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in Linguistics in partial fulfillment of the
requirements for the degree of Doctor of Philosophy
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1985

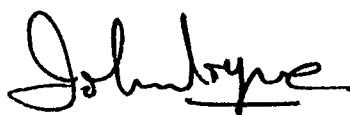
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This manuscript has been read and accepted for the Graduate Faculty in Linguistics in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.



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Abstract

OPAQUE DOMAINS

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This study investigates the interpretation of pronominal and anaphoric elements in Catalan subjunctive clauses within the framework of the Government-Binding theory of grammar (cf. Chomsky (1981)).

It is suggested that the domain in which the binding principles apply is determined by the notion of Tense-chain. Based on the idiosyncracies of subjunctive sentences with respect to tense marking, it is claimed that subjunctive clauses are transparent domains for binding. Obviative interpretation for their pronominal subject follows from the binding principles. The ungrammaticality of nominative anaphors in this type of clause is suggested to be related to the intrinsic properties of the [+AGR] marker.

Subject-object asymmetries for obviative interpretation are accounted for by a principle related to the theory of Case.

Upon the observation that pronominal subjects of subjunctive sentences containing modal verbs can freely corefer with a possible antecedent, an analysis of modals in the null-subject languages is developed within the broader context of restructuring constructions. It is suggested that (epistemic) modal verbs are in the INFL node in Romance. From this fact, their opacity triggering properties are derived.

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'El gramàtic sembla anar sempre amb els braços carregats de taronges, i li'n cau una i quan es decanta a plegar-la li'n cauen tres més, i així sense parar mai'.

Gabriel Ferrater

(The grammarian always seems to have his/her arms loaded with oranges, and one of them falls and when leaning to pick it up three more fall, and so on without ever ending)

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CHAPTER ONE

THEORETICAL OUTLINE

This study undertakes an investigation of a limited set of phenomena based on the syntax of Catalan, a language of the Romance family, and considers them with respect to their implications for the theory of grammar in general.

In the course of the series of lectures given by N. Chomsky in Pisa in the spring of 1979 (cf. 'The Pisa Lectures'), J. Guéron pointed out that in French sentences like (1 a) the pronominal elements with the grammatical function of subject cannot be coreferentially interpreted. The same phenomenon of obligatory obviative interpretation can be observed in similar sentences in Catalan (cf. 1 b):

(1) a. * Il veut qu'il vienne
'He wants that he comes'

b. * (Ell) desitja que (ell) em visiti
'He desires that he visits me'

The disjoint reference interpretation is not required for pronominals with the same grammatical features for person and

number and fulfilling a parallel grammatical function in the type of sentential complexes exemplified below:

(2) a. Il dis qu'il ne montrera cette photo

'He says that he will not show this picture'

b. (El) creu que (el) va arribar el dijous

'He believes that he arrived on Thursday'

The difference between the two sets of sentential complexes is in the tense-mood of the subordinate clause (i.e., subjunctive in (1) vs. indicative in (2)). The contrasts exemplified above can also be observed in non-Romance languages such as Icelandic, which exhibits the same pattern of interpretation for the pronominals under parallel conditions:

(3) a. * Hann segir að ^t hann komi
SUB

'He says that he come'

b. Hann veit að ^t hann elskar mig
IND

'He knows that he loves me'

These judgements are strong and speakers know that while in (2) and (3 b) the pronominal in the subordinate clause can refer to any masculine individual, including the one designated by the subject of the main clause, an element with the same form and function in the subordinate clauses in (1) and (3 a) may denote any individual in the domain of the discourse except the one to which the pronominal

in the main clause refers.

In this study I will try to give an account of this knowledge by invoking general principles of grammar which we assume are innate and represent the nature and general structure of the human language faculty, which accounts for the acquisition of grammatical competence. Given these principles and some facts concerning the properties of indicative and subjunctive clauses, a system of conditions applies which predicts the possible meanings of the above sentences.

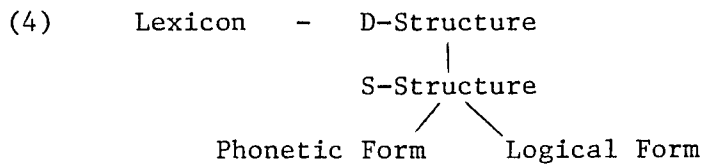
I am assuming that linguistic theory is basically assigned the task of constructing a model of what has been referred to as Universal Grammar (henceforth UG), a system of principles common to the human species and available to each individual prior to experience. It determines the basic character of human linguistic behavior and the basic properties of the state of linguistic knowledge attained by speakers.

A viable research strategy for validating hypotheses on the form and content of the principles constituting UG consists in studying certain phenomena of a particular language within the framework of the theory under which the hypotheses were formulated. This dissertation attempts to contribute to the theory along these lines.

The study is developed within the theoretical framework of the Government-Binding Theory (henceforth GB theory) as developed in Chomsky (1981), (1982) and the references cited therein. Within this framework, UG is conceived of as a parameterized system. It contains a set of universal principles, each of which has associated with it a

set of possible values expressing the range within which particular grammars may vary with respect to that principle. The acquisition of the grammar of a particular language consists of fixing the values of these parameters on the basis of experience.

UG is conceived of as consisting of a system of levels of representation and the relationship between these levels:



The lexicon specifies the inherent properties of lexical items with respect to their syntactic features, categorial as well as contextual. For example, the verb promise has the property of requiring a referential subject and of subcategorizing for an object to which it assigns a thematic role (henceforth θ -role).

The syntactic component consists of two levels of representation: Deep Structure (D-Structure) and Surface Structure (S-Structure) related by transformational rules that may be viewed as instantiations of the general schema Move α . This rule maps D-Structures (i.e., configurational representations of the grammatical functions associated with θ -roles) onto S-Structures, in which grammatical functions are configurationally defined as well.

At S-Structure an element bearing a θ -role may appear on a position where no θ -role is assigned (a non- θ position). The set consisting of this moved element and its trace¹ constitutes a 'chain', which has

to meet certain conditions of well-formedness to be specified below.

S-Structures are mapped onto Phonetic Form (PF) by a variety of rules which may include movement operations such as 'affix hopping', some deletion rules and various stylistic rules. These are the rules which do not affect the determination of Logical Form or the interpretive component.

S-Structures are also mapped onto Logical Form (LF) through the application of further movement rules such as Quantifier Raising (QR) (May (1977)), the rule yielding the interpretation of quantifiers, the rule interpreting wh-phrases 'in situ', and other devices as well. LF is a representation of those aspects of meaning which are determined by sentence grammar.

The properties of these levels of representation and their relationship to each other is determined by a number of subsystems of principles, each applying at one (or more) level:

- (5) a. θ -theory
- b. government theory
- c. Case theory
- d. binding theory
- e. control theory
- f. bounding theory

It is assumed that syntactic phrase markers conform to some version of the X-bar theory, first introduced in Chomsky (1970). The X-bar convention constitutes a theory of redundancy rules operating in

the categorial component of the base which expresses generalizations about phrase structure without specific mention of categorial distinctions. A head of a phrase projects to a maximal projection XP, where X refers to a complete categorial phrase marker ranging over the feature bundles $[\pm N, \pm V]$. It will be assumed that the phrase structure of all lexical categories is specified as in (6):

$$(6) \quad \begin{array}{l} X^n \quad \longrightarrow \quad (\text{Specifier}) X^{n-1} \\ X^{n-1} \quad \longrightarrow \quad X^{n-2} \end{array}$$

It will be assumed furthermore that, in the unmarked case, in each particular grammar all complements occur in the same position with respect to the head, allowing a parametric variation across languages. A certain grammar may be characterized with respect to this particular parameter by the order of the complements in reference to the head. Thus, in the head-initial setting the complements will follow their head whereas in the head-final setting the complements precede it². Separate rules may determine the characterization of the Specifier (Spec) node for each major category: the auxiliary system for verbs, the determiner system for nouns, the modifier system for adjectives, and the Complementizer (COMP) or the subject of a sentential structure for the INFLⁿ category.³

Additional mechanisms such as Case theory and θ -theory constrain this maximally simple base schema.

A basic principle of θ -theory is the θ -criterion, which dictates that each expression requiring a θ -role be assigned one, and that each

θ -role determined by the lexical properties of a predicate be uniquely assigned to a category:

(7) θ -Criterion.- Given the structure S , there is a set K of chains,

$K = \{C_i\}$, where $C_i = (\alpha_1^i, \dots, \alpha_{n_i}^i)$, such that:

- (i) if α is an argument of S , then there is a $C_i \in K$ such that $\alpha = \alpha_j^i$ and a θ -role is assigned to C_i by exactly one position P .
- (ii) if P is a position of S marked with the θ -role R , then there is a $C_i \in K$ to which P assigns R , and exactly one α_j^i in C_i is an argument. (Chomsky (1981), 335)

Arguments will be considered to be all expressions that are assigned the status of terms in a thematic relation.⁴ These will include all elements with referential properties (intrinsic reference or reference assigned by coindexing), and some elements which will be assigned Case directly or indirectly: pronouns, variables, anaphors, names and clausal structures in a thematic relation with a predicate (i.e., subject or object). The notion of argument will exclude terms which do not assume a θ -role, such as existential there or pleonastic it in English and null 'dummy' elements inserted to occupy an obligatory syntactic position like pleonastic pro⁵ (=it) in Romance.

Intrinsic properties of a predicate P will determine its argument structure, a specification of the θ -roles that P can assign (actor, theme, goal, source).⁶ Grammatical functions such as subject and object (or complement) enter into the determination of θ -role. At the level of

- b. [e] fou estudiada [la proposta]
 NP NP
 ' [e] was studied [the proposal] '
 NP NP
- c. [La proposta]_i fou estudiada [e]_i
 NP NP
 ' [The proposal]_i was studied [e]_i '
 NP NP

In (8 a) the predicate subcategorizes for an internal argument with the θ -role of theme and assigns the θ -role of agent to an external argument. When a predicate appears in passive morphology, the function of the [NP,S] as a θ -position is suppressed, but since the subcategorization frame of the predicate has not changed, the projection principle is met in (8 b). If we assume that (8 b) is the D-Structure form from which (8 c) is derived by Move α , (8 c) represents an S-Structure with a chain consisting of NP_i and its coindexed trace [e]_i. The chain consisting of the pair (NP_i, [e]_i) receives a θ -role because one of its members, namely the trace, occupies a θ -position.

These examples show that while subcategorized complements are obligatory for heads, the subject is not (cf. (8 b)). Thus, it may be argued that principles of grammar require specifically the presence of objects, but not necessarily that of subjects. This is why only this syntactic position can be a non- θ -position, and non-arguments such as there or pleonastic it are allowed to appear in [NP,S].

Following this reasoning, the X-bar expansion of S, which is assumed to be the maximal projection of INFLⁿ, must contain, at least, the following structure:

(9) INFL" → INFL' VP

Unlike in English, in the Romance languages the presence of a subject position is not obviously necessary. Pleonastic elements such as 'dummy' it and the subject of weather verbs do not have a lexical form; moreover, some NPs, such as pronominal elements receiving an external θ -role, need not be lexical:

(10) ___ sembla que en Joan és aquí

'___ seems that John is here'

(11) ___ plou

'___ rains'

(12) ___ menja una poma

'___ eats an apple'

One could consider the possibility that a parameter of UG admits two possible expansions of S: one including an obligatory subject position and the other an optional subject position:

(13) a. INFL" → NP INFL' VP

b. INFL" → (NP) INFL' VP

The first one would represent the value of the parameter assumed, say, for English, and (13 b) would characterize Catalan.

However, this move may contradict the projection principle that has been assumed to hold universally. In the case of (12) the subject

position needs to be specified at two syntactic levels other than D-Structure (S-Structure and LF): at LF a position with the θ -role of agent has to be represented, and at S-Structure lexically unrealized arguments may enter in control configurations or referentially identify lexical anaphors:

- (14) a. ---_i vol [PRO_i menjar una poma]
 ' ---_i wants [PRO_i to eat an apple]'
- b. ---_i s'estima a si mateix_i
 ' ---_i loves himself_i'

The quasi-argument subject of weather verbs as in (11) must be syntactically represented as well, since, like the subject of (12), it may be coindexed with a null category to which it transmits its quasi-referential index:

- (15) Sempre ---_i plou abans de [PRO_i nevar]
 'Always ---_i rains before [PRO_i snowing]'

Thus, since the expansion INFL" \rightarrow NP INFL' VP must be specified at, at least, two syntactic levels of representation, it may be assumed, following the projection principle, that S requires an obligatory syntactic position (i.e., [NP,S]) at every syntactic level at least for cases like (11) and (12).

As for (10), Zagana (1982) and Rothstein (1983) have suggested that conditions of well-formedness on the predication rule (cf. Williams

(1980)) require the position of the subject to be syntactically realized, whether it is argumental or pleonastic. The presence of a syntactic subject is a syntactic well-formedness condition which must be fulfilled at least at S-Structure. The use of pleonastics would be a syntactic mechanism to provide a formal subject for predicates which do not assign a thematic role to [NP,S]. The (extended) projection principle can be derived from the predicate-linking rule, which establishes that all predicates must have subjects. That is, for a sentence to be well-formed, both thematic and syntactic conditions must be fulfilled.

The (extended) projection principle can be considered to be subsumed under a requirement of UG specifying that all elements that appear in a sentential structure, predicates and arguments, must be licensed. Arguments would be licensed by predicates either by being in a position to which a θ -role is assigned or by belonging to a chain in which an element α_i is in a θ -position. On the other hand, predicates need to be licensed by the presence of subjects, either argumental or pleonastic, as well as by objects that fulfill their internal θ -role assigning properties. This requirement of mutual licensing is referred to as the principle of full interpretation (Chomsky (1983), class notes).

The mapping from D-Structure onto S-Structure has to fulfill certain conditions expressed under the core notions of government and c-command. Observe that an S-Structure like (17) related by Move α to the D-Structure (16) must be able to be ruled out:

- (16) [[La Núria] deia que [[e] fou estudiada [la proposta]]]
 S_1 NP S_2 NP NP
 ' [[Núria] said that [[e] was studied [the proposal]]]'
 S_1 NP S_2 NP NP
- (17) * [[e]_i deia que [[la Núria]_i fou estudiada [la proposta]_j]]
 S_1 NP S_2 NP NP
 ' [[e]_i said that [[Núria]_i was studied [the proposal]_j]]'
 S_1 NP S_2 NP NP

In (16) the nominal in [NP, S_1] is the external argument of the predicate to say which assigns a θ -role to its internal argument S_2 . S_2 in turn contains a predicate taking an internal argument NP but no external argument. Move α could apply to the nominal in [NP, S_1] and place it in [NP, S_2] position, a non- θ position, creating a chain ([e]_i,NP_i) which receives a θ -role through the position of the trace [e]_i.

The conditions applying to links of chains are specified within the theory of government. In the GB framework various subtheories are developed within this core notion: Case theory, binding theory and the Empty Category Principle (ECP) are contingent on this notion, which refers to the relationship in a structural configuration between the head of an X^n category and its complements. This structural configuration is given in terms of c-command:

- (18) α c-commands β iff
- (i) α does not contain β .
 - (ii) Suppose that $\gamma_1, \dots, \gamma_n$ is the maximal sequence such that
 - (a) $\gamma_n = \alpha$
 - (b) $\gamma_i = \alpha^j$
 - (c) γ_i immediately dominates γ_{i+1}
- Then if δ dominates α , then either (I) δ dominates β ,
 or (II) $\delta = \gamma_i$ and γ_1 dominates β . (Chomsky (1981), 166)

In this configuration the relationship holding between governor and governee is defined as in (19):

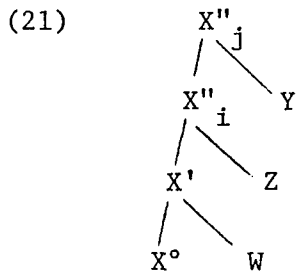
- (19) Given $\beta[\dots\gamma\dots\alpha\dots\gamma\dots]$, where
- (i) $\alpha = X^0$
 - (ii) where φ is a maximal projection, if φ dominates γ then φ dominates α .
 - (iii) α c-commands γ ,
 α governs γ . (Chomsky (1981), 165)

The definition given in (19) expresses the idea that the head of a category (V, N, P, A, AGR/TENSE) governs the elements within its maximal projection, but cannot extend its governing properties to categories within another maximal projection. To illustrate the sense of (19), consider for example the structure exemplified in (20):

- (20) $\begin{matrix} [& NP_i & [+AGR] & & [& V & NP_j & & [P & NP_h]] \\ S & & & & VP & & PP & & & \end{matrix}$

NP_i is governed by [+AGR] in the head of S but not by V, because VP (i.e., the maximal projection of V) does not dominate NP_i . In turn, V governs NP_j but not NP_h , which is protected by the maximal projection PP. NP_h is governed by P.

As for the definition of c-command, which determines a government relationship, some assumptions will be made with respect to the notion 'maximal projection'. Consider a structure like (21), where X''_i and X''_j are maximal projections of X° :



A structure like (21) may obtain after an application of Move α , as for example in cases of extraposition of a sentential structure with the GF of subject, as well as in the instances of optional subject postposing in Catalan, Italian or Spanish:

- (22) a. [[Que no hagi dit una paraula] demostra una certa timidesa]
 '[[That (he/she) didn't say a word] shows a certain shyness]'
- b. [proⁱ [[demostra una certa timidesa] [que no hagi dit una
 VP VP
 paraula]ⁱ]]
 '[(it)ⁱ [[shows a certain shyness] [that (he/she) didn't
 VP VP
 say a word]ⁱ]]'

- (23) a. [[En Jordi] ha composat una sonata]
 '[[George] has composed a sonata]'
- b. [proⁱ [[ha composat una sonata] [en Jordi]ⁱ]]
 VP VP
 '[(it)ⁱ [[has composed a sonata] [George]ⁱ]]'
 VP VP

Chomsky (1981) suggests that it is possible that a 'strong' and a 'weak' sense of c-command may apply depending on category type. Following his suggestion Safir (1982 b) considers two instances of the notion 'maximal projection' which would distinguish the maximal expansion of a category type obtainable at D-Structure and an optional expansion obtainable via adjunction:

- (24) Base Maximal Projection: X^n is the base maximal projection of X° if n is the highest value for X in the base.
- (25) Maximal Projection: A maximal projection of X is the highest projection of X° , X^n , where X^n is base maximal.

(Safir (1982 b) 17,18)

Applied to the diagram represented in (21), X''_i would correspond to the definition (24) and X''_j to (25). The main reason for considering this difference is to capture the fact that a c-command relationship appears to hold between the head X° of a maximal projection created by adjunction and the daughter category adjoined by Move α , whereas the complement categories protected by a base maximal projection may not c-command the adjoined position. I will return to this issue further below.

Case theory deals with the realization of abstract Case under government. The basic principle of Case theory is the Case filter:

- (26) * [α] _{β} when α is governed and/or lexically specified and it is not in a Case marked chain.⁷

Given that both Case and θ -role are assigned to chains, Aoun (1981) and Chomsky (1981) propose to reduce the Case filter to the θ -criterion. Case-marking will make elements 'visible' for θ -role interpretation at the LF level:

- (27) Visibility hypothesis: Suppose that the position P is marked with the θ -role R and $C=(\alpha_1, \dots, \alpha_n)$ is a chain. Then C is assigned R by P iff for some i , α_i is in a position P and C has Case or is headed by PRO. (Chomsky (1981), 334)

It will be assumed that Case will be realized in the following contexts and under adjacency to the governor:

- (28) (i) α is nominative when governed by [+AGR].
 (ii) α is accusative when governed by V.
 (iii) α is genitive when governed by N or A.
 (iv) α is oblique when governed by P.

The requirement specified in (26) constrains the application of Move α . An argument which cannot be Case-marked by a head should move to a position where it can receive Case. A chain is formed which fulfills the visibility condition specified in (27). I will assume that the Case

filter applies to sentential structures with the grammatical function of subject or object, as well as to NPs. The fact that clausal nodes receiving a θ -role must be in a Case-marked chain follows from the visibility condition, if it is considered that at the interpretive level argument chains must have their argumenthood 'ratified' by Case, independently of the categorial type of the X^n projection.

The interpretation of arguments in a sentential structure is constrained by the binding theory. The binding principles specify the relationship of pronominals, anaphors and names, and corresponding non-overt categories to possible antecedents within a domain D. This relationship obtains under c-command defined in (18) above.

An element X can be a binder for Y under the following conditions:

- (29) (i) X c-commands Y
 (ii) X is coindexed with Y
 (iii) X and Y are of the same categorial type

The domain D in which the binding principles apply is defined in Chomsky (1981) in terms of government and a locality condition imposed by a nominal with the grammatical function of SUBJECT that delimits the domain D and creates opacity:

- (30) (i) [+AGR] is coindexed with the NP it governs
 (ii) β is a Governing Category for α iff β is the minimal category containing α , a governor of α , and a SUBJECT accessible to α .

(Chomsky (1981), 210)

- (31) i-within-i Condition: * $\gamma[..\delta..]$, where γ and δ bear the same index.
- (32) α is accessible to β iff β is in the c-command domain of α , and assignment to β of the index of α would not violate (31).

(Chomsky (1981), 212)

The notion SUBJECT in (30) is understood as the most prominent nominal element, and may correspond to the [AGR] features in INFL° or to an argument in the position [NP,S] or [NP,NP].

Given the characterization of the domain D, the binding conditions are stated as follows:

- (33) A. An anaphor is bound in its governing category.
 B. A pronominal is free in its governing category.
 C. An r-expression is free.

Anaphors include overt categories such as si mateix, si mateixa and l'un a l'altre (himself, herself and each other respectively) and the empty element NP trace. Pronominals are elements such as ell, ella, nosaltres (he, she, we) or their phonologically null counterpart, which we will refer to as pro. Pronominals have specific definite reference and they contain the features of person, number, gender and Case. Elements which serve a pleonastic usage (i.e., the equivalents of English there or 'dummy' it)⁸ will also be considered pronominals.

R-expressions can also be overt (cf. Joan) or empty: variables bound by an operator.

The notions 'free' and 'bound' referred to in (33) are defined in terms of (29) above. 'Bound' is interpreted as argument bound (A-bound) when the antecedent of an element is in argument position (A-position).

Variables are A'-bound (i.e., related by coindexing to a non-A position) by their operators, which include among others quantifiers and *wh*-phrases or NPs in COMP position. A'-bound traces have the property of being Case-marked (cf. Chomsky (1981, 69), and they appear to share the fundamental properties of names, in the sense that they are not subject to the binding conditions for NP traces and anaphors.⁹

The fact that the theory of binding constitutes a subdomain of the notion of government introduces the theory of control, which is concerned with the choice of antecedents for the phonologically null element PRO, a pronominal anaphor.

This null element is restricted to a position where a lexical element cannot appear like the [NP,S] of an infinitive clause:

(34) En Joan preferia [PRO veure una pel.lícula]

'John preferred [PRO to see a movie]'

(35) * En Joan preferia [en Pere veure una pel.lícula]

'John preferred [Peter to see a movie]'

While every [NP,S] in (34) and (35) fulfills a θ -role, a lexically specified subject cannot appear in the [NP,S] position of the subordinate clause because it would lack Case and the visibility condition would be violated. Traces are also precluded in the place

of PRO because a trace must be bound by an antecedent in a non- θ position, which would not be the case in (34). Due to the lack of government, PRO is in a position that is non-opaque in the sense specified by the theory of binding. As a pronominal anaphor it may be referentially dependent on an antecedent, if there is one. The choice of antecedents for PRO depends on the lexical properties of the matrix verb, other conditions such as the presence or absence of elements in COMP, and perhaps other semantic considerations as well (cf. Roeper (1983)).

Thus, the θ -criterion and the theory of government distinguish two types of empty categories, PRO and trace. Following from Move α and the projection principle the θ -criterion stipulates that the antecedent of a trace must be in a non- θ position. The antecedent of PRO on the other hand, must fulfill an independent θ -role from the one assigned to the pronominal anaphor. Government characterizes the two empty elements with respect to the properties of the positions in which they may appear in a sentential structure: PRO is ungoverned and trace must be governed. In fact, an even stronger condition with respect to government is imposed on empty categories other than PRO (i.e., NP traces and variables). This condition can be roughly stated as (36) below:

(36) The Empty Category Principle (ECP): α [e] must be properly governed.

(37) α properly governs β iff α governs β and α is lexical.

(Chomsky (1981), 273)

I will return to this principle and the conditions for proper government at various points in this study.

Having given an outline of the principles and subsystems operating in UG, I will come back to the ungrammaticality of the S-Structure exemplified in (17) derived via Move α from the D-Structure (16); both structures are repeated below as (38) and (39):

- (38) [[La Núria] deia que [[e] fou estudiada [la proposta]]]
 S_1 NP S_2 NP NP
- ' [[Núria] said that [[e] was studied [the proposal]]]'
 S_1 NP S_2 NP NP
- (39) * [[e]_i deia que [[la Núria]_i fou estudiada [la proposta]_j]]
 S_1 NP S_2 NP NP
- ' [[e]_i said that [[Núria]_i was studied [the proposal]_j]]'
 S_1 NP S_2 NP NP

In the S-Structure (39) the argument NP_i has moved from its base generated θ -position to a non- θ -position (i.e., the [NP,S] of the passive structure S₂), forming the chain C_i=(_i[e]_i,NP_i). The θ -criterion and the projection principle are not violated.

However, the structure is ruled out, at least, by Case theory and binding theory. The chain C_i receives nominative Case twice from two distinct governors: the [+AGR] features of S₁ and those of S₂. On the other hand, the chain C_j of which NP_j constitutes the only member is left un-Case-marked because the verb with passive morphology may govern but not assign Case to it.

As for the binding conditions, the chain C_i does not fulfill the requirement of accessibility between the trace and its antecedent. Accessibility is not met because the antecedent does not c-command its trace and therefore NP_i does not count as a possible binder. Condition A of the binding theory is thus violated because an anaphor is free in its governing category.

This concludes the presentation of the theoretical assumptions from which I depart and which underlie my research.

In Chapter II, I will proceed to investigate the facts of obviation alluded to above. Based on the idiosyncracies of subjunctive clauses with respect to Tense marking, it will be suggested that Tense specification appears to be the main determinant of opacity. The anaphoric character of subjunctive S nodes with respect to Tense makes them transparent domains.¹⁰ Obviative interpretation of a subject follows then from the binding principles, if the domain in which they apply is reformulated in terms of Tense-chain, which may be taken as a version of the Tensed-S condition first proposed in Chomsky (1973).

Based on some empirical evidence, it will be suggested as well that the notion of accessible subject should refer to accessible (subject) chain, as proposed in Aoun (1981).

Subject-object asymmetries with respect to obligatory obviative interpretation are accounted for under a principle related to the theory of Case. It will be suggested specifically that subject-object asymmetries can be explained as a consequence of the Case resistance principle (CRP) proposed in Stowell (1981).

Chapter III is concerned with providing support for the assumption in Chapter II that a clausal argument has to be in a Case-marked chain, as required by the visibility condition, but may not itself be in a Case-marked position.

Finally in Chapter IV I will study a consistent exception to the claim made in Chapter II that subjunctive clauses are transparent domains. Upon the observation that the subjects of subjunctive sentences containing modal verbs can freely corefer, I will develop an analysis of restructuring predicates. The account which emerges for Romance sentences containing modal verbs differs from the traditional one. It is suggested that modals may appear in the INFL node, and from this their opacity triggering properties are derived.

The fact that Tense specification and Modality delimit domains for the binding conditions to apply could further suggest that the scope of sentential operator-like elements may create islands for interpretation and define basic units for the processing of sentences.

Notes to Chapter One

¹See Chomsky (1973), Fiengo (1974) and subsequent literature.

²Languages may use a mixed system of head-initial and head-final ordering depending on the category type or perhaps on the level of expansion of the X^n node. This would reflect a relative degree of markedness with respect to the situation described above in the text. See Huang (1982) for discussion of this issue.

³Whether COMP or the [NP,S] constitute the Specifier of the INFLⁿ category is still subject to discussion. For arguments for the first approach see for example Safir (1982 a). As for the second, see Chomsky (1981) and Stowell (1981) among others.

⁴It is assumed that the same status of 'argument' is attributed to the NP objects of the following sentences:

(i) Tinc una idea

'I have an idea'

(ii) Tinc un barret

'I have a hat'

That is, both types will be considered terms, independently of their status as abstract entities or objects in the real world.

⁵Pro is a lexically unrealized pronominal element (Chomsky (1982))

⁶See Gruber (1976).

⁷The Case filter was originally stated as follows (cf. Rouveret and Vergnaud (1980), Chomsky (1980)):

(i) *[NP] when NP has no Case and it is lexically specified.

Given that a well-formedness condition such as (27) below is assumed, the Case filter may not be restricted to NP arguments. I will discuss this matter in Chapter III.

⁸As said, expletive elements do not have phonological matrix in the null-subject languages.

⁹The variable [e] in (i) below has the same properties as the NP Núria in (ii) with respect to the theory of binding (irrelevant details omitted):

(i) * Qui_i [pro_i creu que [[e]_i telefonarà]]

' Who_i [does (he/she)_i believe that [[e]_i will call you]]'

(ii) * Ella_i diu que [la Núria_i telefonarà]

'She_i says that [Núria_i will call you]'

¹⁰A first version of Chapter II was written in December (1981). About the same time S. Anderson had come to a conclusion very similar to mine to account for long distance anaphor binding in Icelandic. Anderson's research was presented at the GLOW Colloquium in Paris in the spring of 1982. See Anderson (1982).

CHAPTER TWO
 OBLVIATIVE INTERPRETATION IN SUBJUNCTIVE
 CLAUSES

1. Introduction

It is well known that some Romance languages like Catalan, Italian and Spanish allow the subject of a sentence to be phonologically null:

(1) a. [e] telefona

'[e] calls'

b. ell/ella telefona

'he/she calls'

Although the element in the [NP,S] position is not phonologically realized in (1 a), the sentence is interpreted as having a definite subject. The empty category [e] does not have the basic property attributed to anaphoric elements (i.e., lack of independent reference), and the clause in (1 a) is equivalent in interpretation to (1 b).

This choice between optional and obligatory phonological realization of the subject has been referred to as the null-subject(or pro-drop) parameter (cf. Taraldsen (1978), Chomsky (1980), (1981), (1982), Jaeggli (1980), Borer (1981), Rizzi (1982a), Burzio (1981), Safir (1982 b) and Hyams (1983) among others). Although the various accounts differ from

each other in several respects, all of them relate the possibility of having a null-subject to the properties of the INFL node in this type of languages.

Chomsky (1982) has argued that the typology of empty elements can be considered as mirroring that of overt elements, falling into the categories [\pm pronoun, \pm anaphor]. Given that the interpretation of [e] in (1 a) corresponds to that of ell/ella (he/she) in (1 b), it is considered that [e] is the lexically null counterpart of a non-anaphoric pronominal. This empty pronominal is referred to as pro (cf. Chomsky (1982)). It is assumed that this element is intrinsically characterized by the features [+pronominal, -anaphor] like its corresponding phonologically realized category.

Like its lexically specified counterpart, pro will appear in governed positions and will be assigned Case. The fact that this empty element might be restricted to appear only in the [NP,S] position of tensed clauses is explained by the presence of [+AGR] features in the INFL node with which pro is co-superscripted. It is assumed that the features [+AGR], i.e., person and number, are specified as [+pronominal] (cf. Rizzi (1982 a)). These features appear overtly in the morphology of the verbal form through the application of an affix-hopping rule at some level of grammar. Their realization in the VP makes the optional deletion of the subject fully recoverable.¹

Suppose that (2) represents the surface structure of a string P, where NP_i and NP_j are the subjects of the categories α and β respectively, and β is a clausal structure containing a [+AGR] feature

specification in INFL:

- (2) $[\text{NP}_i \dots [\text{NP}_j^h \text{ [+AGR]}^h \text{ VP}]]$
 α β

Following Chomsky (1981) and Rizzi (1982a) it will be assumed that [+AGR] assigns nominative Case to $[\text{NP}, \beta]$.

Suppose furthermore that NP_j in (2) is a pronominal element (lexically specified or not) agreeing in features of person and number with a nominal in $[\text{NP}, \alpha]$. According to the theory of binding, β is a governing category for the element in $[\text{NP}, \beta]$ because it contains its governor and an accessible SUBJECT (cf. Ch. I (29)-(33)). Therefore, and according to the binding principles, NP_j in (2) is free in β and may be interpreted as coreferential with NP_i , as in the following examples:

- (3) a. En Joan_i diu que [ell_i [+AGR] no ho havia trobat]
 'John_i says that [he_i didn't find it]'
- b. [La seva_i convicció que [pro_i [+AGR] havia arribat tard]] el
 va fer disculpar-se
 '[His/her_i certainty that [(he/she)_i had arrived late]] made
 him/her apologize'

There is a class of sentential structures, in which the verb appears inflected for the subjunctive mood, which seems to constitute a marked case for the theory of binding. In these structures, the pronominal subject is obligatory interpreted as disjoint in reference with the subject of its superordinate governing category, in contrast

(8) a. [La seva_i insinuació que [[e]_i havia arribat tard]] va provocar
IND

alguns comentaris

'[His/her_i insinuation that [(he/she)_i had arrived late]] aroused
IND
some comments'

b.* [La seva_i insinuació que [[e]_i arribés tard]] va provocar alguns
SUB

comentaris

'[His/her_i insinuation that [(he/she)_i arrive late]] aroused
SUB
some comments'

Subjunctive clauses are clearly marked for [+AGR] features in the head of INFL and their verbal morphology does not differ in this sense from their indicative counterparts. They admit lexical subjects, names or pronouns, as shown in the following examples:

(9) En Jordi volia que [la Núria anés a Nova York] . . .
SUB

'George wanted that [Núria went to New York]'
SUB

(10) [El desig de'n Joan que [el diari publicqués la notícia]] era
SUB

evident

'[John's desire that [the newspaper published the news]] was
SUB

evident'

(11) Esperàvem que [ells sortissin d'un moment a l'altre]
SUB

'(We) hoped that [they left at one moment or other]'
SUB

The grammaticality of (9)-(11) indicates that the [NP,S] position

of a subjunctive clause receives Case. Therefore, it will be assumed that if the subject position is phonologically null, as in the examples (4), (5), (7 b) and (8 b) above, it has to be characterized as pro, a non-anaphoric pronominal with definite reference, governed and Case marked by [+AGR] and identical in its feature specification to its lexical counterpart.

As stated, the definition of binding (or governing) category predicts that the S node in subjunctive sentences qualifies as an opaque domain for an element in [NP,S] position. The head S contains a governor for the non-anaphoric pronominal, which assigns Case to it, and an accessible SUBJECT, namely [+AGR]. According to principle B of the binding theory, a pronoun should be able to freely corefer with a nominal element in its superordinate governing category.

Following a suggestion by J. Guéron, in Chomsky (1981) it is proposed that the obviate interpretation of the pronominal in this type of clause could be subsumed under some version of the Avoid Pronoun principle, which has been stated in general terms as imposing the choice of an empty pronominal over a lexically specified one where possible.

The Avoid Pronoun principle accounts for the tendency to interpret a lexically overt pronominal as disjoint in reference from another NP in the structure with which it agrees in features, as in null-subject languages, where this option is always available:³

- (12) a. La Isabel_i m'ha dit que [ella_j volia anar a Alemanya]
 'Elizabeth_i has told me that [she_j wanted to go to Germany]'
- b. La Isabel_i m'ha dit que [pro_i volia anar a Alemanya]
 'Elizabeth_i has told me that [(she)_i wanted to go to Germany]'

A version of the Avoid Pronoun principle has been explicitly adopted in Bouchard (1982) to account for the identical phenomenon of obviation in French subjunctive clauses:

- (13) * Je veux que [j'aïlle voir ce film]
 SUB
 'I want that [I go to see this movie]'
 SUB

Since French is not a null subject language, the non-lexical possibility never arises. Bouchard's explanation for the ungrammaticality of (13) stems from Bresnan's (1972) observation that subjunctive clauses, as well as infinitives, express 'unrealized tenses'.

In Bouchard's system empty categories are contextually defined. PRO, in particular, is an anaphor or a pronoun depending on whether the empty position can be bound or not. He interprets the Avoid Pronoun principle not with respect to the dichotomy 'lexical vs. non-lexical' but 'pronoun vs. anaphor' as expressed in (14):

- (14) Don't put a pronoun in a position where an anaphor is possible, i.e. in a position where the pronoun will be interpreted as coreferential with an NP that can bind it. (Bouchard (1982), 320)⁴

The intended interpretation of (13) can be rendered by having an anaphor, namely a bound PRO, instead of a pronoun:

- (15) Je veux [PRO aller voir ce film]
 'I want [PRO to go to see this movie]'

Therefore, when PRO is defined as a pronominal and not as an anaphor according to Bouchard's account, a coreferential pronoun in an equivalent subjunctive construction should be possible. He gives the following type of examples to confirm his hypothesis:

- (16) a. [PRO_i d'être menacé de mort] ne me_i fera pas changer d'idée
 '[PRO_i to be menaced with death] will not make me_i change ideas'
- b. [Que je sois menacé de mort] ne me fera pas changer d'idée
 SUB
 '[That I be menaced with death] will not make me change ideas'
 SUB

He assumes that in long distance control constructions like (16 a) PRO is a pronoun, not an anaphor, freely indexed at S-Structure. PRO in (16 a) has then the same status as je in (16 b), as opposed to PRO in (15) which is contextually defined as an anaphor.

Identical judgements in grammaticality and interpretation obtain in the following Catalan examples, corresponding to the French (13), (15) and (16):

- (17) a.* Jo vull que [{ jo }
 { pro }
 SUB } vagi a veure aquesta pel.lícula] (cf.(13))
 'I want that [I go to see this movie]
 SUB

b. $\left\{ \begin{array}{l} \text{Jo} \\ \underline{\text{pro}} \end{array} \right\}$ vull [PRO anar a veure aquesta pel.lícula] (cf.(15))

'I want [PRO to go to see this movie]'

(18) a. [PRO ésser amenaçat de mort] no em farà pas canviar d'idea
(cf. (16 a))

'[PRO to be menaced with death] will not make me change ideas'

b. [Que $\left\{ \begin{array}{l} \text{jo} \\ \underline{\text{pro}} \end{array} \right\}$ sigui amenaçat de mort] no em farà pas canviar
SUB
d'idea (cf. (16 b))

'[That I be menaced with death] will not make me change ideas'
SUB

Suppose, following Bouchard, that the Avoid Pronoun principle is expressed as the choice of an anaphor when possible instead of a pronoun, (lexical or non lexical in the case of Catalan). Then, the contrast observed in (17 a) vs. (17 b) must obtain in every case where there is an element in the structure which can serve as a possible antecedent for the subject of a subjunctive clause and a control structure is also allowed. I am referring in particular to the case in which the controller of the subject PRO of an infinitive sentence is an object NP and a subordinate clause in the subjunctive is a possible alternative, as in (19) and (20):

(19) En Pere va convèncer en Jordi_i de [PRO_i anar a Nova York]

'Peter persuaded George_i [PRO_i to go to New York]

(20) En Pere va convèncer en Jordi_i que [pro_i anés a Nova York]
SUB

'Peter persuaded George_i that [(he)_i go to New York]
SUB

Both sentences are, however, perfectly grammatical. Thus the Avoid Pronoun principle expressed in terms of the opposition 'pronoun vs. anaphor' as in Bouchard's account, is contradicted by this type of examples.⁵

If one adopts the hypothesis that the Avoid Pronoun principle expressed in terms of 'lexical vs. non-lexical category' applies strongly in the case of subjunctive clauses, the examples (19) and (20) above also constitute counterevidence. In this view, the grammaticality of (18 b) would be a counterexample as well, because it is to be expected that the principle must apply in all cases.

On more conceptual grounds, it seems unlikely that the Avoid Pronoun principle should manifest itself in the grammar in such different forms in indicative and subjunctive clauses if it applies to the same type of element: in the case of indicative sentences the principle is manifested as deletion up to recoverability, namely avoid redundancy, but in the case of subjunctives, the principle would be not avoid redundancy but disallow coreference.

Thus, other principles of grammar should account for the ungrammaticality of (4)-(6) and (17 a) above under coreferential interpretation of the two NPs. More interestingly, it must be noted that there is a subject/object asymmetry with respect to the possibility of coreference between a pronominal subject of a subjunctive clause and a possible antecedent (cf. (20)). Put in different terms, whether the S of this type appears to be a governing category for a given element depends on the grammatical function of the optional binder of the

element, as shown in (21):

- (21) a. * En Pere_i va convèncer en Jordi que [pro_i arribés aviat]
SUB
- b. En Pere va convèncer en Jordi_j que [pro_j arribés aviat]
SUB
- 'Peter_i persuaded George_j that [(he)_{*i} arrive early]'
SUB
j

A possible explanation based on the claim that the semantic properties of a lexical entry subcategorizing for a subjunctive clause force a certain interpretation should be disregarded, as the examples (7) and (8) show. Example (22) below also shows that when persuade (as in (21)) subcategorizes for a clausal object sentence in the indicative, pro or its lexical counterpart can be interpreted as coreferential with either NP:

- (22) En Pere_i va convèncer en Jordi_j que [^{e11}pro_i arribava aviat]
IND
j
- 'Peter_i persuaded George_j that [(he)_i arrived early]'
IND
j

The asymmetry exemplified in (21 a,b) must follow from a principle other than Avoid Pronoun and should be explained by factors other than the semantic properties of a subcategorizing predicate.

I will argue that the distribution of possible coreference for a pronominal subject of a subjunctive clause follows from the binding principles as proposed in Chomsky (1981),(1982), provided that a revision of the notion 'governing category' or 'binding domain' is

considered.

The characterization of the notion 'binding domain' that will be proposed is based on some considerations concerning the [Tense] features of INFL.

As for the subject/object asymmetry observed in (21 a,b), it will be proposed that it follows from structural phenomena. Following an hypothesis of Stowell (1981), evidence will be provided showing that [+AGR] clausal arguments may not remain in a Case-marked argument position and must move to an adjunct node. This obligatory movement would prevent the object NP from being accessible to the subordinate [NP,S]. That is, the distribution of coreference for pronominal subjunctive subjects follows from the interaction of two subsystems of grammar: binding and Case.

Some observations with respect to [+AGR] and [Tense] will be made in the next section, which will serve as a point of departure for further arguments. I will return to the main line of discussion in section 3.

2. The INFL node

2.1. Postverbal Subjects

It has been assumed, following Chomsky (1981), that the rule analyzing S (=INFLⁿ) is given as (23) where INFL^o in Romance contains two sets of features, verbal [+Tense], and nominal [+AGR].

$$(23) \quad S \longrightarrow NP \quad INFL'$$

$$INFL' \longrightarrow INFL^o \quad VP$$

(24) INFL° → [±Tense],[±AGR]

The features of [+AGR] characterize the nominal features associated with the subject with respect to person and number. It will be assumed (cf. Rizzi (1982a)) that [+AGR] has clitic-like pronominal properties and assigns nominative to the [NP,S] position with which [+AGR] is co-superscripted. As noted above, the specification of the [+AGR] features allows an optional lexically null realization of the subject (i.e., pro).

Perhaps associated with the possibility of having a phonologically null subject,⁶ Catalan, Italian and Spanish have the property of allowing free inversion of the NP receiving nominative Case, without loss of grammaticality or meaning change:

(25) a. En Joanⁱ [+AGR]ⁱ [ha escrit la carta]
VP

b. NPⁱ [+AGR]ⁱ [[ha escrit la carta] en Joanⁱ]
VP VP

'John has written the letter'

(26) a. Un amic meuⁱ [+AGR]ⁱ [ha entrat [e]ⁱ]
VP

b. NPⁱ [+AGR]ⁱ [ha entrat un amic meuⁱ]
VP

'A friend of mine has come in'

(27) a. Els examensⁱ [+AGR]ⁱ [foren avaluats [e]ⁱ]
VP

b. NPⁱ [+AGR]ⁱ [foren avaluats els examensⁱ]
VP

'The exams were evaluated'

In (25) the subject of the predicate to write has moved to a postverbal position from its base-generated [NP,S]. The postposing of an external subject argument occurs as an adjunction to VP, creating the configuration in (25 b), (cf. Chomsky (1981), Rizzi (1982a)).

The predicate to come in in (26) is an intransitive ergative verb. Burzio (1981) provides evidence that the class of intransitive predicates is not homogeneous.⁷ Some intransitives like dormir (to sleep) assign an external θ -role and do not take internal arguments, whereas others like entrar (to come in) assign an internal θ -role but do not take an external argument.⁸ Like intransitive verbs, ergatives do not assign Case to the internal VP which receives nominative Case as is evidenced by their morphology when the argument is pronominal and has a phonetic matrix:

- (28) a. He entrat jo_[nom]
 b. *He entrat me_[acc]
 'Have come in I'

As exemplified in (27), the internal argument can appear following the predicate in the passive as well, or it may move to [NP,S]. Passive morphology suppresses the role of [NP,S] as a θ -position and prohibits Case-assignment by the predicate to its internal argument. As in the case of ergative structures, this postverbal NP is in the nominative:

- (29) a. Ets estimat tu_[nom]
 b. *Ets estimat te_[acc]
 'Are loved you'

Arguments in a sentential structure must receive Case. Given that Case is assigned to a position under adjacency to the Case assigner, and only [+AGR] assigns nominative Case, the grammaticality of the (b) examples in (25)-(27) requires an explanation.

Following a proposal of Jaeggli (1980), Chomsky (1981) relates the possibility of subject postposing to the null subject parameter by proposing that a rule of affix movement can apply in the syntax. This syntactic rule has the effect of moving INFL [+AGR] onto V, where it governs and assigns Case to the postverbal NP.⁹ The θ -role is transmitted to the postverbal subject by co-superscripting.

Rizzi (1982a) suggests that the pro-drop parameter is related to the possibility of having a [+pronominal] INFL which may, optionally, absorb nominative Case. When this is so, INFL can properly govern the empty [NP,S] position, occupied by a trace in Rizzi's system. If the subject appears postverbally, either when adjoined to the VP or in its base-generated position as in ergative and passive structures, INFL transmits nominative Case through coindexing with the postverbal argument. INFL has in this case the properties of a dummy pronominal-like element governing the empty trace in [NP,S].

With the inclusion of pro in the set of empty categories (Chomsky (1982)), a slightly revised version of Rizzi's proposal can be adopted. Assume that the pronominal features of [+AGR] govern an expletive 'dummy' pro which appears in the [NP,S] position if the subject is clause-final. A Case-marked chain C_i is formed consisting of the following elements : $C_i = (\text{Pro}^i, \text{NP}^i)$.

The assumption that the subject in (25) is moved to postverbal position, where Case and θ -role are transmitted to it, raises the question of whether binding principle C can be violated, since a [-anaphoric] NP is 'bound' in S by an expletive pro. In order to preclude this possibility Rizzi(1982a) suggests that a θ -role transmitter like an expletive element cannot be a binder for the argument it is co-superscripted with. This solution appears intuitively correct under the logical assumption that an expletive element may not be assigned a referential index because it does not refer, and therefore cannot be a binder (in the sense of the binding theory) for any element: name, pronoun or anaphor.¹⁰

For the purposes of this discussion I will adopt Rizzi's hypothesis that there is no affix-hopping rule in the syntactic component and postverbal subjects are assigned Case through a co-superscripted chain.¹¹

The appearance of postverbal subjects is not a phenomenon restricted to root sentences. It may occur in subordinate, clausal structures, indicative or subjunctive:

- (30) a. En Jordi sabia que [proⁱ conduïa el cotxe la Núriaⁱ]
IND
'George knew that [(it)ⁱ was driving the car Núriaⁱ]'
IND
- b. En Pere s'imaginava que [proⁱ havia arribat un paquetⁱ]
IND
'Peter imagined that [(it)ⁱ had arrived a packageⁱ]'
IND
- (31) a. En Jordi esperava que [proⁱ portés les flors en Joanⁱ]
SUB
'George hoped that [(it)ⁱ brought the flowers Johnⁱ]'
SUB

considers that Tense is expressed by combining three basic notions: S, the moment of speech; R, a reference point; and E the moment of the event. Tense is a way of temporally representing events in reference to the moment of speech S. He assumes time to be a linear dimension (cf. Fiengo (1974)), where S, R and E are points on the time-line ordered by operations of linearity and associativity. In this system there is no distinction between the 'basic' tenses and the 'complex' tenses formed by multiple embedding of the operator [\pm Past] (see Ross (1969), Mc Cawley (1971) and Fiengo (1974)). Hornstein argues that the system must not distinguish between basic and complex tenses derived by embedding simple tenses in each other's scope, but any particular tense must be formed by a limited number of primitive elements concatenated in various ways. His rationale for this argument is that a theory proposing multiple iteration of simple operators is unable to prevent overgeneration by multiple recursion and thus does not limit the class of possible tenses.

The three basic entities proposed in the Reichenbach/Hornstein account and all their possible combinations would allow only a limited number of tenses, which would express the range of possible parametric variation allowed in natural language.

The hypothesis of considering tenses as formed by the combination of basic notions, as in Reichenbach's approach, seems a more adequate way to characterize Romance tense formation, and it is implicit in the account proposed in Otero (1974) for Spanish, where tenses are represented as a system of features.

Suppose that tense is represented as a sentential operator in logical structure, and suppose furthermore that each operator corresponding to a particular tensed form is assigned an interpretation by the combination of a set of features, each with a binary value. The combination of these features and their values will express a tensed form, i.e., an interval or point in time in which expressions of natural language are interpreted.

Catalan has four simple tenses in the indicative with their corresponding aspectual (or compound) tenses, constructed with an auxiliary and an untensed form of the verb. Following Otero (1974) I will assume that the temporal specification of a simple tense and its corresponding compound form is the same in Romance. Perhaps there is a difference consisting of additional features for Aspect expressed in the Spec or VP along with those characterizing tense.

The indicative tenses can be represented by a set consisting of a pair of features.¹² The first member of the pair would express the intuitive notion of 'precedence' (or 'earlier than') relative to the moment of speech. This will be characterized by the values of the feature [PAST] assigned in reference to a constant point that we will call Present. With [\pm past] the relation expressed in Hornstein (1981) between the notions S and R could be represented: the temporal context of a subject-predicate relation prior to the moment of speech will be expressed as [\pm past] and from the present onwards as [-past].

For the second member of the pair, the feature [PERFECT] would specify whether, within [\pm past], an event is interpreted as occurring

at a point in time or during an interval. The combination of these two features and their possible values will allow for the representation of four tenses: [-past, -perfect], [-past, +perfect], [+past, +perfect] and [+past, -perfect].

Within [-past], the value [-perfect] will indicate that a propositional function is interpreted relative to a point in time after the present, and [+perfect] that it holds at the moment of speech. As an example, the following sentences will be characterized as follows:

(32) En Pere [[-past, +perfect],[+AGR]] dibuixa ninots a la paret
'Peter draws puppets on the wall'

(33) En Pere [[-past, -perfect],[+AGR]] dibuixarà ninots a la paret
'Peter will draw puppets on the wall'

Within [+past], the value for [PERFECT] is: [+perfect] if a subject-predicate relationship is interpreted at a point in time after which it does not hold any longer; and [-perfect] if a subject-predicate relationship obtains during an unspecified period prior to the present across which mutual licensing of subject and predicate holds. (34) and (35) exemplify those values which would correspond roughly to the English simple past and progressive past respectively:

(34) En Pere [[+past, +perfect],[+AGR]] dibuixà ninots a la paret
'Peter drew puppets on the wall'

(35) En Pere [[+past, -perfect],[+AGR]] dibuixava ninots a la paret
'Peter was drawing puppets on the wall'

Thus, the expansion of the category TENSE in the indicative can be minimally characterized as follows:

- (36) [TENSE] → [±past]
 [+past] → [±perfect]
 [-past] → [±perfect]

Indicative clauses are autonomous in their tense marking. An argument clausal structure is not affected by the temporal specification in the root sentence and the complex construction allows any combination of tenses without loss of grammaticality:

- (37) pro sabia que [pro { telefona
 ha telefonat
 telefonarà
 havia telefonat
 telefonà
 telefonava }] IND

'(I) knew that [(he/she) { calls
 has called
 will call
 called
 had called
 was calling }] IND

- (38) [Que en Joan { arriba
 ha arribat
 arribarà
 arribava
 havia arribat
 arribà } sempre tard] és evident IND

'[That John always { arrives
 has arrived
 will arrive
 was arriving
 had arrived
 arrived } late] is evident' IND

As discussed above, subjunctive clauses exhibit the nominal features of [+AGR] in the same way as indicative sentences. However, there is a difference regarding the tense features. Although subjunctive forms can be expressed in two tenses corresponding to [-past] and [+past], it has been often pointed out that subjunctive morphology indicates an 'unrealized tense' (cf. Bresnan (1972), Bouchard (1982)) because subjunctive clauses do not appear to possess a reference of their own in their time-frame feature specification.

Rivero (1977), Luján (1979) and Salamanca (1981), who discuss this characteristic for Spanish subjunctive forms, have observed that the specification of a subjunctive clause as [+past] is contingent on the specification [+past] in the main clause, as opposed to the autonomy of indicative clausal structures observed above.¹³ The same constraints apply in the case of Catalan:

- (39) Pro desitja que [pro { telefoni
hagi telefonat
*telefonés
*hagués telefonat }]
SUB
- '(He/she) desires that [(he/she) { call
has called
*called
*had called }]'
SUB

- (40) [Que en Joan { *arribi
*hagi arribat
arribés
hagués arribat } tard]demostrava que no li
SUB

funciona el rellotge

'[That John { *arrive
 *has arrived
 } arrived
 had arrived } SUB
work'

The relationship between the [Tense] specification of a subjunctive form and that of its main clause may be compared to the relationship between an anaphor and its antecedent. INFL_{Sub}, failing to denote time, is assigned a value in relation to the time-frame specification of its superordinate clause. The specification for [Tense] in the argument subjunctive clause can thus be considered a syntactic consequence of the tense-marking in its higher sentence, and the morpheme marking [\pm past] in this type of clause as analogous in some sense to the -self marker for anaphors.

The fact that subjunctive clauses appear to have a defective tense (they lack specification for [PERFECT]), and have to relate their interpretation for tense to that of a higher clause may explain why they must always be arguments of predication, and cannot appear as root declarative sentences with any type of predicate:

(42) * Pro veié una pel.lícula dels germans Marx
 SUB

'(he/she) saw a Marx brothers' movie'
 SUB

(43) * Tuⁱ anesis [e]ⁱ a Nova York
 SUB

'Youⁱ went [e]ⁱ to New York'
 SUB

- (44) * Proⁱ fos apreciat [e]ⁱ en aquest lloc
 SUB
 '(he/she/it)ⁱ was appreciated [e]ⁱ in this place'
 SUB

Observe that no principle of grammar seems to rule out these examples. Government requirements and the Case filter are not violated in the three cases. The features of [+AGR] in INFL govern and assign Case to the subject position, and the internal argument in (42) is governed and assigned Case as well. θ -theory and the projection principle are also fulfilled in (42)-(44): the verb to see in (42) assigns an external θ -role to the pronominal empty category pro, and a θ -role to its internal argument a Marx brothers' movie. In (43) and (44) the ergative and passive predicates respectively assign their θ -roles to an internal argument. The chains $(Tu^i, [e]^i)$ and $(pro^i, [e]^i)$ in the respective sentences receive nominative Case and therefore they fulfill the visibility condition. The principles of binding are not violated, since the pronominals are free in their governing category, namely S, and if null (cf. (42) and (44)) are recoverable in their feature specification and are interpreted as having a definite reference. The traces in (43) and (44) are properly bound.

The same type of ungrammaticality occurs when infinitive clauses, which lack [Tense] specification, appear as root sentences:

- (45) * PRO veure una pel.lícula dels germans Marx
 'PRO to see a Marx brothers' movie'

- (46) * PROⁱ anar [e]ⁱ a Nova York
'PRO to go to New York'
- (47) * PROⁱ ésser apreciat [e]ⁱ en aquest lloc
'PRO to be appreciated in this place'

Although θ -role assignment, the Case filter and government requirements are not violated in any case, we could argue that these sentences are ruled out because PRO, an anaphoric pronominal, lacks a proper antecedent (explicit or implicit) in the sentential structure.

This account cannot however be totally correct. If the sentences above appear embedded in a clause marked as 'anaphoric' for [Tense] specification (i.e., a subjunctive clause) ungrammaticality obtains too, either if PRO is bound by an antecedent or if it is interpreted as arbitrary in reference:

- (48) * En Joan_i volgués [PRO_i veure una pel.lícula dels germans Marx
SUB
'John_i wanted [PRO_i to see a Marx brothers' movie]'
SUB
- (49) * En Pere et_i demanés [PRO_i anar a Nova York]
SUB
'Peter asked you_i [PRO_i to go to New York]'
SUB
- (50) * [PRO ésser apreciat en aquest lloc] fos sorprenent
SUB
'[PRO to be appreciated in that place] was surprising'
SUB

(60) En Jordi [-past, +perfect] llegeix el diari

INFL

'George reads the newspaper'

IND

(61) * En Jordi [-past] llegeixi el diari

INFL

'George read the newspaper'

SUB

Both the external θ -role and the internal θ -role of the verb to read are assigned in the same way in (60) and (61) and the sentences are interpreted exactly alike in this respect. As noted above, no other principle or condition except full specification for tense would rule out (61) as opposed to (60). (61) cannot be assigned an interpretation to determine whether the subject predicate relation holds, or has the possibility of holding, at any t.

It may be that well-formedness conditions for clausal structures require that the function of mapping thematic roles onto arguments in propositions of natural language has to be given a temporal context which would specify not only the notion of precedence relative to a constant interpreted as 'present' but also a reference to a point in time or time-span associated with it. Otherwise, the structure would constitute an open sentence that would not be susceptible to interpretation at some level of grammar. This temporal context is structurally defined as the c-command domain of a Tense operator. The requirement may explain the ungrammaticality of (45)-(54) vs. their grammaticality when the structures are in the scope of INFL [\pm past,

±perfect] as in (55)-(59). It may be claimed as well that the ungrammaticalities noted above are accounted for by the requirement that all anaphoric elements must be bound, although I guess that other additional interpretive principles might be involved in this case.

3. The characterization of Binding Domain

The formulation of the binding principles provides the conditions in (62) to be satisfied at some level of grammatical representation:

- (62) A. An anaphor is bound in a domain D
 B. A pronominal is free in a domain D
 C. An r-expression is free

If the domain D is characterized as in Chapter I (30), the facts that (62) accounts for when applied to arguments (anaphors and pronominals) in a subjunctive clause are the following:

(i) When the possible antecedent of a nominative pronoun in a subjunctive clause is non-nominative, the subjunctive S node behaves as a binding domain for an element in its [NP,S] and condition (62 B) is fulfilled:

(63) En Pere li_i demanava que [pro_i regués les plantes]
 SUB

'Peter asked him/her_i that [(he/she)_i water the plants]'
 SUB

(ii) Nominative anaphors in the [NP,S] position of a subjunctive clause are always ungrammatical, as according to (62 B):

- (64) a. * En Pere esperava que [si mateix vingués]
SUB
'Peter hoped that [himself come]'
SUB
- b. * Elles volien que [les unes a les altres portessin llibres]
SUB
'They wanted that [each other brought books]'
SUB

(iii) Condition (62 B) predicts as well the behavior of pronominals marked as non-nominative within a subjunctive clause:

- (65) a. La Isabel_i volia que [pro li_i telefonés]
SUB
'Elizabeth_i wanted that [(he/she) called her_i]'
SUB
- b. [El seu_i temor que [pro l_i'acomiadés]] era il.lògic
SUB
'[His/her_i fear that [(he/she) fired him/her_i]] was illogical'
SUB

There are, however, some construction types that deviate from the general paradigm. One type is exemplified in (66), parallel to (4)-(6) above:

- (66) * La Núria_i desitja que [pro_i descansi bé]
SUB
'Núria_i desires that [(she)_i rest well]'
SUB

This type of example shows that if in the higher governing category there is a possible antecedent for the pronoun which is also marked as nominative, the two arguments must be disjoint in reference.

example the infinitive counterpart of (4)-(6) and (67) above, repeated below as (68 a)-(70 a):

- (68) a. En Jordi_i espera que [pro_{*i} vingui]_j SUB (cf. (4))
 'George_i hopes that [(he)_{*i} come]_j SUB'
 b. En Jordi_i espera [PRO_i venir]_{*j}
 'George_i hopes [PRO_i to come]_{*j}'
- (69) a. * Tu sents que [pro telefonis al Joan]_{SUB} (cf. (5))
 'You regret that [(you) call John]_{SUB}'
 b. Tu sents [PRO telefonar al Joan]
 'You regret [PRO to call John]'
- (70) a. [El seu_i desig que [pro_{*i} escribís]]_j SUB ens sorprenia (cf. (6))
 '[His/her_i desire that [(he/she)_{*i} wrote]]_j SUB surprised us'
 b. [El seu_i desig de [PRO_i escriure]]_{*j} ens sorprenia
 '[His/her_i desire [PRO_i to write]]_{*j} surprised us'
- (71) a. Li_i agradava que [pro_{*i} cantés]]_j SUB (cf. (67))
 'It was pleasant to him/her_i that [(he/she)_{*i} sang]_j SUB'

In various respects the referential properties of the pronominal anaphor PRO and the non-anaphoric pronominal in the [NP,S] of a subjunctive clause do not, however, constitute a symmetrical mirror image: in their interpretation with respect to objects, as will be discussed below, as well as in their locality requirements with respect to a possible antecedent when a larger domain than a biclausal structure is considered. I will return to the case of infinitives in the Appendix of this chapter.

Consider the following examples:

(72) [[la seva_i convicció que [en Joan_j desitja que [pro_i vagi al museu]]]
IND *j SUB

ens sorprenia]

'[[His_i certainty that [John_j desires that [(he)_i go to the museum]]]
IND *j SUB

surprised us]'

(73) [[Que ell_i esperés que [en Pere_j volgués que [pro_i vingués]]] ens
SUB SUB *j SUB

sorprenia]

'[[That he_i hoped that [Peter_j wanted that [(he)_i came]]] surprised
SUB SUB *j SUB

us]'

As the referential indices show, pro in the most embedded [NP,S] may be interpreted as proximate to the highest subject but not to the most local accessible subject in the superordinate clause, indicative or subjunctive.

The pronominal in the [NP,S] position of the subjunctive clause S₃

can also be interpreted as proximate with the main subject in (74):

- (74) [En Jordi_i pensa que [pro^h és imprescindible que [pro_i telefoni]^h]]

$$\begin{array}{ccccccc} S_1 & & \text{IND} & S_2 & \text{IND} & S_3 & \text{SUB} \end{array}$$
 '[George_i thinks that [(it)^h is essential that [(he)_i call]^h]]'

$$\begin{array}{ccccccc} & & \text{IND} & & \text{IND} & & \text{SUB} \end{array}$$

A coreferential interpretation between the pronominal in [NP, S₂] and pro in [NP, S₃] would never be possible, independently of the specification for indicative or subjunctive in their respective sentences. Pro^h is a Case-marked expletive element co-superscripted by chain formation with S₃. Pro^h cannot be an antecedent of the most embedded subject because the expletive empty pronominal is not accessible to pro_i (cf. (31) and (32) Ch.I). Besides, expletives may not have referential index. Compare sentence (74) with the distribution of the coreferential indices in (75) and (76):

- (75) [En Joan_i esperava que [pro^h fos possible que [pro_{*i} acabés de

$$\begin{array}{ccccccc} S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 & \text{SUB} \end{array}$$
 llegir el llibre]^h]]
 '[John_i hoped that [(it)^h was possible that [(he)_{*i} finished to

$$\begin{array}{ccccccc} S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 & \text{SUB} \end{array}$$
 read the book]^h]]'
- (76) [La Isabel_i volia que [pro^h fos obligatori que [pro_{*i} entrés]^h]]

$$\begin{array}{ccccccc} S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 & \text{SUB} \end{array}$$
 '[Elizabeth_i wanted that [(it)^h was mandatory that [(she)_{*i}

$$\begin{array}{ccccccc} S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 & \text{SUB} \end{array}$$
 came in]^h]]'
 SUB

In this type of examples the intermediate clause S_2 has been inflected for the subjunctive. The indices marking possible coreference show that whereas the interpretation of the most embedded pro as coreferential with the higher subject is possible in (74), as it was in (72) and (73), proximate interpretation with the main subject appears to be disallowed in (75) and (76). As observed above, in this pair of cases the expletive in the intermediate $[NP, S_2]$ position does not constitute an accessible nominal for the non-anaphoric empty pronominal in the lower sentence.

The generalization that can be drawn from (72)-(76) would be that it is primarily in the domain of a node specified as $[+Tense]$ that a non-anaphoric pronominal is free (cf. (74)).¹⁶ It has to be disjoint in reference with the most local accessible subject in the domain of $[+Tense]$, if there is one. If there is no accessible subject in an A-position, the pronominal is free.¹⁷

- (77) [Proⁱ resulta sorprenent que [pro^j sigui probable que [pro_h es
IND SUB
presenti a les eleccions]^j]ⁱ]

'[(It)ⁱ results surprising that [(it)^j be probable that[(he/she)_h
IND SUB
run for the election]^j]ⁱ']
- (78) [Proⁱ és increïble que [pro^j sigui possible que [pro^h sigui
IND SUB SUB
necessari que [pro_k et visiti]^h]^j]ⁱ]

'[(It)ⁱ is unbelievable that [(it)^j be possible that [(it)^h be
IND SUB SUB
necessary that [(he/she)_k visit you]^h]^j]ⁱ]',

It has already been alluded to on several occasions that subjunctive tenses behave as anaphors with respect to the tense marking of their root sentence. Suppose that this relation between the features in INFL is represented by coindexing, and suppose that we consider that the domain to which the binding conditions refer must include the domain of an anaphoric tense and the domain of its antecedent.

Suppose furthermore that these coindexed elements form a Tense-chain (T-chain) where (T₂, ..., T_n) have to be bound. Given that independent conditions in the grammar require for chains to be maximal, irrespective of the type of elements involved, assume that binding applies in principle within the domain delimited by maximal T-chains.

Assume, as in Chomsky (1981), that binding is a subcase of the theory of government, and that the notion of governing category is redefined in such a way that a domain for interpreting an element α is delimited as before, but it is also taken into account that [TENSE] in the head of S might be anaphoric, that is, that a sentence containing tense features which must be linked to others is dependent on a superordinate Tense domain.

The binding principles will apply to a domain including more than one S if tenses are linked and no accessible subject intervenes, but the binding principles will apply within one and only one S if its

head contains what we may call a 'referential' tense, that is, when a Tense-chain consists of only one member, the case of indicative clauses.

The characterization of binding domain may be proposed, tentatively, in the following terms:¹⁸

- (79) A T-governor of α is the maximal T-chain containing α and the governor of α .
- (80) β is a binding domain for α iff β is the minimal subchain of the T-governor of α containing a subject accessible to α , if there is one. If there is no accessible subject the T-governor is the binding domain.

This definition incorporates both the Tensed-S condition and the Specified Subject condition (SSC) into the notion of binding domain. The formulation given in the GB framework reduced opacity to the SSC under the observation that Tensed-S and SSC almost overlap and, in languages where [TENSE] and [+AGR] are clearly dissociated, the latter appears to be the main determinant of opacity.¹⁹ However, specification for [+Tense] seems to be a principled notion if we want to include the facts observed above into the core system.

On the other hand, data from languages other than Romance languages suggest that, while the presence of sentential operators such as [+Tense] always closes a domain for binding, the specification for the subject does not always do so, and particular grammars may admit a degree of parametric variation with respect to locality requirements

involving an accessible subject.²⁰

Some precisions need to be made in (80) with respect to the notion 'accessible subject'. In Aoun (1981) it is suggested that the opacity condition must take into consideration not only the individual elements of an argument chain for the characterization of the SUBJECT (i.e., [+AGR], or the elements in [NP,NP],[NP,S]) but the whole argument structure in which these elements appear; otherwise the distribution of possible binding relationships between arguments in French causative constructions cannot be accounted for. Aoun proposes to replace the notion 'accessible SUBJECT' in the sense of Chomsky (1981), by that of 'accessible chain' in the definition of governing category.

Aoun's proposal is supported by the interpretation of postposed subjects in subordinate subjunctive clauses.

As mentioned above, the nominative element in the null-subject languages can appear post-verbally. This is either the result of an application of Move α and adjunction to VP (cf. example (25) above), or it is the case of an internal argument (i.e. ergative and passive structures) , which can receive nominative Case through co-superscripting (Burzio (1981), Rizzi (1982a)) as in the examples below:

- (81) a. pro^i [+AGR] ha arribat ellaⁱ
 '(it) has arrived she'
- b. Ellaⁱ [+AGR]ⁱ ha arribat [e]ⁱ
 'Sheⁱ has arrived [e]ⁱ'

- (82) a. pro_i^i [+AGR] i va ésser acomiadat en Joan i
 '(It) i was fired John i '
- b. En Joan i [+AGR] i va ésser acomiadat [e] i
 'John i was fired [e] i '

When the structures (81) and (82) are subordinate clauses in the subjunctive, the nominative internal argument, if phonologically realized, is interpreted as disjoint in reference with a subject in the higher clause:

- (83)a. *La Isabel $_i$ desitja que [pro_i^j hagi arribat ella $_i^j$]
 SUB
- 'Elizabeth $_i$ desires that [pro_i^j has arrived she $_i^j$]'
 SUB
- b. * pro_i vol que [pro_i^j sigui acomiadat ell $_i^j$]
 SUB
- '(He) $_i$ wants that [(it) $_i^j$ be fired he $_i^j$]'
 SUB

The obligatory non-coreferential interpretation of the internal argument in (83 a,b) with respect to the main subject contrasts with the possible coreferential interpretation of the internal argument with the main subject in other constructions such as (84) below:

- (84) La Isabel $_i$ volia que [pro [+AGR] la $_i$ visités]
 SUB
- 'Elizabeth $_i$ wanted that [(I) visit her $_i$]'
 SUB

According to the definition in (80) the subordinate clause would

be the minimal subchain of the T-governor for both the argument in the VP headed by the verb to visit in (84) and for the internal argument of the ergative and passive predicates in (83 a,b), because the subcategorized S contains α (i.e., the internal NP) and its governor and an accessible SUBJECT, namely [+AGR]. The difference between (83) and (84) is that, in the former, [+AGR] is co-superscripted with the postverbal argument by chain formation. This is not the case in (84).

The obviative reading indicates that the higher S in (83) must be the binding domain for all the arguments in the complex structure. Then [+AGR] may not count as an accessible element for the argument co-superscripted with it. Subject accessibility should then refer to an accessible subject chain.

Consider now the interpretation of the pronominal and anaphoric arguments in examples (85)-(90) according to the definitions in (79) and (80):

(85) a. En Pere_i s_i'afaita
 *j
 'Peter_i shaves himself_i'
 *j

b. En Pere_i l_{*i}'afaita
 j
 'Peter_i shaves him_{*i}'
 j

S is the binding domain for α (the anaphor and the pronoun in

[NP,VP] respectively) because S is the minimal (sub)chain of the T-governor of α , containing a subject accessible to α . Within S the anaphor is bound according to principle A of binding and the pronoun must be interpreted as unbound by a c-commanding NP.

- (86)a. [En Joan_i diu que [pro_i el_{*i} mirava]
 S_1 IND S_2 j IND
 '[John_i says that [(he)_i was looking at him_{*i}]]'
 S_1 IND S_2 IND j
- b. [En Joan_i diu que [pro_j s'escribia cartes a si mateix_{*i}]]
 S_1 IND S_2 j IND j
 '[John_i says that [(he)_j was writing letters to himself_{*i}]]'
 S_1 IND S_2 j IND j

S_1 and S_2 constitute two separate T-chains. Both are in the indicative and therefore they are not related by coindexing (i.e., they are not tense-dependent). The main S_1 cannot be a binding domain for a nominal in [NP, S_2] because it does not form a T-chain with the head of S_2 . S_2 in turn is the T-governor of the pronoun in [NP, S_2]; it contains its governor, namely [+AGR] but no accessible subject for it. According to (80) the T-governor S_2 is the binding domain for its subject. The same S_2 fulfills the definition in (80) with α being the argument (pronoun or anaphor) in [NP,VP] because it contains the governor of α and an accessible subject. Within S_2 a pronominal will receive a disjoint interpretation from an accessible argument and an anaphor must be bound.

(87) [Que pro_i sigui amenaçat de mort] no m'impersona
SUB

'[That (I) be menaced with death] does not impress me'
SUB

(88) [En Jordi_i espera que [pro_{*i} vingui]]
S₁ IND S₂ j SUB

'[George_i hopes that [(he)_{*i} come]]'
S₁ IND S₂ j SUB

In (87) the subject sentence is in the subjunctive and it is tense-linked with INFL in the main sentence. Pro_i corefers freely because it does not have an accessible subject contained in its T-governor (i.e., the root sentence). Moreover [+AGR] in the main clause is co-superscripted with the subjunctive S containing pro, and coindexing of the two elements would give rise to an i-within-i violation.

In (88) the main S₁ fulfills (80) for $\alpha = \text{pro}$ in [NP, S₂]. The object clause in the subjunctive is T-coindexed with the head of S₁. The T-chain contains the governor of pro which is [+AGR] and an accessible subject, the NP in [NP, S₁]. Therefore pro has to be interpreted as obviative with respect to this NP.

(89) [En Joan_i creu que [pro^j és imprescindible que [pro_i telefoni]^j]]
S₁ IND S₂ IND S₃ SUB

'[John_i believes that [(it)^j is essential that [(he)_i call]^j]]'
S₁ IND S₂ IND S₃ SUB

(90)*[Tu_i desitges que [pro^j sigui imprescindible que [pro_i telefonis]^j]]
S₁ IND S₂ SUB S₃ SUB

'[You_i desire that [(it)^j be essential that [(you)_i call]^j]]'
S₁ IND S₂ SUB S₃ SUB

In (89) the intermediate S_2 heads a maximal T-chain. It is coindexed with INFL [Tense] in the head of S_3 . This T-chain contains a governor for pro_i but not an accessible subject. The T-governor of pro_i is S_2 which is its binding domain according to (80). Therefore pro_i is free in S_2 and can be interpreted as coreferential with the nominal in $[\text{NP}, S_1]$.

As for (90), S_1 meets (80) for pro_i in S_3 . S_1 is the minimal (sub)chain of a maximal T-chain which contains the governor of pro_i in $[\text{NP}, S_3]$ and an accessible subject. The sentence is ungrammatical because pro_i must be free in the domain of this subject.

Consider now the following sentences, in which an intervening accessible subject triggers opacity within a T-chain:

(91) a. [En Joan_i esperava que [en Jordi_j l_i'invités a la reunió]]
 S_1 IND S_2 SUB

'[John_i hoped that [George_j invite him_i to the meeting]]'
 IND SUB

b. [En Pere_i volia que [en Jordi_j s_{*i}'afaités]]
 S_1 IND S_2 SUB

'[Peter_i wanted that [George_j shaved himself_{*i}]]'
 S_1 IND S_2 SUB j

(92) [En Pere_i esperava que [en Jordi_j volgués que [pro_i hi anés]]]
 S_1 IND S_2 SUB S_3 * j SUB

'[Peter_i hoped that [George_j wanted that [(he)_i went there]]]'
 S_1 IND S_2 SUB S_3 * j SUB

- (93) [En Gerard_i el_j convencia de [PRO_j esperar que [pro_i arribés]]]
 S_1 IND S_2 S_3 *_j SUB
- '[Gerald_i persuaded him_j [PRO_j to wait that [(he)_i arrived]]]'
 S_1 IND S_2 S_3 *_j SUB

In every case, the presence of an accessible subject in [NP, S_2] triggers opacity for the arguments it c-commands.

In (91 a) and (91 b) S_1 contains the head of a T-chain, but S_2 is the binding domain for the nominals in the [NP,VP] according to (80). If α is a pronominal, as in (91 a), it has to be free in S_2 , and if α is an anaphor, as in (91 b) it has to be bound in this domain.

In (92) and (93), the intermediate S_2 fulfills the conditions of (80) for the pronominal in [NP, S_3]. S_2 is the minimal subchain of the T-governor S_1 which contains a subject accessible to pro. Then pro has to be free in S_2 .

Specific reference to the subject in the statement of the definition of binding domain could perhaps be dispensed with and substituted by that of 'accessible argument', as suggested in Aoun (1981). This was already implicit in Chomsky's (1981) notion of SUBJECT, understood as the most prominent nominal element in a certain domain.

Other elements which are not syntactic subjects may trigger opacity in the domain of Tense. The requirement of 'accessible argument' would appear then more accurate since it would always include the subject as well as any argument which is 'prominent' in the sense of the technical notion SUBJECT. (80) may be modified by substituting 'accessible subject' with 'accessible argument':

- (94) β is a binding domain for α iff β is the minimal subchain of the T-governor of α containing an argument accessible to α . If there is no accessible argument the T-governor is the binding domain.

In the following construction types S_1 is a binding domain for pro under (80) or (94):

- (95) a. $\left[\begin{array}{cccc} \text{[pro}^i \text{ li}_j \text{ resultava molest que [pro}^i \text{ cantés]}^i] \\ S_1 & & \text{IND} & S_2 \text{ SUB} \end{array} \right]$
 '[(It)ⁱ resulted bothering to him/her_j that [(he/she) sang]ⁱ]'
 $\left[\begin{array}{cccc} S_1 & & \text{IND} & S_2 \text{ }^i \text{ SUB} \end{array} \right]$
- b. $\left[\begin{array}{cccc} \text{[pro}^i \text{ li}_j \text{ agradava que [pro}^i \text{ llegís el diari]}^i] \\ S_1 & & \text{IND} & S_2 \text{ SUB} \end{array} \right]$
 '[(it)ⁱ was pleasant to him/her_j that [(he/she)_{*j} read the
 $\left[\begin{array}{cccc} S_1 & & \text{IND} & S_2 \text{ }^i \text{ SUB} \end{array} \right]$
 newspaper]ⁱ]'

However, when structures of the type (95) are embedded, (94) but not (80) accounts for the correct distribution of coreference:

- (96) $\left[\begin{array}{cccccc} \text{[En Joan esperava que [pro}^j \text{ li agradés que [pro}^j \text{ anés a Nova York]}^j] \\ S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 \text{ SUB} \end{array} \right]$
 ' [John hoped that [(it)^j was pleasant to him that [(he) went to
 $\left[\begin{array}{cccccc} S_1 & & \text{IND} & S_2 & \text{SUB} & S_3 \text{ SUB} \end{array} \right]$
 New York]^j]]'

There are two possible interpretations for (96), one in which John and to him are coreferent and another in which John and (he) are coreferent. A third interpretation is excluded, namely, one in which

the three argument NPs are coreferent, since the last two must not be (cf. (95)).

Only S_1 is a T-governor for li (to him) and pro in $[NP, S_3]$ because the two nominals are arguments in a subjunctive clause. S_2 is the binding domain for the dative pronominal li (to him): it is the minimal subchain of the T-governor which contains a subject accessible to the dative NP.

According to the definition (94), but not that of (80), S_2 is also the binding domain for pro in $[NP, S_3]$. S_2 is the minimal subchain of the T-governor containing an accessible argument for pro, namely the dative pronoun. Since pro has to be free in S_2 according to (94), when the nominal in $[NP, S_1]$ and the dative pronoun li (to him) in the intermediate clause are interpreted as disjoint in reference, the subject in $[NP, S_1]$ and the subject in $[NP, S_3]$ may be optionally coindexed.

In the structure (97) below, (subject) argument accessibility would apply vacuously. The pronominal in $[NP, S_3]$ has to be interpreted as obviative with respect to the two c-commanding subjects in the structure, because its accessible subject, PRO, is bound by the subject of the highest category:

- (97) [La Núria_i vol [PRO_i esperar que [pro_{*i} vingui]]]
 S_1 S_2 S_3 j SUB
- '[Núria_i wants [PRO_i to wait that [(she)_{*i} come]]]'
 S_1 S_2 S_3 j SUB

With this approach, the ungrammaticality of a structure like (98) with coreferential interpretation of NP_i and pro_i is predicted:

If, as in Chomsky (1981), [+AGR] is considered an accessible SUBJECT for the lexical anaphor in the subordinate clause, the ungrammaticality follows under the NIC (cf. Chomsky (1980)) because the nominative anaphor is free in that clause.

It has been suggested above, following Aoun (1981), that the notion of accessibility should apply to argument chain and should not refer to subparts of it. Aoun's proposal gives the correct results in ergative sentences in the subjunctive (cf. examples (83 a, b) above) where a postverbal pronominal receives an obviative interpretation with respect to a c-commanding subject in the superordinate category.

The same reasoning must then apply to the ungrammatical examples under consideration. Given that [+AGR] forms a chain with the anaphor, it is not accessible to it. If, as argued, subjunctive clauses are transparent domains for α in [NP,S] the ungrammaticality of (100 a,b) is left unaccounted for.

In the present approach, two possibilities might be considered to rule out such examples:

- (i) The NIC effects follow from a principle such as the ECP
- (ii) The ungrammaticality of nominative anaphors might be related to the intrinsic characterization of [+AGR] in INFL.

Chomsky ((1981), 101) has suggested that anaphors may acquire a variable status at Logical Form.²² If this is so, elements without independent referential content automatically become subject to the ECP at this level of representation.

Rizzi(1982a) has argued that in the null-subject languages the subject position is not properly governed. With this assumption, the NIC effects for the anaphor/variable are explained and the sentences (100 a,b) are ruled out by lack of proper government at LF.

With the proposal that lexical anaphors shift from pure anaphor specification at DS and SS to a variable at the interpretive level, as suggested, it is possible to account for certain contrasts observed in Huang (1982) between Chinese and English (or Catalan).

Huang (1982) points out that anaphors may appear in the [NP,S] position of an inflected Chinese sentence:

(101) Zhangsan_i shuo [ziji_i hui lai]
'Zhangsan_i say [self_i will come]'

(102) Zhangsan_i bei wo faxian [[e]_i tou-le qian le]
'Zhangsan_i was found by me [[e]_i has stolen money]'

(cf. Huang (1982),331)

He attributes the contrast to the fact that Chinese does not have an accessible SUBJECT (i.e., [+AGR]) in the head of INFL. The embedded clause does not meet the requirement to constitute a governing category for the anaphor in [NP,S] position because the head of S does not contain [+AGR]. According to Huang, the embedded S is a transparent domain for its nominative anaphor in these cases.

However, and following Aoun's hypothesis, the presence or absence of [+AGR] should not be a sufficient condition to explain the contrast between English/Catalan and Chinese.

Huang argues, however, that a possible parametric variation may obtain with respect to proper government of the subject in some languages. He points out that no 'that-trace' effect for long extraction of the subject obtains in Chinese, as opposed to English. Huang points out that an approach in terms of a subject postposing mechanism prior to extraction, as proposed in Rizzi (1982a) for Italian, cannot apply in this case. Wh-elements appear 'in situ' at S-Structure in Chinese clauses. He concludes then that the head of INFL, and specifically the tense features, might be a proper governor in Chinese, but not in English.

Huang's arguments offer an explanation for the contrasts observed in (100 a,b) and the Chinese examples in (101) and (102). If lexical anaphors acquire a variable status at the level of LF, these elements should appear as subjects only in languages where the [NP,S] position is properly governed.

If this is so, the contrast between the grammatical Chinese examples and the ungrammatical ones in Catalan is accounted for: in the first case there would be no ECP effects for the LF variable in subject position, but the ECP would never be fulfilled in Catalan due to the lack of proper government.

Some problems with this hypothesis must be considered. There are certain constructions in Catalan where the position of the subject might meet ECP requirements. These are the cases of obligatory V-fronting under wh-movement (cf. Torrego (1984)).

Catalan interrogative constructions show the same effects of obligatory V-fronting pointed out in Torrego (1984) for Spanish.

Torrego suggests that, if proper government obtains structurally, the position of the subject after V-preposing might be considered to be properly governed by the fronted verb:

- (103) [Qui_i [va veure_v [en Joan [e]_v [e]_i]]]
 S' S S
 '[Who_i [saw_v [John [e]_v [e]_i]]]'
 S' S S

Assuming that the ECP may obtain structurally, a lexical anaphor must be able to appear in the [NP,S] position of a construction with a fronted verb. This prediction is not borne out and the sentence is always ungrammatical, independently of the mood (indicative or subjunctive) of the clauses containing the nominative anaphor:

- (104) * En Pere sabia [a qui_i [havia vist_v [si mateix [e]_v [e]_i]]]
 S' S IND S
 'Peter knew [whom_i [had seen_v [himself [e]_v [e]_i]]]'
 S' S IND S
 (105) * En Pere es preguntava [que_i [hagués dit_v [si mateix [e]_v [e]_i]]]
 S' S SUB S
 'Peter wondered [what_i [had said_v [himself [e]_v [e]_i]]]'
 S' S SUB S

In the case of (104), where the subordinate clause is in the indicative, it might be argued that the construction is already ruled out at S-Structure, under principle A of binding. If an indicative S is always an opaque domain for the elements it dominates, the anaphor

in (104) is free in it at S-Structure and ungrammaticality follows independently of the ECP.

As for (105), the structure should be grammatical. The anaphor is not in an opaque domain (the subjunctive S node) and it is properly governed by the preposed verb, by hypothesis.

These sentences might be ruled out under a more restrictive version of the ECP such as that proposed in Stowell (1981). He suggests that proper government obtains via a coindexing procedure between the referential index of a subcategorized complement and the matrix assigning a θ -role to it. Proper government is then satisfied when there is coindexing between an argument and a slot in the thematic grid of a predicate:

- (106) α properly governs β iff
- (i) α governs β , and
 - (ii) α is lexical, and
 - (iii) α is coindexed with β . (cf. Stowell (1981), 381))

The indices that are associated with the specific representation of the argument structure of the predicate would count as indices of the verb itself to satisfy condition (106 (iii)) above, according to Stowell.

Assuming this version of the ECP, a structure like (105) would be ruled out because the subject is not subcategorized for by the predicate head, and therefore the coindexing mechanism required in (106 (iii)) does not proceed. Recall that the subject or external argument

may be thought of as coindexed with the predicate by the predication rule (Williams (1980)). This type of coindexing, however, applies between the NP subject and the VP as a whole, that is, head and complements compositionally. In the cases of V-preposing only the verb and its auxiliary are fronted but not its complement structure. Therefore, the ECP is perhaps not met in (105).

These arguments still leave some problems open. There are cases where all conditions in (106) appear to be met and still, a nominative anaphor is barred from appearing in a subjunctive clause. Consider the following examples:

(107) * En Joan volia que [proⁱ vingués si mateixⁱ]
SUB

'John wanted that [(it)ⁱ came himselfⁱ']
SUB

(108) * Elles esperen que [proⁱ siguin escoltades l'una a l'altreⁱ]
SUB

'They hoped that [(it)ⁱ be listened each otherⁱ']

The subordinate clause is a subjunctive sentence, there is no accessible subject-chain for the nominative anaphor in its minimal S-domain, and the predicates are an ergative and a passive verb respectively.

Ergative and passive constructions subcategorize for internal arguments but assign no θ -role to the external [NP,S] position. Thus, the anaphor in (107)-(108) is an internal argument of its predicate and appears at S-Structure in its base-generated position. This element may receive a referential index from the c-commanding NP in the upper

clause which constitutes its binding domain according to the definition.

The referential index assigned to the internal argument can be associated with the θ -grid of the predicate subcategorizing for the anaphoric element. The conditions for proper government, even in the more restricted version of Stowell (1981), are theoretically met but the sentences are ungrammatical.

It appears that other factors besides ECP requirements may intervene in ruling out nominative anaphors in Catalan while admitting them in Chinese.

The other possibility suggested above to account for the ungrammaticality of (100 a,b) was to attribute it to the [+AGR] feature specification in the INFL node.

Following Rizzi (1982 a) it has been assumed that [+AGR] features are intrinsically pronominal non-anaphoric elements in A'-position which form an argument chain with the subject.

In Chomsky (1981) it is suggested that chains created by movement rules leave certain grammatical features on the trace such as person and number. Suppose that it is stipulated that if an argument chain contains an A'-position, such as [+AGR] or a clitic pronoun, the morphological realization of the A'-link of the chain must agree with the argument, not only in the grammatical features of person and number but also in some others related to the intrinsic [\pm anaphoric] character of the argument.

This stipulation would explain that, when clitic doubling occurs, the A'-position heading the argument chain²³ has to share with

the NP its [\pm anaphoric] characterization, otherwise the sentence is ungrammatical:

(109) a. En Joan s'escriu cartes a si mateix
'John himself writes letters to himself'

b. *En Joan li escriu cartes a si mateix
'John him writes letters to himself'

The ungrammaticality of (109 b) cannot be related to a violation of principles such as those of the binding theory, but only to the incompatibility in the [\pm anaphoric] characterization between the doubling element in A'-position and the argument.

Rizzi (1982a) attributes to the [+AGR] element the properties of a clitic; a morpheme containing a certain feature characterization, which serves as a checking device with the argument it is co-superscripted with. If this element is intrinsically [+pronominal], as Rizzi suggests, the ungrammaticality of (100 a,b) appears parallel to that of (109).

These considerations seem to be supported by the observation in Yang (1983) that languages which lack [+AGR] specification in INFL generally allow lexical anaphors in the [NP,S]. Then it is perhaps a condition on argument chain formation and not the ECP that accounts for the NIC effects observed above, although the possibility is not excluded that both are involved.

This second approach raises obvious questions about the status of argument chains created by movement. Given that an NP trace is

characterized as an anaphor in this system, a chain consisting of a moved NP and its trace should be ungrammatical if the account offered for the unacceptability of (109 b) is generalized to conditions on chain formation, unless the [\pm anaphor] matching requirement is restricted to phonologically realized links of a chain.

5. Subject-Object asymmetry for obviative interpretation

Another set of data that is not accounted for under the notion of binding domain proposed in (80) above is exemplified by the following sentence types:

(110) La Mercè deia al Pere_i que [pro_i busqués una feina millor]
SUB

'Mercè told Peter_i that [(he)_i looked for a better job]'
SUB

(111) La Núria demanà a la Isabel_i que [pro_i li escrivís]
SUB

'Nuria asked Elizabeth_i that [(she)_i wrote him/her]'
SUB

These sentences exemplify the subject/object asymmetry for obviative interpretation mentioned at the beginning of this chapter. As shown by the possible coreferential interpretation between the nominal in the main [NP,VP] and the pronoun in the subordinate [NP,S], the subjunctive clause appears to be opaque in this case. If a

5.1. A dichotomy between clausal and NP arguments with respect to possible or obligatory positions at S-Structure has been noticed since Rosenbaum (1967). It has been observed, for example, that clausal arguments, as opposed to NPs, always appear after the other complements of a predicate, with normal intonation pattern:

- (116) a. ?? En Pere va dir [que en Joan arribaria] a la Isabel
 'Peter told [that John would arrive] to Elizabeth'
 b. En Pere va dir a la Isabel [que en Joan arribaria]
 'Peter told Elizabeth [that John would arrive]'

The contrast in the order of the complements may not be explained uniquely in terms of heaviness, since complex NP complements do not appear to follow this restriction:

- (117) a. En Joan va explicar [les històries que havia sentit al jutjat]
 a la Matilde
 'John told [the stories that he had heard at the court] to
 Matilde'
 b. En Joan va explicar a la Matilde [les històries que havia sentit
 al jutjat]
 'John told Matilde [the stories that he had heard at the
 court]'

Sentential arguments, as opposed to NPs, must undergo extra-position in certain contexts:

- (118) a.* La idea de'n Joan que [que ho diguis] et perjudicarà em sembla absurda
 'John's idea that [that you say it] will harm you seems absurd to me'
- b. La idea de'n Joan que [proⁱ et perjudicarà [que ho diguis]ⁱ] em sembla absurda
 'John's idea that [(it)ⁱ will harm you [that you say it]ⁱ] seems absurd to me'
- (119) a. La idea de'n Joan que [la teva actitud] et perjudicarà em sembla absurda
 'John's idea that [your attitude] will harm you seems absurd to me'
- b. La idea de'n Joan que [proⁱ et perjudicarà [la teva actitud]ⁱ] em sembla absurda
 'John's idea that [(it)ⁱ will harm you [your attitude]ⁱ] seems absurd to me'

In (118) the sentential argument of the verb to harm obligatorily appears in postverbal position. As is known, extraposition of an external NP argument is an optional process in Catalan, as well as in Spanish and Italian. The optionality of this movement rule is shown in (119), where the nominative NP can be either in pre- or postverbal position.

In order to explain ungrammaticalities like those of (118 a) and some others that will be discussed later, Stowell (1981) argues

that clausal arguments may not be in a position where Case is directly assigned, although they need to be in a Case-marked chain like any other argument of S. Stowell attributes this constraint to the fact that the head of a clausal structure itself contains a Case-assigning feature.²⁵ According to him, core grammar would include a principle expressed in the following terms:

(120) Case Resistance Principle (CRP): Case cannot be assigned to a category bearing a Case assigning feature.

(cf. Stowell (1981), 146)

This constraint expresses the idea that Case features and Case-assigning features are incompatible in the same categorial matrix. It will be shown (see Chapter III) that the Case Resistance principle proposed by Stowell appears to apply only to [+AGR] sentential complements in Catalan, namely indicative and subjunctive clauses, but not to infinitives. As an example, consider the counterpart of (118 a) with the [+AGR] sentential subject of the verb to harm substituted by an infinitive clause. This shows a clear contrast in grammaticality:

(121) La idea de'n Joan que [PRO parlar amb ell] et perjudicarà em
sembla absurda
'John's idea that [PRO to talk to him] will harm you seems
absurd to me'

In order to fulfill both the visibility requirement, which

requires arguments to be marked for Case or to be in a Case-marked chain, and on the other hand the Case Resistance principle, which prevents Case-assigning categories from being assigned Case directly, Stowell suggests that sentential arguments (i.e., [+AGR] clauses in the case of Catalan) must undergo obligatory movement to an A'-position.

According to this requirement, a clausal argument must appear either in Topic or adjoined to VP, leaving in its base-generated position an empty category that will receive the Case assigned by the governing element.

Notice that this condition predicts distinct S-Structure configurations, contingent on the Case-assigning properties of the predicates subcategorizing for clausal arguments, in (112) vs. (113)-(115).

Consider, for example, the verbs demanar (to ask) and agradar (to like). Both predicates may subcategorize for an internal argument, clausal or nominal. However, whereas demanar (to ask) is transitive and assigns structural accusative Case to the θ -position it subcategorizes for, agradar (to like) is an intransitive verb of the ergative type in Catalan and may not assign Case to its internal argument, which receives this feature through co-superscripting with an expletive pro in the [NP,S].

Thus, the Case Resistance principle applies to the internal clausal arguments of transitive predicates but it will have no effect on clauses subcategorized for by ergative-type verbs or on clausal arguments of adjective predicates like those in (114)-(115).

5.2. Following Stowell's hypothesis, the S-Structure configuration of a sentence like (122) would be represented as (123):

(122) Jo li vaig demanar [que vingués]
 'I asked him/her [that (he/she) came]'

(123) [NP [[clⁱ V [e]_j [e]ⁱ S'_j]]]
 S VP* VP

In configurations like (123) there are two maximal projections of VP: the base maximal projection, which corresponds to the highest value of V^o generated in the base, and the maximal projection VP* created by adjunction movement (cf. Safir (1982 b)).

VP* should constitute the maximal projection of V^o for the effects of government and the head of VP must be able to govern the categories adjoined to its base maximal projection (cf. Rizzi (1982a)). Notice that, if the sentential argument has undergone obligatory adjunction, following Stowell's hypothesis, S' must be governed in configurations like (123), because extraction from the S' domain is grammatical:²⁶

(124) Què_i li vaig demanar que [pro portés [e]_i]
 'What_i did I ask him/her that [(he/she) bring [e]_i]'

Chomsky ((1981), 166) suggests that in configurations like (123), where a category has been adjoined to a base maximal projection, the maximal expansion of V in the base (i.e., VP in (123)) may constitute a barrier for c-command relationships between the internal arguments of

V and the categories external to the base maximal node. The lack of en/ne (of him/her/it) cliticization for a postposed subject in Italian or Catalan might be related to the impossibility for c-command to obtain between the clitic and the category sister to VP.

Following Chomsky's suggestion, Safir (1982 b) points out that a distinction may exist between c-command and government, in the sense that while en/ne cliticization might depend on c-command, wh-extraction might be dependent only on government relationships.

The ungrammaticality of en/ne cliticization for a postposed subject might follow from conditions to be satisfied by chains: the appearance of a clitic related by chain formation to an empty category cannot be grammatical if a base maximal projection constitutes a barrier for c-command, given that the head of the chain, i.e., the clitic, is not in a c-command relationship with the position coindexed with it.

The Case Resistance principle and the restrictions on c-command for arguments dominated by a base maximal projection may explain the subject-object asymmetry with respect to possible coreferential interpretation observed in sentences such as the following:

- (125) En Pere_i [[li_j^j va demanar [e]_s [e]_j^j] [que pro_{*i}^j vingués]_s]
 VP* VP SUB
- 'Peter_i asked to him/her_j that [(he/she)_{*i}^j came]'
 SUB

- (126) En Joan_i [[va convèncer en Pere_j [e]_s] [que pro_{*i} actués
 VP* VP j SUB
 en conseqüència]_s]
 'John_i [[persuaded Peter_j [e]_s] [that (he)_{*i} behaved
 VP* VP j SUB
 consequently]_s']

The effects of the Case Resistance principle trigger the adjunction of a clausal node to a position sister to a base maximal projection. With this S-Structure configuration, the argument NP internal to the VP (cf. (li^j, [e]^j)_j and (en Pere)_j in (125) and (126) respectively) does not c-command the elements adjoined to the VP*, that is, these NPs are not accessible to pro.

It was pointed out above that a subjunctive S node is not a binding domain for its subject. Given that the root sentence constitutes the binding domain for the argument in the [NP,S] of the subordinate clause according to (80), the pronominal in this position cannot corefer with an accessible nominal within the domain, i.e., the main clause subject; but it is free to be interpreted as coreferential with a non-accessible argument such as the object. Thus, the subject/object asymmetry for obviative interpretation would follow from the interaction of the theory of binding and the theory of Case.

This proposal appears to be confirmed when a sentence like (126) is passivized. In its active form, the object of persuade could have the same referential index as the subject pro in the subjunctive subordinate clause, but when in its passive form grammaticality does

not obtain since the subject chain becomes an accessible nominal for categories in the domain of the subordinate S:²⁷

(127) * En Pere_i fou convençut que [pro_i actués en conseqüència]
SUB

'Peter_i was persuaded that [pro_i behaved consequently]'
SUB

The ungrammaticality of structures like (127) supports the suggestion in Chomsky (1981) and Safir (1982 b) that a base maximal projection X^n may constitute a barrier to block a c-command relationship between a category Y, where $Y \neq X$, and the categories adjoined to a maximal projection X^{n+1} .

Proximate interpretation for the pronominal in the [NP,S] in the embedded sentence in examples like (127) is only possible if the subordinate clause is in the indicative, in which case the interpretation for pro is free (because S is an opaque domain if indicative) or if the subordinate clause is in the infinitive, as a structure of obligatory control:

(128) En Pere_i fou convençut que [pro_i actuava en conseqüència]
IND

'Peter_i was persuaded that [(he)_i was behaving consequently]'
IND

(129) En Pere_i fou convençut de [PRO_i actuar en conseqüència]

'Peter_i was persuaded [PRO_i to behave consequently]'

Although, as was shown, the subject of a subjunctive clause can

be interpreted as proximate with a higher object the element in the [NP,VP] in the main clause cannot be a reflexive²⁸:

(130) En Joan es_i convencia que [pro_i actués en conseqüència]
SUB

'John persuaded himself_i that [(he)_i behaved consequently]'

The ungrammaticality of these sentences under the coreferential interpretation follows straightforwardly from the anaphoric character of the object. Given that both arguments in the main clause have to corefer obligatorily and the subject is accessible to pro, obviative interpretation is the only possible one.

For native speakers the primary interpretation of a pronominal subject of a subjunctive clause is that of considering it as coreferential with a higher object, if there is one in the superordinate sentence. Some predicates like forçar (to force) trigger this interpretation as practically the only possible one:

(131) a. En Pere el_i va forçar que [pro_i vingués]
SUB

'Peter forced him_i that [(he)_i came]'
SUB

b.??(*) En Pere el_i va forçar que [pro_j vingués]
SUB

'Peter forced him_i that [(he/she)_j came]'
SUB

This fact, and the tendency to interpret pro as bound when possible could suggest that the proximate interpretation for pro

with an object NP in the higher clause is a subcase of a control-type structure. If this were the case, however, passivization of the main clause in (131) would preserve grammaticality. This prediction is not borne out and when the object NP of verbs like forçar (to force) becomes the subject of a passive, the sentence is ungrammatical:

- (132) * En Pere_i fou forçat que [pro_i vingués]
SUB
'Peter_i was forced that [(he)_i came]'
SUB

I will attribute the bound interpretation of pro in (131) to the semantic properties of the main predicate in this case.²⁹ Other predicate types allow the subject of the subordinate clause in the subjunctive to be distinct from that of the object of the root sentence:

- (133) Pro pregaven als deus que [pro plugués]
SUB
'(They) prayed the gods that [(it) rained]'
SUB

- (134) En Joan va convèncer en Pere que [la Pilar toqués el piano]
SUB
'John persuaded Peter that [Pilar played the piano]'
SUB

- (135) Qui_i et va demanar en Pere que [[e]_i sortís]
SUB
'Who_i did Peter asked you that [[e]_i leave]'
SUB

These examples show that the object NP is not necessarily a

'controller' for the subject in the subjunctive clause; otherwise it would be impossible to have a quasi-argument in this position, as in (133), or an r-expression, as in (134) and (135).

5.3. The subject of the subjunctive clause cannot be interpreted as linked with an object in the matrix sentence when the sentential argument is not assigned Case by the predicate, i.e., complements of adjectives or ergative-like verbs:

- (136) * pro_i^j li_i era convenient que [pro_i marxés]_{SUB}^j
 '(It)_i^j was convenient to him/her_i that [(he/she)_i leaved]_{SUB}^j'
- (137) * pro_i^j li_i agradava que [pro_i llegís el diari]_{SUB}^j
 '(it)_i^j pleased to him/her_i that [(he/she)_i read the newspaper]_{SUB}^j'

This indicates that the dative object in the main sentence constitutes an accessible argument chain for pro_i in the binding domain, and disjointness is required according to principle B of binding.

The contrasts between (125)-(126) above and examples like (136) and (137) suggest that a principle such as Case Resistance must apply in the grammar to sentences marked [+AGR] which would trigger an adjunction movement rule affecting c-command relationships and, hence, accessibility.

- (140) a. Consideraren en Joan incompetent
'(They) considered John incompetent'
- b. Hem plantat el blat espès
'(We) have planted the wheat thick'

In each case the accusative NP is the subject of a small clause³² and can optionally appear adjacent to the main predicate, as in (140), or in sentence final position as in (141):

- (141) a. Consideraren incompetent en Joan
'(They) considered incompetent John'
- b. Hem plantat espès el blat
'(We) have planted thick the wheat'

I will assume that the NP marked with accusative Case has been adjoined to the VP, leaving an empty category $[e]_i$ in its base-generated θ -position:

- (142) [NP [[.... $[e]_i$] NP_i]] (cf. (141 a, b))
VP VP

Consider now the passive counterparts of sentences (140 a, b):

- (143) a. * Fou considerat en Joan incompetent
'Was considered John incompetent'
- b. * Fou plantat el blat espès
'Was planted the wheat thick'

These ungrammatical sentences indicate that the internal NP of the passive predicate cannot remain in its base generated θ -position at S-Structure. In order to obtain grammaticality, it has to move to the [NP,S] position, from where it can optionally be extraposed to VP:

(144) a. En Joan fou considerat incompetent

'John was considered incompetent'

b. Fou considerat incompetent en Joan

'Was considered incompetent John'

(145) a. El blat fou plantat espès

'The wheat was planted thick'

b. Fou plantat espès el blat

'Was planted thick the wheat'

Obligatory NP movement to a non- θ -position is not required when the main predicate is an ergative verb and a secondary predicate or small clause appears in the structure:

(146) a. Ens agradava la carn crua

'To us pleased the meat raw'

b. Ens agradava crua la carn

'To us pleased raw the meat'

c. La carn ens agradava crua

'The meat to us pleased raw'

- (147) a. Van aparèixer els llibres destrossats
 'Appeared the books destroyed'
- b. Van aparèixer destrossats els llibres
 'Appeared destroyed the books'
- c. Els llibres van aparèixer destrossats
 'The books appeared destroyed'

The contrast between (143 a,b) versus (146 a) and (147 a) shows that while nominative Case cannot be transmitted by chain formation to the internal argument of a passive predicate, it is possible to assign it to that of an ergative predicate of the agradar (to like) or aparèixer (to appear) types. While, in the latter, Case might be assigned in place, the internal argument of a passive sentence must move from the θ -position in order to receive Case; the order of the constituents when there is a small clause in the predicate indicates that this must be so.³³

I will not pursue a number of issues which these observations bring up with respect to the conditions on nominative Case assignment in Romance passive structures for clauses and NPs. For the purposes of this section it must be pointed out only that it appears that for reasons other than Case Resistance, the internal argument of a passive must move from its θ -position to become 'visible' (i.e., to receive Case). An internal NP argument will move either to [NP,S] or to a VP-adjoined position, whereas an internal sentential argument appears as VP-adjoined or in Topic, since clauses cannot be in the [NP,S] position (cf. Koster (1978) and Stowell (1981)).

If these claims are correct, the subject pro of the subjunctive clause in a structure like (138) above is not in the c-command domain of the NP object in the main clause and coreference must be possible. Observe that, as in (143), the sentential argument of a passive cannot remain in its θ -position, as shown by the order in which the constituents must appear when there is a small clause assigning a secondary θ -role to the sentential argument:

- (148)a. *Fou declarat [que obrissin la correspondència] inconstitucional
 '(it) was declared [that (they) open the mail] unconstitutional'
- b. Fou declarat inconstitucional [que obrissin la correspondència]
 '(it) was declared inconstitucional [that (they) open the mail]'

Then, the counterevidence exemplified in (138) is only apparent, and the S-Structure configuration of a passive sentence with a clausal internal argument in sentence final position is parallel to that in (123) above:

- (149) pro^i [[li]_j fou demanat [e]_s [e]_j] [que pro_j sortís]_sⁱ] .
 VP* VP SUB
- '(it)ⁱ was asked to him/her_j that [(he/she)_j leaved]_sⁱ'
 SUB

where the dative is not an accessible nominal for pro due to the intervening maximal projection VP.

6. Summary

In this chapter an account of opacity has been proposed as defined basically by the notion of tense specification. My hypothesis has been argued for taking as main empirical evidence the interpretation of pronominal elements in Catalan subjunctive clauses.

It has been pointed out that subjunctive sentences are linked with respect to tense marking. This fact has been related to the impossibility for this type of clause to appear as a root sentence. Since it is in the domain of an 'anaphoric' tensed S that a pronominal subject cannot freely corefer with an accessible NP, be it the subject of the main clause or the oblique NP argument of an ergative-like predicate, it has been suggested that the binding conditions might apply in domains defined within the scope of maximal Tense-chains containing a local accessible (subject) argument.

The subject-object asymmetries for obviative interpretation, which obtain with main transitive predicates, were accounted for as following from the interaction of the theory of anaphora and independent principles related to the theory of Case. Due to the Case Resistance principle (cf. Stowell (1981)) an object clause undergoes obligatory movement to a VP-adjoined position, causing the nominal in the [NP,VP] of the root sentence to become inaccessible to the subject of the adjoined object clause. The fact that this asymmetry can be accounted for structurally and is not semantic was proved by showing that with passivization of the root sentence obviative interpretation is required

with respect to the nominative internal argument.

This revision of the notion of binding domain in terms of T-chains containing an accessible subject allows the facts of obviation to follow in full from the binding principles as formulated in Chomsky (1981).

Appendix: Some notes on Control

The interpretation of the subject of a subjunctive clause and that of an infinitive sentence appear to behave in complementary distribution when there is an accessible nominal in the superordinate domain that can serve as the antecedent.

On the assumption adopted here, that [+Tense] is the main determinant of opacity, a plausible hypothesis to consider would be an account of Control based on the theory of binding along the lines discussed in this study. The complementary interpretation of the arguments in the [NP,S] position of infinitive and subjunctive sentences could be thought of as following from their intrinsic characterization with respect to the features [\pm anaphor]. Given that both arguments are assumed to be in a transparent domain (i.e., their minimal S), an NP marked with [+anaphoric] features, such as PRO, would need to be linked to an antecedent, but a pure pronominal element would not be able to corefer with an accessible nominal within the binding domain.

The characterization of opacity as stated in (79) and (80) above makes crucial reference to government, a T-governor being defined as a

tense-chain containing α and the governor of α .

Then, even assuming the head of an infinitive S node is tense-coindexed with the specification for time-frame of the S node which c-commands it, the interpretation of PRO does not follow from the definition of binding domain under this account. PRO is an ungoverned element. Therefore it does not have a binding domain because there is no T-governor for PRO.

A modification of (79)-(80) in which the requirement of government would be left unspecified could be proposed.³⁴ According to this, the interpretive principles applying to arguments marked with the features [\pm anaphor] would obtain, say, within the domain of categories constituting a maximal T-chain and containing an accessible (subject) argument.

In Chomsky (1981), (1982) a characterization of arguments relevant to the binding principles is proposed. It is assumed that PRO is a pronominal anaphor because it is on a par with both pronouns and anaphors: PRO may denote as determined by context, in which case it is an anaphoric type of element, or it may function as a free variable with an arbitrary interpretation, in which case it might be thought of as a pronominal type of element.

If the requirement of government is dispensed with in the theory of binding PRO cannot be characterized as a pronominal anaphor.³⁵ As a pronominal it would have to be free in its binding domain, and as an anaphor it would need to be bound. This would lead to a contradiction. In order to explain the distribution and interpretation of PRO within the theory of binding, it would be necessary to consider it either as

a pronoun or as an anaphor.

If we compare the behavior of subject arguments in infinitive and subjunctive clauses in a larger domain than a biclausal structure we may observe that PRO and pro (or its lexically specified counterpart) fail to behave in complementary distribution:

(150) * $[\underline{\text{pro}}_i \text{ esperaves que } [\underline{\text{pro}}^j \text{ fos impossible que } [\underline{\text{pro}}_i \text{ arribessis a } S_1 \quad S_2 \quad \text{SUB} \quad S_3 \quad \text{SUB}$
 la ciutat]^j]]

'[(You)_i hoped that [(it)^j was impossible that [(you)_i arrived to
 $S_1 \quad S_2 \quad \text{SUB} \quad S_3 \quad \text{SUB}$
 the city]^j]]'

(151) $[\underline{\text{pro}}_i \text{ esperaves que } [\underline{\text{pro}}^j \text{ fos impossible } [\text{PRO}_i \text{ arribar a la } S_1 \quad S_2 \quad \text{SUB} \quad S_3 \quad j$
 ciutat]^j]]

'[(You)_i hoped that [(it)^j was impossible [PRO_i to arrive to
 $S_1 \quad S_2 \quad \text{SUB} \quad S_3 \quad j$
 the city]^j]]'

The structures exemplified in (150) and (151) form a T-chain in which the root sentence has an accessible (subject) argument for the nominal in the most embedded [NP,S]. The binding principles would then apply within the c-command domain of [NP,S₁], and the most embedded pro must be free in S₁ in (150). Consider the interpretation of PRO in the [NP,S] of (151). If PRO were a pure anaphor, by hypothesis, a free interpretation of PRO in this structure ought to be impossible. If, on the other hand, PRO were a non-anaphoric pronominal, it would be

expected to denote any individual in the domain of discourse except the one denoted by the nominal in $[NP.S_1]$. As the referential indices show, PRO may be interpreted as free or bound in S_1 in this construction.

Then if the definition of binding domain were modified as to exclude specific reference to government in order to include PRO into the categories falling into the binding principles A or B, the facts exemplified in (150) and (151) would have to be accounted for by some extra-device.

As mentioned above, Bouchard (1982) argues that empty categories are contextually defined. Accordingly, PRO would be characterized as an anaphor or as a pronominal (i.e., it would follow principle A or B of binding) depending on the properties of the context in which it appears.

A controlled PRO is an anaphor in Bouchard's hypothesis if it has a governing antecedent which assigns its r-index to the anaphoric PRO. Government by the antecedent is possible due to a process of S'-deletion triggered by some predicates, which allows the relation between controller and controllee to be established.³⁶ When, (a) there is no possible antecedent, (b) the lexical characteristics of the subcategorizing predicate do not allow S'-deletion to occur, or (c) when COMP is not empty, PRO is a pronominal and follows principle B of the binding theory. That is, it corefers freely.

According to Bouchard, a controlled PRO exhibits all the properties of the anaphor-antecedent relationship: it conforms to certain structural constraints, it is obligatory, it is local and it

is unique. The three first properties appear to obtain in the relationship between a controller and a controllee, but not necessarily the last one. It has been noticed (see for example Koster and May (1981)) that some predicates allow for a controlled PRO to have more than one possible antecedent:

(152) En Joan va proposar al Pere de [PRO dissenyar la portada del llibre]
'John proposed Peter [PRO to design the cover of the book]'

There are three possible interpretations for this sentence: either John, or Peter may be understood as the controllers of PRO, or both John and Peter as a set may be interpreted as the subject of the predicate in the infinitive:

(153) En Joan va proposar al Pere de [PRO dissenyar la portada del llibre junts]
'John proposed Peter [PRO to design the cover of the book together]'

This last interpretation, where PRO is assigned a dual referential index, appears to be problematic under the hypothesis that PRO is a pure anaphoric empty category, since anaphors do not admit split antecedents.

If we assume that S'-deletion has not taken place and PRO is characterized as a pure pronominal, some other qualifications would be needed to account for the fact that it must be interpreted as a bound pronoun in this construction. PRO does not corefer freely and may only

is accounted for in Manzini (1983 a) by arguing that lexical items like herself are associated with specific features for person and number, and optionally, gender. Such lexical entries are required to be referentially dependent upon some element present in the structure.

The arguments accounting for the ungrammaticality of (155) as opposed to the grammaticality of (154) do not appear to be applicable to the lexical anaphor in the following ungrammatical sentence:

(156) * It would be a nuisance for it to be possible for [oneself
to win]

The anaphor oneself appears as referentially dependent upon elements which have no specific features associated with them, such as arbitrary PRO:

(157) It would be a nuisance for it to be possible [PRO to hate
oneself]

It may be assumed that whatever features arbitrary PRO has, they are the same ones that characterize the overt anaphor oneself. Yet an anaphor like PRO may appear in structures where no governing category or domain-governing category is defined with respect to it, whereas this is not true of a lexically specified anaphor which seems to be the phonological counterpart of arbitrary PRO according to this hypothesis, and which could be assigned a free referential interpretation under the same conditions. Other principles must be applying which allow an interpretation to be assigned (i.e., that of a free

variable) to a purported pure anaphoric element if it is phonologically null, but not if it is lexically specified.

It has been long noticed³⁹ that infinitive clauses cannot appear as complements of certain kind of adjective phrases:

(158) a. * *És probable* [PRO escriure una novel.la]

'(It) is probable [PRO to write a novel]'

b. * *És obvi* [PRO arribar tard]

'(It) is obvious [PRO to arrive late]'

(159) a. *És convenient* [PRO acabar la feina]

'(It) is convenient [PRO to finish one's work]'

b. *És possible* [PRO telefonar a la Isabel]

'(It) is possible [PRO to call Elizabeth]'

The ungrammaticality of (158 a,b) cannot be attributed to the fact that these adjectives would require a sentential complement with a semantically specified subject, distinct from an 'arbitrary' reading. As the examples below show, an indicative or subjunctive clause is acceptable as a complement, either if the [NP,S] is occupied by a pronoun with specific reference for person and number (or its null counterpart), or if the subject refers to an unspecified set of human beings, that is, has an 'arbitrary' reading:

(160) a. *És probable que* [ella escrigui una novel.la]

SUB

'(It) is probable that [she write a novel]'

SUB

b. És obvi que [pro arribem tard]
IND

'(It) is obvious that [(we) arrive late]'
IND

(161) a. És probable que [hom voti per Mickey Mouse]
SUB

'(It) is probable that [people vote for Mickey Mouse]'
SUB

b. És obvi que [s'està arribant tard]
IND

'(It) is obvious that [one is arriving late]'
IND

The functional characterization of PRO as a pure pronominal when no antecedent is present in the structure seems to be undermined by the contrast between (158) and (159) since there is no reason why PRO in the sentences in the infinitive couldn't be interpreted as the NP or the clitic in (161 a,b).

Roeper (1983) points out that the contrast between (158)-(159) corresponds to a parallel difference in the acceptability of benefactive phrases in English. The same facts are repeated in equivalent Catalan structures:

(162) a. *Li és probable [PRO votar per Mickey Mouse]

'(It) is probable for him/her [PRO to vote for Mickey Mouse]'

b. *Ens és obvi [PRO dormir]

'(It) is obvious for us [PRO to sleep]'

- (163) a. Li és convenient [PRO acabar la feina]
 '(It) is convenient for him/her [PRO to finish his/her work]'
- b. M'és possible [PRO telefonar-te]
 '(It) is possible for me [PRO to call you]'

Roeper argues that this contrast shows why infinitive sentences may occur in (159) but not in (158): PRO may be controlled, that is, assigned a referential interpretation by an implicit argument in the second case but not in the first.⁴⁰ He proposes the following hypothesis to account for the interpretation of arbitrary PRO:

- (164) All instances of PRO_{Arb} are instances of PRO which are controlled by implicit arguments. (cf. (Roeper (1983)))

Assuming that implicit or cognitive arguments are possible controllers, there are two possible mechanisms to explain how this can be implemented in the grammar. One of them would be to consider that a syntactically present empty category controls PRO. The interpretation of this empty category would be assigned by relating it to a slot in the thematic grid of the predicate. In this case the syntactic representation of (165) would be as follows:

- (165) És necessariⁱ [e]_iⁱ [PRO_i sortir ràpidament]
 '(It) is necessary [PRO to leave quickly]'

The other possibility is that there may be no category syntactically represented but the interpretation of PRO is given, say, by

coindexing with a lexically present (but syntactically absent) argument in the thematic structure of the adjective predicate:

(166) Es necessari_[θ_i] [PRO_i sortir rapidement]

Whichever approach proves to be correct, PRO does not appear to behave as a pure anaphor with respect to the antecedent. This cognitive argument is always interpreted as referring to human beings in general, therefore it should be possible to have a lexically specified anaphor like oneself in the [NP,S] position of the infinitive clause in place of PRO. This prediction is not borne out as shown by the ungrammaticality of (156) above. Moreover, and unlike an anaphor, PRO does not seem necessarily to obey c-command requirements which restrict the relationship between anaphors and their antecedents, as shown by the following contrast (cf. Chomsky and Lasnik (1977)):

(167) It is unpleasant for the rich [PRO to do the hard work]

(168)*It is unpleasant for the rich [for themselves to do the hard work]

In Sportiche (1983) it is suggested that the theory of Control should be subsumed under the theory of non-overt operators. According to this view, PRO acquires the status of a variable at the level of LF. PRO is bound by an empty operator the range of which is set within the syntactic domain containing it. The interpretation of the chain $(O_i, PRO_i)_j$ would be assigned by chain composition with an argument syntactically (or perhaps lexically) present in the syntactic domain.

Then, when the syntactic domain containing the infinitive clause does not contain an argument to assign an interpretation to the A'-chain, the sentence is ungrammatical.

The requirements for the interpretation of a control structure, i.e., an A'-chain headed by a non-overt operator according to Sportiche (1983) does not necessarily obey c-command but it appears to obey subadjacency constraints. Notice that if the antecedent, syntactic or lexical, which may assign an interpretation to the A'-chain is not strictly local (i.e., separated by more than one S' node) the structure is ungrammatical:

- (169) a. It is obvious that it is possible [PRO to go to New York]
 b.*It is possible that it is obvious [PRO to go to New York]

These contrasts may not be captured under the hypotheses which consider PRO a pure anaphor or, alternatively, a pure pronominal. Some other interpretive considerations, independent of the binding principles, such as the presence of implicit or syntactically present arguments play a role in assigning a proper interpretation for PRO.

Notes to Chapter Two

¹The correlation between the morphological realization of [+AGR] and the possibility of having a phonologically null subject should be taken only as approximate, since there are exceptions to this generalization.

²There are some exceptions limited to specific lexical entries and interacting with explicit or implicit negation, which deviate from the core cases requiring obviative interpretation for the subject. For example the verb creure (to believe), which subcategorizes for an indicative sentence, may take a subjunctive clause if negated, and in this case coreference is possible. The verb dubtar (to doubt), which does not take indicative or infinitive clauses as complements, also constitutes an exception to the general paradigm:

(i) No crec que telefoni
SUB

'(I) do not believe that (I) call'
SUB

(ii) Dubtava que telefonés
SUB

'(He/she)_i doubted that (he/she)_i called'
SUB

There is also a consistent set of counterexamples to the pattern exemplified in (4)-(6) which will be discussed in Chapter IV.

³Jaeggli (1980). See Rigau (1982) for discussion of the Avoid Pronoun principle from a different point of view.

⁴Some other qualifications would be needed in (14) since subjunctive clauses are unlike infinitives in a number of respects. Notice that (14) as stated, implies that lexical anaphors could appear in the subject position of a subjunctive sentence, contrary to fact. If subjunctives were truly the same as infinitives (i) would be grammatical:

(i) * Ell vol que [si mateix vegi aquesta pel.lícula]

'He wants that [himself see this movie]'
SUB

See Bouchard (1982) for discussion.

¹¹In forthcoming work E. Torrego argues that [+AGR] may move in the syntax to assign Case to postverbal arguments of ergative verbs. Torrego's evidence is based on the distribution of determinerless NPs in the grammar of Spanish which, she argues, can only appear under strict adjacency to a Case-assigner. Given that bare nominative NPs may appear only in postverbal position when they are arguments of an ergative verb, she suggests that [+AGR] must have moved in the syntax in those cases.

¹²In what follows, I will simplify a more adequate three feature system proposed in Otero (1974) for Spanish, by reducing it to two features, although Otero's characterization may be applied to Catalan without alteration.

I will limit the discussion to the indicative and subjunctive tenses. Otero's additional feature allows for the incorporation of the conditional and, furthermore, it would allow for the expression of the interaction of temporal adverbs with tensed forms. Since I am restricting the discussion to a basic descriptive level, I have considered only a minimal system without considering temporal adverbs and the conditional tense.

¹³See however Suñer (1979) for some counterexamples to this proposal in Spanish.

¹⁴Conversely, an NP in a subjunctive S may corefer with another nominal in the superordinate clause marked with the same Case:

(i) El degà els_i va insinuar que [els delegats els_i presentessin les
queixes per escrit] SUB

'The dean suggested them_i that [the student representatives
presented them_i their complaints in writing]'
SUB

¹⁵When a wh-element appears in COMP, pro and PRO in the [NP,S] of a subjunctive and an infinitive clause respectively are free in reference:

(i) En Joan_i es preguntava [què_j [PRO_{Arb}_i fer [e]_j en aquelles circumstàncies]]

'John_i wondered [what_j [PRO_{Arb}_i to do [e]_j in such circumstances]]'

(ii) En Joan_i es preguntava [què_j [pro_i_h hagués fet [e]_j en aquelles circumstàncies]]

'John_i wondered [what_j [(he)_i_h would have done [e]_j in such circumstances]]'

It must be noted that in the cases of wh-movement the subjunctive subordinate clause must always appear in the compound form of the past tense, even though the main clause is [-Past]. Any other tensed form (i.e., present or simple past) is ungrammatical. Thus, tense linking does not obtain in these cases. G. Rigau (p.c.) has pointed out that some dialects would only admit the conditional forms of the verb with wh-movement in examples like (ii).

¹⁶The notation [+Tense] I am using in this context refers to unlinked (or 'referential') tense specification in the sense described in section 2.2., i.e., the indicative forms. The notion [-Tense] as applied to subjunctive clauses is a descriptive device to indicate that subjunctive clauses express a defective tense; the features of INFL for [+past] must be linked to those of a c-commanding INFL node. This entails that subjunctive clauses cannot be root sentences but may only function as arguments, like infinitive clauses.

¹⁷L. Rizzi (p.c.) has pointed out that sentences of the type (75) and (76) do not seem to be unacceptable in Italian if coreference between the most embedded pronoun in [NP,_{S₃]] and the subject of the root sentence is intended. Catalan speakers consider sentences of the type (75) and (76) ungrammatical under this interpretation, as indicated above. The excluded reading may be better observed in Catalan by inducing obligatory coreference between the two NPs in this type of construction, as for example, when both arguments in the [NP,_S] are specified for a second person pronoun (irrelevant details omitted):}

(i) *Tu esperaves que fos possible que [pro acabessis el llibre que estàs
 IND SUB SUB
 escribint]

'You hoped that it was possible that [(you) finished the book that
 IND SUB SUB
 you are writing]'

(ii) *Pro volies que fos obligatori que [pro et presentessis a les elec-
 IND SUB SUB
 ccions]

'(You) wanted that it was mandatory that [(you) run in the
 IND SUB SUB
 elections]'

¹⁸This characterization of binding domain in terms of T-governors was suggested to me by N.Chomsky (p.c.)

¹⁹Chomsky's (1981) proposal to reduce the Tensed-S Condition (or Propositional Island Condition - PIC) to the SSC as the main determinant of opacity is partially based on George and Kornfilt's (1981) study on Turkish gerunds, where it is suggested that the relevant marker for finiteness (i.e., opacity) in Turkish is [+AGR] rather than [Tense].

Turkish gerunds appear to show, however, certain similarities to the opposition 'tensed' vs. 'untensed' categories with respect to the distribution of possible coreference for the subject as discussed above.

There are two types of gerund morphemes in Turkish: -dİg and -mA. -dİg gerunds mark tense, expressing the distinction future/non future, and include morpheme markers for [+AGR]. The subject of -dİg gerunds, which may optionally be null, can be coreferent with the subject of the root sentence:

(i) a. (Biz)_i [(Biz-im)_i viski iç-tig̃-imiz]-i anla-dık
 '(We)_i [(We-Gen)_i whisky -GER-lplur]-Acc understood'
 (cf. 'We understood our being/were drinking whisky')

- b. (Biz)_i [(Biz-im)_i viski iç-eceğ^v-imiz]-i anla-dık
 '(We)_i [(We-Gen)_i whisky -GER -lplur]-Acc understood'
 (cf. 'We understood our will drinking whisky')

-mA gerunds do not express tense at all, but may or may not have an [+AGR] marker. When [AGR] is null, the subject of the gerund is an ungoverned empty category (cf. PRO) controlled by an argument in the main clause:

- (ii) (Ben)_i [PRO_i viski iç-neg]-e razı ol-du-m
 '(I)_i [PRO_i whisky -GER-∅]-Dat consented'
 (cf. 'I consented drinking whisky') (George and Kornfilt (1981),
 (48 a))

If a [+AGR] marker appears in -mA gerunds, the subject may be null as in the constructions with -dİg exemplified in (i), but it must be interpreted as non-coreferential with the subject of the root sentence. A parallel construction to that of (i) is always ungrammatical:

- (iii) a. * (Biz)_i [(Biz-im)_i viski iç-me-miz]-i isti-yoruz
 '(We)_i [(we-Gen)_i -GER-lplur]-Acc want'
 (cf.* 'We want our drinking whisky')
- b. Ahmet [(Biz-im) viski iç-me-miz]-i isti-yor
 'Ahmet wants our drinking whisky'

The specification for [+AGR] (-imiz and -miz in (i) and (iii) respectively) does not appear to trigger opacity for the embedded subject biz-im (we). If this were so, no contrast in grammaticality under coreferential interpretation would exist between (i) and (iii a), given that in both cases [+AGR] would close a domain to which the binding conditions would apply and the pronoun would be free in it.

It seems that the relevant feature to distinguish (i) from (iii) is the specification of a minimal marker for tense (future/non-future), which appears in -dİg gerunds exemplified in (i).

It must be pointed out that the subject/object asymmetry with respect to obviation also obtains in -mA gerunds. Perhaps a solution similar to the one that will be proposed in this chapter to account for

co-superscripted by chain formation with an expletive pro^j in the main [NP,S]. In such cases the pronominal subject of the subordinate subjunctive clause cannot be interpreted as coreferent with the internal NP argument of the ergative predicate (i.e., li (to him/her)). The 'i-within-i' condition cannot be invoked in these cases to explain disjoint reference between the dative object li and pro_i in (ii), since the dative object is not co-superscripted with any element in INFL.

²¹Safir (1982 b) suggests that expletive PRO must be excluded from the typology of empty categories. There are however two possible accounts that may justify the ungrammaticality of expletive PRO. One is related to the visibility hypothesis and will be discussed in Chapter III. The other possible explanation concerns the theory of control in the hypothesis proposed in Sportiche (1983) which will be briefly discussed in the Appendix of this Chapter.

²² See also Lebeaux (1983) for a proposal along these lines.

²³ See Chomsky (1981), Kayne (1983), who suggest that a clitic can head an A-chain despite its being in A'-position.

²⁴ This hypothesis was suggested to me by R. Fiengo (p.c.) and J. Higginbotham (p.c.). If 'subject' is understood as the most prominent nominal element in a defined domain, we may argue that obviation refers to 'subjects' but in a very broad sense: as including the dative arguments of an ergative verb (which are in fact the cognitive subject in these constructions) or the benefactive NPs of an adjective predicate (see examples (113)-(115) below).

²⁵ In Stowell (1981), COMP is argued to be the head of S'. In his account, [+Tense] is the governing element assigning nominative to the [NP,S]. He follows Den Besten (1978) and Chomsky (1981) in considering COMP and INFL to form a discontinuous element, the two X heads related by a rule of movement (see also Pesetsky (1982)). Accordingly, COMP contains a Case-assigning element, namely, the head of the tense-chain.

²⁶ Huang (1982) argues that the following condition on extraction applies at the S-Structure level:

- (i) A phrase A may be extracted out of a domain B only if B is properly governed.

(cf. Huang (1982), 505)

²⁷ Only direct objects may undergo passivization in Romance. In (125) the subordinate clause is the direct object. Our arguments thus cannot be illustrated with sentences of the type (125).

It should be noticed that the ungrammaticality of (127) obtains only if pro is interpreted as coindexed with the passive subject, not if it receives an obviative interpretation. To illustrate this point, consider the following grammatical sentences:

- (i) Finalment, en Pere fou convençut que [en Joan escrivís el comentari
SUB
editorial]

'Finally, Peter was persuaded that [John write the editorial comment]'
SUB

- (ii) Finalment, en Pere_i fou convençut que [pro_{*i} escrivís el comentari
SUB
j
editorial]

'Finally, Peter_i was persuaded that [(he)_{*i} write the editorial
SUB
j
comment]'

²⁸ This fact was brought to my attention by E. Torrego (p.c.)

²⁹ As opposed to verbs like convèncer (persuade), demanar (to ask) or pregar (to beg), which allow the subject of their subordinate subjunctive clause to designate a different individual from that of the main object (cf. examples (125)-(126) above and (133)-(135) below, the predicate forçar (to force) requires the subject of its subjunctive subordinate clause to be non distinct from that of the main clause object. The unacceptability of (131 b) might be attributed to specific semantic properties of the verb to force. An interpretation like 'A forces B for C to do something' seems somehow nonsensical.

If the subject/object asymmetry were to be explained by semantic factors and not by structural phenomena, the ungrammaticality of sentences like (127) with the coreferential interpretation, and particu-

The possibility of double cliticization might indicate that the NP and the secondary predicate form two separate constituents.

³³It has been mentioned (fn. (11)) that Torrego (forthcoming) argues that nominative Case can be assigned to an internal argument by [+AGR] adjunction to the VP in the syntactic component. It is possible that this optional movement may not be applying in the case of ergative verbs of the agradar (to be pleasant) type, which may take clausal internal arguments, because bare plurals cannot appear in the [NP,VP] position:

(i)* M'agraden flors

'(It) are pleasant flowers to me'

I am assuming that these verbs are of the ergative type because the internal nominative NP may undergo en/ne cliticization:

(ii) Me n'agraden moltes

'(It) to me en please many'

(cf. 'Many (of them) are pleasant to me')

[+AGR] may not adjoin to the VP in this particular type of ergative predicates, and nominative Case may be assumed to be assigned by co-superscripting.

The ergative predicate aparèixer (to appear) can only take NP internal arguments and admits determinerless NPs:

(iii) Aparèixen flors

'Appear flowers'

³⁴This has been suggested in Chomsky ((1981), 220).

³⁵See Bouchard (1982) and Manzini (1983) among others.

³⁶The S'-deletion process in control structures was already argued for in Koster (1981).

³⁷The following definitions characterize the domains in which pronominals and anaphors must be free and bound respectively:

- (i) γ is a governing category for α iff
 - a. γ is the minimal category with a subject containing α and a governor for α , and
 - b. γ contains a subject accessible to α . (Manzini (1983 a),(71))
- (ii) γ is a domain-governing category for α iff
 - a. γ is the minimal category with a subject containing the c-domain of α and a governor for the c-domain of α , and
 - b. γ contains a subject accessible to α . (Manzini (1983 a),(72))
- (iii) A. An anaphor is bound in its governing category and its domain-governing category.
 B. A pronominal is free in its governing category. (Manzini (1983 a),(70))

³⁸The notion 'subject' in the definitions (i) and (ii) in fn.37 above is understood in the sense given in Chomsky (1981) (cf. SUBJECT).

³⁹See Roeper (1983) and references cited there.

⁴⁰The relationship between implicit arguments and arbitrary PRO had been previously noticed by R. Manzini in relation to purposive clause constructions:

- (i) The boat was sunk [PRO to collect the insurance]
- (ii) * The boat sunk [PRO to collect the insurance]

PRO in (i) is interpreted as controlled by the implicit agent of the passive sentence, which cannot be the case in middle constructions like (ii).

CHAPTER THREE

CLAUSAL COMPLEMENTS AND CASE

1. Introduction

In the last chapter some empirical consequences were derived from Stowell's (1981) hypothesis that sentential arguments cannot appear in their base generated θ -position at S-Structure. The subject-object asymmetry for obviative interpretation relied crucially on this hypothesis, and was accounted for as following from the obligatory movement that a subjunctive clause has to undergo to avoid structural assignment of Case. It was claimed that accessibility to the nominal in the main [NP,VP] for the embedded subject does not obtain as a result of this adjunction movement.

In this chapter I will seek to provide other support for Stowell's basic hypothesis with data from Catalan.

I will depart from the assumption that argumenthood is marked by the presence of Case. Following a suggestion of Aoun (1981) and Chomsky (1981) this will be taken as an indication that the Case filter can be subsumed under the θ -criterion (i.e., the visibility condition). Data from Catalan indicates that a mark for Case is present in the arguments of [-N] as well as [+N] categories.

It will be claimed that some sentential arguments, while subject

to the visibility condition like NPs, cannot be in a position where Case is structurally assigned. This requirement (cf. the Case Resistance principle) induces an obligatory movement of the categories affected by the principle to a peripheral position. Empirical evidence seems to show that in Catalan only [+AGR] sentential arguments (i.e., indicative and subjunctive clauses) are sensitive to this principle, but not [-AGR] clauses, which may appear in structurally Case-marked positions.

In sec.5, some further effects which Case Resistance may trigger will be briefly explored.

2. Sentential arguments and Case

In Chomsky (1981) and Aoun (1981) it is suggested that Case may be considered a condition on well-formedness of θ -chains. This allows one to derive Case requirements from the θ -criterion and to eliminate Case as an independent device.

According to this hypothesis the Case filter would state that each lexical category which is assigned a θ -role must be either in a Case-marked position or be transmitted Case through chain formation. The Case-marking of a chain can be viewed as a condition on interpretation concerning θ -role assignment.

θ -role assignment and its interpretation are determined by the following principle:

- (1) If a position P is marked with the θ -role R and $C=(\alpha_1, \dots, \alpha_n)$ is a chain, then C is assigned R by P if and only if for some i, α_i is in position P and C has Case or is headed by argument PRO.

(Chomsky (1981), 334)

The hypothesis that the Case filter may be a condition derived from the θ -criterion assumes explicitly that Case assignment must apply to all categories which constitute the argument structure of a lexical item, not only NPs but clauses as well. The following ungrammaticalities are predicted by this requirement:

- (2) a. * No sabíem com [en Jordi telefonar la Núria]
'(We) didn't know how [George to call Núria]'
- b. * Ens preguntàvem perquè [[PRO parlar amb ells]_i semblar [[e]_i important en aquell moment]]
'(We) wondered why [[PRO to talk to them]_i to seem [[e]_i important at that moment]]'

In both (2 a) and (2 b), a lexical NP and a clause respectively appear in a position where Case cannot possibly be assigned, the [NP,S] of an infinitive sentence. In the case of (2 b) Case can also not be hypothetically 'inherited' from the trace. It can be assumed that it is the absence of Case that marks these argument chains as ill-formed. If the NP or the infinitive clause is Case-marked by [+AGR] the structures turn out to be grammatical:

of the ergative-type verbs agradar (to be pleasant) and molestar (to be annoying), and they appear in their base-generated positions. The S complement of the main clause adjective predicate is in the infinitive and its [NP,S] an ungoverned θ -position. PROⁱ is an expletive element.

These structures can be considered to be ruled out by the lack of Case-assignment to a chain. The verb, being intransitive, cannot assign this feature to its argument, which cannot receive it otherwise through chain formation by co-superscripting with PRO, since PRO is Caseless.²

In the last chapter (sec.5.4.) it was pointed out that the internal argument of a passive predicate appears to be unable to receive Case in its base-generated θ -position through chain co-superscripting. The evidence in arguing for this was provided by the facts concerning the position that the argument must occupy if it appears post-verbally and receives a θ -role from a secondary predicate:

(5) a. * Fou considerat l'acusat innocent

'(It) was considered the accused innocent'

b. Fou considerat [e]_i innocent l'acusat_i

'(It) was considered [e]_i innocent the accused_i'

c. L'acusat_i fou considerat [e]_i innocent

'The accused_i was considered [e]_i innocent'

Given that in its active form (5 a) is grammatical, as shown in

(6), it was assumed that the unacceptability of (5 a) was related to passive morphology:

- (6) Van considerar l'acusat innocent
'(They) considered the accused innocent'

An expletive element in subject position may not transmit nominative Case to the internal argument of the verb.³ It was assumed that (5 b) with a postposed nominative NP must have been derived by the NP moving to [NP,S] and then extraposing to a VP-adjoined position.

Sentential arguments behave exactly like NPs in this respect. If the Case filter applied to only nominal arguments, an equivalent of (5 a) with an internal clausal argument instead of an NP would be grammatical. The ungrammaticality of (7 a) and (8 a) below is in all respects parallel to that of (5 a):

- (7) a. * Fou declarat [que protestéssim] il.legal
'(It) was declared [that (we) protested] illegal'
- b. Fou declarat [e]_i il.legal [que protestéssim]_i
'(It) was declared [e]_i illegal [that (we) protested]_i'
- c. [Que protestéssim]_i fou declarat [e]_i il.legal
'[That (we) protest]_i was declared [e]_i illegal'
- (8) a. *Fou considerat [PRO expressar les nostres idees] important
'(It) was considered [PRO to express our ideas] important'

- b. Fou considerat [e]_i important [PRO expressar les nostres idees]_i
 '(It) was considered [e]_i important [PRO to express our ideas]_i'
- c. [PRO expressar les nostres idees]_i fou considerat [e]_i important
 '[PRO to express our ideas]_i was considered [e]_i important'

The ungrammaticalities exemplified in (2 b), (4 b), (7 a) and (8 a) lead to the conclusion that clauses which are assigned a θ -role by a predicate must be Case-marked or must be in a Case-marked chain. (5 b), (7 b) and (8 b) also suggest, on the other hand, that an extra-posed argument must be related by chain formation to an expletive Case-marked position (a 'dummy' pro (it)) in [NP,S], and that the relationship expressed by co-superscripting does not violate the binding conditions (Chomsky (1981), Rizzi (1982 a))⁴.

Indirect evidence that a verb assigns Case to the position occupied by a clausal argument is given by cliticization. As is known, NPs are always marked for gender in the Romance languages. When an NP undergoes cliticization, the pronoun reflects the gender of the nominal it denotes:

- (9) a. En Joan llegeix el llibre
 'John is reading the book_[masc]'
- b. En Joan e_i llegeix [e]_i
 'John him_i is reading'

- (10) a. La Núria portava la llibreta
 'Nuria was carrying the notebook_[fem]'
- b. La Núria laⁱ portava [e]ⁱ
 'Nuria herⁱ was carrying [e]ⁱ'

There exists a clitic proform for clausal arguments, the neuter ho (it), which cannot be used to refer to NPs, which as said, are never genderless:

- (11) a. La Isabel deia que en Jordi m'havia escrit
 'Elizabeth was saying that George has written me'
- b. La Isabel hoⁱ (*el/*la) deia [e]ⁱ
 'Elizabeth itⁱ_[neut] was saying [e]ⁱ'

This indicates that the position in which S is base-generated as an argument must be Case-marked. The existence of a clitic proform for an internal clausal argument (tensed or untensed) can be taken as evidence that this might be so.

3. Complements of [+N] categories

The visibility condition, contingent on Case-marking, should mark sentences such as the following as ungrammatical, or uninterpretable at some level of representation:

If the preposition de (of) is inserted to mark the NP complements in the examples above, the structures become acceptable. This indicates, in principle, that the lack of Case-assignment constitutes the cause of their ungrammaticality:

(16) a. Sentia [el desig de [venjança]]

'(I/he/she) felt [the desire of [vengeance]]'

b. [La sospita de [la seva complicitat]] ens va entristir

'[The suspicion of [his/her complicity]] saddened us'

(17) a. En Jordi estava [content de [la seva arribada]]

'George was [happy of [his/her arrival]]'

b. En Pere estava [segur de [allò]]

'Peter was[sure of [that]]'

These contrasts might show that sentential complements do not have to be assigned Case and that they are not subject to the visibility condition. This contradicts the observations made above based on evidence that clauses seem to behave like NPs with respect to the Case filter in other contexts: sentences do not appear as subjects of infinitive clauses (cf. (2 b)), nor in non-Case-marked chains (cf. (4 b)), nor in the internal argument position of a passive (cf. (7 a), (8 a)).

In order to account for those facts which obtain in the corresponding English sentences, Stowell (1981) considers that different rules of interpretation with respect to θ -role assignment govern the relationship between nominals on the one hand and adjectives on the

other and their respective sentential complements.

Following Chomsky (1980) he assumes that nouns are not Case assigners. He suggests that the complements of derived nominals like those of (12) above, as opposed to the clausal complements in the corresponding verbs of (18) have a different status with respect to the θ -criterion:

(18) a. En Joan desitjava [que guanyessis]

'John desired [that (you) won]'

b. La Núria sospitava [que ens havia telefonat]

'Nuria suspected [that (he/she) had called us]'

According to Stowell, the grammaticality of examples of the type in (12) is due to the fact that derived nominals taking sentential complements are not parallel in meaning to the verbs to which they are related. He suggests that those nominals are not predicative, as opposed to verbs, and therefore they cannot be θ -role assigners. The relationship between these nominals and their respective sentential tensed complements is that of apposition. According to this hypothesis no θ -role is assigned to the clause in (12) and Case-assignment does not proceed. The visibility condition does not apply in those cases.

Stowell contrasts derived nominals taking tensed appositive sentences to those taking infinitive clausal complements. He points out that in English they appear to be in complementary distribution, and nominals that take infinitive clauses as complements may not take

tensed sentences. Derived nominals subcategorizing for infinitive clauses are θ -role assigners, as opposed to those which take tensed sentences as appositives. However, under Stowell's account, Case is not assigned to the infinitive argument by means of a preposition insertion mechanism. This is due to the property of English infinitivals of having the preposition-like element to in INFL. This makes infinitives intrinsically Case-marked categories, satisfying thus the visibility condition.

Safir (1982 b) has argued against Stowell's generalization, namely, that no derived nominal assigns a θ -role to a tensed clause complement, on the grounds that it is too strong. He correctly observes that, although the sentential complements of some derived English nominals may indeed have an appositive reading, other [derived nominal - tensed clause] structures do have a consequent reading like those of infinitive complements.⁵

Stowell's generalization does not appear to apply to Catalan, as the examples in (12) and (16) show, where the same derived nominal may take indistinctively a sentential or a nominal argument. Furthermore, a large number of derived nominals which take sentential [+AGR] arguments (indicative or subjunctive) may take infinitive clauses and NPs as complements as well:

(19) a. L'amenaça [que el treuria si no callava immediatament]

'The menace [that (he/she) would expel him if (he) didn't stop talking immediately]'

b. L'amenaça de [PRO treure'l si no callava immediatament]

'The menace of [PRO to expel him if (he) didn't stop talking immediately]'

- c. L'amenança de [expulsió]
'The menace of [ejection]'
- (20) a. El seu temor [que féssim soroll]
'His/her fear [that (we) make noise]'
- b. El seu temor de [PRO fer soroll]
'His/her fear of [PRO to make noise]'
- c. El seu temor de [la mort]
'His/her fear of [the death]'
- (21) a. La proposició [que ens retirem del concurs]
'The proposal [that (we) withdraw from the contest]'
- b. La proposició de [PRO retirar-se del concurs]
'The proposal of [PRO to withdraw from the contest]'
- c. La proposició de [retirada]
'The proposal of [withdrawal]'

It will be shown below that infinitive sentential complements behave like NPs in Catalan in a number of respects. As (19 b), (20 b) and (21 b) show, infinitive clauses need to appear marked by a preposition in those contexts in order to obtain grammaticality:

- (22) a. * L'amenança [PRO treure'l si no callava immediatament] (cf.(19 b))
b. * El seu temor [PRO fer soroll] (cf.(20 b))
c. * La proposició [PRO retirar-se del concurs] (cf.(21 b))

These examples show that NP complements and clausal complements alike must be able to count as arguments of a nominal, as Safir (1982 b) points out. Moreover, the ungrammaticality of (22 a-c) shows that Case-marking should not be restricted to apply uniquely to lexical NPs. At least one type of sentential argument has to be subject to the Case filter, i.e., infinitives.

The same distribution with respect to of insertion can be observed in the complements of predicate adjectives. Consider the sentences in (23) and (24):

(23) a. En Jordi esta orgullós [que hagi guanyat]
SUB

'George is proud [that (you) have won]'
SUB

b. En Jordi esta orgullós de [PRO haver guanyat]

'George is proud of [PRO to have won]'

c. En Jordi esta orgullós de [tu]

'George is proud of [you]'

(24) a. La Núria estava convençuda [que havia arribat amb vosaltres]
IND

'Núria was certain [that (he/she) had arrived with you]
IND

b. La Núria estava convençuda de [PRO haver arribat amb vosaltres]

'Núria was certain of [PRO to have arrived with you]'

c. La Núria estava convençuda de [la seva eficiència]

'Núria was certain of [his/her efficiency]'

Stowell (1981) considers that adjectives taking a tensed S complement are θ -role assigners, as opposed to nominals. On the assumption that [+N] categories do not assign Case, he suggests that English equivalents of sentences of the type (23 a) and (24 a) above are grammatical due to a special rule of θ -role assignment by 'recognition' triggered by a lexical property of those adjectives (cf. Stowell (1981), 205).

This proposal poses, however, the problem that, if the complements of this class of adjectives may be interpreted with respect to θ -role without mediating Case, the specific lexical property of the predicate adjective should not be restricted to apply only when the complement is a [+AGR] sentence and neutralized when it is a [-AGR] clause or an NP. In other words, of insertion should not need to take effect in any case.

Given that nominals as well as adjective predicates seem to be able to take [+AGR] clauses, infinitive sentences and NPs as complements, the apparent violation of the visibility condition for indicative and subjunctive clauses ([+AGR]) should be addressed as including the complements of adjectives and the complements of nominals as well.

3.1. Cliticization

Of particular interest is the fact that the argument of an NP can undergo en/ne cliticization in Italian (Cinque (1980)) and in Catalan (Argente (1976)):

- (25) a. Considero [les dificultats de l'empresa]
 '(I) consider [the difficulties of the enterprise]'
- b. Enⁱ considero [les dificultats [e]ⁱ]
 '(I) of itⁱ consider [the difficulties [e]ⁱ]'

En/ne cliticization is also possible with the sentential complements of a nominal, as shown in (26) and (27):

- (26) a. Tinc la sospita [que no vindrà]
 '(I) have the suspicion [that (he/she) will not come]'
- b. Enⁱ tinc la sospita [e]ⁱ
 '(I) of itⁱ have the suspicion [e]ⁱ'
- (27) a. Sentia el desig de [PRO sortir desseguida]
 '(I/he/she) felt the desire of [PRO to leave immediately]'
- b. Enⁱ sentia el desig [e]ⁱ
 '(I/he/she) of itⁱ felt the desire [e]ⁱ'

In (25) - (27) the predicates to consider, to have and to feel assign accusative Case to the complex NP:

- (28) Lesⁱ considero [e]ⁱ (les dificultats de l'empresa) (cf. (25))
 '(I) themⁱ consider [e]ⁱ (the difficulties of the enterprise)'
- (29) Laⁱ tinc [e]ⁱ (la sospita que no vindrà) (cf. (26))
 '(I) itⁱ have [e]ⁱ (the suspicion that (he/she) will not come)'

- b. Neⁱ estava avergonyit [e]ⁱ
 '(He) of itⁱ was embarrassed [e]ⁱ'

An explanation based on reanalysis of the compound [estar + AP] cannot be proposed, given that estar (to be)⁶ assigns accusative Case to the AP complex, as cliticization shows:

- (33) La Isabel no hoⁱ estava [e]ⁱ (segura de NP/S)
 'Elizabet it_[neut]ⁱ was not [e]ⁱ (sure of NP/S)'

Another instance where an argument chain manifests Case without an apparent Case assigning governor is exemplified by the benefactive arguments of some adjective predicate phrases such as the following:

- (34) a. Liⁱ era necessari [e]ⁱ [PRO estudiar el problema]
 '(It) for him/herⁱ was necessary [e]ⁱ [PRO to study the problem]'
- b. L'explicació ensⁱ resultava incompreensible [e]ⁱ
 'The explanation for usⁱ resulted incomprehensible [e]ⁱ'

In those instances the clitic pronoun is inflected for dative (or oblique) Case.

In van Riemsdijk (1980) it is suggested that adjectives in German may have the property of being Case-assigners to their NP arguments. The markers for Case are morphologically realized in those NPs as genitive or Dative:

(35) a. Der Hans ist seiner Freundin ueberdruessig geworden

'Hans has of-his-girlfriend weary become'

b. Die Universalgrammatik soll dem Menschen angeboren sein

'Universal Grammar is-said to man innate be'

(van Riemsdijk (1980))

Manzini (1983 b) extends the property of [+N] categories of being Case-assigners to nouns. She argues that the of-insertion mechanism is the realization of Case-assignment from a nominal element to an NP. Following the spirit of van Riemsdijk and Manzini's hypotheses, Chomsky (1983), class notes) has suggested that the θ -marking properties of [+N] categories have to be morphologically expressed in their arguments for them to fulfill the visibility condition.

Nominal categories might not be Case-assigners themselves⁷ but preposition insertion may constitute a morphological marking on their arguments to make visible the θ -role they bear. That is, preposition insertion has the same function as the genitive morpheme 's in English, a marker for the interpretation of a θ -role. It may be argued that the same mechanism of of insertion or 's marking could, hypothetically, apply to the internal arguments of non-Case assigners like passive NPs, but of insertion is unacceptable in those instances:

(36) * Pro_(expl) fou considerat de la proposta

'(It) was considered of the proposal'

It can be suggested that of insertion may not apply in (36) as

a consequence of a grammatical principle. If Case is considered a specification for the interpretation of licensed elements at the level of LF, structures like (36) would be ruled out because there is a Case-marked element (i.e., expletive pro (it)) which cannot be interpreted at some level of representation because it does not have a θ -role. In those cases, the expletive nominative pro cannot be linked by chain formation with the postverbal argument, which is already marked by (default) genitive Case. Then, we may suppose that the ungrammaticality of those expressions is not due to default Case-marking per se, but to the appearance of a nominative expletive which is not linked with an argument.⁸

Coming back now to (26 b), (27 b), (31 b), (32 b) and (34), recall that clitic pronouns manifest morphological Case in Romance, unlike NPs. Then, similarly to what occurs in the instances of NP complements of adjectives in German (genitive or dative), the licensing properties of the [+N] categories as θ -role assigners are already morphologically realized in its arguments if cliticization applies, that is the argument chains are visible.

The lack of morphological Case-marking to the [+AGR] clausal complements of derived nominals and predicate adjectives may be explained on the grounds that the head INFL of indicative and subjunctive clauses already has a 'Case' feature (in this instance a Case-assigning feature) which is morphologically realized. It may be suggested that it is this morphological marker that makes the sentence already visible at the relevant level.⁹

4. The Case Resistance Principle

It has been long noticed that, in a number of respects, argument clauses do not appear to behave like NPs in English. Rosenbaum (1967), Emonds (1976) and Koster (1978) among others have pointed out that clausal structures with the grammatical function of subject can appear in postverbal position in English, unlike an NP. This rule of clause movement has been referred to as it-Extrapolation (cf. Rosenbaum (1967)):

- (37) a. [That George was speaking in French] surprised us
 b. Itⁱ surprised us [that George was speaking in French]ⁱ
- (38) a. Mary surprised us
 b. *Itⁱ surprised us Maryⁱ

Null subject languages, as noted, allow postposing to apply to nominal as well as clausal subjects. In this sense, NP and S are not distinguished from one another with respect to optional movement to postverbal position:

- (39) a. [Que en Jordi parlés en francès] ens va sorprendre (cf. (37 a))
 b. Proⁱ ens va sorprendre [que en Jordi parlés en francès]ⁱ
 (cf. (37 b))
- (40) a. La Maria ens va sorprendre (cf. (38 a))
 b. Proⁱ ens va sorprendre la Mariaⁱ

Extrapolation of sentential arguments is required when the

clause is the subject of a sentential subject, as in (41 a), and also when it appears in the subject position of the clausal complement of a nominal as in (42 a):

- (41) a. (??)* [Que [que pro dormi] et sorprengui] resulta curiós
 '[That[that (I) sleep] surprises you] results curious'
- b. [Que [proⁱ et sorprengui [que dormi]ⁱ]] resulta curiós
 '[That [(it)ⁱ surprises you [that (I) sleep]ⁱ] results curious'
- (42) a. *[La idea de'n Joan que [que dormis] et perjudicarà] em sembla absurda
 '[John's idea that [that (you) sleep] will harm you] seems absurd to me'
- b. [La idea de'n Joan que [proⁱ et perjudicarà [que dormis]ⁱ]] em sembla absurda
 '[John's idea that [(it)ⁱ will harm you [that (you) sleep]ⁱ]] seems absurd to me'

A clausal argument cannot appear in subject position when a wh-element is in COMP, irrespective of whether wh-movement has triggered V fronting¹⁰ (irrelevant details omitted):

- (43) a. (*)??Des de quan [que arregli la bicicleta] ha demostrat la seva habilitat
 'Since when does [that (he/she) fix the bicycle] prove his/her ability'

- b. Des de quan [proⁱ ha demostrat la seva habilitat [que arregli la bicicleta]ⁱ]
 'Since when does [(it)ⁱ prove his/her ability [that (he/she) fix the bicycle]ⁱ']

- (44) a. *A qui [va suggerir_v [[que es repetissin aquells fenomens] [e]_v una solució]]

'To whom [suggested_v [[that these phenomena repeated] [e]_v a solution]]

- b. A qui [va suggerir_v [proⁱ [e]_v una solució [que es repetissin aquells fenomens]ⁱ]]

'To whom [suggested_v [(it)ⁱ [e]_v a solution [that these phenomena repeated]ⁱ]]'

The same structures are grammatical when an NP argument is in the subject position which is occupied by a sentence in the examples (41 a)-(44 a) above. Extraposition is optional in these cases, as the (b) examples below indicate:

- (45) a. [Que [aquestes coses] et sorprenguin] resulta curiós

'[That [these things] surprise you] results curious'

- b. [Que [proⁱ et sorprenguin [aquestes coses]ⁱ]] resulta curiós

'[That [(it)ⁱ surprise you [these things]ⁱ]] results curious'

- (46) a. [La idea de'n Joan que [algú que no coneixes] et perjudicarà]
em sembla absurda
'[John's idea that [someone you don't know] will harm you] seems
absurd to me'
- b. [La idea de'n Joan que [proⁱ et perjudicarà [algú que no
coneixes]ⁱ]] em sembla absurda
'[John's idea that [(it)ⁱ will harm you [someone you don't
know]ⁱ]] seems absurd to me'
- (47) a. Des de quan [els científics] han demostrat la seva hipòtesi
'Since when [the scientists] have proved his/her hypothesis'
- b. Des de quan [proⁱ han demostrat la seva hipòtesi [els científics]ⁱ]
'Since when [(it)ⁱ have proved his/her hypothesis [the scientists]ⁱ']'
- (48) a. A qui [va suggerir_v[[la Pilar] [e]_v una solució]]
'To whom [suggested_v[[Pilar] [e]_v a solution]]'
- b. A qui [va suggerir_v [proⁱ [e]_v una solució [la Pilar]ⁱ]]
'To whom [suggested_v [(it)ⁱ [e]_v a solution [Pilar]ⁱ]]'

The ungrammaticality of the English equivalents of (41 a)-(44 a) has been addressed by several authors in different theoretical frameworks, among them Emonds (1976) and Koster (1978)¹¹. Although their analyses differ in significant points, both derive their respective accounts

from conditions on the expansion of the categorial nodes in the base.

Koster (1978) suggested that the base component requires an NP in subject position by excluding an expansion such as (49):

(49) * NP \rightarrow S'

He argued that there are no subject sentences¹². In order to explain the grammaticality of structures like (37 a) above, in which the clausal argument seems to be in subject position, Koster considered that sentences in clause initial position are Topics, and the representation of (37 a) must conform to the structure (50 a) and not that of (50 b):

(50) a. [That George spoke in French]_i [[e]_i surprised us]
S

b.*[[That George spoke in French] surprised us]
S

According to Koster, the structure in (50 a) is generated at D-Structure as an extension of the base rules, the subject clause being a satellite which binds an empty category in [NP,S] position. This analysis lead him to claim that obligatory extraposition as exemplified in (41)-(44) is not the outcome of a movement rule, but that extraposed clauses are base-generated at the end of VP. Since the rule of extraposition involved elements in [NP,S] position, and satellite structures such as subject sentences are not internal to S, extraposition wouldn't apply to them.

Emonds (1976), on the other hand, argued that all instances of S'

internal to S (i.e., subjects or objects) must undergo topicalization or extraposition. He pointed out moreover that extraposition to a VP final position can apply only once. The reason is that sentential subject postposing is ungrammatical in structures where the verb takes two sentential arguments, one with the grammatical function of subject and the other with that of object.¹³ Similar unacceptable structures obtain in Catalan:

(51) a. [Que ens ocultin la informació] demostra [que estan al servei d'altres interessos]

'[That (they) hide the information] proves [that (they) serve other interests]'

b. (*)?? [proⁱ demostra [que estan al servei d'altres interessos] [que ens ocultin la informació]ⁱ]

'[(it)ⁱ proves [that (they) serve other interests] [that (they) hide the information]ⁱ']'

An account of the ungrammatical sentences along the lines of Emonds (1976) or Koster (1978) would not be consistent with the GB framework. According to the hypothesis that D-Structure is a pure representation of GF- θ , and on the assumption that the base component is category-neutral, subordinate clauses receiving a θ -role assigned by a predicate should be base-generated in argument position. The obligatoriness of clause movement observed above must be derived from the requirements of a subcomponent of grammar other than from restrictions

on the X' expansion.

Stowell (1981) has accounted for the distribution of clausal complements within the theory of Case. He points out that Case appears to mark a disjunction between the categories that assign this feature and the ones that may receive it. He assumes that this disjunction is represented by the values [$\pm N$], and considers Case features and Case-assigning features as conflicting values, so that they are unable to appear in the same categorial matrix. The grammar expresses this conflict by means of the Case Resistance principle, enunciated in the last Chapter and repeated below as (52):

- (52) Case may not be assigned to a category bearing a Case assigning
feature (cf. Stowell (1981),146)

According to Stowell, clausal and nominal arguments share the features [+N, -V]. This characterization would account for the fact that they form a natural class, given their parallelism as receivers of a θ -role:

- (53) a. La Isabel ignorava [els motius del seu refús]
'Elizabeth ignored [the reasons of his/her refusal]'
- b. La Isabel ignorava [que havíem sortit]
'Elizabeth ignored [that (we) had left]'
- (54) a. [La teva actitud] mostra una certa desconfiança
'[Your attitude] shows a certain distrust'

- b. [Que li haguessis parlat així] mostrava una certa desconfiança
 '[That (you) had talked to him/her in such a way] showed a
 certain distrust'

An additional feature must distinguish NP from S, given the differences in their internal structure and grammatical properties. Stowell argues that clausal structures are specified for [Tense], which appears, according to him, both in finite and infinitive clauses.¹⁴ This feature distinction enables Stowell to capture the effects of the Case Resistance principle on English clausal complements. Given that he considers the [Tense] operator as a potential Case-assigner, the principle will apply, according to him, to those structures marked as [+Tense], but not to those negatively specified for this feature or lacking it, namely nouns and gerunds.

As noted above, it is assumed that all lexical elements that are arguments of predication need to be assigned Case. In order to fulfill the requirements of the visibility condition and the restrictions imposed by the Case Resistance principle, Stowell argues that [+Tense] arguments must move to a non-A-position. Sentential subjects would be topicalized or extraposed, and object clauses would adjoin to VP, binding a variable trace. The variable would be assigned Case under adjacency to the governor and the chain formed by the adjoined clause and its bound trace would satisfy the visibility condition.

Stowell's hypothesis accounts then for the obligatoriness of extraposition of clausal subjects when topicalization cannot apply,

as in (41)-(44) above, and captures the fact that sentential complements always follow other subcategorized complements of VP, as observed previously in Emonds (1976). The unacceptability of (51 b) above would result from the combined effects of the Case Resistance principle, which forces argument clauses to undergo movement to an A'-position, and a well-formedness condition restricting multiple adjunction to a base-maximal node at S-Structure. I will return to this well-formedness condition further on because it makes some predictions relative to subject extraction in the null-subject languages.

Additional support for Stowell's hypothesis that sentential arguments cannot appear in positions where Case is structurally assigned is provided by the contrasts in acceptability which obtain with main predicates taking a small clause, depending on the nature (i.e., clausal or nominal) of the argument subject of the secondary predicate.

In examples (5)-(8) above, sentences exhibiting predicates in the passive form and a small clause were considered. The contrasts in acceptability relative to the position of the nominative argument in passive structures showed that the category marked with nominative Case could not be assigned Case in its base-generated position. Given that clausal and nominal arguments behave alike in cases like (55) below, I assumed that every argument, and not only NPs, must be subject to the Case filter. If clauses did not need to receive Case, (55 b) would be grammatical in contrast to (55 a):

- (55) a. * Fou considerat [l'acusat] innocent (cf. (5 a))
 '(It) was considered [the accused] innocent'

- b. * Fou declarat [que protestéssim] il.legal (cf. (7 a))
 '(It) was declared [that (we) protested] illegal'

The argument must move to [NP,S] to receive Case. If it is a nominal it may subsequently adjoin to VP in Romance; if it is clausal it must move from [NP,S] to a peripheral position due to the Case Resistance principle, according to the hypothesis:

- (56) a. [L'acusat]_i fou considerat [e]_i innocent
 '[The accused]_i was considered [e]_i innocent'
- b. [Que protestéssim]_i [[e]_i fou considerat [e]_i il.legal]_S
 '[That (we) protested]_i [[e]_i was considered [e]_i illegal]'
- (57) a. Proⁱ fou considerat [e]_i innocent [l'acusat]_iⁱ
 '(It)ⁱ was considered [e]_i innocent [the accused]_iⁱ'
- b. Proⁱ fou declarat [e]_i il.legal [que protestéssim]_iⁱ
 '(It)ⁱ was considered [e]_i illegal [that (we) protested]_iⁱ'

Passive structures were compared to their active counterparts (i.e., example (6) repeated below as (58 a)) to show that in the active form of the main predicate an NP argument subject of a small clause receives Case in its base-generated position, that is, it is structurally Case-marked by the verb:

- (58) a. Van considerar [l'acusat] innocent
'(They) considered [the accused] innocent'
- b. El tribunal ha declarat [la intervenció del Govern] inconstitucional
'The tribunal has declared [the intervention of the Government] unconstitutional'

The grammaticality exemplified in (58) obtains only when the argument structurally Case-marked is an NP, not when it is a clause:

- (59) a. * Van considerar [que vinguéssim] inútil
'(They) considered [that (we) came] useless'
- b. * El tribunal ha declarat [que el Govern intervingui] inconstitucional
'The tribunal has declared [that the Government intervene] unconstitutional'
- (60) a. Van considerar [e]_i inútil [que vinguéssim]_i
'(They) considered [e]_i useless [that (we) came]_i'
- b. El tribunal ha declarat [e]_i inconstitucional [que el Govern intervingui]_i
'The tribunal has declared [e]_i unconstitutional [that the Government intervene]_i'

These examples show that, while all arguments need to be in a

Case-marked chain, NPs and clauses behave differently if base-generated in a position where Case is directly assigned. The ungrammaticality of (59) as opposed to (58) indicates that clauses must undergo obligatory movement (i.e., as in (60)) as required by the Case Resistance principle.

The contrasts cannot be attributed to 'heaviness' or, say, to the presence in a Case-marked position of a category taking a subject, since in both (58 b) and (59 b) for example, a nominal and a sentence contain an argument fulfilling this grammatical function. However, while the head NP does not assign structural Case to its subject, the head of S contains a structural Case assigner, namely [+AGR]. Then S, but not NP, must be sensitive to Case Resistance¹⁵.

Cliticization shows, on the other hand, that NP and S subjects of a small clause receive Case. It was mentioned above that a neutral proform of the accusative clitic, which stands for sentential arguments, exists in Catalan. Recall that all NPs are marked for gender in Romance. (58) and (59) may show cliticization according to the gender/genderless character of the argument:

(61) EIⁱ van considerar [e]ⁱ innocent (l'acusat) (cf. (58 a))
 '(They) himⁱ considered [e]ⁱ innocent (the accused)'

(62) El tribunal laⁱ ha declarat [e]ⁱ inconstitucional (la intervenció
 del Govern) (cf. (58 b))
 'The tribunal herⁱ has declared [e]ⁱ unconstitutional
 (the intervention of the Government)

- (63) Hoⁱ van considerar [e]ⁱ inútil (que vinguéssim) (cf. (59 a))
 '(They) it_[neut]ⁱ considered [e]ⁱ useless (that (we) came)'
- (64) El tribunal hoⁱ ha declarat [e]ⁱ inconstitucional (que el Govern
 intervingui) (cf. (59 b))
 'The tribunal it_[neut]ⁱ has declared [e]ⁱ unconstitutional
 (that the Government intervene)'

4.1. Infinitive clauses

All examples in the last section showing the obligatoriness of movement for clausal complements have been constructed with [+AGR] sentences namely, indicative or subjunctive. If an infinitive clause appears in the position of the sentence exhibiting [+AGR] features, movement is optional, and both (a) and (b) in the examples below are grammatical¹⁶:

- (65) a. [Que [PRO haver arribat tard] et sorprengui] resulta curiós
 '[That [PRO to have arrived late] surprises you] results
 curious'
- b. [Que [proⁱ et sorprengui [PRO haver arribat tard]ⁱ] resulta
 curiós
 '[That [(it)ⁱ surprises you [PRO to have arrived late]ⁱ] results
 curious'

- (66) a. [La idea de'n Joan que [PRO anar al cinema] et perjudicarà]
em sembla ridícula
'[John's idea that [PRO to go to the movies] will harm you]
seems ridiculous to me'
- b. [La idea de'n Joan que [proⁱ et perjudicarà [PRO anar al cinema]ⁱ]]
em sembla ridícula
'[John's idea that [(it)ⁱ will harm you [PRO to go to the movies]ⁱ]]
seems ridiculous to me'
- (67) a. Des de quan [PRO parlar d'aquests temes] li sembla inconvenient
'Since when does [PRO to talk about these issues] seem
inconvenient to him/her'
- b. Des de quan [proⁱ li sembla inconvenient [PRO parlar d'aquests
temes]ⁱ]
'Since when does [(it)ⁱ seem inconvenient to him/her [PRO to talk
about these issues]ⁱ']
- (68) a. Van considerar [PRO telefonar-nos] completament inútil
'(They) considered [PRO to call us] absolutely useless'
- b. Van considerar [e]_i completament inútil [PRO telefonar-nos]_i

Similarly, sentential subject extraposition can apply if the clausal arguments of a transitive verb are both in the infinitive, contrasting with the unacceptability of similar structures with [+AGR]

clausal arguments exemplified in (51) above:

(69) a. [PRO poder córrer 13 km. al dia] demostra [PRO estar en molt bona forma física]

'[PRO to be able to run 13 km a day] proves [PRO to be in good physical shape]'

b. proⁱ demostra [PRO estar en molt bona forma física] [PRO poder córrer 13 km. al dia]ⁱ

'(it)ⁱ proves [PRO to be in good physical shape] [PRO to be able to run 13 km. a day]ⁱ'

These examples show that infinitive clausal arguments behave like NPs in Catalan, as opposed to indicative and subjunctive argument sentences.

Since indicative and subjunctive clauses are distinguished from infinitive structures by the specification of [+AGR], the Case-assigning element in the head of S, I will relate the difference in grammaticality with respect to optional versus obligatory extraposition to the specification of those features in the head of INFL.

Infinitive clauses in Catalan do not appear to behave as their English counterparts with respect to obligatory extraposition¹⁷. This may correlate with the fact that infinitive morphology in Catalan has the same properties of gerund inflection in English for the purposes of nominalization.

Gerund morphology does not admit nominalization in Catalan, and

its function seems to be limited almost exclusively to that of marking predicates of small clauses (Zagona (1982)). Infinitive forms, on the contrary, create structures which may be considered neutralized categories between S and NP¹⁸. This would allow infinitives to receive structural Case, and appear with a possessive subject and a determiner, or be modified by an adjective, as contrasted with the corresponding gerund:

(70) a. Un constant volar d'abelles

'A constant to fly of bees'

b. El florir d'aquests arbres

'The to blossom of these trees'

c. El seu anar i venir

'His/her to go and to come'

(71) a.*Un constant volant d'abelles

'A constant flying of bees'

b.*El florint d'aquests arbres

'The blossoming of these trees'

c.*El seu anant i venint

'His/her going and coming'

Stowell attributes to English infinitive sentences the property of being intransitivizers, in the sense that they appear to block Case-assignment. He suggests that this might be related to the fact that

English infinitives have the preposition-like element to in INFL. The property of blocking structural Case-assignment cannot be attributed to Catalan infinitive structures, given that they may appear as governed by a preposition in contexts where an NP, but not a sentence bearing [+AGR] features, is allowed, such as the following:

(72) a. Parlàvem [de [el concert]]

'(We) were talking [about [the concert]]'

b. Parlàvem [de [PRO ajornar la reunió]]

'(We) were talking [about [PRO to postpone the meeting]]'

c.*Parlàvem [de [que el comité ajornarà la reunió]]

'(We) were talking [about [that the committee will postpone the meeting]]'

(73) a. En Jordi es dedicava [a [la fotografia]]

'George devoted himself [to [photography]]'

b. El teu pare es dedicava [a [PRO col.leccionar segells]]

'Your father devoted himself [to [PRO to collect stamps]]'

c.*El teu pare es dedicava [a [que col.leccionessis segells]]

'Your father devoted himself [to [that (you) collected stamps]]'

This suggests that infinitivals do not block Case-assignment, nor function as intransitivizers, at least in Catalan. On the contrary, infinitive structures are subject to the Case filter and, moreover, they can appear in structural Case-marked argument positions as shown by

the grammaticality of (65 a)-(69 a) vs. the unacceptability of their [+AGR] counterparts in parallel structures.

5. Subject extraction and the constraint against multiple adjunction

Emonds (1976), Stowell (1981) point out that extraposition of the sentential subject of predicates taking a sentential object triggers ungrammaticality (cf. (51)). They suggest that a restriction against multiple adjunction to the same base-maximal projection must apply at S-Structure. On the assumption that this constraint may operate, it would have certain effects for the grammar of Catalan, Italian and Spanish with respect to subject postposing. As known, the NP subject can appear freely in postverbal position in the null-subject languages, and it is assumed that a postposed external argument adjoins to the VP (cf. (Rizzi (1982 a))):

- (76) $\left[\underset{\text{S}}{\text{pro}}^i \left[\underset{\text{VP}}{\left[\text{dormia} \right]} \underset{\text{VP}}{\left[\text{la Isabel} \right]}^i \right] \right]$
 '(it)ⁱ was sleeping Elizabethⁱ'

If the unacceptability of multiple extraposition obeys a constraint against multiple adjunction, parallel unacceptable sentences must obtain in structures where the external NP argument is postposed and the internal argument of the predicate is sentential.

D. Salamanca and E. Torrego (p.c.) have observed that subject postposing is highly unacceptable in Spanish when the object VP is

clausal¹⁹. Similar unacceptabilities can be observed in Catalan:

(77) a. La Núria ens havia dit [que en Joan va telefonar]

'Núria had told us [that John called]'

b. (??)* proⁱ ens havia dit [que en Joan va telefonar] [la Núria]ⁱ

'(It)ⁱ had told us [that John called] [Núria]ⁱ,

(78) a. Els teus pares esperaven [que vinguéssim]

'Your parents hoped [that (we) came]'

b. ?? proⁱ esperaven [que vinguéssim] [els teus pares]ⁱ

'(It)ⁱ hoped [that (we) came] [your parents]ⁱ,

The subordinate clauses in the examples above are in the indicative and the subjunctive respectively. There is a contrast in acceptability with subject postposing when the subordinate clausal complement is in the infinitive²⁰:

(79) a. La Núria va prometre [PRO telefonar a les quatre]

'Núria promised [PRO to call at four]'

b. proⁱ va prometre [PRO telefonar a les quatre] [la Núria]ⁱ

'(It)ⁱ promised [PRO to call at four] [Núria]ⁱ,

(80) a. La tormenta l'obligà a [PRO tornar a casa]

'The thunderstorm forced him/her [PRO to come back home]'

b. proⁱ l'obligà a [PRO tornar a casa] [la tormenta]ⁱ

'(It)ⁱ forced him/her [PRO to come back home] [the thunderstorm]ⁱ,

The observed contrasts between (77)-(78) and (79)-(80) might be considered as evidence for the Case Resistance principle applying to [+AGR] clauses and the restriction against multiple adjunction. It must be pointed out, however, that if the order [sentential argument - post-posed subject] is reversed (77 b)-(78 b) the sentences have a higher degree of acceptability²¹. This fact seems to constitute a counter-argument to the constraint against multiple adjunction, but not to the Case Resistance principle:

(81) proⁱ ens havia dit [la Núria]ⁱ [que en Joan va telefonar]
'(It)ⁱ told us [Núria]ⁱ [that John called]'

(82) ? proⁱ esperaven [els teus pares]ⁱ [que vinguéssim]
'(It) hoped [your parents]ⁱ [that (we) came]'

The grammaticality or quasi-acceptability of those constructions may have two possible explanations: either the subject and the internal argument were both adjoined to the VP, as represented in (83), or the verb might have been optionally preposed, as shown in (84):

(83) [proⁱ [[[ens havia dit [e]_j] [la Núria]ⁱ] [que en Joan
S VP VP VP
va telefonar]_j]] (cf. (81))

(84) [Ens havia dit_v [la Núria [[[e]_v [e]_i] [que en Joan va
S S VP VP
telefonar]_i]] (cf. (81))

Noticing the unacceptability of structures like (77 b) and

(78 b) above, Bouchard (1982) points out that this fact may raise some questions with respect to the conditions under which extraction of the subject is possible in the null-subject languages. Those grammars show, among other properties, an apparent violation of the 'that-trace' filter:

- (85) Qui dius que ha telefonat
'Who do you say that called'

In Rizzi(1982a) it is suggested that null-subject languages may obey the 'that-trace' filter, although the effects of it may be circumvented by the option of subject postposing prior to extraction in the case of wh-movement. Rizzi(1982a) assumes that the subject is adjoined to the VP prior to moving to COMP, leaving a variable in the VP-adjoined position, which may be properly governed by the verb.

If the unacceptability of (77 b) and (78 b) is due to a constraint preventing multiple adjunction, and the acceptability or quasi-acceptability of (81)-(82) is attributed to the application of optional V-fronting, by hypothesis, long extraction of the subject should be possible from [NP,S] position.

In Picallo (1984) it is pointed out that a contrast regarding extraction of the subject can be observed for movement rules applying at the LF component, depending on the mood (indicative or subjunctive) of the clause from which the element in [NP,S] position undergoes extraction. Given that long extraction of the subject seems possible in indicative but not in subjunctive clauses, it is suggested that the INFL node of indicative sentences, which contains fully specified

(i.e., unlinked) features for [Tense] may be a proper governor, but not INFL [Tense] of subjunctive sentences. Thus, only long extraction from the [NP,S] in subjunctive sentences would violate the ECP²².

Whether this claim proves to be correct or not, notice that an apparent 'that-trace' filter violation with long-distance wh-movement obtains in indicative as well as in subjunctive clauses:

(86) [Qui_i [deia en Pere [que [[e]_i sabia [que en Jordi telefonaria]]]]]
IND

'Who_i did Peter say that [e]_i knew that George would call'
IND

(87) [Qui_i [esperava en Pere [que [[e]_i digués [que podíem sortir]]]]]
SUB

'Who_i did Peter hope that [e]_i said that (we) could leave'
SUB

According to the hypotheses that subject postposing might not be able to apply in (86)-(87) due to a restriction against multiple adjunction, and that the subject position is not properly governed, in subjunctive sentences in particular, the grammaticality of (86) and (87) should be possible by means of another mechanism available in the grammar.

Bouchard (1982) suggests that the 'that-trace' filter effect is avoided in the null-subject languages by resorting to the resumptive pronoun strategy: a phonologically-null pro would be in the [NP,S] position in those cases, to which the wh-phrase would be related at LF. Bouchard's hypothesis might not be applicable, however, in Spanish or Catalan. Wh-movement applies in these cases in successive cyclic steps

and obeys subadjacency (cf. Torrego (1984)). Evidence for this claim is given by the fact that the successive movements of the wh-phrase trigger V-fronting at each of the corresponding S' cycles, as shown by the contrasts between (88 a) and (88 b)

- (88) a. * Qui_i en Pere deia que la Núria pensava que nosaltres creiem que [e]_i telefonaria
 'Who_i Peter said that Núria thought that we believed that [e]_i would call'
- b. Qui_i deia en Pere que pensava la Núria que creiem nosaltres que [e]_i telefonaria
 'Who_i said Peter that thought Nuria that believed we that [e]_i would call'

Movement from the most embedded [NP,S] position to the highest COMP through the intermediate COMP positions has triggered V-adjunction to S, and the order subject-verb must appear inverted. If the wh-phrase and the most embedded subject position were not related by an index chain created by movement, but by the resumptive pronoun strategy, (88 a) should be grammatical. The resumptive pronoun strategy does not involve movement. Therefore the subject-verb inversion exemplified in (88 b) should appear as optional and no contrast would obtain relative to word order. The fact that V-fronting must occur under subadjacency requirements indicates that successive cyclic movement is involved in wh-extraction of the subject²³.

Suppose that we assume with Emonds (1976) and Stowell (1981) that double adjunction to a base maximal node is not possible at S-Structure. Then subject postposing may not apply if, under Case Resistance effects, a sentential complement adjoins to VP. A third alternative emerges which could account for the apparent 'that-trace' filter violations in examples like (86) and (87). V-fronting seems to be possible in Catalan in declarative sentences with varying degrees of acceptability (cf. (81) and (82) above). In the (b) examples below the canonical order subject-verb appears inverted and grammaticality is preserved:

- (89) a. Els geòlegs van predir l'erupció del volcà
'The geologists predicted the eruption of the volcano'
- b. Van predir els geòlegs l'erupció del volcà
'Predicted the geologists the eruption of the volcano'
- (90) a. Els viatgers esperaven l'arribada del tren de les 12
'The travellers were waiting for the arrival of the 12 o'clock train'
- b. Esperaven els viatgers l'arribada del tren de les 12
'Were waiting the travellers for the arrival of the 12 o'clock train'
- (91) a. En Joan llegia el diari cada dia
'John read the newspaper every day'
- b. Llegia en Joan el diari cada dia
'Read John the newspaper every day'

Some evidence related to extraction seems to show that this word order might be the outcome of a syntactic rule of V-movement. Cinque (1980) has argued that the subject of a complex NP may be extracted in Italian. A parallel type of extraction is possible in Catalan as the following examples show:

(92) a. Ha llegit algunes novel·les de Rodoreda

'(He/she) has read some novels of (=by) Rodoreda'

b. De qui ha llegit algunes novel·les

'Of (=by) whom has (he/she) read some novels'

(93) Aquella era l'escriptora de qui ha llegit algunes novel·les

'That was the writer of whom (he/she) has read some novels'

Torrego (1984) assumes that the trace of a moved verb is not a proper governor. An object NP cannot wh-move out of a clause where a wh-element in COMP has triggered V-fronting:

(94) * Quin llibre_j [no recordes [qui_i [llegia_v [[e]_i [e]_v [e]_j]]]]

'Which book_j [don't (you) remember [who_i [read_v [[e]_i [e]_v [e]_j]]]]'

She suggests that the ungrammaticality exemplified in (94) is the result of an ECP violation by the trace in object position [e]_j. Movement of the subject qui_i (who_i) to COMP has triggered V-fronting leaving a trace [e]_v in the VP which may govern, but not properly govern, the trace of the internal argument moved to the highest COMP. If in the

examples (89 b)-(91 b) the verb has undergone optional movement of adjunction to S, it must have left a trace in its base-generated position, which according to Torrego's hypothesis may govern, but not properly govern the object NP.

Huang (1982) has suggested that a condition on extraction may apply in the syntactic component. This condition is parallel to the ECP and also involves the notion of proper government:

(95) Condition on Extraction Domains (CED): A phrase A may be extracted out of a domain B only if B is properly governed.

(cf. Huang (1982), 505)

Huang argues that this condition on extraction accounts for a general asymmetry between complements and non-complements, namely that extraction out of a non-lexically governed domain (i.e., a non-complement) is ungrammatical, independently of whether the trace of the extracted element appears itself to be properly governed. This condition must then apply to the complements of declarative sentences with a fronted verb. Notice that, although the NP object in (89)-(90) is an internal argument of V it must behave as a non-complement in the (b) cases, contrary to the (a) counterparts. Extraction of the subject of the complex NP has to be grammatical in (89 a)-(90 a) but unacceptable in (89 b)-(90 b) according to the hypothesis. This prediction can only be tested with relative clauses because wh-question extraction in Catalan and Spanish would require V-fronting obligatorily; as shown by the contrasts in (96) below:

- (96) a. La Isabel ha llegit algunes novel·les de Rodoreda
'Elizabeth has read some novels of (=by) Rodoreda'
- b. De qui ha llegit la Isabel algunes novel·les
'Of (=by) whom has read Elizabeth some novels'
- c. *De qui la Isabel ha llegit algunes novel·les
'Of whom Elizabeth has read some novels'

In the examples (89) and (90) above, the most embedded NP marked with the preposition de can only be interpreted as the subject of the complex NP object. As Huang (1982) hypothesis predicts, relativization is possible only in cases where subject and verb appear in their canonical order but not where they are inverted²⁴:

- (97) a. Aquest es el volcà del qual els geòlegs van predir l'erupció
'This is the volcano of which the geologists predicted the eruption'
- b. *Aquest es el volcà del qual van predir els geòlegs l'erupció
'This is the volcano of which predicted the geologists the eruption'
- (98) a. Aquest es el tren del qual els viatgers esperaven l'arribada
'This is the train of which the travellers were waiting for the arrival'
- b. *Aquest es el tren del qual esperaven els viatgers l'arribada
'This is the train of which were waiting the travellers for the arrival'

Consider again examples of the type (86)-(87) above, repeated below as (99) and (100):

(99) Qui_i deia en Pere que [[e]_i sabia [que en Jordi telefonaria]]
IND

'Who_i did Peter say that [[e]_i knew [that George would call]]'
IND

(100) Qui_i esperava en Pere que [[e]_i digués [que pro sortíssim]]
SUB

'Who_i did Peter hope that [[e]_i said [that (we) leave]] '
SUB

As said, V-adjunction triggered by wh-movement obeys cyclicity and subjacency. In structures like (99) and (100) movement of the wh-phrase in one step to its final position is allowed, since S is not a bounding node in Italian, Spanish or Catalan (cf. Rizzi (1982a), Torrego (1984)).

Suppose, however, that a 'that-trace' filter violation might still be avoided in those cases by resorting to V-fronting. This could be triggered by movement of the wh-phrase to its immediately dominating COMP prior to proceeding to the highest COMP node, or by an independent Move α rule applied to a projection of V, a possibility which might be available in the grammar and that would have the same effects as the subject postposing mechanism argued for in Rizzi (1982a) with respect to the ECP²⁵. Then the S-Structure representation of (99) and (100) would be represented as follows (irrelevant details omitted):

(101) Qui_i deia en Pere que [sabia_S [[e]_S [e]_V [que en Jordi telefonaria]]]

'Who_i did Peter say that [knew_S [[e]_S [e]_V [that George would call]]]'

(102) Qui_i esperava en Pere que [digués_S [[e]_S [e]_V [que pro sortíssim]]]

'Who_i hoped Peter that [said_S [[e]_S [e]_V [that (we) leave]]]'

Thus, V-preposing might have applied as a 'last resort' rule, if multiple adjunction to a base-maximal node (i.e., the most embedded [+AGR] clause and the extracted wh-subject) would be precluded, as Emonds (1976) and Stowell (1981) suggest.

Some indication that elements in [NP,S] may be extracted in structures where the verb has been preposed is given by the contrast in grammaticality of the following sentences, which show double wh-extraction from the most embedded clause with an ergative verb in the head of VP:

(103) * Quants_i no sabia en Joan amb qui_i n'havien sortit [e]_i [e]_j

'How many_i didn't John know with who_j NE had left [e]_i [e]_j'

(104) Quants_i no sabia en Joan amb qui_j havien sortit [e]_i [e]_j

'How many_i didn't John know with who_j had left [e]_i [e]_j'

En/ne cliticization in the ungrammatical example (103) indicates

that the wh-phrase has been extracted from [NP,VP] position, where it originates (cf. Rizzi (1982a)). Movement to the lower COMP of the wh-phrase amb qui_j (with who_j) has triggered V-fronting. If the trace of a fronted verb is not a proper governor, the ungrammaticality of (103) follows from a violation of the ECP for [e]_i, as in the example (94) above.

The grammaticality of (104), in which en/ne does not appear, indicates that extraction has taken place from [NP,S]. In this position the trace of the wh-phrase_i can be properly governed by the preposed verb. Movement to [NP,S] from [NP,VP] is possible in those cases because the subject position is a non- θ -position.

Notice, however, that these examples cannot be considered exactly parallel to (101) and (102). In (103), (104) V-fronting is obligatory due to the presence of a wh-element in COMP and, moreover, the ECP in its most restricted version of Stowell (1981) is fulfilled because the phrase extracted from [NP,S] is an internal argument of the preposed verb.

6. Conclusions

The main purpose of this Chapter has been to provide independent empirical support for the hypothesis suggested in Chapter II that the subject-object asymmetry with respect to obviation in subjunctive sentences may be accounted for by a principle of grammar. I argued

that [+AGR] argument clauses (indicative and subjunctive) must undergo an obligatory movement to a peripheral position. Movement affects c-command relationships, and hence accessibility, between an internal NP of a predicate subcategorizing as well for a subjunctive clause and the subject of the adjoined sentence.

This claim has been based on an hypothesis of Stowell (1981), namely the Case Resistance principle, which establishes that categories bearing a Case assigning feature may not be assigned case directly. The Case Resistance principle would explain that [+AGR] argument sentences, while fulfilling the visibility condition contingent on Case-marking, may not remain in positions where Case is structurally assigned.

Direct assignment of Case or indirect assignment of this feature through chain formation accounts for a further asymmetry for obviation which was observed in the cases where Case-marking obtains through co-superscripting with an expletive element. It was pointed out that internal clausal arguments in the subjunctive of ergative-like predicates contrast with the internal clausal arguments of transitive verbs with respect to possible coreference of their subject with an internal NP in the main clause (irrelevant details omitted):

- (105) [pro_1^j [li_i agradava que [pro_{*i} cantés] j]]
 S_1 VP S_2 SUB
- '[(it) j [was pleasant to him/her $_i$ that [(he/she) $_{*i}$ sang] j]]'
- S_1 VP S_2 SUB
- (106) [Jo [[li_i demanava [e] $_j$] [que[pro_i cantés]] $_j$]]
 S_1 VP* VP S_2 SUB
- '[I [[asked him/her $_i$ [e] $_j$] [that[(he/she) $_i$ sang]] $_j$]]'
- S_1 VP* VP S_2 SUB

In (105) S_2^j is not affected by the Case Resistance principle because the verb is an ergative-intransitive predicate. Hence, S_2^j does not undergo adjunction.

In (106) the subordinate S_2 is directly assigned accusative Case by the verb, and must move to a VP*-adjoined position according to the Case Resistance principle. Consequently li (to him/her) in (105) is accessible to pro in $[NP, S_2]$ in the binding domain S_1 and the arguments must be disjoint in reference by principle B of the binding theory. In (106) li (him/her) is not accessible to the subject of the adjoined category, in which case pro may (co)refer freely.

The distribution of obviation in subjunctive clauses follows then from the interaction of the theory of binding, as proposed in Chapter II, and the principles related to Case and θ -theories discussed in this chapter.

Notes to Chapter Three

¹The ungrammaticality of expletive PRO as a consequence of the visibility hypothesis was first pointed out, I believe, by L. Burzio. See Safir (1982 b) for discussion of this issue from a different point of view.

²According to the hypothesis of Sportiche (1983) that the theory of Control is the theory of non-overt operators, these structures could perhaps also be ruled out independently of the Case filter. Sportiche considers PRO as a variable at the level of LF. The A'-chain $\{O_i, PRO_i\}$ would be assigned an interpretation by chain composition with another argument in the higher domain, implicit or syntactically specified (cf. Roeper (1983)). Expletive PRO would be excluded in this account because the LF variable would not be licensed by any predicate.

³Recall that the internal argument of an ergative predicate may receive Case in place in the same context (see (146)-(147) in Chapter II). Then, the unacceptability of examples of the type in (5 a) is limited to internal arguments of passive structures, not to nominative internal arguments in general.

⁴Safir (1982 b) argues that only NPs are subject to the Case filter, i.e., clausal arguments cannot be in a Case-marked chain. He assumes that there is no indexing relationship between expletive it (or expletive pro) and an extraposed sentence, the reason being that θ -chains containing an argument which is not the head are excluded by the binding conditions. Since in Safir's system superscripts are excluded and the only type of indexing allowed is that of the theory of anaphora, it follows that from this point of view an argument must occupy the head of its chain to avoid a binding violation.

I cannot offer an alternative to invoking the Case filter to rule out (2 b) as opposed to (3 b). In both cases the argument clause occupies the head of the chain, and the relationship between the clause and its trace does not violate the binding conditions. Similar considerations related to the theory of Case would apply to the contrasts exemplified in (7) and (8).

⁵See Safir (1982 b) for discussion.

⁶There are two forms for the verb to be in Catalan and Spanish: ésser/ser and estar. Their distribution and respective properties slightly differ in the two languages, and it would take us too far afield to be described. For the purposes of this discussion, it might be enough to point out that estar in this contexts appears to behave as a Case-assigner taking an AP complement.

⁷I am assuming that the properties of a given item of being a θ -role assigner and a Case assigner are dissociated, and not all θ -role assigners must bear Case-assigning features, although all arguments of predication require a marker of Case. The reason for considering that [+N] categories might not have Case-assigning features is that they do not appear to be sensitive to the Case Resistance principle. (see fn.15).

N. Chomsky (p.c.) suggests that another way to account for the fact that [+N] categories are not subject to the CRP would be to consider [+N] categories as intrinsic Case-assigners. The principle of Case Resistance would hold only for categories which assign Case structurally, not for those which assign inherent Case.

I cannot offer a proof to determine which of the two alternatives is more adequate.

⁸It may be asked why the grammar would not allow structures like (36) to appear 'subjectless', with default Case-marking for the internal argument. The visibility condition would be then fulfilled:

(i) *[[fou considerat de la proposta]]
 S VP
 '[[was considered of the proposal]]'

(ii) *[[was seen John's]]
 S VP

A possible explanation for the unacceptability of (i)-(ii) can be given on the basis of the Predicate-linking rule (Rothstein (1983)), from which the (Extended) Projection principle is derived. According to Zagana (1982) and Rothstein (1983) a subject position is required in order to satisfy a condition of well-formedness which states that predicatehood must be syntactically satisfied by linking predicates with syntactic subjects (argumental or pleonastic).

If, on the other hand, a principle of Full Interpretation disallows Case-marked elements which are not part of an argument chain, it follows

that the impossibility of (36) and hence, the required nominative Case-marking for the internal argument of a passive structure, results from two principles of grammar that operate in those constructions: the (Extended) Projection principle and Full Interpretation.

⁹It must be pointed out that in Spanish, unlike in Catalan and Italian, de (of) insertion applies to all arguments of a[+N] category, tensed and untensed clauses as well as NPs:

- (i) a. Juan está contento de [que hayas llegado]
'John is happy of [that (you) have come]'
- b. Pilar está orgullosa de [PRO haber ganado]
'Pilar is happy of [PRO to have won]'
- c. Cecilia estaba segura de [su éxito]
'Cecilia was sure of [his/her success]'
- (ii) a. El temor de [que enfermara]
'The fear of [that (he/she) fall ill]'
- b. Su deseo de [PRO salir corriendo]
'His/her desire of [PRO to leave quickly]'
- c. Las pruebas de [el juicio]
'The proofs of [the trial]'

The contrast between Spanish and Catalan/Italian with respect to de (of) insertion has been addressed in Argente (1976). Noting that tensed sentential complements of [+N] categories can be cliticized with en/ne in Catalan and Italian, unlike in Spanish, he suggests that the preposition de might have been deleted at the PF level in the former languages. Spanish, as contrasted with Catalan and Italian, possesses a much more reduced clitic system. In Spanish it is not possible, for example, to express morphological genitive Case by means of a clitic (i.e., en/ne). One could speculate that the presence of the preposition de (of) marking [+AGR] sentential complements might be related to this factor.

¹⁰See Torrego (1984)

¹¹See also Kuno (1973) and Reuland (1981)

¹²See however Piera (1979)

¹³Emonds attributes this observation to E. Klima

¹⁴The categories that may function as arguments in English sentential structures would be characterized by the following feature content according to Stowell:

- (i) a. Finite clauses : [+N,-V][+Tense][±Past]
 b. To-infinitives : [+N,-V][+Tense] --
 c. Gerunds : [+N,-V] -- --
 d. NPs : [+N,-V][-Tense]

Infinitive clauses are considered [+Tense] forms in his system. He distinguishes them from finite clauses by their lack of [±Past] features, which provide the Tense operator with lexical content and, according to him, assign nominative Case to the subject. As for gerunds, he considers them as differing from clausal structures and NPs in lacking [Tense] entirely, expressing this way their status of a neutralized category between S and NP. See Stowell (1981), (1982) for discussion on the [+Tense] character of infinitives. Unlike him, I am considering that infinitive sentences are untensed.

¹⁵The contrast in grammaticality between (58 b) and (59 b) shows that nominal categories taking an argument morphologically marked for (default) genitive Case and clausal structures with a structural Case-marker in INFL^o do not behave alike with respect to the CRP. For this reason I am considering that nominal categories might not contain Case-assigning features. See fn.7.

¹⁶An equivalent of sentence (44 a) exemplified below as (i b) seems unacceptable if an infinitive sentence is in subject position:

- (i) a. [PRO parlar en públic] produia una certa angoixa al Jordi
 '[PRO to speak publicly] produced a certain anxiety to George'
 b. ??(*) A qui produia [PRO parlar en públic] una certa angoixa
 'To whom produced [PRC to speak publicly] a certain anxiety'

In (i b) the sentence has to be extraposed to obtain full acceptability:

- (ii) A qui [produia_v [proⁱ[e]_v una certa angoixa [PRO parlar en públic]ⁱ]]
 'To whom [produced_v [(it)ⁱ[e]_v a certain anxiety [PRO to speak
 publicly]ⁱ]]'

The unacceptability of (i b) might be due to crossover effects.

¹⁷See Emonds (1976)

¹⁸For extensive discussion on the semi-nominal character of infinitives see Solà (1972) and Hernanz (1982) for Catalan and Spanish respectively.

¹⁹See also Bouchard (1982)

²⁰The main verb is non-restructuring in those constructions.

²¹This was brought to my attention by J. Levin (p.c.)

²²See Picallo (1984) for discussion

²³An alternative account to the one in Torrego (1984) is given in Bouchard (1983). On the assumption that V is the head of S', Bouchard proposes a system of indirect binding via an index-chain formed with the indices of complements entering into the grid of the subcategorized verbs, which would allow long-distance wh-movement. Torrego (1983) has given arguments that Bouchard's hypothesis makes some false predictions relative to wh-movement in infinitive clauses as well as adjuncts. Torrego also points out that Bouchard's indirect binding system, in addition, cannot account for some ECP effects triggered by V-fronting which are accounted for in Torrego (1984)

²⁴Extraction out of a sentential complement of a clause with a preposed verb gives, at best, only marginal results in Catalan, despite the fact that the CED is theoretically not met. I would consider sentences (i b) and (ii b) as grammatical:

- (i) a. Aquesta es la persona que la Isabel esperava que arribés
'This is the person that Elizabeth hoped that would come'
- b.? Aquesta es la persona que esperava la Isabel que arribés
'This is the person that hoped Elizabeth that would come'
- (ii) a. Aquell no era l'article que l'editor va prometre que el diari
publicaria

'That was not the article that the editor promised that the
newspaper would publish'
- b. (?) Aquell no era l'article que va prometre l'editor que el
diari publicaria

'That was not the article that promised the editor that
the newspaper would publish'

²⁵ A question that is left open is whether V-preposing in those cases still fulfills the ECP in Stowell's (1981) version of the principle, which requires lexical government and coindexing (see Chapter II (106)). The projection of V which moves includes the verb and its auxiliary. In Catalan and Spanish, unlike in Italian, the compound auxiliary-verb forms always an indivisible unit. Italian allows auxiliary movement to COMP in certain gerund constructions (cf. Rizzi (1981), Belletti and Rizzi (1981)) which would be ungrammatical in Catalan or Spanish.

N. Chomsky (p.c.) has suggested that the fact that the projection of V which is fronted includes not only the auxiliary but also the head of the predicate might indicate that θ -coindexing is fulfilled.

CHAPTER FOUR

MODAL VERBS AND OPACITY

1. Introduction

In Chapter II it was suggested that the interpretive rules operating at S-Structure --i.e., the binding principles-- appear to have their domain of application as primarily delimited by the scope of a Tense operator. This proposal aimed to account for the phenomenon of required obviative interpretation for the nominative pronominals in subjunctive clauses. It was argued that subjunctive sentences cannot be considered tensed structures in the appropriate sense. The lack of proper tense specification was related to the fact that subjunctives may not appear as root sentences, but always have to be in the domain of a [+Tense] specified S node (an indicative clause) with which they are dependent.

Given that it is in the domain of a 'bound' tense where a disjoint reference interpretation for a subject pronominal is required, it was suggested that the characterization of binding category could be reformulated on the basis of the notion of a Tense-chain containing a governor and an accessible (subject) argument (cf. Chapter II (80)). The application of the binding principles within a domain defined in such terms accounts for the phenomenon of obviation: according to principle B,

(5) Pro_i sentien que [pro_i deguessin produir una falsa impressió]
 IND SUB

'(They) $_i$ regretted that [(they) $_i$ must give a false impression]'
 IND SUB

(6) T_i 'agradava que [pro_i puguessis considerar-lo amic]
 IND SUB

'(It) was pleasant to you $_i$ that [(you) $_i$ could consider him a friend]'
 IND SUB

The verbs inflected for the subjunctive morphology in (4)-(6) constitute a subset of the class of verbal elements which trigger the formation of complex predicates, a phenomenon known as restructuring, which appears to be characteristic of the null-subject languages.

This property of modals of inducing opacity is not shared by other verbal elements which may form a verbal complex with an infinitive verb. Subjunctive clauses exhibiting a non-modal restructuring verb follow the general paradigm exemplified in (1)-(3) above. Their pronominal subject must receive an obviative interpretation with respect to an accessible (subject) argument in the domain of [+Tense], as shown in the following examples:

(7) * En Joan $_i$ desitjava que [pro_i tornés a venir]
 IND SUB

'John $_i$ desired that [(he) $_i$ came back to come]'
 IND SUB

(cf. John desired that he came again)

(8) * [La seva $_i$ insistència que [pro_i la comencessin a demolir]] era
 IND SUB IND
 sospitosa

'[Their $_i$ insisting that [(they) $_i$ started to demolish it]] was
 IND SUB IND
 suspicious'

phenomenon singles out modals from the general class of restructuring verbs. The following section will attempt to provide an explanation, based on structural properties, for why restructuring constructions should bifurcate in this particular respect while behaving all alike with regard to other grammatical processes.

In the course of the discussion evidence will be given suggesting that restructuring --i.e, complex predicate formation-- is not a derived process, but structures exhibiting modal and aspectual verbs are monosentential at every level of representation.

This analysis of restructuring supports the basic assumption of Strozer (1976)¹, who first proposed a monosentential analysis of restructuring for Spanish constructions, and opposes the view that these verbal complexes are derived via transformation.

The chapter will be organized as follows: section 2 will focus on the syntactic and semantic properties of restructuring verbal elements. Special emphasis will be placed on modal verbs. After justifying the hypothesis that modal verbs may appear in INFL, I will address the issue of opacity in section 3.

2. Restructuring verbs

We label 'restructuring' the operation induced by some verbal elements which makes possible an apparent violation of the relation between a predicate and its complements. For the moment I will leave unspecified the nature of this operation. Assume that restructuring

consists of the formation of a complex predicate at some level of grammatical representation.

Two basic types of verbal elements may induce complex predicate formation in the null-subject languages:

(11) (i) Modals and semi-modals such as the Catalan poder (may/can), deure (must), haver de (to have to) and voler (to want).

(ii) A highly idiosyncratic group of verbal elements that will be called Aspectuals, which include, among others, començar a (to start to), acabar de (to finish to), soler (to use to), tornar a (to come back to), anar a (to go to) and venir a (to come to).

From the morphological point of view, modal and aspectual verbs might be considered as included in the category [-N, +V] in Romance. Modals in particular have been mostly analyzed as raising predicates, base generated as the lexical head of a VP node. In modern English may, can, will, shall and must are morphologically anomalous as compared to the English verbal paradigm and they do not possess an infinitive form. The lack of infinitive morphology, among other syntactic properties, prevents modals from being adjacent to one another. That is, in standard English it is formally impossible the modalization of a modal so to speak.

As was said, these verbal elements are not formally distinguished

from other verbal categories in Romance. They possess an infinitive morphology and may occur adjacent to each other, as in Old English². Then, the grammar of Catalan, Spanish or Italian does not appear to distinguish them, in principle, from the rest of the verbs that subcategorize for a clausal infinitive complement.

With structures exhibiting modal and aspectual verbs, however, certain syntactic phenomena occur that apparently violate well-formedness conditions. It is assumed that a restructuring strategy must apply in those grammars which allows these possible violations to be circumvented. Restructuring between the verbs listed in (11) and an infinitive predicate is manifested in Romance by the following syntactic phenomena: clitic climbing, object preposing from the most embedded sentence to the main [NP,S] position in impersonal es/se constructions³, and change of to have or to be, which are illustrated below⁴:

- (12) a. En Joan podia portar-li el llibre
'John could bring-him/her the book'
- b. En Joan li podia portar el llibre
'John him/her could bring the book'
- (13) a. Es sol llegir aquest manuscrit amb una lupa
'One uses to read this manuscript with a magnifying glass'
- b. Aquest manuscrit es sol llegir amb una lupa
'This manuscript one uses to read with a magnifying glass'

(14) a. Mario ha voluto tornare a casa ⁵

'Mario has wanted to come back home'

b. Mario è voluto tornare a casa

'Mario is (=has) wanted to come back home'

The position of the clitic li (to him/her) and the object of the infinitive verb aquest manuscript (this manuscript) in (12 b) and (13 b) respectively indicates that the Specified Subject condition, imposed by the null element in the [NP,S] of the subordinate infinitive sentence, appears to be violated. The empty category coindexed with the preposed object should not be properly bound due to the intervening subject. In the Italian sentence (14 b) the auxiliary to be should mark the structure as ungrammatical because in Italian transitive verbs like volere (to want) select the auxiliary to have obligatorily. The grammaticality of to be as auxiliary in (14 b) indicates that the auxiliary has been selected by the lower verb tornare (to come back), which in Italian takes the auxiliary to be, like all ergative verbs (Burzio (1981)).

The grammaticality of the (b) sentences in (12)-(14) contrasts with the ungrammaticality of the (b) examples in (15)-(17) below, with a non-restructuring predicate in the main clause. Both the Specified Subject condition and proper selection of the auxiliary hold in these examples, as shown by the ungrammaticality of (b):

(15) a. En Joan semblava portar-li el llibre

'John seemed to bring-him/her the book'

- b. * En Joan li semblava portar el llibre
'John him/her seemed to bring the book'
- (16) a. Es pretén (de) llegir aquest manuscrit amb una lupa
'One pretends to read this manuscript with a magnifying glass'
- b. * Aquest manuscrit es pretén (de)llegir amb una lupa
'This manuscript one pretends to read with a magnifying glass'
- (17) a. Mario ha promesso di tornare a casa
'Mario has promised to come back home'
- b. * Mario è promesso di tornare a casa
'Mario is (=has) promised to come back home'

2.1. The multisentential hypothesis

Rizzi (1978) and Burzio (1981), (1982) analyze the equivalent of sentential complexes (12)-(14) in Italian as undergoing an operation that optionally transforms a multisentential deep structure into a complex predicate. The basic argument of these authors is that the two verbs involved in the construction [modal/aspectual + infinitive] are both base generated as primary predicates, remaining as such in the course of the derivation. Move α applied to the subordinate infinitive VP would adjoin it to the main predicate, creating a single compound, where the chain headed by the clitic or the preposed NP object does not violate the Specified Subject condition.

Rizzi (1978) suggests that strings like (18) below, with an inflected modal/aspectual verb taking an infinitive complement, are affected by a rule which alters the structure, transforming (18) into a single sentence, as shown in (19):

(18) a. [En Pere_i arribà a [PRO_i telefonar-te]]

'[Peter_i arrived [PRO_i to call-you]]'

b. [En Pere_i pot [[e]_i telefonar-te]]

'Peter_i may [[e]_i call-you]'

(19) a. [En Pere [arribà a telefonar-te]] (cf. (18 a))
VP

b. [En Pere [pot telefonar-te]] (cf. (18 b))
VP

According to Rizzi's account, the empty category subject of the lower clause is deleted at certain level of representation. This deletion having taken place, conditions of well-formedness are not violated if the clitic adjoins to the main predicate in (19 a,b). This solution, available in the framework assumed in Rizzi (1978), is not acceptable in the current GB framework because the deletion operation would alter significantly the argument structure of the complex in violation of the projection principle.

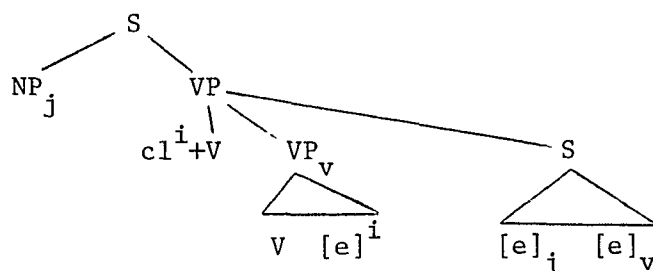
In order to overcome this problem while maintaining the hypothesis of the full predicate status of the verbs forming the complex, Burzio (1981),(1982) proposes that restructuring is the result of a rule of VP movement into the higher predicate, which creates an asymmetrical complex

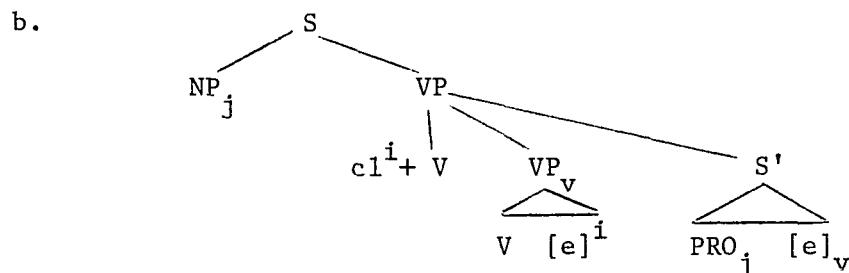
VP where the main verb c-commands the embedded verb, but not the converse. Crucial to Burzio's account is the proposal that the embedded empty subject is not deleted but remains in the subordinate clause coindexed with the main subject, by movement or construal. Then, consistent with the assumption that the verbs forming the complex are primary predicates, their argument structure has to be present at all levels of representation.

Burzio considers that two types of predicates may trigger the restructuring rule: those represented by modal verbs, which are analyzed as raising predicates; and aspectuals and the verb want, which are analyzed as control verbs. According to this hypothesis the strings (20 a,b) are represented as (21 a,b) respectively. Encliticization of the pronoun et/te (to you) indicates that restructuring has applied:

- (20) a. En Joan et podia telefonar
'John you could call'
- b. En Joan et volia telefonar
'John you wanted to call'

(21) a.





VP_v has adjoined to the main VP. NP_j is coindexed by movement or construal to $[e]_j$ or PRO_j respectively, and the clitic pronoun cl^i may form a chain with $[e]^i$ without incurring in violation of the Specified Subject condition.

The analysis of modal verbs as raising predicates accounts for the fact, pointed out already in Rizzi (1978), that the structures exhibiting this type of verbal element as main predicates do not change meaning under passivization of the subordinate clause:

(22) a. En Joan_i pot [[e]_i veure la Maria]

'John_i may [[e]_i see Mary]'

b. La Maria_i pot [[e]_i ésser vista [e]_i] (per en Joan)

'Mary_i may [[e]_i be seen [e]_i] (by John)'

(22 a,b) contrasts with similar structures involving restructuring verbs such as voler (to want), that take external arguments, under passivization of the lower clause:

(23) a. En Joan_i vol [PRO_i veure la Maria]

'John_i wants [PRO_i to see Mary]'

b. La Maria_i vol [PRO_i esser vista [e]_i] (per en Joan)

'Mary_i wants [PRO_i to be seen [e]_i] (by John)'

Evidence for the syntactic derivation of restructured complexes, as well as for the distinction between raising and control structures, is provided in Burzio (1982). It consists of the ungrammaticality that may result due to the selectional restrictions of the verbs which trigger restructuring. Burzio argues that, if Romance restructuring constructions were base-generated as complex predicates, as in the English modal system, it is predicted that the compound would allow any kind of subject to appear at the surface, as long as this subject would conform to the selectional restrictions of the verb in the infinitive. However, control verbs like want, a restructuring verb, may produce semantically anomalous sentences if their selectional restrictions are not met. The unacceptability of (24) below shows, according to Burzio, that the verb voler (want) is a main predicate:

(24) * Les pedres hiⁱ volen caure [e]ⁱ
'The stones thereⁱ want to fall [e]ⁱ'

The sentence is grammatical if want is replaced by may/can, a non-external θ -role assigner:

(25) Les pedres hiⁱ poden caure [e]ⁱ
'The stones thereⁱ may fall [e]ⁱ'

Then, only the derived approach for restructuring constructions,

as well as for the distinction between raising and control verbs may account for the facts mentioned above while explaining the syntactic phenomena exemplified in (12)-(14) above.

2.2. The argument structure of restructuring compounds

The analysis of modal verbs as raising predicates overlooks the known fact that these verbal elements appear to assign a θ -role to a subject in one of their interpretations. The equivalence in meaning between (22 a) and (22 b) above obtains only if the modal verb is interpreted in its epistemic sense, not in its root interpretation. Sentences (26 a) and (26 b) may not be synonymous:

(26) a. En Joan pot veure la Maria (cf. (22 a))

'John is able/allowed to see Mary'

b. La Maria pot ésser vista (per en Joan) (cf. (22 b))

'Mary is able/allowed to be seen (by John)'

Similarly, under this interpretation, (25) above, repeated as (27), becomes semantically anomalous. The acceptability of (25) results only because the semantic features of the NP the stones force an epistemic interpretation of the verb; the root reading of poder (may/can) would make the sentence unacceptable:

(27)(??)* Les pedres hiⁱ poden caure [e]ⁱ (cf. (25))

'The stones thereⁱ are able/allowed to fall [e]ⁱ'

Modal verbs ought to allow a double subcategorization frame according to the multisentential hypothesis, given the possible ambiguity of sentences like the following:

- (28) El lladre pogué entrar per la finestra
 'The thief could come in through the window'
- a. It is possible that the thief came in through the window
 - b. The thief was able/allowed to come in through the window

Several problems arise upon consideration of the thematic structure of complex predicates within the derived structure approach and the distinction between raising and control predicates. In the following section some evidence will be examined which strongly suggests that no verbal element under restructuring subcategorizes for a control structure; otherwise the projection principle is violated. In section 2.3 other syntactic tests will prove that, in addition, restructuring verbs fail to behave as raising predicates, regardless of which interpretation is assigned to them.

The syntactic evidence showing that restructuring verbs may not subcategorize for structures of obligatory control involves the distribution of the partitive clitic en/ne.

2.2.1. En/ne cliticization

The distribution of the partitive clitic en/ne (of it, of them, of NP) in Catalan follows practically the same pattern as in Italian

(cf. Belletti and Rizzi (1981), Burzio (1981)). For the purposes of the following discussion, recall that its appearance is only allowed under cliticization of the head of an internal argument. En/ne follows the pattern of distribution specified below:

(I) The pronominal en/ne stands for the head of an N' constituent of a quantified NP if it is a direct object or the postverbal nominative argument of an ergative verb:

- (29) a. Han sortit algunes persones
'Has left some people'
- b. N'han sortit algunes
'EN/NE has left some'
- c. * Han sortit algunes
'Has left some'

(II) The obligatoriness of en/ne is preserved under wh-movement of the specifier of these internal arguments:

- (30) a. Quants n'han sortit
'How many EN/NE have left'
- b. *Quants han sortit
'How many have left'

(III) If the NP is in preverbal position, whether it is an external argument of a predicate or a derived subject moved from its [NP,VP]

θ-position, the partitive clitic is disallowed:

(31) a. Alguns turistes han dormit en aquell hotel

'Some tourists have slept in that hotel'

b. *Alguns n'han dormit en aquell hotel

'Some EN/NE have slept in that hotel'

c. Alguns han dormit en aquell hotel

'Some have slept in that hotel'

(32) a. Algunes persones_i han sortit [e]_i

'Some people_i have left [e]_i'

b. *Algunes n'han sortit

'Some EN/NE have left'

c. Algunes han sortit

'Some have left'

(IV) A postposed external argument (i.e., VP-adjoined) cannot undergo en/ne cliticization:

(33) a. [proⁱ [[parlaven][molts nois]ⁱ]]
 VP VP

'[(it)ⁱ [[were speaking] [many boys]ⁱ]]'
 VP VP

b. *En parlaven molts ⁶

'EN/NE were speaking many'

c. Parlaven molts

'Were speaking many'

(34) a. [proⁱ [[volien llibres] [alguns amics teus]ⁱ]]
 VP VP

'(It)ⁱ [[wanted books] [some friends of yours]ⁱ]]'
 VP VP

b. *En volien llibres alguns

'EN/NE wanted books some'

c. Volien llibres alguns

'Wanted books some'

The contrast in acceptability of the partitive clitic between (29 b) and the apparently parallel (34 b) indicates whether a nominative NP appearing in postverbal position is an internal argument, as in (29 b) or the external argument of a predicate, as in (33 b), (34 b).

Lexical elements that may potentially trigger the formation of verbal complexes do not form a homogeneous class with respect to their thematic structure. Some like començar (to start) and acabar (to finish), as well as voler (to want) are external θ -role assigners:

(35) a. Avui pro he començat la lectura del llibre

'Today (I) have started the reading of the book'

b. pro hem acabat la tasca

'(We) have finished the work'

c. pro volia un gelat de xocolata

'(he/she) wanted a chocolate ice cream'

Another type are non-external θ -role assigners: modals in their epistemic reading and verbs that in their main predicate function are ergative verbs, the latter including restructuring tornar (to come back), arribar (to arrive), anar (to go) and venir (to come). It was shown above that the postverbal argument of such ergative predicates must undergo en/ne cliticization if the NP is quantificational or undergoes wh-movement:

(36) a. Arribaven alguns vaixells

'Arrived some ships'

b. N'arribaven alguns

'EN/NE arrived some'

(37) a. Ha tornat un amic meu

'Has come back a friend of mine'

b. N'ha tornat un

'EN/NE has come back one'

Ungrammaticality would obtain if en/ne cliticization of the nominative argument appears with an external θ -role assigning verb, such as the ones exemplified above in (35 a-c):

(38) a. *Quants n'han començat la lectura del llibre

'How many EN/NE have started the reading of the book'

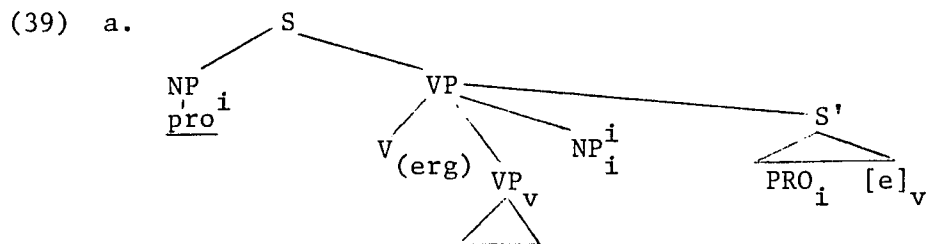
b. *N'han acabat la tasca tres

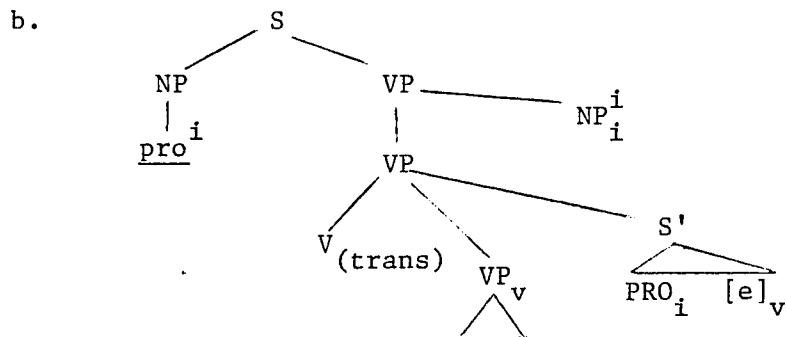
'EN/NE have finished the work three'

c. *Quants en volien un gelat de xocolata

'How many EN/NE wanted a chocolate ice cream'

Principles of UG require that the argument structure of predicates be preserved at all levels of representation (cf. Chomsky (1981), 38). According to the preceding discussion, and if restructuring would consist of a transformation performed on a multisentential structure, the distribution of en/ne must be predictable: it should be contingent on the θ -role assigning properties of the main inflected verb. If the restructuring predicate is a non-external θ -role assigner (i.e., ergative) the partitive clitic must be obligatory if the quantified nominative NP appears postverbally or its specifier undergoes wh-movement. On the other hand if the restructuring predicate assigns an external θ -role, the appearance of the partitive clitic should mark the sentence as ungrammatical, even if the subject appears postverbally. This is so because two restructuring constructions showing a postverbal subject differ structurally if the nominative NP is in one an internal argument and in the other an external argument of the main predicate, as shown in the following schemata (from Burzio (1981), 552):





These predictions are not borne out in Catalan restructuring complexes. The examples below show that en/ne cliticization of the nominative argument can appear if and only if the infinitive predicate is an ergative verb:

(40) a. * Quants teⁱ n'arribaren a escriure cartes [e]ⁱ
 'How many to youⁱ EN/NE arrive to write letters [e]ⁱ,

b. Quants tⁱ, arribaren a escriure cartes [e]ⁱ
 'How many to youⁱ arrived to write letters [e]ⁱ,

(41) a. N'hiⁱ tornaven a crèixer moltes [e]ⁱ
 'EN/NE thereⁱ came back to grow many [e]ⁱ,

b. * Hiⁱ tornaven a crèixer moltes [e]ⁱ
 'Thereⁱ came back to grow many [e]ⁱ,

Clitic climbing has taken place, which indicates that a complex predicate is formed: te (to you) in (40) stands for the indirect object of the infinitive escriure (to write). Hi (there) in (41) is a locative clitic associated with the predicate crèixer (to grow).

The inflected (i.e., restructuring) verbal elements in examples (40) and (41) are ergative verbs, whereas the subordinate infinitive predicates are non-ergative (40) and ergative (41) respectively. Despite the fact that the inflected verbs are both ergative, en/ne cliticization is only possible if the infinitive is itself an ergative verb. Thus, the partitive clitic is ungrammatical in (40 a) and obligatory in (41 a).

The same judgements in grammaticality obtain if the restructuring verb is non-ergative, as the examples below show:

- (42) a. * Quants teⁱ, n comencen a escriure cartes [e]ⁱ
 'How many to youⁱ EN/NE start to write letters [e]ⁱ,
- b. Quants etⁱ comencen a escriure cartes [e]ⁱ
 'How many to you start to write letters [e]ⁱ,
- (43) a. N'hiⁱ començaven a crèixer moltes [e]ⁱ
 'EN/NE thereⁱ started to grow many [e]ⁱ,
- b. * Hiⁱ començaven a crèixer moltes [e]ⁱ
 'Thereⁱ started to grow many [e]ⁱ,

Under the multisentential deep structure control hypothesis the contrast between (41) and (42) is accounted for, but not the facts illustrated in (40) and (43), which are predicted to show exactly the opposite judgements in grammaticality. In (40) the main verb is ergative and the absence of en/ne should be ungrammatical with wh-movement. In (43) the inflected verb is non-ergative and the absence of the partitive

clitic should be required.

The distribution of en/ne cliticization indicates that it is the verb in the infinitive which is the predicate that determines the thematic structure of the complex. That is, a nominative NP of a restructuring construction is an internal or external argument according to the properties of the infinitive verb, not of the inflected one.

The same distribution can be observed with the modals poder (may/can), deure (must) and haver de (to have to), as well as with the predicate voler (to want) under restructuring:

- (44) a. \underline{N} 'hiⁱ pogueren entrar sis [e]ⁱ
 'EN/NE thereⁱ could come in six [e]ⁱ'
- b. *Hiⁱ pogueren entrar sis [e]ⁱ
 'Thereⁱ could come in six [e]ⁱ'

The subject receiving an external θ -role by transitive voler (want) in its main predicate function does not undergo en/ne cliticization, as shown by the ungrammaticality of (34) above. However, when voler is restructured with an infinitive ergative verb, the partitive clitic appears in the relevant cases:

- (45) a. Quants \underline{n} 'hiⁱ volien arribar [e]ⁱ
 'How many EN/NE thereⁱ wanted to arrive [e]ⁱ'
- b. * Quants hiⁱ volien arribar [e]ⁱ
 'How many thereⁱ wanted to arrive [e]ⁱ'

- (46) a. N'hiⁱ volien entrar alguns
 'EN/NE thereⁱ wanted to come in some [e]ⁱ'
- b.* Hiⁱ volien entrar alguns [e]ⁱ
 'Thereⁱ wanted to come in some [e]ⁱ'

Taking clitic climbing as an indication of complex predicate formation, one may compare the sentences above with those exemplified in (47) and (48) below, in which the locative hi (there) remains in its base-generated position in the infinitive VP. Opposite judgements in grammaticality obtain:

- (47) a. * Quants en volien arribar-hi
 'How many EN/NE wanted to arrive-there'
- b. Quants volien arribar-hi
 'How many wanted to arrive-there'
- (48) a. * En volien entrar-hi alguns
 'EN/NE wanted to come in-there some'
- b. Volien entrar-hi alguns
 'Wanted to come in-there some'

All these examples show that complex predicate formation may not consist of a derivation from an underlying control structure. Such a hypothesis would lead to the conclusion that the thematic structure of a predicate may change over the derivation, or that it can be 'neutralized' as a result of a transformation. Then, under the control hypothesis the

projection principle is necessarily violated because the θ -role assigning properties of a predicate do not remain invariant at all levels of representation.

An alternative hypothesis which could be considered in this approach would be that of assuming that verbs that may form a complex predicate have the lexical property of entering into two subcategorization frames: raising and control⁷. Restructuring would then be possible only when the main verb enters into a raising configuration.

This would leave unaccounted for the selectional restrictions that some restructuring predicates may impose on the nominative argument (cf. (24) vs. (25) above), and the non-equivalence of meaning when the infinitive verb exhibits passive morphology as noticed by Rizzi (1978). No raising predicate has such effects in a sentential structure:

- (49) a. Els núvols semblaven prendre formes extranyes
'The clouds seemed to take on strange shapes'
- b. *Els núvols volien prendre formes extranyes
'The clouds wanted to take on strange shapes'
- (50) a. Pro semblava considerar aquell llibre extraordinari
'(he/she) seemed to consider that book extraordinary'
- b. Aquell llibre semblava ser considerat extraordinari
'That book seemed to be considered extraordinary'

2.3. Restructuring as a non-derived process

The facts related to en/ne cliticization discussed in the last section and the ungrammaticality observed in examples like (49 b) appear to lead to the contradictory conclusion that some of the verbs triggering the formation of complex predicates behave semantically like control verbs but syntactically like raising verbs.

This contradiction can be otherwise handled by considering that under complex predicate formation, the predicate in the infinitive nullifies the formal manifestations of the thematic structure of the inflected verb. That is, the infinitive verb is thematically dominant over the verb it restructures with. In Catalan this fact can be observed only by the distribution of the partitive pronominal. In Italian it may be reflected also by the change of auxiliary (cf. Rizzi (1978), Burzio (1981)). Then, the thematic relations that a given restructuring predicate may establish with an argument of the sentence are only semantically manifested by means of selectional restrictions.

Within the present framework, these facts can be accounted for by the proposal that a restructuring verb may function as a secondary or adjunct predicate, as suggested in Zubizarreta (1982).

Zubizarreta argues that the thematic relations of a restructuring verb are syntactically represented as a double structure at all levels of representation, D-S, S-S, and LF. The simultaneous double structure analysis for one terminal string is proposed in order to account for the ambiguities that may result between the epistemic and the root inter-

restrictions that this secondary predicate imposes on the sentence.

With the representation of the modal verb as a syntactic affix, movement rules may operate without violating the Specified Subject condition, since the structure has a possible monosentential representation, as shown in (52 b)⁸. The distribution of en/ne cliticization discussed above offers support to Zubizarreta's hypothesis that restructuring verbs may be base-generated as secondary or adjunct predicates.

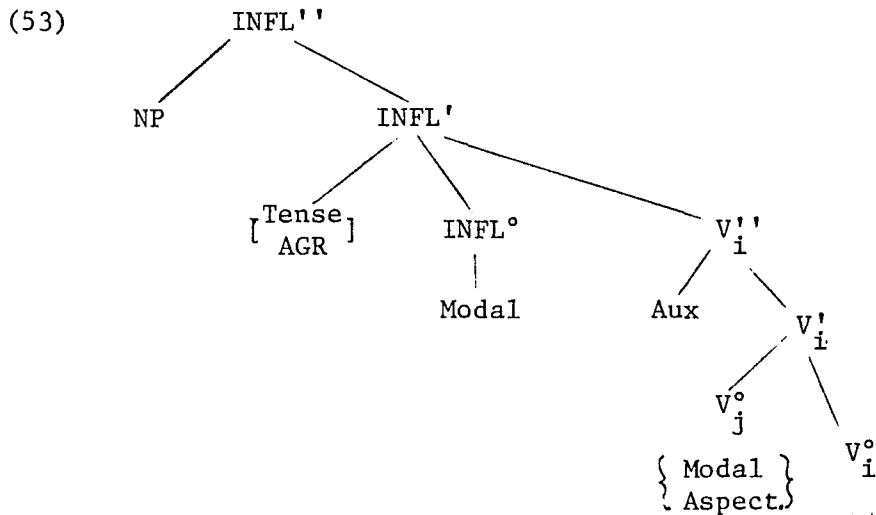
It seems to me, however, that ambiguities should not be accounted for by proposing simultaneous multiple syntactic representations for one and the same terminal string. This is not saying that strings susceptible to an ambiguous interpretation, like some containing modal verbs, cannot have two different syntactic representations, only that these are not simultaneous.

I will argue that sentences containing restructuring verbs are monosentential at every level of representation, and that modal verbs may appear in two syntactic positions in the sentence, either in the INFL node, where the modal verb has scope over a sentential structure, or in the VP as an adjunct predicate. In the latter case its θ -role properties may be considered to be assigned compositionally with those of the main predicate in the infinitive.

As for aspectual verbs, I will argue that they are base-generated in the VP, like root modals. However, there is evidence that the lexical properties of restructuring aspectuals in Catalan (as well as in Spanish) prevent these verbal elements from establishing any type of thematic relation with the arguments of S and from taking sentential complements.

That is, they do not have a predicative function. Their function in the sentence can be better characterized as that of a VP adverbial-like element modifying a predicate phrase in the infinitive.

I would like to suggest that the relevant expansion of the categorial nodes for sentences containing an epistemic modal and/or a root modal or aspectual verb are represented as follows:



I am assuming that root modals or aspectual modifier verbs are non maximal projections (i.e., V_j)⁹. The verb inflected for the infinitive is the head of the predicate V_i^n . Epistemic modals are in the head of $INFL^{10}$. Thus, the epistemic or root interpretation of a modal verb is contingent on how is it analyzed by the base rules.

2.3.1. Derived subjects

A list of Catalan modal verbs with their respective possible meanings is given below:

(54)	<u>Epistemic</u>	<u>Root</u>
<u>poder</u> (may/can)	possibility	to be able/allowed
<u>deure</u> (must)	necessity	--
<u>haver de</u> (to have to)	necessity	to be compelled
<u>voler</u> (to want)	--	to want

The possible interpretations of these lexical items differ in one instance from their Italian and Spanish counterparts. Deure (must) has only an epistemic sense in modern Catalan (cf. Badia-Margarit (1962), 391), as opposed to the Spanish or Italian deber/dovere which may have also the root interpretation of be compelled¹¹.

This verbal element cannot be interpreted as assigning an adjunct θ -role to an NP argument in Catalan. The sentences in which it appears are never interpreted ambiguously. Then, whatever representation is attributed to sentences containing modals in their root reading, it is irrelevant in the case of deure since no such interpretation can possibly obtain:

- (55) La Núria deu escriure una novel.la
 'Núria must write a novel'
 a. It must be the case that Núria is writing a novel
 b.*Nuria is obliged to write a novel

(59) * En Joan_i ES es_i confiarà [e]_i [e]_i

'John_i ONE to himself_i will entrust [e]_i [e]_i'

As Rizzi observes, these ungrammaticalities cannot be attributed to anaphorization itself, since a lexical anaphor in [NP,VP] position is grammatical in both cases:

(60) Els nostres amics_i foren presentats l'un a l'altre_i

'Our friends_i were introduced to each other_i'

(61)a. ES confiarà en Joan_i a si mateix_i

'ONE will entrust John_i to himself_i'

b. En Joan_i ES confiara a si mateix_i

'John_i ONE will entrust to himself_i'

The ungrammaticality of reflexive-reciprocal cliticization with a derived subject obtains as well in raising constructions, which is consistent with the facts observed in (58) and (59) above:

(62) * En Joan_i es_i sembla [[e]_i intel.ligent] [e]_i

'John_i to himself_i seems [[e]_i intelligent] [e]_i'

These ungrammaticalities cannot be related to the process of cliticization, since, when the reflexive pronoun is substituted by a non-reflexive in (58), (59) and (62), the sequence is grammatical:

- (63) Els nostres amics_i ens_j foren presentats [e]_i [e]_j
 'Our friends_i to us_j were introduced [e]_i [e]_j'
- (64) En Joan_i SE'ns_j confiarà [e]_i [e]_j'
 'John_i ONE to us_j will entrust [e]_i [e]_j'
- (65) En Joan_i ens_j sembla [[e]_i intel.ligent] [e]_j
 'John_i to us_j seems [[e]_i intelligent] [e]_j'

Rizzi's account for the ungrammaticality of sequences like (57) is given in terms of a locality condition on chain formation. This condition requires that the chain not be interrupted by coindexed lexical material:

- (66) $C = (\alpha_1, \dots, \alpha_n)$ is a chain iff for $1 \leq i \leq n$

α_i is the local binder of α_{i+1}

(i) α is a binder of β iff, for $\alpha, \beta =$ any category,

α and β are coindexed and α c-commands β .

(ii) α is the local binder of β iff α is a binder of β ,

and there is no γ such that γ is a binder of β , and

γ is not a binder of α .

(cf. Rizzi (1982b))

This condition on chain formation accounts for the ungrammaticality of anaphoric cliticization with a derived subject as shown above. Rizzi notices however that condition (66) would rule out restructuring constructions with modal verbs if they are analyzed as raising predicates

and an anaphoric pronoun undergoes clitic climbing onto the main predicate¹³.

Under an analysis of epistemic modals as raising verbs, the same ungrammaticalities should obtain. The element in the main [NP,S] position is always a derived subject according to this hypothesis, and anaphoric clitic climbing onto the main predicate (i.e., the modal verb) produces a sequence of coindexed elements as the one excluded by filter (57) that violates (66). Contrary to the prediction anaphoric cliticization is fully grammatical in the case of modals¹⁴:

(67) a. En Joan es deu afaitar

'John himself must shave'

(It must be the case that John shaves himself)

b. En Pere i en Gerard es deuen considerar intel.ligents

'Peter and Gerald each other must consider intelligent'

(It must be the case that Peter and Gerald consider each other intelligent).

According to Zubizarreta's hypothesis, condition (66) is violated. Recall that she considers that modal verbs are associated with two representations at each syntactic level: as a raising predicate and as a verbal affix. Her hypothesis would predict that clitic climbing and, in particular, anaphoric cliticization is only compatible with the root interpretation of a modal verb, that is, in its function of adjunct predicate as a syntactic affix. If modals are also analyzed as raising verbs (the epistemic interpretation), some sentences should be

ungrammatical if this reading is intended.

Raising verbs like seem do not allow clitic climbing in Catalan or Spanish, presumably because a trace in the embedded [NP,S] position constitutes a Specified Subject:

- (68) a. En Pere_i semblava [[e]_i convence'ls]
 'Peter_i seemed [[e]_i to persuade-them]'
 b. *En Pere_i els semblava [[e]_i convèncer]
 'Peter_i them seemed [[e]_i to persuade]'

Deure (must) does not have a root interpretation in Catalan; therefore only a raising structure is possible in this case according to the hypothesis. However, clitic climbing (anaphoric or otherwise) is always compatible with complexes exhibiting modal verbs:

- (69) a. En Pere devia convence'ls
 'Peter musteded persuade-them'
 b. En Pere els devia convencer
 'Peter them musteded persuade'
 (It had to be the case that Peter persuaded them)
- (70) a. Els teus amics podien haver-se conegut abans del 36
 'Your friends could have-each other met before 1936'
 b. Els teus amics es podien haver conegut abans del 36
 'Your friends each other could have met before 1936'

A raising analysis of modal verbs should account for the grammaticality of (67), (69) and (70) vs. (62) and (68 b) by an independent principle or condition able to overcome not only the Specified Subject condition (cf. (68 b)), but (66) as well.

When a restructuring verb forms a complex with a non-external θ -role assigning predicate (raising or passive), reflexive-reciprocal cliticization always triggers ungrammaticality:

(71) * En Joan_i es_i devia semblar [e]_i intel.ligent [e]_i

'John_i to himself_i must_{ed} seem [e]_i intelligent [e]_i'

(72) * Els teus amics_i s_i 'haviem de ser presentats [e]_i [e]_i

'Your friends_i to each other_i had to be introduced [e]_i [e]_i'

(73) * En Joan_i es_i podia semblar [e]_i un geni [e]_i

'John_i to himself_i could seem [e]_i a genius [e]_i'

The contrasts observed above with respect to anaphoric cliticization are consistent with filter (57) derived from condition (66) if epistemic modals are generated in the INFL node. All facts follow if modals are not considered raising predicates but the structure in which they appear is always a monosentential complex where the rightmost verb in the infinitive occupies the head of the predicate phrase and determines the argument structure of the compound. Hence, the subject of the complex would behave as a derived subject or not depending on the lexical properties of the head of the predicate phrase, as was shown.

A parallel behaviour with respect to anaphoric cliticization can be observed in structures exhibiting aspectual verbs. Only when the predicate in the infinitive is a non-external θ -role assigner is a reflexive-reciprocal clitic pronoun disallowed:

- (74) a. En Joan_i es_i començava a afaitar [e]_i
 'John_i himself_i started to shave [e]_i'
 b. En Joan_i es_i solia afaitar [e]_i
 'John_i himself_i used to shave [e]_i'
- (75) a. *Els meus amics_i es_i començaven a ser presentats [e]_i [e]_i
 'My friends_i each other_i started to be introduced [e]_i [e]_i'
 b. *En Joan_i es_i solia semblar [e]_i intel.ligent [e]_i
 'John_i to himself_i used to seem [e]_i intel.ligent [e]_i'

Aspectual verbs do not impose selectional restrictions on the surface subject¹⁵ and can restructure with predicates taking clausal complements or quasi-argument subjects, as shown by the following examples:

- (76) Pro ens començava a semblar [que la situació podia millorar]
 '(It) to us started to seem [that the situation could improve]'
- (77) Pro solia ploure molt
 '(It) used to rain a lot'
- (78) Pro torna a ser necessari [que telefoneu]
 '(It) comes back to be necessary [that (you) call]'
 (It is necessary again that you call)

It was argued above that no restructuring verb may be a control predicate. The grammaticality of these examples proves, independently of the distribution of en/ne cliticization, that this must be so in the case of aspectuals. Notice that if the inflected verbs in (76) and (78) were subcategorizing for a structure of control, the visibility condition for the clausal argument of the predicates to seem and to be necessary respectively would not be fulfilled. The most embedded clause would not be in a Case-marked chain if co-superscripted with an expletive PRO in the [NP,S] of the non-external θ -role assigning predicates which appear in the infinitive.

In Chapter III it was argued that the ungrammaticality of expletive PRO could be explained by a violation of the visibility condition by the argument co-superscripted with it. Lack of fulfillment of the visibility condition is exemplified by ungrammatical structures such as the following:

(79) * Pro és necessari [PRO semblar [que la situació pot millorar]]

'(It) is necessary [PRO to seem [that the situation may improve]]'

The grammaticality of (76) and (78) is not accounted for if the same structure is attributed to them as to (79). Then, according to the hypothesis that restructuring verbs are heads of a main predicate phrase, the contrast between (76) and (78) on the one hand and (79) on the other could only be explained if the inflected verbal elements (the aspectual verbs) were raising verbs. However, and as in the case of modals, aspectual restructuring verbs fail to behave as raising predicates. Their appearance in the sentence is irrelevant in determining whether the surface subject is derived, as the contrast between (74) and (75) shows.

2.4. The distribution and interpretation of modal verbs

Several exceptional features distinguish modern English modals from the class of verbs¹⁶. It has been generally assumed¹⁷ that this type of verbal element constitutes with Tense and AGR, the INFL node. The following characteristics distinguish the category Modal from the rest of the English verbal paradigm:

- (80) a. They do not show number agreement or do support.
 b. Modals cannot appear in infinitive or gerund morphology.
 c. They cannot occur adjacent to each other.
 d. Modals cannot be marked with AUX.
 e. Modals cannot take normal complementation forms

None of the peculiarities listed in (80 a-e) appear to apply to Catalan modal verbs or to the Romance modal system in general. Modals may be inflected for number and person as in (81 a), they show infinitive or gerund morphology as in (81 b), they may appear adjacent to each other as in (81 c), they can be marked with AUX features as in (81 d) and seem to subcategorize for an infinitive clausal structure as in (81 e). That is, modals show the morphological (or formal) behavior of regular main predicates, but not their syntactic behavior, as has been shown in the preceding sections.

- (81) a. Deu ser al jardí
 '(He/she) must_s be in the garden'

- b. (i) Volia poder cantar
'(He/she) wanted to may sing'
- (ii) Podent fer tantes coses, no entenc perquè no fas res
'Maying to do so many things, I don't understand why you
do nothing'
- c. Deuen poder cantar
'(They) must may sing'
- d. Han pogut anar-hi
'(They) have mayed to go there'
- e. Poden anar-hi
'(They) may to go there'

A close examination of the properties illustrated in (81) shows however that full verbal behavior is only possible when modal verbs are interpreted in their root sense. Most of the idiosyncracies pointed to above for English modals are replicated in their Catalan counterparts when an epistemic reading is obligatory or possible.

In what follows, certain characteristics relative to word order in sentences where modal verbs appear will be examined. The distribution of these verbal elements with respect to perfect markers, aspectual verbs as well as other modals is subject to some constraints on interpretation which, I believe, reflect their structural position in the sentential structure.

2.4.1. Perfect markers and aspectual verbs

It has often been pointed out that a restructuring sequence formed with an aspectual and an infinitive predicate cannot be interrupted by an auxiliary element (a perfect marker). Consider the following examples:

(82) a. Hi havien tornat a crèixer flors

'There have come back to grow flowers'

(cf. Flowers have again grown there)

b.*Hi tornàven a haver crescut flors

'There came back to have grown flowers'

(83) a. En Pere li havia acabat d'escriure una carta

'Peter to him/her had finished to write a letter'

b.*En Pere li acabava d'haver escrit una carta

'Peter to him/her finished to have written a letter'

Sentences containing modal verbs, as opposed to those exemplified above with an aspectual, are always grammatical, whether the perfect marker precedes the modal or intervenes between it and the infinitive verb¹⁸:

(84) La Gemma havia pogut anar a Banyoles

'Gemma had could go to Banyoles'

(85) En Pere ja deu haver sortit

'Peter must have left already'

Clitic climbing onto the inflected verbal element is optional without loss of grammaticality or meaning change. The possibility of clitic climbing indicates that the complex is monosentential at some level of representation:

- (86) a. En Pere ja hiⁱ deu haver arribat [e]ⁱ
 'Peter thereⁱ must have arrived [e]ⁱ already'
- b. La Nuria lⁱ'havia pogut veure [e]ⁱ
 'Nuria he/she/itⁱ had could see [e]ⁱ

The distribution of the perfect auxiliary to have in a sentential structure containing a modal verb imposes some constraints on the reading of the modal. Consider the following pair of sentences which differ in the distribution of the modal verb relative to the auxiliary element:

- (87) a. En Joan pot haver anat al cinema
 'John may have gone to the movies'
- b. En Joan ha pogut anar al cinema
 'John has mayed go to the movies'

According to my own intuitions as well as other native speakers these sentences do not express the same meaning with respect to the modal verb. While in (87 a) poder (may) receives an epistemic interpretation, only the root reading is possible in (87 b):

- (88) a. It is possible that John has gone to the movies (cf. (87 a))
 b.??(*) John is able/allowed to have gone to the movies

- (89) a. ??(*) It has been possible that John went to the movies (cf.(87 b))
 b. John has been able/allowed to go to the movies

The unacceptability of a reading like the one paraphrased in (89 a) as corresponding to (87 b), indicates that epistemic modals may not be marked with aspect features. This fact is confirmed by the behavior of deure (must), a pure epistemic modal, with respect to the auxiliary element. This verb always appears in the simple tenses, present or imperfect¹⁹. If an auxiliary is inserted it may mark the verb in the infinitive for aspect, but not the epistemic modal which always precedes the auxiliary element:

- (90) a. * En Pere havia degut tastar el pastís
 'Peter had musted taste the cake'
 b. * En Joan hauria degut escriure l'article
 'John would have musted write the article'
 c. * La Núria va deure parlar amb tu²⁰
 'Núria musted talk to you'
 d. ? El tren ha degut sortir a les quatre²¹
 'The train has musted leave at four'

Assuming that the AUX node is dominated by V^{\max} in Romance, the ungrammaticalities exemplified above become significant under this hypothesis. If, as suggested, the epistemic reading of a modal verb is represented syntactically as forming the node INFL, it cannot be in the scope of any element in the VP.

The interaction of modal verbs with the perfect markers allows one to make some further predictions. Assuming that a perfect marker excludes the epistemic reading of a modal verb, some sentences should be ungrammatical if the infinitive predicate selects a subject which does not conform to the selectional restrictions of a root modal. The root reading interpretation can be induced in those cases by marking the complex [Modal + V] for perfect aspect. Infinitive predicates selecting quasi-argument subjects, or predicates taking clausal arguments cannot form a complex with a modal verb if the complex VP is marked for aspect:

(91) * Havia pogut ploure tot el dia

'(It) had mayed rain all day'

(92) ??(*) Va poder ser imprescindible que tornessis

'(It) mayed be mandatory that you came back'

(93) * Havia pogut caldre que telefonessis

'(It) had mayed be necessary that you called'

The ungrammaticality of these examples might follow because the modal verb is assigning an adjunct θ -role to the subject position. If the sequence Auxiliary-Modal is reversed in those examples, or the auxiliary does not appear, the sentences become grammatical because the modal is interpreted epistemically:

(94) Podia haver plogut tot el dia

'(It) could have rained all day'

(95) Podia ser imprescindible que tornessis
'(It) could be mandatory that you came back'

(96) Podia haver calgut que telefonessis
'(It) could have been necessary that you called'

Other evidence to consider is related to the interaction between modals and aspectual restructuring verbs. I am considering that aspectual restructuring verbs are elements with an adverbial function, base-generated in the VP and modifying a predicate phrase²². This claim will be justified in section 2.5 below. Assuming that this is so, pending further justification, one can predict that aspectual verbs, like perfect markers, should disambiguate the meaning of a sentence if both verbal elements (both an aspectual and a modal verb) appear in the same clause:

(97) Tornava a poder tocar el piano
'(He/she) came back to can to play the piano'
a. 'He/she was again able/allowed to play the piano'
b. *'(It) was again possible that (he/she) play the piano'

(98) Solia haver d'examinar els pacients cada dues hores
'(He/she) used to have to examine the patients every two hours'
a. 'He/she used to have the obligation of examining the patients every two hours'
b. *'(It) used to be necessary that he/she examined the patients every two hours'

The impossibility of an epistemic interpretation for the modal

when preceded by an aspectual restructuring verb can be clearly observed in the ungrammaticality of the sentences below, where deure (must), a pure epistemic modal, is modified by an aspectual verb:

- (99) a. * Tornava a deure tocar el piano
 '(He/she) came back to must to play the piano'
 ('It again has to be the case that he/she play the piano')
- b. * Començava a deure considerar la situació
 '(He/she) started to must to consider the situation'
 ('It started to be the case that he/she considered the situation')

As in the case of perfect markers, if the sequence is reversed in (99) and the aspectual modifies only the infinitive predicate, the sentences are grammatical:

- (100) a. Devia tornar a tocar el piano
 '(It) had to be the case that (he/she) again played the piano'
- b. Devia començar a considerar la seva situació
 '(It) had to be the case that (he/she) started to consider his/her situation'

2.4.2. Adjacency

One of the characteristics of Romance modal constructions, as opposed to English, is that modal verbs can appear adjacent to each other. These sequences are however subject to certain constraints: only one modal, the first in the sequence, can be interpreted epistemically²³. Sentences

(101) and (102) can only be paraphrased as (a) but not as (b):

(101) La Núria deu poder tocar el piano

'Núria must can play the piano'

a. It must be the case that Núria is able/allowed to play the piano

b.*It must be the case that it is possible that Núria would play
the piano.

(102) En Jordi pot haver de solucionar aquest assumpte molt aviat

'George may have to solve this affair quite soon'

a. It is possible that George would have the obligation to solve
this affair quite soon.

b.*It is possible that it is necessary that George solve this
affair quite soon.

The fact that two epistemic modals cannot be adjacent cannot be attributed to semantic considerations, but only to syntactic constraints in the base component since the purported paraphrases of (101) and (102) expressed in the (b) readings are otherwise acceptable and meaningful.

The (b) interpretations may also not be accounted for by the effects of some principle of grammar preventing a sequence of two predicates of the raising type (if epistemic modals were raising verbs), as shown by the grammaticality of the following sentences:

(103) a. John is likely to seem to be crazy

b. John seems to be likely to be fired

Epistemic modals differ in grammatical behavior from other predicates of the epistemic type, such as the verb caldre (to be necessary) which subcategorizes for sentential complements, tensed or untensed. Sentences with predicates headed by caldre admit epistemic modals:

- (104) a. Pot caldre anar-hi de pressa
 '(It) may be necessary to go there quickly'
- b. Deu caldre que parlem amb ella
 '(It) must be necessary that we talk with her'

These observations might be explained if elements expressing the epistemic notion of modality are considered to be analyzed as a distinct category from predicates in Romance. This category would constitute the INFL node. Since there is only one slot in the head of S for the category Modal, no more than one of these elements should appear in this position.

Predictions similar to those discussed in relation to the distribution of perfect markers can be made: certain predicates would not admit restructuring with more than one modal verb. If only one epistemic modal is allowed in S, a modal verb adjacent to it must be interpreted in its root sense and function as a secondary predicate, obligatorily assigning an adjunct θ -role to an argument of the main infinitive verb. The ungrammaticality of sentences like (105) below follow because the selectional restrictions of the root modal are not met²⁴:

- (105) * Deu poder ploure
 '(It) must can rain'

If the root modal is absent or if an aspectual modifier is inserted in place of the modal in the example above, the sentence is grammatical:

(106)a. Deu ploure

'(It) must rain'

b. Deu començar a ploure

'(It) must start to rain'

A double modal sequence is also disallowed in sentence types like (107) and (108), for the reasons given above:

(107) * Deu poder semblar que ja son tots aquí

'(It) must may seem that all of them are already here'

(108) * Deu poder ser necessari que vinguin

'(It) must may be necessary that they come'

If in a sequence of modal verbs adjacent to each other only the first one may have an epistemic reading, the lexical idiosyncracies of the modal deure (must) allow one to foresee that there should be an impossible sequence of modal verbs in Catalan, namely, those sequences showing the epistemic deure preceded by another modal:

(109) * En Joan pot deure tocar el piano

'John may must play the piano'

Notice that the sequence is grammatical if the order of modals in (109) is reversed (cf. (81 c)), but in that case the verb poder (may/

can) is an adjunct predicate, since its root interpretation is the only one allowed if it is in the scope of another modal. The root reading is not possible for deure in (109) due to its lexical properties.

2.4.3. Untensed morphology

Another feature characterizing epistemic modals is their incompatibility with infinitive or gerund morphology. This characteristic is obscured by the fact that all root modals may appear in infinitive or gerund forms:

- (110) a. En Joan sentia [PRO haver de marxar en aquell moment]
 'John regretted [PRO to have to leave in that moment]'
- b. Ignoràvem com [PRO poder expressar-li el que sentíem]
 '(We) ignored how [PRO to can manifest to him/her what (we) were feeling]'
- (111) [PRO podent dedicar-te exclusivament a això] no entenc perquè
 no ho fas
 '[PRO caning/maying devote yourself exclusively to that] (I) do not understand why you don't do it'

The modal verbs exemplified in (110)-(111) cannot be interpreted epistemically. This can be observed by the ungrammaticality of the sentences exemplified below, where deure replaces the modals above in

the same context:

- (112) a. * En Joan sentia [PRO deure marxar en aquell moment]
 'John regretted [PRO to must leave in that moment]'
- b. * Ignoràvem com [PRO deure expressar-li el que sentíem]
 '(We) ignored how [PRO to must manifest to him/her what (we)
 were feeling']
- (113) a. * [PRO devent dedicar-te exclusivament a això] no entenc perquè
 no ho fas
 '[PRO musting devote yourself to this] (I) do not understand
 why you don't do it'

The observation that infinitive or gerund morphology is only compatible with the root interpretation of a modal verb can be tested, as in other cases, by inserting modals as modifying predicates taking arguments which are semantically incompatible with the reading of a modal verb with untensed morphology:

- (114) a. Plovia sempre abans de nevar
 '(it) always rained before to snow'
 (cf. It always rained before snowing)
- b. * Plovia sempre abans de poder nevar
 '(It) always rained before to may to snow'

Notice that the ungrammaticality of epistemic modals in infinitive

or gerund forms may not obey to morphological constraints, as it could be claimed for the case of English. Modal verbs in Romance follow regular paradigms from the morphological point of view. The verb deure (must) in particular is morphologically well-formed in infinitive or gerund²⁵. The unacceptability of untensed sentences exhibiting epistemic modals cannot be attributed to other factors than those related to the interpretive component of the grammar.

The principle of Full Interpretation (cf. Chomsky (1983), class notes) requires that every category appearing in a sentential structure must be licensed. Arguments of predication and the predicate assigning a θ -role to them mutually license each other, and every operator must be licensed by a variable.

Suppose that the licensing condition for epistemic notions such as the ones expressed by modal verbs is that they must be linked to morphological tense; either under the relation operator-variable, the value of the variable being determined by the features [\pm Past] or under the relation predicate-argument, the modal constituting a property predicated of the time-frame expressed in the sentence. That is, possibility/necessity must be always relative to a given time in natural language (i.e., 'S is possible/necessary at t'). If one admits this as a plausible hypothesis, one might even speculate that the ungrammaticality of expletive PRO could be traced back to a more abstract condition of UG than the visibility condition. It is not logically impossible to have well formed propositions where modalities do not bind or are not relative to tense notions. Thus, this might be a condition specific to natural language, not a semantic or logical property.

2.4.4. Complementation

The last point to consider is the type of complementation forms characteristic of modal constructions. Modals appear to be the only type of epistemic verbal elements which cannot subcategorize indistinctively for [+AGR] or [-AGR] clausal complements, being limited to take only infinitive forms:

- (115) a. Sembla que [en Joan està cansat]
 '(It) seems that [John is tired]'
- b. En Joan_i sembla [[e]_i estar cansat
 'John_i seems [[e]_i to be tired]'
- (116) a. Cal que [pro arribem abans que es faci fosc]
 '(It) is necessary that [(we) arrive before dark]'
- b. Cal [PRO arribar abans que es faci tard]
 '(It) is necessary [PRO to arrive before dark]'
- (117) a. * Deu que [en Joan escrigui les seves memòries]
 '(It) musts that [John write his memoirs]'
- b. En Joan deu escriure les seves memòries
 'John must write his memoirs'
- (118) a. * Podia que [en Pere telefonés]
 '(It) could that [Peter call]'
- b. En Pere podia telefonar
 'Peter could call'

This gap in the type of complementation forms would not be particu-

larly significant if considered in isolation. It is more interesting however, if considered in light of the morphological and semantic restrictions observed in the previous sections, the opacity facts which motivated our study of restructuring (to which I will come back in sec.3), and the observation that the appearance of an epistemic modal in a sentential structure is totally irrelevant in determining whether the subject of the sentence is a derived subject. All these facts may be accounted for together by the hypothesis suggested above, namely, that the expansion of the INFL node in Romance may include the category Modal.

2.5. VP complexes: Aspectual and Root Modal verbs

I now turn to the characterization of base-generated VP complexes formed with an aspectual and/or root modal verb and a predicate in the infinitive. In sections 2.2 and 2.3 above, it was shown that the notions 'internal' or 'external' as applied to an argument of a restructuring compound, as well as those of 'derived' 'non-derived' relative to the type of position --i.e., θ or non- θ -- that a nominative argument occupies at S-Structure, were always determined by the properties of the verb which appears rightmost in the sequence. In the last case this was in an indirect fashion and also mediating other principles of grammar such as Case theory. This supports the hypothesis that restructuring complexes may be monosentential at every level of representation and that the head

of the predicate phrase in S is the rightmost verb in the complex.

As was said, a restructuring verb may establish thematic relations with the internal or external nominative NP. Its function as a secondary or adjunct predicate is determined by its lexical properties, which are manifested by selectional restrictions:

(119) a. Quantes n^i, hi^j volien entrar_(Erg) (de persones)ⁱ (al teatre)^j
 'How many EN/NEⁱ there^j wanted to enter (of people)ⁱ (in the theatre)^j,

b. *Quantes n^i, hi^j volien crèixer_(Erg) (de tomàquets)ⁱ (a l'hort)^j
 'How many EN/NEⁱ there^j wanted to grow (of tomatoes)ⁱ (in the orchard)^j,

(120) a. Havien pogut sortir tres persones
 'Had canned come out three people'

b. (??)* Havien pogut naufragar tres vaixells
 'Had canned wreck three ships'

The unacceptability of (119 b) and (120 b) shows that root modal verbs select arguments according to their semantic properties. These semantic constraints do not obtain with aspectual verbs under restructuring. Compare the contrasts observed above with the total acceptability of an aspectual verb in the same contexts:

(121) a. Quantes n^i, hi^j acabaven d'entrar (de persones)ⁱ (al teatre)^j
 'How many EN/NEⁱ there^j finished to come in (of people)ⁱ (in the theatre)^j,

- b. Quants nⁱ,hi^j acabaven de crèixer (de tomaquès)ⁱ (a l'hort)^j
 'How many EN/NEⁱ there^j finished to grow (of tomatoes)ⁱ (in the orchard)^j'

(122) a. Havien tornat a sortir tres persones
 'Had come back to come out three people'

- b. Havien tornat a naufragar tres vaixells
 'Had come back to wreck three ships'

2.5.1. Aspectual verbs

Aspectual verbs do not impose selectional restrictions on the arguments of the structure in which they appear. Any type of predicate may form a complex with an aspectual verb. The examples below show that this type of verbal element can restructure with predicates such as semblar (to seem), caldre (to be necessary) taking clausal complements, as in (123); predicates selecting quasi-arguments like weather verbs, as in (124); ergative predicates as in (125); or external θ -role assigning predicates as in (126):

- (123) a. Liⁱ arribà a semblar [e]ⁱ [que ningú no ho podia entendre]
 '(It) to him/herⁱ arrived to seem [e]ⁱ [that nobody could understand it]'

(cf. It even seemed to him/her that nobody could understand it)

- b. Ensⁱ torna a caldre [e]ⁱ [que parleu amb ells]
 '(It) to usⁱ comes back to be necessary [e]ⁱ [that(you) talk to them]'
- (cf. It is again necessary for us that you talk to them)
- (124) a. Començava a tronar
 '(It) started to thunder'
- b. Tornava a nevar
 '(It) came back to snow'
- (125) Acaba de sortir el sol
 '(It) finishes to rise the sun'
 (cf. The sun just rose)
- (126) Va arribar a dormir deu hores
 '(He/she) arrived to sleep ten hours'
 (cf. He/she even slept ten hours)

Independently of the facts discussed above, the grammaticality of some of these sentences again shows that aspectual verbs in Catalan cannot subcategorize for structures of control. Consider for example sentences (123 a,b): the clitics li (to him/her) and ens (to us) generated as benefactive arguments of the verbs semblar (to seem) and caldre (to be necessary) have undergone movement to the higher verbal element, the aspectual verb. If the restructuring verbs were control verbs, the assignment to the embedded expletive PRO of the referential index of

the purported subject of the verbs tornar or arribar (to come back, to arrive) wiche select a [+Animate] subject in their main predicate function would result in ungrammaticality for two independent reasons: one, because the visibility condition for the most embedded clause would be violated, as was said, and second because coindexing by construal must reflect a referential dependence, which would not be the case in those constructions.

Similar considerations apply in the examples in (124). The grammaticality of these constructions contrasts with sentences such as (127) below, with homophonous verbal elements functioning in this case as main predicates. Coindexing by construal with the subject of the adjunct clause leads to ungrammaticality:

- (127) a. *pro_i hem començat la feina abans de [PRO_i nevar]
 '(We)_i have started our work before [PRO_i snowing]'
- b. * pro_i tornava (a Barcelona) a [PRO_i ploure]
 '(he/she) came back (to Barcelona) [PRO_i to rain]'

The grammaticality of sentences like (123) and (124) shows that aspectual verbs cannot function as adjunct predicates. Unlike root modals, passive morphology for the infinitive predicate does not affect the meaning of the compound. The following examples, with or without clitic climbing, in active or passive form, are synonymous:

- (128) a. Tornen a presentar-nos els músics
 '(They) come back (=again) to introduce us the musicians'

- b. Ensⁱ tornen a presentar [e]ⁱ els músics
 '(They) to usⁱ come back to introduce [e]ⁱ the musicians'

- (129) a. Els músics tornen a ser-nos presentats
 'The musicians come back(=again) to be introduced to us'
 b. Els músics ensⁱtornen a ser presentats [e]ⁱ
 'The musicians to usⁱ come back to be introduced [e]ⁱ

The glosses for the grammatical examples (123)-(126) and (128)-(129) reflect the interpretation that aspectual verbs have if forming a complex with an infinitive predicate. As pointed out in Strozer (1981) for similar structures in Spanish, the reading of aspectual verbs under restructuring is not that of a predicate, expressing motion or otherwise; rather these verbal elements have the function of a VP adverb²⁶. For example the verbal expression tornar a (literally 'to come back to') in the sentences above expresses the iteration of an occasion, not a moving event. The non predicative interpretation of aspectual verbs explains why they can modify any type of predicate without imposing selectional restrictions on its arguments. Aspectual verbs do not have a predicative function.

In Catalan, as well as in Spanish and Italian, clitic climbing is optional under restructuring. The pronoun licensed by the infinitive predicate can be cliticized onto the infinitive verb, where it originates, or to the verbal restructuring element:

- (130) a. En Joan havia tornat a veure'l
 'John had come back to see-him'
 (cf. John had again seen-him)

b. En Joan 1'havia tornat a veure

'John him-had come back to see'

Sentential structures exhibiting aspectual verbs may have an ambiguous reading if the restructuring verb could otherwise express motion and clitic climbing has not applied. Consider the following sentences which may be ambiguously interpreted as (a) or (b):

(131) Anava a dir-te el que va passar

a. '(I) was going to tell-you what happened'

b. '(I) was gonna tell-you what happened'²⁷

(132) He tornat a felicitar-la

a. '(I) have come back to congratulate-her'

b. '(I) have congratulated-her again'

(133) Va venir a dir-me que no li interessava

a. '(He/she) came to tell-me that it did not interest him/her'

b. '(He/she) more or less told-me that it did not interest him/her'

(134) Ha arribat a molestar-te

a. '(He/she) has arrived to bother-you'

b. '(He/she) has even bothered-you'

As the (b) glosses indicate the inflected verb has the function of a future marker (131), or that of an adverbial-like expression ((132),(133), (134)); whereas in (a) the inflected verb is a motion predicate and the sentence in the infinitive is a purposive clause.

The ambiguity between (a) and (b) interpretations does not obtain if clitic climbing applies:

- (135) T^i anava a dir [e]ⁱ el que va passar (cf. (131))
 a. *(I) to youⁱ was going to tell [e]ⁱ what happened'
 b. '(I) to youⁱ was gonna tell [e]ⁱ what happened'
- (136) L^i 'he tornat a felicitar [e]ⁱ (cf. (132))
 a. *(I) herⁱ have come back to congratulate [e]ⁱ,
 b. '(I) herⁱ have again congratulated [e]ⁱ,
- (137) Em^i va venir a dir [e]ⁱ que no li interessava (cf. (133))
 a. *(He/she) to meⁱ came to tell [e]ⁱ that it did not interest
 him/her'
 b. '(He/she) to meⁱ more or less told [e]ⁱ that it did not
 interest him/her'
- (138) T^i 'ha arribat a molestar [e]ⁱ (cf. (134))
 a. *(He/she/it) youⁱ has arrived to bother [e]ⁱ ,
 b. '(he/she/it) youⁱ has even bothered [e]ⁱ,

The fact that no clitic climbing is possible under the purposive interpretation might be explained by well formedness conditions on chain formation. Following Faraci (1974) we may assume that purposive clauses are dependent on S:

- (139) $\left[\begin{array}{c} NP_i \\ S_1 \end{array} \left[\begin{array}{c} V \\ VP \end{array} \right] \left[\begin{array}{c} PRO \\ S_2 \end{array} \left[\begin{array}{c} V \\ NP_j \end{array} \right] \right] \right]$

The clitic pronoun which is the head of the argument chain $C_j = (cl^j, [e]^j)$ would not c-command the empty category it is linked to by chain formation if it is cliticized onto the main V in S_1 .

Object preposing with impersonal ES/SE is also precluded under the purposive interpretation. The examples (140)-(141) below may be ambiguous between readings (a) and (b). In these cases object preposing has not applied:

- (140) S' anava a collir el blat
 a. 'People went to pick up the wheat'
 b. 'People were gonna pick up the wheat'

- (141) Es tornava a observar l'eclipsi
 a. 'People came back to observe the eclipse
 b. 'People again observed the eclipse'

If the object appears preposed, the sentences are not ambiguous, and only the (b) reading is possible:

- (142) El blat_i s'anava a collir [e]_i
 a. *'The wheat_i people went to pick up [e]_i'
 b. 'The wheat_i people was gonna pick up [e]_i'
- (143) L'eclipsi_i es tornava a observar [e]_i
 a. *'The eclipse_i people came back to observe [e]_i
 b. 'The eclipse_i people again observed [e]_i'

The impossibility of an interpretation such as (a) in (142) and (143) may be explained on the assumption that purposive clauses are always islands for extraction because they are not subcategorized for by a predicate. Thus, the lack of ambiguity of structures in which the NP object appears preposed might follow as a consequence of the Condition on Extraction Domains²⁸. Under the purposive reading which corresponds to a structure like (139), object preposing or clitic climbing would violate conditions on rule application²⁹.

The preceding discussion seems to indicate that an account of complex predicate formation in terms of simultaneous phrase markers for one and the same terminal string (cf. Zubizarreta (1982)) may not be adequate. The possible ambiguities in interpretation that may exist when an object NP of an infinitive verb does not undergo movement are expressed in the grammar with two different structures, corresponding to two different sentences, where an inflected verbal element fulfills a different function in each case. In one case it is generated as the head of a predicate phrase and has the properties attributed to predicatehood: it establishes thematic relations with arguments which are defined as internal or external according to the lexical properties of this predicate head. In the other case it is analyzed as a VP modifier and its function is that of making precise certain aspects of the predicate which might not be specified by means of pure auxiliary verbs (immediate future, iteration, etc.) Only in the latter case are the phenomena associated with restructuring possible.

The two structures corresponding to the two possible readings in

the examples discussed may not be simultaneous for the same string as Zubizarreta suggests. If they were simultaneous, no movement operations could ever apply because there would be always one representation of the string precluding it³⁰.

The claim that restructuring verbal elements such as aspectual verbs are base-generated as modifiers of the head of a main predicate phrase accounts for the observation that they have to be adjacent to the element they modify. Zagana (1982) and Zubizarreta (1982) point out that these elements appear to behave as syntactic affixes onto a main predicate. It has often been observed that no category, like an adverb or the auxiliary element may intervene between the aspectual and the predicate in the infinitive³¹:

(144) * Tⁱ arriba sempre a molestar [e]ⁱ
'(He/she/it) youⁱ arrives(=even) always bother [e]ⁱ'

(145) * Hoⁱ solc haver dit [e]ⁱ
'(I) itⁱ use to have said [e]ⁱ'

The adjacency requirement would account for the fact that syntactic Move α cannot apply to what would appear to be their complement in the infinitive³²:

(146)a. *Em pregunto a què_i va [e]_i
'(I) am wondering what_i (he/she) is gonna [e]'
b. *No sabia a què_i torna [e]_i
'(I) didn't know to what_i (he/she) comes back (=again) [e]_i'

Aspectual modifiers behave in a similar fashion to the auxiliary in Catalan or Spanish, in the sense that the compounds [Auxiliary-Verb] or [Aspectual-Verb] form a syntactic unit for the effects of movement rule application to a V^n node.

As was already mentioned in several occasions, it has been assumed, following Torrego (1984), that wh-movement of an argument of S triggers adjunction of a projection of V to the S node in Spanish or Catalan. V adjunction movement to S may trigger ECP effects if wh-extraction applies out of the complement of a verb that has been preposed under previous application of Move α to COMP. Evidence for this claim was provided in Chapter III (94).

The same type of ECP violation can be observed with the verbal complexes formed with an aspectual and the verb in the infinitive:

(147) a. *Què no saps qui acaba de trencar

'What don't you know who finished to break'

(cf. 'What don't you know who just broke')

b. *Què no saps amb qui torna a parlar

'What don't you know with whom (he/she) comes back to talk'

(cf. 'What don't you know with whom (he/she) again talks')

The ungrammaticality of these sentences is parallel to (148 a,b) below, in which the aspectual verb is not present:

(148) a. *Què no saps qui ha trencat

'What don't you know who has broken'

b. *Què no saps amb qui parla

'What don't you know with whom (he/she) talks'

Given the parallelism with respect to grammaticality judgements, one must assume that the whole verbal complex [Aspectual+V] functions as a syntactic unit for movement effects. This may be taken as an indication that the aspectual is a modifying element. Notice that if the aspectual was forming a separate constituent with the verb, and if only the aspectual verb had been preposed in (147 a,b), a clear contrast in grammaticality would have appeared as compared to (148 a,b) because the infinitive verb (a lexical head) would have been able to properly govern the trace of the wh-phrase moved to the highest COMP ³³.

2.5.2. Root modal verbs

In section 2.4 it was shown that the epistemic reading for a modal verb appears to be excluded if it is in the scope of VP elements: perfect markers and aspectual verbs. It has been my contention that restructuring constructions are monosentential at every level of representation. The relative distribution of aspectual verbs and perfect markers with respect to modals was claimed to reflect the syntactic position of a modal in S, namely as dominated by INFL (epistemic) or as dominated by the VP (root).

Root modal verbs impose selectional constraints on the nominative argument of the verb with which they form a complex predicate:

- (149) a. El quadre emⁱ va impressionar [e]ⁱ
 'The painting meⁱ impressed [e]ⁱ'
- b. *El quadre emⁱ va voler impressionar [e]ⁱ
 'The painting meⁱ wanted to impress [e]ⁱ'
- (150) a. En Joan emⁱ va impressionar [e]ⁱ
 'John meⁱ impressed [e]ⁱ'
- b. En Joan emⁱ va voler impressionar [e]ⁱ
 'John meⁱ wanted to impress [e]ⁱ'

The unacceptability of sentences like (149 b) are due to the selectional restrictions imposed on the subject of the verb impressionar (to impress) by the adjunct predicate voler (to want). Recall that restructuring voler cannot be a control predicate for the reasons already discussed (cf. sec. 2.2.).

Selectional restrictions leading to unacceptable sentences like (149 b) are replicated with modals like poder (may/can) and haver de (to have to) in their adjunct-predicate function, which syntactically corresponds to the VP position:

- (151) a. * Comença a haver de ploure
 '(It) starts to have to rain'
- b. * Torna a poder ser necessari que parlem amb ells
 '(It) again can be necessary that (we) talk to them'

c. (??)* Havia pogut semblar que ella no n'estava convençuda

'(It) had could seem that she was not convinced of it'

The examples above have been constructed with the modals haver de and poder in the scope of VP elements, either aspectuals or an auxiliary to exclude their epistemic interpretation. If these VP elements are not present, the sentences are grammatical because a non-root reading of the verb (i.e., dominated by INFL) is possible and this is the analysis assigned to the modal in the grammatical sentences below, which are 'apparently similar to (151 a-c), except that the aspectual or the auxiliary does not appear:

(152) a. Ha de ploure (cf. (151 a))

'(It) has to rain'

b. Pot esser necessari que parlem amb ells (cf. (151 b))

'(It) may be necessary that (we) talk with them'

c. Podia semblar que ella no n'estava convençuda (cf. (151 c))

'(It) could seem that she was not convinced of it'

Similarly, if the sequence Auxiliary/Aspectual-Modal is reversed in (151 a-c) the sentences are fully grammatical. According to this hypothesis, the modal verb is analyzed as a constituent of INFL in those cases, outside the scope of VP elements³⁴:

(153) a. Haurà de començar a ploure (cf. (151 a))

'(It) has to start raining'

- b. Pot tornar a ser necessari que parlem amb ells (cf. (151 b))
 '(It) may again be necessary that (we) talk with them'
- c. Podia haver semblat que ella no n'estava convençuda (cf. (151 c))
 '(It) could have seemed that she was not convinced of it'

Root modal verbs may appear adjacent to each other and may each assign a secondary θ -role to the nominative NP:

- (154) a. La Meritxell liⁱ hauria volgut poder dir el que pensava [e]ⁱ
 'Meritxell to him/herⁱ would have wanted to can to say what
 (he/she) thought [e]ⁱ'
- b. En Joan començava a haver de poder trobar una forma de
 resoldre el problema
 'John started to have to can to find a way to solve the problem'

The θ -criterion as formulated in Chomsky((1981),335) excludes the possibility of a predicate assigning the same θ -role to more than one argument, or for a trace to be associated with two argument heads. It establishes as well that the θ -assigning properties specified in the thematic structure of a lexical element must be assigned to an argument. This formulation of the θ -criterion does not exclude the possibility of an argument chain being assigned more than one θ -role if more than one element with a predicative function appears in S³⁵.

Root modal verbs appear to fulfill the characterization of

secondary predicates (cf. Rothstein (1983), 167). They do not determine the argument structure of the sentence in which they appear, they impose selectional restrictions but the term to which they assign a θ -role is defined as an internal or external argument according to the lexical idiosyncracies of the primary predicate, which is the infinitive verb which appears rightmost in the VP.

Rothstein (1983) argues that the predicate-subject relation has to conform to a syntactic well-formedness condition which applies at S-Structure, requiring that non θ -marked (i.e., predicative) elements must satisfy the predicate-linking rule. The rule requires mutual c-command between an argument position and a predicate (primary or secondary)³⁶.

Notice that, while the lexical function of root modals as predicative elements is satisfied at some level of representation, the syntactic well-formedness condition requiring mutual c-command between the root modal and the argument to which it assigns a θ -role is not satisfied if, as I suggest, root modals are dominated by a maximal VP node the head of which is the primary predicate in the infinitive.

There are two possible alternatives to consider. Zubizarreta (1982) suggests that these predicational elements are not subject to the (Argument) θ -criterion. She adopts a restricted version of the θ -criterion (cf. Chomsky (1981), 34) which excludes the association of a term with the thematic grid of more than one element with a predicative function. Zubizarreta argues that root modals obey the (Adjunct) θ -criterion, which is fulfilled at LF. If this is so, the predicate-linking rule (an S-Struc-

ture condition) applies vacuously and the structures are well formed.

Another alternative would be to assume, as a null hypothesis, that the projection principle applies uniformly at D-Structure for all θ -role assigning elements (primary and adjunct predicates). Since root modals are base-generated in the VP node and, moreover, they seem to undergo a word formation process with the main predicate head (cf. Zagana (1982), Zubizarreta (1982)) it may be suggested that their θ -role is assigned compositionally with that of the main predicate head in the infinitive. Then, the choice of the argument of predication would be determined by the head of VP and its complements (cf. Chomsky (1981)) as well as the predicative affix-like elements.

Some indication that this might be so is provided by the following type of sentences:

(155) a. En Joan_i semblava [[e]_i estar sempre despistat]

'John_i seemed [[e]_i to be always lost]'

b. En Joan_i podia semblar [[e]_i estar sempre despistat]

'John_i could seem [[e]_i to be always lost]'

Hypothetically, the modal poder in (155 b) may be analyzed either as dominated by INFL or as dominated by a VP node headed by seem. In the latter case it would assign an adjunct θ -role to the surface subject. Then, the sentence could mean either 'It is possible that John seemed to be always lost' or 'John is able to seem to be always lost', depending on the position of the modal in S. According to my own intuitions, the

modals from the general class of restructuring verbs. I first tried to establish whether complex predicates under restructuring were base-generated as compounds or were the outcome of a transformational operation performed on a multisentential D-Structure configuration. According to their lexical properties, verbal heads of predicate phrases which take non-interrogative infinitive complements can be of only two types, raising or control.

This distinction appeared to be, however, a spurious one in the case of restructuring verbs. The discussion concerning the distribution of en/ne cliticization proved that an analysis of any restructuring verb as a control predicate would violate the projection principle.

Rizzi's hypothesis relative to locality conditions on chain formation indirectly proved, on the other hand, that all restructuring verbs fail to behave as raising predicates. The presence of a modal or aspectual verb in a sentential structure is not relevant in determining whether the surface subject is a derived subject.

These facts provided some support for the hypotheses that there is no restructuring transformation in Romance, that sentences containing modal and/or aspectual verbs are base generated as monosentential complexes, and that no restructuring verb can be the head of a predicate phrase.

Some restrictions concerning aspectual marking, morphology, the sequential order of restructuring elements and adjacency could be accounted for under the assumption that modal verbs may appear in two syntactic positions in S, INFL or VP, contingent on their function as sentential operators or adjunct predicates. It was suggested that their contribution to the interpretation of the clause depends on how they are analyzed in

the base component³⁸.

The semantic properties of aspectual verbs and their behavior with respect to the syntactic processes associated with restructuring were also considered. Possible ambiguities which may arise with other constructions showing homonymous verbal forms with the function of main predicate proved independently that aspectuals (as well as modals) cannot be analyzed as heads of a VP phrase. They must be analyzed as VP modifiers in order for the phenomena associated with complex predicate formation to occur. Otherwise conditions such as the ones applying on chain formation and the CED are necessarily violated.

3. Modal verbs and opacity

The preceding discussion focusing on the properties of restructuring verbs sought to provide a basis for the hypothesis that a notional category Modal is a possible constituent of the INFL node in Romance, with Tense and AGR.

The expansion of INFL as containing the category Modal follows with some variation the analysis originally proposed in Chomsky (1957) for English structures containing modal verbs³⁹. It was shown above that the behavior of epistemic modals with respect to possible adjacency to other epistemic modals, aspectual marking and untensed morphology was practically the same as in English, these properties characterizing only

aspectual verbs marking a complex [Modal + V] in subjunctive clauses make coreference for the subject pronominal impossible in some cases and questionable in others. There is a contrast between (a) and (b) in the examples below in this respect. In (166 a)-(170 a) the modal verb is preceded by a perfect marker or an aspectual. In the corresponding (b) cases the modal appears unmarked for perfect or it is outside the scope of the aspectual verb:

(166) a. * En Joan_i tem que [pro_i hagi hagut de sortir immediatament]
SUB

'John_i fears that [(he)_i have had to leave immediately]'

b. En Joan_i tem que [pro_i hagi de sortir immediatament]
SUB

'John_i fears that [(he)_i has to leave immediately]'

(167) a. (*)) En Pere_i desitjava que [pro_i hagués pogut visitar la ciutat]
SUB

'Peter_i desired that [(he)_i had could visit the city]'

b. En Pere_i desitjava que [pro_i pogués visitar la ciutat]
SUB

'Peter_i desired that [(he)_i could visit the city]'

(168) a. *[La seva_i esperança que [pro_i hagués pogut parlar amb ell]]
SUB

anava disminuint

'[His/her_i hope that [(he/she)_i had could talk with him]]

was diminishing'

(170 b) would indicate that coreference for pro in the [NP,S] position of a subjunctive clause is possible if the modal is in INFL but not otherwise.

Modal verbs as constituents of INFL are analyzed as occupying the head position, the features [Tense,AGR] being analyzed as daughters of INFL. If there is no modal verb, [Tense,AGR] occupy the head⁴¹. If the head of INFL contains a Modal, the head of the projection cannot be anaphorically related to the head of S in the upper clause. Then a Tense-chain cannot be formed and pro in the [NP,S] of the examples above may be interpreted as free in reference.

[Tense,AGR] would otherwise constitute the head of INFL, if a modal verb is in the VP node as an adjunct or secondary predicate (i.e., root modal).

The intuitive idea behind this proposal is that the scope of some sentential operators such as a fully specified [+Tense] or an epistemic modal appear to delimit domains for the interpretive rules to apply defining basic units for the processing of sentences. Although the morphological tense marking of subjunctive clauses containing modal verbs still needs to be dependent on the tense of the upper clause due to its anaphoric character, it is not in the head position of S, but the modal is, and heads have the property of taking scope over all their projections⁴².

This suggestion leaves some problems open. A different alternative can be suggested based on a recent proposal by Chomsky (forthcoming)⁴³.

Chomsky (forthcoming) suggests that a binding domain for a given α , $\alpha = [\pm \text{anaphor}, \pm \text{pronoun}]$, should be defined as the minimal Complete Functional Complex (CFC) in which the principles of binding can be satisfied under some indexing⁴⁴. A governing category or binding domain would be the minimal category where all grammatical functions are fulfilled, both under the projection principle and under the predicate linking rule which requires for predicates to be licensed by syntactic subjects (argumental or pleonastic).

In Chapter II it was pointed out that subjunctive clauses cannot be root sentences because they exhibit a defective tense marking. Their morphological specification for $[\pm \text{Past}]$ has always to be linked to the mark for $[\pm \text{Past}]$ in a superordinate category. This implies that subjunctive sentences have always the function of arguments of predication.

A Complete Functional Complex would thus include a category X with a subject and its subjunctive argument clause because so is it required by the projection principle. The local domain where its pronominal subject must be free in reference would not be the S node immediately dominating it, but the minimal category --for which S is defined as an argument or the argument of an argument-- where all grammatical functions are saturated.

Under this view, reference to the Tensed-S Condition or some version of it might still be needed in the characterization of governing category, for indicative clauses that may also be arguments of predication close always a domain for binding. Contrary to subjunctive sentences, they behave like islands for the binding conditions to apply even if

they are included in a larger functional complex.

Subjunctive sentences exhibiting a modal verb in the head of INFL would be a governing category under this hypothesis because the minimal S dominating the modal may constitute a CFC. Epistemic modals may be thought of as elements expressing a property predicated of the event that the sentence is describing. It was suggested above that the licensing condition for epistemic modals appears to be the expression of morphological Tense. Recall that no epistemic modals are allowed to appear in infinitive structures. The features [\pm Past] whether 'referential' or 'anaphoric' in the sense given in this study would be the subject of the modal in some sense. If this is so, a functional complex is completed in the minimal S containing the modal verb. Therefore this S would be a governing category for a pronominal element in its [NP,S] position.

Notes to Chapter Four

¹See also Zagana (1982) for a proposal along these lines.

²See Lightfoot (1979), Steele et al.(1981), Roberts (1984) and references cited therein.

³The impersonal clitic es/se stands for an indefinite referent (one, human beings). An NP counterpart of es/se exists in Catalan: Hom:

- (i) a. Antigament, hom creia que el Sol girava al voltant de la Terra
 b. Antigament, es creia que el Sol girava al voltant de la Terra

'In the old times, people believed that the Sun turned around the Earth'

The clitic es/se as well as its equivalents si and se in Italian and Spanish respectively, is associated with a peculiar construction in the grammar of Romance: when es/se appears encliticized onto a transitive predicate, the verb may agree with its internal argument, and object movement to subject position can apply. That is, its effects on the sentence consist in absorbing the function of the [NP,S] as a thematic position:

- (ii) a. S'apreciava molt la ceràmica japonesa
 'People appreciated Japanese pottery very much'
 b. La ceràmica japonesa_i s'apreciava [e]_i molt
 'Japanese pottery_i people appreciated [e]_i very much'

Such processes of object preposing and agreement of the verb with its internal argument in es/se constructions is not possible with its NP equivalent hom.

For extensive discussion on the properties of the impersonal es/se construction, see Rizzi (1976), Otero (1972), Burzio (1981), Belletti (1982), Hyams (1983) and Manzini (1983 b).

⁴There is an extensive literature dealing with the phenomenon of restructuring in Romance. The reader is referred to the following authors and references cited therein: Strozer (1976), (1981), Demonte (1977),

Rizzi (1978), Burzio (1981), Zagana (1982), Zubizarreta (1982), Manzini (1983b) and Hernanz and Rigau (1984).

⁵These examples are from Rizzi (1978). In Catalan only the auxiliary to have may act as a perfect marker (see also fn.20).

⁶Sentence (33 b) is grammatical under an interpretation which is irrelevant in the present context, namely if en/ne stands for cliticization of a PP de NP (about NP):

(i) Molts (nois) parlaven de les eleccions
'Many (boys) talked about the elections'

(ii) Molts (nois) en parlaven
'Many (boys) about it talked

(iii) En parlaven molts (nois)
'About it talked many (boys)'

⁷The possibility of a double subcategorization frame for some restructuring verbs such as cominciare (to start) has been suggested in Burzio (1981), (1982).

⁸N.Chomsky (p.c.) has pointed out, however, that it is not clear why the SSC doesn't apply, given that the simultaneous structure (52 a) should always invoke it.

⁹This assumption is partially based on the facts relative to clitic climbing. The pronominal (head of the argument chain) encliticized on the restructuring verb must c-command the empty category it is co-superscripted with.

¹⁰I will suggest that the presence of a morphological tense marker (indicative or subjunctive) constitutes the licensing condition for an epistemic modal. In section 2.4.3. some consequences will be argued to follow from this assumption.

¹¹ Sentence (i) in Spanish is ambiguous between interpretations (a) and (b):

(i) Juan debe trabajar mucho

'John must work a lot'

a. It must be the case that John works a lot

b. John is obligated to work a lot

The exclusive epistemic interpretation of the modal deure (must) in Catalan must be a (relatively) recent phenomenon, given that this does not appear to have always been the case. As far as one can infer from the contexts, deure had also a root interpretation in Old Catalan.

¹² The ungrammaticality of configurations such as (60) was first noticed by Kayne (1975).

¹³ See Rizzi (1982b)fn.18

¹⁴ Burzio (1981),(1982) attributes the ungrammaticality of anaphoric cliticization in structures exhibiting a derived subject to an intrinsic property of anaphoric clitics which requires them to be related to an argument at all levels of representation, including D-Structure. The ungrammaticality of (58) and (59) would follow because at D-Structure the subject position is empty and the anaphoric clitic cannot be properly bound.

Observing that anaphoric cliticization is fully grammatical in restructuring complexes, Burzio proposes that a Subject Substitution rule may apply, with the effect that the syntactic relations previously held by the embedded subject might be reestablished with respect to the matrix subject after restructuring (i.e., VP movement in his account).

We may assume that Rizzi's condition (66), as well as filter (57), are the manifestation of a principle of grammar applying to argument chains. Under this view a transformational approach for restructuring would need still to account for the fact that Rizzi's condition, or the filter, do not apply in the case of epistemic modals. Chains with the excluded configuration appear if VP adjunction occurs:

(i) [En Pere_i [es_i devia [afaitar [e]_i] [[e]_i [e]_{vp}]]]]
 S VP VP S

'[Peter_i [himself_i must [shave [e]_i] [[e]_i [e]_{vp}]]]'

¹⁵This is the case in Catalan and Spanish. Aspectual verbs are highly idiosyncratic lexical items, and some of them might not have parallel correlates in all null-subject languages.

A. Belletti (p.c.) and L. Rizzi (p.c.) point out that the properties of aspectual restructuring verbs in standard Italian are similar to those of root modals, in the sense that they may establish thematic relations with the subject of the compound. R. Manzini (p.c.) has pointed out that dialectal variation appears to exist in Italian at this respect. In some non-standard dialects aspectual verbs seem to have the same properties than those described for Catalan and Spanish.

¹⁶An extensive amount of literature exists dealing with English modal verbs. The reader is referred to Jenkins (1972), Jackendoff (1972), (1977), Steele et al. (1981), Roberts (1984) and references cited therein.

¹⁷See, however, Ross (1967)

¹⁸The contrasts between modal and aspectual verbs with respect to the possible distribution of the perfect marker are difficult to be accounted for either by the transformational hypothesis of restructuring or by the simultaneous double structure proposal. In the first case, Move α is assumed to apply blindly, irrespective of the actual elements composing the X' projection. On the other hand, simultaneous representations for aspectual restructuring verbs would only be possible if the infinitive predicate appears without a perfect marker, but not otherwise.

¹⁹This characteristic of deure of appearing only in the simple tenses has been pointed out in descriptive grammars. See for example Badia-Margarit ((1962),391).

²⁰The preterit tense is normally constructed as a periphrastic form in Catalan, with the verb anar (to go) in the present tense and a predicate in the infinitive. Va is a pure auxiliary element:

(i) a. Jo vaig dormir

'I slept'

b. La Mercè va anar a Grècia

'Mercè went to Greece'

²¹For most speakers, myself included, (90 d) is not unacceptable, as contrasted with the ungrammatical status of (90 a-c).

²²Strozer (1981) and Zagona (1982) argue that aspectuals are verbal elements in the VP with the function of semi-auxiliaries. See also fn.26

²³A sequence of two root modals is possible, as will be shown further below.

²⁴The ungrammaticality of examples like (105), as well as that of (107) and (108), were brought to my attention by G.Rigau (p.c.)

²⁵The modal deure (must) is homonymous with the transitive predicate deure (to owe) which, as any predicate, may be marked with infinitive or gerund morphology:

(i) a. Sento [PRO deure tants diners]

'(I) regret [PRO to owe so much money]'

b. [PRO devent tants diners] no sé perquè has demanat un nou préstec

'[PRO owing so much money] I don't understand why did you ask for another loan'.

²⁶The non-predicative function of aspectual verbs when forming a complex with an infinitive predicate has been repeatedly addressed in descriptive grammars of Catalan and Spanish. They had been traditionally considered semi-auxiliary elements. See, among others, Roca Pons ((1958), 12), Alonso ((1967), 194), Alcina and Blecua ((1975), 778) and Fabra ((1956), 88).

²⁷The case of gonna contraction in English vs. going to would reflect the point I am trying to illustrate. Gonna does not function as a predicate but as a future marker: 'I'm gonna tell you something', 'It's gonna rain', 'He's gonna die', etc.

²⁸See Huang ((1982), 505) and Chapter III (95) above.

²⁹The same results would follow, I believe, on the assumption that purposive clauses are in the VP. The CED establishes that extraction out of a domain D is possible only if D is properly governed. If proper government obtains under the conditions proposed in Stowell (1981) --i.e., lexical government and coindexing--, the purposive clause in the VP would be lexically governed by the verbal head, but it would not be properly governed because it does not share an index with the θ -grid of the verb.

³⁰Similar arguments would apply in the hypothesis of restructuring proposed in Manzini (1983 b) who incorporates the basic proposal of Rizzi (1978) into Zubizarreta's double structure hypothesis.

³¹Other aspectual verbs are allowed to appear adjacent to each other. A sequence of aspectuals, unlike a sequence of modals, does not affect the selectional restrictions of the infinitive predicate:

- (i) a. Va tornar a començar a nevar copiosament
'(It) came back (=again) to start to snow copiously'
- b. Les fulles van tornar a començar a sortir després de la gelada
'The leaves came back (=again) to start to appear after the freezing'
- c. La multitud va tornar a començar a cridar
'The crowd came back (=again) to start to shout'
- (ii) a. El most sol acabar de fermentar en botes de roure
'The must uses to finish to ferment in oak barrels'
- b. En Joan sol acabar de treballar a les sis
'John uses to finish to work at six
- (iii) a. Els delegats acaben de tornar a començar a discutir l'article primer de la nova llei
'The representatives finish to come back to start to discuss the first article of the new law'
- b. La tempesta acaba de tornar a començar a arremetre
'The thunderstorm finishes to come back to start to rush'

³² Sentences (146 a) and (146 b) are grammatical if the verbs to go and to come back (va and torna respectively) are main predicates expressing motion, and the wh-phrase in COMP stands for a purposive clause. It can be assumed that the trace of the adjunct clause is antecedent-governed by the wh-phrase in the immediate COMP.

³³ A problem that the hypothesis proposed meets is exemplified by the following contrasts in grammaticality in the Italian sentence types exemplified below, pointed out to me by L. Burzio (p.c.):

- (i) a. (??)* pro loⁱ ho tornato a dire [e]ⁱ
 '(I) itⁱ have come back to say [e]ⁱ'
 (cf. I have said it again)
- b. pro loⁱ sono tornato a dire [e]ⁱ
 '(I) itⁱ am come back to say [e]ⁱ'
 (cf. I have(=to be) said it again)

The choice of the auxiliary to be vs. to have appears to be determined by the aspectual verb, not by the lexical properties of the predicate in the infinitive which should select avere (to have), as all transitive verbs.

The ungrammaticality of ((i) a.) contrasts with the grammaticality of (ii):

- (ii) Mario è voluto tornare a casa (cf. (14 b))
 'Mario is wanted to come back home'
 (cf. Mario has wanted to come back home)

In this latter case the main predicate, an ergative verb, and not restructuring volere (want) is the verb selecting the auxiliary. In Burzio (1981) these facts are accounted for by the effects of a VP adjunction movement rule onto the main sentence.

³⁴ L. Rizzi (p.c.) has brought to my attention one case where epistemic modals in Italian seem to admit a perfect marker, namely if the form is

inflected for the conditional:

- (i) Giovanni avrebbe potuto avere 20 anni

'Giovanni would have may be 20 years old'

A root reading for the modal appears impossible: '?? Giovanni would have been able/allowed to be 20 years old'

³⁵This was brought to my attention by N.Chomsky (p.c.)

³⁶The predicate-linking rule as a condition to be satisfied at S-Structure would perhaps account (although only in part) for the English 'Can't seem to' construction (see Langendoen (1970), Chomsky (1975)). English sentences like (i) are interpreted as in (ii):

- (i) Abe can't seem to afford paying the rent (cf.Langendoen (1970),
(2 a))
(ii) It seems that Abe is unable to afford paying the rent

Can may only have a root reading. These authors suggest that a raising transformation should have applied to the modal, base-generated in the subordinate untensed INFL node, placing it in the INFL position of the main sentence. Raising of the subject is triggered by principles of Case-assignment. Raising for the modal verb may follow from the combined effects or morphology (i.e., root can does not have an untensed form although it seems that it might be generated in an untensed INFL) and the predicate linking rule, which has to be satisfied at S-Structure. This English construction poses a number of other questions for which I cannot offer a satisfactory answer.

³⁷N.Chomsky (p.c.) points out that (156 a,b) also appear to violate the θ -criterion at S-Structure, since the chain has two θ -positions.

³⁸The hypothesis that modal verbs may appear in INFL in the null-subject languages is challenged by Hyam's (1983) proposal that null-subject parameter grammars identify AGR with PRO. She suggests that the characterization of AGR as a pronominal anaphor accounts for the absence of lexical expletives and existential there, as well as the possibility of phonologically unrealized subjects.

In this hypothesis modals may not be in INFL because the appearance of lexical material in the head of INFL would govern the pronominal anaphor.

³⁹See also Jackendoff (1977), Fiengo (1979) and Steele et al (1981)

⁴⁰This would be the case of Icelandic. See fn.18 in Chapter II.

⁴¹An analysis of English modal verbs as heading a maximal projection, with [Tense,AGR] analyzed as elements attached to the XP' level has been proposed in Jackendoff ((1977), 264). Hyams((1983), 54) has also suggested that a Head Assignment principle applies in the grammar under the following convention:

(i) Head Assignment Principle:Where Aux contains lexical material Aux. heads INFL, otherwise AGR heads.

⁴²The proposal of a QR application at LF for the modal verbs from a VP position seems untenable. It would not explain, for example, why epistemic modals do not appear with perfect or aspectual markers. Williams (1984) also argues that epistemic modals do not undergo QR and their scope appears to be assigned by the base rules.

⁴³I am indebted to L. Rizzi for bringing this to my attention.

⁴⁴Chomsky's proposal allows the possibility of having different local domains for anaphors and pronouns because the binding theory can be satisfied under different indices in different categories. Given that pronouns are always free, conditions will be satisfied in minimal categories, whereas anaphors would require an antecedent obligatorily. The latter case will be satisfiable only in a category containing one.

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