previous section we have seen that the subject of the verb embedded under the causatives faire/laisser may appear in a par-phrase. But, as is well-known, it may also appear in the accusative or dative form.

- (40) Pierre a fait travailler Marie.
 (Peter made work Mary./'Peter made Mary work.')
- (41) Pierre a fait écrire la lettre à Marie.
 (Peter made write the letter to Mary./'Peter made
 Mary write the letter.')

We shall refer to these constructions as the Acc/Dat Causative. It has been studied by, among others, Kayne 1975, Strozer 1976, Rouveret & Vergnaud 1978, Burzio 1981.

As noted by Kayne 1975 and others, this construction differs from the faire-par construction in several ways. First, non-passivizable idioms may be embedded in the Dative Causative construction. Compare (42)a-b with (2)c and (3)c in Part I of this chapter.

- (42) a- Il a fait casser la croûte à sa famille.
 b- Il fera faire le malade à son fils.

Second, objects which are inalienable possessions of the subject as well as overt possessives may appear in the Dative Causative construction. Compare (43)a-b with (6)c and (7)c in Part I.

- (43) a- Elle fera lever la main à Jean.
 b- Tu feras apprendre son_i rôle à Jean_i.

Third, although the subject of verbs with locative objects may not appear in a par-phrase (cf. IV(10)), it may appear in a dative NP.

(44) Je ferai quitter ma maison à Jean demain.

Is the structure of the Acc/Dat Causative distinct from the structure of the faire-par Causative? In effect, is the Accusative or Dative NP an "internalized" external argument of the embedded verb or not? That is, are the underlined Acc and Dative NPs in (40) and (41) under VP or under S?

The grammaticality of (43)b is neutral with respect to this question because a dative indirect object is a possible proper antecedent independently of this construction.

(45) On a appris son_i rôle à Jean_i.

(We taught his role to John./ 'We taught John his role.')

The grammaticality of (43)a is somewhat more relevant since, as noted by Kayne 1975, there is normally a difference in status between the sentence with a dative indirect object NP and that with a dative indirect object clitic in many cases of a nonprepositional possession, although the contrast is less than sharp.

- (46) a- Paul lui a embrassé le front.
 ?b- Paul a embrassé le front à Marie-Claire.)
 (Paul kissed her/Marie-Claire's forehead.)

- (47) a- La poussière lui a noirci les jambes.
 ?b- La poussière a noirci les jambes à ce garçon.
 (The dust blackened his/that boy's legs.)

(46)b and (47)b contrast with (43)a which is fully grammatical. This contrast suggests that à Jean in (43)a is a subject and not an indirect object.

The grammaticality of (42)a and (42)b provides strong evidence that the dative NP in the Dative Causative, unlike the par-NP in the faire-par construction, is not an "internalized" external argument of the embedded verb. To see why this is so, we must turn back to the contrast between non-passivizable idioms and passivizable idioms. Cf. (2)-(3) versus (4)-(5). The difference between idioms like casser la crouûte/faire le malade on the one hand and prêter assistance/porter plainte on the other is that the meaning of the latter (call them quasi-idioms) but not the meaning of the former (call them full-idioms) is equal to the sum of the meaning of their parts. The question is then why can't the full idioms passivize? The ungrammaticality of the faire-par sentences (2)c and (3)c -- constructions in which there has been no object-to-subject movement -- indicate that the ungrammaticality of (2)b and (3)b does not lie (or at least

not solely) in the impossibility for the objects of full-idioms to move.² We conclude then that full idioms cannot passivize due (at least partly) to the fact that their external arguments cannot be internalized. This implies that in (42)a and (42)b the dative NP à sa famille and à son fils are in subject position and not inside the VP.

We may ask why the external argument of non-compositional idioms cannot be internalized. Or to put the question in another way, when can an external argument be internalized? A plausible answer to this question is the following. An external argument may be internalized if the argument in question is selected only by the verb. If the external argument is selected by the unit Verb + Object then the external argument may not surface as an internal argument for obvious reasons: internal arguments are arguments of the Verb only. The idioms like casser la croûte and faire le malade are a case in point. In these cases, the verb and the object as a unit select the external argument via the VP node which dominates them. The external th-role is not assigned by casser and faire but by casser la croûte and faire le malade. (Recall that this is in fact possible because the VP governs the subject position and because the VP is a th-marking category. Cf. Chapter I.) Consequently, in these cases casser and faire have no external argument which can be internalized.³

Other cases in which the unit Verb + Object compositionally assigns a th-role to the subject cannot be passivized either.

Consider the following example: (provided by N. Chomsky)

- (48) a- John broke several bones.
 b- Several bones were broken (by John).

While a is ambiguous between the agentive and non-agentive reading, b is not. b only has the non-compositional reading: i.e., the agentive reading. (Cf. the discussion in Chapter I). The impossibility of passivizing quitter la maison (cf. IV(10)) might be explained in a similar way.

As noted by Burzio 1981, subject control verbs may appear in the Dative Causative construction but not in the faire-par construction.

- (49) a- Feci affermare di averlo letto a Mario.
 *b- Feci affermare di averlo letto da Mario/∅.
 (I had Mario affirm that he had read it.)

Assuming that verbs like affermare are lexically marked as +SUBJ control verbs, then the contrast between (49)a and (49)b follows from the fact that the dative NP is in subject position and that the da-phrase is not.

The above facts do not show that faire is never a bound verb in the Acc/Dat construction. But it shows that faire may function solely as an autonomous predicate in the Acc/Dat construction. That this is so is further indicated by the distribution of clitics. In the Acc/Dat Causatives, clitics

may appear on the causative verb but they may also appear on the embedded verb.

(50) a- Marie le lui a fait acheter.

(Mary it-to him made buy./ 'Mary made him buy it.')

b- Marie l'a fait l'acheter.

(51) a- María se la hizo escribir.

(Maria him-it-made write./ 'Maria made him write it.')

b- María le hizo escribirla.

On the other hand, in the faire-par construction clitics may not appear on the lower verb. Cf. (30)a-ii, b-ii, c-ii in section IV.1 and below.

(52) *a- Marie a fait l-acheter (par Pierre).

*b- María har^á escribirla (por Pedro).

(The contrast between (51)b and (52)b was noted by Strozer 1976.)

IV.4 The Structure of Acc/Dat Causatives

Before we examine the structure of sentences like (40) and (41), it is important to notice the existence of the following sentences.

(53) a- Ça fait rire.

(It makes laugh./ 'It makes one laugh.')

- b- Les oignons, ça fait pleurer.
(The onions, it makes one cry.)
- c- Le magicien a fait pleuvoir.
(The magician made rain./'The magician made it rain.')
- (54) a- On n'a jamais vu neiger dans ce pays.
(We never saw rain in this country./'We never saw
it rain in this country.')
- b- Rara vez ví llorar en mi vida.
(Rarely did I see cry in my life./'Rarely did I
see somebody cry in my life.')
- c- Escuchamos llamar a la puerta.
(We heard call on the door./'We heard somebody
knock on the door.')

The embedded subject in (53)a-b and (54)b-c is arbitrary in reference. In (53)c and (54)a the embedded subject "refers" to whatever "object" may function as subject of pleuvoir and neiger respectively. In any case, the arbitrary interpretation of the subject in sentences like (53)a-b and (54)b-c clearly indicates that the embedded subject must be a PRO: i.e., the embedded subject position is free and ungoverned. Hence, the complement clause of faire in (53) and of voir/ver and escuchar in (54) must be an \bar{S} , as in the bisentential analysis of the faire-par construction. Cf. (25) and (26) in IV.1. In conclusion, the causatives and verbs of perception are non-grammatical control verbs (i.e., the controller is outside

of the sentence) when they function solely as autonomous predicates and take an \bar{S} -complement. In the case of (53)a-b and (54)b-c, the range of PRO's antecedent is the set of animate (or human) objects. In the case of (53)c and (54)a, PRO's antecedent is a constant -- not because it is deictic but because of the semantics of pleuvoir and neiger respectively.

As for the Acc/Dat Causative constructions like the ones exemplified in (40) and (41), as well as the Acc/Dat constructions with perception verbs like the ones below:

- (55) a- Elle a vu partir Jean.
 (She saw leave Jean./'She saw Jean leave.')
- b- Elle écoutait chanter son frère.
 (She listened sing her brother./'She listened to her brother sing.')
- c- On a vu voler le livre à Pierre.
 (We saw steal the book to Peter./'We saw Pierre steal the book.')
- d- J'ai entendu dire cela à un de tes amis.
 (I heard say that to one of your friends./ 'I heard one of your friends say that.')

the basic properties that must be accounted for are:

- 1- The post-verbal position of the embedded subject.
- 2- The presence (i.e., the case-marking) of the lexical NP in the embedded subject position.

- 3- The possibility for clitics on the matrix verb to be linked with arguments of the embedded verb.

To account for the first property there are two alternatives: either some verbal projection is preposed or the subject is post-posed. We will assume the former hypothesis for reasons that will soon become evident. To what position is the verbal projection preposed? This brings us to the second property.

Recall that for a position to be occupied by a lexical NP it must be a case-marked position: i.e., a lexical NP must be case-marked. Since there is no nominative case in infinitivals, the embedded subject must be case-marked by the causative or perception verb in the matrix clause. Recall moreover that government is a necessary condition for "non-structural" case-assignment. Consequently, the embedded clause in the Acc/Dat construction must be a non-maximal clause. Let us then assume that unlike raising verbs (cf. Chapter II), the causatives faire, laisser and the verbs of perception voir, entendre, are optional \bar{S} -deletion verbs. These verbs assign either accusative or dative case to the embedded subject, which explains the presence of a lexical NP in this position. See section IV.5 for further discussion on the case-assigning properties of these verbs.

Given that \bar{S} -deletion applies in the Acc/Dat construction, there is but one possible landing site for the preposed verbal projection compatible with the Projection Principle: namely

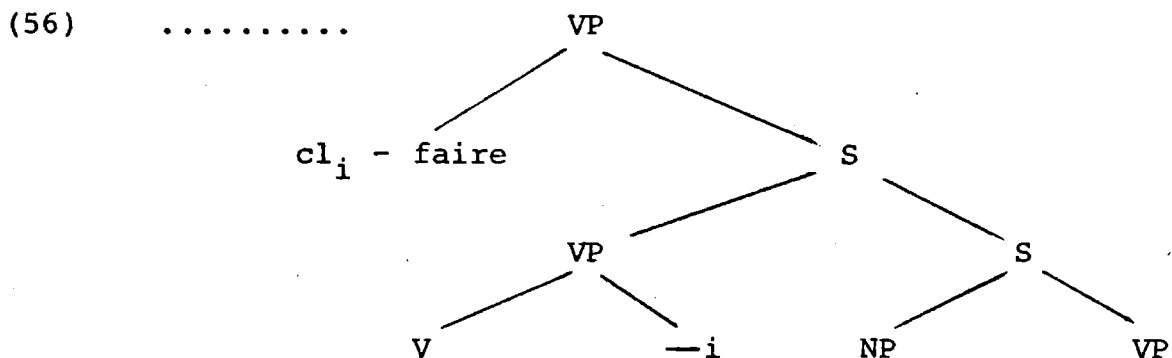
adjunction to S. In effect, the alternative possibility which is movement into the matrix VP is ruled out by the Projection Principle. Cf. footnote 3 in Chapter III.

As for the third property, recall that the Condition on Identification of pro (Cf. II(128), repeated in Part I of this chapter) requires some kind of "closeness" between the clitic (i.e., "the identifier") and the coindexed position (i.e., "the identified position"). The "closeness" relation required between the clitic and the coindexed position is a "chain-linking" relation where either

- 1- $cl_i - V$ governs the identified position i or,
- 2- $cl_i - V$ governs the th-position in a chain j . And the lexical head in the chain j governs i .

The "linking" is direct in 1- and indirect in 2-.

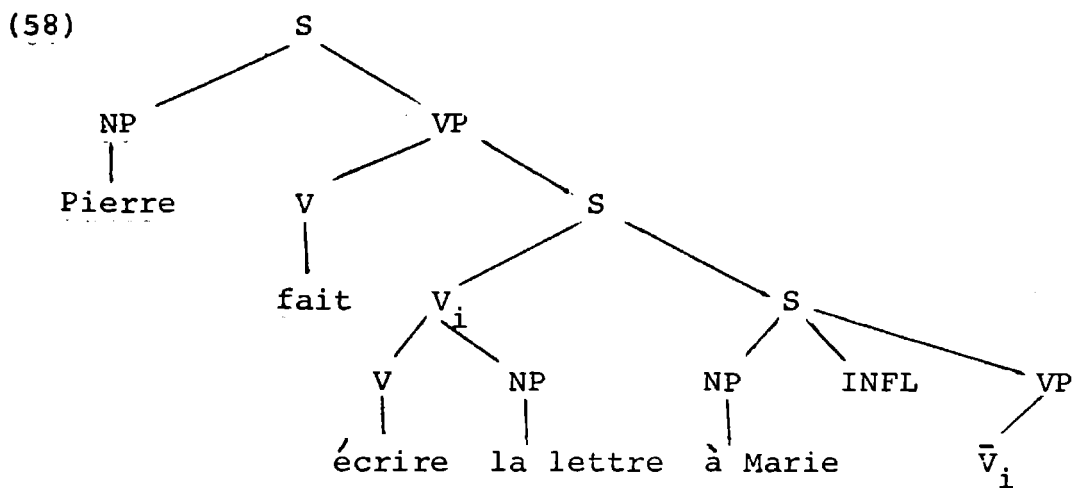
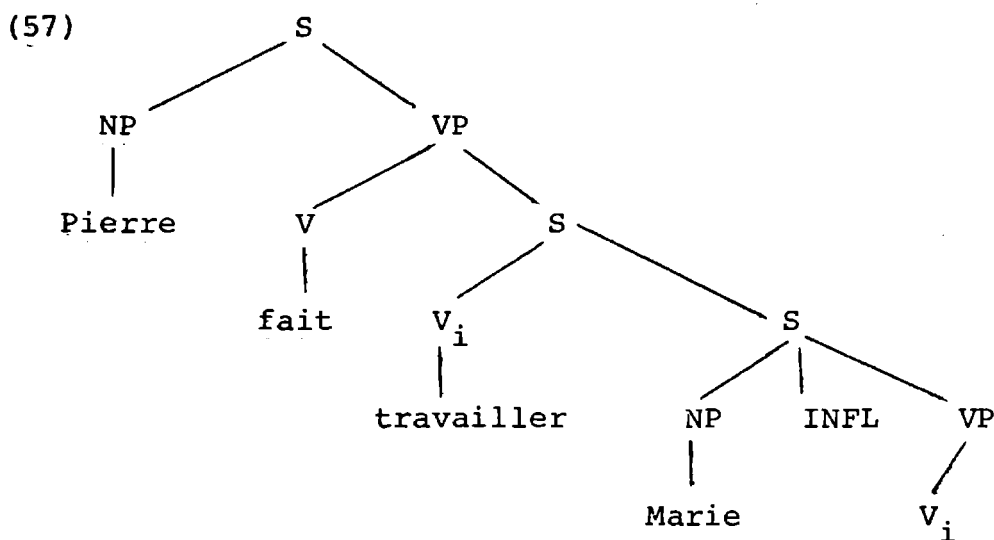
Now suppose that the VP is preposed in the structures under discussion.



In this configuration, the position i is not correctly identified. The relation between the clitic and the position i does not fall under any of the two cases discussed above. The

only way in which the position \underline{i} in (56) would be correctly identified is if the preposed verbal projection is non-maximal. $\underline{cl}_i\text{-V}$ would then govern the position \underline{i} . Let us then assume that there is an intermediate \bar{V} which contains all and only the obligatory arguments of the verbs. The optional arguments of the verb or the arguments that are added to the verb are inserted under the VP. And it is V or \bar{V} which is adjoined to the left of S in the Acc/Dat constructions.

The Acc/Dat constructions then have the following structures:



The next two questions that arise are:

- 1- Why is there preposing of a verbal projection in the non-maximal clausal complement of causatives and verbs of perception?
- 2- Why preposing of a non-maximal projection?

The two questions are undoubtedly related.

As for the first question, we suggest the following answer. There is preposing of a verbal projection in the clausal complement of causatives and verbs of perception because this class of verbs may select a verbal complement. Before we elaborate on this proposal, let us turn to English in order to see its plausibility.

Consider the following constructions known as NI (Naked Infinitives).

- (59) a- John made Peter leave early.
- b- John let Mary smoke cigars.
- c- John saw your brother steal the car.
- d- I felt Susan hit me with a stone.

A priori, there are two plausible structures for the sentences in (59)a-d: either (60) or (61).

- (60) a- John [VP made [NP Peter] [PRO leave early]]
- b- John [VP let [NP Mary] [S PRO smoke cigars]]

- c- John [VP saw [NP your brother] [\bar{S} PRO steal the car]]
- d- I [VP felt [NP Mary] [\bar{S} PRO hit me]]
- (61) a- John [VP made [α Peter leave early]]
- b- John [VP let [α Mary smoke cigars]]
- c- John [VP saw [α your brother steal the car]]
- d- I [VP felt [α Mary hit me]]

α = clause in (61)a-d.

As noted by Gee 1976, the second NP in (59) is not selected by make, let, see, feel. It is selected by the verb in the embedded clause as shown by the following facts.

- (62) a- We saw it rain.
- b- I've never seen there be so many complaints from students before.
- (63) a- This makes it seem that "make" has a double sub-categorization frame.
- b- They never make/let it seem obvious that the government has no public support.

Hence, we conclude that the structure of (59) is (61).⁴

Note moreover that the clausal complement in (61) must be non-maximal in order for the embedded subject to receive case from the matrix verb. In effect, another important property of this construction is that the clausal infinitival complement lacks the infinitive inflectional element to. This suggests that the clausal complement in this construction is not a projection of INFL. It must then be a projection of the verb just as in John considers [_α Peter foolish] α is an Adjectival projection. That is, causative and perception verbs may select a verbal clause just as many epistemic verbs like consider may select an Adjectival clause. Cf. Stowell 1981, Chomsky 1981. These constructions are referred to as "small clauses" (Cf. footnote 13 in Chapter II).

- (64) a- Causative/Perception verbs: [_{VP} NP [_{VP} V ...]]
 b- Epistemic verbs: [_{AP} NP [_{AP} A ...]]

Hence, the causative and perception verbs in (59)a-d govern and assign accusative case to the subject of its complement clause.

The NI-construction has various curious semantic properties discussed, among others, by Gee 1976 and Higginbotham 1981. We shall not go into this complex and interesting domain. We shall simply quote Gee 1976 who says:

"Semantically, I believe NI-constructions have a particularly close relationship between the VP in the complement

and the higher perception verb (an almost "direct object"-like relationship). In the way in which 'John felt Mary' means that what John felt was Mary, 'John felt Mary hit him' means that what John felt was the hitting of Mary on him. If [this construction] has complementizerless or bare Ss or has zero complementizer $\bar{S}s$, then there may be something of a lack of correspondence between syntax and semantics here" (p. 477).

If the semantics of the NI-construction can be linked -- at least partly -- to the non-maximal verbal clause status of the complement, then we could conclude that there is in fact a correspondence between syntax and semantics in this construction. For the present though we have no suggestion to make as to the nature of this correspondence.

Turning back to faire, voir..., just how does preposing of a verbal projection satisfy these verbs' lexical requirement: i.e., selection of a non-maximal verbal clause?

Although S is the projection of INFL, the category adjoined to S can be interpreted as the head of S by the matrix predicate if such category fulfils the matrix predicate's categorial selection requirement. In effect, in (57) and (58) the clausal complement is interpreted as the projection of V with respect to "faire". How can S function both as the projection of INFL and as the projection of the category adjoined to S? We would like to suggest that this is in fact possible because the node \bar{S}/S is different from V^n , N^n , A^n , P^n in that

it is not categorially specified -- probably due to the fact that INFL is not categorially specified. In effect, INFL may be considered to be a collection of person, number, gender, tense features but which does not include categorial features of the type $\bar{+}N$, $\bar{+}V$.⁵ The hypothesis that the category adjoined to S can function as the head of S with respect to the matrix predicate is suggested in Zubizarreta 1981 to account for the difference in behavior between factives and non-factives with respect to wh-extraction. We briefly review the argument below.

As noted by Kiparsky & Kiparsky 1971, factive verbs take nominal complements, non-factives don't as suggested by contrasts like the following:

- (65) a- We regret John's being ill.
 *b- We believe John's being ill.

These two classes of verbs also differ with respect to wh-extraction. Rouveret 1980 and Kiparsky & Kiparsky noticed that while wh-extraction is possible from the subject position of non-factive complements, it is not possible from the subject position of factive complements.

- (66) a- Qui crois-tu qui a fait ce bruit?
 (Who do you believe made that noise?)
 *b- Qui regrettes-tu qui châtie les enfants?
 (Who do you regret punished the children?)

Although factive verbs are not as good bridge verbs as non-factive verbs, still extraction from object position is possible with these verbs. For example, (67) is significantly better than (66)b.

- (67) ? Qui regrettes-tu que Marie châtie?
 (Who do you regret that Mary punished?)

Similarly, Stylistic-Inversion in French is possible in the complement of non-factive verbs but it is not possible in the complement of factive verbs as shown in (68)c.

- (68) a- Voici le livre que Pierre croit/regrette que les
 élèves de lère année ont/aient lu.
 (This is the book that Peter believes/regrets that
 the 1st year students read.)
- b- Voici le livre que Pierre croit qu'ont lu les
 élèves de lère année.
- *c- Voici le livre que Pierre regrette qu'aient lu
 les élèves de lère année.

Stylistic-Inversion -- studied by Kayne & Pollock 1978 -- is a rule which optionally post-poses the subject. It is triggered by a wh element in Comp in relative, question, cleft, and comparative constructions. The contrast between (68)b and (68)c suggests that wh-movement into the Comp of a factive verb is not possible. As remarked by Rouveret, if there is

no wh-movement into the Comp of factive complements, the contrast between subject and object extraction reduces to the *that-t phenomenon.

- (69) *a- Who do you believe that read the book?
 b- Who do you believe read the book?
 c- Which book do you believe that he read?

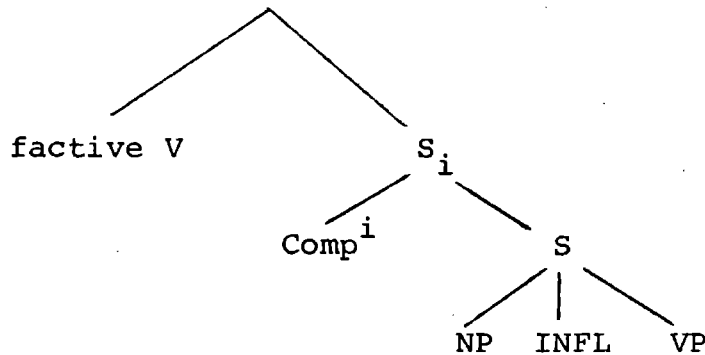
In effect, a wh-trace in subject position -- unlike a wh-trace in object position -- must be bound by an antecedent in Comp. Cf. the discussion in footnote (12) in Chapter II. The embedded subject in (66)a moves into the matrix Comp triggering the que → qui rule. Qui functions as an antecedent for the wh-trace in subject position. Cf. Pesetsky 1979. On the other hand, since movement into the Comp of a factive verb is not possible, the embedded subject in (66)b must move directly into the matrix Comp. No que → qui rule applies. The wh-trace in subject position is not locally bound as it must be. Hence, (66)b is out for the same reason that (69)a is. The same argument can be constructed for Portuguese as shown in Zubizarreta 1981. Similarly, in English non-factives do not require the presence of the complementizer that in the Comp of their complement, thus allowing for a wh-trace in Comp to bind the subject position. Cf. (69)b. Factives, on the other hand, require the presence of that in their complement's Comp. Cf. *Who do you regret read the book?

The question is then: why is movement into the Comp of the complement of factive verbs not possible? Recall that the difference between factives and non-factives is that the former but not the latter select a nominal complement. How is this categorial selection requirement fulfilled in the case of clausal complements? If \bar{S} is not specified for categorial features, the only way that it can be fulfilled is by selecting a complement with a nominal complementizer which functions as the clausal head with respect to the matrix factive predicate. We shall then assume that the complementizer that/que is nominal, a not implausible hypothesis since in some languages like English (as noted by Pesetsky 1979), Spanish, and Portuguese it has the same morphological form as the demonstrative pronoun or the wh-pronoun. Cf. I regret that./ Quién vio qué? (Who saw what?). Furthermore, factive complements may be preceded by an article in languages like Spanish and Portuguese. Cf. Pedro lamenta o terem-se lançado bombas. (Peter regrets det. have (inflected inf.) thrown bombs.) The obligatory presence of the complementizer that in the complement's Comp of factive verbs in English may then be related to the fact that these verbs select a nominal complement. On the other hand, recall that non-factive verbs do not select nominal complements. Hence, their complement's Comp will not be interpreted as the head. In these cases only INFL will function as head.

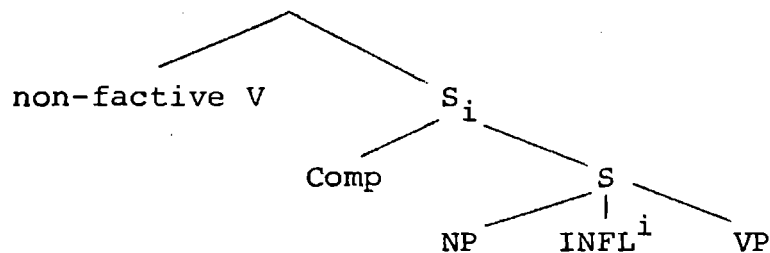
But how is the impossibility of wh-movement into the Comp of factive complements in French related to the head-status

of Comp? Recall that we have assumed that the referential index of a category percolates down to the head of the category (cf. II.4.3.1.) We may assume furthermore that what counts as head of a category for the purpose of index-percolation is what counts as head for the predicate which selects the category in question: namely Comp in the case of the complement of a factive verb and INFL in the case of the complement of a non-factive verb. But since Comp and INFL are neither referential nor arguments, let us assume that in this case the referential index percolates down to the head, or what is interpreted as head, as a super-index and not as a sub-index. (Sub-indices are referential indices, they identify arguments. Super-indices identify positions that are "related" in some way to arguments.) Hence, a factive complement has indexed-structure (70)a and a non-factive complement has indexed-structure (70)b.

(70) a-



b-



Now consider movement into the Comp of a factive complement. The category moved into the Comp of a structure like (70)a will inherit the index of Comp and furthermore it will transmit it to its trace. (Recall that every element in a chain share their features and indices.) Hence, sentence (66)b will have indexed-structure (71).

(71) [_S Qui_jⁱ [_S regrettes-tu [_{S_i} qui_jⁱ [e_jⁱ châtie les enfants]]]]

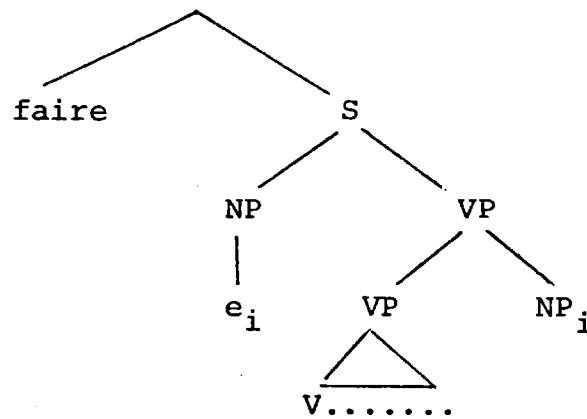
Note that (71) does not violate the Th-Criterion. Qui and its traces belong to the th-chain j. The index i is not the referential index of qui. Consequently, qui and its traces are not members of th-chain i. On the other hand, the indexed-structure in (71) violates the i-within-i Condition (cf. II.4.2 and f.n. 14 in Chapter II), which we reformulate as follows:

(72) * [_Y ... \mathcal{f} ...], where \mathcal{Y} and \mathcal{f} bear the same index unless \mathcal{f} functions as the head of \mathcal{Y} .

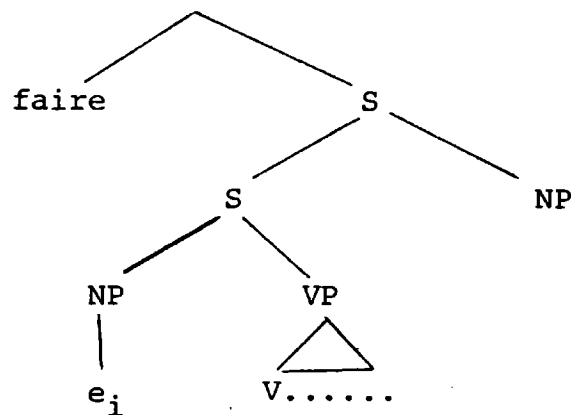
In conclusion, we have suggested that causative and perception verbs may select a non-maximal verbal clause. In English, this non-maximal clause is a verbal small-clause. In Romance, it is an S with a non-maximal verbal projection left-adjoined to it. Just as COMP in (70)a functions as the head of the clausal complement with respect to the factive verb, the preposed Verb functions as the head of the clausal complement

with respect to the matrix causative or perception verb in the Acc/Dat constructions. Note that this immediately answers the second question: Why preposing of a non-maximal verbal projection? If a maximal VP were preposed, the Verb would function only as the head of the VP and not as the head of the clause.⁶ Likewise, subject-postposing would not put the verb in the "scope of" faire/voir, whether it is adjoined to VP or to S.

(73) a-



b-



Note that the fact that the categorial selection requirement is fulfilled by preposing of a verbal projection in Romance means that categorial selection need not be fulfilled

at D-Structure. Interestingly enough, Pesetsky 1982 argues on independent grounds that categorial selection need be fulfilled only at the level of Logical Form, a not implausible hypothesis if it is in fact the case that the categorial type and the semantic type of an argument are intimately related, and since the characterization of semantic types involves notions and concepts that naturally belong to LF such as proposition, term, and probably others yet to be understood.

Based on the differences between the "faire-par" construction and the Acc/Dat causative construction, Burzio 1981 proposed that faire has two subcategorization frames: ___VP, ___S. (We refer the reader to Burzio's work for discussion.) We proposed instead that faire always selects a clause as complement (either a "verbal" S or an \bar{S}) as suggested by the entailment in (24)a-b and that the differences between the "faire-par" construction and the Acc/Dat causative is due to the fact that faire may optionally function as a syntactic affix and as such it functions as an intransitizer.

Finally, note the following property of causatives: raising verbs may not be embedded under faire/laisser. (These facts were noted by Kayne 1975).

- (74) *a- Son expression peinée fait sembler Jean souffrir.
 /... fait souffrir Jean.
 (His pained expression makes Jean seem to be suffering.)

- *b- Son expression peinée fait paraître Jean être en colère./.... fait Jean paraître être en colère.
(His pained expression makes Jean appear to be angry.)
- *c- L'aveu de Jean a fait s'avérer s'y connaître Paul.
/....fait Paul s'avérer s'y connaître.
(Jean's confession made Paul turn out to know all about it.)
- *d- Sa formation musicale la fait se trouver aimer l'opera.
(Her musical training makes here happen to like the opera.)

To account for the facts in (74) Burzio 1981 proposed that the rule of VP-preposing in causatives attach the embedded VP to the matrix VP (in violation of the Projection Principle):

(75) [S NP [VP V VP_i [S NP VP_i]]]

The preposed VP contains the trace of the raised subject but this trace is not c-commanded by its antecedent in embedded subject position. Consequently, the sentence is ruled out.⁷

This explanation cannot be right. First, the preposed VP may contain lexical anaphors that are properly bound by an antecedent in the embedded subject position. (Examples (76)a-b are from Burzio 1981).

(76) (?)a- Con le minacce fecero accusare se stesso_i all' imputato_i.

(With threats they made the defendant accuse himself.)

(?)b- Faranno informare il proprio_i avvocato a tutti gli imputati_i.

(They will have every defendant inform his own lawyer.)

(?)c- Piero ha fatto leggere l'uno i libri dell'altro_i a Mario e Francesco_i.

(Piero made Mario and Francesco read each other's books.)

Second, even if subject-to-subject raising does not apply the sentences are ungrammatical (as noted by Kayne 1975).

(77) *a- Ce rapport fait sembler que la situation est très mauvaise.

(The report makes it seem that the situation is very bad.)

*b- Le journal fait paraître qu'on va augmenter le métro.

(The newspaper makes it appear that they're going to raise the price of the metro.)

*c- L'aveu de Jean a fait s'avérer que Paul était innocent.

(Jean's confession made it turn out that Paul was innocent.)

- *d- Cette nouvelle fait se trouver que tu as tort.
 (That bit of news makes it so happen that you are
 wrong.)

It is interesting to note that sentences with paraître when interpreted in the sense of apparaître (appear) and not in the sense of sembler (seem) become much more acceptable.

- (78) ? Ce pull fait paraître Marie plus grosse qu'elle
 ne l'est.
 (That sweater makes Mary appear fatter than she is.)

The same remark holds for être.

- (79) *a- Cela a fait être son fils malade.
 (That made his son be sick.)
 *b- Il a laissé être son fils malheureux.
 (He let his son be unhappy.)

(79)a-b are unacceptable under the reading where être means be. But when the meaning of devenir (become) is imposed on être the sentence becomes more acceptable. We hence tend to think that the ungrammaticality of (74) and (77) is due to semantic reasons. Vaguely speaking, causatives in these structures seem to select verbs that denote change of state. Hence, "pure" predicative or stative verbs are ruled out.⁸

IV.5 Some remarks and speculations on case, clitics, and order in the ACC/DAT Causatives.

Consider the following sentences.

- (80) a- Marie a fait manger la tarte à l'enfant.
 (Mary had eat the pie to the child./'Mary had the child eat the pie.')
 b- María hizo comer la tarta al niño.

The embedded subject is case-marked dative and the embedded object is case-marked accusative by faire/hacer. As we have seen, both the embedded subject and object may cliticize onto the matrix causative verb.

- (81) a- Marie le lui a fait manger.
 (OBJ)acc-(SUBJ)dat
 b- María se la hizo comer.
 (SUBJ)dat-(OBJ)acc

The subject may not cliticize onto the lower verb.

- (82) *a- Marie a fait lui manger la tarte.
 *b- María hizo comerle la torta.

If we interpret the notion "maximal projection" in a relative fashion, the ungrammaticality of (82)a-b follows from the

fact that the lower verb does not govern the subject position in the structures (57) and (58). We repeat the definition of government given in I(8) below.

I(8) In the configuration:

$$[\underset{\emptyset}{} \dots \mathcal{Y} \dots \alpha \dots \mathcal{Y} \dots]$$

(i) $\alpha = x^{\circ}$

(ii) where \emptyset is a maximal projection, \emptyset dominates α if and only if \emptyset dominates \mathcal{Y} .

α governs \mathcal{Y} .

"maximal" must be understood in the following way: \emptyset is maximal in configuration C if \emptyset has no further projection within C (i.e., there is no category of the same type as \emptyset which immediately dominates \emptyset). According to this definition of "maximal", the preposed V^n in the Acc/Dat construction functions as a maximal projection. Consequently, the preposed verb does not govern the subject position in the embedded clause. (82)a-b then violate the Condition on the Identification of pro.

On the other hand, the object may cliticize onto the lower verb:

(83) a- Marie l'a fait le manger.

b- Maria lo hizo comerla.

In these sentences, the embedded subject is in the accusative case. Note though that the reason for this cannot be that V^n -preposing has not applied. In effect, V^n -preposing is obligatory with faire and with hacer in the dialect under discussion.

(84) *a- Marie a fait l'enfant le manger.

*b- María hizo al niño comerlo.

In Spanish, the counterpart of (83)b where the subject is not "cliticized" is grammatical. But this is not so in French.

(85) *a- Marie a fait le manger à l'enfant.

(OBJ)acc. (SUBJ)dat.

b- María hizo comerla al niño.

(OBJ)acc-(SUBJ)dat

There is another contrast between French and Spanish which we think is related to the contrast in (85). In Spanish but not in French, the cliticized subject in (83) may be dative.

(86) *a- Marie lui a fait le manger.

*b- Marie le hizo comerla.

Note furthermore that in Spanish, but not in French, the subject of an intransitive verb in the causative construction may be case-marked accusative or dative.

- (87) a-(i) Pedro lo hizo venir.
 (Peter him(acc)-made come./'Peter made him
 come.')
- (ii) Pedro le hizo venir.
 (dat)
- b-(i) Pierre l'a fait venir.
 (acc)
- *(ii) Pierre lui a fait venir.
 (dat)

From the contrast between (87)a-(i)-(ii) and (87)b-(i)-(ii) and between (83)a/(86)a and (83)b/(86)b we conclude that faire, unlike hacer, gives priority to the Acc case. Hacer assigns indifferently either Acc or Dat case. As noted by Strozer 1976, this is not a unique property of hacer but it is in general a property of verbs in Spanish which take an animate direct object.

- (88) a- Pedro lo/le vió en la oficina.
 (Peter acc/dat him-saw in the office.)
- b-(i) Pedro le sirvió la comida.
 (Peter to him(dat)-serve the food.)
- (ii) Pedro le/lo sirvió.
 (Peter dat/acc him-serve.)

Nor is "priority to Acc case" an unique property of faire in French.

- (89) a- Pierre lui a servi le repas.
 (Peter to him(dat) served the meal.)
- b-*(i) Pierre lui a servi.
 (ii) Pierre (dat) l'a servi.
 (acc)

Now note that if faire gives priority to the accusative case it follows that (85)a is not possible. In (85)a the direct object is cliticized onto the lower verb, which means that it is not case-marked by faire. Hence, faire must assign accusative and not dative case to the subject l'enfant. But the counterpart of (85)a with l'enfant case-marked accusative is also ungrammatical.

- (90) *Marie a fait le mager l'enfant.

(90) is reminiscent of the well-known "double-accusative" constraint in Japanese. But why should such constraint exist? A plausible but for the present speculative explanation is that languages may use case to identify grammatical relations when word order is not sufficient. Recall that in Japanese subject and objects are unordered with respect to each other. Hence, order does not identify grammatical relations. Nor does order identify the subject and the object in sentences like (90), where V^n -preposing has applied. Consequently, case becomes relevant in identifying grammatical relations. Dative case in sentences like (85) in Romance, and also in

Japanese, identifies the subject. The elaboration and implementation of this proposal is left open for further research.

Footnotes to Chapter IV

1) Note that the fact that the external th-role of the verb embedded under faire may be realized as a par-phrase gives support to the "internalization of the external th-role" analysis of passives rather than to the analysis which assumes that the external th-role is blocked from mapping onto subject position but remains an external-to-VP argument -- i.e., the by-phrase is adjoined to the VP. Cf. Chapter I, footnote 2.

2) This observation is further corroborated by languages where there is no obligatory object-to-subject movement in passives. (Spanish, Italian ...).

a- Pedro metió la pata.

(Pedro stuck the foot./'Pedro stuck his foot in his mouth.')

*b- La pata fué metida por Pedro.

*c- Fué metida la pata por Pedro.

Sentence c, where no object-to-subject movement has applied, is still ungrammatical.

3) Although there are clear cases of idioms whose meaning is not equal to the sum of the meaning of their parts like kick the bucket and clear cases of idioms whose meaning is equal to the sum of the meaning of their parts like keep tabs and give assistance, there are other less clear cases like

take care which can passivize. Cf. We took good care of the children./Good care was taken of the children. Further investigation of the semantics of idioms is needed to see whether the explanation we suggested for the non-passiviation of a certain class of idioms is in effect correct.

4) But, as noticed by Gee, a and b below have different meaning.

a- Make/let John examine Mary.

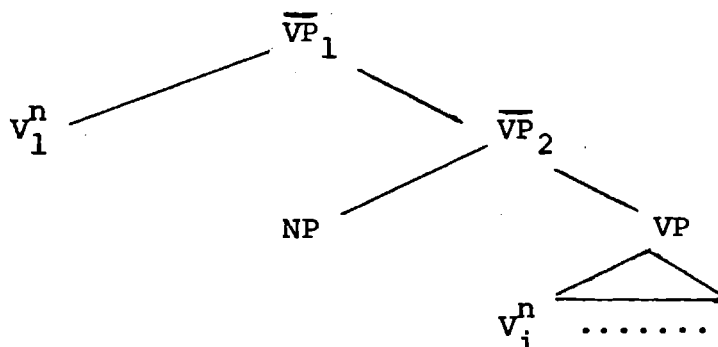
b- Make/let Mary be examined by John.

We may assume either that make and let optionally subcategorize for an object NP: [__(NP) Clause], or that they subcategorize only for a clause: [__ Clause] but they may assign an adjunct th-role to the subject of its complement clause.

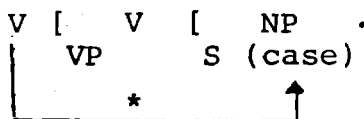
5) Our hypothesis is hence incompatible with Rizzi's proposal (cf. Rizzi 1980a) that INFL bears the feature ^+N . He suggests that this is the feature which distinguishes languages with "missing" subjects from languages with no "missing" subjects: INFL in the former case is either +N or -N, INFL in the latter case is -N. Note that our proposal is compatible with the idea that Comp or the category adjoined to S and INFL may function as a discontinuous head.

6) Note that V^n -preposing cannot apply in English because in this language the complement clause is already a non-maximal verbal projection. Hence, V^n -preposing creates a new th-marking

configuration between V^n and \overline{VP}_2 , in violation of the Projection Principle, as shown below.



7) As we have pointed out above in the text, Burzio assumes that faire may either take a VP or an S as complement. In order to account for the ungrammaticality of (74) in the case VP is chosen as complement, Burzio suggests that case cannot be assigned across VP and S:



But it is unclear why this should be so.

8) As has often been noticed, passive verbs may not be embedded under faire: *Pierre a fait être mangé la pomme par Pierre. We have no explanation for this. It might be related to the fact that auxiliaries may not appear at all in the infinitival complement of faire. Burzio's explanation for the ungrammaticality of the sentence above is the one given for the ungrammaticality of (74), coupled with the assumption that mangé la pomme par Pierre is a "small-clause" complement of être.

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