UNIVERSAL LICENSING:

IMPLICATIONS FOR PARASITIC GAP CONSTRUCTIONS

by

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Abstract

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This dissertation investigates, within a Government-Binding framework, the licensing mechanisms which regulate the distribution of sentence-internal constituents. It is proposed that the licensing requirements apply across components, in the spirit of the Projection Principle of Chomsky (1981). Under the extended view of licensing proposed here ("Universal Licensing"), maximal projections must comply with the appropriate licensing requirements at every syntactic level of representation.

This allows for a more constrained model of grammar, under which a number of facts follow in a principled way; this is the case particularly with respect to constructions involving null operators. Thus, from the D- and S- Structure conditions on null operator licensing, we derive the cross-linguistic as well as the language-internal distribution of resumptive pronouns. Furthermore, some of the well-known, but so far stipulated, constraints on parasitic gap (PG) constructions are shown to follow from general principles: we explain for instance the fact that PGs must be sanctioned at S-Structure, as well as the inability of adjunct movement to license PGs.

The consequences of Universal Licensing on the distribution of PGs are examined with particular reference to adnominal PGs in French genitival relatives. It is shown that the properties displayed by these little-studied ("double dont") constructions, in conjunction with the Universal Licensing Principle, shed significant light on a number of issues, among which the thematic structure of nominals, and the nature of the locality constraints on null operator identification.

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Résumé

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Cette these étudie, dans le cadre de la théorie du Gouvernement et du Liage, les mécanismes de sanctionnement qui régissent la répartition des constituants à l'intérieur de la phrase. Il est proposé que les contraintes de sanctionnement s'appliquent dans toutes les composantes du modèle, dans l'esprit du principe de projection de Chomsky (1981). Dans le cadre d'une théorie étendue du sanctionnement telle que celle proposee ici (le "sanctionnement universel"), les projections maximales doivent être adéquatement autorisées à tous les niveaux de représentation syntaxique.

Cette proposition a pour effet de contraindre le modèle syntaxique et de dériver un certain nombre de faits de principes plus généraux. C'est le cas en particulier pour les constructions à opérateurs vides. Ainsi les propriétés distinctives des pronoms résomptifs, aussi bien à travers les langues qu'à l'intérieur d'une même langue, découlent de l'application des contraintes de sanctionnement au niveau de la structure-D et de la structure-S. De plus, notre hypothèse permet de dériver certaines propriétés connues - mais jusqu'ici stipulées - des constructions à vides parasites (ViPs). Par exemple, le cadre proposé ici offre une explication au fait que les ViPs doivent être sanctionnés en structure-S; il explique également l'impossibilité pour les traces d'adjoint d'autoriser les ViPs.

Les conséquences du sanctionnement universel sur la distribution des ViPs sont étudiées avec une attention particulière aux relatives génitives du français. Les propriétés de ces constructions relativement peu documentées (constructions dites à "double dont"), de concert avec le principe du sanctionnement universel, mettent en lumière un certain nombre de questions importantes, dont la structure thématique des nominaux et la nature des contraintes de localité régissant l'identification des opérateurs nuls.

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CHAPTER 1

INTRODUCTION

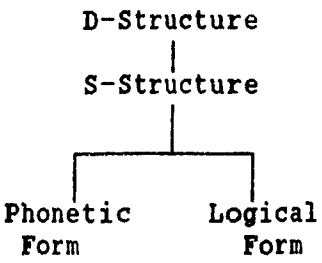
The first section of this chapter consists in an overview of the main features and assumptions which characterize the theoretical framework within which the present study is cast, i.e. Government-Binding Theory (Chomsky 1981), along with the modifications concerning movement and government introduced in Barriers (Chomsky 1986b). The second section introduces the reader to the phenomenon of parasitic gaps (PGs); a review of the properties of these constructions is presented, as are some of the analyses which have been proposed in the literature to account for their particular behaviour. In the third section, we summarize the main proposals put forth in this dissertation and stress their relevance to linguistic theory.

1.1. Theoretical Background

Throughout this dissertation, I shall assume the general model of Universal Grammar (UG) laid out in Chomsky (1981) and

subsequent work. In what has come to be known as the "modular" view of grammar, the organization of the grammar is as in (1), where each component or level of representation is autonomous, though it partially interacts with the other modules:

(1)



D-Structure constitutes the "base component", where lexical items are associated with structural representations, or syntagmatic trees. D-Structure maps onto S-Structure via the transformational rule "Move α", where α stands for any category. S-structure contains derivational information in the form of movement traces. S-Structure representations are then mapped, on the "left side", onto Phonetic Form (PF), where phonological rules apply to yield the phonetic output. On the "right side" of the grammar, S-Structures are mapped onto Logical Form (LF), where further movement rules apply, affecting the semantic interpretation of sentences. These are for instance the rules which assign scope to

quantifiers (e.g. Quantifier Raising -QR - cf. May 1977), and to Wh-elements (Wh-Raising; cf. Aoun, Hornstein & Sportiche 1981). In this model, LF is considered a syntactic level, since, in addition to the lexical items, it contains all the structural information about sentences that is relevant to semantic interpretation. The output of LF then feeds into a semantic component, where the meaning of sentences is read off the structural representations present in Logical Form.

Apart from these modules, UG also comprises a number of subsystems of principles which must be general enough to apply to every human language, yet sufficiently rich so as to severely constrain the form of possible grammars. The main sub-systems of grammar are given in (2):

(2) a. X-bar Theory
b. θ-Theory
c. Case Theory
d. Binding Theory
e. Government Theory
f. Bounding Theory
g. Control Theory

In what follows, I discuss the main features of the sub-systems listed in (2).

1.1.1. X-bar Theory

The structural representations of the base component (D-Structure) must meet the specifications set by X-bar (henceforth X') Theory. X'-Theory requires that every phrase be a projection of a zero-level category (X^0), i.e. an element available in the lexicon. Lexical items are divided into two main sets according to their feature content. The first class is that of "lexical" categories: nouns (Ns), verbs (Vs), Adjectives (As) and Prepositions (Ps), all defined in terms of their positive or negative value with respect to the binary features N and V. The second class of lexical items is that of functional categories, a closed set containing inflectional elements (I, including modals, tense and agreement elements), determiners (Ds) and complementizers (Cs). Functional categories are not defined with respect to the features N and V.

It is assumed that each element of the zero level heads a phrase XP which comprises the complements of X and the specifier of X. The general schema which X'-theory imposes on the internal structure of phrases can be illustrated as in (3) - where X*

represents zero or more occurrences of a given maximal projection:

(3) a. X' = X X"*
b. X" = X"* X'

It is assumed that, universally, heads project to an X'-level comprising the head and its sub-categorized complements (X"* in (3a)). The next level is the phrasal level, which contains X' and its specifier (X"*) in (3b). The exact nature of the specifier varies according to the category represented by X; for instance the specifier position hosts the phrasal subject when X = I, and constitutes the landing site for Wh-elements when X = C.[1]

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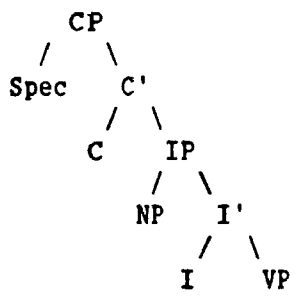
[1] I assume following Chomsky (1986b) that the clausal projections S' and S are not defective with respect to X'-theory, but are normally projected from their heads C (complementizer) and I (Inflection), as in (i):

(i)



While (3) specifies the hierarchical organization of the constituents within the phrase, the linear order of these constituents varies cross-linguistically, and is fixed according to the head-first/head-last parameter.[2] The order given in (3a) is that of SVO languages such as French and English; it is the reverse in SOV languages like German and Japanese.

1.1.2. θ-Theory

θ-Theory regulates the relations between heads and their complements, in terms of the semantic functions (θ-roles) assigned by these heads. The lexical entry for an X^0 category contains, apart from information concerning its semantic interpretation, a thematic structure, i.e. specifications regarding the number of arguments that it takes, along with the kinds of θ-roles assigned to its arguments. Further information is encoded in the sub-categorization frames of individual lexical items,

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[2] The head-first/head last parameter has been argued to be the result of a directionality parameter, specifying for each language the direction in which Case and θ-roles are assigned. See Travis (1984), Koopman (1984) for discussion.

specifying the categorial realization of its complements. An example is given below for the verb put.

(4) put

a. (Agent, Theme, Locative)
b. [__ NP PP]

(4a) specifies that put is a three-place predicate, i.e. a predicate which assigns three θ-roles: agent (the animate being which does the action), theme (the object which undergoes the action) and a locative (the place where the object is put). θ-roles are assigned to structural positions; the positions to which θ-roles are assigned are referred to as θ-positions. Positions to which no θ-role is assigned (such as, e.g. the subject position of verbs like seem) are called θ'-positions.

θ-roles are assigned under government, a structural notion which is relevant to various sub-systems of grammar. For the time being, let us assume the following definition of government, where α is a category of the zero level:

(5) α governs β iff α m-commands β and no maximal projection intervenes between α and β.

The notion of "m-command" (cf. Aoun & Sportiche 1983) is related to the notion of "c-command" originally introduced by Reinhart (1976). Thus in (6), α m-commands β if the choice for τ is "maximal projection", and α c-commands β if τ = first branching node.

(6) C-command/ m-command

α c-commands (m-commands) β iff α does not dominate β and every τ that dominates α dominates β.

where τ = the first branching node (the first maximal projection)

θ-roles are assigned by lexical heads under government. Let us, following Williams (1981), distinguish between external and internal θ-roles, i.e. θ-roles which are assigned to positions outside or inside the maximal projection of the head. Since, according to the definition in (5), verbs do not m-command outside of their maximal projection VP, it cannot be said that the external θ-role is assigned directly by the verb. In fact, there is evidence that the external θ-role is assigned composi-

tionally, i.e. by the whole verbal projection containing V and its complements (see Chomsky 1981:104f for discussion). Thus the external θ-role is unique in that it is assigned by VP, not V.

Further specifications present in lexical entries concern the categorial realization of the complements (i.e. the internal arguments): thus put requires two complements, realized as NP and PP; the first corresponds to the theme argument, the second to the locative argument.

The core principle of θ-Theory is the θ-criterion, stated as in (7), from Chomsky (1981:36).

(7) θ-Criterion

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

The θ-criterion is taken to hold at the level of LF. The term "argument" in (7) refers to constituents with referential value: noun phrases such as Lucy, the book or clausal constituents like that John left in sentences like "It is likely that John left". Since θ-roles are assigned to positions, an argument affected by "move α" receives its θ-role by virtue of binding a trace in a θ-

position. The θ-criterion yields as a result that movement is only possible to θ'-positions. Thus a derivation like (8a) with seem abides by the θ-criterion, while a similar derivation with the verb want violates it:

(8) a. Steffi$_i$ seems [t_i to have beaten Martina again]

b. Steffi$_i$ wants [t_i to win the French Open]

The verb seem assigns no external θ-role (as evidenced by the fact that expletives are possible in this position, e.g. it seems that S). Thus the subject position of the verb seem is a θ'-position. Steffi in (8a) receives only one θ-role, i.e. agent of beat, through its trace. The verb want, on the other hand, assigns an external θ-role. In (8b), Steffi receives two distinct θ-roles, i.e. agent of win, through its trace, and agent of wants. Thus under this derivation, (8b) is ruled out by the θ-criterion.

Chomsky's (1981) Government-Binding framework incorporates as a fundamental tenet the Projection Principle, which interacts

in important ways with the θ-Criterion. The Projection Principle is stated informally as in (9):

(9) Projection Principle

The lexical structure of individual items must be represented categorially at every syntactic level of representation, i.e. D-Structure, S-Structure and LF.

The Projection Principle says that even though the complement of a transitive verb is inaudible on the surface in the position where it is required to appear, it must be present in the syntactic representation, as an empty category. For instance, since the lexical structure of a verb like give specifies that two complements (bearing a theme and goal θ-role, respectively) must be present VP-internally, then at S-Structure a sentence like (10a) must have a representation like (10b), i.e. with an empty category occupying the position of the "missing" argument:

(10) a. What did Lucy give to Linus?

b. What$_i$ did Lucy give t_i to Linus?

Thus the Projection Principle (in conjunction with the θ-criterion, which requires that every θ-role be assigned), yields part of the trace theory of movement rules.

Another effect of the Projection Principle is that it simplifies, in fact, virtually eliminates, the categorial component. In earlier frameworks, a separate categorial component was assumed, which consisted of a set of rewrite rules, specifying the range of possible expansions for a given phrasal category. Thus, for instance, VP might be expanded as in (11):

(11) VP --> V (NP) (PP)

As several authors have noted, however, the rules of the categorial component reduplicate much of the information already contained in the individual sub-categorization frames of lexical items. Thus a ditransitive verb like put requires the full expansion of the categories in (11), a transitive verb like see selects the realization of NP only, while an intransitive verb like sleep selects none of the optional complements. The categorial component then incorporates a substantial amount of redun-

dancy in terms of the categories contained in a given expansion. The Projection Principle, by requiring that the lexical specifications of lexical items be realized at every level of representation (including D-Structure), amounts to projecting the subcategorization frames of each lexical item at that level. Thus the Projection Principle, order of constituents aside, eliminates the need for a separate categorial component.

1.1.3. Case Theory

Case Theory restricts the distribution of overt noun phrases at S-Structure to Case-marked positions, through the Case filter given in (12):

(12) Case Filter:

* [NP] if NP has a phonetic matrix and no Case

The Case-assigning categories have traditionally been assumed to be the [-N] categories: V and P, along with the AGR element in INFL. The former assign accusative and oblique Case to their object, the latter assigns nominative Case to the

clausal subject. Assuming that the AGR element is restricted to tensed clauses (plus inflected infinitives in some languages), an overt NP subject will be limited to those positions, unless some outside Case-assigner is available (such as e.g. for or a verb of the Exceptional Case Marking class: expect, believe, consider, etc.). This is shown in (13):

(13) a. * (For) Lucy to leave now would be a mistake

b. * We tried Janet to win the prize

Nouns and Adjectives do not assign Case directly to their complement; instead the preposition of (a Case-assigner) must be inserted between a noun or adjective and its complement. Compare:

(14) a. They discussed the problem

b. Their discussion *(of) the problem

c. These parents are proud *(of) their children

It has been proposed that Case is assigned under adjacency (see Stowell 1981). Verbs assign accusative Case to their direct

objects, and hence must be string-adjacent to these objects. This accounts for the ungrammaticality of (15a,b) with intervening PPs and adverbs:

(15) a. * Max put on the shelf the book

b. * Max reads often magazines

1.1.4. Binding Theory

Binding Theory governs the distribution and interpretation of pronominals and anaphors. In Chomsky's (1982) framework, overt NPs and empty categories are cross-classified according to their value with respect to the features [anaphoric] and [pronominal]. This yields the following four types of categories:

(16)

	Empty	Overt
[+a, -p]	NP-trace	Lexical anaphors
[+a, +p]	PRO	----
[-a, +p]	pro	Pronouns
[-a, -p]	Wh-trace	R-expressions

"Pure" anaphors are NP-traces (i.e. traces of movement to an A-position)[3] and lexical anaphors: reflexives like themselves, reciprocals like each other. The pronominal anaphor PRO has no overt counterpart, for reasons that will become apparent shortly. The "pure" pronominals are lexical pronouns (she, him, etc.) as well as the empty pronominal pro, which occurs in the subject position of tensed clauses in languages like Italian and Spanish. Finally, the non-anaphoric, non-pronominal categories are variables (traces of movement to A'-positions) and names.

Principles A and B of the Binding Theory, given below, govern the distribution of anaphoric and pronominal categories with respect to an antecedent (a coindexed, c-commanding category). Principle C requires that R-expressions (overt and empty) be free in all domains.

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[3] A-positions are positions to which a grammatical function is assigned: subject of, object of, etc. A'-positions are non-A positions, i.e. adjunct positions, adjoined positions, as well as some specifier positions, e.g. [Spec,CP].

(17) Binding Theory (Chomsky 1981:188)

A: An anaphor is bound in its governing category
B: A pronominal is free in its governing category
C: An R-expression is free (in the domain of the head of its maximal chain)

"Bound" in (17) means "c-commanded by a coindexed category in an A-position"; "free" is equivalent to "not bound". Apart from c-command (see above), the following definitions enter into Binding Theory:

(18) Governing Category (Chomsky 1981:211)[4]

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

where the class of governors comprises the X^0 categories N, A, V and P, and the term SUBJECT covers the structural subjects ([NP,S], [NP,NP]) and AGR.

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[4] Finer distinctions are required to accommodate the domains in which anaphors and pronouns are not in complementary distribution, i.e. essentially NPs. Proposals by Huang (1983), Chomsky (1986a) have the effect of making NPs governing categories for NP-internal pronouns, but not for anaphors. I will ignore these refinements here, since the definition in the text is sufficient for our purposes.

(19) Accessibility

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

Under the definitions above, Binding Theory subsumes the effects of the Tensed S Condition and the Specified Subject Condition. That is, anaphors are excluded from the subject position of tensed clauses (AGR is an accessible SUBJECT), and from the object position of clauses containing a subject, overt or null. Relevant examples are given in (20):

(20) a. * John$_i$ seems t_i has left
b. * John$_i$ said that himself$_i$ would win

(21) a. * John$_i$ believes Mary to like t_i
b. * John$_i$ believes Mary to like himself$_i$

Pronominals, on the other hand, must be free in their governing category: this accounts for the obligatory disjoint reference in (22a) - the governing category is the matrix IP - and for the possible coreference in (22b) - the governing category is the embedded IP:

(22) a. * They$_i$ consider them$_i$ to be the winners
b. They$_i$ think that they$_i$ should win

Finally, R-expressions must be free according to Principle C. As applied to Wh-traces, Principle C has often been invoked as an account of strong cross-over as in (23a) below; as applied to names, it accounts for the ill-formedness of (23b) under the coreferent reading:

(23) a. * Who$_i$ does he$_i$ love t$_i$?

b. * She$_i$ told Max that Lucy$_i$ was sick

Note that the parenthesized material under principle C in (17) (from Chomsky 1986a:98) specifies a domain within which a Wh-trace must be free, viz. the domain of the head of the chain. This is intended to exempt from Principle C violations variables left by relative movement, as in (24):

(24) A woman$_i$ who$_i$ your brother just met t$_i$

Chomsky points out that in sentences like (24), the variable is bound to the lexical head of the relative, an element in an A-

position. This NP is outside the domain of the chain containing the variable, which is headed by the Wh-operator in [Spec,CP]. Hence, by the parenthetized restriction under Principle C, relatives avoid Binding violations. In Chapter 2, however, we will take the view that the coindexing relation between the head of the relative and the Wh-operator is one of predication, and that predication coindexing is not relevant to Binding Theory. Under this view, the parenthetized restriction under Condition C can be dispensed with for these cases; we will henceforth assume that variables must be free everywhere.

1.1.5. Control Theory

Control Theory is essentially concerned with the conditions under which PRO, the pronominal anaphor, is identified; we will have little to say about it here. Chomsky (1981) argues that the distribution of PRO follows from the Binding Theory. Under the cross-classification given in (16) above, PRO is both an anaphor and a pronominal and thus is subject to both Principles A and B. This means that it must be at the same time bound and free in a given category X, which is a contradiction. Hence, Chomsky

argues, PRO can have no governing category and may appear in only those positions which are ungoverned.[5]

Whether Control Theory exists as a separate sub-system, or whether it can be subsumed under Binding Theory remains an open issue. The latter view, in particular, has been advocated by Bouchard (1982) and Manzini (1983). Bouchard argues that PRO may be either a pronominal or an anaphor, but not both. He derives the distribution of PRO from Case Theory, and its identification from Principles A or B of the Binding Theory, depending on whether PRO in a given context is an anaphor or a pronominal. Manzini (1983), on the other hand, argues that PRO is a pure anaphor; the principle which accounts for the identification of PRO in her framework is very similar to Principle A, and is integrated as part of an extended version of the Binding Theory.

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[5] This is why PRO has no overt counterpart. Since Case is assigned under government, an overt NP is ungoverned positions would systematically violate the Case filter.

1.1.6. Bounding Theory

1.1.6.1. Bounding Nodes

Bounding Theory, the core principle of which is Subjacency, accounts for the boundedness of syntactic movement rules by imposing on them a locality condition.[6] The basic idea is that movement will be ruled out if too many nodes of a certain type (usually more than one) are crossed at any given point in the derivation. Until fairly recently, the nodes relevant to Subjacency (the bounding nodes) were taken to be fixed for a given language. In English for instance, NP and S (IP) were considered bounding nodes for Subjacency (see Chomsky 1973). This accounts for the impossiblity of extracting out of certain domains (the "island constraints" in the sense of Ross (1967)). Thus Subjacency subsumes, among other constraints, the Subject Condition, the Complex NP Constraint (CNPC) - i.e. the impossibility of extracting out of relatives and noun-complement clauses, and the Wh-Island Constraint. Some examples are given in (25):

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[6] The apparent unboundedness of Wh-movement is attributable to successive-cyclic movement through [Spec,CP]. That only syntactic movement (and not LF-movement) is subject to Subjacency has been argued for at length by Huang (1982) on the basis of the scopal properties of Chinese Wh-in situ.

(25) a. * Who$_i$ did [$_{IP}$ [$_{NP}$ a sister of t_i] get married in Mexico?

b. * Which pills$_i$ did they sue [$_{NP}$ the doctor [who [$_{IP}$ prescribed t_i]]]?

c.?? Which present$_i$ do [$_{IP}$ you wonder [$_{CP}$ to whom [$_{IP}$ Santa gave t_i]]]?

In each of these cases, two bounding nodes are crossed: NP and IP in (25a-b), two IP nodes in (25c).

In a very influential paper, Rizzi (1978) pointed out that in Italian, Wh-Islands are systematically violated. Thus (26), the Italian counterpart to (25c), is grammatical.

(26) Il solo incarico$_i$ che [$_{IP}$ non sapevi [$_{CP}$ a chi [$_{IP}$ avrebbero affidato t_i]]] è poi finito proprio a te

"The only charge that you didn't know to whom they would entrust has been entrusted exactly to you"

Rizzi proposed to parametrize Subjacency: while English selects NP and S (IP) as bounding nodes, Italian selects NP and S' (CP). In (26), then, only one bounding node is crossed at any given

point, in compliance with Bounding Theory. As Rizzi points out, his analysis predicts that Subject Condition violations should be observed in Italian as well. This prediction is seen as a problem since extractions out of subjects give variable results. Rizzi (footnote 25) cites the following:

(27) a.?? L'uomo di cui [$_{IP}$ [$_{NP}$ la sorella maggiore t] è innamorate di te] è Gianni
"The man of whom the elder sister is in love with you is Gianni"

b.?? L'autore di cui [$_{IP}$ [$_{NP}$ i racconti] sono stati pubblicati recentemente] è mio fratello
"The author by whom the tales have been published recently is my brother"

Sportiche (1981), extending Rizzi's analysis to French, argues that NP and S' are also bounding nodes in this language. This makes the correct prediction in the case of both relativization out of subjects (cf. the fully grammatical (28b)), and extraction out of Wh-Islands, although the latter degrades when the embedded clause is tensed.

(28) a. Voilà une liste des gens à qui$_i$ [$_{IP}$ on n'a pas encore trouvé [$_{CP}$ quoi [$_{IP}$ envoyer t_i]]]
"Here is a list of the people to whom we haven't yet found what to send"

b. L'homme$_i$ dont [$_{IP}$ [$_{NP}$ la soeur aînée t$_i$] est amoureuse de toi] s'appelle Jean
"The man of whom the elder sister is in love with you is called Jean"

As we shall see directly, the Barriers reformulation of Subjacency virtually eliminates parametrization; in this framework, it becomes more difficult to account for the cross-linguistic variation just discussed. I return to this issue in Chapter 3, where I propose to account for the differences (in particular with respect to the Subject Condition) between English/Italian, one the one hand and French, on the other, in a manner compatible with the Barriers framework.

1.1.6.2. Barriers

The main insight behind the Barriers approach is one also pursued, in a different way, by Kayne (1983) through his Connectedness proposal, i.e. that of unifying Subjacency and the Empty Category Principle (ECP). In Chomsky's (1986b) system, this unification is effected through a common notion of "barrier".

For the purposes of Subjacency, the term "bounding node" is replaced by the term "barrier", but the two notions crucially differ with respect to their implementation. One important difference is that a given node XP is not selected as a barrier for a given language; rather, barrierhood is established relative to the structural and thematic environment in which XP is found. Another aspect of the relative character of barriers concerns the exact position of the trace: a node XP may be a barrier for a constituent, but not for another.

Schematically, the main features of the Barriers system are as follows: a maximal projection is a barrier if it is not θ-marked by a lexical category, or if it immediately dominates a maximal projection which is not itself θ-marked. Adjunction to a barrier XP annuls barrierhood of XP with respect to the adjoined trace. Movement may proceed by successive adjunctions, though adjunction is only allowed to maximal projections that are non-arguments.[7]

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[7] However, not all non-argumental maximal projections may be adjoined to. Adjunction to CP, for instance, is precluded even when CP is a non-argument. Similarly, no syntactic adjunction to IP is allowed in Chomsky's system.

The definition of "barrier" is based on the notions of Blocking Category and L-marking, given below:

(29) Barrier

τ (τ a maximal projection) is a barrier for β iff (a) or (b):

a. τ immediately dominates δ, δ a BC for β;
b. τ is a BC for β, $\tau \neq$ IP.

(30) Blocking Category (BC)

τ is a BC for β iff τ is not L-marked and τ dominates β.

(31) L-Marking

α L-marks β iff α is a lexical category that θ-governs β.

According to the definition in (29), a maximal projection may be a barrier either intrinsically, by virtue of being a BC (clause (b)) or by inheritance (clause (a)). A maximal projection which is either not θ-marked, or θ-marked by a non-lexical category (i.e. any X^0 other than N, A, V, or P) is a blocking category and a barrier. IP, however, is a defective category; that is to say, although it may be a BC and thus transmit barrierhood onto a higher node, it may not itself be a barrier

inherently. Finally, any maximal projection (including IP) which immediately dominates a blocking category is a barrier by inheritance.

Subjacency is defined as before, substituting "barriers" for "bounding nodes". If movement crosses more than one barrier at any given point, a Subjacency violation ensues, though in this system the severity of the violation is proportional to the number of intervening barriers. To illustrate how the definitions in (29)-(31) apply, let us use the English examples given in (25), and repeated here:

(32) a. * Who$_i$ did [$_{IP}$ [$_{NP}$ a sister of t_i] get married in Mexico?

b. * Which pills$_i$ did they sue [$_{NP}$ the doctor [$_{CP}$ who [$_{IP}$ prescribed t_i]]]?

c.?? Which present$_i$ do [$_{IP}$ you wonder [$_{CP}$ to whom [$_{IP}$ Santa gave t_i]]]?

Consider first (32a). Recall that subjects are θ-marked by VP, hence not θ-marked by a lexical zero-level category. Thus the subject NP in (32a) is a BC and a barrier. IP, though it is not an inherent barrier by (29b), nonetheless inherits barrierhood from the NP it dominates. Two barriers are crossed, and (32a)

violates Subjacency. In (32b), the lower IP is a BC, but not a barrier given its defective status. CP, however, is both a BC and a barrier, on the assumption that relative heads do not L-mark their complement. The NP dominating CP thus inherits barrierhood from CP, though the NP itself is not a BC. As before, movement out of relative clauses crosses two barriers.

The Wh-Island case in (32c) requires a little more discussion: as it stands, only one barrier (CP) is crossed. CP inherits barrierhood from IP, which is a BC. But since CP is θ-marked by the verb wonder, it is not a BC and therefore does not transmit barrierhood onto IP. Thus (32c) is incorrectly predicted to abide by Subjacency.[8]

In fact, it has been noted in the literature that Wh-Island violations are mildly deviant in comparison with the "strong" type of CNPC violations (i.e. extractions out of relative clauses). Chomsky (1986b) suggests that the parametric variation in this respect might reduce to variation in the effects of

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[8] This is actually a simplification. The representation in (32c) in fact involves further intermediate movement (i.e. adjunction to VP, discussed below).

Tense: he points out that for many English speakers (32c) notably improves if the lower IP is infinitival. Chomsky proposes that for English, the lowest tensed IP is an inherent (perhaps weak) barrier. Parametric variation concerns the choice of tensed nodes selected: IP for French and English, CP for Italian. Choice of the lowest tensed IP in the former languages adds a (weak) barrier, while choice of the lowest tensed CP in Italian leaves (26) above unaffected, since CP is already a barrier by inheritance. This accounts for the differences observed.

Note however that the cross-linguistic differences with respect to Subject Condition violations remain unaccounted for. I will return to this problem in Chapter 3.

Consider now another feature of the system, i.e. adjunction. It is proposed that along the movement path, intermediate adjunction to non-argument maximal projections is allowed and, further, that such adjunction voids barrierhood of the node to which material is adjoined. This is necessary in order to avoid Subjacency violations in the case of simple object extractions, as in (33):

(33) Who$_i$ did [$_{IP}$ you [$_{VP}$ see t_i]]?

It is assumed in Barriers that I θ-marks VP, but does not L-mark it since I is not lexical. Thus VP is generally a BC and a barrier; the wrong result would be obtained here if VP could transmit barrierhood onto IP. It is thus proposed that who adjoins to VP on the way out, yielding the configuration in (34):

(34) Who$_i$ did [$_{IP}$ you [$_{VP}$ t'$_i$ [$_{VP}$ see t_i]]?

Chomsky then adds a crucial assumption due to May (1985), concerning adjunction structures as in (35) below, where α is adjoined to β.

(35) [$_\beta$ α [$_\beta$ ..δ..]]

May (1985) proposes to interpret the notion of "domination" as follows. In (35), the category β consists of two segments. A category is dominated by another category only if it is dominated by every segment of this category. By this definition of domination, α in (35) is not dominated by β. This is the relational view of barriers mentioned above: supposing that β is a barrier,

it is a barrier only for a category it dominates, i.e. for δ but not for α.

Adjunction to VP thus has the following effect: VP is neither a BC nor a barrier for the intermediate trace t' in (34), and thus does not transmit barrierhood onto IP. No barriers are crossed at any given point.[9]

Finally, note that the ban on adjunction to CP (and IP) mentioned in footnote 7 is necessary in this system to account for Subjacency violations in relative clauses like (32b). Intermediate adjunction to CP would void barrierhood for that node and further prevent barrierhood inheritance by NP, incor-

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[9] VP is not a barrier for the original trace t, though it dominates it, given the definition of Subjacency based on the notion of "exclusion":

(i) Subjacency Condition

β is n-subjacent to α iff there are fewer than n+1 barriers for β that exclude α.

(ii) Exclusion

β excludes α if no segment of β dominates α.

VP in (34) is not a barrier for t excluding t'; therefore, t is 0-Subjacent to t'.

rectly predicting extraction out of relative clauses to be fully grammatical.

1.1.7. Government Theory

1.1.7.1. Disjunctive ECP

The central principle of Government Theory is the ECP, introduced by Chomsky (1981) as a condition on recoverability for empty categories. The ECP, as stated in (36), requires that non-pronominal empty categories (NP-t, Wh-t) be properly governed; the most widely assumed definition of "proper government" is that in (37):

(36) Empty Category Principle

Non-pronominal empty categories must be properly governed

(37) Proper Government

α properly governs β if α governs β and
a. α is a lexical category X^0, or
b. α is coindexed with β.

(where lexical categories are N,A,V,P)

Clause (37a) is referred to as "lexical government", clause (37b) as "antecedent government". Under this formulation, the ECP is a disjunction of two requirements (whence the term "disjunctive ECP"): if either (a) or (b) is met, the ECP is satisfied. The ECP typically accounts for the long-observed fact that subjects and objects pattern differently with respect to extraction, in particular in the presence of an overt complementizer or over a Wh-Island. Some examples are given in (38)-(39):

(38) a. * Who$_i$ do you think [t'$_i$ that [t$_i$ saw Max]]?

b. Who$_i$ do you think [t'$_i$ [t$_i$ saw Max]]?

c. Who$_i$ do you think [t'$_i$ (that) [Max saw t$_i$]]?

(39) a. * Who$_i$ do you wonder [when [t$_i$ saw Max]]?

b.?? Who$_i$ do you wonder [when [Max saw t$_i$]?

Under the ECP, these subject/object asymmetries find an explanation under the assumption that the subject position is not

lexically governed (INFL is not lexical).[10] Thus subject traces depend on antecedent government in order to satisfy the ECP. It has been proposed that the presence of an overt complementizer blocks antecedent government of the subject trace by the intermediate trace in COMP, hence the contrast between (38a) and (38b).[11] In (39a), on the other hand, the presence of a Wh-word

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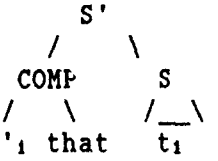
[10] Kayne (1981a) has proposed that the ECP applies to the output of QR, i.e. at LF, on the basis of subject/object asymmetries in the scope of quantified NPs (see Rizzi 1982 for similar arguments in Italian). Subject/object asymmetries with Wh-in situ have also been treated as ECP effects in LF (see, among others, Huang 1982, Aoun, Hornstein & Sportiche 1981, Chomsky 1981, May 1985).

[11] The blocking effect of that on antecedent-government has been attributed to a failure of the intermediate trace to c-command the subject trace (see Kayne 1981b). Both that and the intermediate trace are under COMP, and c-command (under Reinhart's (1976) "first branching node" definition) is blocked. Another approach is that of Aoun, Hornstein & Sportiche, who propose that the COMP node itself is the antecedent-governor, if it is indexed. Their proposal states that COMP is indexing i when it dominates only i-indexed elements; the presence of that blocks COMP indexing, and antecedent-government fails.

(i)



As Rizzi (1987) points out, however, the c-command approach is no longer natural under Chomsky's (1986b) extension of X'-principles to the functional projections. In the configuration in (ii), the

precludes successive-cyclic movement through the intermediate [Spec,CP]; the sentence violates the ECP, since the overt binder who is too far to antecedent-govern its trace in subject position.

Huang (1982) has shown that the subject/object asymmetry was in fact a complement/non-complement asymmetry, since adjuncts pattern with subjects with respect to extraction. The distinction falls under the ECP on the assumption that adjuncts are daughters

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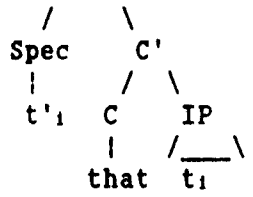
intermediate trace and the complementizer occupy different positions, and c-command is not at stake. Similarly, the COMP-indexing solution requires some adjustments under this configuration (see Chomsky 1986b:47f for a proposal based on M(inimality) barriers).

(ii)



of IP, hence, like subjects, not lexically governed.[12] The behaviour of adjuncts under extraction is illustrated in (40):

(40) a. * How$_i$ do you wonder when they talked to Max t_i?

b. How$_i$ did they talk to Max t_i?

Adjuncts may extract short-distance, as in (40b), but not over Wh-Islands: compare (40a) with similar long extraction of objects as in (39b). This is accounted for under the view that adjuncts are dependent on antecedent-government in order to satisfy the ECP.

In the Barriers framework, the definition of proper government entering into the ECP is termed as follows:

(41) α properly governs β iff α θ-governs or antecedent-governs β.

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[12] Stowell (1985) points out, on the basis of constituency tests, that manner and place adjuncts may be in a VP-internal position, where they are governed by the lexical head V. To account for the asymmetry between objects and adjuncts, he proposes to replace "lexical government" by θ-governement. Both objects and adjuncts within VP are lexically governed, but only the former are θ-marked by the verb.

Government is defined in terms of the notions of "barrier" and "exclusion" discussed above in 1.1.6.2.:

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

In this view, while two barriers incur Subjacency violations, one barrier suffices to block government.

Huang (1982:575) notes that the subject/adjunct parallelism fails with respect to <u>that</u>-t effects. The presence of an overt complementizer does not block the extraction of adjuncts (cf. (43). This is surprising under the view that the presence of <u>that</u> blocks antecedent-government for a subject trace.

(43) When$_1$ did you say that they would leave t_1?

Different accounts for this problem have been put forth in

the literature.[13] I will adopt here one proposal which seems particularly attractive, and which is based on a conjunctive, rather than ¬ disjunctive, view of the ECP.

1.1.7.2. Conjunctive ECP

In recent literature, a number of authors have proposed that the two requirements subsumed under the ECP, lexical government and antecedent government, should be viewed as separate. Under this approach, non-pronominal traces must be both lexically governed and antecedent governed. For some authors, the two requirements together form the (conjunctive) ECP; for others, they are independent conditions, which may even apply in dif-

[13] See, for instance, Lasnik & Saito (1984), whose analysis hinges on the idea that arguments are marked with a diacritic at S-Structure [-τ] when they violate the ECP, while adjuncts are τ-marked only at LF. They further propose that complementizer that may delete at LF; that-deletion does not save that-t effects for subjects since these are marked [-τ] at S-Structure and τ-marking is indelible. Adjuncts, however, will be marked [+τ] at LF once that is deleted.

ferent components of the grammar.[14] I will refer to this approach globally as the "conjunctive ECP", though I will assume that the two requirements are independent from one another in the radical way suggested by Aoun et al. (1987). As we shall see in Chapter 5, this assumption plays a central role in our analysis of extraction from within NPs in Romance.

The two requirements of the conjunctive ECP may be stated as follows:

(44) A non-pronominal empty category must be:

a. governed by an X^0 (head-governed), and
b. governed by a coindexed category (antecedent-governed)

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[14] This latter position is taken by Aoun, Hornstein, Lightfoot and Weinberg (1987), who argue that lexical government must be met at PF, and antecedent government at LF. Other proponents of a "split" or "conjunctive" ECP include Jaeggli (1982), Stowell (1985) and Rizzi (1987); the reader is referred to the abovementioned authors for arguments.

Rizzi (1987) proposes an interesting account of the that-t effect in terms of this definition of government, with the additional assumption that head-government must be directionally canonical in the sense of Kayne (1983), i.e. left-to-right in a right-branching language. Under Rizzi's analysis, that-t effects with extracted subjects are ascribed not to a failure of antecedent government, but to the lack of canonical head government, on the assumption that the complementizer that is inert, i.e. not a head governor. This accounts for the lack of that-t effects in adjunct extraction: adjuncts are head-governed by V.[15]

The contrast between (38a) and (38b), repeated below, must then be attributed to the head-governing properties of null complementizers:

(45) a. * Who$_i$ do you think [t'$_i$ [$_C$ that] [t$_i$ saw Max]]?

b. Who$_i$ do you think [t'$_i$ [$_C$ ∅] [t$_i$ saw Max]]?

---

[15] A very similar approach is independently developed by Contreras (1988, ch. 10).

Rizzi proposes that null (tensed) complementizers in English may be realized as AGR, a head-governor under his definitions. This is viewed as part of a wider mechanism of Spec-Head agreement in COMP (cf. Chomsky 1986b). Several examples are given of languages where agreement between an operator in [Spec,CP] and the head of CP is morphologically visible. One such case is the well-known French rule converting complementizer que into qui, which Rizzi reanalyzes as que+AGR.[16]

(46) a. * Quel auteur crois-tu [t'$_1$ [$_c$ que] [t$_1$ a écrit ce roman]]?

b. Quel auteur crois-tu [t'$_1$ [$_c$ qui] [t$_1$ a écrit ce roman]]?

"Which author do you think that wrote this novel?"

In (45b)-(46b), the subject trace is canonically head-governed by the AGR element under C, and antecedent-governed by the intermediate trace in [Spec,CP]. Antecedent-government holds in (45a)-(46a) as well, but the subject trace is not lexically governed, since neither that nor que are head governors. Under a conjunc-

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[16] See Chapter 3 (Section 3.1.1.) for a slightly different view of que --> qui, and an analysis of genitive dont in terms of Spec-Head agreement.

tive definition, then, (45a)-(46a) are ruled out as ECP violations.

This concludes our survey of the main aspects which characterize the theoretical framework adopted in this dissertation. I now turn to parasitic gap constructions, the study of which will constitute our focal point in the chapters to come. Here, I will outline the main properties of these constructions, and give an overview of the different analyses that have been proposed in the literature to account for their behaviour.

1.2. Parasitic Gaps[17]

The core characteristic of PG constructions is that they contain a gap which depends on (is parasitic on) the presence of

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[17] As far as I know, Ross (1967) was the first to draw attention to these constructions. The term "parasitic gap" was coined by Taraldsen (1981) whose work, along with Engdahl's (1983) paper, re-opened the subject for investigation. The study of PG constructions has generated a substantial amount of literature in recent years. For extensive discussion, see, in addition to the authors already cited and among many others, Chomsky (1982, 1986a,b), Koopman & Sportiche (1982), Pesetsky (1982b), Kayne (1983), Contreras (1984), Safir (1984), Cinque (1984), Koster (1984, 1987), Haik (1986), Browning (1987).

another gap in the sentence. Typical examples are given in (47); following standard practice, I represent the "real" gap as [t] and the parasitic gap as [e].

(47) a. Which books did you review t_i without having read e_i?

b. This is a man who$_i$ friends of e_i admire t_i

PG constructions, though somewhat marginal, are generally considered acceptable and, more importantly, give rise to strong contrastive judgments among native speakers. That is to say, speakers have clear intuitions about what does or does not constitute a possible PG sentence. This is precisely why, as Chomsky (1982) has observed, the properties of these constructions provide a particularly revealing probe into the principles of UG. Indeed, the question arises as to where the speakers' intuitions about PG constructions come from. The very marginality of the phenomenon strongly argues against its having been the subject of explicit instruction at any stage in the speaker's linguistic experience. It has been a central tenet of generative grammar since its inception that unconscious knowledge of language reflects the innate character of the grammatical principles involved. For these reasons, the investigation of the

properties of these constructions and the principles responsible for their occurrence is of particular interest for linguistic theory.

Some of the properties of PG constructions have been uncovered early on in the literature. For instance, as observed by Engdahl (1983) and Chomsky (1982), the following constraints hold:[18]

(48) A PG is licensed by a gap t if:

a. t is a variable at S-Structure;
b. t does not c-command the PG;
c. the binder of t c-commands the PG.

(48a) refers to the fact that neither NP-traces nor variables created by LF-movement are proper licensers for PGs. (48b) has been invoked in order to account for the inability of subject traces to license PGs (I return to the anti-c-command condition in Chapter 5). As for (48c), it reflects the fact that PG

[18] I will return in Chapter 4 to a more detailed survey of these properties.

constructions are ungrammatical if the Wh-phrase binding the variable is structurally lower than the PG itself.

A further characteristic property of PG constructions (although by no means a necessary one) is that the position occupied by the parasitic gap is inaccessible to movement. Adjunct clauses and subjects in English notoriously resist extraction from within.[19] This is shown in (49) - though extraction from adjuncts sometimes yields only mild deviance; I will return to this in Chapter 5.

(49) a.?? Which books$_i$ did you leave the library without having read t_i?

b * This is a man who$_i$ friends of t_i admire Gretzky

Thus the parasitic gap cannot survive on its own, but rather must be licensed in the appropriate way by a legitimate gap. The fact that the relation from the PG to the overt Wh-binder violates Subjacency has led Chomsky (1982) to propose that PGs are empty

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[19] These two domains fall under Huang's (1982) Condition on Extraction Domains (CED), which states that ungoverned domains are islands for extraction. Chomsky (1986b) argues that his barrier-based Subjacency Condition subsumes the CED.

pronominals, base-generated in their surface position. In Chomsky's (1982) framework, the features of empty categories are identified functionally, i.e. through the structural properties of their local binder. Locally A'-bound gaps are defined as variables; thus parasitic gaps, though base-generated as pronominals, are defined as variables at S-Structure since they are locally A'-bound by the overt binder at that level. In other words, empty categories change features in the course of the derivation.[20]

Though parasitic gaps customarily appear in positions out of which extraction is impossible, Kayne (1983) observed that they are not entirely immune to locality effects. In fact, the locality constraint to which PGs are subject is reminiscent of Subjacency. For instance, just as Subjacency precludes extraction out of subjects in English, PGs may appear within the object, but

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[20] The functional determination of empty categories has been abandoned by Chomsky (1986a, 1986b). See Brody (1984) for arguments against this approach.

not within the subject, of an adjunct clauses. (50) below illustrates this subject/object asymmetry:[21]

(50) a. ? the person$_i$ that John described t_i [without examining any pictures of e_i]

b. * the person$_i$ that John described t_i [without [any pictures of e_i] being on file]

Kayne analyzes these contrasts by way of the ECP. Loosely put, his view of the ECP requires that an empty category have an antecedent within a projection of its governor. These projections (g-projections) may go up the tree, as long as they comply with a condition of canonical government requiring that the projection not be on a left branch in a language like English. Since subjects are on left branches, the g-projection stops at the NP node dominating the gap. The antecedent not being contained

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[21] Longobardi (1985), extending Kayne's observations and analysis, notes a similar effect with the other sub-case of the CED, adjunct clauses. PGs cannot be contained in an adjunct clause if it is itself embedded inside an adjunct:

(i) ? The head of cattle$_i$ that we have eliminated t_i [without trying to persuade the vet to cure e_i]

(ii) * The head of cattle$_i$ that we have eliminated t_i [without trying to call a vet [instead of killing e_i]]

within this projection, a sentence like (50b) is ruled out. (Longobardi's extension involves extending the g-projection breaching capacity to adjunct clauses, i.e. to ungoverned domains).

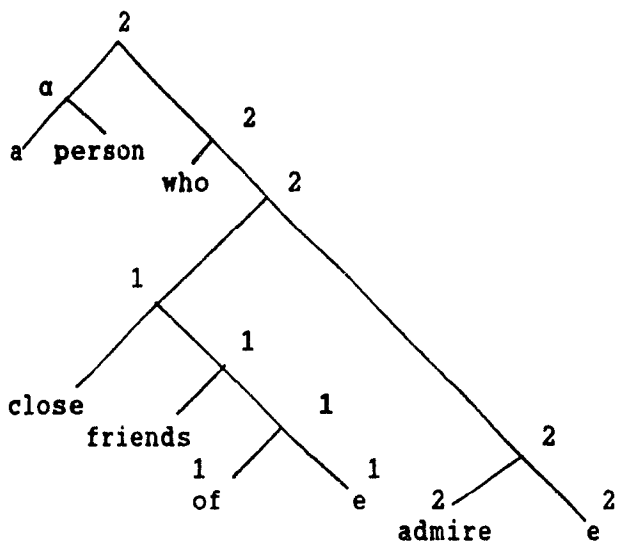
In this analysis, however, a gap will comply with the ECP if the antecedent, though outside of the g-projection of the gap, is accessible through a connecting path. Roughly speaking, a gap contained within a left branch is licensed if it is sister to a g-projection of another gap (leading to the antecedent). This will account for the contrast between (50b), repeated below as (51b), and (51a):

(51) a. ? a person who$_i$ close friends of e_i admire t_i

b. * the person$_i$ that John described t_i [without [any pictures of e_i] being on file]

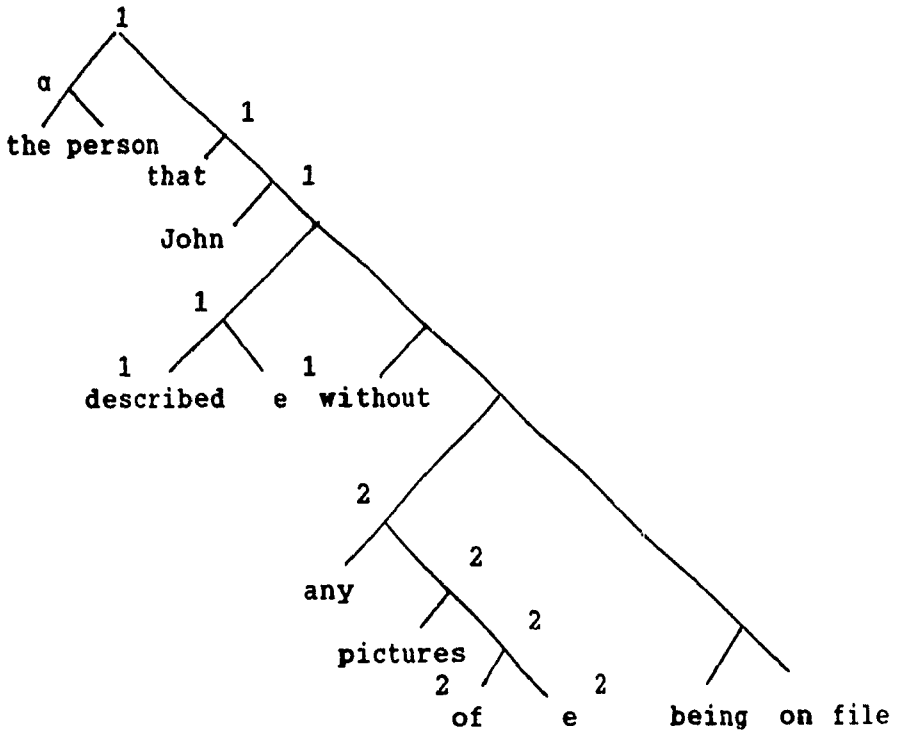
To illustrate, compare the relevant representations, where the numbers indicate the g-projections for each gap:

(52)



In (52), the path formed by the subject-internal gap reaches the antecedent α since it properly connects with the path marked 2, which dominates the antecedent. This is not the case for sentences like (51b), under the representation shown below:

(53)



It is important to note that in Kayne's analysis, no distinction is made between movement-derived and base-generated gaps. That is, simple extractions out of subjects in English are treated on a par with PG constructions of the type shown in (51b). Both involve ECP violations, since their antecedent is not contained within the g-projection of the category governing the gap.

Another way to view the similarity between the deviant PG constructions above and the corresponding illicit extraction cases is to say that the parasitic gaps are indeed derived by movement, and, therefore, that (51b) above is a Subjacency violation, on a par with the extraction cases. This is the approach taken by Contreras (1984) and Chomsky (1986a,b), who argue that null operator movement is involved in PG constructions. That is, although the parasitic gap is not, for the reasons discussed, the trace of the "real" operator, it is nonetheless a trace in its own chain, headed by a null operator. Extraction out of adjunct clauses is precluded; thus the landing site of the null operator is taken to be within the adjunct clause, i.e. the [Spec,CP] position. To illustrate, consider the well-formed PG construction below:[22]

(54) a. Which books did you file t without having reviewed e

b. [$_{PP}$ without [$_{CP}$ Op$_i$ [$_{IP}$ having reviewed e$_i$]]]

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[22] Similarly with subject-internal PGs, it must be assumed that the null operator lands within the subject position, since extraction out of the subject in English crosses two barriers. I will return to this briefly in Chapter 4.

As Contreras (1984) observes, this analysis reduces Kayne's subject/object asymmetries to ordinary, movement-derived Subjacency violations. Consider again the relevant portion of the ill-formed (51b), shown below under the null operator analysis:

(55) [$_{PP}$ without [$_{CP}$ Op$_i$ [$_{IP}$ [$_{NP}$ any pictures of e$_i$] being on file]]]

Movement from within the NP to the [Spec,CP] position of the adjunct clause violates Subjacency (two barriers, NP and IP, intervene).

The null operator analysis is supported by the fact that PG constructions display, internally to the domain defined by the adjunct clause containing them, all the island effects typical of movement. This is shown in (56b) with respect to the relative clause subcase of the CNPC; similar effects arise with Wh-Islands and noun-complement constructions (for discussion and further examples, see Chomsky 1986b:55):

(56) a. this is the man$_i$ John interviewed t$_i$ [Op$_i$ before expecting us to tell you to give the job to e$_i$]

b. * this is the man$_i$ John interviewed t$_i$ [Op$_i$ before reading the book you gave to e$_i$]

Throughout this dissertation, I will assume that PGs are derived by null operator movement. In Chapter 4, further evidence will be adduced which supports this type of derivation, based on French PG constructions of a different type from the well-known subject and adjunct cases discussed above.

Other approaches to the derivation of PGs have been proposed in the literature.[23] One of them, discussed by Huybregts & van Riemsdijk (1985) and Haïk (1986), treats PGs as Across-the-Board (ATB) variables in the sense of Williams (1978).[24] Though I will not adopt an approach of this type, I will briefly summarize its main features.

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[23] See, for instance, Emonds (1985), Bordelois (1986), Frampton (1987).

[24] Huybregts & van Riemsdijk take this approach to account for PGs in Dutch, which they assume to be very marginal (but see Bennis & Hoekstra 1984 for a different view). They reject it for English. Haik (1986), on the other hand, generalizes the ATB approach to the "standard" cases of PG constructions. An analysis similar to Haïk's was recently developed by Williams (1988).

As is well known, ATB movement refers to the fact that in coordinate structures, movement must take place from within the two conjuncts simultaneously. This is Ross' (1967) Coordinate Structure Constraint, illustrated in (57):

(57) a. I wonder which manuscript Reidel accepted e and/but Foris rejected e

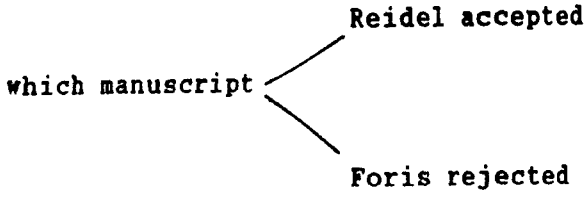
b. * I wonder which manuscript$_i$ Reidel accepted your thesis but Foris rejected t$_i$

c. * I wonder which manuscript$_i$ Reidel accepted t$_i$ but Foris rejected your thesis

Haik's (1986) use of ATB with PG constructions is as follows. She assumes that PGs are pure empty pronominals at both D- and S-Structure. Some of the independent assumptions she makes (and which I will not discuss) have the effect of precluding pro in the position of PGs at LF. Her analysis is thus that PGs become pure variables at LF, and that the representation of PG constructions is, at that level, identical to that of coordinate structures displaying ATB extraction. Central to this proposal is the assumption that coordinate constructions are represented as multi-dimensional (or "parallel") structures, as argued for by

Goodall (1984). For example, the representation of (57a) would be as follows:

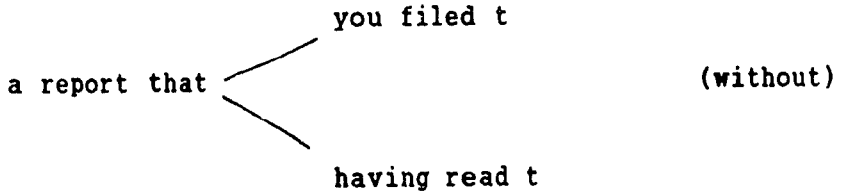
(58)



A representation like (58) is linearized at PF; the conjunction (and, but) is then added to the structure.

Haïk proposes that at LF, adjuncts containing PGs become conjuncts; the prepositions before, without, etc. which introduce adjunct clauses play the role of the conjunctions and, but in coordinate structures. Thus, in way that parallels (58), an adjunct PG construction is represented at LF as in (59):

(59)



In this view, PGs within adjuncts are treated as ATB variables at LF, with the two S (IP) constituents coordinated. It is not so clear, however, how this approach handles subject-internal PGs of the type given in (51a) and repeated below:

(60) A person who [close friends of] admire t

The problem arises from the fact that conjuncts in coordinate structures are normally of the same categorial type. Extending the analysis to (60) would involve assigning to it an LF structure where an NP is coordinated with a VP. Williams (1988), who adopts this approach for (60), ascribes to the lack of syntactic symmetry the well-known fact that subject-internal PGs are more marginal than are adjunct-internal PGs.[25] However, such an explanation is considerably weakened in view of the French data

[25] Subject-internal PGs are also subject to a number of particular constraints. For instance, (60) is ungrammatical if the NP is definite. Furthermore, in those cases where the PG is within a subject-internal relative clause, as in (i), the head of the relative must be an indefinite or a quantified NP.

(i) a man who everybody who meets e ends up liking t

brought forth in this dissertation. Indeed, constructions structurally similar to (60) are found in French, yet they are fully grammatical. Thus under the ATB analysis of parasitic gaps, categorial mismatch in the case of constructions like (60) remains as a problem.

1.3. Introduction to the Thesis

One of the most puzzling properties of parasitic gaps is that they must be licensed at S-Structure. As is well-known, variables created by LF movement cannot sanction PGs. Chomsky (1986b) has proposed to account for the relationship between the parasitic chain (i.e. the chain headed by the null operator) and the licensing variable by way of a chain composition mechanism. That is, the parasitic chain forms, subject to locality constraints, a complex chain with the "real" chain. Chomsky further stipulates that chain composition is an S-Structure process. Ideally, though, one would want to derive the core properties of parasitic gaps from general and independently motivated principles, especially in view of their marginal character, as discussed above. In Chapter 2, I develop a general approach to licensing where this property of parasitic gaps follows from

independently motivated principles. It is proposed that every maximal projection must be licensed at every level of representation (i.e. "universally licensed"), in the spirit of the Projection Principle. This proposal has a variety of desirable consequences, in particular with respect to constraining the distribution of null categories (and null operators) at D- and S-Structure. One important implication of this framework is that null operators must be identified by an antecedent at S-Structure, hence the need for parasitic chains to compose with another chain at that level. Another property of parasitic gaps also follows from our analysis. It has been observed that adjunct movement does not license PGs. In our view, this property derives from the inability of null operators to be licensed in adjunct positions at D-Structure. As we show, this restriction on null operators is needed independently of PG constructions; thus no stipulation is required to account for this property of PGs.

Several other consequences of this approach are explored with respect to other structures involving null operators. In particular, we draw a distinction (in terms of the manner in which - and the levels and at which - null operators are identified) between predication (easy-clauses, relatives, etc.) and

non-predication structures. This derives the syntactic differences between these constructions, particularly regarding the syntactic properties of the identifier for null operators. Another prediction made by our approach concerns the distribution of resumptive pronouns both language-internally (i.e. within relative clauses or Wh-constructions) and cross-linguistically. It follows from our proposal that base-generated resumptive pronouns will only occur within relative clauses, as a result of the base-generated operator (null or overt) being identified in this type of structure.

The next three chapters are concerned with the consequences of Universal Licensing on the distribution of parasitic gaps. New data are brought to bear on this issue. I document the properties and distribution of so-called double dont constructions, i.e. French genitival relatives where two unexpressed adnominal complements are interpreted as coreferent, as shown in (61):

(61) Une star du cinéma muet$_i$ dont les admirateurs $\_\__i$ conservent précieusement la photo $\_\__i$
"A star of the silent movies of whom the admirers treasure up the photograph"

In Chapter 3, I propose an analysis of dont (genitive) relatives in French where dont is a Case-marked complementizer. This has interesting consequences not only with respect to the distribution of dont, but also with respect to accounting for cross-linguistic and French-internal differences in the extractability out of subjects. Concerning (61), it is argued that the coreferent interpretation is not pragmatically induced, but that the adnominal position is syntactically realized and occupied by an empty category. The remainder of Chapter 3 is concerned with establishing the nature of the empty category; we show that it behaves in all relevant purposes like a variable.

Chapter 4 deals with the distribution of null operators in noun phrases at both S- and D- structure. It is shown that adnominal gaps display all the properties of parasitic gaps, and that, furthermore, they are derived by null operator movement. At S-Structure, the null operator is argued to occupy a specifier position within the noun phrase; arguments are brought forth which support the view that noun phrases in Romance contain a COMP-like position (i.e. an "escape hatch"). At D-Structure, null operators in noun phrases occupy the adnominal position. One of the consequences of the Universal Licensing framework developed

in Chapter 2 is that null operators cannot be adjuncts at this level. Null operators in noun phrases are thus very relevant to the much debated question of the argument vs. adjunct status of NP-internal constituents. As we show, the asymmetries observed with respect to which constituents may be adnominal PGs sheds significant light on the matter. Further properties of double dont constructions are investigated in view of the issue of the thematic structure of nominals. It is proposed, for instance, that the definite determiner plays a crucial role in the realization of certain arguments, and more precisely that its presence is crucial in the assignment of certain θ-roles.

Chapter 5 constitutes an investigation of the structural configurations instantiated by double dont constructions, relating in particular to the local relation between the null operator and its S-Structure antecedent. It is argued that the problems posed by these constructions to Chomsky's (1986b) chain composition analysis can be solved in a simple way by taking advantage of the COMP-like nature of the specifier of noun phrases in French. Several restrictions on the distribution of adnominal gaps are explored: the inability of adnominal PGs to occur within non-argument PPs, within embedded tensed clauses,

within subjects, etc. This distribution is shown to follow under a chain composition analysis. It is further proposed that the properties characteristic of parasitic gap constructions in general need not be stipulated, but rather follow from the way in which null operators meet, at S-Structure, the licensing requirement imposed by the Universal Licensing framework developed in Chapter 2.

CHAPTER 2

UNIVERSAL LICENSING

2.0. Introduction

The central idea pursued in this thesis is that the licensing mechanisms for maximal projections proposed by Chomsky (1986a) should be extended to apply to all levels of syntactic representation. In this chapter, we develop this proposal, which we refer to as "Universal Licensing" (UL). The import of UL with respect to the general organization of the grammar is examined, as are its empirical consequences. It is shown that constraining the occurrence of maximal projections in this fashion yields desirable results, in particular concerning the distribution and properties of null categories and null operators at D- and S-Structure.

One important advantage of our proposal is that it subsumes under a general and principled approach a number of facts that have received stipulative accounts in the literature. Consider for example, the following well-known constraints: (a) adjunct

movement does not license parasitic gaps; (b) resumptive pronouns in French/English are found in relatives, but not in Wh-questions, while other languages display no such asymmetry; and (c) parasitic gaps must be licensed at S-Structure. In no analysis of which I am aware are these facts viewed as related, nor are they attributed to general principles. For instance, Safir (1986) proposes for (b) a condition applying solely to resumptive pronouns, and requiring that they be bound by relative heads (R-bound). Cross-linguistic variation is attributed to the parameter status of the R-binding requirement. As for (c), Chomsky (1986b) stipulates that the chain composition mechanism which accounts for PG licensing must apply at S-Structure.

By contrast, under the approach developed here, the three restrictions stated above receive a unified treatment: they are shown to follow in a principled way from the general conditions imposed by Universal Licensing on null operators at the levels of D- and S-Structure.

2.1. Universal Licensing

Chomsky (1986a:98ff) observes that natural language is subject to a requirement whereby every element in the sentence must receive an interpretation at the phonetic and semantic levels; conversely, elements which cannot be so interpreted must be eliminated from those levels. This requirement, formulated as the Principle of Full Interpretation (PFI), is violated at LF and PF in the ungrammatical examples below:

(1) a. I was in England last year [the man]

b. John was here yesterday [walked]

c. [rbuks]

(1a-b) cannot mean "I was in England last year", or "John was here yesterday", with the bracketed constituents simply disregarded in the semantic interpretation. Similarly, (1c) cannot be the phonetic representation of the word book, where the first and last consonants are ignored in the output. The PFI is implemented through a licensing requirement which may be stated informally as follows:

(2) **Every element must be licensed in the appropriate way at the levels of LF and PF.**

We will not be concerned here with (2) as it applies to the output of PF; let us assume that receiving a phonetic realization is enough for an element to be properly licensed at that level. Consider now how the requirement in (2) is implemented with respect to the level of Logical Form. Non-maximal projections (X^0 and X') satisfy (2) within their own maximal projection. That is, they are licensed by virtue of conforming to X' theory, by being either heads of projections or intermediate levels of projections. I will have nothing further to say about the way in which non-maximal projections are licensed.

Maximal projections, on the other hand, must be sanctioned from the outside. Intuitively speaking, being licensed for a maximal projection XP means that XP must be closely associated with the network of thematic relations that obtain within the sentence. Some of the mechanisms under which such an association may be effected are given in (3) - from Chomsky (1986a:101).

(3) A maximal projection is licensed as either:

a. an argument or the trace of an argument (in which case it must receive a θ-role);
b. a predicate (in which case it must assign a θ-role);
c. an operator (in which case it must bind a variable).

Let us assume for the moment the licensing mechanisms as stated in (3)[1]. A question which arises concerns the level(s) of representation at which maximal projections must meet the licensing requirement. In Chomsky's view, the PFI (which is satisfied by proper licensing) is relevant only to the interpretive levels PF and LF, i.e. those levels which constitute the "interface between syntax (in the broad sense) with systems of language use" (1986a:98). If the licensing requirement in (2) is seen as simply a means for elements to comply with the PFI, then it follows that maximal projections are only required to be licensed at those two levels of representation.

As Chomsky points out, one of the consequences of the Principle of Full Interpretation on LF structures is that

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[1] I will return to the requirement in (3b), which is too strong as stated, since not all VPs, for instance, assign external θ-roles.

expletives will be eliminated at that level: they are neither predicates nor operators, and their defining characteristic is that of being non-arguments. Under the PFI, then, expletives are barred from appearing in LF representations since they are unlicensed at that level. Note that the occurrence of expletives at the other syntactic levels is correctly allowed, given that the licensing requirement is not enforced earlier than LF.

Restricting the licensing requirement to the syntactic level of LF has, I believe, both empirical and conceptual shortcomings. On the empirical side, consider again the case of expletives. While the PFI predicts their obligatory deletion at LF, it has nothing to say about constraining their distribution at other levels. As is well-known, expletives appear only in those positions where no θ-roles are assigned, such as subjects of raising predicates. Now, it is generally assumed that adjunct positions are not positions to which θ-roles are assigned-rather, these are positions occupied by secondary predicates. But expletives cannot appear in these positions, nor can they appear in, say, focus positions:

(4) a. * I like fish it

b. * It, it is true that Charlie likes fish

Why are these sentences ruled out? It is plausible to say that expletives, having no semantic content, cannot function either as (secondary) predicates or as topics of sentences, hence are not licensed in these positions. Note however that in the system described above, the licensing requirement is enforced at the output of LF, i.e. at a level where expletives are absent from the representation. The licensing requirement, as it stands, can therefore not account for the ungrammaticality of (4) since at the level at which it is enforced, the offending element has been deleted. Obviously, it is still possible to account for (4) independently of the licensing requirement. One could invoke, for instance, a sort of "last resort" strategy for expletives, restricting their occurrence to only those positions where the presence of a lexically realized constituent is required in the syntax. But such an account only begs the question as to why

expletives, and only expletives, should be subject to such a functional requirement.[2]

A more fruitful approach can be developed, I believe, through extending the licensing requirement to other syntactic levels of representation. This would allow us to rule out (4) at D-Structure (or S-Structure), by invoking the incapacity of expletives to function as predicates (or topics) at these levels. Note that adopting this view does not force us to abandon Chomsky's claim that expletives must delete at LF. Under a modular view of grammar, each level of representation is autonomous; thus, nothing in principle forces the licensing requirements to be met in exactly the same way at every level of representation. It is perfectly plausible to suppose, for instance, that expletives are licensed (by a syntactic form of predication) as subjects at S-Structure, yet unlicensed at LF in the way Chomsky suggests, i.e. for lack of semantic content. These differences are reflected in the use we make of the terms "argument" and "predication" in our extension of (3) below; as

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[2] Note further that the θ-criterion, while it ensures a one-to-one match between arguments and θ-roles, has nothing to say about whether and how adjuncts are realized.

applied to S-Structure or D-Structure, these terms are to be understood under their more strictly syntactic interpretation.

On the conceptual side, one may wonder why the licensing requirement should be relevant only to the peripheral levels, i.e. PF and LF. One major thrust of recent theoretical research has been not to limit, but rather to extend the reach of general principles within the system. A case in point is the Projection Principle which, as mentioned in Chapter 1, has the effect of extending the scope of the θ-criterion to all syntactic levels of representation. Suggestions with a view to generalizing the domain of application of principles across components have occasionally been put forth in connection with other sub-systems of the grammar. For instance, Chomsky (1982, fn.11) mentions the possibility that the principles of Binding Theory apply to all syntactic levels of representation apart from D-Structure (in his view, S-Structure, LF and LF').[3] A proposal in a similar vein has been put forth with respect to the ECP by Stowell (1987), who

[3] But cf. Belletti & Rizzi (1986:23) who suggest that Principle A, at least, is a kind of "anywhere" principle, which need only be satisfied at one level of representation, i.e. D-Structure, S-structure or LF.

extends the application of the ECP (or, more precisely, of the Head Government clause of the ECP) to D-Structures.[4]

A principle as pervasive as the Projection Principle - or, for that matter, any principle which applies across components- naturally has a variety of implications throughout the system. Recall that with respect to the level of D-Structure, the Projection Principle yields as a consequence a simplification of the base component. By requiring that all the sub-categorized complements of a lexical entry be realized at D-Structure, the Projection Principle removes the redundancy between the sub-categorization frames of individual lexical items and the rewrite rules, the latter being virtually eliminated. Other consequences of the Projection Principle can be observed with respect to the levels of S-Structure and LF. Since it ensures that, under movement, every thematic position will remain syntactically realized at these levels, the Projection Principle subsumes much of the trace theory of movement operations.

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[4] Stowell's analysis is discussed further in 2.2.3.

Following a similar line of thought, I propose to generalize the application of Chomsky's (1986a) licensing requirement to all levels of syntactic representation. Thus, under the extended view advocated here, Licensing Theory (the mechanisms of which remain to be made precise) incorporates the following as its core principle:

(5) Universal Licensing Principle (ULP)

Every maximal projection must be properly licensed at every level of syntactic representation.

Formulating the requirements of Licensing Theory in this way has a number of important consequences. One overall effect is that the grammar will impose more severe restrictions on the occurrence of elements, since the latter are now required to be properly licensed at D-Structure and S-Structure as well. This means that a grammar incorporating the ULP is more constrained than a grammar incorporating the narrower Principle of Full Interpretation, conceptually a desirable result. Specific consequences that ensue will be examined below in light of the different mechanisms available for licensing. As we shall see,

furthermore, the ULP yields interesting results in a range of areas about which the PFI has nothing to say, such as the analysis of PG constructions, the distribution of null operators and resumptive pronouns, etc.

Before turning to the interaction between the ULP and other sub-systems of the grammar, a few words should be said about the intuitive appeal of our proposal. Adopting the ULP means extending the relevance of the somewhat semantic notions which constitute the licensing mechanisms (thematic association, predication, etc.) to levels of representation other than LF, the latter being traditionally considered the level (sometimes the only level) at which such notions are relevant. On these intuitive grounds alone, one might question the merit of the ULP. But note that the Projection Principle already has the consequence that thematic structure and thematic relations must play a role not only at LF, but also at D- and S-Structure. As Chomsky (1981) points out, the effect of the Projection Principle on D-Structure is that the latter level becomes a "pure" representation of the thematically relevant grammatical functions (GF-θ). From this point of view, the ULP comes at no cost in the grammar since it expresses an analogous intuition, viz. that the integration of

the constituents into the thematic structure of the sentence plays a crucial role at all syntactic levels.

2.2. Syntactic Levels and Licensing Mechanisms

I now turn to a consideration of the way in which Universal Licensing affects the various licensing mechanisms stated in (3) and repeated below:

(6) A maximal projection is licensed as either:

a. an argument or the trace of an argument (in which case it must receive a θ-role);
b. a predicate (in which case it must assign a θ-role);
c. an operator (in which case it must bind a variable).

Under the ULP, elements base-generated in A-positions are properly licensed by virtue of being arguments, as before (although the notion of "argument" may be a little wider at S-Structure than it is at D-Structure and LF; see section 2.2.3 for a discussion of this issue as well as that pertaining to the licensing of null categories in argument positions). The main

import of Universal Licensing consists in constraining the distribution of those constituents which are in A'-positions at D-Structure. One such class of maximal projections is predicates, the behaviour of which we now examine in some detail.

2.2.1. Predication

A "predicate" may be loosely understood, as Geach (1962:50) puts it, as an expression that gives us an assertion about something, when we attach it to an expression that stands for what the assertion is about. Predicates may be divided into two groups: those which assign θ-roles and those which do not.[5] θ-related predication involves primary predicates (VP) as well as secondary predicates (NP, AP, PP). It is generally assumed that the VP assigns an agent θ-role to the subject in (7a), while the bracketed constituents in (7b-d) assign adjunct θ-roles to their

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[5] See Williams (1980) and subsequent work, and Rothstein (1983).

subjects.[6] In these and subsequent examples, the predication relation is expressed by coindexing.

(7) a. Max$_i$ [$_{VP_i}$ moved to the Cayman Islands]

b. Jacques$_i$ came home [drunk]$_i$

c. The guests ate the meat$_i$ [raw]$_i$

Non θ-related predication refers to the relation between certain clausal constituents or non-θ assigning predicates or adjuncts with their structural subjects. Such a relation is exemplified below, where the bracketed constituents are predicated of the indexed subjects. In (8), the non θ-assigning predicates are: VPs headed by verbs like seem (which assign no external θ-role), as in (8a), purposive clauses (cf. (8b)), relatives ((8c), see Chomsky 1977, Williams 1980), as well as, plausibly, reflexives

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[6] Adverbs may also be considered to fall under the category of θ-assigning secondary predicates, although in this case the adjunct θ-role will sometimes be assigned to another predicate. See Zubizarreta (1982:34ff). A different view of adverbs and adverb licensing is put forth by Travis (1988), who argues that adverbs are not maximal projections, hence not licensed through predication.

in A'-positions ((8d)) and floating quantifiers of the type displayed by Québec French (cf. (8e)):[7]

(8) a. It$_i$ [seems that Hélène will be doing ski reports]$_i$

b. I bought this bottle of Château Lafitte$_i$ [to give to Edith]$_i$

c. This is the book$_i$ [that I was looking for]$_i$

d. Jeff$_i$ baked the lasagna himself$_i$

e. Ils$_i$ ont pas dormi cette nuit personne$_i$
"They did not sleep tonight (none of them)"

Given the existence of non θ-related predication structures such as those illustrated in (8), the requirement according to which all predicates must assign a θ-role (cf. (6a), from Chomsky 1986a) is clearly too strong. In what follows, I will assume instead that, apart from conforming to the structural conditions on predication (see below), a predicate must have a sufficiently

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[7] Floating personne (literally: "nobody") is different both in its interpretation and in its distribution from the homonymous personne found in argument positions. The latter occurs in Standard French as well, while the former is specific to Québec French. For a discussion of the properties and distribution of floating personne and its non-negative counterpart tout le monde (lit. "everybody"), see Tellier (1987).

close semantic association with its subject. The notion of "close semantic association" will remain at an intuitive level; it will suffice for our purposes to assume that such relations as specification of some properties of the subject, or restriction of the reference domain of the subject, etc., constitute valid associations for predicates to entertain with their subjects. We might follow Chomsky (1977) in including under the non θ-related predication rubric other relations, such as for instance that which obtains between topic and comment, where the clausal predicate holds, loosely speaking, an "aboutness" relation to the structural subject, the latter being the salient NP in peripheral position. Topic-comment relations are exemplified in structures like topicalization (cf. (9a)), dislocation (left and right, illustrated for French in (9b-c)), and cleft sentences (cf. (9d)):

(9) a. This book$_i$, [I really enjoyed]$_i$

b. Pierre$_i$, [son frère est avocat]$_i$
"Pierre, his brother is a lawyer"

c. [Je l'ai donné à Jean]$_i$, ce bouquin$_i$
"I gave it to Jean, this book"

d. It is this book$_i$ [that I liked best]$_i$

Finally, I assume that the structural conditions on predication hold as stated in Williams (1980) and Rothstein (1983). First, the subject must c-command the predicate. Secondly, at S-Structure, clausal predicates must contain an element which has no independent reference, such as a gap, an operator, or a pronoun (a "predicate variable" in William's (1980) terminology). This is required for the clause to function as an unsaturated (one-place) predicate and to allow it to be construed as being "about" the structural subject.[8] Note that the operator, in order to function as a predicate variable, must be in the [Spec,CP] position of the predicate. This is necessary to account for obligatory operator movement in relatives. If null operators could remain in situ, we would incorrectly predict that Subjacency violations could be circumvented in relatives, the null

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[8] This constraint is sometimes relaxed in the case of topic-comment constructions, for which a loose "aboutness" relation is sufficient, and no predicate variable is required. This type of structure is commonly found in Japanese and Korean, which allow sentences of the type "Sports, I like tennis". It is also found, in a more limited capacity, in other languages. English as for constructions are of this type (e.g. "As for Mary, John is too tall"); similarly in French, cf (i) from J. Barbey d'Aurevilly, Pensées détachées; see also Hirschbühler (1974):

(i) En fait de femmes, c'est dans les huitres qu'on trouve les perles
"As for women, it is in oysters that pearls are found"

operator raising only at LF, where Subjacency does not hold.[9] But (10a) is ungrammatical. Similarly, relative pronouns may not remain in situ in the syntax, contrasting in this respect with their Wh counterpart, as shown for French in (10b-c).

(10) a. * John is the man [that I wonder [what I gave to Op]]

b. * Voilà un homme (que) tu penses pouvoir compter sur lequel
"Here is a man that you think you can count on whom"

c. Tu penses pouvoir compter sur lequel/sur qui?
"You think you can count on which/on whom?"

Returning to the requirements of Licensing Theory, I will henceforth assume that all the indexed constituents of (7)-(9) which are not in argument positions are properly licensed via predication. In fact, the ULP allows us to make the stronger claim that all maximal projections base-generated in A' positions must be licensed at D-Structure by predication, be it θ-related or non θ-related. I will return below to further implications of

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[9] This consequence, along with the example in (10a), were pointed out to me by Mark Baker (p.c.).

this claim. Recall that under the view advocated here, the licensing requirement must be met at every syntactic level of representation. Thus one direct consequence of the ULP is that predication indexing must be established not only at LF, as has sometimes been assumed, but rather as early as D-Structure.[10]

2.2.1.1. Null Predicates at D-Structure

Granting this, the ULP predicts that a given maximal projection will not be base-generated in an A' position if it cannot enter into a predication relation at D-Structure. As we shall see directly, this prediction is borne out, and will allow us to rule

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[10] On the view that Predication indexing is a rule mapping S-structure onto LF (or LF onto LF'), see, for instance, Williams (1980) and Chomsky (1982, fn.11). As far as I can see, there is no compelling argument favouring this particular view. Chomsky (op.cit.) seeks to account for the purported lack of weak crossover effects in restrictive relatives by assigning predication indexing to the level of LF' (which derives from LF); he assumes the Bijection Principle of Koopman & Sportiche (1982) as an account of weak crossover, and limits the application of the principle to LF. Restrictive relatives, which involve predication, are unindexed at the level at which the Bijection Principle applies, and therefore are not subject to it. It should be noted, however, that even assuming this to be the correct analysis, it does not constitute strong evidence against D-structure predication indexing, as some speakers do find WCO effects in restrictive relatives (cf. Safir 1986, fn.4, and references cited there).

out in a unified manner a number of constructions. In order to make this point, we must first reconsider a constraint on predication briefly mentioned earlier in this chapter.

Given that predicates must express some property (in the broad sense) of their subjects, a plausible condition on the predication relation is that the predicate must be semantically non-null (or, if it is an NP, have referential content). As was mentioned above, the position of a secondary predicate may not be occupied by a pleonastic NP (it, there). An additional example illustrating this is given in (11), where the judgment indicated corresponds to a non-referential reading of it (indexing indicates predication relations):[11]

(11) * Alex$_i$ came home it$_i$

(cf. Alex$_i$ came home [a hero]$_i$)

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[11] Note again that the PFI does not alone suffice to rule out (11). Under the PFI, expletives are eliminated from the representations at LF; furthermore, since the position occupied by it is that of a secondary predicate, the Projection Principle applying at LF does not require it to be realized. Thus under the PFI, (11) could be well-formed at S-Structure, and also well-formed at LF where, after elimination of the expletive, it could be interpreted as equivalent to "Alex came home".

It might be argued that this semantic condition is sufficient to rule out the ill-formed (12) as well, where an empty category occupies the position of the secondary predicate.

(12) a. * Alex$_i$ came home e$_i$

b. * They ate the meat$_i$ e$_i$

Under this view, (12) would be ruled out on the grounds that [e] is not identified as to its semantic content. As such, it cannot function as a predicate, and the sentence is ruled out for the same reason that accounts for the ill-formedness of (11) above. What I will show now is that the lack of semantic content does not suffice as a condition to rule out all occurrences of null categories as predicates. Rather, I argue, the condition must be sharpened in the following direction: maximal projections cannot occupy predicate positions just in case they are unlicensed in these positions <u>at D-Structure</u>.

The first relevant point to note is that null categories in predicate positions may, in certain cases, acquire semantic

content from the linguistic context. One such case is illustrated by the so-called "VP-deletion" constructions:

(13) a. Mary [went to Ogunquit in the summer] but Jane did not [e]

b. - Did you [buy a new tennis racket]?
- No, but I will [e]

The empty VPs in the second conjunct of (13a) and the second sentence of the dialogue in (13b) are interpreted as having the same semantic content as the bracketed VPs of the first conjunct/sentence. Now, this would not count as an argument for contextual identification of the semantic features of [e] under the traditional assumption that the second VP has been deleted (under identity) on the PF side of the grammar. This traditional analysis has, however, been challenged by Zagona (1982), who argues that the "deleted" VP is in fact a base-generated empty category, which is subject to the ECP (cf. also Lobeck 1987 for discussion). If this analysis is correct, we must conclude that what allows the empty categories in (13) to function as predicates is the fact that they have recovered their semantic content from the lexically realized VPs.

Before going on, we must make precise two technical points which will be of crucial relevance to the discussion. First, I assume that whenever a maximal projection is able to function as a predicate (that is, as soon as it has acquired the necessary semantic content), it can (and must) undergo predication coindexing with a structural subject. That is, predication indexing is effected at any level, as soon as the conditions are met. Secondly, while for convenience I will continue to use subscripts in an ambiguous manner, I adopt the position whereby predication indices are formally different from the indices used for binding or resulting from movement. In particular only the latter, not the former, are computed in view of the principles of Binding Theory.[12] In order to render this assumption more perspicuous, I

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[12] Aoun & Clark (1984) argue in favour of this view. They point out that in equative predication structures ("X is Y"), both X and Y must refer to the same entity, hence share an index. Since referential indices are relevant to Binding Theory, a sentence like (i) wrongly constitutes a Principle C violation.

(i) Mary is the woman over there

However, since the woman over there is a predicate, it need not receive a referential index, but may be identified with the subject by predication indexing. Since (i) is not a Principle C violation, predication indices must be irrelevant to binding relations.

shall henceforth refer to indexing by predication as P-indexing. This formal difference is also reflected in the levels at which the indices are assigned. While predication indexing take place at the earliest level possible, the other indices are assigned at S-Structure, either as a result of movement or by the Free Indexing Procedure of Chomsky (1981).

This being said, let us return to null secondary predicates as in (12). The hypothesis under discussion is that this example is ungrammatical for lack of semantic content of the potential predicate. Suppose we superimpose upon (12) the context necessary for content recoverability: this would involve, in parallel with the well-formed (13), providing a lexically realized secondary predicate in a first conjunct/sentence for [e] to be identified with. We would then expect such a sentence to become acceptable on a par with (13). This is not what the data show, however:

(14) a. * John ate the fish [raw], but Yoko didn't eat the meat [e]

b. – Did you eat the fish [raw]?
– * No, I ate the meat [e].

Assuming, by analogy with (13), that the potential predicate [e] is in the right context to retrieve its semantic content, why are the sentences in (14) ungrammatical? Given the set of assumptions we have adopted, a plausible explanation is at hand. Suppose, as we have so far, that the semantic content of [e] in (13)-(14) is identified only at S-Structure: that is, the two predicates are coindexed via the Free Indexing Procedure. Then, [e] in (14) may be licensed as a predicate from that level on. But note that [e] is unlicensed at D-Structure, since in general at that level maximal projections in A'-positions can only be licensed as predicates. It thus follows that (14) violates the ULP at D-Structure.

In view of the foregoing discussion, a question obviously arises: why are null primary predicates allowed where null secondary predicates are ruled out? Why are the null VPs in (13), repeated below, not ruled out at D-Structure, since they are presumably unable to function as predicates at that level?

(15) a. Mary [went to Ogunquit in the summer] but Jane did not [e]

b. - Did you [buy a new tennis racket]?
- No, but I will [e]

Our analysis requires that a principled distinction be drawn between VPs and secondary predicates with respect to their D-Structure properties. I suggest that null VPs, while (like null secondary predicates) they are unlicensed by predication at D-Structure, can be licensed at that level through other mechanisms which are unavailable to secondary predicates. More concretely, VPs (null or overt) are licensed as arguments of INFL. (See Chomsky 1986b:70 and passim for arguments that INFL θ-marks its VP complement). Thus null VPs, though they function as predicates at other levels, are licensed at D-Structure as arguments.[13] It now follows that, contrary to the cases we have been examining,

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[13] It is perhaps more plausible to say that VPs are licensed as quasi-arguments (by analogy with the θ-role assigned by weather verbs - cf. Chomsky 1981). Alternatively, we might assume that VPs are licensed by virtue of being selected by a functional head, a mechanism which Lamontagne & Travis (1986) refer to as "functional selection".

A problematic point of our account is the following: we must assume that a predication relation nonetheless holds at D-Structure, in order for the subject to be licensed as an argument at that level. We could assume that the relation holding between the null VP and its subject in (15) is effected through the INFL node, although the question remains as to how the right θ-role is assigned.

the ULP is complied with in the case of base-generated null VPs, as desired.

As Mark Baker (p.c.) has observed, this account predicts that null VPs will be impossible in those contexts which lack an INFL node. In such a configuration, the ULP is violated at D-Structure since, recall, null VPs are licensed at that level by virtue of being θ-marked by INFL. One context which allows us to test this prediction involves infinitival complements of perception verbs. It is sometimes assumed that the complement of perception verbs as in "I saw John leave" is a small clause - that is, an S without an INFL node - headed by the infinitival verb. We thus expect such constructions to be ungrammatical with null VPs. This is borne out:

(16) *? I saw John leave, but Mary didn't see Bill [e]

The second conjunct in (16) may not be paraphrased as "Mary didn't see Bill leave"; i.e. the interpretation with a null VP is precluded in this configuration.

2.2.1.2. Null Operators in Adjunct Positions

Chomsky (1977) has argued that several constructions involving no overt Wh-phrase in fact arise from Wh-movement (of a null operator, cf. Chomsky 1981). Such constructions include easy-clauses, degree adjective constructions, purposives, etc. As evidence for Wh-movement in these structures, Chomsky (op.cit.) cites among other properties the fact that these constructions obey the island conditions on movement rules. Similar observations underlie the proposal that parasitic gap constructions too are derived by null operator movement (Contreras 1984, Chomsky 1986b). Examples representative of each of these constructions are given in (17):

(17) a. John is easy [Op to talk to t]

b. This opportunity is too good [Op to miss t]

c. I bought this book [Op to read t on the plane]

d. Which books did you file t [Op without having read t]?

Our analysis of the non-occurrence of null secondary predicates can be extended to these structures as well. We have argued that null categories in adjunct positions at D-Structure

are ruled out if they cannot function as predicates at that level. Recall the rationale behind this: null categories in general have no inherent semantic features, hence they cannot be predicated of a subject at a level L if no semantic features are assigned to them through an identifier at level L.

All things being equal otherwise, we expect null operators in adjunct positions to be also prohibited at D-Structure, since, having no intrinsic semantic features, they cannot function as predicates at that level. Note that in order to test this prediction, we must use adjuncts that may otherwise occur as "bare NPs" (see Larson 1985), since otherwise there would be no source for movement, given the fact that null operators cannot be of the category PP.[14] The prediction is borne out for the null operator constructions of the type shown in (18):

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[14] These constructions are relevant to our hypothesis that null operators cannot be adjuncts only if "bare NP adverbs" such as that way, last Tuesday are indeed NPs. If they are PPs introduced by a null preposition, as Bresnan & Grimshaw (1978) and Emonds (1987) argue, their status is irrelevant to us since if there is a null operator it is not itself the adjunct, but rather a complement to the null preposition. Under this analysis, stranding of the null preposition must be prevented, at least for the constructions given in (18). This is problematic, however, given the behaviour of these adverbs as heads of relatives; see below in the text.

(18) a. * Today is easy [Op to do your homework t]

b. * This way is too difficult [Op to sleep t]

c. * I left last Tuesday [Op to reach Boston t]

d. * This is the way you presented it t without [Op having read it t]

Note that the judgment given for (18d) refers to the coreferent reading. The sentence is, irrelevantly grammatical under the interpretation where the bracketed clause contains no adjunct; but it cannot be intended as a statement about something that was, say, presented carefully though not carefully read.

As we shall discuss in more detail later on, the null operator in such examples is generally assumed to be coindexed at S-Structure with an antecedent, and is therefore correctly identified at that level. The sentences in (18) thus cannot be ruled out on the basis of their S-Structure representation. Here again, the ULP can account for the ungrammaticality of the examples in (18): the null operators are unidentified at D-Structure, hence cannot function as D-Structure predicates. Constructions containing null operators in adjunct positions are

thus straightforwardly ruled out by the ULP applying at D-Structure.

A problem arises, though, if relatives (tensed and infinitival, cf. "A man that I know", "Someone to talk to ") and cleft constructions ("It is this woman that I met") are also derived by null operator movement. The fact that "bare NP adverbs" may head these constructions suggests the presence of null operators in adjunct positions at D-Structure:

(19) a. Parents usually don't like the way (that) kids dress

b. These people need a place to stay

c. It was last Tuesday that I left

One possibility compatible with our assumptions is that relatives and clefts allow deletion (up to recoverability) of an

overt Wh-phrase in [Spec,CP], as in Chomsky & Lasnik (1977).[15] Crucially, this type of derivation must be unavailable in (18). The distinction might be expressed in terms of adjacency of the identifying term to the deleted element: the Wh-phrase in [Spec,CP] is adjacent to the head in (19), but not in (18). Perhaps recoverability as applied specifically to deletions requires some sort of adjacency. I will not pursue this any further, though I will assume that deletion in [Spec,CP] is at

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[15] L. Rizzi (p.c.) suggests as an alternative a raising analysis from COMP as in Vergnaud (1974) - see Chomsky (1980) for discussion. Rizzi points out that the null operator analysis is implausible for clefts, as it would involve in cases like (i) a null operator of the category PP:

(i) It is to John that I gave the book

A second difficulty for a null operator analysis of relatives and clefts is that while null operators cannot be subjects (see below in the text and Section 2.2.3.), (ii) and (iii) are well-formed:

(ii) The man that saw Bill
(iii) It is John that people say saw Bill

least available as an option for relatives and cleft constructions.[16]

Before going any further, I want to discuss an alternative analysis that has been put forth in order to account for some of examples in (18). Stowell (1985) argues that the absence of adjunct parasitic gaps and, more generally, adjunct traces bound by null operators is due to the ECP. As he shows, similar constraints obtain with subjects, which can neither be parasitic gaps, nor be bound by null operators in tough/easy constructions, etc. Under a disjunctive view of the ECP, subjects and adjuncts, not being lexically governed (or θ-governed), need to be governed by an antecedent. Assuming this, Stowell proposes that null operators cannot be antecedent governors; this restriction is embodied in (20) below.

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[16] Carstens' (1987) account of adjunct Wh-extraction in Yoruba can be recast along those lines. She explicitly assigns to these constructions the structure of clefts, and argues that null operator movement is involved. In our view, no adjunct null operator need be present at D-Structure if cleft constructions allow for the deletion of overt Wh-phrases in the specifier position of the main clause.

(20) A category α may antecedent govern a null category β iff α is a member of a chain headed by a non-null category.

The formulation of (20) is meant to distinguish null operators from intermediate traces, given that the latter qualify as antecedent governors for other traces within their own chain.

There are two main reasons why I think this analysis should be rejected in favour of the one which has been proposed here. First, an analysis based on antecedent government does not extend to the inability of null categories to function as secondary predicates (cf. (12)). Since the empty categories involved are not movement-derived, the ungrammaticality of the examples cannot be attributed to the properties of null operators as heads of chains. Furthermore, as Stowell (1987) points out, the analysis fails to account for the whole range of cases involving traces of null operators in subject position (note however that our approach does not extend to subjects; cf. 2.2.3 below for discussion). Secondly, as we shall see in Chapter 5, there are reasons to believe that in PG constructions, the real and the parasitic chains behave, for all relevant purposes, as one single chain at the level of S-Structure. In other words, at that level, the

chain containing the parasitic gap is no longer headed by the null operator, but is headed rather by the overt Wh-phrase. Assuming the antecedent government requirement to apply at LF, parasitic gaps are members of chains headed by overt operators. It then follows that parasitic gaps, whether adjuncts, subjects or objects, comply with (20) - i.e. they are antecedent governed. If this is correct, an ECP-based analysis fails to effect the required distinction.

To sum up, I have argued that elements base-generated in A'-positions, if they are not licensed by virtue of being arguments of heads (as VP is), must be licensed via predication. Furthermore, the ULP predicts that the predication relation must be established at D-Structure. Thus maximal projections in A'-positions for which the predication relation cannot be established at D-Structure are unlicensed at that level and violate the ULP. This has allowed us to rule out structures with null secondary predicates, as well as constructions containing adjunct null operators: parasitic gap constructions, easy clauses and degree adjective complements.

In the next sub-section, I discuss the quantification mechanism in (6c), which says that operators may be licensed at LF by virtue of binding variables.

2.2.2. Quantification

It is a well-known fact that natural languages do not in general allow the formation of Wh-questions, relatives or cleft sentences where neither a gap nor a pronoun corresponds to the extracted constituent. Chomsky's (1982:11f) formulation of this particular constraint of natural language states that operators (roughly, Wh-words, quantified NPs, and covert operators) may not quantify vacuously. Sentences violating the Vacuous Quantification Condition are illustrated in (21):

(21) a. * Who does Mary know Max?

b. * The man [Op that Mary knows Max]

c. * It is Max [Op that Mary knows my sister]

The above examples are ruled out since the expected gap in object position has been replaced by a name or a referential NP; therefore the examples contain no variable for the overt and null

operators to quantify over. Following essentially Chomsky's (1986a) view, I will assume that the condition on vacuous quantification is integrated into Licensing Theory as the way for operators to be licensed at LF. Under the extended view of Licensing we are adopting, however, operators, like all other maximal projections, must also be licensed at the levels of D-Structure and S-Structure. Let us for the moment make the simplifying assumption that operators base-generated in A-positions are properly licensed as arguments at D-Structure (this assumption will be discussed in 2.3 below), and that they are licensed by virtue of binding a variable at LF.[17] What remains to be assessed, then, is how operators base-generated in A'-positions are licensed at D-Structure. We have discussed, in the preceding subsection, some issues that arise with respect to the licensing of null operators in adjunct positions at D-Structure. Here, we will examine the properties of operators base-generated in the specifier position of CP. The constructions relevant to the discussion are those involving resumptive pronouns; it will be shown that the quantification mechanism does not suffice to

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[17] Overt operators are licensed at S-Structure either as arguments (if they appear <u>in situ</u>) or as operators binding variables if they have undergone syntactic movement.

license these operators. Rather, it will be argued, these operators must be licensed at D-Structure by predication. The ULP will be shown to provide an interesting account of their distribution, in particular concerning the Wh/relative asymmetry.

2.2.2.1. Operators in [Spec,CP] at D-Structure

2.2.2.1.1. Resumptive Pronouns

Let us at the outset distinguish between two types of resumptive pronouns: those that are base-generated, as in English and French, and those that are phonetic spell-outs of traces, as in e.g. Vata, Swedish, etc. In the latter case, it can be shown that the relationship between the pronoun and the operator in [Spec,CP] is analogous to that between a moved element and its trace. In particular, these constructions obey Subjacency, and the resumptive pronouns, like Wh-traces, license parasitic gaps and create Weak Crossover effects.[18] These facts indicate that the resumptive pronouns are really movement traces at S-Structure. Their realization as pronouns may be attributed to a

[18] See Koopman & Sportiche (1982), Sportiche (1983), Zaenen, Engdahl & Maling (1981), Engdahl (1985, 1986) for relevant discussion.

phonetic "spell-out" mechanism operative at the S-Structure level, the purpose of which is arguably to escape ECP violations.[19]

In English and French, on the other hand, resumptive pronouns appear preferably within islands, i.e. in contexts where extraction would incur Subjacency violations. Taking Subjacency as a diagnostic for movement, this indicates that constructions with resumptive pronouns do not result from movement in these languages.

I will assume that English constructions involving resumptive pronouns as in (22a-b) have the structure indicated in (22c). That is, an operator (null or overt) is base-generated in the [Spec,CP] position and coindexed, at least by LF, with the resumptive pronoun.

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[19] See Koopman & Sportiche (1982) for a discussion of the properties of resumptive pronouns of this type in Vata. My assumption with respect to the ECP differs from Koopman & Sportiche's, although not in a way that would affect their argument for S-Structure spell-out. Under a conjunctive view of the ECP, if lexical government must be met at PF and antecedent-government at LF, then the lexicalization of the trace would apply either at S-Structure or at PF, depending on which clause of proper government lexicalization serves to fulfill.

(22) a. A patient who$_i$ the doctors wonder whether he$_i$ will survive or not.

b. A country Op$_i$ that every tourist who ever visited it$_i$ returned home in complete shock.

c. [$_{CP}$ Wh$_i$/Op$_i$ [$_C$Ø/that] [$_{IP}$ ... pron$_i$ ...]]

That constructions with resumptive pronouns have the structure in (22c) is argued for by Safir (1986), who shows that resumptive pronouns must always be bound by an operator in [Spec,CP], a relation which he labels A'-binding (as distinct from R-binding, i.e. binding by the head of the relative clause; cf. below).[20]

Structures like (22c) abide by the Vacuous Quantification Condition on the assumption that resumptive pronouns are treated as variables in Logical Form. But how are the operators in (22c) licensed at D-Structure? It could be argued that the resumptive pronouns are treated as variables at that level, thus licensing the operators via quantification. However, as is well-known, resumptive pronouns in English do not display the behaviour

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[20] For a different view of the structure of (22b), cf. Chao & Sells (1983) and Sells (1984). These authors take the position that resumptive pronouns are accidentally bound to the relative head, and that (22b) does not involve a base-generated null operator in COMP.

characteristic of syntactic (as opposed to semantic) variables. In particular, they do not license parasitic gaps, as the following shows:

(23) * This is the report that the spy who forgot to file it after having read e just got caught

Furthermore, if quantification sufficed to license operators in specifier positions at D-Structure, we would expect to find questions with base-generated Wh-words in [Spec,CP] construed with resumptive pronouns within islands. In languages which allow null objects, we would expect to find Wh-constructions where the gap (a null resumptive pronoun) is non-subjacent to the Wh-word. French displays, in a limited fashion, the required properties: the object of bisyllabic prepositions may be syntactically realized as a null pronominal.[21] Yet, Wh-questions are excluded in this context; compare (24a) with (24b):

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[21] These prepositions are sometimes referred to as "intransitive" or "orphan prepositions". Cf. Vinet (1979), Zribi-Hertz (1984), and references cited in Chapter 3.

(24) a. Voilà le gars que tu sais pas pourquoi tu compterais dessus e
"Here is the guy that you don't know why you should count on (him)"

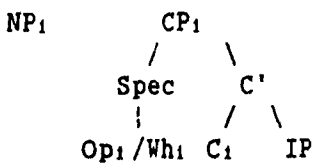
b.?* Quel gars est-ce que tu sais pas pourquoi tu compterais dessus e?
"Which guy don't you know why you should count on him?"

The ULP requires that operators (null or overt) base-generated in [Spec,CP] must be licensed at D-Structure. We just saw that quantification as a licensing mechanism does not suffice to ensure that these operators will be licensed at that level. What I want to propose is that operators in [Spec,CP] are licensed at D-Structure by virtue of being assigned a predication index. Thus the D-Structure licensing of maximal categories in A'-positions reduces to only one mechanism, i.e. predication. Maximal projections in possible predicate positions must be predicates at D-Structure, and maximal projections in other A'-positions (e.g. [Spec,CP]) must be contained within predicates so as to be part of a predication chain.

Let us make precise what it means for an operator to be part of a predication chain. Here I adopt an idea put forth by Browning (1987:61f) from a slightly different perspective.

Consider a D-Structure which we might take to be that of (22), i.e. an English relative clause with resumptive pronoun:

(25)



The coindexing relations in (25) are as follows: NP is coindexed with CP via predication; C, as the head of CP, acquires the index assigned to its maximal projection; finally, the operator in [Spec,CP] is coindexed with the head C via the Spec-Head agreement mechanism (cf. Chomsky 1986b).[22]

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[22] Browning (op.cit.) takes the coindexing relations as one of the necessary conditions for Predication to take place. In her view, a subject-predicate relation is licensed if either 1) the subject satisfies the external θ-role of the predicate, or 2) the subject agrees with a chain contained in the predicate. The presence of an operator in [Spec,CP] in (25) is thus necessary to ensure the formation of an agreement chain. This is incompatible with the view adopted here. We have argued that predication relations may be established at D-Structure; obviously, at that level, not all operators occupy the [Spec,CP] position. It could well be that a condition similar to that proposed by Browning holds of S-Structure predication, however, given the obligatory character of operator movement in relatives and other predication structures (cf. supra, Section 2.2.1).

We have proposed that an operator in [Spec,CP] at D-Structure is licensed if and only if the clause which dominates it participates in a predication relation with a subject.[23] Assuming again that resumptive pronouns which violate Subjacency have the structure in (22), the ULP, in conjunction with the proposal just made, makes the following prediction: in languages like English or French, no resumptive pronoun can appear outside of predication structures. In particular, they are excluded with Wh-questions. This is, of course, because operators base-generated in [Spec,CP] will not be licensed at D-Structure unless they are contained within a predicative clause. We thus derive the contrast between the French examples in (24a) and (24b); the prediction is also borne out for English, as the following examples illustrate:

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[23] While null operators in adjunct positions are ruled out at D-Structure, this accounts predicts, as Lisa Travis points out, that adjunct null operators base-generated in [Spec,CP] should be correctly licensed at D-Structure. In other words, we should in principle find adjunct resumptive pronouns in relative clauses. French has a pronominal clitic which may correspond to a locative adjunct: y ("there"). As expected, within islands, y may be used as a resumptive pronoun:

(i) C'est un endroit qu'on ne connaît encore personne qui s'y soit vraiment plu
"This is a place that we don't know anybody yet that really enjoyed himself there"

(26) a. This is the guy that/who you didn't know whether he would show up or not

b.*? Who were you wondering whether he left early?

Safir (1986:685), who notes these examples, provides a different account of the contrast. His analysis of the ungrammaticality of (26b) relies on conditions imposed not on operators, but rather on the resumptive pronouns themselves. The latter are subject to a requirement whereby they must be bound by a relative head (a relation which he refers to as R-binding). Thus the contrast between the (a) and (b) examples of (24) and (26) is handled by the statement in (27):

(27) Resumptive pronouns must be R-bound

Both (27) and the ULP yield the same result in accounting for the Wh-question/relative clause asymmetry with respect to resumptive pronouns in French and English. Note however that the ULP does not have the stipulative character of (27), which refers specifically to resumptive pronouns. Our approach is thus more general, and under this view the behaviour of resumptive pronouns

in (24), (26) is made to follow from independently motivated principles.

The two approaches differ in their empirical coverage in two areas. The first one has to do with the distribution of resumptive pronouns in other predication structures, i.e. easy-clauses, purposives, etc. In this particular case, the facts observed would appear at first glance to favour Safir's (27) over the approach advocated here. I suggest below that the problem is just apparent, and that the facts observed may be attributed to other factors. The second area concerns the distribution of resumptive pronouns within relatives and Wh-questions both cross-linguistically and language-internally; here, as we will show, the ULP makes the correct distinctions.

Let us address the first case. Safir's account limits the occurrence of resumptive pronouns to cleft sentences and relative clauses. By contrast, the analysis advocated here is more general, and in principle allows the occurrence of resumptive pronouns in any predication structure, provided the null operator in [Spec,CP] is part of a predicate chain at D-Structure. There is reason to believe that the operator in easy constructions and

degree adjectives of the type shown in (28) is part of the predicate chain by S-Structure (see below).

(28) a. John$_i$ is [difficult to talk to]$_i$

b. John$_i$ is [too marginal/marginal enough for us to identify with]$_i$

Whatever the precise structure of such constructions, we are led to conclude that the [Spec,CP] position is part of the predicate chain and, therefore, that null operators are licensed in this position already at D-Structure.

Granting this, we do predict that resumptive pronouns should be grammatical in these structures as well. This prediction is not borne out, however: resumptive pronouns are marginally accepted in purposives (cf. (29a)), and ungrammatical in infinitival relatives and <u>easy</u> constructions (cf. (29b-c)).

(29) a.?? John gave his kid a new toy to play with it

b. * I was assigned a problem to figure out how to solve it

c. * John is difficult (for us) to decide on a way to approach him

Browning (1987:69), who gives the examples in (29a-b), suggests that their marginality might be attributed to the fact that purposives and infinitival relatives resist embedding. Since resumptive pronouns occur within islands in English, the relevant constructions must involve embedded purposives and infinitival relatives, which are independently marginal.[24] This explanation will extend to (29c) if embedding of <u>easy</u> constructions results in decreased acceptability. Indeed, it appears that the examples given by Chomsky (1977:103f) are degraded for some speakers:

(30) a. John is easy for us to convince Bill to arrange for Mary to meet

b. John is easy for us to convince Bill that he should meet

Thus it seems plausible that the ungrammaticality of the constructions in (29) can be (at least partly) attributed to indpendent factors, which have nothing to do with the possibility

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[24] Note with respect to (29b) that resumptive pronouns in the corresponding relative are equally marginal, i.e. independently of the purposive construction:

(i) ?? This is a problem that I don't know how to solve it

of base-generating null operators in the [Spec,CP] position of easy-constructions, purposives, etc.

2.2.2.1.2. Relative/Wh Asymmetries with Resumptive Pronouns

The second area concerns the asymmetry between Wh-constructions and relative clauses with respect to their ability to host resumptive pronouns. As we saw, Safir's R-binding requirement accounts for the fact that resumptive pronouns in French/English may be found in relative clauses but not in Wh-questions. In some languages, however, resumptive pronouns do occur inside Wh-questions; for instance, as Safir (1986:686) notes, Irish and Swedish display no Wh-question/relative asymmetry with respect to hosting resumptive pronouns.[25] In order to account for this variation, Safir suggests that (27) is a parameter: resumptive pronouns must be R-bound in some languages, but need not be so in others.

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[25] The references cited in this regard are McCloskey (1979) and Sells (1984). Irish may actually be a language like English or French in this respect, since Wh-questions overtly have the form of relatives.

The analysis proposed here tackles the problem of variation differently. We have attributed the non-occurrence of resumptive pronouns with Wh-questions to the fact that the operator in [Spec,CP] is unlicensed at D-Structure in these constructions. But recall that there are two types of resumptive pronouns: those that are bound to base-generated operators (as in French, English), and those that are spell-outs of traces. In the latter case, there is no operator in [Spec,CP] at D-Structure; rather, the operator is moved to this position in the syntax. Under our account, therefore, nothing should prevent the second type of resumptive pronoun from appearing on the surface within a Wh-question. In other words, we predict the following: resumptive pronouns of the first type (base-generated) should be limited to predication structures, but resumptive pronouns of the latter type (trace spell-outs) should be unrestricted. We thus expect to find a correlation of properties such as summarized in the following chart:[26]

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[26] The correlation between properties (a) and (b) of (31) is noted in Sportiche (1983:117ff).

(31)

	(a) Obey Subjacency	(b) License PGs	(c) Occur in Wh-questions	(d) Occur in Relatives
Type 1 Base-gen.	no	no	no	yes
Type 2 Spell-outs	yes	yes	yes	yes

We have discussed above French and English, which allow only resumptive pronouns of the first type, and which display all four properties. Similar facts obtain in Yiddish: resumptive pronouns are marginally accepted within islands, as (32a) below shows. What is important is that there is a marked contrast between the (a) and (b) examples: Wh-constructions with resumptive pronouns are sharply ungrammatical, as our analysis predicts:[27]

(32) a.? der boxer$_i$ vos ix ken [dos meydl$_j$ vos t$_j$ hot im$_i$ gezen]
"the boy that I know the girl that has seen him"

b.* Voser boxer$_i$ kenst du dos meydl$_j$ vos t$_j$ hot im$_i$ gezen?
"Which boy do you know the girl that has seen him?

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[27] Example (32a) is adapted from Sportiche (1983:119). The judgments given here are Jean Lowenstamm's (personal communication).

Resumptive pronouns of the second type are instantiated in e.g. Vata, Standard Arabic, and Swedish. Resumptive pronouns in Vata behave as predicted with respect to properties (b), (c) and (d) - cf. Sportiche (1983:124); similarly for Swedish, as discussed by Engdahl (1985:9). In particular, the fact that in these languages resumptive pronouns license PGs shows that they display the characteristics of syntactic variables: the important fact here is that they appear in both Wh-questions and relatives.[28]

Resumptive pronouns in Standard Arabic, according to Aoun (1985:93), obey island Constraints (property (a)) and may occur in Wh-questions (property (c)).

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[28] The behaviour of Vata resumptive pronouns with respect to Subjacency cannot be tested because of independent factors (see Koopman 1984, Koopman & Sportiche 1986 for discussion). In Swedish, on the other hand, Subjacency violations occur systematically with non-overt traces (cf. Zaenen, Engdahl & Maling 1981); thus again obedience of resumptive pronouns to Subjacency cannot be shown. But as Engdahl (1985) points out, replacing traces by resumptive pronouns in contexts which feel like Subjacency violations does not improve the grammaticality of the sentences, thus indicating that at least resumptive pronouns do not behave like those of type 1 in this respect.

In order to test whether the occurrence or non-occurrence of resumptive pronouns in Wh-questions is a matter of cross-linguistic variation, or whether it is a matter of the type of resumptive pronoun involved, we need to find a language which displays both types of resumptive pronouns. We then predict that in such a language, only type 1 resumptive pronouns will display the Wh-question/relative asymmetry.

Hausa has the required properties. Tuller (1986:157f) argues that two resumptive pronoun strategies are used in Hausa: one which "rescues" Subjacency violations (as in type 1 above), and one which allows certain structures to escape ECP violations (as in type 2). The second type appears when the object of a preposition is extracted (prepositions are argued not to be proper governors in Hausa). The important point is that the distribution of the two types of resumptive pronouns is as expected. The first type of resumptive pronoun is found only in relative clauses, while the latter occurs in relative clauses and Wh-constructions alike. The examples are given below: that the pro resumptive pronouns in (33) are of type 1 is evidenced by the fact that they

occur within an island; the ill-formedness of (33b) shows that this strategy is restricted to relative clauses.[29]

(33) a. mutumɪn da ka san [lɪttaafɪn da pro ya rubuutaa t]
man REL 2sm know book-the REL 3sm write
"the man that you know the book that wrote"

b. * wane mutum ka ba nɪ [littaafin da pro ya rubuutaa t]
which man 2sm give me book-the REL 3sm wrɪte
"Which man did you give me the book that wrote?"

The sentences ɪn (34) exemplify type 2 resumptive pronouns in Hausa: they obey Subjacency, as shown by the fact that they are ungrammatical within islands ((34a)), and they may occur wɪth Wh-questions (cf. (34b):

(34) a. * Waa ka san [maatar da ta yi maganaa da shii
who 2sm know woman REL 2sf do speech with him
"Who do you know the woman that talked to hɪm?"

b. Waa ka yi maganaa da * (shii)
who 2sm do talk with him
"Who did you talk wɪth?"

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[29] Hausa has null subjects and objects, and thus a resumptive pronoun strategy using null pronominals is expected. Tuller argues that the gap in (33) is pro and not trace. This is particularly apparent ɪn the case of objects, since in object position pro may only refer to [-human] nouns; traces are of course not constrained as to anɪmacy. Tuller points out that only [-human] null objects may relativize out of Wh-Islands.

A similar account can, I believe, be extended to the apparently problematic properties of resumptive pronouns in Palauan. Georgopoulos (1985) argues that overt resumptive pronouns and gaps are base-generated and that, furthermore, both resumptive pronouns and gaps behave like syntactic variables in view of so-called Wh-agreement phenomena. Resumptive pronouns in Palauan can occur both inside and outside of islands, they license parasitic gaps, and they are found in relatives and Wh-questions alike. This is obviously at odds with the clustering of properties predicted by our analysis and summarized in (31).[30]

I would like to suggest that the facts of Palauan are compatible with a different analysis: like in Hausa, Palauan has two resumptive pronoun strategies. Type 1 resumptive pronouns are base-generated within islands, while type 2 are S-Structure trace spell-outs. Consider first the resumptive pronouns that occur outside of islands: as Georgopoulos (1985) argues, they appear in those positions which are not properly governed, i.e. essentially

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[30] Note however that the occurrence of resumptive pronouns in Wh-questions in Palauan is not problematic for our claim, given that, much like in Irish, Wh-questions are overtly predicational (here, they have the structure of clefts).

objects of verbs having no agreement, and objects of prepositions. Apart from this, they behave just like gaps do. In particular, they trigger at S-Structure a verbal agreement rule which is sensitive to the presence of a variable.[31] Thus, from our point of view, this type of resumptive pronoun is of type 2: it behaves like a trace at S-structure, but must be lexicalized at that level to avoid an ECP violation. Further evidence for this comes from the fact that resumptive pronouns in these positions license parasitic gaps (see Georgopoulos 1984 for discussion). Under our analysis, it is thus expected that this type of resumptive pronoun may occur in both Wh-questions and relatives, as indeed they do.

Consider now the resumptive pronouns that occur within islands. Here, the available data are incomplete; however my point will be that the facts brought forth by Georgopoulos (1984, 1985) do not convincingly show that resumptive pronouns within islands are also S-structure variables on a par with those outside islands. That is to say, my claim is that the data are

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[31] A subject variable (null or overt) triggers realis morphology on the verb of its clause, while a non-subject variable triggers irrealis morphology.

compatible with an analysis of these resumptive pronouns as being type 1 (base-generated), with the associated properties.[32] First, the examples of island-internal resumptive pronouns cited by Georgopoulos involve predication structures (i.e. topicalization), and not Wh-questions. Secondly, no example is given where resumptive pronouns inside islands license parasitic gaps. Some of the examples given by Georgopoulos (1985) do, however, show S-structure verbal agreement with island-internal resumptive pronouns. The presence of this agreement, recall, is indicative of the resumptive pronoun being an S-Structure variable. I will discuss this point in a little more detail, since I believe it shows precisely that resumptive pronouns inside islands behave differently than do resumptive pronouns outside islands in this respect.

The important fact about the agreement rule is the following: the verb of the clause immediately containing the (syntac-

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[32] This is not to say that this claim is necessarily correct, as it hinges on the absence of crucial data rather than on positive evidence. It is clear, however, what type of constructions are required to falsify it: structures with resumptive pronouns inside islands which license PGs, and where the island-internal resumptive pronoun may correspond either to a Wh-phrase or to a relative operator.

tic) variable takes realis morphology if the variable (overt or null) is a subject, and irrealis morphology if the variable is non-subject. The sentences below show that non-subject overt resumptive pronouns (35a) and empty categories (35b) pattern alike in triggering irrealis morphology on the most embedded verb:[33]

(35) a. ng-ngera ia ?om- ulemdasu [el l- ulengiil er ngak
CL what IR-2 PF-think COMP IR-3 wait P me

[el bo k- uruul er ngii$_i$]]]
COMP IR-FUT IR-1s IM-do P it

"What do you think that they were waiting for me to do?"

b. a bung$_i$ [el l - ulemdasu a del -ak [el l- omekeroul
flowers COMP IR-3 think mother 1s COMP IR-3 grow

$\_\__i$ a Remy er a sers -el]]
P garden 3s

"the flowers that my mother thought that Remy was growing in her garden"

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[33] The abbreviations used are the following:

CL	cleft	R	realis
IM	imperfective	IR	irrealis
P	preposition	s	singular
PF	perfective	PTC	particle

The pronoun ngii in (35a) and the gap in (35b) are objects of a preposition and a verb, respectively, hence trigger irrealis morphology on the lowest verb.[34] But consider now the agreement pattern triggered by a resumptive pronoun inside an island:

(36) a stoang$_1$ [a l- uleker er a tonari a buik [a lsekum
store IR-3 IM-ask P neighbor boy if

e ng- mo er ngii$_1$]]
PTC R-3s go P it

"The store, the boy asked the neighbor if she's going to (it)"

Note that the lowest verb in (36) has realis morphology, whereas we expect, by analogy with the sentences in (35), to find irrealis since ngii is the object of a preposition. Similar facts obtain with overt resumptive pronouns and null categories in other island contexts: complex NP islands and Wh-Islands (see examples (14c-f) in Georgopoulos 1985). This suggests that neither gaps nor overt resumptive pronouns within islands trigger S-structure agreement in the way that resumptive pronouns and

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[34] Verbs without agreement, like prepositions, are not proper governors.

gaps outside islands do. In our terms, only the latter are syntactic variables. Gaps within islands are instances of resumptive pro (Palauan is pro-drop), and resumptive pronouns within islands (whether overt or null) are instances of type 1, i.e. base-generated in their surface position.[35]

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[35] Other languages relevant to our typology of resumptive pronouns include Modern Hebrew, Egyptian Arabic and Irish. In Modern Hebrew (Borer 1984:72ff), resumptive pronouns within islands (i.e. type 1, base-generated) occur in ordinary relatives but not in free relatives or Wh-questions. As L. Rizzi points out, this state of affairs is expected under our analysis: in free relatives as in Wh-questions, an operator base-generated in [Spec,CP] cannot be licensed via predication at D-Structure. An outstanding problem, however, concerns an asymmetry between Wh-questions and free relatives with respect to type 2 resumptive pronouns: the spell-out option is available in the latter construction only.

In Irish, no Wh/relative asymmetry apparently exists, a fact which we may attribute to the overtly relative syntactic properties of Wh-questions, as noted before. Further research into the matter would be required, however, in order to test whether Irish has one or two types of resumptive pronouns.

In Egyptian Arabic, as described by Kenstowicz and Wahba (1983), resumptive pronouns occur inside Wh-Islands, which suggests type 1 behaviour. As we predict, the Wh/relative asymmetry is attested in this case:

(i) la?eet il-kitaabi illi Mona nisyit miin xad-uhi
"I found the book which Mona forgot who took-it"

(ii) * ana 9aarif anhi kitaabi Mona nisyit miin xad-uhi
"I know which book Mona forgot who took-it"

A problem arises, though: by contrast with (ii), resumptive pronouns are allowed inside noun-complement clauses:

In this sub-section, we have shown that the mechanism of quantification alone does not suffice to license operators in [Spec,CP] at D-Structure. In particular, operators base-generated in [Spec,CP] - like other maximal projections in A'-positions under the ULP - must be licensed at D-Structure via predication. That is, they must be part of a predication chain at that level. This proposal yields the correct results in predicting the distribution of resumptive pronouns in relative clauses and Wh-constructions. We now examine the question of how operators (in particular null operators) are licensed at the level of S-Structure.

(iii) miin$_i$ illi Fariid simi9 isaa9it inn Mona yimkin titgawwiz-uh$_i$
"Who did Fariid hear the rumor that Mona might try to marry-him?"

One difference between (ii) and (iii) lies in the nature of the complementizer. Kenstowicz & Wahba point out that the complementizer illi is that found in relative clauses. This suggests that a structure like (iii) might be predicational. If this holds, (iii) is no longer problematic for our proposal.

2.2.2.2. Operators in [Spec,CP] at S-Structure

We have shown in the previous sub-section that operators appearing in the specifier of position of CP at D-Structure must be part of a predication chain in order to be licensed at that level. In other words, quantification is not the licensing mechanism responsible for the occurrence of operators in specifier positions at D-Structure, whether these operators are null or overt. The situation, however, is different at S-Structure, since it is evident that binding a variable suffices for overt operators to be correctly licensed at that level.

Let us consider again how overt operators are licensed at the different levels of syntactic representation. To illustrate, let us take as an example the overt operators in (37), which are correctly licensed at every level either as arguments, (secondary) predicates, or operators:

(37) a. Who ate where?

b. DS: Who ate where
Arg Pred

c. SS: Who_i [t_i ate where]
Quant Pred

d. LF: [Who_i $where_j$ [t_i ate t_j]]
Quant Quant

Null operators, however, are subject to more stringent conditions. As we saw, they cannot be licensed as predicates at D-Structure; this accounts, among other facts, for the absence of a null counterpart to the adjunct operator where in (37). With respect to their licensing at other levels, there is evidence that quantification alone does not suffice to license null operators. Consider for instance the fact that there are no Wh-questions with null operators; thus (38) is not available as an alternative formulation of "Who did you see".

(38) * [Op_i [did you see t_i]]

Null operators, then, although they bind a variable in conformity with the quantification mechanism, require in addition an antecedent. Chomsky (1986a:85) points out that null operators, being semantically empty, cannot assign a range to the variable which they bind. He thus formulates the necessary requirement given in (39) as a condition on variable binding holding at LF. "Strong binding" in (39) refers to the properties of the binder: either the operator binding the variable determines the range of the variable, or else the operator is associated to an antecedent which can assign a range to the variable.

(39) A variable must be strongly bound

Another way of putting it is to say that quantification licenses a maximal projection XP as an operator subject to the condition that XP has semantic content. Under this view, the effects of (39) are integrated into Licensing Theory. If, as we have proposed, the ULP holds, then null operators will require an antecedent at all relevant levels of representation, i.e. at those levels where they bind a variable: S-Structure and LF. As we have discussed, the mechanism of predication indexing allows null operators to acquire antecedents in the relevant sense, by

being part of the predication chain. At S-Structure and LF, the null operator in structures like (40a-b) is correctly licensed as a quantifier, since the relative head and the matrix subject, respectively, identify the semantic content of the operator and assign a range to the variable.

(40) a. the woman$_i$ [Op$_i$ that Max met t$_i$]$_i$

b. this book$_i$ is [easy [Op$_i$ to read t$_i$]]$_i$

As I have mentioned, construing (39) as part of the quantification licensing mechanism entails, under the view advocated here, that the null operators must be identified by an antecedent by S-Structure. While it makes no difference in predication structures like those of (40), this proposal yields an important advantage

with respect to other, non-predicative constructions involving null operators, viz. parasitic gap constructions.[36]

As is well-known, parasitic gaps (or, to be more accurate, parasitic chains) depend on the presence of a movement-derived A'-chain in the construction. The important fact is that A'-chains formed by LF movement do not sanction PGs, as the contrast between (41a) and (41b-c) illustrates:

(41) a. Which articles$_i$ did you file t_i without [Op$_i$ having read e_i]

b. * You filed many articles without [Op$_i$ having read e_i]

c. * Who filed which articles without [Op$_i$ having read e_i]

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[36] As evidence for the view that easy-clauses, purposives, etc. are predicative constructions, while PG constructions are not, Aoun & Clark (1984) point out the contrasts between (i)-(ii), on the one hand, and (iii). Easy-clauses and purposives are ungrammatical when the clause contains no predicate variable, a constraint which holds on the predication relation. PG constructions are not subject to this constraint, as the grammaticality of (iii) shows.

(i) * John bought the book to read the journal
(ii) * John is easy to please Mary
(iii) Which articles did John file t without consulting Mary?

These facts indicate that PGs must be sanctioned at S-Structure. As we mentioned in Chapter 1, Chomsky (1986b) suggests that the parasitic chain must compose with another A'-chain present in the clause at S-Structure.[37] The relevant point here is the following: why should chain composition be an S-Structure process? There are in fact two questions to answer: 1) why must chain composition apply at S-Structure, and 2) why can't chain composition apply at LF also? Note that (39), the LF requirement on variable binding, goes only partway towards forcing the chain composition process to apply. Because it requires variables to be strongly bound at LF, it requires the null operator to have an antecedent by that level. In other words, nothing in (39) forces chain composition to take place at S-Structure as opposed to LF.

The proposal made here, by contrast, requires the null operators in (41) to be identified by an antecedent at both S-Structure and LF. Note that since no predication is involved in

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[37] Apart from chain composition, other analyses have been put forth in order to ensure that the null operator is identified. In Chapter 5, I discuss the chain composition mechanism along with one alternative approach based on Binding Theory.

these cases, the operator cannot be identified by an argument via predication coindexing. Thus some other identification mechanism is required in order for the null operators in (41) to be licensed by quantification at S-Structure. Assuming chain composition to be the available mechanism, it is forced to apply at S-Structure under the ULP. We therefore have a straightforward answer to the first question posed in the preceding paragraph.

As for the second question, it is now clear that we need not prevent chain composition from applying at LF. This is because LF chain composition cannot, in any event, save an ill-formed structure like (41b).[38] Indeed, even if the null operator acquired an antecedent via chain composition at LF, the sentence would still be ruled out by the ULP: at S-Structure, the null operator is unidentified, and fails to be licensed by quantification.

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[38] The fact that many articles in (41b) cannot be taken as an S-Structure identifier for the null operator follows from independent, structural conditions on identification. See Chapter 5 for further discussion.

This concludes our discussion of the licensing mechanisms for operators in A'-positions. Turning now to another of the licensing mechanisms, I examine the relationship between the ULP and those maximal projections which are licensed as arguments.

2.2.3. Argumenthood

Maximal projections may be licensed as arguments of a verb or VP, from which they receive a θ-role. Constituents in A-positions (subject of, object of) are licensed in this manner at D-Structure. At S-Structure and LF, if an argument has moved to an A'-position (by Move α or QR), it is licensed by virtue of binding a trace in argument position; thus the whole chain is assigned a θ-role. Thus, as a consequence of the Projection Principle, which forces the realization of arguments at D-Structure and requires the presence of movement traces at other levels, the underlined arguments in (42) satisfy the licensing requirement at all levels of representation:

(42) a. Max did his postdoc in Paris

b. On which shelf$_i$ did you put the dictionaries t_i?

c. Max expected someone

LF: [someone$_i$ [Max expected t_i]]

We have seen that null operators in A'-positions are subject to more restrictive licensing conditions than are overt operators, an intuitively natural state of affairs given their lack of intrinsic semantic content. A legitimate question which arises is whether this is also true of null operators in argument positions. Specifically, is the identification of null operators satisfied simply by virtue of being arguments of lexical heads, or must they comply with additional requirements?

It would be very tempting to subsume under the ULP some of the conditions that have been argued to hold of null operators at levels other than LF. For instance, Stowell (1987) argues that null operators must be head-governed at D-Structure; such an extension of the head-government requirement fits in nicely with the spirit of our proposal. I will first sum up Stowell's main arguments, and then discuss a way in which it it might be put in

broader perspective and integrated into the framework of Licensing Theory as conceived of here. This approach, although conceptually attractive, is not without technical problems, and these will be discussed. Pending a solution to overcome these difficulties, I shall leave open the issue, and adopt Stowell's proposal as a condition independent of the ULP.

Stowell (1987) argues that the gap in as-clauses, given in (43), is a trace left by movement of a null operator (the latter being not an NP, but a CP):

(43) a. Gary is guilty, as Mary said __

b. As John reminded Bill __, the earth is round

c. The earth is round, as __ was proved t many years ago

The relevant observation about such constructions is the following: as-clauses are grammatical when the null operators correspond to complement positions ((43a-b)) or derived subject positions ((43c)). But, as the examples in (44) show, null operators are precluded from subject positions just in case the subject is also a D-Structure subject:

(44) a. * John owns the gun, as __ shows that he is guilty

b. * Jenny is famous, as __ convinced Jim to visit her

These asymmetries are accounted for under the proposal that the head-government requirement of the ECP applies to null operators at D-Structure.

Suppose this analysis is correct: then, null operators are required to be head-governed at both D-Structure and S-Structure. Note that if the head-government requirement is part of the licensing mechanisms for null operators, this is exactly what we are led to expect under the ULP. In order to see how the head government requirement might fit into our proposal, let us explore its status in light of the licensing of empty categories.

Within GB theory, empty categories in argument positions are subject to additional constraints above and beyond compliance with the licensing requirement which holds of lexically realized arguments. Non-pronominal empty categories (Wh-trace and NP-trace) must abide by the ECP, which we assume really consists of two separate mechanisms: lexical government and antecedent government. Pronominal empty categories (PRO, pro) are subject to

control theory and feature identification, respectively. Rizzi (1986:518f) points out that the above requirements imposed on empty elements can be conceptually unified if they are viewed as pertaining to two distinct processes: formal licensing and feature identification. Under this view, variables and NP-traces are formally licensed in part by the ECP (in the view assumed here, the lexical government part of the ECP); their features are identified through binding by an antecedent in an A'/A position.[39] PRO is formally licensed by appearing in ungoverned positions, and the features of PRO are recovered through control by an antecedent. Finally, pro is formally licensed, Rizzi proposes, if it is governed by an X^0 which assigns it Case; its features are recovered, in the general case, through rich agreement.

Suppose we take literally the term "formal licensing" used in the preceding paragraph, and claim that the mechanisms referred to in this way are in fact part of Licensing Theory.

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[39] The view that the ECP consists of two distinct government requirements, i.e. c-government (by an X^0) and "identification" (by an antecedent) was originally put forth by Jaeggli (1982, ch.4).

Under this view, null elements in A-positions must be licensed not only as arguments, but must also be "formally" licensed by the mechanisms mentioned above. Such a view also entails, given the ULP, that formal licensing must hold at every level of derivation.

This is obviously a strong claim, which will in fact prove too strong in most cases. Requiring that formal licensing conditions for PRO be met at all levels would entail, for instance, that PRO cannot appear as a D-Structure object, incorrectly ruling out a passive derivation such as that in (45a). Similarly, if the formal licensing condition for pro must be met at D-Structure, Italian ergative/unaccusative verbs cannot be derived as in (45b) - cf. Burzio (1981):

(45) a. PRO_i to be mugged t_i is very uncommon in Tokyo

b. pro_i arriva t_i

Turning now to variables and NP-traces, the claim above is obviously vacuous with respect to D-Structure. It requires, however, that the lexical government requirement be met at both

S-Structure and LF. Assuming that only intermediate traces of arguments delete at LF (cf. Lasnik & Saito 1984), we are forced to take the position that original traces of adjunct and arguments, as well as intermediate traces of adjuncts and null operators, must be lexically governed at that level, potentially a problematic claim. Unless those problems can be solved, we must exempt LF from the effects of subsuming the lexical government requirement under the ULP.

Given the difficulties mentioned, I will leave open the issue of whether Stowell's proposal concerning null operators can be integrated into Licensing Theory. For the time being, I will take the safer course of maintaining the head government requirement as a principle independent from Licensing Theory (and thus not falling under the ULP). This should not detract from the conceptual similarities, however, and particularly from the fact that the head government requirement, like the licensing mechanisms as proposed here, applies across more than one syntactic level.

2.3. UL and Parasitic Gap Constructions

Chomsky (1982:39 and passim) has observed that the exotic nature of parasitic gap constructions makes them particularly interesting from the point of view of linguistic theory. There are two main reasons for this. First, PG constructions are marginal, and as such do not constitute core phenomena: it is therefore unlikely that specific principles should be devised to account for their properties. Yet, speakers have clear intuitions as to whether a given PG construction is acceptable or not; that is, judgments about parasitic gap constructions constitute part of what native speakers know about their language. It must then be, Chomsky reasons, that the properties of PG constructions are determined largely by independent principles made available by Universal Grammar.

The second reason for the special theoretical interest of PG constructions lies in the fact that they are in all likelihood absent from the primary linguistic data available to the child learning a language. This entails that any cross-linguistic variation observed with respect to their properties must be attributed to independent properties of specific languages.

Indeed, the absence of relevant evidence during the acquisition stage makes it highly unlikely that parameters refer to PG constructions proper, as there would be no way for the child to set the value of the parameter one way or the other. Because of this, PG constructions are particularly useful as a probe into the properties of individual grammars, properties that may otherwise not have been uncovered.

I shall henceforth proceed from the view that PG constructions constitute a fairly accurate reflection of the combined effects of general principles of UG and independently motivated language-specific properties. Thus while PG constructions afford us new insights into the principles made available by Universal Grammar, they form in turn a privileged ground for testing the validity of principles postulated to pertain to UG.

We have proposed, as one of the principles constraining UG, the Universal Licensing Principle, which requires that maximal projections be licensed at all levels of syntactic representation. As we have seen in the course of this chapter, one of the effects of the ULP is that of restricting the distribution of null operators at D- and S-Structure. Thus, continuing to assume

that parasitic gaps are traces left by null operator movement, the ULP makes a number of clear predictions concerning the general properties of PG constructions. We have already ascertained the correctness of some of these predictions against the core data from English. In what follows, new data from French will be brought forth and assessed in view of the licensing of null operators under the ULP.

The French constructions documented in this thesis provide instantiations of parasitic gap constructions which are potentially problematic for current analyses, and in this capacity alone they constitute a challenging extension of the body of available data. But, more to the point, the problems displayed in this language are closely related to the issues raised by the ULP. In fact, they instantiate aspects of the behaviour of null operators at each of the two levels to which we have extended the licensing requirement, viz. D- and S-Structure. To put it succinctly, in the case of PG constructions the ULP at D-Structure imposes conditions on the position of the null operator per se. The problem raised by the distribution of parasitic gaps in adnominal positions in French is directly related to the conditions which restrict the D-Structure occurrence of null operators

to only certain positions. On the other hand, at S-Structure, the ULP requires that the null operator have a suitable antecedent, where "suitable" refers to various structural properties. Here again, French instantiates configurations which are unattested in better-studied cases of PG constructions, and which will serve as discriminating evidence between competing theories.

These problems will be addressed in detail in the following chapters, but it is worthwhile at this juncture to give a more precise idea of the issues that will arise as a result of the ULP applying at the two relevant levels of representation. In order to do this, let us recapitulate the specific consequences of the ULP by considering the predicted distribution of null operators at D-Structure and S-Structure. As applied to D-Structures, the ULP entails that null operators can be base-generated in a given position if and only if they can be licensed in this position. The positions we have so far identified as possible hosts for null operators at D-Structure are of two kinds: lexically governed argument positions (i.e. objects but not subjects), as well as the specifier position of CP if CP receives a predication index. At this level, then, null operators are excluded from [Spec,CP] in non-predication constructions, as well as from all

adjunct positions. Note that it follows from the biconditional nature of the requirement that the presence of a null operator at D-Structure in a non-specifier position is indicative of the argument status of this position.

This is especially interesting in view of the fact that it is sometimes unclear whether a given complement is an argument or not. Consider for instance complements of nouns which, unlike (subcategorized) complements of verbs, are optionally realized. While it is usually agreed that complements of deverbal nouns constitute arguments of these nouns, the argument status of complements of underived nouns is much less clear. It is sometimes assumed in the literature that nouns like book, money, or talent, etc., have no argument structure; under this view, the underlined complements in (46a-b) below differ from that in (46c) in that only the latter is an argument of the head noun.

(46) a. Le talent de Guylaine
"Guylaine's talent"

b. L'argent de Lucie
"Lucie's money"

c. La discussion du problème
"The discussion of the problem"

Whether the complements in (46a-b) constitute arguments of the head noun or not is of course an empirical matter, to be determined on the basis of their syntactic behaviour: thus, it cannot be assumed a priori that complements of either underived nouns or concrete nouns are not arguments. As we shall see in more detail in Chapter 4, the syntactic tests which have been used to determine the argument status of complements of nouns are usually, for independent reasons, inapplicable to underived nouns. Thus it remains a delicate matter to ascertain whether the adnominal complements of (46a-b) have or do not have argument status, unless a new test is devised that applies to the complements of underived nouns.

The ULP, in conjunction with the data from French which we study in Chapters 3-5, sheds significant light on the matter. From the ULP, it follows that only those adnominal positions which are arguments are able to host null operators at D-Structure. For independent reasons, this prediction cannot be tested on the basis of NPs contained in null operator constructions such

as easy-clauses, degree adjectives, etc.[40] What about parasitic gap constructions? In those languages where PG constructions have been relatively well studied, such as English and other Germanic languages, the prediction cannot be tested, as there are no parasitic gaps corresponding to of+NP complements of nouns; instead, the null operator corresponds to the NP following of. French, on the other hand, has the desired properties: in the following chapters, I argue that double dont relatives of the type shown in (47a) are to be analyzed as PG constructions

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[40] The fact is that sentences like (i)-(ii) below, with NP-internal gaps inside easy-type clauses, are ungrammatical both in French and in English, thus contrasting with (iii)-(iv):

(i) * Jean$_i$ est facile à contenter le frère e$_i$
(ii) * John$_i$ is easy to please brothers of e$_i$
(iii) Jean$_i$ est facile à contenter e$_i$
(iv) John$_i$ is easy to please e$_i$

Though I have no explanation for the ungrammaticality of (i)-(ii), evidence brought forth in Chapter 4 suggests that it is independent from the internal properties of the noun phrase. In 4.3, I suggest that inalienable constructions in French constitute the counterpart of easy-type clauses in noun phrases.

derived by null operator movement, i.e. having the S-Structure representation shown in (47b).[41]

(47) a. Un artiste dont les admirateurs louent sans cessent le talent
"An artist of whom the admirers always praise the talent"

b. Un artiste dont$_i$ [[les admirateurs t$_i$] louent sans cesse [Op$_i$ le talent e$_i$]]

If this is correct, it follows from the analysis we have developed in this chapter that the complement position of the noun talent in (47) is an argument position. As we shall see, furthermore, the ULP and its particular instantiation in the case of the distribution of parasitic gaps yields interesting results with respect to establishing finer distinctions with respect to the argument-taking properties of nouns, as well as the obligatory vs. optional status of arguments within noun phrases.

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[41] Here and in all subsequent examples of PG constructions, I represent the trace of the "real" operator as [t], and the parasitic gap (the trace of the parasitic null operator) as [e].

Let us now return to the effects of the ULP on null operators at the S-Structure level; in this instance also, the behaviour of parasitic gap constructions is particularly revealing. At S-Structure, the ULP requires that null operators binding variables be identified; in other words, quantification as a licensing mechanism does not suffice in itself to ensure that null operators are properly licensed. Identification is effected through coindexing with an antecedent, and takes one of two forms. Either the antecedent is in a predication relation with the CP hosting the null operator in its specifier position (in which case the operator is part of a predicate chain) or else the null operator must acquire an antecedent by composing with an existing chain with the required properties.

Concerning null operator identification, important questions arise with respect to the structural constraints governing the relation between the null operator and its identifying antecedent. In the case of predicative null operator constructions (such as, e.g. easy-clauses, etc.), the matter is resolved as a result of two independent conditions: 1) the structural relations governing predication relations, and 2) the definition of "predicate chain". The first condition requires that predicates

be c-commanded by the subjects of which they are predicated; hence it follows that the antecedent (the subject of the predicate clause) c-commands the null operator contained within the predicate CP. From the definition of "predicate chain", on the other hand, it follows that the null operator must occupy the specifier position of the predicative clause, as opposed to, say, the specifier position of a clause embedded further down within the predicate.

Similar questions of c-command and locality arise in the case of non-predicative null operator constructions. It has been shown in the literature that null operators heading parasitic chains must be c-commanded by the "real" operator, and that, moreover, the distance between the real movement chain and the parasitic chain is subject to strict locality conditions. Contrary to the case of predicative null operator constructions, however, these constraints in the case of PG constructions do not follow from the interaction of independent principles, and must thus be ascertained on the basis of a body of empirical data. We will see in Chapter 5 that double dont constructions in French provide new insights into the nature of the locality constraints governing parasitic gap constructions.

Other issues of a more peripheral nature arise as a result of the ULP. Earlier in this chapter, I have proposed that certain maximal projections which are neither predicates nor arguments (in the strict sense) at D-Structure could be licensed as quasi-arguments: recall the distinction between base-generated null VPs and base-generated null secondary predicates established in section 2.2.1. It was suggested that while neither null VPs nor null secondary predicates could be licensed via predication at D-Structure, the former were properly licensed at that level by virtue of being (quasi-) arguments of INFL. The argument could extend to the licensing of IPs as well. In Chapter 3 it is argued, on the basis of facts independent of licensing, that the head of CP θ-marks its complement IP, in a manner analogous to θ-marking of VP by INFL. Thus IP too can be licensed at D-Structure as a quasi-argument. Note that IPs are neither predicates nor, strictly speaking, arguments; still, they must, like other maximal projections, be licensed at every level of representation in conformity with the ULP.

2.4. Summary

In this chapter, I have proposed that the Licensing Conditions of Chomsky (1986a) should be extended to apply to all levels of syntactic representations. This yields a number of desirable predictions, in particular with respect to the occurrence of null categories in A'-positions. We have proposed that maximal projections base-generated in non-argument positions must be licensed as predicates (or as part of predicate chains) at D-Structure. This has allowed us to rule out null categories in adjunct positions, on the assumption that 1) these are the position normally occupied by secondary predicates, and 2) null categories, having no semantic content, cannot function as predicates and thus are unlicensed at D-Structure. One particular instantiation of this affects null operators: thus we derive from the ULP the fact that in null operator constructions (easy-clauses, purposives, etc. and PG constructions), the empty category in the clause cannot correspond to an adjunct. Another way in which maximal categories in non-argument positions may be licensed at D-Structure, we have argued, is by being part of a predicate chain. This situation arises only when an operator in in the [Spec,CP] position of a predicative clause: easy-constructions, relative clauses, etc. On the assumption that resumptive pronoun constructions in French/English involve operators base-

generated in [Spec,CP], we have derived the restriction limiting the occurrence of these resumptive pronouns to relative clauses (as opposed to Wh-constructions). We have also accounted for cross-linguistic variation with respect to this restriction.

At the level of S-Structure, the ULP requires that operators 1) bind a variable, and 2) be identified as to their content. This predicts that null operators must have an identifier at that level. Again, two strategies are possible. A null operator is identified if it is part of a predication chain; if not, it must form a chain with an antecedent from which it can acquire features. Thus we derive from the ULP the fact null operators in PG constructions require a proper antecedent at S-Structure.

In the following chapters, I will focus on one specific aspect of the ULP, viz. its ability to constrain the distribution of null operators, in particular at the levels of D- and S-Structure. The case study which constitutes the remainder of this dissertation - double dont constructions in French - reflects the requirements imposed by the ULP on parasitic gap constructions at these two syntactic levels of representation.

CHAPTER 3

DOUBLE DONT CONSTRUCTIONS

3.0. Introduction

In the preceding chapter, some of the consequences of the ULP on the distribution of null operator constructions were explored. One important outcome of the framework developed here is that it severely constrains the distribution of null operators at the levels of D- and S-Structure. As we saw, this is of particular relevance in the case of parasitic gap constructions, especially in view of the fact that in these structures, the licensing of null operators at S-Structure requires a process of chain formation which is unnecessary in the case of other (predicative) null operator constructions. Thus, parasitic gaps constitute a revealing source of data for establishing the structural conditions which govern the identification and licensing of null operators.

Another important aspect of the ULP concerns the thematic status of possible parasitic gaps: since null operators are ruled

cut as adjuncts at D-Structure, parasitic gaps may only be found in argument positions.

The next three chapters are devoted to an in-depth examination of relatively little-studied constructions from French which are relevant to those issues. French displays genitival relative clauses (henceforth, double dont constructions (DDCs)) which at first sight resemble parasitic gap constructions in that they involve two lexically unrealized constituents both interpreted as coreferent with the relative head. (1) below is a typical example:

(1) Un homme$_i$ dont les ambitions $\_\__i$ dépassent le talent $\_\__i$
"A man of whom the ambition exceeds the talent"

Most instances of parasitic gaps studied in the literature are found either in object positions of transitive verbs, or as objects of prepositions in those languages which allow preposition stranding. One unusual aspect of the data in (1) is that the unexpressed complements are bare complements of nouns. Given the optionality of such complements, the question immediately arises as to whether these constructions involve syntactically realized

gaps at all. Another question relevant to the ULP is the following: on the assumption that the constructions in (1) are parasitic gap constructions derived by null operator movement, what is the thematic status of the complements of those nouns? As a consequence of the ULP, null operators may only occupy argument positions at D-Structure. Yet, it has been often assumed in the literature that underived nouns have no argument structure; on this view, their (optional) complements cannot be considered arguments of these nouns, but rather must assume adjunct status. The data in (1) is thus of primary relevance to the issue, provided it can be shown that 1) they are indeed cases of parasitic gap constructions, and 2) they are derived by null operator movement. Once this is established, other questions arise as a consequence of the particular configurations displayed by double dont constructions. One of these concerns the landing site of the null operator in mono-clausal structures like (1); another has to do with the locality conditions governing the S-Structure identification of null operators. The French data are particularly revealing in this regard, since they allow for configurations which cannot be constructed in other languages such as English. For example, the fact that French, but not English, allows relativization out of subjects provides new

insights into the locality constraints governing the identification of null operators at S-Structure.

These aspects of DDCs will be explored in the next chapters, as will their relevance to the study of parasitic gap constructions in general. The present chapter is devoted to laying the groundwork on the basis of which theoretical implications may be drawn from sentences such as (1). The chapter commences with an investigation of the general properties of simple genitival relatives, with particular reference to their manner of derivation and the status of dont. Next, I examine double dont relatives, and provide evidence that the unexpressed adnominal complement is syntactically realized as a gap. The nature of this gap with respect to a typology of empty categories is investigated. I conclude that, although it may sometimes be found in positions inaccessible to movement, the gap behaves syntactically like a variable and unlike a pronominal.

3.1. Genitival Relatives

The relative form dont is used primarily to introduce clauses where the relativized constituent is a genitive comple-

ment (preceded by de ("of")). Genitive complements in French are either complements of verbs requiring de as in (2), complements of nouns as in (3), or complements of adjectives as in (4):

(2) a. Une dépendance$_i$ dont Anne-Marie n'essaie même pas de se défaire t_i
"An addiction of which A.-M. doesn't even try to get rid"

b. Un auteur$_i$ dont on parle beaucoup t_i en ce moment
"An author of whom people talk about a lot these days"

(3) a. Un peintre$_i$ dont [les oeuvres t_i] sont exposées au musée d'Orsay
"A painter whose works are displayed at the Orsay Museum"

b. Un livre$_i$ dont on n'a lu que [les premières pages t_i]
"A book of which one has only read the first pages"

(4) Une loi anti-tabac$_i$ dont la Northwest est apparemment très fière t_i
"An anti-smoking law of which Northwest is apparently very proud"

As Vergnaud (1974:246ff) has pointed out, there is good reason to consider de in French as a Case-marker rather than as a

true preposition.[1] With respect to coordination, for instance, complements introduced by de behave on a par with NPs and unlike PPs. Similarly, while PPs cannot be extracted out of NPs, genitive adnominal complements may, as shown by the contrasts below:[2]

(5) a. César entrevoyait [la destruction de la ville]
"Caesar foresaw the destruction of the city"

b. La ville dont César entrevoyait [la destruction t]
"The city of which Caesar foresaw the destruction"

(6) a. César entrevoyait [la reddition aux ennemis]
"Caesar foresaw [the surrender to the enemy]

b. * Les ennemis à qui César entrevoyait [la reddition t]
"To enemies to whom Caesar foresaw the surrender"

I will henceforth assume that de in the sentences above constitutes the morphological realization of genitive Case (but see Chapter 4, Section 4.2.1. for further remarks). This holds when the constituent introduced by de is the complement of either

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[1] See the references cited in Vergnaud (op.cit.), as well as Milner (1982:81), who attributes a similar claim to E. Benveniste.

[2] See, among others, Ruwet (1972:274) and Kayne (1975:125).

a noun or an adjective, and Vergnaud's tests indicate that this is true of complements of verbs as well.

3.1.1. Dont Is Case-Marked que

It is important at the outset of this study into genitival relatives to clarify the exact status of dont, especially in view of the fact that French has several ways in which to form genitival relatives. Aside from dont, the relative pronouns de qui, duquel/de laquelle/desquel(le)s may be used to relativize the genitive NP in (5):

(7) Voilà des alliés précieux dont/desquels/de qui il est devenu bien difficile de se passer t

"These are precious allies that it has become quite difficult to do without"

The contexts in which de qui and duquel may be used vary

somewhat, but these differences will not concern us here.[3] In traditional analyses, the three forms in (7) are considered to be variants of one another, in the sense that they are all relative pronouns corresponding to a genitive complement. In structural terms, this means assigning to any of the three relative forms in (7) the same S-Structure position, i.e. Spec,CP:

(8) des alliés précieux [$_{CP}$ de qui / desquels / dont [$_{C}$] [$_{IP}$ .. t ..]]

There is ample evidence, however, that dont differs structurally from the other two forms given in (8). First, unlike de qui and desquels, etc., dont does not double up as a Wh-phrase. Thus in Modern French (although not in earlier stages of French)

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[3] For instance, usage of duquel to relativize a post-nominal complement seems limited to cases where it has been pied-piped as part of a larger PP constituent. Cf. the following:

(i) un juge de qui / ?* duquel personne ne met en doute [l'honnêteté t]
"a judge of whom no one doubts the honesty"

(ii) un juge sur l'honnêteté de qui / duquel les prévenus savent pouvoir compter t
"a judge on the honesty of whom the accused know they can count"

dont is restricted to relative clauses. The contrasts in (9) illustrate this for matrix and embedded questions, and Wh-in-situ, respectively:

(9) a. De qui/duquel/*dont parlez-vous?
"Of whom/of which/of which are you talking?"

b. Je ne sais pas du tout de qui/duquel/*dont vous parlez
"I really don't know of whom/of which/of which you are talking"

c. Vous parlez de qui/duquel/*dont?
"You are talking of whom/of which/of which?"

Secondly, as has long been noted by traditional grammarians, dont is excluded from within PPs in COMP.[4] Inside a larger PP that has been pied-piped to [Spec,CP], only the "full forms" de qui and duquel may appear:

(10) Les groupes minoritaires, sans l'appui desquels/de qui/*dont ce candidat n'aurait pas pu être élu...
"the minority groups, without the support of whom this candidate could not have been elected..."

[4] See, e.g. Damourette & Pichon 1911, VI, 189f.

Finally, dont, like complementizer que, is invariant: it does not overtly agree with the relativized head either in animacy or in number/gender. In this it is unlike de qui/de quoi, duquel/desquelles, etc., which must display agreement, as shown in (11).

(11) a. les idéaux en vertu de quoi/desquels nous luttons...
[-an. m.pl] [-an.] m.pl.
"the ideals by virtue of which we are fighting"

b. la romancière de qui/de laquelle il était question
[+an. f.sing] [+an.] f. sing.
"the novelist of whom mention was made"

These differences can be explained if dont is taken to be not the moved constituent itself, but rather a complementizer. This hypothesis will account for the contrasts in (9), since questions (at S-Structure and LF) require the presence of an overt Wh-operator in [Spec,CP]; dont as a complementizer cannot fulfill this function and, as we have shown in Chapter 2, null operator movement to [Spec,CP] is precluded outside of predication/parasitic gap structures. (10) is similarly accounted for, since dont is restricted to the C position and hence cannot be pied-piped along with a PP complement. Finally, the fact that dont differs in agreement from the relative pronouns in (11) is

explained by the fact that complementizers in French never display gender/number agreement.

To be more precise, I propose the following: 1) dont relatives, like que relatives, are derived either by null operator movement or by Wh-phrase deletion in [Spec,CP][5], and 2) dont is the morphological manifestation of complementizer que bearing genitive Case.[6] In this view, the complementizer in (12) acquires genitive Case features from the adjacent null operator, as naturally follows from the Spec-Head agreement procedure of Chomsky (1986b):

(12) les alliés$_1$ [$_{CP}$ Op$_1$ [$_C$ dont$_1$] [$_{IP}$ ... t$_1$ ...]]

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[5] See Section 2.2.1.2. of Chapter 2, where I argue that this possibility (deletion up to recoverability) is limited to relative clauses and cleft constructions.

[6] That dont is a complementizer has been suggested independently by Godard-Schmitt (1986:118). Her proposal differs from ours in two important respects: 1) she does not assume a movement analysis for dont relatives, hence no null operator or deleted Wh-phrase in [Spec,CP], and 2) in her view, dont is unrelated to complementizer que.

Note that overt Spec-Head agreement within COMP is otherwise attested in French, and manifests itself in the well-known que/qui alternation.[7] In the view adopted here, qui is thus the morphological variant of complementizer que, which acquires nominative Case features under Spec-Head agreement with the null nominative operator, as shown in (13b).

(13) a. La pluie qui tombe
"The rain that falls"

b. la pluie$_i$ [$_{CP}$ Op$_i$ [$_C$ qui$_i$] [$_{IP}$ t$_i$ ...]]

Given the analysis we propose for dont, other puzzling asymmetries in the distribution of de qui and dont fall straightforwardly into place. Consider for instance the non-occurrence of

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[7] The que/qui alternation has generated much discussion in the literature. See, among others, Moreau (1971), Kayne (1972, 1976), Aoun, Hornstein & Sportiche (1981), Pesetsky (1982a), and for a recent interpretation in terms of Spec-Head agreement, Rizzi (1987).

dont in infinitival relatives, noted by Huot (1977), and illustrated below:[8]

(14) a. Les humoristes ont trouvé là des personnalités de qui se moquer à loisir

b. * Les humoristes ont trouvé là des personnalités dont se moquer à loisir

"The humorists have found in them persons of whom to make fun as much as they want"

As the acceptability of (14a) indicates, genitive relative pronouns occur freely in infinitival relatives; the same holds for other relative pronouns such as à qui, sur lequel, où, etc; cf. (15):

(15) a. Ces malheureux cherchent désespérément quelqu'un à qui parler
"these unfortunate people are desperately looking for someone to whom to speak"

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[8] The examples are from Godard-Schmitt (1986:721). Infinitival relatives with de qui are sometimes considered marginal, but the crucial point is that a sharp contrast exists between the (a) and (b) examples.

b. On a finalement trouvé un navire sur lequel s'embarquer pour les Seychelles
"We finally found a boat on which to embark for the Seychelle Islands"

c. Ils cherchent un endroit où aller en vacances
"They are looking for a place where to go on vacation"

The hypothesis that dont is the genitive variant of complementizer que predicts exactly these facts. It is well known that que, like English that, requires a tensed IP complement; the contrast in (16) provides an illustration of this:

(16) a. J'ai trouvé quelqu'un que vous admirez
"I found someone that you admire"

b. * J'ai trouvé quelqu'un qu'admirer
"I found someone that (to) admire"

Under our proposal, then, (14b) is excluded for the same reason that (16b) is; nothing further needs to be said.

Though, as we have just seen, several facts argue in favour of the view that dont is a complementizer, there are additional data which are seemingly problematic for our hypothesis. The difficulty concerns an asymmetry between que and dont in those

dialects of French which allow doubly-filled COMPs. In Québec French, while a genitive pronoun in [Spec,CP] may co-occur with que, no co-occurrence with dont is allowed. This is shown in (17):

(17) a. La personne de qui que je parle
"the person of whom that I am talking"

b. * La personne de qui dont je parle
"the person of whom that-gen I am talking"

c. * La personne dont que je parle
"the person of whom that I am talking"

Given that (17a) with complementizer que is grammatical, the impossibility of (17b) with dont is puzzling under the claim made here. Note however that these facts pose problems also for the alternate view whereby dont is in [Spec,CP]. Under this analysis, it is the non-occurrence of (17c) which is unexpected.

Our account readily handles the ungrammaticality of (17c); but why does (17b) contrast with (17a) if dont is the genitive counterpart of que? It is very plausible to assume that (17b) is ruled out by virtue of the style clash involved. Indeed, dont pertains to a standard speech style which is inconsistent with

the level of speech at which relatives of the type (17a) are uttered. In the colloquial dialect which allows doubly filled COMPs, que is almost always used where Standard French would have dont, as shown in (18):

(18) a. La personne que je te parle
"The person of whom I am talking about"

b. Le gars que je connais son frère
"The guy that I know his brother"

In fact, many native speakers of the Québec French dialect which allows (17a) and (18) report having difficulty with the correct use of dont and often make mistakes when using it. It thus seems that Standard French and colloquial French differ in that, while in the former overt morphological realization of genitive Case on the complementizer is obligatory, it is allowed only very marginally in the latter. The unacceptability of (17b) may thus be attributed to the fact that dont realization and

doubly-filled COMPs pertain to two different dialects of French.[9]

3.1.2. Movement or Base-generation?

So far in the discussion, I have proceeded from the assumption that genitival relatives are derived by movement, either of a null operator or of a Wh-phrase later deleted. This view is at odds with the recent claim made in Godard-Schmitt (1986) - see also Godard (1985) - that dont-relatives involve no movement at all. Here I review her main argument, and show that further scrutiny of the relevant data leads instead to the opposite conclusion. As I argue, a strong case can be made which favours a movement derivation for dont relatives.

3.1.2.1. Problems With Base-Generation

Godard-Schmitt (1986) proposes that the relationship between dont and a gap in the relativization site is effected through an

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[9] Furthermore, as N. Domingue has observed, the independently motivated Chain Condition on Case Realization (CCCR) proposed in Chapter 5 handles the ungrammaticality of (17b) straightforwardly. See Section 5.2.5.2. for details.

A'-chain formation process applying at S-Structure. Adopting the view whereby representational chains escape Subjacency, the latter a condition on movement rules, she argues, on the basis of sentences similar to those in (19) below, that dont relativization is not constrained by Subjacency.

(19) a. Un étudiant dont on sait [CP combien tu apprécies [NP le travail t]]
"A student of whom one knows how the work is serious"

b. Un importun dont je vois [CP2 que tu ne sais pas [CP1 comment te débarrasser t]]
"An intruder of whom I see that you don't know how to get rid"

Assuming that the bounding nodes in French are S' (CP) and NP (cf. Sportiche 1981), she contends that the distance separating dont and the relativization site in (19) spans over two bounding nodes, in violation of Subjacency. If this is correct, then the well-formedness of the sentences above constitutes an argument against the view that dont relatives are movement-derived.

(19b) as evidence against movement can easily be disposed of. Underlying the argument here is the assumption that dont is a

complementizer, and as such is base-generated in the head position of CP. If dont has not moved, and in particular has not moved through the specifier of CP2, the relevant bounding nodes are to be calculated from the position of the original gap. As is obvious, Godard-Schmitt's use of (19b) as evidence against movement stems from the fact that she does not consider the possibility of null operator movement or deletion of Wh-material in [Spec,CP]. This option, which in our view plays a crucial role in the morphological realization of dont as a genitive complementizer, clearly allows for successive-cyclic movement through the specifier of CP2. Thus only one bounding node is crossed at any given point, and the grammaticality of (19b) ceases to be relevant to the issue.

The well-formedness of (19a), where the relativization site is within an NP embedded in a Wh-Island, constitutes potentially more convincing evidence against a movement analysis. If indeed combien in (19a) occupies the specifier position of the embedded CP, direct movement is forced across two bounding nodes, in violation of Subjacency.

First, it is important to note that the reason why dont relatives sometimes appear to violate Subjacency has to do with the type of main verb which is used. As we shall discuss in more detail in Sections 3.1.3 and 3.2 below, verbs such as savoir allow the constituent corresponding to dont to be construed as a sort of matrix topic. The effect of this is to alleviate Subjacency effects. Secondly, there is reason to believe that combien in (19a) does not occupy the [Spec,CP] position; in other words, the bracketed CP is not a Wh-Island. If this is correct, movement may proceed successive-cyclically through the specifier position of the combien clause, (19a) obeys Subjacency, and the example is again irrelevant to the issue of movement vs. base-generation.

In order to see that (19a) does not involve a Wh-Island, we must first recognize the fact that French has two different usages for combien. In one case, combien is a Wh-word meaning "how much". In the other case, combien functions as an adverbial or as an exclamative; it may be used alone, in which case it means roughly "to what extent", or it may be used in conjunction with an adjective, in which case it functions as an inten-

sifier.[10] As I show directly, these semantic differences correlate with a distinct syntactic behaviour; most relevant for our discussion is the fact that only the former (Wh-combien) may occupy the [Spec,CP] position. I now turn to specific arguments to buttress this claim.

Let us take as representative of the two usages of combien the examples in (20a-b), with Wh-combien and adverbial combien, respectively:

(20) a. Je sais combien cette voiture coûte
"I know how much this car costs"

b. Je sais combien cette femme souffre
"I know to what extent this woman suffers"

Consider now the fact that the two types of combien pattern differently with respect to a number of phenomena. First, adverbial combien cannot fulfill the requirements of verbs of the

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[10] This distinction between the two usages of combien is explicitly recognized by some (though not all) traditional grammarians, e.g. Le Bidois II, p. 597, and Grevisse (1975:893). For relevant discussion, see also Milner (1978:259ff).

"wonder" class, which require indirect interrogatives as complements. The relevant contrasts are given below:

(21) a. Je me demande combien cette voiture coûte
"I wonder how much this car costs"

b. * Je me demande combien cette femme souffre
"I wonder to what extent this woman suffers"

The requirement for these verbs is fulfilled when their clausal complement is marked [+Wh], either through a [+Wh] operator in the [Spec,CP] position, or through a [+Wh] complementizer.[11] The fact that combien in (21a) differs from combien in (21b) provides an argument that the former, but not the latter, bears a [+Wh] feature. It now follows, on the standard assumption that the [Spec,CP] position is available only to those overt constituents which are marked [+Wh], that adverbial combien does not occupy the specifier position of CP.

This distinction between the two combien is further supported by contrasts below:

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[11] Complementizers of that class would, under certain analyses, include whether in English and si in French. On the status of the latter, see Huot (1974:147) and Kayne (1972, fn.17).

(22) a. Combien crois-tu que cette voiture coûte?
"How much do you think that this car costs?"

b. * Combien crois-tu que cette femme souffre?
"To what extent do you think that this woman suffers?"

(23) a. Cette voiture coûte combien?
"This car costs how much?"

b. * Cette femme souffre combien?
"This woman suffers to what extent?"

The ungrammaticality of (23b) reduces to that of (22b) if, as argued by Aoun, Hornstein & Sportiche (1981), Wh-words in situ undergo raising to [Spec,CP] at LF. These contrasts bring confirmation to our claim that adverbial combien (in the (b) examples) cannot occupy the [Spec,CP] position.

A second argument in support of this claim comes from the behaviour of adverbial combien with respect to stylistic inversion. Kayne & Pollock (1978) have shown that stylistic inversion of the subject is triggered by the presence of an operator or Wh-

trace in the [Spec,CP] of the clause adjacent to the subject.[12] The following contrasts indicate that complementizers do not trigger stylistic inversion:

(24) a. Je me demande quand/où dormiront ces enfants
"I wonder when/where will sleep these children"

b. * Je me demande si dormiront ces enfants
"I wonder if will sleep these children"

The contrast in (24) is paralleled by the behaviour of the two types of combien: stylistic inversion is possible with Wh-combien, but not with adverbial combien.

(25) a. Je sais combien coûte cette voiture
"I know how much costs this car"

b. * Je sais combien souffre cette femme
"I know how much suffers this woman"

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[12] Thus, independently of the [+Wh] properties of the relevant clause. Wh-traces are generally taken to be [-Wh], as evidenced by the fact that their presence in [Spec,CP] does not satisfy the requirements of verb of the "wonder" class. Yet, they trigger stylistic inversion, while [+Wh] complementizers like si do not.

Given that adverbial combien patterns with complementizer si ("if") with respect to stylistic inversion, it now seems clear that it behaves in all respects as a complementizer and not as a Wh-word.

Now the type of example used by Godard-Schmitt (cf.(19a)) involves adverbial combien, as evidenced by its semantic interpretation. Our analysis predicts that extraction out of "true" Wh-Islands (i.e. with Wh-combien) should yield degraded results with respect to extraction form clauses introduced by adverbial combien, the latter having about the same degree of grammaticality as does extraction out of si or whether clauses. This is borne out, as the following shows:

(26) a. ? Un étudiant dont on a deviné combien tu appréciais le travail
"A student of whom we guessed to what extent you appreciate the work"

b. * Un homme dont on a deviné combien tu as payé la maison
"A man of whom we guessed how much you paid the house"

I thus conclude the following: 1) combien in (19a)/(26a) occupies the C position within CP; 2) the [Spec,CP] position in

these sentences is available for successive-cyclic movement of the null genitive operator; and 3) (19a)/(26a) do not violate Subjacency, hence does not constitute evidence against a movement analysis of dont relatives.

3.1.2.2. Dont Relatives Obey Subjacency

By contrast, positive evidence can be adduced which supports the view that dont relatives are movement-derived. The ungrammaticality of the sentences below show that dont-relativization obeys the island constraints on movement subsumed under Subjacency: the Complex NP Constraint (CNPC), as in (27a-b), and the adjunct island constraint ((27c)). Furthermore, (27d) indicates that dont relativization may not take place from within an NP contained in a true Wh-Island:

(27) a. * voilà l'enfant dont$_i$ tu connais [$_{NP}$les écoliers [$_{CP}$qui se sont moqués t_i]]
"this is the child of whom you know the pupils who made fun"

b.?? un scandale dont$_i$ nous abhorrons [$_{NP}$l'idée [$_{CP}$que les journaux se délectent t_i]]
"a scandal that we hate the idea that the newspapers revel in"

c. * un problème dont$_i$ tout ira bien mieux [$_{AdvP}$ quand vous vous serez débarrassé t_i]
"a problem that everything will go much better when you will have gotten rid of"

d.* une femme dont$_i$ on a trouvé [$_{CP}$ à qui$_j$ [vous présenterez [$_{NP}$ la soeur t_i] t_j]]
"a woman of whom we found to whom you will introduce the sister"

Given these facts, it seems clear that no special chain formation strategy need be resorted to in order to account for the behaviour of genitival relatives. Like other relatives in French, they are derived by movement, and they comply with the constraints on movement rules.

3.1.3. Dont Relatives and the Subject Condition

In our argumentation for a movement analysis of dont relatives, we have made use of Rizzi's parametrized bounding node view of Subjacency, assuming that S' (CP), but not S (IP) counts as bounding in French. In the Barriers framework, however, the notion of parametrization for Subjacency is virtually eliminated: the status of a given node as bounding is not a parameter selected once and for all by a given language, but rather follows

from, roughly, the relation of this node with respect to a θ-assigning head.[13] For reasons of learnability, it is highly unlikely that θ-theory (and in particular, the fact that, say, Vs do not directly θ-mark their subjects) constitutes the locus of parametrization. The question therefore arises as to how the facts that have led to the parametrization of Subjacency can be accommodated in the Barriers framework. One such cross-linguistic difference, viz. extractability out of subjects (the Subject Condition, subsumed under Subjacency), is of particular importance in the context of the structures we are concerned with. As we have seen, dont-relativization out of subjects is fully grammatical in French, while other languages, e.g. English, allow no extraction at all from within subjects. In this section, I address the problem posed by these cross-linguistic differences. It is shown that our analysis of dont as a Case-marked complementizer provides an attractive account of both the French and English facts which fits naturally into the Barriers conception of Subjacency.

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[13] As should be clear, this shift in the implementation of bounding nodes in no way affects the arguments developed in the preceding sub-sections.

Violations of the Subject Condition (cf. Chomsky 1973) as in (28) fall under the traditional view of Subjacency on the assumption that S (IP) and NP are bounding nodes in English:

(28) a. * Who did [$_{IP}$ [$_{NP}$ pictures of t] appear in the Globe & Mail]?
b. * a politician who [$_{IP}$ [$_{NP}$ pictures of t] appeared in the Globe & Mail]

The Subject Condition sub-case of Subjacency translates into the Barriers approach as follows. Recall that Chomsky's (1986b) view of Subjacency relies on the notion of "barrier". As before, Subjacency is violated if more than one barrier is crossed by movement. The assumptions relevant to the case at hand are the following: 1) The subject is not L-marked, and therefore is a BC and a barrier; 2) S (IP), though not L-marked, is not a barrier

inherently; but it inherits barrierhood in (28) by virtue of dominating a BC (the subject NP).[14]

Evidently, something must be said about the fact that French allows dont relativization out of the subject position. There are two main approaches to accounting for these cross-linguistic differences within the Barriers framework. The first one is to reintroduce the notion of parametric variation into Subjacency in one way or another. The correct result could be achieved in a number of ways, but all of them would have the effect of voiding the barrierhood of NP, IP, or both in the French analogue of

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[14] The definitions for BCs (bounding categories), L-marking and barriers are repeated from Chapter 1 for convenience:

(i) τ is a BC for β iff τ is not L-marked and τ dominates β.

(ii) α L-marks β iff α is a lexical category that θ-governs β.

(iii) τ is a barrier for β iff (a) or (b):

a. τ immediately dominates δ, δ a BC for β;
b. τ is a BC for β, $\tau \neq$ IP.

(28).[15] The second approach consists in maintaining a non-parameterized view of Subjacency, while attributing the more permissive character of French to independent properties of either the language or the constructions involved.

The second approach proves, upon further examination of the French data, to be the correct one. Consider the whole range of extractions out of subjects in French. While it is well-known that in this context dont-relativization is fully grammatical, little notice has been taken in the literature of the contrasts given in (29):

(29) a. un linguiste$_i$ dont les parents t$_i$ vivent à Chartres

b. * un linguiste$_i$ de qui les parents t$_i$ vivent à Chartres
"a linguist of whom the parents live in Chartres"

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[15] One possibility is that French, but not English, allows adjunction to IP. If unconstrained, this hypothesis wrongly predicts extraction out of multiple Wh-islands to be grammatical in French. Rochemont (1988) proposes, in view of certain differences between Italian and English, an alternative implementation of the parametric approach within the Barriers framework. The Subjacency Parameter he proposes (the value of which is set positively in Italian) voids barrierhood of the most deeply embedded barrier iff it is distinct from every node dominating it.

c. * De quel linguiste$_i$ est-ce que les parents t$_i$ vivent à Chartres?
"Of which linguist do the parents live in Chartres?"

Relativization with full forms such as de qui and Wh-extractions are both ungrammatical out of the subject position. Note that the ill-formedness of (29b-c) cannot be attributed to a general prohibition against extracting these full forms out of noun phrases, as similar extraction out of the object position yields clearly better results (although relativization with de qui is, for some speakers, slightly less felicitous than is relativization with dont. a fact that I ignore here). Compare the (b)-(c) examples of (29) and (30):

(30) a. Un linguiste$_i$ dont vous avez rencontré les parents t$_i$

b. Un linguiste$_i$ de qui vous avez rencontré les parents t$_i$
"A linguist of whom you met the parents"

c. De quel linguiste$_i$ avez-vous rencontré les parents t$_i$?
"Of which linguist did you meet the parents?"

Similarly, extraction of other material such as combien ("how much, how many") shows subject/object asymmetries. While

combien may extract from within an object (cf. Obenauer 1976), extraction from within the subject yields deviant results:

(31) a. Combien$_i$, à votre avis, invitera-t-il [t_i de gens]?
"How many, in your opinion, will he invite (of) people?"

b. * Combien$_i$, à votre avis, [t_i de spectateurs] ont-ils assisté au concert?
"How many, in your opinion, (of) spectators have attended the concert?"

These data reveal the limited character of Subject Condition violations in French. Such violations are not a property of relativization (cf. (29b)), but more narrowly a property of dont relativization. Clearly, a parametrized Subjacency approach is too permissive: if the relevant barriers are voided irrespective of the type of extraction involved, (29b-c) and (31b) are wrongly predicted to abide by Subjacency.

More true to the facts is an approach which takes (29a) to be the special case. Assume that Subjacency is not parametrized; French is then like English, and extraction out of subjects is prohibited in the way described above. Obviously, something about dont constructions allows them to overcome Subjacency violations.

The solution I wish to propose relies on the analysis I have proposed of dont as a Case-marked complementizer, along with the assumptions below, which I take to hold universally:

(32) a. C θ-marks its complement IP;

b. Where α is a lexical category, α L-marks β iff β agrees with the head of γ that is θ-governed by α.

(32a) is from Canac-Marquis (1987:64), who extends to the functional head C Chomsky's (1986b) proposal regarding θ-marking of VP by INFL.[16] The definition in (32b) is given in Barriers (p.24) and has the following effect: a specifier is L-marked if the maximal projection dominating it is also L-marked. (Recall that specifiers agree with the head of the maximal projection dominating them under Spec-Head agreement).

We are now in a position to explain the grammaticality of (29a), the relevant portions of which are represented below:

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[16] As pointed out by Canac-Marquis (op.cit.), the fact that C selects (subcategorizes) IP complements lends plausibility to this hypothesis, as does the special relationship holding between C and I with regard to Tense. On this latter point, see among others, Stowell (1982).

(33) a. un linguiste$_i$ dont les parents t_i vivent à Chartres

b. ... [$_{CP}$ Op$_i$ [$_C$ dont]$_i$ [$_{IP}$ [$_{NP}$ les parents t_i] ...]]

In general, although C θ-marks IP, it does not L-mark it since C is not lexical in the relevant sense. But consider the properties of dont. As we have argued, dont in French is the morphological realization of genitive Case on the complementizer que. Suppose that such overt Case features assign to the complementizer sufficient lexical weight: in particular, suppose that dont, as opposed to que or null complementizers, is lexical in view of the definition of L-marking. Then IP is L-marked in (33) = (29a), but not in the (b-c) cases of (29) or in (31b). Now, IP is not an inherent barrier, but a barrier by inheritance; hence normally it should be immaterial whether it is L-marked or not. But note that given the definition in (32b), we need not modify the Barriers view that IP escapes inherent barrierhood in order to account for the case at hand. (32b) already yields the desired consequence: if IP is L-marked, the subject NP (a specifier agreeing with the head I) is also L-marked. It then follows that in (33), IP does not inherit barrierhood from the

subject; no barriers at all intervene between the genitive null operator and its subject-internal trace, as desired.[17]

We have attributed the possibility of extracting out of subjects in French to the morphological properties of complementizer dont. The idea is that the overt (genitive) Case features borne by dont render it sufficiently lexical to function as an X^0 in view of the definition of L-marking, thus voiding the two Subjacency barriers responsible for Subject Condition effects. Our analysis thus explicitly draws a distinction between morphologically "strong" Cs such as dont and other Cs bearing no overt Case-marking, e.g. que. If this is correct, we make the very clear prediction that a C position occupied by complementizer que (or any other morphologically non-Case marked complementizer), although it θ-marks its complement IP, does not have the ability to L-mark it. More concretely, we predict that

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[17] Our account leads to the prediction that in Spanish and Italian, where only full form relative pronouns are available (i.e. they lack a genitive Case-marked complementizer), extraction from within subjects should give rise to Subjacency effects. The prediction is borne out in Spanish (cf. Torrego 1986:36, who assigns ?? to relativization out of subjects) and to a certain extent in Italian, although here the judgments given in the literature display some variation, ranging from ? (Cinque 1980:48, Longobardi 1987:38) to * (Belletti & Rizzi 1986:41).

Subjacency effects should return in full force if dont-relativization takes place from within the subject of an embedded clause introduced by que. The subject/object asymmetries below show that this prediction is borne out:

(34) a. un homme dont$_i$ je refuse que vous fréquentiez le fils t_i
"a man of whom I refuse that you associate with"

b.?* un homme dont$_i$ je refuse que le fils t_i vous fréquente
"a man of whom I refuse that the son associate with you"

(35) a. un bandit dont$_i$ le juge a ordonné qu'on arrête les complices t_i
"a bandit of whom the judge ordered that one arrest the accomplices"

b.?* un bandit dont$_i$ le juge a ordonné que les complices t_i purgent une peine de dix ans
"a bandit of whom the judge ordered that the accomplices get a 10-year sentence"

Similarly, extraction of combien from within an embedded clause is deviant, as noted by Obenauer (1976:67):

(36) a. Combien$_i$ prétends-tu que j'ai invité [t_i de gens]?
"How many do you claim that I invited (of) people?"

b. * Combien$_i$ prétends-tu que [t_i de gens] ont assisté au concert?
"How many do you claim that (of) people attended the concert?"

The ill-formedness of the (b) sentences in (34)-(36), while expected under our analysis, is unaccounted for under the view that Subject Condition violations arise as a result of French selecting the more permissive option of a Subjacency parameter.

It is important to point out that grammatical examples structurally identical to (34b)-(35b) are often cited in the literature to support the view that extraction is possible from within embedded subjects. Such well-formed sentences are given below:

(37) a. Un homme dont on croit que les parents sont très riches
"A man of whom one believes that the parents are very rich"

b. Un bandit dont on sait que les complices purgeront une longue peine
"A man of who. we know that the accomplices will get a severe sentence"

The examples above differ from those in (34)-(35) in one crucial but often overlooked respect, viz. the lexical choice of matrix verb. As will be discussed in more detail in 3.2., epistemic

verbs like those in (37) allow for a matrix topic-like construal which sometimes obliterates the effects of syntactic violations. Because of this property, these verbs have essentially a "rescuing" effect on Subjacency violations. As a result, the grammaticality of (37) is irrelevant to the issue under discussion.

To sum up the foregoing discussion, we have traced back to otherwise motivated properties of complementizer dont the cross-linguistic as well as French-internal differences with respect to extraction from within subjects. This proposal has allowed us to explain the following facts: 1) Genitival relativization out of subjects is possible in French, although not in Spanish/Italian or English; 2) Genitival relativization out of subjects in French is possible only if the null operator strategy is used - i.e. if the complementizer surfaces as dont; and 3) relative extraction is only possible from the subject position adjacent to the morphologically marked complementizer, essentially the matrix C.

The account we have proposed of cross-linguistic differences in Subject Condition violations thus obviates the need to reintroduce the notion of parametrization into the Barriers definition of Subjacency proper.

Before turning to the properties of double dont constructions, we must address another relevant aspect of simple genitival relatives. In particular, attention must be drawn to the distinction between movement-derived genitival relatives of the sort we have been examining and other, superficially similar, dont constructions.

3.2. Other Relatives With Dont

In the remainder of this dissertation, I shall concern myself solely with those dont relatives which are movement-derived, i.e. where the relativization site is occupied by a trace. It is thus crucial at this point to distinguish between these and other types of relatives involving dont, where a pronoun appears on the relativization site. Following Godard-Schmitt (1986), where they are extensively studied, I shall refer to these constructions as dont-pron relatives.[18] These relatives have, among others, the following characteristics: 1) the

[18] See also Huot (1974) for a discussion of the properties of these constructions.

relationship between dont and the pronoun is not subject to Subjacency; 2) the pronoun corresponding to the relative head may bear any function/case in the sentence, and 3) the relative head must be construable with the matrix verb as a kind of topic.

The first characteristic is straightforward, and indicates that these constructions, contrary to the true genitival relatives we have examined, are not derived by movement. The second property is exemplified in the sentences below, where the pronoun is either nominative ((38a)), accusative ((38b)), dative ((38c)), and complement to a preposition ((38d-e)).[19]

(38) a. Une hypothèse dont$_i$ le professeur a dit qu'elle$_i$ valait certainement la peine d'être explorée plus à fond
"A hypothesis of which the teacher said that it was certainly worth exploring in more depth"

b. Un incident dont$_i$ le directeur suggère que ses subordonnés l$_i$'ignorent
"An incident of which the director hints that his subordinates don't know about it"

c. Un professeur dont$_i$ les parents savent que les élèves lui$_i$ font confiance
"A professor of whom the parents know that the students trust him"

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[19] (38b-c) are from Huot (1974:31-32); examples (38a,d and e) are given in Godard-Schmitt (1986).

d. Un compositeur dont$_i$ il est clair qu'on te reproche ton influence sur lui$_i$
"A composer of whom it is clear that one reproaches you for your influence on him"

e. Un professeur dont$_i$ on m'a assuré qu'une seule leçon avec lui$_i$ te profiterait plus que plusieurs heures avec d'autres
"A professor of whom I have been assured that a single lesson with him would benefit you more than many hours with others"

The third characteristic of these constructions is that the relative head is interpreted in a topic-like fashion. This is made clear by the glosses to (38); for instance, (38a) can be paraphrased as "the professor said of/about this hypothesis that..."; "speaking of this hypothesis, the professor said that.." etc. As in all topic constructions, either a gap or a coindexed pronoun must be present in the predicate in order to ensure that the latter is "about" the topic. This is presumably the function of the pronouns in (38), especially given the fact that many of the verbs which allow the topic-like interpretation cannot take a complement in de. That is, the main clause does not necessarily contain a genitive complement which could constitute the source of relative movement.

There is in fact evidence that in dont-pron constructions the relative head must be construed with the main verb in a topic-like fashion. Indeed, the acceptability of these relatives, unlike that of true genitival relatives, varies with the lexical choice of matrix verbs. Thus dont-pron relatives are restricted to the relatively small semantic class of predicates which are compatible with an "aboutness" interpretation: verbs of saying (dire "to say", prétendre "to claim", etc.), epistemic predicates (savoir "to know", croire, "to believe", avoir l'impression "to get the impression", se demander "to wonder", etc.), as well as raising predicates and certain expressions used with expletive subjects (sembler "to seem", paraître "to appear", être certain "to be certain", etc.). All these predicates have the common property of expressing an opinion or impression which may be about the relative head. As the ungrammaticality of the following examples show, verbs which are semantically incompatible with a topic-like complement also disallow the dont-pron construction:

(39) a. * Une actrice dont$_i$ je veux que notre journal écrive quelque chose sur elle$_i$
"An actress of whom I want our newspaper to write something about her"

b. * Ce prisonnier, dont$_i$ le juge a ordonné qu'on l'$_i$ exécute/qu'il$_i$ soit exécuté ...
"This prisoner, of whom the judge ordered that one execute him/that he be executed...

c. * Un homme dont$_i$ on a convaincu Jeanne qu'il$_i$ n'était pas fait pour elle
"A man of whom they convinced Jeanne that he was not right for her"

d. * Une hypothèse dont$_i$ il faut que vous la$_i$ défendiez
"A hypothesis of which it is necessary that you defend it"

e. * Un malade dont$_i$ l'hôpital a refusé qu'on lui$_i$ administre ce traitement
"A patient of whom the hospital refused that he be given this treatment"

To summarize the discussion, dont-pron relatives are not derived by movement; furthermore, the fact that dont does not necessarily correspond to a genitive pronoun indicates clearly that they are not true genitival relatives. I thus take it that dont in these structures differs fundamentally from the genitive complementizer under discussion. I will leave open the question of the exact status of dont in these constructions, since having established the topic-marking function of dont in dont-pron relatives is sufficient for our purposes.

To the extent that the present study is concerned mainly with gaps (and parasitic gaps), further examination of dont-pron relatives lies outside of its scope. However, there is one important aspect of the distinction between dont-pron constructions and true genitival relatives which should be borne in mind. As we have seen, the predicates which allow dont-pron constructions are also those which favour a topic-like interpretation. This semantic property is carried over when these verbs co-occur with a true genitival relative. In this case also, there is a tendency to construe the (true) relative head with the matrix verb as a topic, with the result that the effects of syntactic constraints are sometimes obscured, as we already mentioned.[20] In order to

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[20] For instance, Subjacency violations are rescued as a result of the possibility of construing the relative head with the matrix verb: for discussion, see Rizzi (1982:72), Sportiche (1981:fn 25). This is likely to be responsible for the contrast between (i) and (ii) - where the "aboutness" reading is available with savoir, but less so with trouver.

(i) Un enfant dont$_i$ on ne sait pas pourquoi les parents t$_i$ se sont séparés
"A child of whom we don't know why the parents separated"

(ii) *? Un enfant dont$_i$ on a trouvé pourquoi les parents t$_i$ s'étaient séparés
"A child of whom we found out why the parents separated"

control for this, all further examples involving dont relatives will be carefully selected so as to avoid the use of these predicates.

3.3. Double Dont Constructions

3.3.1. The Problem

French displays genitival relatives where the relative head is interpreted as corresponding to two (or more) unexpressed complements within distinct NPs. For ease of reference and to use theory-neutral terms, I label constructions of this type "double-dont" constructions (DDCs). Several examples of this very common construction are given in (40):[21]

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[21] Two restrictions are operative in double dont constructions. First, the coreferent interpretation is much easier if the second NP is definite, and in the case of some nouns the presence of the definite determiner is required in order for the coreferent interpretation to obtain. Secondly, not all nouns may enter into double dont constructions; there are requirements holding of the relation between the head noun and its complement. For an extensive discussion of these two constraints, see Section 4.2 of Chapter 4.

(40) a. Un argument Op$_i$ dont$_i$ vous attribuez la valeur t$_i$ à la clarté de l'exposition __$_i$
"An argument of which you attribute the value to the clarity of the exposition"

b. Une thèse Op$_i$ t$_i$ dont les conclusions t$_i$ sont résumées dans la préface __$_i$
"A thesis of which the conclusions are summarized in the preface"

c. Cette sombre histoire, Op$_i$ dont$_i$ les images t$_i$ s'accordent parfaitement au rythme __$_i$ et au ton __$_i$ ...
"This gloomy story, of which the images fit perfectly with the rhythm and the tone..."

(René Homier-Roy, "Cinéma", Châtelaine, déc. 1987, p.18)

d. Un musicien Op$_i$ dont$_i$ le talent t$_i$ dépasse de loin la popularité __$_i$
"A musician whose talent exceeds by far the popularity"

e. Ces Peuls Op$_i$ dont$_i$ les descendants t$_i$ conservent la langue __$_i$, se concentrent le long du Nil Bleu...
"These Fulani of whom the descendants have preserved the language, are concentrated along the Blue Nile"

(A. Mohamadou, "Review of A. Abu-Manga, 'Fulfulde in the Sudan: Process of Adaptation to Arabic'", Journal of African Linguistics 9 (1987), p. 179.

f. Une civilisation Op$_i$ dont$_i$ l'apogée t$_i$ préfigure l'anéantissement __$_i$
"A civilisation whose apogee foreshadows the annihilation"

g. Le khalife général des Mourides, Op$_i$ dont$_i$ les fidèles t$_i$ observent les décisions __$_i$ comme un commandement divin ...
"The general caliph of the Mourides, of whom the followers obey the decisions like a divine command..." (Philippe Duru, "Sénégal: maraboutage électoral", L'événement du jeudi no 173, 25 fév.- 2 mars 1988, p.36)

The existence of such sentences, along with their particular interpretation, has long been noted by traditional grammarians.[22] But their properties, and in particular the conditions under which the relevant interpretation is allowed or disallowed, have not been extensively studied either by traditional grammarians or from the viewpoint of generative grammar.[23] My objective in the remainder of this chapter and in Chapters 4 and 5 is to provide such a characterization, and to cast it against the theoretical claims of the framework I am adopting.

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[22] See, for instance, Damourette & Pichon (1911, vol.IV, 191ff) who point out that dont serves a double function in this type of sentence, i.e. it corresponds to the complement of both the N subject and the N object. This is also noted by Grevisse (1975:531ff).

[23] Two recent studies of which I am aware which (partially) address the syntactic properties of DDCs are Steriade (1981)- from whom the term "double-dont" is borrowed - and Godard-Schmitt (1986), the latter explicitly assigning them the status of parasitic gap constructions. Their particular proposals will be discussed in Sections 3.4.3. and 4.1.2., respectively.

Before turning to the properties of the adnominal complements under study, some clarification is in order regarding their interpretation. It is important to distinguish between understood complements which are arbitrary or generic in interpretation, and those which, as in (40), are construed as definite. For instance, the nouns in (41) below - as would any N, for that matter - could be taken to have an arbitrary understood complement, inasmuch as demonstrations or endings are necessarily demonstrations and endings of something:

(41) a. La démonstration est intéressante
"The demonstration is interesting"

b. La fin est proche
"The end is near"

In isolation, the "understood" complements could be interpreted as generic, or as constants of some sort (e.g. "the end of the world/of life", but not "the end of this road" in (41b)). The crucial difference is that while the generic/constant interpretation is available in every context, and while a discourse-linked interpretation is subject to no sentence-internal constraints, a definite and specific interpretation is only possible

under certain conditions.[24] Since the generic interpretation is apparently unconstrained by syntactic factors, the simplest assumption is that the "understood" complements in (41) are unlinked, i.e. not mapped onto a syntactic position. In other words, NPs with a generic interpretation simply appear without a complement position in the syntax. Questions regarding the syntactic nature of the unexpressed complement therefore concern only those cases where the complement is interpretable as definite. Obviously, if the generic interpretation is unconstrained, most of our examples will have a grammatical - though irrelevant - reading. It is therefore important to bear in mind that all further reference to null adnominal complements is to unexpressed complements with a non-generic interpretation.

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[24] This is reminiscent of the behaviour of verbs with "optional" direct objects such as eat, drink, etc. As Gruber (1965:25ff) and others have observed, the understood objects of sentences like "we ate" or "he drinks" must be canonical objects or constants: food but not pieces of wood in the first case, alcohol but not goat milk in the second. In the case of verbs too, certain conditions must be met in order for the complements to acquire a specific interpretation. Thus the complement of eat may be taken to be documents in (ii) but not in (i).

(i) I shred these classified documents and then I ate
(ii) These are the classified documents that I shred before eating

This being said, let us make a little more precise the line of inquiry which is to be followed as a first step into the investigation of DDCs. Assuming for the time being that the NP closest to COMP in (40) is the extraction site, three questions arise with respect to the second unexpressed adnominal complement (marked __ in (40)):

(42) a. What is the syntactic status of the unexpressed adnominal complement? Is it structurally absent, or is it realized as an empty category?

b. If an empty category, which of the four types of empty categories does it belong to?

c. Which principle(s) of the grammar account(s) for its distribution and interpretation?

(42c) will be taken up in Chapters 4 and 5, where we study the structural conditions which govern DDCs. Providing an answer to (42b) is the object of section 3.4. of this chapter. We now turn to a discussion of the first question.

3.3.2. Adnominal Complements and the Projection Principle

In current syntactic theory, empty categories in A-positions other than subject are taken to arise as a result of the Projection Principle of Chomsky (1981). The Projection Principle may be stated informally as follows:

(43) The lexical properties of lexical entries must be represented at every syntactic level of representation (D-Structure, S-Structure, LF).

One of the effects of (43) is that verbs which require objects as part of their lexical specifications must have a syntactically represented object at every level. If this object is not phonetically realized, then its position is occupied by an empty category.[25] Thus, since meet is transitive, its understood direct object must be categorially represented at every level of structure, as in the examples of (44a-c):

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[25] We make an exception for those cases where the object of transitive verbs is taken to be "canonical", as discussed in the preceding footnote.

(44) a. This is the woman I met [e]
b. Here is the author that I heard about before meeting [e]
c. Who did you meet [e]?

As was mentioned in Chapter 2, the Projection Principle yields some of the results of Trace Theory in the case of a moved argument. But while it ensures the presence of (null or overt) objects of transitive verbs at all levels, the Projection Principle has nothing to say about the syntactic realization of adjuncts, which are not part of the specifications of lexical entries.

In the case of verbs, it is a relatively easy matter to distinguish between sub-categorized complements and adjuncts. Sub-categorized complements are those which are selected by virtue of lexical properties of the verb, while adjuncts may appear with any verb, quite independently of its lexical proper-

ties.[26] The distinction between arguments and adjuncts is less clear, however, when dealing with complements of nouns. Furthermore, complements of nouns display an apparent optionality which, in the light of recent studies, may actually be a true property of only a certain class of deverbal nominals and underived nouns (see below). Consider for instance the underived nouns in (45), the parenthetized complements of which we may perhaps take to be truly optional:

(45) a. l'apogée (de la civilisation grecque)
"the apogee (of the Greek civilisation)"

b. le talent (de cet artiste)
"the talent (of this artist)"

c. un livre (de Marguerite Duras)
"a book (of Marguerite Duras)"

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[26] The distinction is perhaps more clearly illustrated by the following contrasts, pointed out to me by Lisa Travis:

(i) The cat jumped onto the bed
(ii) The cat jumped on the bed

While both PPs are locatives, only the PP in (i) is an argument of the verb, as evidenced by the fact that directional prepositions occur only with motion verbs (the cat slept *onto/on the bed). By contrast, locatives like that in (ii) may occur with any verb.

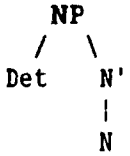
Let us for now entertain the hypothesis, often assumed in the literature, that the optionality of the complements in (45) is due to the fact that they are not part of the lexical specifications of the head nouns. In other words, these complements are not subject to the Projection Principle. This is very relevant to our discussion of double dont relatives, since underived nouns like those in (45) are among those which head the NPs hosting the "second gaps". Now, if the syntactic realization of such complement positions is not forced by the Projection Principle, it is not an obvious matter to say that the unexpressed complements (marked __ in (40c), repeated below), are syntactically realized as empty categories.

(46) Cette sombre histoire, Op_i $dont_i$ les images t_i s'accordent parfaitement au rythme $__i$ et au ton $__i$ ...
"This gloomy story, of which the images fit perfectly with the rhythm and the tone..."

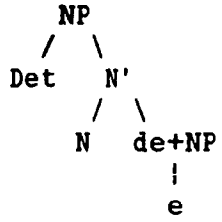
An equally valid alternative could be formulated along the following lines: the second NPs in double dont constructions involve no syntactically realized complement position at all, and the construal of the "understood" complements with the relative

head is somehow induced either by the discourse context or by pragmatic factors. Under this view, which I shall label the pragmatic account, the structure of "second" NPs in DDCs would be that of (47a), not that of (47b).

(47) a.



b.



Recall that (47a) is the structure we have assigned to NPs where the inaudible complement was interpreted generically. Under this interpretation these nouns, we have claimed, are truly intransitive in the syntactic sense. The question is thus whether NPs with a definite unexpressed complement have the same structure or a different one. In other words, on which basis can we choose between a pragmatic and a syntactic account of the interpretation of double dont constructions? The main difference between empty categories and syntactically unrealized complements is the following: since only the former are structurally present,

only the former should be subject to syntactic constraints.[27] A representation like (47b) will then be favoured over (47a) if the unexpressed complement is subject to constraints of a strictly syntactic nature (e.g. locality, structural relationships, etc.), or if it participates in syntactic processes which require the presence of a syntactically realized category.

In this chapter and in Chapter 4, I will show that the occurrence of null, non-generic adnominal complements in French is indeed constrained by structural factors, thus favouring the view that the NPs involved in double dont constructions have the structure given in (47b). As a first example illustrating such syntactic constraints, consider the following dialogue:

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[27] Williams (1987) advocates a different approach, and claims that syntactic relations like binding and control apply directly to θ-roles, and not to positions. In this view, even θ-roles to which no position is assigned in the syntax can be syntactically active as binders or controllers. This does not undermine our conclusions, however, since William's proposal is concerned with relations between two θ-roles; relations between a Wh-binders and their trace are explicitly taken to be relations between syntactically realized positions. The adnominal unexpressed complements in DDCs evidently display the latter sort of relation, since in any event neither of the adnominal complements c-commands the other.

(48) A: Tu as sûrement vu cette skieuse autrichienne gagner en descente
"You probably saw this Austrian skier win the downhill"

B: # Oui, et j'admire la témérité
"Yes, and I admire temerity"

The NP témérité in (48B) cannot be interpreted as meaning "temerity of the Austrian skier"; the only possible reading is a generic one, meaning "temerity as a quality, in general". This accounts for the oddness of the dialogue, the response of B being essentially unrelated to the assertion made by A. (48) illustrates the fact that an NP may not contain an unexpressed, definite complement where the antecedent, although salient in the discourse, is absent from the sentence itself. This of course weakens a pragmatic account of sentences like (40). If a definite interpretation can be assigned to adnominal complements in DDCs through pragmatic or extra-sentential mechanisms, why is this option totally unavailable in (48)?

A perhaps more compelling argument can be built on the behaviour of a certain class of deverbal nouns in DDCs. Deverbal nominals may be divided into two semantic classes: process and

result nominals. The former denote a process, while the latter refer to the output of the process. Grimshaw (1986) argues that the two classes differ syntactically in that only the former have argument structure. Furthermore, the internal argument of process nominals is obligatory, i.e. subject to the Projection Principle. The apparent optionality of the complement in (49), under this view, is due to the systematic ambiguity between the process and result readings:

(49) The examination (of the patients) was long

Once the process interpretation is forced, Grimshaw argues, the complement is no longer optional. One way to force this reading is by using the modifiers frequent or constant. Thus the (b) examples below are ungrammatical if the complement is omitted, since the process reading is the only one available:

(50) a. The expression is desirable
b. The frequent expression *(of one's feelings) is desirable

(51) a. The assignment is to be avoided
b. The constant assignment *(of unsolvable problems) is to be avoided

Similar facts obtain in French, as the following illustrate:

(52) a. La manifestation requiert un certain engagement
"The manifestation requires some involvement"

b. La manifestation assidue *(de ses sentiments) requiert un certain engagement
"The assiduous manifestation (of one's feelings) requires some involvement"

(53) a. La dénonciation a fait perdre beaucoup de votes au candidat
"The denunciation made the candidate lose many votes"

b. La dénonciation constante *(de ses propos haineux) a fait perdre beaucoup de votes au candidat
"The constant denunciation (of his heinous remarks) made the candidate lose many votes"

The above show that the theme complement of process nominals

in French must be syntactically realized.[28] These nominals thus behave like transitive verbs with respect to the Projection Principle. Conversely, the Projection Principle requires that the complement position of a process nominal, if not occupied by a lexically realized NP, be occupied by an empty category.

Now, process nominals can appear without an overtly realized complement when they head the second NP in double dont construc-

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[28] It should be pointed out that other factors not discussed by Grimshaw seem to intervene. For instance, the obligatoriness of the complement in French is linked to the presence of the definite determiner (note that Grimshaw's English examples in (50)-(51) are also definite). Substituting an indefinite, quantificational or demonstrative determiner in the (b) examples of (52)-(53) yields a clear improvement, even though the complement is omitted:

(i) ? Une/toute manifestation assidue requiert un certain engagement
"An/any assiduous manifestation requires some involvement"

(ii) ? Ces/des dénonciations constantes ont fait perdre beaucoup de votes au candidat
"(These) constant denunciations made the candidate lose many votes"

I will return to this significant correlation in Chapter 4 (section 4.2.3.). Note that it does not affect the argument here, inasmuch as the definiteness is kept constant.

tions. We must therefore conclude that the complement position is occupied by an empty category, as the Projection Principle demands:

(54) a. Des sentiments dont$_i$ la violence t_i rend difficile la manifestation assidue [e]$_i$
"Feelings of which the violence renders difficult the assiduous manifestation"

b. Des propos dont$_i$ le caractère haineux t_i provoque la dénonciation constante [e]$_i$
"Remarks of which the heinous nature induces the constant denunciation"

What is particularly striking is that the syntactic configurations which preclude the occurrence of deverbal process nominals without an overt complement (e.g. (52b)-(53b)) are exactly the same contexts which disallow a definite interpretation for the unexpressed complements of other nominals. This correlation provides strong support in favour of the view that complements of deverbal process nominals and non-generic complements of (a certain class of) underived nominals are represented as empty categories in the syntax (i.e. they have the structure in (47b)). In other words, the ungrammaticality of the (b) examples in (52)-(53) and the lack of definite reading in (48B)

have the same explanation: in both cases, the syntactic configuration is such that an empty category is unlicensed in this position.

In the course of this dissertation, ample evidence will be adduced to show that the occurrence of adnominal unexpressed complements (in the relevant sense) is subject to a number of syntactic constraints. As we shall see, this holds not only of process nominals of the type just discussed, but also of underived nouns such as those we will be using in most examples of double dont constructions. A more thorough investigation of the types of nouns which enter into DDCs will be undertaken in Chapter 4.

I will henceforth assume (47b) as the internal structure of NPs in double dont constructions, and I will now refer to unexpressed adnominal complements as adnominal gaps. This leads us to the second question, which concerns the nature of these gaps with respect to a typology of empty categories.

3.4. Identifying the Gaps

Let us now examine the status of adnominal gaps in the light of the properties of empty categories. Consider again the following example:

(55) Un musicien Op_i dont$_i$ le talent t_i dépasse [la popularité e_i]
"A musician of whom the talent exceeds the popularity"

Both the positions occupied by the gaps in (55) are accessible to movement: a word must therefore be said about our assumption, implicit in the use of the symbols [t] and [e], that the first gap is the "real" gap, i.e. the trace of the relative null operator. Independently from the data at hand, it seems very plausible from the point of view of parsing to assume that the first gap in a linear sequence containing a filler should be interpreted as the "real" gap, as long as it is in a position accessible to movement. As we shall see in Chapter 5, this assumption yields interesting results in accounting for a difference between French and English: namely the latter, but not the former, allows PGs within subjects. Anticipating these

results, let us from now on take for granted that a subject-internal gap in French DDCs is obligatorily construed as the real gap, i.e. the trace left by relative movement.

This being said, we now address the second question posed at the end of 3.3.1., concerning the type of empty category that the second gap belongs to.

3.4.1. Adnominal Gaps Are Not Anaphoric

It is easy to see that the adnominal gap in DDCs is not anaphoric. It cannot be PRO since the adnominal complement position is both governed (by N) and (inherently) Case-marked (genitive). Suppose next that it is the [+anaphoric, -pronominal] empty category which falls under principle A of the Binding Theory. As such, it requires a c-commanding antecedent in an A-position within its governing category, which we may take to be the matrix clause. No such antecedent is available in (55): the trace of the relativized constituent does not c-command the second adnominal gap, and neither the null operator nor <u>dont</u> are in an A-position. The adnominal gap in DDCs therefore cannot be the [+anaphoric, -pronominal] empty category.

Under the version of Binding Theory adopted here (where binding is A-binding), this eliminates all possibilities of survival for an adnominal gap bearing the positive value for the feature [anaphoric]. What remains to be ascertained is whether it bears the plus or minus value for the feature [pronominal], i.e. whether it is pro or variable.

3.4.2. pro or Variable?

The pure pronominal empty category, pro, is a plausible candidate as the adnominal gap in DDCs, especially in light of recent claims to the effect that the distribution of pro is much wider than was previously believed.

Since Chomsky (1982), the category pro has been identified as the category occupying the subject position of tensed clauses in languages like Italian and Spanish, which allow null subjects. The cross-linguistic distribution of pro has been linked to the

presence of "rich agreement"[29]: in those languages which allow a null subject, rich morphological agreement (the AGR node of tensed clauses) is said to license the presence of the null subject by identifying its features.

Several proposals have been made to the effect that the category pro may appear in positions other than subject of richly inflected clauses. Zubizarreta (1982:109ff) has argued that the category associated with object clitics in Romance is pro.[30] Cinque (1984) and Obenauer (1984) have proposed that resumptive pro is allowed under certain circumstances in languages that do not allow null subjects in tensed clauses. Bouchard (1982) and Zribi-Hertz (1984) argue that pro may appear as the complement of certain prepositions in French. More recently, Rizzi (1986) has

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[29] The observation is originally due to Taraldsen (1978). See also Rizzi (1982, ch.4), Chomsky (1981, 1982), Taraldsen (1981), Safir (1982), among others.

[30] Sportiche (1983:196ff) extends this analysis to subject clitics; this is further developed by Roberge (1986).

proposed that (arbitrary) pro may occupy the direct object position in Italian.[31]

As we mentioned in Chapter 2, Rizzi's (1986) theory of pro distinguishes between formal licensing and identification. In his view, pro requires an antecedent which can identify its phi-features (person, number, gender). Rich inflection in null-subject languages fulfills this requirement, as do clitics in Romance. Formal licensing for pro is effected through Case-assignment: pro is formally licensed by being governed by an X^0 which assigns it Case. In Rizzi's proposal, the class of X^0s which may act as formal licensers for pro is subject to parametrization: AGR and V in Italian, V and P in French.

The question we seek to answer is whether the second adnominal gap in double dont relatives is the pronominal empty category; in other words, whether Ns in French - and more precisely the type of nouns involved in DDCs - belong to the

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[31] The proposals mentioned concern referential pro. For proposals concerning the occurrence and distribution of expletive pro see, among others, Safir (1982), Travis (1984), Pollock (1986).

class of formal licensers for pro.[32] In order to explore this possibility, I will first proceed by comparing the distribution of adnominal gaps with that of relatively uncontroversial instances of referential pro in French. A convincing case has been made in the literature that the null object of prepositions in French is pro; whence the need for a digression into the properties of these constructions.

3.4.2.1. pro in French: Orphan Prepositions

It is well known that preposition stranding is disallowed in French:

(56) a. * Qui as-tu voté pour?
"Who did you vote for?"

b. * Le piano à queue que tu as mis un vase sur
"The grand piano that you put a vase on"

[32] Note that this option is consistent with Rizzi's formal requirement, on the assumption that Ns assign inherent Case to their complement. For a proposal where inherent Case is assigned by P, N and A (vs. structural Case, assigned by V and INFL), see Chomsky (1986a:193).

Yet, as a number of authors have observed, there are some prepositions in French which allow their object to be null. Following Zribi-Hertz (1984), I will refer to these prepositions as "orphan prepositions" (OPs).[33] Some examples are given below:

(57) a. Cette valise$_i$, je voyage toujours avec e$_i$
"This suitcase, I always travel with (it)"

b. Faites attention à ce meuble$_i$, il vaut mieux ne pas poser votre verre dessus e$_i$
"Be careful with this piece of furniture, it would be better not to put your glass on (it)"

There are two main sets of facts which suggest that the null object of OPs is not a Wh-trace. First, as was just noted, P-stranding is disallowed in French. Secondly, null objects of OPs are found within domains out of which Wh-extraction would incur a Subjacency violation:

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[33] The list of prepositions having this property includes mostly bisyllabic prepositions, which may be locative (contre "against", devant "in front", derrière "behind", autour "around"), temporal (après "after", avant "before", depuis "since"), or manner prepositions (avec "with", sans "without"), etc. For discussion, see Vinet (1979), Bouchard (1982), Zribi-Hertz (1984), Rizzi (1986) and Tuller (1986).

(58) a. Les arbres$_i$, je conteste violemment [$_{NP}$l'idée [$_{CP}$qu'il puisse être plaisant de se cacher derrière e$_i$]]
"The trees, I disapprove vehemently the idea that it may be pleasant to hide behind"

b. Voilà la femme$_i$ que je connais bien [$_{NP}$le gars [$_{CP}$qui sort avec e$_i$]]
"This is the woman that I know very well the guy who goes out with"

These facts suggest that the null category in (57)-(58) is base-generated in its surface position. Furthermore, the data in (58) show that the null category is syntactically active, in that it behaves like a resumptive pronoun with respect to relativization and left-dislocation. Recall that these structures require the presence of a pronoun or syntactically realized empty category in order for the clause to function as a predicate. This argues against a possible alternative, whereby the OPs in (57)-(58) have no syntactically realized object at all, and assume, in the absence of an overt complement, an (intransitive) adverbial function.

Let us then take as a point of departure the assumption that the null complement of OPs is pro. Under Rizzi's theory, it must be that it is both formally licensed and identified in (57)-(58).

Licensing is straightforward if, as Rizzi suggests, the set of X^0s that license pro is subject to parametrization: French, but not English, selects P. As for identification, note that the pro object of OPs has a definite, non-generic interpretation, although, as Rizzi (1986, fn 42) points out, P does not have the necessary features to identify pro.[34] For concreteness, let us assume with Tuller (1986) that pro may be identified by a constituent other than its formal licenser, when the latter does not have the necessary features. In (57)-(58), pro is identified by the closest c-commanding antecedent.[35] The exact manner in which pro is identified in these structures is not crucial for our purposes: suffice it to suppose that pro is both licensed and

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[34] In this null complements of OPs are unlike arbitrary pros which appear in object positions in Italian (also in French, cf. Roberge 1987) and which Rizzi (1986) argues to be both licensed and identified by V.

[35] Tuller (1986:347ff), adapting an idea of Huang's (1984), suggests that pro in OP constructions may be identified by a phonologically null topic. Assuming that the null topic is coindexed with the NP ce meuble in (57) yields the correct interpretation. See, however, Rizzi (1986) for a suggestion along different lines.

identified in these contexts, as the grammaticality of (57)-(58) would lead us to expect.

Returning now to our topic, suppose that the adnominal gaps in double-dont constructions are instances of pro; in other words, suppose that N is selected as part of the set of X^0s that license pro in French. Our expectation is then that adnominal gaps will be grammatical in the same contexts that allow pro objects of OPs. The assumption here is that whatever identifies pro in (57)-(58) should be available as an identifier for adnominal instances of pro.

3.4.2.2. Adnominal Gaps Are Not pro

This expectation is not fulfilled, however. (59) and (60) illustrate structures parallel to those in (57)-(58); yet, an

adnominal gap (under the relevant, definite interpretation) is impossible:[36]

(59) a.* Cet homme$_i$, Hélène apprécie beaucoup la fidélité e$_i$
"This man, Hélène really appreciates the (i.e. his) fidelity"

b.* Faites attention à cet enfant$_i$, il vaudrait mieux ménager la susceptibilité e$_i$
"Be careful with this child, it would be better to spare the (i.e. his) feelings"

(60) a. * Le Front National$_i$, je n'aime pas [$_{NP}$l'idée [$_{CP}$qu'un éditorialiste puisse entériner les idées e$_i$]]
"The National Front, I don't like the idea that an editorialist can support the (i.e. its) ideas"

b. * Voilà l'auteur que j'ai rencontré [$_{NP}$les critiques [$_{CP}$qui ont aimé le livre e$_i$]]
"This is the author that I met the critics who liked the (i.e. his) book"

The contrast between (57)/(58) and (59)/(60) leads us to either of the following conclusions: 1) N is not a formal

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[36] Longobardi (1987:33) points out that constraints on extraction out of NPs are sometimes alleviated in Italian when the NP is definite. He suggests that the definite article may marginally serve as a resumptive pronoun, the extracted genitive NP being reinterpreted as a dislocated phrase. The ungrammaticality of (59)-(60) (and that of their Italian counterpart) shows that this analysis cannot hold. Note that (59)-(60) contrast markedly with similar sentences where the NP has a prenominal possessive pronoun instead of the definite determiner: in this case, the examples are fully grammatical.

licenser for pro in French or 2) N is a formal licenser in French, but, as Tuller (1986:367) proposes, the referential (i.e. feature-bearing) character of the Ns in (59)-(60) force them to be the identifiers for pro, a situation which, under coindexing, would always lead to a principle B violation.[37] Either way, we conclude that pro is disallowed as a complement in the French examples we have been examining; thus, the adnominal gap in grammatical double dont constructions is not an instance of pro.

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[37] Tuller (ibid., p. 368) proposes as evidence that Ns are formal licensers in French the following contrast. In (ii), she claims, the noun intérieur assumes a non-referential function and in this case only allows a pro complement:

(i) * C'est le genre de maison qu'on aime bien l'intérieur
"It's the kind of house that you really like the inside of"

(ii) C'est le genre de maison qu'on se sent bien à l'intérieur
"It's the kind of house that you feel good inside of"

The contrast above is, however, also compatible with the view that N is not a formal licenser in French in general. As Tuller notes, such nouns allow a pro complement only when they are preceded by a preposition (à in (ii)). It is therefore possible to suppose that the noun intérieur in (ii) is part of a complex preposition, in which case it may be assumed that P, but not N, is a licenser for pro in French. I will follow here Tuller's view, in particular because it allows for a unified treatment of the empty category associated with verbal and nominal clitics, on the assumption that prenominal genitive pronouns (e.g. sa destruction) are clitics; see Chapter 4, Section 4.1.4, for further discussion.

3.4.2.3. Adnominal Gaps Are Variables

Another sort of argument can be adduced, which not only shows that adnominal gaps in DDCs are not pro, but which in addition provides evidence that they behave like variables with respect to the principles of Binding Theory. The data to be discussed directly have the following property: adnominal gaps in DDCs may not corefer with a constituent in an A-position, even though this constituent is outside of their governing category. The coreference restrictions for adnominal gaps are thus stricter than what Binding Theory would impose on pure pronominals. Rather, adnominal gaps are shown to be, like variables, subject to Principle C of the Binding Theory.

Consider a well-formed double dont construction such as that in (61):

(61) Un enfant Op_i $dont_i$ les parents t_i ont promis [$_{CP}$ d'[$_{IP}$ exploiter le talent e_i]]
"A child of whom the parents have promised to exploit the talent"

Suppose that the second adnominal gap were pro. Then, according to Principle B of the Binding Theory, it should be able to corefer with an NP in an A-position, provided that this NP is outside its governing category. Evidently, a position located outside the bracketed IP in (61) is well outside the governing category of any pronominal located within the embedded NP.[38] But the ungrammaticality of (62) shows that the prediction is not borne out:

(62) * Un enfant Op_i dont$_i$ les parents t_i lui$_i$ ont promis e_i [$_{CP}$ d'[$_{IP}$ exploiter le talent e_i]
"A child of whom the parents have promised to exploit the talent"

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[38] This is why an accusative clitic within IP may corefer freely with a dative clitic - and the pro associated with it- located outside IP:

(i) Un enfant$_i$ dont les parents t_i lui$_i$ ont promis pro_i [$_{CP}$ de [$_{IP}$ l_i'emmener au cinéma]]
"A child of whom the parents promised him to take him to the movies"

See Pollock (1986:215, fn.6) for a discussion of the facts which show that clitics (or their traces) are subject to Principle B of the Binding Theory.

In (62) the post-verbal empty category (noted e) is the trace of (or the null pronominal associated with) the dative clitic lui. The adnominal gap may not be coindexed with the clitic trace - a c-commanding A-position - although the clitic trace is outside the governing category of the adnominal gap. Note that double dont constructions do not disallow the presence of a complement to the main verb, as long as it is not coindexed with the adnominal gap (cf. (63a)). Furthermore, the ungrammaticality of (62) cannot be attributed to the fact that the dative clitic is A'-bound by the null operator in [Spec,CP] of the relative, since an analogous situation occurs in the grammatical (63b) below:

(63) a. Un enfant Op_i $dont_i$ les parents t_i m_j' ont promis e_j [d'[exploiter le talent e_i]]
"A child of whom the parents have promised me to exploit the talent"

b. Un enfant Op_i $dont_i$ les parents t_i lui_i ont promis e_i une bicyclette
"A child of whom the parents promised him a bicycle"

The offending relation in (62) thus seems clearly to be that involving coreference between the clitic trace and the adnominal gap. The impossibility of such coreference is unexplained if the

adnominal gap is analyzed as pro. On the other hand, (62) is accounted for if the adnominal gap is a variable: the sentence is straightforwardly ruled out by Principle C of the Binding Theory.[39]

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[39] Attributing the ill-formedness of (62) to a Principle C violation makes the following prediction. A similar structure should be good on the coreferent reading with a coindexed NP in a non c-commanding position. This prediction is verified: the sentence is improved when the clitic trace is replaced by a pronoun embedded within a PP verbal complement:

(i) Un enfant dont$_i$ les parents t$_i$ ont décidé [sans/pour lui$_i$] d'[exploiter le talent e$_i$]
"A child of whom the parents decided without/for him to exploit the talent"

An apparent problem for this analysis is that the acceptability of (i) degrades, at least for some speakers, when the preposition is avec ("with") instead of sans, pour. Thus (ii), which is structurally identical to (i), sounds ungrammatical to my ear:

(ii) * Un enfant dont$_i$ les parents t$_i$ ont décidé [avec lui$_i$] d'[exploiter le talent e$_i$]

The ill-formedness of (ii) is, however, consistent with the claim that (62) is a Principle C violation. The preposition avec allows parents and lui in (ii) to be interpreted as split antecedents, controlling PRO in the subject position of the infinitival clause. Evidence for this is found in the possibility of the lexical anaphor in (iii) to bear plural agreement, an option which is precluded with prepositions such as e.g. sans, pour (in the latter case, the anaphor agrees with the subject only):

(iii) Cette femme$_i$ a décidé avec son mari$_j$ [de PRO$_{i/j}$ se suffire à eux-mêmes$_{i/j}$]
"This woman (fem.sing.) decided with her husband (masc.sing.) to fend for themselves (plur.)"

It could be argued that the ungrammaticality of (62) is still compatible with adnominal gaps being pro, if one adopts the framework of Cinque (1984) and Obenauer (1984), according to which pro is identified (among other means) by local operator-binding. In (62), pro would be locally A-bound by the trace of the clitic, hence not properly identified as a resumptive pronoun. (61), on the other hand, would be grammatical as a result of pro being locally A-bar bound by the relative operator. While this explanation is plausible, it runs into problems in view of the fact that a structure equivalent to (62) is grammatical with pro as the complement of a preposition:

(64) Ce gars-là$_i$, les gens lui$_i$ ont promis e$_i$ de [ne pas passer devant pro$_i$]
"This guy, people promised him not to pass in front of (him)"

The ungrammaticality of (ii) above is thus explained as a Binding Theory violation: PRO bears as one of its referential indices the i index of lui, and thus binds the adnominal gap. The fact that some speakers find (ii) no worse than (i) is also expected under this analysis, since split antecedence with avec, while possible, is not obligatory.

The well-formedness of (64) shows that the presence of an intervening clitic does not prevent pro from being identified by an A-bar antecedent and that, consequently, an analysis along these lines will not account for the ungrammaticality of (62).

As is obvious, the contrast between (62) and (64) follows from the Binding Theory under the view that null objects of Ps are pro, and null complements of nouns are variables. As its status as a pronominal would lead us to expect, pro in (64) may corefer with the c-commanding clitic trace, which is outside of its governing category.

To sum up, I have argued in this sub-section that the adnominal gaps found in double-dont structures are not instances of pro. The data brought forth have shown them to be variables instead. In Chapter 4, I will show that adnominal variables in DDCs display the behaviour of parasitic gaps, i.e. that their occurrence is parasitic on the presence of a real gap in the clause. Before doing so, however, it is worthwhile considering an alternative derivation which is compatible with the variable status of the adnominal gap. Here I will review briefly an

analysis which has been put forth by Steriade (1981), and which involves simultaneous extraction of the genitive complements out of the two target NPs.

3.4.3. Problems With Multiple Extraction

One analysis that comes to mind when dealing with double dont constructions is to assume that they are instances of multiple extraction. That is, Wh-movement to [Spec,CP] takes place simultaneously from both positions. Steriade (1981), who studies some of the properties of French DDCs, argues against an analysis which posits direct, simultaneous movement of the post-nominal complements to COMP. The alternative she advocates for the derivation of double dont constructions - and genitival relatives in general - involves not direct, but rather two-step movement. First, the target Wh-word is taken out of the NP by a rule which moves it to INFL - the position of the corresponding genitive clitic en. Wh-movement to COMP then takes place from this position. For double dont relatives, a reduction rule which she calls Haplology (H) applies to delete one of the cliticized Wh-words, the motivation for such erasure being that the en clitic position only has one slot. This also explains the

constraint put on the H rule: it only operates if the two Wh-words are in adjacent positions. To illustrate, consider the derivation of (65a):

(65) a. Une femme dont la beauté e_i dépasse la vertu e_i
"A woman of whom the beauty exceeds the virtue"

b. Une femme [$_{S'}$ [$_S$ [$_{NP}$ la beauté e_i] [$_{INFL}$ de Wh_i de Wh_i]

dépasse [$_{NP}$ la vertu e_i]]]

H: c. Une femme [$_{S'}$ [$_S$ [$_{NP}$ la beauté e_i [$_I$ de Wh_i] dépasse [$_{NP}$ la vertu e_i]]]

One obvious problem for both the direct Wh-movement analysis and Steriade's alternative is posed by the existence of DDCs where one of the adnominal gaps is in a position inaccessible to movement. It is well-known that French does not allow Wh-movement out of an NP which is embedded within a PP. Some examples of this are found in (66):[40]

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[40] On the impossibility of extracting out of NPs contained in PPs see, among others, Kayne (1975:112, fn.57), Milner (1978:56ff), Rizzi (1982:72, fn.16), Sportiche (1981:227f).

(66) a. * Un homme dont$_i$ vous avez nui [à la réputation t_i]
"A man of whom you have detracted from the reputation"

b. * Des gens dont$_i$ vous venez de parler [avec le fils t_i]
"People of whom you just talked with the son"

c. * Une bouche d'aération dont$_i$ les pigeons se posent [sur la grille t_i]
"An air vent of which the pigeons land on the grille"

d. * Une thèse dont les faits du Klamath sont présentés [dans la préface]
"A thesis of which the facts of Klamath are presented in the preface"

The same constraint applies to cliticization. The genitive clitic en may not correspond to an adnominal complement within a PP. Compare the (a-b) sentences to the (c-d) cases of (67):

(67) a. Il nous a raconté [la fin du film]
"He told us the end of the movie"

b. Il nous en$_i$ a raconté [la fin t_i]
"He us of-it told the end"

c. Il a cru [à la fin du monde]
"He believed in the end of the world"

d. * Il en$_i$ a cru [à la fin t_i]
"He of-it believed in the end"

While extraction out of PPs is impossible, adnominal gaps may be found within PPs in DDCs. Examples of this were given in (40a-c); further illustrations are shown below, contrasting with the sentences in (66):

(68) a. Un artiste dont les fredaines e_i nuisent à la réputation e_i
"An artist whose pranks detract from the reputation"

b. La fille dont le père e_i ne parle plus avec la mère e_i
"The girl whose father no longer talks with the mother" (Kayne 1975:112, fn.57)

c. Ceux dont les péchés e_i pèsent sur la conscience e_i
"Those of whom the sins lie heavy on the conscience"

d. Une thèse dont les conclusions e_i sont présentées dans la préface e_i
"A thesis of which the conclusions are summarized in the preface"

Grevisse (1975:531f) cites several examples of this type drawn from French literature, some of which are reproduced in (69):[41]

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[41] As an introduction to these examples, Grevisse makes the following interesting observation, in effect pointing out the parasitic nature of adnominal gaps within PPs in DDCs:

"Dont ne peut, en principe, dépendre d'un complément introduit par une préposition. (...) [mais] dont peut dépendre d'un complément prépositionnel quand il dépend en même temps d'un nom qui précède ce complément prépositionnel." (p.531).

(69) a. L'autre, dont les cheveux t_i flottent sur les épaules e_i
"The other, whose hair floats on the shoulders"
(A. France, Pierre Nozière, p. 187)

b. Les professeurs des Facultés, dont les épitoges de couleur t_i flottent sur les simarres sombres e_i
"The faculty professors, of whom the coloured cloaks float on the dark cassocks"
(La Varende, Le roi d'Ecosse, p.281)

c. La vieille marquise du Badoul, dont les mèches grises t_i pendaient sous le tricorne e_i
"The old marquess of Badoul, of whom the gray hair strands hung under the tricorn"
(P. Vialar, La grande meute, I,6)

d. Ce garçon, dont l'énergie t_i se lisait dans les yeux bleus e_i
"This boy, whose energie could be read in the blue eyes"
(J. et J. Tharaud, Le passant d'Ethiopie, p. 90)

e. Ces hommes dont les vingt-cinq ans d'uniforme t_i sont collés à la peau e_i
"These men, of whom the twenty-five years of uniform stick to the skin"
(R. Martin du Gard, Jean Barois, p.311)

The existence of such DDCs poses a problem for an analysis which relies on extraction out of the target NP. Steriade (1981), who notes this, points out that not every speaker accepts double dont sentences of the type shown in (68)-(69). Her analysis is intended to account for those dialects where such double dont

constructions are considered ungrammatical. There are two problems with this, however. First, for the vast majority of speakers, sentences like (68)-(69) are either perfect or slightly marginal at most. Secondly, and more importantly, even those speakers who find (68)-(69) deviant still report a sharp contrast between these sentences and corresponding cases of Wh-extraction ((66)), or en-cliticization as in ((67d)), which are considered completely ungrammatical.[42]

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[42] Godard-Schmitt (1986:230) gives ungrammatical sentences of the type shown in (i) to illustrate the view that DDCs are impossible when the second gap is within PPs, thus concurring with the stand taken by Steriade:

(i) * Une architecte dont$_i$ le mari t$_i$ s'est entretenu [avec la secrétaire e$_i$]
"An architect of whom the husband talked with the secretary"

While I agree with the judgment given, I find the ill-formedness of (i) inconclusive in this regard, since the analogue of (i) does not improve even in the absence of a PP node:

(ii) * Une architecte dont$_i$ le mari t$_i$ déteste la secrétaire e$_i$
"An architect of whom the husband hates the secretary"

It is thus likely that (i)-(ii) are ruled out independently of structural constraints, but rather as a result of the lexical choice of the noun heading the second noun phrase. As will be discussed in Chapter 4, it is a general property of DDCs that the occurrence of the second gap depends on the semantic relation between the head noun and the complement. Suffice it to say at this point that kinship, but not possessive or other "looser"

This contrast remains unexplained under Steriade's analysis. In the dialect she is accounting for, the ungrammaticality of (68)-(69) is attributed to the impossibility of movement of a PP-internal genitive constituent to the clitic site. The examples in (68)-(69), then, are ruled out on the first step of the derivation. But the same movement occurs in (67d). Why, then, is (67d) much worse than (68)-(69)?

Another argument against multiple extraction in DDCs comes from comparative constructions, which Steriade does not discuss. These constructions allow the double adnominal gap interpretation quite freely:

(70) a. Un auteur dont$_i$ les romans t$_i$ se vendent mieux que les recueils de poésie e$_i$
"An author of whom the novels sell better than the collection of poems"

b. Un musicien dont$_i$ on apprécie tout autant le charme t$_i$ que le talent e$_i$
"A musician of whom one appreciates just as much the charm as the talent"

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relations such as perhaps social relations may enter into the construction, the relation between a boss and secretary being of the latter sort.

Yet, while Wh-extraction may take place from within the first NP alone in such comparative structures, extraction out of the second one is difficult. This is shown in (71):

(71)a. Un auteur dont$_i$ les romans t$_i$ se vendent mieux que le Larousse illustré
"An author of whom the novels sell better than the illustrated Larousse"

b.?* Un auteur dont$_i$ le Larousse illustré se vend mieux que les romans t$_i$
"An author of whom the illustrated Larousse sells better than the novels"

Comparatives are not Across-the-Board contexts (cf. Williams 1977), as the possibility of extracting from only one of the NPs demonstrates. On the other hand, the ungrammaticality of (71b) shows that the second NP in comparatives is not a possible extraction site. Just as in the case of adnominal gaps within PPs discussed previously, this argues against an analysis whereby the second gap in (70) arises from movement either to INFL or [Spec,CP].

These difficulties are ground enough to warrant a new analysis of the DDC phenomenon. As any reanalysis must also encompass the data covered in previous frameworks, I will mention here one case which Steriade's movement analysis accounts for. I will point out the problems associated with her particular solution, but the discussion of an alternative solution will be deferred until Chapter 5.

Recall that Steriade argues in favour a two-step movement approach over direct multiple Wh-movement. She points out that double dont constructions have the following property: the second gap may not occur within a complement clause when the first gap is located within the matrix clause (cf.(72a)). In Steriade's view, the well-formedness of (72b) shows that independently, Wh-movement from within an embedded subject is possible:[43]

(72) a. * Un étudiant dont [le professeur e_i] croit [que [la thèse e_i] est bonne]
"A student of whom the professor says that the thesis is good"

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[43] Recall that this is a view we have argued against in 3.1.3.; it was shown that epistemic ver's allow a topic-like interpretation, the effect of which is to rescue extractions like that in (72b) from Subjacency.

b. Un étudiant dont vous croyez [que [la thèse e_i] fera avancer la science
"A student of whom you find that the thesis will benefit science"

Under Steriade's analysis, both NPs in (72) are accessible to extraction. If Wh-movement is not at stake, why is (72a) deviant? Her solution is as follows: the rule which takes the target Wh-word out of the NP (the first step of (65)) is, like clitic-placement rules, clause-bound. This means that the two Wh-phrases will not meet the adjacency condition for the application of H, and the derivation will be ruled out.

It seems to me that the above account of the ill-formedness of (72) does not support, and indeed constitutes yet another problem for, a two-step movement analysis of DDCs. This s because the generalization according to which the two adnominal gaps must be clausemates is in fact too strong. As (73) shows, the requirement does not hold if the embedded clause is infinitive:

(73) a. Un enfant dont$_i$ les parents t_i ont décidé [de confier [la garde e_i] à l'Etat]
"A child of whom the parents decided to entrust the guardianship to the State"

b. Un ancien chanteur dont$_i$ les amis t_i tentent en vain [de ressusciter la carrière e_i]
"A former singer of whom the friend try to no avail to ressuscitate the career"

Under Steriade's analysis, these sentences would be incorrectly ruled out, for exactly the same reason that (72a) is, since clitic placement in Modern French is clause-bound in both infinitive and tensed clauses (that is to say, unlike Italian and Old French, where clitic climbing is observed in some infinitive contexts). Thus, under Steriade's account, the two available clitic positions are not adjacent, and H cannot apply.

As we shall see, there is another explanation for the ungrammaticality of (72a), which does not rely on a movement analysis. Before presenting this solution, a detailed characterization of the contexts which allow the occurrence of two adnominal gaps in different clauses will be required. This would take us too far afield here, but the problem posed by the

ungrammaticality of (72) should be kept in mind; it will come under discussion in Chapter 5 (Section 5.2.4).

In view of the problems raised, and in particular the fact that second gaps in DDCs may appear in positions inaccessible to movement, it seems clear that any analysis of DDCs in terms of multiple movement must be abandoned. This applies to both an analysis where movement is direct to COMP and a two-step movement through a clitic position such as that advocated by Steriade (1981).

3.5. Summary

To recapitulate very briefly the findings of this chapter, we have argued the following: 1) dont in genitival relatives is not a Wh-pronoun, but a complementizer indexed and marked for Genitive Case via Spec-Head agreement with a null relative operator; 2) genitival relatives are derived by null operator movement and abide, as expected, by Subjacency; 3) the adnominal gap in double dont constructions is a variable, subject to Principle C of the Binding Theory.

As suggested by the fact that adnominal gaps may be found in position out of which extraction is impossible (e.g. within PPs), an analysis of DDCs as parasitic gap constructions is warranted. In the next chapter, I show that the core properties generally attributed to PG constructions hold of double dont constructions as well. The manner of derivation of adnominal parasitic gaps is also addressed, and shown to be best analyzed as null operator movement.

CHAPTER 4

NULL OPERATORS IN NOUN PHRASES

4.0. Introduction

We have argued in the previous chapter that adnominal gaps in double dont constructions display the behaviour of syntactic variables. In the first part of the present chapter, it is shown that the gaps have all the properties characteristic of parasitic gaps. Furthermore, evidence is adduced which supports a derivation of adnominal PGs by null operator movement. It is shown that the specifier position within noun phrases in French (and more generally in Romance) is a COMP-like position, i.e. a landing site for null operators and intermediate traces for Wh-movement out of noun phrases.

Having investigated the position occupied by null operators within noun phrases at S-Structure, we address next the problems posed by their D-Structure distribution. The Universal Licensing Principle proposed in Chapter 2 predicts that, apart from [Spec,CP] in predication structures, only those positions which

are θ-marked may be occupied by null operators at D-Structure. This prediction is crucially relevant to the distribution of adnominal parasitic gaps in DDCs, as well as to the much debated issue of the thematic structure of nominals. The question of whether a given complement is θ-marked or not by the head noun, and which types of nouns are argument-takers has generated much discussion in recent literature. Facts relating to the distribution of parasitic gaps within noun phrases, in view of the predictions made by the ULP, therefore constitutes a welcome addition to the body of available data, as it sheds significant light on the issue.

Matters relating to the argument vs. adjunct status of genitive complements, as well as to the manner in which certain θ-roles are assigned, are also discussed in this chapter. It is proposed, for instance, that the definite determiner in French participates along with the head noun in the assignment of the theme θ-role of process nominals, and the inalienable possessor θ-role. Finally, it is suggested that the occurrence of null operators within noun phrases is not limited to the parasitic gap constructions exemplified by DDCs. Other types of null operator constructions are expected to be found as well, and we suggest

that inalienable possession constructions constitute the "missing type": they are the nominal counterpart of easy-clauses, where a null operator is identified as part of a predication chain at S-Structure.

4.1. Null Operators in Noun Phrases at S-Structure

4.1.1. DDCs Are Parasitic Gap Constructions

We have shown in the preceding chapter that DDCs involve the occurrence of a variable in positions inaccessible to movement (e.g. within PPs and comparatives). Given this, it seems clear that they constitute instances of parasitic gap constructions.[1] In this section, I show that most other properties attributed to PG constructions are attested in DDCs as well.

As we mentioned in Chapter 1, parasitic gaps typically (although not exclusively) appear in contexts out of which extraction is impossible: their occurrence in such positions cannot be attributed to movement, and is said to be parasitic on

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[1] Godard-Schmitt (1986:223f) comes to the same conclusion, but on different grounds. See 4.1.2. below for a brief discussion of her analysis.

the presence of another gap in the structure. The real gap, which acts as the licenser for the PG, is obligatory in such constructions, as the contrasts in (1) exemplify. Similarly, in DDC constructions, adnominal gaps in opaque environments (PPs or comparative clauses) are parasitic on the presence of a first gap. This is shown in (2):

(1) a. This is the book$_i$ that you filed t_i without reading e_i

b. * You filed [this book]$_i$ without reading e_i

(2) a. Voilà des gens$_i$ dont les péchés t_i pèsent sur la conscience e_i
"These are people of whom the sins lay heavy on the soul"

b. * Les péchés [de ces gens]$_i$ pèsent sur la conscience e_i
"The sins of these people lay heav n the soul"

Research on PG constructions has focused mainly on the following aspects: 1) the nature of the licensing gap; 2) the level of representation at which PG licensing takes place; and 3) the structural conditions under which PGs are licensed. The core

properties that have been attributed to PG constructions in the literature may be summarized as follows:[2]

(3) a. PGs require the presence of an S-Structure variable (i.e. trace of movement to an A'-position);
b. The binder of the variable must c-command the PG.
c. The licensing variable must:
i) not c-command the PG;
ii) be "close enough" to the PG.

I will address these properties in turn, and show how they apply first to well-studied cases of PG constructions, and then to DDCs. Note that as they stand, the conditions in (3) refer specifically to parasitic gap constructions, a state of affairs which, as we have discussed, is undesirable given the marginality of PG constructions. In Chapter 5, I will propose a way in which these properties can be made to follow from more general principles, and in particular from the requirements of the ULP proposed in Chapter 2. For now, let us simply take the conditions in (3) as adequate descriptive statements of the conditions under which PGs are allowed.

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[2] Whether or not the anti-c-command condition in (3c.i.) holds of parasitic gaps has been the subject of some debate in recent literature. See, e.g. Engdahl (1983, 1985), Contreras (1984), Safir (1987b), Chomsky (1986b).

(3a) states that PG licensing requires the presence of a syntactic variable, i.e. a trace of A'-movement. This distinguishes traces left by syntactic movement to an A'-position from all other relations, whether involving A'-movement at LF, or A-movement in the syntax. We first illustrate the well-formed cases. As shown in (4) below, the constructions which have been argued to involve A'-movement license PGs: relativization, Wh-movement, Heavy NP Shift, cleft constructions, NEG preposing, etc.[3]

(4) a. This is the report$_i$ you filed t$_i$ without reading e$_i$

b. Which report$_i$ did you file t$_i$ without reading e$_i$

c. You filed t$_i$, without having read e$_i$, [this voluminous report on drug abuse]$_i$

d. It is this report$_i$ that you filed t$_i$ without reading e$_i$

e. Not a single report$_i$ have I ever filed t$_i$ without reading e$_i$

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[3] See Whitney (1984) for a survey of the constructions involving A'-movement in English.

Consider how adnominal gaps in French fare with respect to similar constructions. As it turns out, of those constructions which can be tested (i.e. a-d), only relatives and clefts are grammatical:

(5) a. Un auteur dont$_i$ on reconnaît les aspirations t$_i$ dans les écrits e$_i$
"An author of whom one recognizes the yearnings in the writings"

b. * De quel auteur$_i$ reconnait-on les aspirations t$_i$ dans les écrits e$_i$?
"Of which author does one recognize the yearnings in the writings?"

c.?* On reconnait les aspirations t$_i$, dans les écrits e$_i$, [de cet auteur idéaliste du XVIIIe siècle]$_i$
"One recognizes the yearnings, in the writings, of this idealistic author of the 18th Century"

d. C'est cet auteur$_i$ dont$_i$ on reconnaît les aspirations t$_i$ dans les écrits e$_i$
"It is this author of whom one recognizes the yearnings in the writings"

The ill-formedness of (5b) can be explained by taking advantage of the distinction we have been effecting between "full-form" genitives and the null operator strategy used in dont constructions. In particular, it is plausible to assume that full form

genitives, once extracted, are reanalyzed as PPs rather than Case-marked NPs. If this is correct, the ungrammaticality of (5b) is explained: in PG constructions, the overt binder must match in category the null operator heading the parasitic chain. Since null operators cannot be of the category PP, it follows that syntactic variables whose A'-binder is a PP do not qualify in view of (3a).[4]

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[4] Similarly, the "full form" relative is ungrammatical on the PG interpretation, cf. the following:

(i) * Un auteur de qui$_i$ on reconnaît les aspirations t$_i$ dans les écrits e$_i$.

Heles Contreras (p.c.) observes that adnominal PGs of the type displayed by French do not exist in Spanish. We can attribute this difference to the fact that Spanish does not have the null operator option for genitive relativization. Genitive extraction in Spanish involves either pied-piping with cuyo ("whose") or full forms equivalent to (i) - although the latter is sometimes considered marginal (cf. Zubizarreta 1986, ch.2, fn.13). The analysis proposed in the text for (5b) therefore carries over to these cases. Problems arise with respect to the categorial status of Italian di cui, however. As L. Rizzi points out, the following is grammatical:

(ii) Questo ragazzo, di cui l'energia eguaglia l'intelligenza
"This boy, of whom the energy equals the intelligence"

Assuming (ii) to involve null operator movement (the adnominal gap within the subject is parasitic in this case - cf. Chapter 5), we must assume that Italian differs from Spanish and French in that full forms are not necessarily reinterpreted as PPs.

The example in (5c) involves extraposition, which has been customarily analyzed as rightward syntactic movement, i.e. adjunction of the bracketed constituent to VP.[5] If this analysis holds, the ungrammaticality of (5c) is problematic for our claim that adnominal gaps are PGs, since the structural conditions on PG licensing are otherwise met. The problem can easily be solved, however, in view of a recent claim made by Culicover and Rochemont (1988). These authors argue that extraposition is not derived by movement; rather, the extraposed constituent (of+NP, clause, etc.) is base-generated in its surface position. A principle of construal ensures, subject to structural con-

[5] See Baltin (1981). Rochemont's (1978) analysis treated extraposition as a stylistic rule, i.e. a rule taking place on the PF side of the grammar. Arguments have since been adduced to show that the output of extraposition feeds the LF component. Guéron (1980), for instance, argues that extraposition affects quantifier scope, binding relations, as well as the distribution of negative polarity items.

straints, that the extraposed constituent is interpretable as the complement of the head N.[6]

Under this analysis, then, extraposition is unlike Heavy NP Shift in that it does not involve A'-movement; the ungrammaticality of (5c) is thus expected, since traces of A'-movement are required in well-formed PG constructions.

The condition in (3a) further expresses the fact that the following empty categories do not qualify as licensers for PGs: traces of movement to A-positions (NP-traces), variables created

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[6] Culicover & Rochemont's "Complement Principle" (cf. Guéron 1980 and Guéron & May 1984 for earlier proposals of a similar interpretive principle) requires that the extraposed constituent be governed by the NP of which it is a complement. In the framework developed in Chapter 2, constituents base-generated in non-argument positions must be licensed as predicates at D-Structure. Recall that we have included under the non θ-related predication rubric the relation holding between relative clauses and their heads, as well as the relation of other constituents the function of which is to restrict the range of interpretation available for their governing head. Thus the idea that extraposed constituents appear in A'-positions already at D-Structure is fully compatible with the proposals made in Chapter 2.

at LF, empty categories associated with clitics in Romance.[7] Moreover, resumptive pronouns (unless they are trace "spell-outs", see Chapter 2) are also excluded as licensers for PGs. These restrictions are exemplified by the ill-formed examples in (6a-d), respectively:[8]

(6) a. * This report$_i$ was filed t$_i$ before John read e$_i$

b. * Who filed [which report]$_i$ before reading e$_i$?

c. * Vous l$_i$'avez rangé e$_i$ sans avoir lu e$_i$

(Cf. voilà le livre$_i$ que vous avez rangé t$_i$ sans avoir lu e$_i$)

---

[7] Given the formulation given in (3a), we must assume that clitics, which are undeniably in A'-positions, are not derived by movement. One possibility is that advocated by Borer (1984), i.e the pair [clitic, trace] constitutes a discontinuous pronominal element. Alternatively, we could assume movement, and reformulate "variable" in (3a) as an empty category bound by an operator. If, as Kayne (1984:203f) proposes, clitics are not operators, the fact that they do not license PGs follows. I will not take a stand on this issue, as it is immaterial for our purposes whether clitic constructions involve movement or not.

[8] I assume that in (6c), the object clitic c-commands the parasitic gap, in compliance with condition (3b) above. Under Emonds' (1978) analysis, both the clitic and the tensed verb occupy the INFL node at S-Structure. Furthermore, I assume that the sans-clause as well as other adjunct clauses are base-generated under the VP node (cf. Chapter 5).

d. * This is the report$_i$ that you remember the guy who filed it$_i$ before reading e$_i$

Once again, the question that we want to answer is whether these properties of PG constructions are manifested in DDCs. The counterpart of (6a) is ungrammatical with an adnominal gap:

(7) * Cet homme$_i$ a été présenté t$_i$ au demi-frère e$_i$
"This man has been introduced to the half-brother"

This is as expected, although it should be noted that the ill-formedness of this example may not be telling in view of the PG status of the adnominal gaps, if (7) is ruled out for reasons independent of the type of movement involved. Suppose that French PGs (like those of Hungarian, cf. Kiss 1985) are subject to a

Case-matching requirement. (7) would then excluded because the adnominal gap is genitive, while the licenser is nominative.[9]

Consider next the DDC analogue to (6c), involving a clitic. Under the view that clitics do not license PGs, the adnominal counterpart to (6c) is not as deviant as expected. While judgments are delicate here, there is nonetheless a contrast between the (b) sentences in (8)-(10), involving genitive clitic en, and the (a) sentences with dont:

(8) a. Un livre dont$_i$ la critique t$_i$ a été publiée par les détracteurs e$_i$
"A book of which the critique has been published by the detractors"

---

[9] This possibility is suggested by the ungrammaticality of the double dont constructions below; (i) shows that a genitive trace may not license a PG in object position; conversely, an object trace does not license an adnominal PG, as illustrated in (ii):

(i) * Cet enfant, dont$_i$ les parents t$_i$ ont envoyé e$_i$ en colonie de vacances
"This child, of whom the parents sent to holiday camp"

(ii) * Un homme qu'on a présenté t$_i$ au demi-frère e$_i$
"A man which one introduced to the half-brother"

b. ? La critique e_i en_i a été publiée par les détracteurs e_i
"The critique of-it has been published by the detractors"

(9) a. Une idée dont$_i$ on attribue le charme t_i au caractère subversif e_i
"An idea of which one attributes the charm to the subversive character"

b.?? On en_i attribue le charme e_i au caractère subversif e_i
"One of-it attributes the charm to the subversive character"

(10) a. Un meuble dont$_i$ la surface t_i est plus usée que les pieds e_i
"A piece of furniture of which the surface is more worn than the legs"

b.?? La surface e_i en_i est plus usée que les pieds e_i
"The surface of-it is more worn than the legs"

It is unclear what status to assign to the (b) examples, given that their level of acceptability is somewhere between sentences of the type (6c) and the (a) examples of (8)-(10). We might consider them marginal but essentially grammatical on the PG interpretation; if this option is taken, a distinction must be effected between the genitive clitic en and object clitics. One possibility compatible with the formulation of "variable" in (3a) is to suppose that en-cliticization is derived by movement, while object clitics are base-generated on the V node, along the lines

described in footnote 7. Alternatively, we might claim that adnominal gaps are not licensed by en-cliticization; in this case, nothing particular needs to be said about the manner of derivation of genitive clitics. Whichever option is taken, it is clear that some account must be provided for the fact that, with respect to PG licensing, en-constructions are slightly worse than dont-constructions, and slightly better than other clitic constructions. I leave the matter open; for the purposes of this study, I shall make the simplifying assumption that adnominal PGs are not licensed by genitive clitics.

Finally, the analogues of (6b) and (6d), with LF-created traces and resumptive pronouns, respectively, are ungrammatical also in double dont constructions. This is shown in (11):[10]

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[10] Note that in (11b), the complementizer is que an not dont. As is the case in English, the use of resumptive pronouns in French is characteristic of a colloquial speech style which, as we pointed out in 3.1.1., does not easily allow the overt realization of genitive features on the complementizer. The argument remains unaffected, since in any case (11b) shows that a genitive resumptive pronoun (the pre-nominal possessive) does not license an adnominal parasitic gap.

(11) a. * Les fredaines [de quel artiste]$_i$ nuisent-elles à la réputation e_i ?
"The pranks of which$_i$ artist are detrimental to the reputation?"

b. * un auteur$_i$ que je connais beaucoup de monde qui apprécie ses$_i$ romans plus que les poèmes e_i
"an author that I know a lot of people who appreciate his novels more than the poems"

Consider now the second condition on PG licensing stated in (3). (3b) demands that the binder of the real gap be in a position to c-command the PG. This constraint is motivated by contrasts such as those given in (12), which differ only with respect the the position of the adjunct clause:

(12) a. You$_j$ knew [which articles$_i$ Bill$_k$ read t_i [even without PRO$_k$ analyzing e_i]]

b. * You$_j$ knew [which articles$_i$ Bill$_k$ read t_i] even without PRO$_j$ analyzing e_i

c. * You$_j$ knew, even without PRO$_j$ analyzing e_i, which articles$_i$ Bill read e_i

The interpretation of control PRO indicates that the adjunct clause must be construed with the embedded verb (read) in (12a). Under this interpretation, the binder which articles c-commands

the clause containing the PG. In (12b), however, PRO is controlled by the matrix subject, and the adjunct clause is construed with the matrix verb. This is made clearer in (12c), where the adjunct clause has been preposed. A parasitic gap is impossible under this interpretation, as it is outside of the c-command domain of the Wh-binder.

Similar contrasts obtain in double dont constructions. Compare (13a) with (13b):

(13) a. Un enfant dont$_i$ [[les parents t$_i$]$_j$ ont promis de [PRO$_j$ confier la garde e$_i$ à l'Etat]]
"A child of whom the parents promised to entrust the guardianship to the State"

b. * L'assistante sociale$_k$ a [promis [à l'enfant dont$_i$ les parents t$_i$ sont morts] de PRO$_k$ confier la garde e$_i$ à l'Etat]
"The social worker promised the child of whom the parents died to entrust the guardianship to the State"

In the (a) example, the binder of the real gap is in the matrix [Spec,CP]; it c-commands the adnominal gap in the infinitival clause. By contrast, dont is embedded within a PP object of the matrix verb in (13b); in this position, it does not c-command the

infinitival clause within which the adnominal PG is contained. Thus, property (3b) holds of DDCs as well.

Finally, let us turn to the two properties of PG constructions given in (3c). (3c.i.) requires the PG not to be c-commanded by the real gap, and is motivated by the ungrammaticality of (14):

(14) * Who$_i$ t$_i$ met you before you recognized e$_i$

The anti c-command condition met in the examples of DDCs we have

seen: the licensing gap is a genitive complement, hence never c-commands outside of its NP.[11]

(3c.ii) refers to the locality constraints which must obtain between the parasitic gap and the licensing gap. The examples below show that PG constructions are ungrammatical if the licensing gap is "too far" from the parasitic gap:[12]

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[11] Mark Baker points out that the anti c-command condition in DDCs can in fact be tested on the basis of the following structure, where the genitive possessor/agent c-commands the theme:

(i) la photo des enfants de X de Y
Th Poss/Ag
"the picture of X's children of/by Y"

The possessor/agent can be extracted as in (ii), but there is no available interpretation where an unexpressed theme corefers with the relative head; that is, a representation like (iii), with a PG in the theme position, is ill-formed:

(ii) Marie, dont$_i$ la photo des enfants de X t_i ...

(iii) * Marie, dont$_i$ la photo des enfants e_i t_i ...

As far as I can see, (iii) violates no other principle, which suggests that the anti-c-command condition holds in DDCs as well. See Chapter 5 for further evidence.

[12] The observation that PG constructions are subject to a locality constraint is originally due to Kayne (1983). (15a-b) are from Longobardi (1984:175); (15c) and the examples in (16) are given by Chomsky (1986b:55,62).

(15) a. ? The head of cattle that we have eliminated t_i without trying to persuade the vet to cure e_i ...

b. * The head of cattle that we have eliminated t_i without trying to call a vet instead of killing e_i ...

c. * Who$_i$ did you convince t_i [that Tom should visit Bill [before we talk to e_i]]?

(16) a. ? This is the man John interviewed t_i before expecting us to tell you to give the job to e_i

b. * This is the man John interviewed t_i before reading the book you gave to e_i

c.?? This is the man John interviewed t_i before announcing the plan to speak to e_i

(15) illustrates what I shall call "external locality" (cf. Chapter 5 for further discussion): it shows that while a PG may occur several clauses down within an adjunct clause, it may not be separated from the real gap by two adjunct clauses ((15b)). Nor can it occur within an adjunct clause which is itself embedded within a complement clause ((15c)). The examples in (16) exemplify "internal locality" constraints, i.e. locality constraints that operate within the domain (the adjunct clause) containing the parasitic gap. As (16b-c) show, PGs within adjuncts are sensitive to the island constraints on movement:

thus they cannot, (with the varying degree of acceptability characteristic of Subjacency violations), be contained inside a relative or a noun-complement clause.

The locality constraints in (16b-c) are accounted for under the view that parasitic gaps are traces of movement of a null operator into the [Spec,CP] position of the adjunct clause (cf. Contreras 1984, Chomsky 1986a,b). Thus (16b-c), the relevant portions of which are given below, constitute Subjacency violations:

(17) a. before [Opi reading [$_{NP}$ the book [$_{CP}$ you gave to e_i]]

c. before [Op$_i$ announcing [$_{NP}$ the plan [$_{CP}$ to speak to e_i]]

Adnominal gaps in DDCs are subject to locality constraints of a similar sort. Consider the contrasts shown under (18) and (19), which parallel those given in (15) and (16), respectively:

(18) a.?? Un peuple dont$_i$ on condamne les pratiques religieuses t_i [sans chercher à comprendre la civilisation e_i]
"A nation of which one condemns the religious observances without trying to understand the civilization"

b. * Un peuple dont$_i$ on condamne les pratiques religieuses t_i [sans avoir examiné les faits [à la lueur de la civilisation e_i]]
"A country of which one condemns the religious observances without having examined the facts in the light of the civilization"

(19) a. Un argument dont vous attribuez l'intérêt t_i à la clarté de l'exposition e_i
"An argument of which you attribute the interest to the clarity of the exposition"

b. * Un argument dont vous attribuez l'intérêt t_i à [la tournure inattendue que [l'exposition e_i a prise]]
"An argument of which you attribute the interest to the unexpected turn that the exposition took"

c.?* Un argument dont vous attribuez l'intérêt t_i au [fait [qu'on ait soigné l'exposition e_i]]
"An argument of which you attribute the interest to the fact that one has polished the exposition"

The examples in (18) show that the NP hosting the adnominal PG may marginally be found embedded within an adjunct clause, although not within an adjunct itself contained within an adjunct clause. I will return to an analysis of the "external locality" constraint displayed by these examples in Chapter 5.

The sentences of (19), on the other hand, illustrate internal locality constraints similar to those of (16): adnominal PGs may not be embedded under a relative clause ((19b)) or a noun-complement clause ((19c)). By parity of argument with the discussion concerning (16), such facts provide evidence in favour of the view that DDCs, like other PG constructions, are derived by null operator movement. Under this analysis, (19b-c) are ruled out as Subjacency violations. Since most grammatical instances of DDCs (and those in (19) in particular) are mono-clausal, there is obviously no [Spec,CP] position to host the null operator. I will assume that the null operator in DDCs moves to the specifier position internal to the noun phrase; I will provide further motivation for this claim in Section 4.1.3.

4.1.2. Problems With a Multiple Chain Analysis

Recall that Godard-Schmitt's (1986) analysis of genitival relatives involves no movement, but rather S-Structure chain formation between a base-generated complementizer (dont) and a base-generated empty category. We have argued in 3.1.2. against this analysis, based on the fact that dont-relativization obeys Subjacency. On similar grounds, her analysis of DDCs must also be

rejected. She proposes that DDCs, as parasitic gap constructions, are instances of multiple chain formation. Dont in the head position of CP is independently coindexed with both gaps, forming two separate chains which may (although they need not) intersect.[13] Since chain formation in Godard-Schmitt's view is a process not subject to Subjacency, this approach predicts that the relationship between the second (parasitic) gap and dont should freely occur across two or more bounding nodes. This is not the case, however. As we have just seen, there are locality constraints between the parasitic gap and the position occupied by dont. An additional example illustrating this state of affairs is given in (20):

(20) * un artiste dont$_i$ le génie t$_i$ n'atteint pas [le niveau [que les premières oeuvres e$_i$ laissaient présager]]
"an artist of whom the genius does not attain the level that the first works announced"

cf. un artiste dont le génie t$_i$ n'atteint pas le niveau que ses premières oeuvres laissaient présager

---

[13] The multiple chain analysis is reminiscent of Kayne's (1983) multiple binding approach to parasitic gap constructions. It should be noted however that Kayne's Connectedness approach ensures, contrary to Godard-Schmitt's analysis, that the parasitic gap will be in a local relationship with the licensing chain.

From the above facts, we must conclude that adnominal gaps are not immune to Subjacency, and therefore cannot be straightforwardly accommodated under a multiple chain approach such as that described above.

4.1.3. [Spec,DP] As a COMP Position

In 4.1.1., it was shown that DDCs display the internal locality effects characteristic of parasitic gap constructions. In the better-studied cases of PG constructions, such locality effects have been argued to reduce to Subjacency, on the assumption that PGs are derived by movement of a null operator to the [Spec,CP] position of the adjunct clause. Given that similar effects are displayed within noun phrases in DDCs, we are led to the conclusion that null operator movement is involved in deriving adnominal PGs as well.

In current theory, it is generally assumed that the only landing site available for Wh-operators (null or overt) is the

specifier position of CP.[14] This assumption is obviously incompatible with our claim that (monoclausal) DDCs are derived by operator movement, since the matrix [Spec,CP] is already occupied by the relative operator. I have suggested earlier that adnominal gaps in DDCs are traces of null operators moved to a NP-internal position, implicitly assuming that noun phrases, just like CPs, contain a COMP-like position. As it turns out, there are restrictions on possessive pronominalization and extraction out of noun phrases in Romance which provide independent evidence in favour of this view. In particular, it can be shown that the specifier position in Romance serves as an "escape hatch" for Wh-movement from within noun phrases.

For more perspicuousness, I shall henceforth adopt the view that noun phrases are in fact maximal projections of the functional head D (determiner). Under this view, which I will refer

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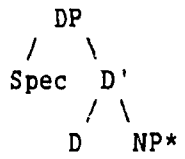
[14] Contreras (1988) claims that PGs derived by null operator movement are impossible in monoclausal structures, due to the absence of an available [Spec,CP]. On the other hand, van Riemsdijk (1982) argued that (certain) PPs contain a COMP-like position which serves as an "escape hatch" for movement from within. More recently, Sportiche (1987, 1988) has proposed that extraction out of the categories NP, PP and CP is obligatorily through their specifier position.

to as the DP-hypothesis, the internal representation of noun phrases is as in (21):[15]

(21)


The representation in (21) differs from the traditional analysis of NPs mainly in that the specifier position is distinct from the position occupied by the determiner. The claim made here is that the [Spec,DP] position in Romance fulfills a function similar to that of the [Spec,CP] position: it hosts operators, and it constitutes an intermediate landing site for successive-cyclic movement of Wh-constituents.

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[15] The idea that determiners are heads of noun phrases is originally due to Brame (1981, 1982) and has been developed in various forms by Abney (1986, 1987), Hellan (1986) and Fukui & Speas (1986). I adopt Abney's view whereby the complement of D (NP* in (21)) is a maximal projection; but see Fukui & Speas (1986) for a different view. I will continue to refer to noun phrases (DPs) informally as NPs; this should not be confused with the DP-internal constituent labeled NP* in (21).

As is well known, the presence of post-nominal genitive possessors within NPs in Romance blocks the realization of other genitive constituents as prenominal possessive pronouns. The same hindering effect is produced by post-nominal genitive agents: in this case, the realization of themes as prenominal possessive pronouns is blocked.[16] This constraint is illustrated below with respect to the interaction between themes and post-nominal genitive possessives, but it should be borne in mind that similar facts obtain if de Julie in (22) is interpreted as an agent.

(22) a. La photo de Steffi Graf de Julie
(Theme) (Poss)
"The picture of Steffi Graf of Julie"

b. Sa photo (sa = Ag, Th or Poss)
"Her picture"

c. Sa photo de Steffi Graf (sa = Poss or Ag)
(Theme)

d. * Sa photo de Julie
(Poss)

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[16] These constraints on prenominal pronominalization (and the extraction counterpart discussed below) were first pointed out with respect to French by Ruwet (1972:270ff); see also Milner (1977). Similar facts hold in Italian and Spanish, as discussed by Cinque (1980) and Torrego (1986).

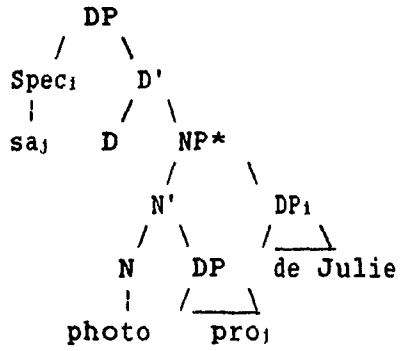
As shown in (22b), a prenominal possessive pronoun is ambiguous in cases where only one argument is involved: it may correspond to an agent (the photo that X took), a theme (the photo of X) or a possessor (the photo that X owns). When a post-nominal genitive theme complement is present as in (22c), the prenominal possessive pronoun is either a possessor or an agent. But if the noun phrase contains a post-nominal genitive possessor, no other argument may be realized as the prenominal pronoun sa. Thus (22d) is ungrammatical since sa is uninterpretable.

Various analyses have been proposed in the literature in order to account for these facts, most of which make crucial use of a special relation holding between the specifier position and the post-nominal position occupied by possessive NPs. Zubizarreta (1979), for instance, has proposed that this relation is one of coindexation. Taking this as a basic assumption, let us see how the facts of (22) can be accounted for in the present framework.

I assume that prenominal possessives are clitics base-

generated in [Spec,DP].[17] I further assume that, like other clitics in Romance, prenominal clitics bind an empty category (presumably, pro) base-generated in the corresponding (post-nominal) argument position.[18] Under these assumptions, the representation of the ungrammatical (22d) is as in (23):

(23)



[17] See Aoun (1985:35) for a similar view. Tremblay (1988) argues that possessive prenominal clitics in French are dative, a view which is not immediately compatible with the framework developed here.

[18] As is clear, I am assuming that [Spec,DP] has a wider range of functions than the specifier position of CP. Both are A'-positions, but [Spec,CP] in Romance may not host non-operator NPs at any level (however, see Kayne 1984, ch.10, whose analysis of French complex inversion hinges on the presence of certain types of non-Wh NPs in COMP). If clitics may be base-generated in the specifier of DP, then we must assume that this position, although it may host operators, is not reserved to this sole usage. This dual function of [Spec,DP] recalls Travis'(1984) claim concerning [Spec,CP] in German, which she argues hosts either Wh-operators and topicalized NPs.

We can now account for the ill-formedness of (22d) as follows. Suppose that the fact that Spec is contra-indexed with the clitic occupying it prevents the proper identification of the contents of pro. In other words, identification of pro is effected under government from the category occupied by the clitic, rather than by government from the clitic itself. The two possibilities are indistinguishable in the case of verbal clitics, since nothing prevents the INFL node from acquiring the index borne by the clitic it hosts. In (23), however, the index of the clitic cannot percolate onto the Spec position, precisely because of the coindexing relation holding between the specifier and the adnominal possessive DP. Suppose that the clitic transmits its index onto the specifier position; in other words, i = j. Then all the indexed elements in (23) are coindexed. This results in a

Principle B violation, since pro is now bound in its governing category by the possessive DP.[19,20]

What is especially relevant for our discussion, and for the claim that [Spec,DP] is a COMP-like position, is the following: the blocking effect of post-nominal possessives is also manifested with respect to extraction out of noun phrases, and can be accounted for in a similar way.

The relevant facts, which parallel those of (22) above, are given below:

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[19] I am assuming that the position occupied by the post-nominal possessive is an A-position, although not necessarily a θ-position (see 4.2.2. for more discussion). Thus, by analogy with the subject position of clauses, this position is a position to which the grammatical function of "subject" of noun phrases is assigned, and in which agentive genitives are base-generated in deverbal nominals.

[20] It must independently be assumed that the indices resulting from Spec-Head agreement do not incur Binding Theory violations. Otherwise object clitics, as pronominals, would always be in violation of Principle B, since the subject position is coindexed via Spec-Head agreement with the INFL node.

(24) a. La photo de Steffi Graf de Julie
(Theme) (Poss)
"The picture of Steffi Graf of Julie"

b. Steffi Graf/Julie, dont$_i$ la photo t_i est parue dans le Sports Illustrated
"Steffi Graf/Julie, of whom the picture appeared in Sports Illustrated"

c. Julie, dont$_i$ la photo de Steffi Graf t_i ...

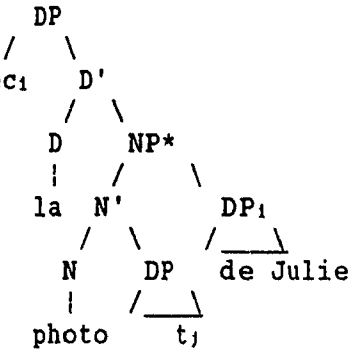
d. * Steffi Graf, dont$_i$ la photo t_i de Julie ...

(24b) illustrates the fact that when only one postnominal genitive NP is present, it can be relativized whether it corresponds to a theme, an agent or a possessor. The ungrammaticality of (24d) shows that the presence of a post-nominal possessor hinders the extraction of a theme (compare with (23c), where the possessor may be extracted in the presence of an adnominal NP corresponding to theme).

The analysis proposed above extends to these cases, provided it is assumed that extraction from within noun phrases passes

through the [Spec,DP] position.[21] The representation of the ill-formed (24c) parallels that given in (23) above for prenominal possessive clitics:

(25) dont$_i$ ..



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[21] This proposal, technical details aside, is very close to Torrego's (1986) account of similar data in Spanish; see also Sportiche (1987, 1988) on French. Longobardi (1987) argues that movement out of noun phrases in Italian too is successive-cyclic through the specifier position. Our analysis differs from the ones mentioned above in particular with respect to the role played by indices. Furthermore, if I interpret Torrego's proposal correctly, she assumes that Spec in Romance noun phrases is post-nominal, and is the position in which possessives and agents are base-generated. Since these are arguments, this entails that the Spec position in Romance is an A-position, a view which is incompatible with our claim that [Spec,DP] is the landing site for null operators. In fact, Torrego claims that the specifier position is both an A and an A'-position (cf. Diesing 1987 for a similar claim with respect to [Spec,IP] in Yiddish). Under the definition of A/A' positions adopted here, this type of claim is untenable insofar as A' constitutes the negative counterpart of A, much as θ' is interpreted as [$-\theta$].

The analysis proposed above carries over to this case as well, if we suppose that antecedent-government of the original trace (t_j) is blocked by the contra-indexing between the intermediate trace and the specifier position hosting it. (Note that reindexing of the specifier position is again prevented by Binding Theory, Principle C in this case). This analysis crucially hinges on the following assumptions. First, traces must be both lexically governed and antecedent governed; this is the conjunctive view of the ECP we have adopted in Chapter 1. Secondly, extraction from within noun phrases in Romance must go through the [Spec,DP] position. This is extensively argued for by Torrego (1986) and Longobardi (1987) who attribute it to the ECP, on the hypothesis that NP-internal traces must be antecedent-governed within their maximal projection. (Longobardi, adapting a proposal put forth by Kayne 1983, ascribes the difference between Vs and Ns in this respect to the idea that the latter are not structural governors; only structural governors would allow a trace they govern to have an antecedent outside their maximal projection).

In the light of the foregoing discussion, it appears justified to consider that the [Spec,DP] position in Romance is a COMP-like position, an escape hatch for movement from within.

Longobardi (1987) provides further support for this analysis, by showing that the intermediate trace in [Spec,DP] is sensitive to lexical government from the outside. As he argues, Wh-extraction out of noun phrases in Italian is ruled out just in case the [Spec,DP] position is not lexically governed. Assuming that all traces must be lexically governed, this in turn argues for the presence of an intermediate trace in the [Spec,DP] position and for the successive-cyclic character of extraction from within noun phrases.[22] I return to this analysis in Chapter 5, where the lexical government requirement is shown to apply to the intermediate trace in the specifier position of French DPs as well.

We have provided supporting evidence for our claim that the null operators binding adnominal PGs are in [Spec,DP] at S-Structure, and in particular for the hypothesis that the [Spec,-

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[22] Longobardi also assumes a conjunctive ECP; particularly crucial to his account is the idea that the lexical government requirement applies at a different level of representation than the does antecedent government requirement. Thus even assuming with Lasnik & Saito (1984) that intermediate traces of arguments delete at LF, intermediate traces in [Spec,DP] are still subject to the lexical government requirement applying at either PF or S-Structure.

DP] position in Romance is a COMP-like position, hence a proper landing site for operators.[23]

Our movement analysis of adnominal PGs raises other questions, in particular regarding the occurrence of null operators in post-nominal positions at D-Structure. One important issue

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[23] It would seem that English differs in that the [Spec,DP] position is instead an A-position. The occurrence of theme arguments in the prenominal, specifier position (e.g. the city's destruction) has given rise to two types of analyses in the literature: NP-movement (cf. Chomsky 1970, Anderson 1983 and others) or base-generation (Williams 1982, Safir 1987a). Under either possibility, the specifier position would be an A-position. Then in English NP-internal PGs as in (i) cannot be derived by null operator movement to [Spec,DP], since A-positions are not proper landing sites for operators.

(i) A man who$_i$ [friends of e$_i$] admire t$_i$

This claim is further supported by the following fact: even in cases where the [Spec,DP] position is occupied by lexical material, NP-internal PGs are still possible. This is shown in (ii)-(iii), from Engdahl (1983:14) and Stowell (1987:24), respectively:

(ii) Who$_i$ did [John's talking to e$_i$] bother t$_i$ most?
(iii) Who$_i$ did [Mary's pictures of e$_i$] annoy t$_i$?

Should NP-internal PGs in English be null operator-derived, then we must postulate that the operators land in a different position (perhaps adjoined to NP*). Another possibility is to assume that subject-internal PGs are derived differently from other PGs. For a suggestion along those lines, see Contreras (1988) who argues that the PG in constructions like (i) is pro. I leave this issue aside, but see Chapter 5 for additional remarks.

which arises concerns the thematic status of adnominal complements (i.e. arguments vs. adjuncts), in conjunction with the ULP and the distribution of adnominal PGs. A discussion of these and related issues constitutes the remainder of this chapter.

4.2. Null Operators in Noun Phrases at D-Structure

We have argued that adnominal PGs in DDCs arise from null operator movement, and consequently that the position of the PG is occupied by a null operator at D-Structure. In Chapter 2, it was proposed that null operators cannot appear in adjunct positions at D-Structure, due to their inability to function as (secondary) predicates at that level. Thus, the fact that adjuncts cannot be parasitic gaps follows from the ULP applying at D-Structure, since the corresponding null operators are unlicensed at that level. We then make the following prediction: only those adnominal complements which are arguments of the head Ns may function as PGs in double dont constructions. It is not a simple matter, though, to determine whether an NP-internal constituent is an argument of the head noun; this is because the one classic test for non-argumenthood, optionality, fails in the case of adnominal complements. The thematic structure of nominals is

thus a murky issue, which has given rise to some debate in recent literature. Some of the recent proposals which have been made in this respect are discussed below. Now, in the absence of independent compelling tests for determining whether a given complement is an argument or an adjunct, it becomes difficult to test our prediction with respect to DDCs. It is legitimate to adopt a different viewpoint, and to use the behaviour of a given complement in DDCs as evidence for its thematic relation to the head. That is, assuming that the views expressed in Chapter 2 are correct, we can take the occurrence of a particular complement as a PG as evidence that this complement is θ-marked by the head noun. Similarly, the impossibility for a given complement to enter into DDCs is, all things being equal otherwise, indicative of its adjunct status.

I will first summarize the main views that have been expressed in the literature with respect to the distinction between argument-taking and non argument-taking nominals, as well as the distinction between arguments and adjuncts within NPs. I then examine the behaviour of various types of Ns in DDCs. It is shown that certain Ns never allow the PG interpretation for their complement. As we shall see, the distinction drawn by DDCs is not

random, and in fact matches closely at least one of the classifications between argument- and non argument-taking nominals independently arrived at in the literature.

4.2.1. The Thematic Structure of Nominals

It is generally assumed in the literature that possessors of concrete nouns such as those in (26) are not arguments of these Ns:

(26) a. Mary's book

b. Le livre de Marie

As several authors have pointed out, the relation between Mary and book is a loose one, i.e. it does not correspond to any one particular θ-role. The noun phrases in (26) could refer, for instance, to a book that Mary owns, a book that she wrote, her favourite book, or the one she is holding at the moment. This suggests that the genitive NP interpreted as the possessor is not a lexically selected argument of the head noun; in other words, it is not part of the noun's argument structure. In fact, most

authors assume that concrete nouns such as book have no argument structure at all. Anderson (1983) has proposed that in (26a), Mary receives a possessive θ-role not from the head noun, but rather from the possessive morpheme 's; a similar claim can be made for the French example in (26b), where de may be considered a possessive marker.[24]

While most authors agree that (alienable) possessors are not arguments, the various proposals differ somewhat with respect to what constitutes the class of θ-assigning nouns. Stockwell, Schachter & Partee (1973) divide nouns in two classes: nouns whose genitive complements are derived from cases on nouns and those which are not. In their framework, the cases referred to are D-Structure cases (in the sense of Fillmore 1967), a notion which we may take to be equivalent to the notion of θ-role. Apart from deverbal nominals, which they consider to be θ-role assig-

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[24] Anderson distinguishes between two morphemes 's: the possessive θ-role assigner is lexically inserted before concrete nouns, as in (25a), whereas the 's that occurs before abstract nouns (e.g. the city's destruction) is inserted transformationally and does not assign a θ-role; rather, in this case, the θ-role is assigned by the noun itself. Again, a similar distinction is warranted for de in French.

ners, Stockwell, Schachter & Partee (p. 687ff) list the following semantic classes as argument-taking nouns:

(27) a. "Picture" nouns: John's portrait, photograph, etc.
b. Nouns expressing kinship and social relations: Mary's mother, cousin, friend, etc.
c. Nouns expressing characteristics: the child's age, intelligence; the region's climate, etc.
d. Nouns expressing parts in part-whole expressions: the man's head, arms, lungs; the book's jacket, title, contents; the journey's end, etc.

Anderson (1983) adopts a slightly different view. In her analysis, the dividing line between θ-assigning and non θ-assigning nouns is drawn along the abstract vs. concrete axis. She claims that concrete nouns do not assign θ-roles; hence in her analysis the genitive complements of body-part nouns or (concrete) nouns entering into part-whole relations are not arguments of these nouns. Presumably, the same would be said of "picture" nouns, in those cases where "picture" takes on a concrete interpretation.

Grimshaw (1986) adopts the concrete/abstract distinction, but claims that not all abstract nouns (and in particular, not all abstract deverbal nouns) are θ-assigning. As we discussed

briefly in Chapter 3, she divides deverbal Ns into process vs. result nominals, the former only being θ-assigners in her view. Furthermore she claims that genitive agents (e.g. enemy in "the enemy's destruction of the city") are not subject arguments but adjuncts.[25] Under her analysis, the argument structure of nouns differs from that of verbs in that nouns do not have the capacity to assign the θ-role corresponding to the subject of verbs.

The idea that agents are adjuncts is argued against by Safir (1987a), who proposes that prenominal genitive NPs (PGNPs) in English are true external arguments only if the nominal has a syntactically realized internal argument. This does not entail, of course, that when the internal argument is realized, all PGNPs are true external arguments, but it predicts that some of them are. Safir further argues that agentive by-phrases in nominals are arguments on a par with PGNPs.

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[25] Grimshaw (1988) slightly modifies this claim by calling agents (and by-phrases) argument adjuncts. She points out that, like arguments, agents are licensed by argument structure, but like adjuncts they are not θ-marked and do not satisfy argument positions.

With these various proposals in mind, let us now turn to double dont constructions, focusing in particular on the types of head nouns which allow their genitive complement to take on the parasitic gap interpretation.

4.2.2. Arguments and Adjuncts in DDCs

As we mentioned in the previous sub-section, most authors agree that alienable possessors of concrete objects are not arguments of the nouns denoting these objects. If it is true that alienable possessors are adjuncts, the ULP predicts that double dont constructions will be ungrammatical just in case the adnominal parasitic gap corresponds to an alienable possessor. Recall that adnominal PGs are derived by null operator movement, and that the ULP precludes the occurrence of null operators in adjunct positions at D-Structure. This prediction is borne out: the sentences in (28) are all ungrammatical on the PG interpretation.

(28) a. * un auteur dont$_i$ les livres t$_i$ sont sur la table e$_i$
"an author of whom the books are on the table"

b. * un homme dont$_i$ le bureau t$_i$ rappelle l'appartement e$_i$
"a man of whom the office recalls the apartment"

c. * quelqu'un dont$_i$ le goût pour les antiquités t$_i$ se reconnaît dans les meubles e$_i$
"someone of whom the taste for antiques can be recognized in the furniture"

The sentences in (28) are totally impossible under the interpretation whereby the object denoted by the second N in (28) belongs to the person denoted by the relativized constituent. This is as expected if possessors are adjuncts, since, again, the

null operator required to obtain this interpretation is unlicensed at D-Structure, hence ruled out by the ULP.[26]

Inalienable possessors, on the other hand, contrast with

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[26] It could be objected that adnominal PGs in (28) are ruled out independently of the ULP, for instance if one were to suppose that alienable possessors are base-generated outside of the lexical government domain of the head noun, i.e. inside DP but outside NP*. Then, their trace would violate the (conjunctive) ECP. It is a simple matter to show that an analysis along these lines is untenable. Indeed, extraction out of noun phrases is possible for alienable possessors and arguments alike (cf. below), a fact which precludes any distinction for the PG facts in terms of the ECP.

(i) Une femme dont$_i$ j'ai visité [t'$_i$ la maison t$_i$]
"A woman of whom I visited the house"

(ii) Une ville dont$_i$ on regrette [t'$_i$ la destruction t$_i$]
"A city of which one regrets the destruction"

Note that the relative in (i) must be derived through Wh-movement followed by deletion, an option which we have assumed to be available in relatives (see Chapter 2, Section 2.2.1.2). A derivation of (i) via null operator movement would involve a null operator in an adjunct position at D-Structure, a possibility ruled out by the ULP.

alienable possessors in that they may occur as adnominal PGs. Relevant examples are given in (29):[27]

(29) a. Un enfant dont$_i$ l'innocence t$_i$ se voit dans les yeux e$_i$
"A child of whom the innocence shows in the eyes"

b. Une femme dont$_i$ on reconnaît les origines françaises t$_i$ à la voix suraigue e$_i$
"A woman of whom one recognizes the French origins in the high-pitched voice"

A similar behaviour is observed with the following classes of nouns, all of which allow their genitive complement to be interpreted as a parasitic gap: nouns expressing kinship relations ((30)), nouns expressing intrinsic qualities or charac-

[27] Recall also the examples cited in Section 3.4.3. The possessed objects simarres and tricorne in (69b-c) of Chapter 3 (repeated below), take on an inalienable interpretation by virtue of the fact that they are objects worn on the body. This interpretation is not available in (28), hence the contrast in grammaticality:

(i) Les professeurs des Facultés, dont$_i$ les épitoges de couleur t$_i$ flottent sur les simarres sombres e$_i$
"The faculty professors, of whom the coloured clocks float on the dark cassocks"

(ii) La vieille marquise du Badoul, dont$_i$ les mèches grises t$_i$ pendaient sous le tricorne e$_i$
"The old marquess of Badoul, of whom the gray hair strands hung under the tricorn"

teristics ((31)), nouns other than body-part expressing part-whole relations ((32)).

(30) a. Quelqu'un dont$_i$ le mari t$_i$ ne supporte pas les parents e$_i$
"Someone of whom the husband cannot stand the parents"

b. Une fille dont$_i$ le père t$_i$ ne parle plus avec la mère e$_i$
"A girl of whom the father no longer talks with the mother"

(31) a. Une chanteuse dont$_i$ la popularité t$_i$ excède de beaucoup le talent e$_i$
"A singer of whom the popularity far exceeds the talent"

b. Un président dont$_i$ les nombreuses gaffes t$_i$ ont vraiment nui à la crédibilité e$_i$
"A president of whom the many blunders have really undermined the credibility"

(32) a. Un rapport dont$_i$ les conclusions t$_i$ sont énoncées dans le premier paragraphe e$_i$
"A report of which the conclusions are set forth in the first paragraph"

b. Un livre dont$_i$ le titre t$_i$ ne reflète pas tout-à-fait le contenu e$_i$
"A book of which the title does not quite reflect the contents"

The grammaticality of the DDCs in (30)-(32) suggests, in conjunction with the ULP, that the classes of nouns involved assign a θ-role to their genitive complement. The facts above thus support the distinction effected by Stockwell, Schachter & Partee (1973) over, for instance, Anderson's (1983) or Grimshaw's (1986) partitioning, since the latter authors exclude concrete nouns altogether from the class of argument-taking nominals.

For ease of reference in view of the subsequent discussion, I shall refer to the noun-complement relations illustrated in (29)-(32) collectively as "inalienable possession", thus including in this class relations other than that of obtaining between a body-part and its owner. The fact that the genitive complements of this class of nouns are, as we saw, θ-marked by the head noun, and the fact that they contrast in this respect with alienably possessed complements, suggests that there is a θ-role "inalienable possessor" distinct from "alienable possessor" (<u>contra</u> Guéron 1985, who claims that no such θ-role exists). I have already suggested that in French, the θ-role borne by alienable possessors is assigned by <u>de</u>; another possibility is that alienable possessor is a default θ-role which is assigned,

subject to semantic congruence, to an NP-internal genitive which is not selected by the head noun. Whichever of these possibilities turns out to be the correct one is not crucial for our purposes, but we must conclude that the inalienable θ-role is assigned differently. I will return in 4.2.3. to the exact manner in which the inalienable θ-role is assigned.

Let us continue to explore the behaviour of other genitive complements of nominals in DDCs in view of the argument/adjunct dichotomy. Themes of deverbal nominals can function as adnominal parasitic gaps; this is expected under the view that they are part of the thematic structure of these nominals. Recall the following examples from Chapter 3, where modification by <u>assidu</u>, <u>constant</u>, forces the process reading and hence, the syntactic realization of the internal argument (cf. Grimshaw 1986):

(33) a. Des sentiments dont$_i$ la violence t$_i$ rend difficile la manifestation assidue e$_i$
"Feelings of which the violence renders difficult the assiduous manifestation"

b. Des propos dont$_i$ le caractère haineux t$_i$ provoque la dénonciation constante e$_i$
"Remarks of which the heinous nature induces the constant denunciation"

Similar judgments obtain with themes of those deverbal nominals which only lend themselves to the process interpretation. As pointed out by Zubizarreta (1986), nominals like capture, condamnation, exécution, etc. cannot, contrary to e.g. dénonciation, description, denote the result of a process.

(34) Un criminel dont$_i$ la mort t$_i$ a suivi de très près la capture e$_i$ (par la police) / la condamnation e$_i$ (par le jury)

"A criminal of whom the death soon followed the capture (by the police) / the condemnation (by the jury)"

Let us now turn to agents of nominals, again trying to assess their status as arguments in view of their behaviour as PGs in double dont constructions. In order to maximize the possibility that the agentive genitive constitutes a true external argument, I use deverbal nominals where the internal theme argument is lexically realized (cf. Safir's (1987a) proposal, discussed above). Most speakers find that the interpretation where the PG corresponds to agent is not at all natural, the preferred reading being the generic one. Relevant examples are given in (35)-(37) below. It should be stressed, however, that

the sentences in (35)-(37) are reported to be more acceptable than those in (28) on the PG interpretation.

(35) a. Les traductions des romans d'Hemingway de cet auteur
(Theme) (Agent)
"The translations of Hemingway's novels of this author"

b.?? Un auteur dont$_i$ le style t_i se reflète dans les traductions des romans d'Hemingway e_i
"An author of whom the style is reflected in the translations of Hemingway's novels"

(36) a. L'interprétation de la Bible de ce théologien
(Theme) (Agent)
"The interpretation of the Bible of this theologian"

b.?? Un théologien dont$_i$ les idées t_i ont influencé l'interprétation de la Bible e_i
"A theologian of whom the ideas influenced the interpretation of the Bible"

(37) a. L'habile démonstration du théorème de ce mathématicien
(Theme) (Agent)
"The clever demonstration of the theorem of this mathematician"

b.?? Un mathématicien dont$_i$ le talent t_i transparaît dans l'habile démonstration du théorème e_i
"A mathematician of whom the talent shows in the clever demonstration of the theorem"

How can we account for the above facts? It seems to me that the difficulty of interpreting the agents in (35)-(37) as parasi-

tic gaps does not lead to the conclusion that agents are not arguments of the head nouns. This is because, although admittedly difficult, this interpretation is not altoghether excluded. There is thus a contrast to be accounted for; recall the fully ungrammatical status of (28), from which we concluded that alienable possessors are not θ-marked by the head nouns.

I suggest that the preferred generic interpretation of (35)-(37) stems from the true optionality of external arguments. Suppose, as has sometimes been proposed in the literature (e.g. Rizzi 1986) that the thematic grid of a lexical item may be saturated either in the lexicon or in the syntax. If the former option is selected, the argument saturating the θ-role is interpreted as arbitrary, i.e. it is generic or a constant of some form (see footnote 24 of Chapter 3 for related remarks). Under the second option, the argument is syntactically realized: a position is thus projected in the syntax, which is occupied either by an overt constituent or by an empty category. Now, in those cases where lexical saturation is available (this may be a semantic property or an idiosyncratic property of lexical items), it is plausible to assume that it will be selected over the empty category option, especially in DDC contexts. After all, parasitic

gaps constitute a marginal phenomenon in every language which displays them.

If this explanation is on the right track, it immediately raises the following question: why are the DDCs in (29)-(32) better than those in (35)-(37)? Recall that in the former, the relationship between the head N and the PG corresponds to inalienable possession (i.e. body parts, intrinsic or human characteristics, kinship and part-whole relations). Our explanation of the marginality of (35)-(37) naturally commits us to the view that the inalienable possessors of (29)-(32) must obligatorily be realized in the syntax. Although such a claim appears controversial to say the least, I will argue in its favour in Section 4.2.3.

Before doing so, however, I want to draw attention to further facts relating to sentences of the type shown in (35)-(37), and which provide independent support for the hypothesis that the derivation of PGs in double dont constructions involves movement of a null operator to [Spec,DP].

We saw above, in connection with (33) and (34), that themes of deverbal nominals may be interpreted as adnominal parasitic gaps. Interestingly, such an interpretation ceases to be available if a post-nominal genitive agent is present in the sentence. Thus, using as a starting point a construction similar to that in (36a), we derive the ungrammatical double dont construction in the (b) example below:

(38) a. L'interprétation d'un épître de ce théologien
(Theme) (Agent)
"The interpretation of an epistle of this theologian"

b.* Un épître dont$_i$ le caractère obscur t_i a motivé l'interprétation e_i de ce théologien

"An epistle of which the obscure character motivated the interpretation of this theologian"

The ungrammaticality of (38b) under the PG reading parallels the ill-formedness of (39) below, where the theme argument of (38a) has been relativized:

(39) * Un épître dont$_i$ on connaît l'interprétation t_i de ce théologien
"An epistle of which we know the interpretation of this theologian"

Recall from the discussion in 4.1.4. that the presence of post-nominal genitive agents blocks the extraction of themes out of noun phrases in Romance. We have attributed this constraint to properties of the [Spec,DP] position, and in particular to the idea that coindexing between [Spec,DP] and a post-nominal agent (or possessor) renders the specifier position unavailable, as it were, for intermediate movement of the extracted constituent. The [Spec,DP] position, and in particular the fact that movement out of noun phrases proceeds through this position, thus plays a crucial role in explaining the ill-formedness of (39). Now, the fact that the parasitic gap interpretation in (38b) is subject to an identical constraint provides strong support for the view that the [Spec,DP] position is involved in the derivation of adnominal PGs as well. In this case, the coindexing between the [Spec,DP] position and the post-nominal agent prohibits movement of the null operator into the specifier position. It then follows that a PG interpretation of the theme is unavailable, since the null operator lacks a proper landing site.

4.2.3. Definite Determiners and Argument Realization

Recall from Chapter 3, section 3.3.2., our discussion of Grimshaw's (1986) claim that the internal arguments of process nominals must be syntactically realized. We pointed out that in French, the obligatoriness of the internal argument is in fact tied to the presence of a definite determiner. The observation was that when other determiners (indefinite, quantified, demonstrative) are used instead, even process nominals can appear, albeit marginally, without a syntactically realized internal argument. I repeat below one of the examples given in Chapter 3 to illustrate this effect of determiners on argument realization:

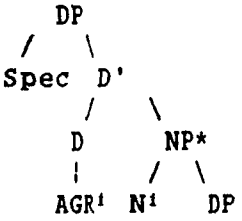
(40) a. La manifestation assidue *(de ses sentiments) requiert un certain engagement
"The assiduous manifestation (of one's feelings) requires some involvement"

b. ? Une/toute manifestation assidue requiert un certain engagement
"An/any assiduous manifestation requires some involvement"

The contrasts in (40) suggest that the definite determiner is instrumental in forcing the syntactic realization of themes of

deverbal process nominals. I propose that the definite determiner in French participates in the assignment of obligatory θ-roles. Suppose that the definite determiner in French is unique in that it is a spell-out of an AGR node under D; its features must then be accessible to N, much as the tense features of INFL are accessible to V. For concreteness, I represent such feature sharing by cosuperscripts in (41):

(41)



The idea that D (or AGR under D) interacts with the head noun in the assignment of θ-roles finds some plausibility in the fact that a similar interaction is attested within the verbal system. It can be shown that INFL (and more specifically, TENSE/ASPECT under I) sometimes participates with the verb in θ-role assignment, and in fact contributes to determine the type of θ-roles that a given verb may assign. The similitude is striking, for D stands in an identical structural relationship to N as does I to V.

To illustrate, consider the external θ-role assigned by the verb dire ("to say"):[28]

(42) a. Ceci nous dit que la terre est ronde
"This tells us that the earth is round"

b. Pierre nous dit que la terre est ronde
"Pierre tells us that the earth is round"

The verb dire (or more precisely the VP which it heads) externally assigns either an agent θ-role, as in (42b), or a kind of causal θ-role (or theme) as in (42a). However, the type of θ-role that dire may assign to its external argument is contingent on the tense/aspectual properties of the INFL node. If the aspect selected is non-durative (or if the tense is non-generic), only the agent θ-role is available. Consider the contrast in (43):

(43) a. * Ceci nous a dit que la terre était ronde
"This told us that the earth was round"

b. Pierre nous a dit que la terre était ronde
"Pierre told us that the earth was round"

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[28] The examples in (42) are due to Isabelle Haïk (personal communication).

These facts suggest that, in order to assign a non-agentive external θ-role, the verb dire requires that INFL contain a certain aspect or tense. In other words, the contents of INFL directly participate in the assignment of the (external) θ-role by the verb dire.[29]

Much as in the cases of the head nouns discussed above, the participation of TENSE/ASPECT in θ-role assignment by VPs only affects certain lexical choices of verbs (e.g. dire, but not the semmantically similar montrer ("to show")), and is relevant to only certain types of θ-roles. Whatever conditions are respon-

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[29] A perhaps more parallel example would show that INFL participates in the assignment of internal θ-roles of Vs, just as the contents of D participate in internal θ-role assignment by N. An illustration of this type is provided by Fabb (1984:69ff) who argues that INFL participates in (internal) θ-role assignement by the verb through Case-assignment (in his view, Vs need Case in order to assign θ-roles, an extended version of the Visibility Condition). In (i) and (ii), the verb receives Case from INFL = to and the causative verb, respectively. But a passivized causative verb loses its ability to assign Case; therefore to must be present if the verb is to assign its θ-roles:

(i) It's good for you [PRO to drink lots of water]
(ii) We made them drink lots of water
(iii) They were made *(to) drink lots of water

sible for constraining the cosuperscripting mechanism illustrated in (41) will then have to be invoked for nouns and verbs alike. What is important for the discussion is that such a mechanism is attested independently of our proposal.

We have suggested that the definite determiner participates in the assignment of the (obligatory) theme θ-role by process nominals. I now propose that a similar participation of the definite determiner is involved in the assignment of the inalienable possessor θ-role, and furthermore that this θ-role, like the theme of process nominals, must be obligatorily linked to a structural position in the syntax.

As evidence for a correlation between the presence of the definite determiner and that of the inalienable possessor argument, consider the following paradigm given in Milner (1982:71):[30]

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[30] I thank John Lumsden for bringing to my attention these examples and their significance.

(44) a. le fils du voisin
"the son of the neighbour"

b. le fils d'un voisin
"the son of a neighbour"

c. * un fils d'un voisin
"a son of a neighbour"

d. ? un fils du voɪsin
"a son of the neighbour"

With respect to the interpretation of the noun phrases above, Milner makes the following observations. In (44a-b), voisin is interpreted as an inalienable possessor. However, if the head noun is indefinite, this readɪng ɪs no longer available. (44c) ɪs clearly ungrammatical; as for (44d), it is only interpretable as a partitive, equivalent to un des fils du voisɪn ("one of the neighbour's sons"). (44d) implies that the neighbour has more than one son, and its the use ɪs inappropriate ɪf the neɪghbour has only one son. As Milner poɪnts out, this is ɪndeed a property of the definite determɪner: the use of the demonstratɪve ɪs similarly excluded (cf. * ce fils du voisin, * ce fils d'un voisin), unless one assigns to these NPs a special predɪcative ɪnterpretation (i.e. this x which is the neighbour's son).

Crucially, the type of determiner only affects the interpretation of genitive NPs when they correspond to inalienable possessors. When the genitive complement is an alienable possessor or an agent, the partitive interpretation is not forced. Thus, although the indefinite determiner is used, the noun phrases in (45) do not imply that the neighbour has more than one friend, or that Yourcenar has written more than one book.

(45) a. un copain du voisin
"a friend of the neighbour's"

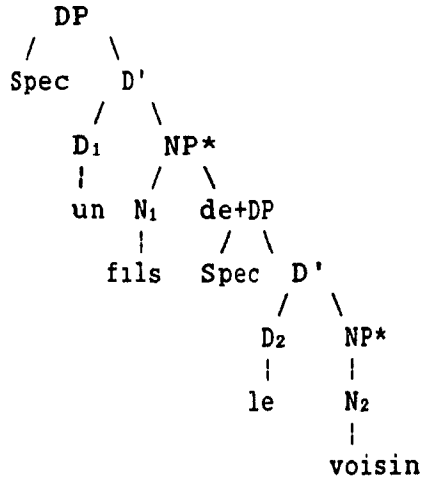
b. un livre de Marguerite Yourcenar
"a book of Marguerite Yourcenar"

I interpret these data as follows. The definite determiner is a necessary participant in the assignment of the inalienable possessor θ-role by the head N. In other words, without the definite determiner, the head noun cannot alone assign the inalienable possessor θ-role. Thus (44a) and (44b) are well-formed, since un voisin receives the inalienable possessor θ-role from the head N in conjunction with the definite determiner. Similarly, the ungrammaticality of (44c) is explained: there is no definite determiner, hence the head noun is unable to assign an inalienable θ-role to un voisin. But why must (44d) be

interpreted as a partitive? This, I suggest, follows from the analysis proposed here, since only under a partitive structure can the genitive constituent acquire an inalienable possessor θ-role in (44d). In order to see how this comes about, consider (44b), repeated below as (46a), under a non-partitive structure:

(46) a. un fils du voisin
"a son of the neighbour"

b.

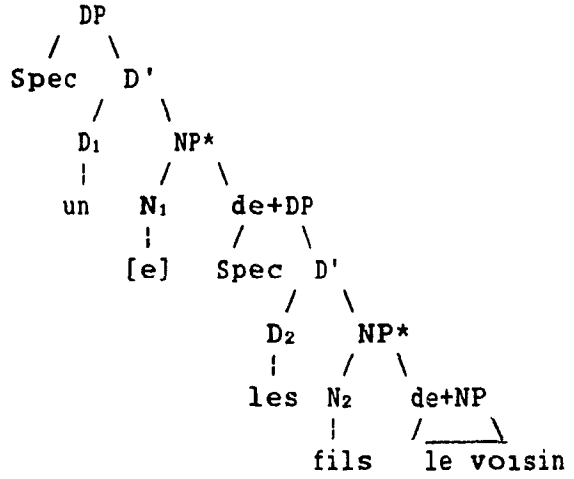


In (46b) the head noun <u>fils</u> is unable to assign an inalienable possessor θ-role to its complement <u>du voisin</u>. This is because the determiner which governs it (D_1) is not definite, hence not cosuperscripted with N_1, and by hypothesis, the assignement of

the inalienable possessor θ-role requires co-superscripting between D and N. But consider now (46a) on the partitive interpretation. The corresponding partitive (i.e. (47a)) is assigned the structure of (47b) - adapted from Milner (1977:120) to the present framework:

(47) a. un ‹fils› des fils du voisin
"a ‹son› of the neighbour's sons"

b.



In this structure, N_1 cannot assign an inalienable possessor θ-role because the determiner (D_1) does not have the required definite properties (it is not co-superscripted with N_1). N_2, on the other hand, acquires the ability to assign such a θ-role from its governing determiner (D_2), which is definite. Thus while du

voisin in (46a) is indeed an inalienable possessor with respect to fils, it can only be so if fils is in the position of NP_2, not NP_1, i.e. reinterpreted as definite. I thus suggest that un fils du voisin has the interpretation of a partitive because its structure is identical to that of a partitive, i.e. (47b). The phonological difference between the two (un fils du voisin vs. un des fils du voisin) is, I take it, due to the possibility of gapping, which is attested elsewhere in French and which affects, among other elements, the head (N1) in (47b).[31]

We have shown that the definite determiner participates in the assignment of the inalienable possessor θ-role by the head noun. What remains to be demonstrated is the second part of our claim, i.e. that the syntactic realization of the inalienable possessor argument is obligatory. I will argue that the apparent optionality of the genitive complements of inalienably possessed Ns is attributable to the ambiguous usage of the definite determiner in French. Once this ambiguity is controlled for, the facts come out much more clearly.

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[31] I leave to further research the more technical aspects involved in implementing this idea, in particular the conditions under which gapping is allowed within DPs, and the constituents it affects.

As Guéron (1983) points out, the definite determiner has multiple uses. It can be employed as an iota operator, where it designates a unique object in the discourse; this is the case in (47a), associated with a logical form as in (48b). The definite determiner may also have a generic value, as in (48c). Finally, it can be used in inalienable possession constructions such as (48d).

(48) a. Le livre

b. the only x such that x is a book

c. Le livre enrichit la vie de l'homme
"Books enrich man's life"

d. Jean lève la main
"Jean raises the hand"

My claim is that the definite determiner in (48d) participates in the obligatory assignment of the inalienable possessor θ-role. The obligatoriness of the inalienable possessor argument is obscured, however, by the fact that nouns of the inalienably possessed class may also enter into generic sentences, where the definite determiner is instead that of (48c). This is illustrated

in (49); note that the relevant interpretation is even more perspicuous in the glosses, since in English genericity may be expressed by null determiners.

(49) a. Le talent peut se manifester dès la plus tendre enfance
"Talent may manifest itself at a very early age"

b. On reconnaît facilement le talent chez les autres
"One easily recognizes talent in other people"

This generic usage of the definite determiner requires, however, that the time reference of the main verb also be generic. If a specific tense is substituted in (49), the generic use of the definite determiner is no longer available. Thus the use of a tense referring to a specific, punctual event, reduces the ambiguity of the definite determiner by eliminating the possibility of a generic interpretation. What is particularly striking is that once this is done, the inalienable possessor argument can no longer be omitted. Consider (50):

(50) a. Le talent *(de ce jeune pianiste) s'est manifesté lors du dernier concert
"The talent *(of this young pianist) manifested itself at the last concert"

b. Le contenu *(de ce roman) a surpris maints critiques littéraires
"The contents *(of this novel) surprises many literary critics"

c. Je n'ai rencontré la petite soeur *(de Julie) que lors de son deuxième anniversaire
"I only met the little sister *(of Julie) on her second birthday"

d. Tous ces scandales politiques ont amoindri la crédibilité *(du gouvernment de droite)
"All these political scandals have undermined the credibility *(of the right-winged government)"

The sentences above are all ungrammatical if the parenthetized material is omitted; this provides a strong confirmation for the correctness of our claim. Inalienable possessors, like the themes of (definite) process nominals, are obligatory arguments; that is, the corresponding θ-role cannot be saturated in the lexicon, but must be linked to a position in the syntax.

Let us sum up the discussion so far. We have shown that there exists a correlation between the presence of the definite determiner and the assignment of certain θ-roles: themes of process nominals, and inalienable possessors. Furthermore, both types of arguments have been shown to be obligatory in the context of a definite determiner. The obligatory character of

these arguments accounts for the differences observed in double dont constructions: recall that in the previous sub-section, we have attributed the difficulty of interpreting agents of deverbal nominals as PGs to their truly optional character. The idea was that if the argument may be saturated in the lexicon, then this option is chosen over the syntactic realization of a parasitic empty category. Since, as we have shown, inalienable possessors are obligatorily realized in the syntax, we account for the fact that inalienable possessors are much more natural as parasitic

gaps in DDCs than agents are, as was evidenced by the contrast between (29)-(32) on the one hand, and (35)-(37), on the other.[32]

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[32] The obligatoriness distinction between inalienable possessors and agents should be taken with caution, however, since it appears to be subject to lexical variation. For some nominals, the agent seems obligatory in non-generic sentences. Compare:

(i) Les écrits restent
"The writings remain - i.e. what is written remains"

(ii) Les écrits *(de cet auteur) ont donné lieu à plusieurs controverses
"The writings *(of this author) have given rise to many controversies".

(iii) Les recueils de poésie se vendent peu
"Collections of poems sell little"

(iv) J'ai chez moi dans un tiroir les recueils de poésie *(de Claude Beausoleil)
"I have at home in a drawer the collections of poems *(of Clause Beausoleil)"

I do not know why this is so, and why the nominals above differ from those in (35)-(37) with respect to the obligatoriness of their agent. These facts, however, support the proposal just made in the text, since the agents of the nouns in (ii)-(iv) are easily interpretable as PGs in DDCs. Given our analysis, this behaviour is attributable to the obligatory character of the agents.

4.3. Speculations on Easy-Type Constructions in Noun Phrases

We saw in Chapter 2 that there are two main types of constructions involving null operators: parasitic gap constructions, and what I shall refer to collectively as easy-type constructions, i.e. easy-clauses, purposives, degree adjective complements, etc. I repeat examples representative of these two classes of constructions for convenience:

(51) a. Which books$_i$ did you file t_i [Op$_i$ without reading e_i]

b. John$_i$ is easy [Op$_i$ to talk to t_i]

The two types of constructions differ mainly in the way in which the null operator is identified at S-Structure. Recall that constructions of the type shown in (51b) are predication structures; the subject John is coindexed by predication (P-coindexed) with the easy-clause. This allows the null operator to be part of the predication chain which includes the subject John. Thus, at S-Structure, the null operator in (51b) is properly identified by the antecedent John since it is P-coindexed with it. Furthermore, the properties of P-indices, namely that they are invisible to

the principles of Binding Theory, allow the identifier to be in an A-position. Note that free indexing between John and the null operator would result in a Principle C violation on the part of the trace in (51b), under the definition of Principle C we have adopted in Chapter 2.

The manner in which the null operator is identified at S-Structure is different in the case of parasitic gaps and so are, as a consequence, the structural conditions imposed on the antecedent. PG constructions are not predication structures, hence being part of a predication chain is not available as an option for the identification of the null operator. Therefore, the null operator (which must be identified at every level of representation under the ULP) must acquire an S-Structure antecedent through other means. It is irrelevant at this point what the exact mechanisms are; I will return to this in Chapter 5, where I argue that identification in the case of null operators in PG constructions is effected through the chain composition mechanism of Chomsky (1986b).

So far, in our survey of null operators in noun phrases, we have considered only the case of adnominal gaps in double dont

constructions. These, as we have shown extensively, display all the properties of parasitic gap constructions. But recall the conditions on null operators imposed by the Universal Licensing Principle of Chapter 2. The ULP requires that a null operator 1) be an argument at D-Structure, and 2) be properly identified by an antecedent at least by S-Structure. We are therefore led to expect that, if these conditions are met, both types of constructions should be instantiated in noun phrases. That is, we expect to find the equivalent of easy-clause constructions in noun phrases just in case the null operator is an argument of the head noun, and provided it participates in an agreement chain. Such a construction should in addition display the characteristic property of easy-clauses, i.e. the identifying antecedent for the adnominal gap should be allowed to occur in an A-position.

I would like to suggest that inalienable possession con-

structions of the type given in (52) below instantiate such a possibility:[33]

(52) a. Marie-Eve a bougé la tête
"Marie-Eve moved the head"

b. Elle lui a coupé les cheveux
"She cut him the hair"

In these constructions, the possessor of the body-part must be interpreted as coreferent with the clausal subject in (52a), and the dative clitic in (52b).[34] In the absence of an antece-

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[33] See Kayne (1975), Guéron (1983,1985), Cheng & Ritter (1987) for analyses of inalienable possession constructions, all of which differ from the one presented here. The following discussion does not take into account inalienable possession structures of the type given in (i) below:

(i) Vous leur avez tiré dans le ventre
"You shot them in the stomach"

[34] In fact, the two constructions illustrated display slightly different properties. One of them is that in (52b), the possessor cannot be coreferent with the matrix subject; (52b) is, in fact, ungrammatical without a clitic. This is likely due to the semantic properties of the verb: in the (a) case, the body-part does the action (though obviously by will of the possessor), while in the (b) sentence, the possessor does something to a body-part, either her own (elle s'est coupé les cheveux, "she cut herself the hair") or someone else's as in (52a). I will return below to other differences between the two constructions.

dent, or where the antecedent is non-local, these structures are ungrammatical, as (53) shows:

(53) a. * La tête a été bougée
"The head was moved"

b. * Elle lui a promis [de PRO couper les cheveux]
"She promised him to cut the hair"

(53b) is ungrammatical since the dative clitic, with which the possessor of cheveux must corefer, is too far away from the NP containing the body-part N. These properties recall those we have observed with null operator constructions; the fact that the antecedent, though obligatory, need not be in an A'-position suggests a parallel with constructions of the easy-type.

I propose to analyze the sentences in (52) as involving null operator movement to the [Spec,DP] position of the noun phrase

containing the inalienably possessed noun. The examples above are thus assigned the representation in (54):[35]

(54) a. Marie-Eve$_i$ a bougé [Op$_i$ la tête t$_i$]

b. Elle lui$_i$ a coupé [Op$_i$ les cheveux t$_i$]

Apart from the interpretation facts noted above, there is evidence in favour of a null operator analysis of these constructions. We have shown in Section 4.2.3. that inalienable possessor arguments are obligatorily linked to a position in the syntax. This strongly argues in favour of a representation where the post-nominal position of the inalienable possessor is occupied by an empty category, as opposed to being syntactically

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[35] There are clearly many differences between inalienable constructions and other null operator constructions, which I do not take into account here. The most salient difference is the restricted character of inalienable constructions: contrary to other null operator constructions, the operator here may correspond to only a subset of the possible arguments. Furthermore, of the (broad) class of inalienably possessed nouns which can enter into DDCs (hence have their possessor expressed as a null operator - see Section 4.2.), only those denoting body-parts are allowed in the present construction. These difference will hopefully follow from properties of these constructions which are independent of the conditions on the null operator itself.

unrealized. A further supporting argument for the representation in (54) is provided by the fact that the island constraints on movement are operative within the domain of the noun phrase containing the gap. To see this, compare the (a) and (b) examples in (55):

(55) a. Je lui ai brûlé le bout du doigt
"I burnt him the tip of the finger"

b. * Je lui ai brûlé le bout qui restait du doigt
"I burnt him the part that was left of the finger"

(55b) can be excluded as a Subjacency violation, but only under a movement derivation as in (56), where two barriers (CP and NP*, by inheritance) separate the null operator from its trace- recall that in the Barriers framework, adjunction to CP is precluded altogether:

(56) ... [Op_i le [$_{NP*}$ bout [$_{CP}$ qui restait du doigt t_i]]]

In order to comply with the ULP, the null operator in (54) must be identified at S-Structure. The question then arises as to how the null operator comes to be part of a predication chain. My

suggestions in this respect will remain speculative; further investigation of the properties of these constructions is required in order to account for the whole range of structural frames in which they may enter. However, one line of inquiry which seems promising can be pursued along the following lines. Guéron (1983) has proposed that the noun phrases in inalienable constructions (la tête, les cheveux in (54)) are reanalyzed with the main verb as a complex predicate, and in so doing lose their referential index. This is supported by two sets of facts: 1) the relationship between the verb and the noun phrase must express a "natural gesture", and 2) as pointed out by Kayne (1975:164-165), head nouns in inalienable constructions cannot, contrary to referential nouns, be modified by an adjective. These two properties are illustrated in (57):

(57) a. Elle a bougé/*lavé la tête
"She moved/washed the head"

b. Elle a bougé la (*jolie) tête
"She moved the (pretty) head"

Now suppose that reanalysis is involved in (54a), yielding the representation below:

(58) Marie-Eve$_i$ a [$_{VP}$ bougé Op$_i$ la tête t$_i$]

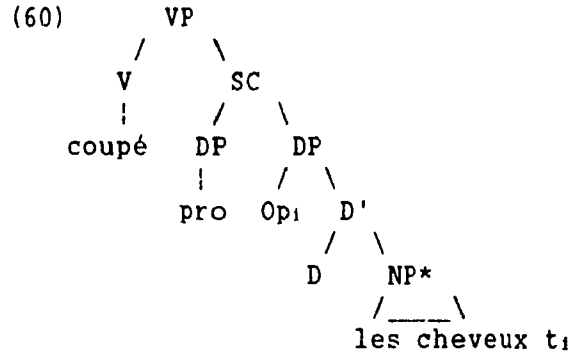
Assuming that the noun phrases lose their referential index, then the index immediately dominating the null operators in (58) is the P-index borne by the VP (under predication indexing with the clausal subject). The V node is coindexed with its maximal projection VP. Now if the DP containing the null operator is reanalyzed as part of the complex verb, it is plausible that DP (and its head D) share the index borne by the verb. Thus, via Spec-Head agreement ([Spec,DP] agrees with D), the null operator acquires the P-index of the subject, and is thus properly identified at S-Structure by its antecedent Marie-Eve.

The identification of the null operator in (54b), repeated below as (59), must be implemented in a slightly different way. This is expected, however, given the fact that (54b) has a different syntactic behaviour and, as we shall show, plausibly a different structural representation.

(59) Elle lui$_i$ a coupé [Op$_i$ les cheveux t$_i$]

As we mentioned above, in (59), the inalienable possessor of cheveux must be interpreted as coreferent with the clitic. Coreference with a subject (as in *Elle$_i$ a coupé Op$_i$ les cheveux t$_i$) is impossible; compare with (58). This is obviously due to the type of verb involved, since replacing couper with bouger removes the obligatory character of the clitic. I suggest that verbs like couper optionally sub-categorize a small clause complement, comprising a subject and a DP predicate, as in (60):[36]

(60)



[36] That is, couper obligatorily requires an SC complement structure if its complement is an inalienably possessed body-part, but does not do so otherwise.

Let us first see how the indexing relations are established in view of the identification of the null operator, returning below to further motivating arguments for this structure.

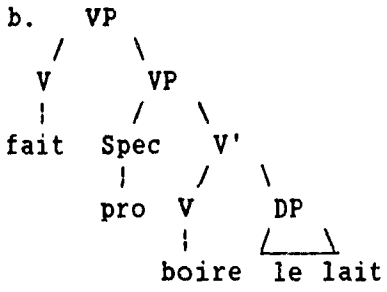
pro in (60) is the empty category associated with the clitic lui. Within a small clause, the predicate (the DP dominating les cheveux) and its subject (pro) are P-coindexed. By Spec-Head agreement, D (the head of DP) and the operator are coindexed. Since D acquires the index of DP, itself coindexed with pro, it follows that the null operator is identified by pro, by virtue of being part of the same predicate chain. Note that under this structure, the clausal subject is too far from the null operator to identify it through predicate chain formation.

This proposal finds support in the fact that inalienable possession structures like that in (59) display syntactic properties reminiscent of those found in causative constructions. Now the latter, an example of which is given in (61a), have sometimes been argued in the literature to have a structure

similar to that given in (61b), where faire subcategorizes a verbal projection:[37]

(61) a. Elle lui a fait boire le lait
"She made him drink the milk"

b.



As in (60), pro is the null category associated with the clitic lui. It occupies the subject position of the small clause in (60) and the subject position of VP in (61b). Faire causatives and inalienable possession constructions of the type (59) share another property: when the subject is lexical, it must 1) occupy a position following the other VP- (or SC-) internal con-

[37] See, for instance, Zagona (1982), Rochette (1988). The structure in the text is a simplified version of the one proposed by Rochette for faire causatives.

stituents, and 2) be preceded by à, presumably for Case-theoretic reasons. Compare:

(62) a. Elle a coupé les cheveux à Michel
"She cut the hair (to) Michel"

b. Elle a fait boire le lait à Michel
"She made drink the milk (to) Michel"

Though I shall not pursue the issue any further, a structural rapprochement between faire causatives and inalienable possession constructions with verbs like couper seems plausible in view of these facts. If this is correct, then we have evidence for a structure like that proposed in (60). We also have an explanation for the fact that with verbs like couper, the inalienable possessor interpretation hinges on the presence of a clitic (in our view, a small clause subject): only under this structure does the null operator in [Spec,DP] comply with the identification requirement imposed by the ULP.

4.4. Summary

To sum up the contents of this chapter, we have discussed aspects of the distribution of NP-internal null operators at the two levels of representation relevant to the ULP, i.e. S-Structure and D-Structure. With respect to the former level, we have argued that double dont constructions are derived by null operator movement, and that the null operator occupies, at S-Structure, the [Spec,NP] position. Independent evidence has been adduced that this position is a COMP-like position in Romance, and that it serves a crucial role as an escape hatch for movement out of noun phrases.

The D-Structure aspects of double dont constructions which we have addressed concern specifically the predictions made by the Universal Licensing Principle proposed in Chapter 2. Since the ULP limits the occurrence of null operators to adnominal positions that are θ-marked by the head nouns, it predicts that only if a genitive complement is θ-marked can it be interpreted as a parasitic gap in double dont constructions. The distribution of adnominal gaps observed in DDCs has led us to propose that inalienable possessors are arguments, in constrast with alienable

possessors which are adjuncts. We have accounted for further contrasts in the correlation between the type of θ-role involved and the possibility of occurring as adnominal PGs in terms of the obligatoriness of argument realization in the syntax. It has been proposed that the definite determiner in French participates in the assignment of (obligatory) θ-roles; this has been shown to obtain for themes of deverbal process nominals, as well as for inalienable possessors. Finally, we have suggested that the counterpart of easy-clauses is in fact instantiated within nominals, as the ULP would lead us to expect. We have proposed that inalienable possession constructions illustrate a case where the null operator in [Spec,DP] is identified at S-Structure via predication, and where, consequently, the antecedent need not be in an A'-position, contrary to the parasitic gap construction instantiated in nominals by DDCs.

In the next chapter, I continue to investigate the properties of null operators at S-Structure, focusing more particularly on the structural conditions under which null operators in double dont constructions are identified by their antecedents.

CHAPTER 5

DDCS, LOCALITY, AND CHAIN COMPOSITION

5.0. Introduction

Null operators in general, and null operators in double dont constructions in particular, must be in a local relationship with respect to the A'-chain which identifies them at S-Structure. Recall that we have derived the need for an S-Structure antecedent from the Universal Licensing Principle, one effect of which is that null operators must be licensed (and identified) at every syntactic level of representation.

In this chapter, the locality conditions necessary for null operator identification are examined with particular reference to DDCs. One especially revealing aspect of these constructions is that they instantiate configurations which are unattested in the better-studied cases of PG constructions, i.e. adjunct- and subject- internal PGs. Furthermore, unlike English or other Germanic languages on the basis of which the conditions on PG-licensing have been more extensively drawn, French displays structures where the "real" gap is within the subject. As we

shall see, this is of particular relevance to the issue of whether or not an anti c-command condition on PGs is required independently of the locality problem.

The locality conditions holding between a null operator and the licensing chain in PG constructions have given rise, in the literature, to two main types of analyses. One is the chain composition analysis, advocated by Chomsky (1986b): under this view, the chain headed by the null operator must compose with another A'-chain under the locality condition which governs chain formation in general, i.e. Subjacency. The other approach, defended by Aoun & Clark (1984) and Contreras (1987, 1988) views the null operator as an anaphor in the sense of Generalized Binding Theory (Aoun 1981). This analysis assimilates the locality conditions on PG licensing and the locality conditions on anaphor binding.

In the course of this dissertation (see in particular Chapter 2), it has been implicitly assumed that null operators in PG constructions were identified through chain composition. In the present chapter, the two analyses mentioned in the preceding paragraph are discussed and assessed, in particular with respect

to the configurations displayed by adnominal PGs in double dont constructions. On the empirical side, it is shown that the data brought forth here favour the chain composition approach. Furthermore, I argue that the availability of a chain composition mechanism in the grammar yields an important conceptual advantage inasmuch as it is construed as a means to implement the requirements imposed by the Universal Licensing Principle. Viewed in this way, it allows us to dispense with statements referring to the properties of parasitic gaps proper; instead, these properties follow from the general principles which govern the processes of identification and chain formation.

5.1. External Locality in PG Constructions

We mentioned that the identification of null operators in PG constructions is subject to locality constraints; this is the relation we have labeled "external locality" in Chapter 4 (see Section 4.1.1) so as to distinguish it from "internal locality", i.e. Subjacency effects arising from null operator movement within the domain containing the PG. As an illustration of external locality effects, compare the following examples, from Chomsky (1986b:57,62):

(1) a. Which book$_i$ did you file t_i [without Op$_i$ believing [Mary would like e_i]]

b. * Who$_i$ did you convince t_i [that Tom should visit Bill [before Op$_i$ we talk to e_i]]

The two constructions are of similar complexity, yet only the first one one is grammatical. This difference can be attributed to the fact that the operator in (1a) may be extracted from the lower clause and land in the specifier position of the adjunct clause. In (1b), Subjacency prevents the operator from landing in the specifier position of the that-clause. This in turn suggests that in (1b), the null operator is too far away from the real chain for the identification procedure to apply.

An analysis of these locality effects must provide answers to two main questions: 1) what is the nature of the locality constraint? and 2) between which elements must the locality condition be established? That is to say, it must be ascertained whether it is the position of the "real" operator or that of the "real" gap which is relevant to the locality constraint on null operator identification. I now turn to a discussion of the main

approaches to locality mentioned in the introduction; as we will see directly, they differ in the answers they provide to the questions posed above.

5.1.1. Chain Composition

Chomsky (1986b) proposes that the two chains involved in PG constructions, i.e. the real chain and the null operator-headed parasitic chain, must undergo at S-structure a process of chain composition, stated as follows:

(2) If $C = (\alpha_1, \ldots, \alpha_n)$ is the chain of the real gap and $C' = (\beta_1, \ldots, \beta_m)$ is the chain of the parasitic gap, then the "composed chain", $(C,C') = (\alpha_1, \ldots, \alpha_n, \beta_1, \ldots, \beta_m)$ is the chain associated with the parasitic gap construction and yields its interpretation.

The external locality condition discussed above is viewed as a condition holding between adjacent links of a chain. Composed chains are taken to behave in a manner analogous to real (i.e. movement-derived) chains, in that each link must be subjacent to the next link up. In composed chains, then, Subjacency holds at the point of merging, i.e. between the foot of the real chain and

the head of the parasitic chain. Thus, the null operator heading the parasitic chain must be subjacent to the licensing gap.

5.1.1.1. Anti-c-command

The main motivation behind the Subjacency-based chain composition approach is Chomsky's will to subsume under the locality condition the effects that were previously attributed to the anti-c-command requirement. Recall that such a condition was invoked by Engdahl (1983) in order to account for the inability of subject traces to license PGs, a state of affairs exemplified by the contrasts below:

(3) a. * which woman$_i$ [t_i [$_{VP}$ spoke to you [$_{PP}$ before Op_i you recognized e_i]]]

b. which woman$_i$ did [you [$_{VP}$ recognize t_i [$_{PP}$ before Op_i you spoke to e_i]]]

Engdahl (1983) thus proposed that in PG constructions, the parasitic gap may not be c-commanded by the real gap. In recent literature, however, the validity of an anti-c-command condition on PGs has been called into question; I return directly to the arguments in favour of this view. Exploring the possibility that

anti-c-command does not hold, Chomsky (1986b) proposes to account for the ungrammaticality of (3a) through the chain composition approach. Since VPs are BCs and barriers, and given that they exclude subjects but not objects, the contrasts in (3) are accounted for. In both cases, the non L-marked PPs are barriers; however VP constitutes an additional barrier in (3a), and therefore the null operator is not subjacent to the subject trace. Hence, chain composition cannot apply.[1]

The adequacy of the anti-c-command condition has been challenged on the basis of two sets of facts. The first one concerns the well-formedness of PG constructions of the type shown in (4):

(4) Who$_i$ did you [$_{VP}$ convince t_i [Op$_i$ that you were going to denounce e_i]]?

According to standard assumptions about X'-theory, since the embedded clause is an argument of convince, it is a daughter of

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[1] Note that the device used in Barriers for voiding barrierhood of VPs (i.e. adjunction) is not available in PG constructions, since no movement crossing VP is involved.

the V' constituent dominating the verb and its direct object. Hence in (4), the real gap in direct object position c-commands the parasitic gap in violation of the anti-c-command requirement, though the sentence is grammatical. There are ways to circumvent this problem; for instance Safir (1987b) argues that in structures like (4), the that-clause is extraposed, hence outside the c-command domain of the real gap. As evidence for this view, Safir points to a correlation between the presence of that and the occurrence of PGs: namely, PG constructions degrade in the absence of that (i.e. (5a) is worse than (4)). On the other hand, similar sentences without parasitic gaps are unaffected by the presence or absence of the overt complementizer, as (5b) shows.

(5) a. Who$_i$ did you convince t_i you were going to denounce e_i?

b. Who$_i$ did you convince t_i (that) you were going to denounce his friends?

Assuming that a null complementizer must be properly governed (see Kayne 1981b, Stowell 1981:396ff), the contrast between (5a) and (5b) may be attributed to the fact that the complement clause must extrapose when containing a parasitic gap - hence in this case the null complementizer is not properly

governed by V. If this analysis is correct and if indeed extraposition takes place, then the well-formedness of PG constructions like (4) does not argue against the anti-c-command requirement.

The second set of facts concerns coreference between matrix objects and adjunct-internal NPs. Contreras (1984) has pointed out that (6a) is ungrammatical with the coreferent interpretation indicated:

(6) a.* We interviewed them$_i$ before hiring those students$_i$

b. We interviewed their$_i$ spouses before hiring those students$_i$

c. Which students$_i$ did you interview t_i before hiring e_i?

The contrast between (6a) and (6b) suggests that the former is a Principle C violation, with <u>them</u> c-commanding <u>those students</u>. But if objects may c-command into adjunct clauses, then the real gap c-commands the parasitic gap in (6c). Therefore, the anti-c-command condition on PGs cannot be correct.

Though I will propose no alternative account for the ungrammaticality of (6a), which remains an outstanding problem, I will assume that objects do not c-command into adjunct clauses, and that the anti-c-command requirement holds. There are two reasons for this. First, as will be shown in Section 5.2, the particular configurations instantiated in double dont constructions provide some evidence that anti-c-command must hold independently of the locality constraints. Secondly, in Chomsky's system, in order to subsume the whole range of anti-c-command effects, the locality constraint must be reduced from 1-Subjacency to 0-Subjacency.[2] The notion of 0-Subjacency, however, is problematic on both empirical and conceptual grounds. As Chomsky points out, it requires that adjunction to non-argument PPs be allowed, thereby voiding the Adjunct Condition entirely. Conceptually, a chain composition analysis based on 0-Subjacency is suspicious in view of the claim that grammars do not contain

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[2] This is required in view of examples like (i) below (see Chomsky 1986b:64f for discussion):

(i) * who$_1$ t$_1$ [$_{VP}$ warned the men [$_{CP}$ Op$_1$ that they were about to arrest e$_1$]

The operator is 1-Subjacent to the licensing trace (only VP is a barrier), though the sentence is ungrammatical. 0-Subjacency, which requires that no barrier at all intervene, gives the right result in this case.

principles the sole purpose of which is to license parasitic gaps. As Browning (1987:203) observes, 0-Subjacency, which Chomsky (1986b:65) refers to as "government minus the c-command requirement" has no application elsewhere in the grammar. 1-Subjacency, on the other hand, is independently required as a condition on movement chains.

5.1.1.2. Locality

I thus assume that the anti-c-command condition holds, and I take the Subjacency condition on chain composition to be 1-Subjacency, as originally proposed by Chomsky (1986b:64). To see how a 1-Subjacency condition on chain composition handles the locality effects in PG constructions, consider again the examples in (1), repeated below for convenience:

(7) a. Which book$_1$ did you [file t_1 [$_{PP}$ without [$_{CP}$ Op$_1$ believing [Mary would like e_1]]]]

b. * Who$_1$ did you [convince t_1 [$_{CP}$ that [$_{IP}$ Tom should [$_{VP}$ visit Bill [$_{PP}$ before [$_{CP}$ Op$_1$ we talk to e_1]]]]]

In (7a), only one barrier (PP) intervenes between the null operator and the foot of the licensing chain, in compliance with the 1-Subjacency requirement. By contrast, (7b) is ruled out since several barriers (PP, VP, and the higher CP) dominate the null operator to the exclusion of the real gap.

5.1.2. Null Operators As Anaphors

We now turn to the alternative analysis of the external locality effects which attributes to null operators anaphoric properties. In the course of our discussion of double dont constructions later on in this chapter, it will become apparent that this analysis, though conceptually attractive, fails to account for the whole range of locality effects. The present subsection addresses one particular argument which has been invoked as favouring the binding approach over the chain composition analysis. I will show that the argument is inconclusive, and that the data involved call for a treatment which is altogether independent of the way in which locality constraints are enforced.

Apart from Subjacency, other sub-systems are available in UG which impose conditions of locality between two constituents. Thus a plausible candidate for the locality effects displayed in PG constructions is Binding Theory, and in particular Principle A which requires that anaphors be bound within a certain domain. This is the approach taken by Aoun & Clark (1984) and Contreras (1987, 1988) who argue that null operators in PG constructions are anaphors in the sense of Generalized Binding.[3]

One important difference between this approach and the chain composition analysis is that under the binding proposal, the locality restrictions hold between the null and overt operators, not between the null operator and the real gap. Essentially, then, the position of the real gap is irrelevant to the binding

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[3] Aoun's (1981) framework extends the Binding Principles to A'-binding. Under this view, Wh-traces are A'-anaphors, and as such must be A'-bound in their governing category. There are important differences between Aoun & Clark's and Contreras' proposals, which I will not discuss in any detail here. It should be mentioned that Contreras attempts to provide a unified treatment of null operators in PG constructions and easy-clauses, purposives, etc., in terms of anaphor binding. Aoun & Clark limit their claim to null operators in PG constructions. They treat the relation between null operators in easy-clauses and their antecedents in terms of predication indexing, a view I have adopted here; see Chapter 2 for discussion.

analysis, much as the position of the binder (save for c-command) is irrelevant to the chain composition approach. I will return to this distinguishing aspect of the two analyses.

Under Aoun & Clark's proposal, the governing category for an A'-anaphor in an A'-position is the superordinate S'(CP) containing the anaphor. Taking again the sentences in (1) as an illustration, this account yields the desired results, since only in the (a) example does the null operator comply with Principle A of Generalized Binding Theory:

(8) a. [$_{CP}$ Which book$_i$ did you file t_i without [$_{CP}$ Op$_i$ believing Mary would like e_i]]

b. * [$_{CP}$ Who$_i$ did you convince t_i [$_{CP}$ that Tom should visit Bill before [$_{CP}$ Op$_i$ we talk to e_i]]]

(8b) is ruled out since the null operator is free its governing category, which is the clause headed by <u>that</u>.

As supporting evidence for their analysis, Aoun & Clark bring forth evidence from French which, they argue, show that only the position of the overt operator is relevant to the

locality conditions. The data involve PG constructions where the real gap is within a tenseless Wh-island. Recall that extraction from within an infinitival Wh-Island is possible in French (cf. (9a)). The example in (9b) illustrates a simple case of parasitic gap within an adjunct clause.

(9) a. [$_{CP1}$ quel livre$_i$ Jean sait [$_{CP2}$ à qui$_j$ offrir t$_i$ t$_j$]]?

"Which book does Jean know to whom to offer?"

b. [$_{CP1}$ quel livre$_i$ Jean a offert t$_i$ à Pierre sans [$_{CP2}$ Op$_i$ avoir mis e$_i$ sur la table]]?

"Which book did Jean give to Pierre without having put on the table?"

As Aoun & Clark point out, while the adjunct clause hosting the null operator may be embedded within a complement clause (cf. (10a)), a parasitic gap construction is ungrammatical if this complement clause is a Wh-Island; this is shown in (10b):

(10) a. [$_{CP1}$ quel livre$_i$ Jean sait [$_{CP2}$ t'$_i$ que tu as offert t$_i$ à Pierre sans [$_{CP3}$ Op$_i$ avoir mis e$_i$ sur la table]]]?

"Which book does John know that you offered to Pierre without having put on the table?"

b. * [$_{CP1}$ quel livre$_i$ Jean a su [$_{CP2}$ à qui$_j$ offrir t_i t_j sans [$_{CP3}$ Op$_i$ avoir mis e_i sur la table]]]?

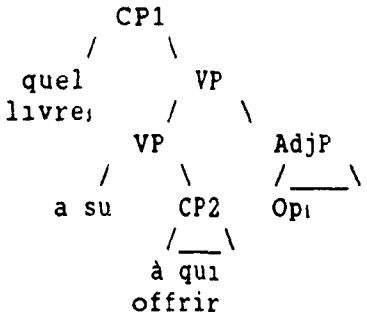
"Which book did John know to whom to offer without having put on the table?"

The grammaticality of (9b) and (10a) is expected under both the chain composition and the generalized binding analyses. The null operator in both sentences is 1-subjacent to the trace; it is also A'-bound in its governing category (CP1 in (9b), CP2 in (10a)) by the overt operator quel livre and the intermediate trace t', respectively.

The ungrammaticality of (10b), on the other hand, is unexpected under the chain composition analysis, since the relation from the real gap to the null operator is the same as it is in the well-formed example (10a). Aoun & Clark argue that, by contrast, their approach predicts the ill-formedness of (10b). Intermediate movement of the extracted object quel livre through the Spec position of CP2 is impossible since this position is occupied by the Wh-phrase à qui. Thus, no A' antecedent for the null operator is present within CP2 (the governing category for the null operator), in violation of principle A of the Generalized Binding Theory.

While I agree with part of the conclusion drawn by Aoun & Clark - viz. that the ill-formedness of (10b) remains unexplained under the chain composition analysis - I believe the facts brought forth do not constitute a compelling argument in favour of their proposal. One assumption crucial to their account is that the adjunct clause is embedded within CP2 in (10b); in other words, it is construed with the embedded verb offrir and not with the matrix verb savoir. Under a matrix construal, the adjunct clause would be outside the Wh-Island; the governing category for the null operator would then be the matrix clause (CP_1), which indeed contains an A'-antecedent for the null operator. (10b), under matrix construal, would have the structure schematized in (11):

(11)



Aoun & Clark's account predicts that (10b) should be grammatical if the adjunct clause is construed with the verb savoir. Now a matrix construal is, for pragmatic reasons, difficult to obtain with the lexical choices in (10b); it is, however, perfectly possible in (12a) below, where the addition of même ("even") contributes to force the interpretation whereby the adjunct sans l'avoir décachetée is construed with the matrix verb (i.e. knew without having opened). Thus the adjunct clause in (12a) is outside the Wh-Island altogether. Yet (12b) with a parasitic gap is ungrammatical on a par with (10b):

(12) a. Jean savait à qui renvoyer cette lettre sans même l'avoir décachetée
"Jean knew to whom to return this letter even without having opened it"

b. * Quelle lettre$_i$ Jean savait à qui$_j$ renvoyer t_i t_j sans même avoir décachetée e_i?
"Which letter did Jean know to whom to return without having opened?"

This suggests that the ill-formedness of (12b) has nothing to do with the position of the overt operator with respect to the null operator, and more generally that it is independent of the locality problem. It seems reasonable to suppose that the added complexity induced by the presence of multiple traces renders the

parasitic gap interpretation difficult to process. Whatever the explanation invoked for the ill-formedness of (12b), it will no doubt extend to (10b) and, more importantly for our discussion, will apply regardless of the analysis adopted to account for the external locality effects. What may be safely concluded, then, is that the ungrammaticality of (10b)-(12b) is not a problem specific to the chain composition analysis.

I will henceforth assume that the Subjacency-based chain composition analysis is the correct one. The investigation of the configurations displayed by double dont constructions, to which we now turn, provides further evidence in favour of this claim. As we shall see, the chain composition analysis straightforwardly handles a number of problems posed by the distribution of adnominal PGs.

5.2. DDCs and Chain Composition

The present section addresses a number of problems posed by double dont constructions, concerning in particular the relationship between the null operator and the real gap. Because of the type of problems involved, the discussion will of necessity take

a technical turn and will at times require digressions into matters of detail and implementation. It will thus be useful at this juncture to give a brief overview of the problems to be addressed.

In 5.2.1 it is argued that, for reasons particular to French, VP is not an inherent barrier (in most cases) in this language. This provides a testing ground for distinguishing between locality and anti-c-command in the case of subject traces; recall that subsuming the anti-c-command effects under 1-Subjacency crucially hinges on the idea that VP, a barrier, excludes the subject. Next, in 5.2.2, we explore cases where the configuration of DDCs poses an apparent problem for the chain composition analysis. The difficulty is one of incompatibility: while null operators within argument PPs must abide by the 1-Subjacency condition on chain composition, the corresponding (ungrammatical) extraction must cross more than one barrier to violate Subjacency. I propose an alternative analysis for the extraction cases under which the problem dissolves. Sections 5.2.3 and 5.2.4 deal with adjunct clauses: we discuss their structural position, extraction from within, as well as the odd fact that adnominal PGs do not occur within adjunct clauses.

Finally, an account is proposed to explain the exclusion of DDCs from tensed bi-clausal structures. It is argued that every derivation available for these constructions violates either an independently needed constraint or the Subjacency condition on chain composition.

5.2.1. French VPs and Tensed V Raising

Let us start by examining the simplest cases of double dont constructions in view of the chain composition analysis. A representative example is given in (13):

(13) Un fumiste dont les ambitions t [$_{VP}$ excèdent [$_{DP}$ Op le talent e]]
"A fraud of whom the ambitions exceed the talent"

These structures fall straightforwardly under the 1-Subjacency condition. DP is L-marked by the verb, hence not a barrier; thus irrespective of whether or not VP is a barrier, the null operator in (13) is 1-Subjacent to the licensing variable.

The question of the barrierhood of VP leads, however, to a more important issue and is thus worth examining here. For reasons having to do with independent properties of French, it is likely that tensed VPs are not BCs, hence not inherent barriers. It is a widely accepted view that, following Emonds (1978), tensed Vs in French raise to I in the syntax. In Barriers it is proposed, for independent reasons, that a "lexical" INFL (i.e. an I node hosting V), acquires the ability to L-mark its complement VP. The conjunction of these two assumptions, as Kayne (1987) observes, leads to the conclusion that in French, tensed VPs are always L-marked. This entails that tensed VPs are never barriers inherently, though it should be stressed that nothing prevents them from acquiring barrierhood from a BC they dominate.[4]

This property of French is relevant to the question discussed in 5.1.1.1, i.e. whether an anti-c-command requirement on

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[4] Given Emonds' (1978) proposal, which I adopt here, (13) has in fact the structure given in (i), where t_v is the trace of the raised verb:

(i) ... [$_I$ excèdent] [$_{VP}$ t_v [$_{DP}$ Op le talent e]]

For simplicity, I continue to use representations where the tensed verb is within VP, though I assume that tensed Vs are under I at S-Structure, voiding barrierhood for VP.

PGs is required independently of the locality constraints. We have answered this question positively, partly because of the conceptual difficulty associated with the notion of 0-Subjacency. French, in view of the properties just discussed, provides supporting evidence for this view. Recall that in Chomsky's (1986b) analysis, the inability of subject traces to license PGs is ascribed (in the absence of an anti-c-command constraint) to the fact that VP, a barrier, always intervenes, hence blocking the chain composition process. But if tensed VPs are not barriers in French, the ungrammaticality of (14) below cannot be accounted for in this way.

(14) * Un homme qui$_i$ t$_i$ [nous demandait [$_{CP}$ Op$_i$ d'embaucher e$_i$]]
"A man who asked us to hire (him)"

Compare with the grammatical (15), where the licensing gap is still outside of VP, but which differs from (14) in that the licensing gap does not c-command the PG:

(15) Un musicien dont$_i$ les admirateurs t$_i$ [nous demandaient [$_{CP}$ Op$_i$ de reconnaître le talent e$_i$]]
"A musician of whom the admirers asked us to recognize the talent"

These contrasts bring support to the view that the anti-c-command condition is required independently of the 1-Subjacency condition on chain composition.[5]

5.2.2. Adnominal Gaps Within Argument PPs

Double dont constructions pose an apparent problem for the chain composition analysis. The difficulty arises when the adnominal PG is within an argument PP, as in the following examples:

(16) a. Un bandit dont$_i$ les méfaits t$_i$ pèsent [$_{PP}$ sur [$_{DP}$ Op$_i$ la conscience e$_i$]]
"A bandit of whom the misdeeds lie heavy on the conscience"

b. Un candidat à la présidence dont les écarts de conduite t ont porté atteinte [$_{PP}$ à [$_{DP}$ Op la réputation e]]]
"A presidential candidate of whom the wrongdoings have cast a slur on the reputation"

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[5] It should be noted that the argument will be weakened in the event that French requires Case matching between the licensing trace and the PG; then the ill-formedness of (14) could be ascribed to factors independent of anti-c-command. For evidence in support of anti-c-command where Case matching is not at stake, see the DDC facts noted in footnote 11 of Chapter 4.

To put it succintly, the problem is the following. Recall that extraction out of PPs is precluded in French, a fact that has often been ascribed to Subjacency. In the Barriers framework, this means positing both DP and PP as barriers. But the locality condition on chain composition requires that the null operator be 1-subjacent to the licensing gap (t), which cannot be the case in (16) if the bracketed constituents are barriers.

Let us now see in a little more detail why the fact that PPs are arguments in (16) is particularly problematic. Consider the corresponding extractions, examples of which are given in (17):

(17) a. * un bandit dont quelque chose pèse [PP sur [DP la conscience t]]
"a bandit of whom something lies heavy on the soul"

b. * le président dont Watergate a porté atteinte [PP à [DP la réputation t]]
"the president of whom Watergate has cast a slur on the reputation"

Suppose that (17) are Subjacency violations, as in earlier frameworks where PP and NP (DP) were considered bounding nodes. Translating this idea into the Barriers approach, we must posit

that DP is a BC and a barrier; since PP is L-marked, it is not a barrier inherently, and hence must acquire barrierhood through inheritance from DP. Again, if this is correct, the null operators in (16) are not 1-Subjacent to the licensing gaps and chain composition cannot apply. This is the wrong result since the DDCs in (16) are grammatical.

These facts suggest that either a 1-Subjacency chain composition analysis of parasitic gaps does not work, or else a Subjacency account of the ill-formedness of (17) is incorrect. Additional facts involving DDCs provide support for the second conclusion. Consider the examples in (18):

(18) a. * La seconde guerre mondiale, dont les horreurs t ont été [découvertes [PP après [DP Op la fin e]]]
"The 2nd World War, of which the horrors were discovered after the end"

b. * La France, dont l'armée t a [combattu [PP pour [DP Op l'honneur e]]]
"France, of which the army fought for the honour"

The sentences in (18a,b) are ungrammatical under the relevant reading: it is impossible to interpret the bracketed noun phrases as referring to the end of the war and the honour of France,

respectively. Thus there is a clear constrast between these sentences and the structurally similar ones in (16). But this contrast is not reflected in the number of barriers: again, assuming that that Subjacency rules out the extraction examples in (17), both DP and PP are barriers in each case. Now, the reason why these data cast doubt on a Subjacency analysis of the extraction facts is that the contrast between the DDCs in (16) and (18) otherwise find a very natural explanation under a Subjacency-based chain composition analysis.

The difference between (16) and (18) lies essentially in the thematic relation of the PPs to the verbs. As we saw, the PPs in (16) are arguments. The PPs in (18), on the other hand, are time and causal PPs, and it is plausible to assume that they are not

θ-marked by the verbs.[6] θ-marking distinctions are at the basis of the notion of L-marking, which in turn determines the status of constituents as barriers. It is thus intuitively appealing to attribute the contrast between (16) and (18) to the numbers of barriers involved, and more specifically to the idea that the non-argument PPs are barriers in (18) but, that the argument PPs are not barriers in (16). Assuming that DPs remain barriers in both cases, the desired contrast immediately follows under a chain composition analysis: the operator is 1-subjacent to the

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[6] I will assume that manner/cause/temporal PPs are not θ-marked, whereas locatives are (note that locative PPs behave like arguments wrt DDCs). This finds some support in Koopman & Sportiche's (1985) observation that, with respect to extraction over Wh-Islands, the former behave like adjuncts, and the latter like arguments. The relevant examples below show that only locatives may extract in this context:

(i) * voilà la façon dont$_i$ je sais quoi formuler t$_i$
"this is the way in which I know what to word"

(ii) * voilà la raison pour laquelle$_i$ tu sais quoi acheter t$_i$
"this is the reason why you know what to buy"

(iii) *? voilà le moment où$_i$ je sais quoi acheter t$_i$
"this is the moment when I know what to buy"

(iv) voilà l'endroit dans lequel$_i$/où$_i$ je sais quoi acheter t$_i$
"this is the place in which/where I know what to buy"

licensing gap in (16), but not in (18). But if the PPs in (16) are not barriers, then the Subjacency analysis of the extraction facts in (17) no longer holds as stated.[7]

I wish to propose another approach to the impossibility of extracting out of (argument) PPs which is compatible with a chain composition analysis of the corresponding DDCs, where the null operator is within an argument PP. Recall the claim we have made in Chapter 4, according to which extraction out of noun phrases takes place through the [Spec,DP] position. Assuming this, the bracketed DPs in (16) and (17) differ in that the specifier contains a null operator in the first case, and a trace in the second. This immediately suggests an ECP analysis of the ill-formed extraction cases. I repeat the relevant structures below, where (19a) represents the grammatical case of adnominal PGs

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[7] It is not clear how the contrast between the DDC cases in (16) and (18) can be accommodated under the Generalized Binding approach, since in general the distribution of anaphors is not determined by the argument status of the domain containing them. Compare:

(i) Lucy left [without a picture of herself]
(ii) Lucy put the money [behind a picture of herself]

within argument PPs (=(16)), and (19b) ungrammatical extraction out of PPs (=(17)):

(19) a. ... t_i .. [V [$_{PP}$ sur [$_{DP}$ Op_i [.. N .. e_i]]]]

b. * ... [t''_i [V [$_{PP}$ sur [$_{DP}$ t'_i [.. N .. t_i]]]]]

Suppose, following Longobardi (1987), that intermediate traces in specifier positions of noun phrases are subject to the lexical government requirement. The grammaticality of (19a) is reconcilable with the ungrammaticality of (19b) under Chomsky's (1986b) assumption that one barrier suffices to block government, though more than one barrier is required to violate Subjacency. I now turn to the details involved in the implementation of this analysis.

Consider first the extraction case schematized in (19b) above. Assume, following Chomsky (1980:26), that the bracketed DP receives oblique Case from the preposition. We can exploit another suggestion of Chomsky's (1986b:36) to the effect that constituents bearing oblique Case are inherent barriers. It then

follows that DP blocks lexical government of t' from the outside, and consequently that t' in (19b) incurs an ECP violation.[8]

The fact that DDCs are grammatical with argument PPs (cf. (19a)) now falls straightforwardly under a chain composition analysis. We have suggested that DP is an inherent barrier by virtue of being marked for oblique Case. But note that since DP is L-marked, it is not a BC, hence does not transmit barrierhood

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[8] Another possibility is that P creates a M-(inimality) barrier, preventing lexical government of the intermediate trace by V, on the assumption that Ps are not lexical governors. This is the analysis proposed by Kayne (1984, ch.3, pp.51f) for similar examples involving empty QPs in specifier positions of noun phrases:

(i) * Jean n'a pas parlé [à [e de linguistes]]
"John (neg) has not spoken to linguists"

(ii) * Elle a trop compté [sur [t d'amis]
"She has too much counted on friends"

(iii) * Combien a-t-elle été applaudie [par [t de spectateurs]]?
"How many has she been applauded by spectators?"

While a Minimality-based analysis is plausible, we still need to assume for other cases that DP is a barrier in addition to the non L-marked PP for the cases where adnominal PGs occur within non-argument PPs (see below). I will thus assume the analysis proposed in the text; note that it also accounts for the ungrammaticality of (i)-(iii).

onto the PP which dominates it. The PPs in (19a) are L-marked, hence are neither BCs nor barriers. Thus only one barrier - DP- dominates the null operator, and no problem arises in view of the chain composition analysis.

Under this analysis, the contrast between argument and non-argument PPs with respect to their ability to host adnominal gaps also follows. Recall that DDCs are ungrammatical if the adnominal gap is within a non-argument PP; example (18a) is repeated here as (20):

(20) * La seconde guerre mondiale, dont les horreurs t ont été [découvertes [$_{PP}$ après [$_{DP}$ Op la fin e]]]

DP is an inherent barrier, as before; however in (20) the PP is not L-marked, hence is also a barrier. The sentence is thus ruled out since chain composition cannot apply.[9]

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[9] Our analysis is at odds with Pollock's (1988) claim that all PPs - whether subcategorized or not - are L-barriers uniformly. It is not clear, however, how an analysis adopting this view can account for the contrasts in DDC constructions brought forth here.

We have made the assumption that the DP complement of a preposition must be a barrier. It could be objected that this is not necessary, since in (20), VP, though tensed, may nonetheless inherit barrierhood through the non L-marked PP it dominates. The example would then be ruled out independently of the status of DP. Note however that this cannot be the correct analysis, since (21) is ungrammatical, though in this case the licensing trace is in object position:

(21) * La seconde guerre mondiale, dont on a [$_{VP}$ découvert les horreurs t [$_{PP}$ après [$_{DP}$ Op la fin e]]]
"The second World War, of which one discovered the horrors after the end"

5.2.3. Adjunct Clauses

It is furthermore plausible to suppose that the barrier-inducing effect of oblique Case is limited to those constituents that may overtly bear Case features, i.e. noun phrases but not clauses. This is in any event necessary to account for the fact that clausal complements of prepositions are not barriers in adjunct PG constructions like that in (22):

(22) Voilà les livres que vous avez [rangés t [PP sans [CP Op avoir lus e]]]
"Here are the books that you put away without having read"

Now, in the case of adjunct clauses, a chain composition analysis of PGs is compatible with a Subjacency account of the corresponding extraction, illustrated below for French:

(23) ? Voilà quelqu'un que vous êtes partis sans avoir vu t
"Here is someone whom you left without having seen"

The character of the violation in (23) is rather mild, as is that of the English gloss. I have been assuming throughout that adjunct clauses (like the adjunct PPs with nominal complements discussed above) are base-generated under VP, perhaps outside of a small VP' dominating the verb and its arguments, as Chomsky (1986b:61) suggests:[10]

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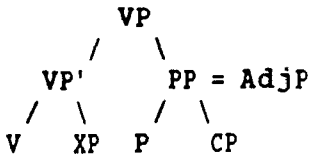
[10] As evidence that adjunct phrases may be base-generated under VP, it has been pointed out in the literature that they may be fronted along under VP-preposing, as shown in (1):

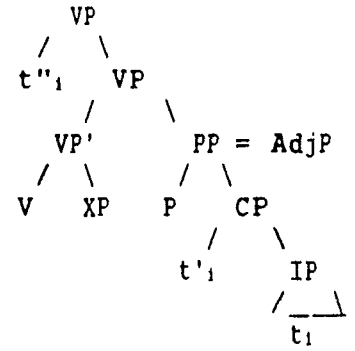
(i) We said she would leave town without paying her credit cards, and leave town without paying her credit cards she did.

(24)



Under this structure, how can we explain the marginal status of extraction out of adjunct clauses? Browning (1987:181) has proposed to account for the relatively mild character of the Subjacency violation by way of the notion of "weak" barrier. She extends Belletti & Rizzi's (1986) idea that lower segments of a category may inherit barrierhood, although, being only segments, they will be weak barriers. For instance in (24), once the extracted constituent adjoins to VP, barrierhood of VP is not entirely voided; rather, the lower segment retains the status of "weak" barrier. The relevant configuration is given in (25):

(25)



In this view, movement from t' to t" crosses one barrier (the PP node) plus a weak one (the lower segment of VP). This analysis readily extends to French, where it also reflects the mild character of the violation.[11]

There are other possibilities. Note in particular that our ECP analysis of (17) commits us to the view that intermediate traces must be lexically governed. A problem thus arises concerning the intermediate trace in [Spec,CP] of the adjunct clause (t' in (25)). It cannot be lexically governed by P, since we assume following Kayne (1984) that Ps are not lexical governors. Moreover, lexical government by V does not hold since PP is a barrier. On the other hand, the slight marginality of extraction out of adjunct clauses suggests that the ECP is complied with. One solution which is compatible with our hypotheses is to assume that in these cases successive-cyclic movement through [Spec,CP]

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[11] Recall that Finite Verb Raising in French voids barrierhood for VP. This would not affect extraction out of adjunct clauses since VP in (25), though not an L-barrier, is a barrier by inheritance from the adjunct PP.

is not obligatory. That is to say, the intermediate trace may be absent from the specifier position of CP in (25), circumventing an ECP violation. Suppose, then, that movement is direct from within the IP-internal position in the adjunct clause to the VP-adjoined position. In this case, (not assuming "weak" barriers this time), two barriers are crossed: CP (by inheritance from IP) and PP. Since this approach obviates the difficulty raised by lexical government of the intermediate trace, I shall tentatively adopt it, although it leaves open the question of why (23) is less deviant than other two-barrier Subjacency violations.[12]

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[12] One consequence of this proposal is that we also expect null operators in PG constructions to be able (with Subjacency effects) to skip the [Spec,CP] node of the adjunct clause. For instance, in ill-formed sentences like (1b), the operator could land in the specifier position of the higher <u>that</u>-clause, giving rise to the representation in (i) below.

(i) Who$_i$ did you convince t_i [$_{CP}$ Op$_i$ that Tom should visit Bill before [$_{CP}$ we talk to e_i]]]

This may not be a severe problem, for although (i) no longer constitutes an (external) locality problem, it is still ruled out as a Subjacency violation. There may be more adverse effects to this proposal, but I will not explore them here.

5.2.4. No Adnominal PGs in Adjunct Clauses

An apparent problem posed by DDCs is that adnominal gaps are not found within adjunct clauses, though the condition on chain composition is not violated. Note that object parasitic gaps within adjunct clauses, as in (21), repeated below, are grammatical in French, though perhaps slightly marginal for some speakers. This is as expected under the chain composition analysis, since the null operator is 1-Subjacent to the real gap in object position - recall that only PP is a barrier.

(26) Voilà les livres que vous avez [$_{VP}$ rangés t [$_{PP}$ sans [$_{CP}$ Op avoir lus e]]
"Here are the books that you put away without having read"

We are led to expect the occurrence of adnominal gaps in the same configuration, assuming that the null operator lands in the [Spec,CP] position of the adjunct clause. This prediction is not borne out, as the grammaticality judgment on the double dont construction in (27) indicates:

(27) a.?? Voilà quelqu'un dont$_i$ vous avez lu les oeuvres t$_i$ sans apprécier le talent e$_i$

"Here is someone of whom you read the works without appreciating the talent"

b. [$_{VP}$ lu [les oeuvres t] [$_{PP}$ sans [$_{CP}$ Op apprécier le talent e]]]

This appears to pose a problem for the chain composition analysis: the null operator in (27b) is 1-subjacent to the licensing trace within VP, just as it is in (26), though only the latter construction is grammatical.

However, further facts suggest that the deviancy of (27a) is independent of the chain composition analysis, and indeed independent of parasitic gap constructions altogether. In fact, extraction out of adjunct clauses displays a similar gradation: while extraction of an object yields a marginal result, extraction of an adnominal complement is worse. Compare (28) and (29):

(28) ? Voilà quelqu'un que vous êtes partis sans avoir vu t
"Here is someone whom you left without having seen"

(29) *? Voilà quelqu'un dont vous êtes partis sans avoir vu le fils t
"Here is someone whom you left without having seen the son"

These contrasts pose a problem of their own within the Barriers framework, and Subjacency as it is construed cannot be invoked to explain them since the same number of barriers are crossed in both cases. Perhaps the degraded character of (29) reflects a processing difficulty. If this is correct, then the same explanation can be invoked to explain the less than perfect character of adnominal PGs within clausal adjuncts.[13]

5.2.5. DDCs in Biclausal Structures

5.2.5.1. Tense

Let us now address a problem of a different sort posed by the distribution of adnominal parasitic gaps in DDCs. Recall from

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[13] As originally observed by A. Belletti (see Chomsky 1982 for discussion), extraction of PPs out of adjunct clauses is significantly worse than the corresponding NP extraction. Compare (i) below with (28):

(i)* Voilà quelqu'un à qui vous êtes partis sans avoir parlé t

Cinque (1984) argues that sentences like (28) do not involve true extraction, but a null resumptive pronoun strategy; another possibility explored in Chomsky (1982) is that these constructions are PG constructions without real gaps. L. Rizzi (p.c.) suggests that the contrast between (28) and (29) may be seen as a special case of this NP/PP asymmetry.

Chapter 3 (Section 3.4.3) the observation, due to Steriade (1981), that double dont constructions are ungrammatical in biclausal structures. We pointed out that in fact, this is true only in the case where the clause hosting the adnominal parasitic gap is tensed. That Tense is indeed the the hindering factor is evidenced by the contrasts in grammaticality displayed the DDC constructions below:

(30) a. * Un peintre dont$_i$ les admirateurs t$_i$ veulent que nous achetions les oeuvres e$_i$
"A painter of whom admirers want us to buy the works"

b. ? Un peintre dont$_i$ les admirateurs t$_i$ trouvent les oeuvres e$_i$ exceptionnelles
"A painter of whom the admirers find the works exceptional"

c. Un peintre dont$_i$ les admirateurs t$_i$ ont résolu de diffuser les oeuvres e$_i$
"A painter of whom the admirers have decided to circulate the works"

The adnominal gaps in the examples in (30a-c) are within a tensed clause, a small clause and an infinitival clause, respectively. Thus the elimination of Tense results in notable improvement.

Suppose that the structure of the ungrammatical sentence in (30a) is as follows, with the null operator occupying the [Spec,DP] position:[14]

(31) dont$_i$ les admirateurs t_i [veulent [$_{CP}$ que [$_{IP}$ nous achetions [$_{DP}$ Op$_i$ les oeuvres e_i]]]]

As is stands, (31) is wrongly predicted to be grammatical under the chain composition analysis since only one barrier (CP, by inheritance from IP) intervenes between the null operator and the licensing trace. But recall from Section 1.1.6.2 of the introductory chapter that tensedness is relevant to Subjacency. In particular, the lowest tensed IPs in French/English are taken to be weak barriers for Subjacency (vs. the lowest tensed CP in Italian). Assuming, as seems natural, that this parameter is relevant to Subjacency as applied to composed chains, the desired result is obtained. In (31), two barriers intervene between the null operator and the licensing trace (IP, a weak barrier, and CP, by inheritance - IP is also a BC). Note that although IP is

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[14] Other derivations are in principle possible; however since the sentence is ungrammatical it must be ruled out under all its derivations. I will return to the other possibilities below.

only a weak barrier, the full star status on (30a) is expected: since chain composition is blocked, the sentence violates not Subjacency, but the Universal Licensing Principle. This is because in the absence of chain composition, the null operator is unidentified and unlicensed at S-Structure.

5.2.5.2. Chains and Case Realization

A second derivation available for (30a) has the null operator moved up to the specifier position of the embedded clause, as in (32):

(32) dont$_i$ les admirateurs t_i [veulent [$_{CP}$ Op_i que [$_{IP}$ nous achetions [$_{DP}$ les oeuvres e_i]]]]

I have argued in Chapter 3 that complementizer que converts into its morphological variant dont under Spec-Head agreement with a genitive null operator or deleted Wh-phrase. It seems that, at least in Standard French, this rule is obligatory. Assuming this, (32) is ruled out since que, although in a context

for genitive Case assignment by the operator, does not overtly manifest the genitive Case feature.

We might expect the structure to be rescued simply by converting que into dont. The fact is, however, that the lower complementizer in (32) may not surface as dont. Thus (33) is ungrammatical:

(33) * Un artiste dont les admirateurs veulent dont nous achetions les oeuvres

The deviancy of (33) recalls the ungrammaticality of (34) with two complementizers realized as qui:

(34) * Un livre que tu as dit qui tu pensais qui valait la peine d'être lu
"A book that you said that (nom.) you thought that (nom.) was worth reading"

Under successive-cyclic extraction, only one complementizer may acquire overt nominative marking from a trace under Spec-Head agreement. The striking parallelism between (33) and (34) suggests that a single constraint is being violated. Suppose that

complementizers which acquire overt Case features under Spec-Head agreement are computed as part of the chain to which the constituent that transmits them Case belongs. Suppose further that French prohibits the occurrence of more than one element overtly

marked for Case in any given chain.[15] We thus formulate for French the following constraint:

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[15] For the sake of completeness, it should be noted that nothing precludes the occurrence of two overtly Case-marked complementizers in a sentence, provided they belong to distinct chains:

(i) Un livre dont$_i$ les détracteurs t$_i$ ne connaissent même pas à fond ce dont$_j$ il traite t$_j$
"A book of which the detractors do not even know well that with which it deals"

(ii) Un livre dont$_i$ le critique dont$_j$ il est question t$_j$ a sûrement dû parler t$_i$
"A book about which the critic in question must have already talked"

(35) Chain Condition on Case Realization (CCCR)[16]

In a chain C = $(\alpha_1,...\alpha_n)$, only one instance of α may be overtly marked for Case.

Note that the CCCR will also account for the impossibility of genitive dont to co-occur with a full-form genitive in [Spec,CP], even in those languages (such as Québec French) which allow doubly-filled COMPs. The relevant contrast, repeated from Chapter 3, is given in (36):

(36) a. La personne de qui que je parle
"The person of whom that I am speaking"

b. * La personne de qui dont je parle
"The person of whom that-gen I am speaking"

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[16] An identical constraint was originally proposed by Kayne (1984:216) in order to rule out complex inversion structures like those in (i) an (ii) below:

(i) * C'est-il faux?
"It is-it false?"

(ii) * Il est-il là?
"He is-it here?"

(iii) Jean est-il là?
"John is-it here?"

On the assumption that clitics - but not lexical NPs - bear overt morphological Case in French (and that ce is overtly nominative), the structures in (i)-(ii) are ruled out since the chains (ce,il) and (il, il, e) bear more than one morphological Case.

The CCCR refers to morphological realization, hence it is likely to apply at either S-Structure of PF. While (34) and (36) are straightforwardly ruled out, a unified treatment of (33) and (34)/(36) under the CCCR implies that the real chain and the parasitic chain in (33) are computed as one single chain in view of S-Structure or PF processes. In other words, if indeed the ungrammaticality of (33) and (34)/(36) is to be attributed to a more general constraint, then this provides an argument that an S-Structure chain composition process is indeed operative in PG constructions.

Recall that the problem we seeked to solve concerns the ungrammaticality of adnominal gaps within tensed clauses. We have ruled out two possible derivations, i.e. where the embedded null operator is within [Spec,DP] and [Spec,CP] at S-Structure. The first one was ruled out by the 1-Subjacency condition, under the view that tensed IPs are weak barriers.

The second derivation, as we have shown, violates one of two requirements imposed by the grammar of French: 1) the obligatoriness of genitive Case-realization on a complementizer under Spec-

Head agreement, and 2) the CCCR, which requires that chains contain no more than one overtly Case-marked member. Note that the effects of clausal Tense are in fact embedded in these two conditions, thus preserving the intuition that Tense is responsible for the contrasts in the bi-clausal PG constructions of (30). Genitive (or nominative) Case is only visible on complementizer que, which selects tensed clauses. The "infinitive" complementizers de and à never acquire overt Case through Spec-Head agreement, hence never incur a CCCR violation.

5.2.5.3. Absence of Subject-Internal PGs

I have assumed throughout that in bi-clausal DDCs, the second gap is parasitic on the first one. Since both positions are accessible to extraction, a successful derivation of (30a) could in principle be achieved if the subject-internal gap were parasitic on the second one. But the ungrammaticality of (30a), repeated below as (37a), suggests that a configuration like that in (37b) is unavailable:

(37) a. * Un peintre dont$_i$ les admirateurs e$_i$ veulent que nous achetions les oeuvres e$_i$
"A painter of whom admirers want us to buy the works"

b. ... dont$_i$ [$_{IP}$ [$_{DP}$ Op$_i$ les admirateurs e$_i$] veulent que nous achetions les oeuvres t$_i$]

The Subjacency condition on chain composition is not at stake in (37b): we have proposed in Chapter 3 that dont L-marks its complement IP, with the result that the specifier of IP, DP, is also L-marked. Thus there are no barriers which dominate the null operator to the exclusion of the licensing trace in the embedded clause.

It was also briefly suggested in Chapter 3 that, due to parsing constraints, the first gap must be interpreted as the real gap if it is in a context out of which extraction is possible. This constraint will suffice to rule out (37a) under

the derivation given in (37b).[17] More generally, it predicts that in a language like French, which allows (limited) extraction from within the subject position, any subject-internal gap must be a real gap. In other words, PGs within subjects are absent altogether.[18] As J. Emonds has pointed out to me, this prediction is supported by the impossibility of interpreting (38) below as a double dont construction:

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[17] This will not affect the ability of English subjects to host parasitic gaps, since subjects in English do not allow extraction from within. Similarly, we expect subject-internal PGs to be possible in Italian, given that Italian obeys the Subject Condition. The following contrasts, pointed out to me by Luigi Rizzi, bear out this prediction:

(i) ?? Questo ragazzo, di cui l'energia si legge negli occhi
"This boy, of whom the energy reads in the eyes"

(ii) Questo ragazzo, di cui l'energia eguaglia l'intelligenza
"This boy, of whom the energy equals the intelligence"

(i) has about the status of an ordinary Subject Condition violation (recall also that extraction from within PP is precluded). The fact that (ii) is significantly better follows: the real gap is within the object in (ii), licensing a subject-internal parasitic gap.

[18] An exception to this might arise under the parsing account if the subject has been inverted to the right of another gap, but I will ignore this possibility here.

(38) Un enfant dont les parents parlent très peu
"A child of whom the parents speak very little"

(38) can only mean that the parents of the child are taciturn; it cannot mean that the parents of the child do not often speak about that child. Thus there is only one gap in (38) and it must be in subject-internal position, since the alienable possessor is an obligatory argument of les parents, as I have argued in 4.2.3. The verb parler, on the other hand, may be interpreted intransitively.

But why are there not two gaps in (38)? The fact that parler cannot take as a complement a parasitic gap is expected, since the VP does not contain a landing site for the null operator.[19] Given that the sentence is ungrammatical under the relevant interpretation, it must therefore be that the subject cannot contain a parasitic gap either. Thus the inability of subjects to

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[19] The specifier position of VP will not be a proper landing site for operators if it is either reserved to a certain class of [-Wh] quantifiers, adverbs or negation particles (cf. Obenauer 1984, Rizzi 1987), or else if [Spec,VP] is the base position of clausal subjects, as has recently been proposed in the literature (see, e.g. Koopman & Sportiche 1988 and the references cited there).

host parasitic gaps seems to be a general property of French, to be correlated, as we have suggested, with the possibility of extraction from within this position.

There are two classes of apparent counter-examples to the claim that PGs cannot be subject-internal in French. The first one involves genitive complements of adjectives in copular constructions. For instance, contrasting with (38) is the example in (39) below, from Godard-Schmitt (1986:216), which is grammatical under the double dont interpretation.

(39) un homme dont$_i$ les enfants e$_i$ sont fiers e$_i$
"a man of whom the children are proud"

If (39) is structurally similar to (38), this interpretation is problematic for our view that the subject-internal gap must be the real gap. One possiblity to account for the contrast between (38) and (39) would be to postulate that APs, like DPs, contain a COMP-like position, thus deriving (39) with a PG in the complement position of fiers. Alternatively, we could adopt Couquaux's (1981) view that predicative sentences are derived by raising of the subject from a post-copular small clause, as in (40):

(40) [les enfants]$_i$ sont [$_{sc}$ t_i fiers de NP]

Assuming with Kayne (1985:77) that small clauses may have a COMP position (Kayne cites Mouchaweh 1984 and Pesetsky 1984 for similar proposals), we derive the desired contrast. In (39)-(40), a landing site is available for the null operator base-generated as the complement of fiers, but no such landing site exists in (38).

The other class of seemingly problematic constructions involves what have been called "pronominal verbs" by traditional French grammarians (e.g. se douter "to suspect", se plaindre "to complain", etc.). Contrary to other verbs with genitive complements like parler, douter, etc., pronominal verbs allow the double dont interpretation. This is shown in (41):

(41) a. un homme dont les ennemis t_i se méfient e_i
"a man of whom the enemies mistrust (him)"

b. un enfant dont les parents t_i se plaignent e_i
"a child of whom the parents complain (about)"

A solution along similar lines could be invoked to account for the contrasts between (38) and (41). We could tentatively posit that pronominal verbs have a representation like (42), where se binds a null pronominal in the subject position of a small clause:[20]

(42) les parents se$_i$ plaignent [$_{SC}$ pro$_i$ de NP]

If this structure can be independently motivated, then the occurrence of a PG in the object position of pronominal verbs is accounted for, there being again a proper landing site for the null operator. I will, however, leave a detailed analysis of these constructions to further research.

Returning now to the mechanism of chain composition, I would like to address some of the conceptual objections which it has

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[20] Pronominal verbs differ from reflexives in that the latter involve two distinct arguments; in Jean se lave ("John washes himself"), Jean corresponds to the agent, and se to the theme; similarly for reciprocals, cf. Ils se parlent ("they talk to one another"). In pronominal verbs, se does not correspond to a theme argument. A small clause analysis is thus compatible with this fact, since the theme θ-role is assigned to the SC headed by the genitive complement, while se binds a pronominal in the subject position of the small clause.

raised in the literature. I will argue that, contrary to what has been claimed, the chain composition as construed under the wider framework of Universal Licensing, is not conceptually deficient, but on the contrary provides a principled explanation of the syntactic properties of parasitic gaps.

5.3. Deriving the Properties of PG Constructions

I have shown in this chapter that the chain composition analysis of PG constructions provides a simple account of the conditions under which null operators are licensed in double dont constructions. The data brought forth here thus brings independent empirical support to Chomsky's (1986b) analysis. It is important to note, however, that the chain composition approach has been argued against on conceptual grounds in the literature.

Contreras (1987, 1988) has pointed out that the chain composition mechanism is specific to parasitic gap constructions and has no applications elsewhere in the grammar. In fact, Chomsky's (1986b) approach indeed stipulates that chain composition is an S-Structure process. Furthermore, the C-Subjacency condition on chain composition proposed in Barriers is, as we

mentioned, relevant only to PG constructions. Assuming, for the reasons cited in Chomsky (1982), that no mechanism should refer to parasitic gaps proper, the objection is a valid one.

However, under the framework we have developed in Chapter 2, the construction-specific character of the chain composition approach dissolves. Under our view, chain composition is the mechanism by which null operators satisfy the ULP, much as lexical government and antecedent government are the mechanisms under which traces satisfy the ECP. Thus chain composition does not apply to parasitic gap constructions: chain composition applies to null operators which are unidentified, i.e. which are in specifier positions outside of predication structures. Now the fact that null operators outside of predication constructions have the properties they do (i.e. requiring an A'-antecedent, etc.) in fact follows, I believe, from their having to be part of composed chains in view of the ULP. To put it differently, the question we are now in a position to pose is not: why does chain composition apply only to parasitic gap constructions?, but rather: why do null operator-headed chains which are unlicensed by predication display the properties attributed to PGs?

An answer to this question immediately provides an answer to another sort of conceptual objection that has been raised in the literature against the chain composition approach, namely that it does not explain why the licensing chain must be an S-Structure A'-chain. As we shall see directly, the fact that chain composition is the only means available for an operator in non-predication structures to be identified indeed predicts this very property.

The claim I now wish to pursue is that all the syntactic properties which have been attributed to PG constructions derive from the licensing requirement imposed by the ULP, on the assumption that chain composition is the mechanism which ensures licensing for null operators outside of predication chains. Let us now see how these properties, repeated below in (43), can be derived from more general principles.

(43) a. PGs are licensed at S-Structure
b. The "real" operator must c-command the PG
c. The real gap may not c-command the PG
d. PGs are licensed by traces of movement to an A'-position
e. The distance between the real gap and the parasitic chain is subject to a locality condition (Subjacency).

(43a) follows straightforwardly from the ULP, which requires that all maximal projections (including null operators) be licensed and identified at all levels of representation. Thus null operators in specifier positions outside of predication structures need an antecedent as early as S-Structure. (43b) is a general property holding of identification relations: in order to be identified, a constituent must be able to structurally "reach" its antecedent. This is also true of anaphoric relations, where the anaphor depends on a c-commanding antecedent for reference. Now, in the case of PG constructions, the antecedent is the whole chain; it should suffice in principle for the chain to be accessible to the null operator through one of its links. Why must it be the operator which c-commands the PG? Note that given (43c), the foot of the chain may not c-command the parasitic gap. It thus follows that the only way in which the chain is accessible is if the head of the chain c-commands the PG. But why does property (43c) hold? As Chomsky (1986b) points out, the anti-c-command constraint follows from Condition C of the Binding Theory holding of composed chains: PGs are A'-bound gaps, hence cannot be A-bound in the domain of the head of their chain (i.e. in the domain delimited by the overt operator). Part of (43d) then also follows: since the head of the real chain must c-command the PG

in order for the real chain to be accessible as an identifier, then the head cannot be in an A-position, lest Principle C be violated. This derives the requirement that PG licensers are A'-bound, not A-bound. Finally, (43e) reflects the fact that links of chains in general must obey a locality condition, expressed by 1-Subjacency.

The remaining question is why movement is required, i.e. why base-generated null operators in resumptive pronoun constructions do not license PGs. One possibility is that the relation of a null operator to a resumptive pronoun is one of P-coindexing. Under the view we have adopted, P-indices are not computed in view of the Binding Theory. Thus resumptive pronouns are not bound by null operators; it could be that this prevents them from being part of the operator-headed chain with which the parasitic chain must compose. Note that the presence of a lower link is crucially required for chain accessibility in most cases, since the overt operator itself is too far, i.e. not 1-Subjacent to the null operator.

If these suggestions are valid, the chain composition approach, where chain composition is viewed as a means to

implement the licensing requirement imposed at all syntactic levels by the Universal Licensing Principle, provides a principled explanation for the properties of parasitic gaps. This is particulary desirable since the very theoretical interest of PG constructions lies precisely in the assumption that their properties should follow entirely from independent principles of UG.

5.4. Summary

In this chapter, I have addressed the questions raised by the particular configurations instantiated in DDCs, in view of the claim that null operators must be identified at S-Structure. Problems raised by the distribution of adnominal PGs for the chain composition analysis have been shown to be only apparent. In particular, the occurrence of adnominal PGs within argument PPs has led us to explore an alternative analysis for the corresponding extraction facts; we have proposed that the impossibility of extracting out of the nominal complement of prepositions is due to the ECP, not to Subjacency, as has often been assumed. We have also accounted for the impossibility of adnominal PGs to occur in a tensed embedded clause; this was shown

to follow from Subjacency under a chain composition approach. Finally, we have addressed the conceptual problems associated with the chain composition analysis; we have suggested that the Universal Licensing Principle of Chapter 2 provides a principled account under which the properties characteristic of parasitic gap constructions follow from general conditions on composed chains.

CONCLUSION

As we have mentioned in the course of this dissertation, the particular interest of parasitic gap constructions for linguistic theory lies in their marginal status. This property makes it unlikely that the knowledge and intuitions that speakers have about PG constructions arise from any form of explicit instruction they would have been exposed to at any stage of their linguistic experience. It must therefore be concluded that these intuitions arise directly from the general principles made available by Universal Grammar. Furthermore, the very marginality of the data involved renders unlikely the possibility that UG contains principles the sole purpose of which is to account for the properties of PG constructions.

While the general goal is to have all the properties of PGs follow from independent principles, it is clearly the case that some of the mechanisms proposed in the literature to account for the behaviour of PG constructions have a stipulative character. For instance, Chomsky (1986b) stipulates that the chain composition process must take place at S-Structure; moreover, the notion

of 0-Subjacency he advocates is unattested outside of PG constructions.

In this thesis, I have proposed that the level at which chains must compose need not be stipulated, but in fact follows from the Universal Licensing Principle, which requires that maximal projections in general - and null operators in particular - be licensed and identified at every level of syntactic representation. Chain composition, under the view adopted here, is simply the means by which an operator unlicensed by predication acquires an identifier. Thus chain composition is available in the grammar for the same reason that lexical government is available, i.e. in order to enforce the requirement made by deeper principles (the ULP and the ECP) that features of null categories be recoverable.

The Universal Licensing Principle proposed in Chapter 2 yields other interesting results. It provides, among other things, a principled account of the fact that adjunct traces do not license parasitic gaps. Recall that this property stems, under our analysis, from the inability of null opertors to be

licensed as predicates at D-Structure - hence to appear at this level in the adjunct positions normally occupied by secondary predicates. Other consequences concern the distribution of resumptive pronouns. On the view that resumptive pronouns in languages like French and English involve an operator base-generated in the specifier position of CP, we have derived the fact that the resumptive pronoun strategy in these languages occurs only within relative clauses. This distribution arises from the D-Structure conditions on the licensing of operators (overt or null): in order to be licensed in a specifier position at D-Structure. an operator must be part of a predicate chain, hence contained within the specifier of a predicative clause. Thus, such pronouns are excluded from Wh-constructions. By contrast, resumptive pronouns which are "lexicalized" traces are not subject to such a requirement, since the operator does not occupy the specifier position, but rather an argument position, at D-Structure. The D-Structure licensing requirements imposed by the ULP on operators thus allows us to establish a typology of resumptive pronouns based on their manner of derivation, as well as on correlating syntactic properties.

Two of the consequences of the ULP have been explored with particular reference to double dont constructions in French. First, the idea that null operators cannot be adjuncts has proven of crucial importance in view of the asymmetries displayed by genitive complements as parasitic gaps in double dont constructions. The asymmetries involved have led us to argue that inalienable possessors are (obligatory) arguments, and that, furthermore, the determiner is instrumental in the assignment of the inalienable θ-role. Secondly, the requirement whereby a null operator must be identified at all levels of representation has led us into an investigation of the conditions under which null operators within noun phrases are identified and licensed at S-Structure. The constructions instantiated by double dont constructions have provided evidence in favour of the 1-Subjacency based chain composition analysis. Furthermore, we have argued that the anti-c-command requirement holds independently of the locality conditions.

In the wake of our investigation of the properties and distribution of double dont constructions, we have made a number of proposals more directly related to the grammar of French. We have analyzed dont as a genitive complementizer, overtly Case-

marked for genitive Case via Spec-Head agreement. The question of extraction from within subjects in French was also addressed: we pointed out the limited character of such extractions, and suggested an analysis, compatible with the Barriers relational view of bounding categories, to account for the grammatical cases of Subject Condition violations. This analysis makes crucial use of the properties of dont as a Case-marked complementizer, and thus derives the correct results without recourse to parametrization.

Other issues addressed in this thesis were concerned with the proper analysis of extraction out of PPs in French, the implementation of the locality conditions on PG licensing - with particular reference to adnominal PGs within argument and non-argument PPs, as well as other issues of locality particularly relevant to the chain composition analysis.

Finally, it was suggested that, within the broader context of the Universal Licensing Principle developed in this thesis, the chain composition analysis yields an important conceptual advantage: it allows us to derive from general conditions on chains, as well as from independently motivated structural

constraints on identification relations, the range of properties that have been attributed to parasitic gap constructions.

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