THE FORMAL NATURE OF ANAPHORIC RELATIONS

by

JOSEPH AOUN
M.A. ,Saint-Joseph University
D.E.A.,University of Paris VIII

Vol. 1

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE
DEGREE OF

DOCTOR OF PHILOSOPHY

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

November 1981

Signature of Author _____
Department of Linguistics and Philosophy
November 3, 1981

Certified by _____
Thesis Supervisor

Accepted by _____
Chairman, Departmental Committee

THE FORMAL NATURE OF ANAPHORIC RELATIONS

by

JOSEPH AOUN

Submitted to the Department of Linguistics and Philosophy in partial fulfillment of the requirements for the Degree of Doctor of Philosophy, on November 3, 1981.

ABSTRACT

Anaphors, in the government-binding framework, are nominal expressions which must be related to an antecedent in an argument-position (A-position). The relation between the anaphoric expression and its antecedent is contrained by the binding principles which define an opaque domain in which these anaphors must be bound -i.e. must have an antecedent.

In this work, we will suggest the existence of another kind of anaphoric relations ; the anaphoric relation which holds between an anaphor and an antecedent in an non-argument position ($\bar{A}$-position). We will refer to anaphors which need an antecedent in an argument-position as A-anaphors and anaphors which need an antecedent in a non-argument position as $\bar{A}$-anaphors. It is possible to show that for each type of A-anaphors there exists a corresponding $\bar{A}$-anaphor. Two anaphoric systems will thus be distinguished: the A-anaphoric system whose members are A-anaphors and the $\bar{A}$-anaphoric system whose members are $\bar{A}$-anaphors. To establish the existence of these two anaphoric systems, to study their behavior and to explore the consequences of their incorporation in the grammatical theory will beour main concern.

In particular, we will suggest that the distribution of A-anaphors and $\bar{A}$-anaphors is constrained by the binding theory which, thus, will be generalized from a theory of A-binding- i.e. from a theory constraining A-anaphors- to a theory of A- and $\bar{A}$-binding. The generalized binding theory will be shown to apply in syntax and in Logical Form.As a consequence,the emty Category Principle will be dispensed with as an independent principle in the grammar and its effects derived from the theory of binding and the theory of thematic relations; thus, solving various conceptual and empirical problems in the grammatical theory.

These proposals will bear on the characterization of fundamental grammatical notions. The notion chain will be extended to include (some) $\bar{A}$-chains: the notion of thematic-chain will be introduced. A relativized rather than an absolute notion of A and $\bar{A}$-position will appear to be at work in the grammar and a general constraint prohibiting extraction from $\bar{A}$-positions will be put forward. With respect to "empty elements", it will be argued that there is no type distinction between phonetically realized pronouns and the so-called empty elements (NP-traces, wh-traces, PRO). Pronouns are just a different occurrence of the empty category identified as such in terms of properties of the structure they appear in. As for anaphors, it will be suggested that there are anaphoric markers which A-anaphorize or $\bar{A}$-anaphorize the noun or the pronoun they are attached to. As a consequence, for some languages like English, it will be possible to suggest that inherent lexical anaphors do not exist, rather there exist anaphorization processes which A-anaphorize or $\bar{A}$-anaphorize the element they affect. Throughout, the dissertation, we will seek to characterize the notion " anaphor"; the anaphorization strategy will be related to the various identification strategies in the grammar.

Thesis Supervisor: Noam Chomsky

Title: Institute Professor

ACKNOWLEDGEMENTS

I would like to thank my thesis Advisor Noam Chomsky and the members of my committee . I also would like to thank my teachers and friends in Lebanon and France, my fellow students, as well as the visitors to the M. I.T. community. Many thanks to Jean-Roger Vergnaud, and a special mention to my family and Zeina el-Imad.

TABLE OF CONTENTS.

Page

Page

INTRODUCTION.

Consider the following relations in the grammar:

1-a) The relation between an agreement marker and the element it agrees with

b) The relation between PRO and its controller

c) The relation between an anaphoric expression and its binder.

These relations may be viewed as identification strategies. The agreement marker receives its features (gender, number ...) from the element it agrees with. The agreement element is identified by the element it agrees with. Similarly, the controller of the non-phonetically realized pronoun -i.e. PRO- identifies the controlled PRO. It, also, is possible to say that the antecedent -the binder- of an anaphoric expression identifies this anaphoric expression.

These identification strategies obey various locality conditions (cf. Koster 1978). (1 a) seems to be clause-bound. The locality conditions on (1 b) are part of the theory of control (cf. Chomsky 1980). They recently came under extensive investigation and some promising results that will characterize their exact nature may be expected (cf. Chomsky 1981 and Manzini 1980). The locality conditions on (1 c) are part of the binding theory. Anaphors, in the government binding framework, are nominal expressions which must be related to an antecedent in an argument-position. The relation between the anaphoric expression and its antecedent is constrained by the binding principles which define an opaque domain in which these anaphors must be bound -i.e. must have an antecedent-. A more detailed presentation of these notions is to be found in chapter 1[1]. Thus, in (2 a-b):

2-a)* they$_i$ think that John likes each other$_i$
b) John thinks that they$_i$ like each other$_i$

The opaque domain in which the anaphoric expression <u>each other</u> has to be bound is the embedded clause. Only the reciprocal in (2 b) is bound in this opaque domain. Therefore, (2 a) will be ruled out by the binding theory.
As indicated earlier, the antecedent of the anaphoric expression is in an argument-position (A-position). As for the anaphoric expression, itself, it may be overt or not: the reciprocal in (2) is an overt anaphoric expression whereas the empty category left by the extraction of a noun-phrase (NP-trace) is not:

3- John$_i$ was arrested t_i

The anaphoric expression may also receive an independent thematic role (θ-role) or not. That is, it may or may not have a different interpretation from its antecedent. In (4):

4- John$_i$ hit himself$_i$

The reflexive anaphor is interpreted as the patient <u>y</u> that was hit by <u>x</u> and <u>John</u> is interpreted as the agent <u>x</u> that hit <u>y</u>. In this case, <u>x</u> = <u>y</u>. In (3), however, assuming that the trace is anaphoric, it does not seem to receive an interpretation distinct from its antecedent <u>John</u>. Since anaphoric expressions may be overt or not and since they may bear an independent θ-role or not, they may be classified with respect to the features (±phonetic), (±θ-role):

5-a) + θ-role + phonetic
b) - θ-role + phonetic
c) - θ-role - phonetic
d) + θ-role - phonetic

Among the four possibilities predicted by this classification, three are acknowledged in the litterature. (5 a) is fulfilled by reciprocals and reflexives, (5 c) by NP-traces and (5 d) by PRO. It will be suggested that (5 b) occurs in natural languages. There are overt anaphors which do not bear an independent θ-role (cf.chapter 4).

In this work, we will suggest the existence of another kind of anaphoric relation; the anaphoric relation which holds between an anaphor and an antecedent in a non-argument position ($\bar{A}$-position). We will refer to anaphors which need an antecedent in an argument-position as A-anaphors and to anaphors which need an antecedent in a non-argument position as $\bar{A}$-anaphors. $\bar{A}$-anaphors, like A-anaphors, may be classified with respect to the features ($\pm$phonetic), ($\pm$ θ-role). It, thus, will be possible to distinguish between two anaphoric systems: the A-anaphoric system whose members are A-anaphors and the $\bar{A}$-anaphoric system whose members are $\bar{A}$-anaphors. To establish the existence of these two anaphoric systems, to study their behavior and to explore the consequences of their incorporation in the grammatical theory will be our main concern.

The binding principles do not only constrain the distribution of anaphoric expressions,but also that of other nominal expressions such as pronominals (pronouns and PROs) and R-expressions (names and traces left by the extraction of wh-element, i.e. variables). Furthermore, the distribution of a subset of these nominal expressions,the empty elements left by extraction rules (NP-traces and wh-traces), is constrained by the Empty Category Principle (ECP). The binding principles and the ECP belong to different components of the grammatical theory. The binding principles are part of the

theory of binding and the ECP is part of the theory of government. In chapter 1, we will start by discussing some empirical and conceptual problems facing the government-binding framework. The existence of these problems will be traced back to the ECP. A radical way to solve them, thus, is to eliminate the ECP as an independent principle in the grammar.[2] The effects of this principle will be derived from the binding theory generalized to constrain A-anaphors and $\bar{A}$-anaphors i.e. to constrain the A-binding and the $\bar{A}$-binding relations (chapter 1, part I) and from the θ-criterion under a slight modification of the notion chain (cf.chapter 1, part I). Obviously, the generalization of the binding theory from a theory of A-binding to a theory of A- and $\bar{A}$-binding is possible if $\bar{A}$-anaphors exist. In particular, we will argue in this chapter that empty categories left by (quasi-)operator such as wh-elements belong to the $\bar{A}$-anaphor system.

The generalization of the binding theory to a theory of A- and $\bar{A}$-binding will trigger a number of modifications. For instance,the opaque domain -the governing category- in which the binding principles apply will have to be redefined in order to include $\bar{A}$-positions such as COMP; i.e. to include $\bar{S}$. Similarly, since the binding theory is to subsume part of the ECP and since the ECP applies at L.F., it follows that the binding theory will apply in L.F. too. In chapter 2, we will seek a more optimal formulation of the binding theory and a precise characterization of its domain of application. It will appear that the definitions and principles which form a part of this theory are relevant to the distribution of quantified expressions

and negative expressions in Romance Languages (chapter 2, part I).

The behavior of movement rules in L.F. will prove to be relevant to the application of the binding theory and the status of the various nominal expressions. A particular instance of Move α in L.F. appears to be constrained by the binding theory. Further evidence, thus, will be provided for the L.F. nature of this theory. It will be argued that the binding principles apply at S-structure and at L.F. As for the status of nominal expressions, it will be argued that there is no type distinction between pronouns and the other empty elements (NP-trace, wh-trace, PRO): pronouns are just a different occurrence of the empty category identified as such in terms of properties of structures they appear in.

In chapter 1, traces left by wh-elements are shown to be members of the $\bar{A}$-anaphoric system. In chapter 2, another (non-overt) member of this system will be isolated: the empty element coindexed with a clitic. Since clitic-traces and wh-traces are coindexed with elements in $\bar{A}$-positions, they will both be identified as variables. These two kinds of variables will display a different behavior. For instance, only clitic-traces obey the Specified Subject Condition.These differences will be traced back to the binding theory. Whereas wh-traces function as $\bar{A}$-anaphors and R-expressions, clitic-traces function only as $\bar{A}$-anaphors. As a consequence, wh-traces are subject to two principles of the binding theory: the one which refers to anaphors and the one which refers to R-expressions. Clitic-traces, however, function as $\bar{A}$-anaphors and will only be

subject to the binding principle which refers to anaphors. Thus, two kinds of variables will be distinguished : variables coindexed with an operator in an $\bar{A}$-position and variables coindexed with a non-operator in an $\bar{A}$-position (chapter 2, part II).

Pursuing the study of clitic-traces, the distribution of these elements in French causative constructions will prove to be relevant to the formulation of a central concept of the binding theory; the notion "accessible SUBJECT" which defines the opaque domain - the governing-category- in which the binding principles apply. In particular, it will be suggested that the notion "accessible SUBJECT" is to be replaced by that of "accessible chain"; the notion thematic-chain (θ-chain) will be introduced (chapter 2, part III).

The study of clitic doubled constructions in chapter 3 will prove to be relevant to the considerations mentioned in chapter 1, where part of the ECP were derived from the θ-criterion. This attempt was made possible under the assumption that $\bar{S}$ breaks a chain; i.e. that a chain may not be formed accross an $\bar{S}$-boundary. In chapter 3, this assumption will be subsumed under a more general constraint prohibiting extraction from an $\bar{A}$-position. A relativized rather than an absolute notion of A and $\bar{A}$-pcsitions will appear to be at work in the grammar. The analysis of doubled constructions, we will suggest, may also bear on the status of the case-filter an as independent principle in the grammar. A typological classification of clitics will emerge: clitics in natural languages will be classified as to whether they absorb Case and/or thematic-roles (θ-roles) (chapter 3, part I). Doubled constructions will also illus-

trate the first instance of overt $\bar{A}$-anaphors encountered in this work and it will be suggested that there are anaphoric markers which $\bar{A}$-anaphorize or A-anaphorize the elements they are attached to. As a consequence, for some languages like English, it will be possible to suggest that inherent lexical anaphors do not exist , rather there exist anaphorization processes which A-anaphorize or $\bar{A}$-anaphorize the element (the pronoun or the name) they are attached to. (chapter 3, part II).

In chapter 4, the parallelism between the two anaphoric systems - the A-anaphoric system and the $\bar{A}$-anaphoric system- will be studied more carefully. As indicated in (5), above, A-anaphors may be classified with respect to the features ($\pm$phonetic), ($\pm\theta$-role). Similarly, $\bar{A}$-anaphors may be classified with respect to the same features. Thus, for each type of A-anaphors, there exists a corresponding $\bar{A}$-anaphor . As examples of overt A-anaphors, the negative <u>ne...personne</u> (<u>nobody</u>) in some French dialects, <u>l'altro</u> in the reciprocal constructions of Italian and <u>there</u> in English will be studied.

FOOTNOTES.

1 -The framework as well as the concepts and notions assumed will be presented in detail throughout the four chapters.

2 -In Brody (1981), a different attempt to derive the ECP from the binding theory is outlined.

CHAPTER 1: BINDING, ECP AND THE θ-CRITERION

0. Presentation.

In the government-binding framework outlined in Chomsky (1981), nominal expressions are divided into three basic categories: (I) anaphors (reciprocals, reflexives, NP-traces, PRO),(II) pronominals (PRO and phonetically realized pronouns),(III) R-expressions (names and variables). The distribution of these nominal expressions is constrained by the binding principles. Informally speaking, these principles require anaphors to be locally bound (i.e. to have a local antecedent in a sense to be made precise), phonetically realized pronouns to be locally free (i.e. not to have a local antecedent), and R-expressions to be free (not to have any antecedent). Thus, consider the following paradigm:

i-a) ≠ they$_i$ think [$_{\bar{S}}$ that he saw each other$_i$]
b) they$_i$ saw each other$_i$

ii-a) ≠ John$_i$ saw him$_i$
b) John$_i$ thinks [$_{\bar{S}}$ that he$_i$ saw Mary]

iii-a) ≠ who did he$_i$ see x$_i$
b) who did he$_i$ see x$_j$ (where i ≠ j)

iv-a) ≠ who does he$_i$ think [$_{\bar{S}}$ Peter saw x$_i$]
b) who does he$_i$ think [$_{\bar{S}}$ Peter saw x$_j$]

The (a) examples are excluded by the binding theory:(ia) is excluded because the reciprocal <u>each other</u> is locally free, (iia) is excluded because the pronoun is locally bound by <u>John</u> and (iiia), (iva) are excluded because the variable is bound by the pronoun <u>he</u>.

As for PRO, it follows from the binding theory that it must be ungoverned (i.e. that it must not appear as a constituent

of an $\bar{X}$ category such as VP, PP, NP or as a subject of a tensed clause) (the notion "government" will be defined later on):

v-a) John$_i$ wants $[_{\bar{S}}[_{\bar{S}}$ PRO$_i$ to leave$]$ $]$

b)$\neq$ John$_i$ read $[_{\bar{NP}}$ PRO$_i$ books$]$

The subject of an infinitival clause is a non-governed position; PRO can appear in this position and be controlled by <u>John</u>. However, the subject position of a noun phrase is governed; PRO cannot appear in this position: (vb) does not mean that "John read his$_i$ books (where his=John)" (cf. Chomsky 1981 and infra for more details).

Furthermore the distribution of a subset of these nominal expressions is constrained by the Empty Category Principle which requires NP-traces and variables to be properly governed: roughly, an NP-trace or a variable is properly governed if it is a complement of V or if it has a local antecedent. Thus, consider:

vi-a)$\neq$ who$_i$ do you think $[_{\bar{S}}$ t$_i$ that $[_{\bar{S}}$ x$_i$ left$]$ $]$

b) who do you think $[_{\bar{S}}$ t$_i$ $[_{\bar{S}}$ x$_i$ left$]$ $]$

vii-a)$\neq$ John$_i$ is probable $[_{\bar{S}}$ $[_{\bar{S}}$ t$_i$ to leave$]$ $]$

b) John$_i$ was beaten t$_i$

The (a) sentences are excluded by the Empty Category Principle: in (via), the presence of <u>that</u> prevents the trace t$_i$ in COMP from counting as the local antecedent of the variable in subject position, and in (viia), the embedded $\bar{S}$ prevents <u>John</u> or the matrix predicate from counting as proper-governors of the trace t$_i$.

Note that for variables, the local antecedent relevant for the Empty Category Principle is different from the one relevant for the binding principles. For the former principle, the

relevant antecedent is in non-argument position (or $\bar{A}$-position such as COMP) and for the latter, the relevant one is in argument position (or A-position). With respect to the binding theory which is a theory of A-binding, the variable must be A-free (i.e. must not have an antecedent in argument position) and with respect to the Empty Category Principle, it must be $\bar{A}$-bound (i.e. must have a local antecedent in non-argument position).

The main purpose of this chapter is to suggest a rearrangement of the different principles at work in the government-binding framework. This rearrangement has two effects: it eliminates the Empty Category Principle as an independent principle in the grammar and generalizes the binding theory from a theory of A-binding to a theory of A-binding and $\bar{A}$-binding. In its essential, this generalization requires a variable to be A-free and $\bar{A}$-bound in its governing category.

The chapter is divided into two parts. In the first part, some empirical and conceptual problems in the government-binding framework will be discussed. The empirical problems have to do with the extraction of wh-elements from inside an NP which seems to indicate -contrary to what is assumed in the government-binding framework- that the Specified Subject Condition applies to variables. The conceptual problems have to do with some redundancies between the binding theory and the Empty Category Principle. It will be indicated that the generalization of the binding theory to a theory of A-binding and $\bar{A}$-binding will overcome the empirical problems. As for the conceptual problems, a radical way of avoiding them is by eliminating the Empty Category Principle (ECP) as an independent principle in the grammar: the generalized binding theory will account for the

cases of variables covered by ECP, and, as indicated in the second part, the θ-criterion will account for the cases of NP-traces covered by ECP.

PART I: ELIMINATION OF ECP FOR VARIABLES.

1. The GB-approach.

The binding theory as developed in Chomsky (1980) (henceforth O.B.) characterizes two domains as opaque in the sense that an anaphor (traces,reciprocals,reflexives...)cannot be free in these domains and a pronoun is disjoint in reference from an "antecedent" within them. The two opaque domains are: (1) the subject of a tensed sentence(the Nominative Island Condition:NIC);(2) the c-command domain of the subject of an NP or S (the specified subject condition SSC). Among the conceptual and empirical considerations that motivated the reformulation of the binding principles in Chomsky (1981)(henceforth Pisa Lectures or P.L.),are those concerning the behavior of wh-traces. In Rizzi (1978),it is observed that in languages such as Italian that tolerate certain violations of the wh-island constraint(namely,those that follow from taking only $\bar{S}$,not $\dot{S}$, to be a bounding node for subjacency),the SSC does not hold for wh-movement as illustrated in(1):

1- tuo fratello,a cui$_i$ mi domando [che storia abbiano raccontato t_i] era molto preoccupato; "your brother,to whom I wonder [which stories they told t_i] was very troubled".

In (1), the wh-phrase a cui moves in a single step to its S-tructure position from the position marked by the trace t violating the SSC. A similar observation can be made in French[1] with respect to the following sentence where the movement of the abstract wh-element α_i violates the SSC too:

2- c'est à Paul [α_i que [Marie sait [quoi [donner t_i]]]]
"it is to Paul that Marie knows what to give"

This appears very natural in the light of the similarity between variables and names,as illustrated for example under the condition of strong cross-over in the sense of Wasow (1972 ,1979).Moreover, as Freidin and Lasnik(1979,1979a) point out, the similarity between variables and names revealed by the strong-cross-over phenomenon extends to the domain of Tense,i.e.,to N IC. In (3),the variable t cannot be coindexed with the pronoun he:

3-a) who did he say [Mary kissed t]
b) who did he say [t kissed Mary]

In this respect, the NIC and SSC are alike: neither apply to variables, which behave in the manner of names in these constructions.
Nevertheless, wh-movement does appear to observe the N IC.That is, wh-movement out of a clause is impossible from the nominative subject position in constructions from which wh-movement is possible from the domain of a subject. Compare, for example, (1) and (2) with (4):

4- * les hommes [que/qui]$_i$ je me demande [quels histoires t_i ont raconté à ton frère], étaient très troublés
"the men who$_i$ I wonder [which stories t_i told to your brother] were very troubled".

While examples such as (4) appear to indicate that the N IC holds for the variable left by wh-movement, example (3b) shows that it does not hold.[2] In brief, while wh-movement is not constrained by the SSC, it is apparently constrained by the N IC.

As indicated in P.L., it is not at all clear whithin the OB-framework why there should be this asymmetry.
These observations are taken in P.L. -from which the above considerations are drawn- to indicate that the NIC, in the OB-framework expresses a spurious generalization, and that in fact two distinct principles are involved in the category of phenomena that had been classified under the N IC. NIC is restricted to the category of phenomena in which there is complete symmetry between the N IC and the SSC. Thus,variables are exempt from both conditions, while NP-trace is subject to both. A distinct principle -the Empty Category Principle ECP which requires traces to have a local antecedent or a governor[3] - accounts for the fact that wh-movement appears to be subject to something like the N IC, as in (4) or (4a). We will return to these matters in detail:

4-a) ≠ who$_i$ do you think that t$_i$ left

2. Some problems with the GB-approach.

2.1. The SSC.

Examples (1) and (2) of the preceding section indicated that the SSC does not hold for wh-movement. The facts, however, are more complex and some restrictions must be made with respect to the conclusion that variables are not subject to the SSC. As indicated by Cinque (1979) for Italian and by Zubizarreta (1979) for French, only subject PPs can be extracted from NPs:[4] (the Genitive constructions were first discussed by Milner 1975):

5-a) una persona [$_{PP_i}$ di cui] appreziano [$_{NP}$ la grande generosita t$_i$] [è Georgio]

b) une personne [dont$_i$] nous apprécions [$_{NP}$ la grande générosité t$_i$] [est Georges]
"a person of whom we appreciate the great generosity is Georges "

6-a) ✱ un pianeta $[_{PP_i}$ su cui $]$ molti di noi vedrano $[_{NP}$ l'atteragio t_i $]$

b) ✱ une planète $[_{PP_i}$ sur laquelle $]$ plusieurs d'entre nous verront $[$l'atterissage t_i $]$

"a planet on which many of us will see the landing"

Sentences (5)-(6) represent cases of wh-movement[5]. In (5), the subject PP-<u>di cui</u> in (5a) and <u>dont</u> in (5b)- is extracted by wh-movement and the sentence is grammatical. In (6),the non-subject PP -<u>su cui</u> in (6a) and <u>sur laquelle</u> in (6b)- is extracted by wh-movement too; the result, however, is ungrammatical. As indicated in Cinque op.cit.,it is tempting to account for the contrast between (5) and (6) in terms of SSC. Assuming that a covert subject is present when there is not an overt one[6], the subject -whether covert or overt- or more precisely the SSC will prevent the extraction of the PP in (6) but this constraint will be inoperative in (5).

We are, thus, lead to a near contradiction. While examples (1)-(2) indicate the SSC does not hold for variables,examples (5)-(6) appear to indicate that it does hold. The situation is, thus, similar to the one discussed in the previous section where N C appears to hold for variables in some cases but not in others. It is true that the SSC seems to hold for variables left by extraction from an NP level but not from a sentential level; the situation, however, is more complicated since the (L.F.) extraction of wh-elements from inside an NP is not constrained by the SSC in English[7]:

7- who criticized $[_{NP}$ his writing of which book$]$

Assuming that move α in L.F. raises the wh-quantifier and adjoins it to the COMP (cf.Chomsky 1978 ,Kayne 1980 and Aoun,Hornstein and Sportiche 1981),the movement will

violate the SSC (irrelevant details omitted):

7-a) $[_{\bar{S}}$ who$_j$ of which book$_i$ $[$t$_j$ criticized $[$his writing t$_i$ $]]]$

2.2. Some Conceptual problems.

Other questions can be raised with respect to the government-binding framework. They are more conceptual in nature. There are some redundancies in this system. For example, both the binding principles and the ECP require an antecedent for the trace left by NP-movement: principle A of the binding theory requires the NP-trace (an anaphor) to have a c-commanding antecedent in its governing category and the ECP also requires a c-commanding antecedent (or a lexical governor)[9].

This redundancy does not hold throughout between the two theories. For traces left by wh-movement, i.e. for variables, the binding theory and the ECP are complementary. The former requires variables to be free and the latter requires them to have a c-commanding antecedent in an $\bar{A}$-position (= non-argument position), cf. P.L. (or a lexical governor). The binding theory being essentially a theory of A-binding (and not of $\bar{A}$-binding) the redundancy is avoided. One may ask, in this respect, why this is the case. What prevents the generalization of the binding theory from a theory of A-binding to a theory of A-binding and $\bar{A}$-binding?

In the presentation of the government-binding theory given at the GLOW Conference in Pisa (1979) by N. Chomsky, PRO was distinguished from NP-trace and wh-trace in that contrary to the latter, it is not empty; it has a collection of features (α person, β number, γ gender). In chapter 6 of P.L., however, this distinction does not hold anymore. These elements are viewed as three different occurences of one type, call it

F. In this approach, the existence of a principle -the ECP- which singles out two occurences of F, NP-trace and wh-trace, is not as natural as it is in the presentation given at the GLOW Conference. Moreover, the situation is complicated by the existence of an other principle (8) which singles out in a different way two other occurences trace and PRO- :

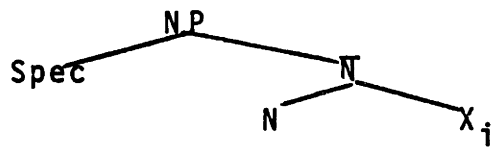
8- If α is an F and not a variable, then it is an anaphor. (cf. Pisa Lectures, chapter 6).

While this state of fact may be inevitable, any attempt to eliminate the ECP or to generalize (8) so as to eliminate the restriction concerning variables (cf.8') is a welcome step:

8'- If α is an F, then it is an anaphor.

A third problem concerning ECP is more technical in nature. In the government-binding framework, the distribution of variables left by wh-movement is constrained by the ECP which requires empty elements to be properly governed by a lexical element. For the core cases, the lexical elements are nouns N°, verbs V° and NPs. Consider, now, the extraction of wh-elements from inside an NP. As illustrated in the preceding section, this extraction is limited: only the subject in an NP may be extracted in Italian and French. This may be partially accounted for if it is assumed that nouns N° are not proper governors, cf. P.L.:

9-



(where the variable x_i is not in subject position).

Since nouns are not proper governors, the variable left by wh-movement in (9) will be in non-properly governed position; the derivation will be ruled out by the ECP. The extraction of subjects will involve a specific mechanism whose effect is to provide a "proper governor" for the variable. This mechanism is treated at length in the following sections. In short, not all lexical categories but only V° (or more precisely (+V°) elements) and NPs will count as proper governors; ECP will have to be redefined accordingly. Note, however, that proper governors do not form a natural class anymore. In the literature, various proposals may be thought of as an attempt to overcome the problem (cf. Kayne 1981 , Jaeggli 1980): in essence, they extend ECP so as to require an antecedent NP and a governor (V...) for the empty elements. These attempts, however, are subject to the same remark mentioned at the beginning of this section: they don't avoid the redundancy between ECP and the binding principles.

Summarizing, three (conceptual) problems that arise in the government-binding framework were mentioned.(1) redundancies, specifically between the binding theory and the Empty Category Principle.(2) the naturalness of principles and definitions such as the ECP and definition (8) which single out different occurrences of the same type.(3)the naturalness of the class (+V°) and NP singled out by ECP. Although the government-binding approach constitutes a definite improvement over the previous one outlined in Chomsky (1980),these problems and the one mentioned in the preceding section with respect to the SSC suggest that some modifications are in order.

3. Reformulation of the Binding Theory.

We would, now, like to develop an approach intended to overcome the empirical and conceptual problems mentioned in the preceding two sections. Contrary to what the previous discussions seemed to imply, this approach will not be radically different from the GB-approach. Rather, it will be indicated that a generalization of the binding theory from a theory of A-binding to a theory of X-binding (where X = A or $\bar{A}$) will permit a solution of many of the mentioned problems. Essentially, it will be suggested that variables function as anaphors and names and are thus subject to principles A (revised) and C of the binding theory. Since the change involves crucial use of such fundamental notions as "accessibility""governing category" etc. We will begin by reviewing these notions and their domain of application as they were originally developed in P.L.

3.1. On government.

In the government-binding framework, the notion government plays a central role; the Case theory, the binding theory and the Empty Category Principle are formulated in terms of government. Roughly speaking, case-assignment is a special case of governance: it occurs when the governing element happens to be a case-assigner. The binding principles apply in the domain of the minimal S or NP containing a governor and a governee. The Empty Category Principle requires empty elements to be properly governed: the proper governors will be a subset of the governors. These principles will be considered more carefully in the following sections, cf. P.L.

The notion of government is essentially a relational notion which holds in a specific structural configuration between

a governor and a governed element. For the core cases, a lexical head governs its complements; the governor is an X° element, the governed element is an $\overline{X}$ and the structural configuration is that of c-command as defined in (10), cf. P.L.:

10- α c-commands β iff

(i) α does not contain β

(ii) Suppose that $\gamma_1, \ldots, \gamma_n$ is a sequence such that

a) $\gamma_n = \alpha$

b) $\gamma_i = \alpha^j$

c) γ_i immediately dominates γ_{i+1}

Then if δ dominates α, then either (I) δ dominates β, or (II) $\delta = \gamma_i$ and γ_1 dominates β.

11- $(_{\beta} \ldots \gamma \ldots \alpha \ldots \gamma \ldots)$, where

(i) $\alpha = \underline{X^{\circ}}$

(ii) where φ is a maximal projection, if φ dominates γ then φ dominates α

(iii) α c-commands γ.

12- α governs γ in (11).

3.2. The Binding Principles and the notion SUBJECT.

As noted earlier, in the GB-framework, nominal expressions are subdivided into three basic categories: (I) anaphors (lexical anaphors, such as reciprocals and reflexives, NP-trace, PRO), (II) pronominals (PRO and phonetically realized pronouns), (III) R-expressions (names and variables).
The binding theory has one principle for each of these categories:

13- Binding Theory:

A) An anaphor is bound in its Governing Category

B) A pronominal is free in its Governing Category

C) An R-expression is free.

As previously noted, the binding is A-binding (antecedent-binding):

14-a) α is A-bound by β iff α and β are coindexed, β c-commands α and β is in an A-position.

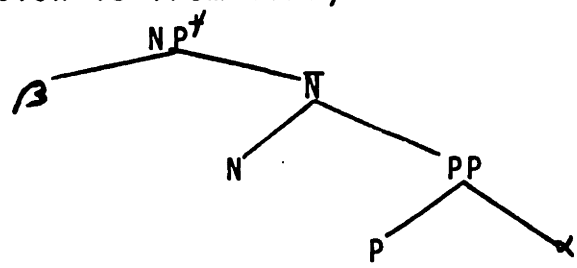
b) α is A-free iff α it is not A-bound.

The theory of binding -like case theory- is developed within the theory of government. It makes use of the fundamental notion "governing category" characterized as follows:

16- α is the governing category for β iff α is the minimal category containing β and a governor of β where α = NP or S.

Let us, now, briefly consider the application of the binding theory to arguments within NP as in (17) (the content of this section is from P.L.).

17-



In position α, an anaphor is governed by P so that NP* is its G.C., in which it must be bound. This gives the right results where β is a subject, as in (18), but the wrong results where β is not a subject as in (19): (the governing category is starred):

18- $[_{NP^*}$ their stories about each other $]$

19-a) we heard $[_{NP^*}$ some stories about each other $]$

b) we heard $[_{NP^*}$ the stories about each other $[$that are being circulated$]$ $]$

The same is true in more complex cases, e.g., (20):

20- we thought [that [$_{NP}$ pictures of each other] would be on sale]

Principle A of the binding theory incorrectly rejects (19) and (20). As for pronouns[10], the predictions of GB-theory are that a pronoun must be free in its G.C. NP, giving (21) for the case of <u>him</u> proximate to <u>John</u>:

21-a) John$_i$ saw [$_{NP}$ my picture of him$_i$]

b) I saw [$_{NP}$ John'$_i$s picture of him$_i$]

c) John$_i$ saw [$_{NP}$ a picture of him$_i$]

d) John$_i$ thought I saw [$_{NP}$ a picture of him]

(21 c) is incorrectly marked grammatical.

In brief, while the binding theory gives correct results on a sentential level (cf. P.L.)[11], it faces some problems on an NP level.

To overcome these empirical problems[12], a redifinition of the notion governing category is undertaken in P.L.

Consider the basic structure of S, (cf. Emonds 1976):

22- NP INFL VP where INFL= [[$\pm$ Tense], [AGR]]

Here AGR = PRO and is obligatory with (+ Tense) and excluded with (-Tense) in English. The notion "SUBJECT" including the subject of an infinitive or an NP and also AGR in (22) but not the NP in (22) is introduced. This notion accords with the idea that the SUBJECT is "the most prominent nominal element" in some sense, taking INFL to be the head of S. Thus, SUBJECT is taken to be the underlined element in (23), cf. P.L.:

23-a) John [$_{INFL}$ past <u>AGR</u>] win

b) he wants [very much] [for <u>John</u> to win]

c) he believes [<u>John</u> to be intelligent]

d) [<u>John</u>'s reading the book] surprised me.

In cases (b-d), the subject of the embedded phrase is the SUBJECT. In case (a), the subject is <u>John</u> and the SUBJECT is AGR.

The binding theory formulated in (13) is maintained without alteration and the following two principles, where II replaces the definition (16) for Governing Category, are introduced:

24-(I) AGR is coindexed with the NP it governs

(II) β is a governing category for α, iff β is the minimal category containing a governor of α, and a SUBJECT accessible to α.

It follows that α is a governing category only if it has a SUBJECT.[13] Thus, S is always a governing category, and NP is also a governing category when it has SUBJECT. Principle (24 I) expresses the phenomenon of agreement. While AGR creates a governing category in which an anaphor must be bound and a pronominal must be free, AGR is not itself a binder, (cf. P.L.); thus, accounting for the ungrammaticality of (25) where the anaphor <u>each other</u> is free in its G.C.:

25-a)* each other win

$[_{NP}$ each other $]$ $[_{INFL}$ AGR $]$ $[_{VP}$ win$]$

As for (24 II), "accessibility" is defined in terms of the well formedness condition (26):

26- * $[\gamma_i$ .... δ_i .... $]$

27- α is <u>accessible</u> to β iff β is in the c-command domain of α and coindexing of (α, β) would not violate (26).

(26) is independently motivated and holds for a variety of constructions as illustrated in (28):

28-a)* $[_{NPi}$ the friends of $[_{NPi}$ each other $]$ $]$

b)* there is $[_{NPi}$ a picture of $[_{NPi}$ itself$]$ $]$ on the mantelpiece.

c)* $[_{NP_i}$ the owner of $[$ $[_{NP_i}$ his$]$ boat$]$ $]$

d)* $[_{NP_i}$ the friends of $[$ $[_{NP_i}$ their$]$ parents$]$ $]$

For the case of an argument within S (cf.Fn.11), the nominative subject of a clause has an accessible SUBJECT. The AGR element of INFL. Hence the clause is a G.C. and anaphors must be bound in this category and pronominals must be free in this category.

In the case of arguments within NP, the situation is different: NP is a G.C. only when it contains a SUBJECT,solving the problems mentioned in (18-20). To illustrate,consider some of these examples:

20- $[_S$* we thought $[_S$ that $[_{NP}$ pictures of each other$]$ would be on sale$]$$]$

21-c) $[_S$* <u>John</u>$_i$ saw $[_{NP}$ a picture of <u>him</u>$_i$ $]$$]$

In (20), NP contains a governor of <u>each other</u> but no SUBJECT accessible to <u>each other</u>.[14] Similarly, the embedded S contains a governor of <u>each other</u> but not a SUBJECT accessible to <u>each other</u>. The matrix S, however,contains a governor of <u>each other</u> and a SUBJECT accessible to <u>each other</u> (the matrix AGR);it, therefore, counts as the governing category for the reciprocal <u>each other</u> in which it is A-bound by <u>we</u> and the sentence is correctly marked grammatical. In (21 c), the governing category for the pronoun is S; it contains a governor of <u>him</u> and a SUBJECT accessible to this pronoun (AGR). The binding principles (13-B) will correctly exclude (21 a) where the pronoun <u>him</u> is bound in its governing category.

Finally, an extension of the notion "Governing Category" is needed for governed anaphors lacking governing categories because there is no SUBJECT accessible to them:

29- * [for each other to win] would be unfortunate.

It will be considered that root sentences (main clauses) count as governing categories for such governed elements. This suggestion incorporated in P.L. is due to Norbert Hornstein. In (29) (noted by L.Rizzi,cf. P.L.),each other has a governing category but no accessible SUBJECT; the main clause counts as its governing category. The anaphor is A-free in this category and the sentence is, thus, ruled out:

24-(III)A root sentence is a governing category for a governed element which lacks an accessible SUBJECT.

3.3. Rearrangement of the GB-framework.

In this section, a generalization of the binding principles will be outlined. It will be suggested that variables are subject to principles A (revised) and C of the binding theory. While, preserving the fundamental insights embodied in P.L., these modifications may help to solve some of the conceptual and empirical problems mentioned in 2.

3.3.1. X-Binding.

Consider the following sentence:

30- who [t was killed t']

The trace t is a variable with Case, we will say that it is operator-bound by who. The trace t' is an anaphor lacking Case; we will say that it is antecedent-bound by the variable t. Antecedent-binding relates anaphors to their antecedents. Variable-binding relates variables to the operators that bind them, cf. P.L.

As pointed out in P.L., the appropriate distinction does not seem to be that of antecedent versus operator-binding

but rather antecedent-binding versus peripheral-binding, where the former holds when the c-commanding element is in an A-position and the latter when it is not. Thus, movement of an empty category α to COMP leaves a variable, but the empty NP is not an operator:[15]

31- John bought a book $[_S \alpha_i$ [PRO to read X_i]]

Therefore two notions "A-binding" and "$\bar{A}$-binding" are distinguished in P.L. The former holds when the binder is in an A-position and the latter when it is in an $\bar{A}$-position.

A trace in S is an anaphor if it is A-bound and a variable if it is $\bar{A}$-bound. As mentioned earlier, the theory of binding is a theory of A-binding. Note that a variable -like NP-trace- must be bound by a c-commanding antecedent. For variables, however, the antecedent is in a $\bar{A}$-position and not an A-position. (14) can be generalized as follows, cf. P.L.:

32-a) α is $\underline{X}$-bound by β iff α and β are coindexed, β c-commands α, and β is in a X-position.

b) α is $\underline{X}$-free iff it is not $\underline{X}$-bound.

c) α is locally bound by β iff α is $\underline{X}$-bound by β, and if γ $\underline{Y}$-binds α then either γ $\underline{Y}$-binds β or $\gamma = \beta$.

d) α is locally $\underline{X}$-bound by β iff α is locally bound and $\underline{X}$-bound by β.

(Where $\begin{bmatrix} (X) \\ (Y) \end{bmatrix}$ = A or $\bar{A}$)

The possibility that an element may be locally A-bound and $\bar{A}$-bound by two different elements is excluded, (cf. P.L.)

A variable will be defined as follows:

33-a) $\alpha = [_{NP}\ e]$

b) α is in an A-position

c) There is a β that locally $\bar{A}$-binds α.

(33 a) is too narrow; for instance, it prevents phonetically realized pronouns from being treated as variables (cf. Koopman and Sportiche 1981). In the following chapter, the notion of "emnty element" will be generalized to include phonetically realized pronouns. In that case,(33 a) may be generalized as follows:

33-a') α = an empty element

3.3.2. Reformulation of the binding principles.

With these definitions in mind, we can, now, turn to the reformulation of the binding principles.

We will consider that all empty elements in the sense of P.L. chapter 6 -i.e. PRO,NP-trace and wh-trace- are anaphors; (8) is generalized to (8'):

8- If α is an empty element F and not a variable, then it is an anaphor

8'- If α is an empty element F, then it is an anaphor.

As for the binding principles, they may be reformulated as follows[16]:

13'- Binding principles:

A- An anaphor must be X-bound in its G.C.

B- A pronominal must be free in its G.C.

C- A name must be A-free .

(where X = A for reflexives, reciprocals, NP-traces
$\bar{A}$ for variables)

As an anaphor PRO will be subject to principle A. As a pronominal it will be subject to principle B; being subject to A, B, it must be ungoverned in order to satisfy both requirements, cf. P.L.. Similarly, thinking of variables as place-holders for names,cf. P.L., they will be

subject to principle C which does not refer to the notion governing category; being anaphors, they will be subject to principle A too.[17]
The definitions of governing category (24 II), (24 I), that of accessibility,cf(27) (but cf.infra) will be maintained. Let us, now, illustrate how the system works.

3.3.3. Variables on a sentential level.

As mentioned in section 1,variables violate the SSC in languages where $\bar{S}$ but not S is taken as a bounding mode (Italian, French) as illustrated in (2), repeated in (34) (irrelevant details omitted):[18]

34- c'est à Paul $[_{\bar{S}}\ \alpha_i$ que $[_{S_1}$ Marie AGR sait

$[_{\bar{S}}$ quoi$_j$ $[_{S_0}$ PRO donner X_j X_i]]]]

Consider first X_j. It has a governor the verb donner but no accessible SUBJECT.:an element in an A-position such as PRO in S_0 cannot function as an accessible SUBJECT for a variable; this possibility is excluded by principle C of the binding theory: the variable would be A-bound by this element.[19] Thus, the notion accessibility defined in (27) is to be reformulated:

27'- α is accessible to β iff β is in the c-command domain of α and coindexing of (α, β) would not violate the well formedness condition (26) or principle C of the binding theory.

(27') can be generalized to (27"):

27"- α is accessible to β iff β is in the c-command domain of α and coindexing of (α, β) would not violate any grammatical principle.

For our purpose, it is enough to keep in mind that the well-

formedness condition and principle C of the binding theory cannot be violated. One may think prima facie that the generalization of (27) to (27') or (27") renders the system circular: the notion accessible SUBJECT serves to define a governing category relevant for the formulation of the binding principles and this notion refers itself to the binding principles; it uses something which it is supposed to define. This is not so, however. The notion accessible SUBJECT makes crucial use of principle C of the binding theory; but this principle -contrary to principles A-B- does not refer to the notion governing category neither in the formulation given in P.L., cf.(13) nor in that given in (13'). The circularity is, thus,avoided. Returning to (34), the variables X_j and X_i have a governor, the verb donner but no accessible SUBJECT. By principle C of the binding theory, PRO cannot function as an accessible SUBJECT. If it is assumed that it is not in an A-position, cf.(25), AGR in S_1 by itself can function as an accessible SUBJECT for these variables. However, AGR is coindexed with the subject Marie of S_1. Assuming transitivity of indexing the variables will end up by being A-bound by Marie in violation of the binding theory. Therefore AGR in S_1 cannot function as an accessible SUBJECT. In general, by principleC, AGR can never function as an accessible SUBJECT for a variable in non-subject position.[20] The governed variables X_j and X_i have no accessible SUBJECT; hence, no governing category. Recall however the discussion of (29) which necessitated the extension of the notion "governing category". There, it was assumed that main clauses count as governing categories for governed elements which happen to have no accessible SUBJECT. This applies to the governed variables X_j and X_i: their governing category is the

main clause. By principle A, they must be $\bar{A}$-bound in this category, which they are: $\underline{X}_j$ is $\bar{A}$-bound by $\underline{quoi}_j$ and $\underline{X}_i$ by $\underline{\alpha}_i$. The derivation, thus, is well formed.

In the preceding paragraph, it was indicated that governed variables in non-subject positions have no accessible SUBJECT; therefore, the main clause functions as their governing category accounting for the possibility of long cases of wh-movement as in (34). The situation is, however, different for variables in subject position: nothing prevents the AGR they are coindexed with from functioning as an accessible SUBJECT:

$$\ldots\ldots \quad X^k \quad AGR^k \quad V.$$

In light of this remark, consider the following pair:

35-a) who do you think $[\bar{S}_1$ t_i that

$[S_1$ X_i AGR left $]]$ (cf.4 a)

b) who do you think $[\bar{S}_1$ t_i $[S_1$ X_i AGR left$]]$

In (35), $\underline{\bar{S}}_1$ is the governing category for the variable $\underline{X}_i$: it is the minimal category containing a governor (INFL/AGR) and an accessible SUBJECT (AGR). By principle A of the binding theory, this variable must be $\bar{A}$-bound in $\underline{\bar{S}}_1$. $\underline{X}_i$ is $\bar{A}$-bind in (35 a) but not in (35 b) where the intermediate trace $\underline{t}_i$ fails to c-command it. Therefore, (35 a) but not (35 b) is correctly marked ungrammatical. Some remarks are in order . (on the c-command requirement, cf. Kayne 1979 and Rizzi 1979 cf.also Pesetsky 1978). As a consequence of generalizing the binding theory to a theory of X-binding , an extension of the notion "governing category" is necessary. Since the variable must be $\bar{A}$-bound in its governing category (cf.principle A of 13')

and since the $\bar{A}$-binder is generally an element in COMP, it follows that -at least for variables-$\bar{S}$ and not S is to be taken as a governing category, cf. (16). This is clearly illustrated in the discussion of examples (35 a-b) where the embedded $\underline{S}_1$ is considered as the governing category for variables. If the embedded $\underline{S}_1$ were considered as the governing category, the variables will be $\bar{A}$-free in this S and (35 a-b) will both be incorrectly marked ungrammatical. It is legitimate to ask what the consequences of this change are. Is it always possible to consider $\bar{S}$- and not S- as the governing category? Under the definition of governing category given in (16) where the notion accessible SUBJECT is not referred to:

16- α is the governing category for β iff α is the minimal category containing β and a governor of β, where α = NP or S.

S and not $\bar{S}$ must be chosen as the governing category for non-variable anaphors and pronominals. To see why, consider:[21]

36- $\ulcorner_{S_1}$ $\ulcorner_{S_1}$ they$_i$ prefer $\ulcorner_{\bar{S}_o}$ for $\ulcorner_{S_o}$ $\left\{\begin{array}{l}\text{each other}_i\\ \text{them}_j\end{array}\right\}$ to win $\lrcorner\lrcorner\lrcorner\lrcorner$

The governor of the embedded SUBJECT is the preposition <u>for</u>; if S and not $\bar{S}$ is taken as a governing category, the minimal S satisfying definition (16) is $\underline{S}_1$: in $\underline{S}_1$, the anaphor <u>each other</u> is A-bound by <u>they</u> and the pronoun <u>them</u> is disjoint from <u>they</u>. If, however, S is replaced by $\bar{S}$ in (16), the minimal $\bar{S}$ satisfying this definition is $\underline{\bar{S}}_o$. This will incorrectly disallow the anaphor <u>each other</u> from occuring in the SUBJECT position of $\underline{\bar{S}}_o$ (since it will be A-free in $\underline{\bar{S}}_o$) and will incorrectly

allow the pronoun <u>them</u> to be coreferential with <u>they</u> (since <u>they</u> is outside the governing category $\bar{S}_0$).

However, under the definition of governing category including the notion accessible SUBJECT:

24-(II) β is a governing category for α iff β is the minimal category containing α, a governor of α and a SUBJECT accessible to α.

The choice of $\bar{S}$, instead of S, as the governing category for non-variable anaphors and pronouns becomes irrelevant in P.L. In (36), the governor is <u>for</u>, the first accessible SUBJECT is AGR of the matrix clause. Therefore, the governing category is the matrix $\bar{S}_1$ in which the anaphor <u>each other</u> must be A-bound to <u>they</u> and the pronoun <u>them</u> disjoint from <u>they</u>.

In brief, under the extended definition of (24 II), the choice of $\bar{S}$ or S as the governing category is irrelevant for non-variable anaphors and for pronominals. For variables, however, $\bar{S}$ and not S must be chosen as the governing category as illustrated in (35 a-b). We conclude, therefore, that $\bar{S}$ may always be considered as the governing category. The fact that $\bar{S}$, and not S, is to be considered as the governing category does not need to be stipulated in our system either if the definition of governing category is formulated as follows:

24^{1}(II) β is a governing category for α iff β is the minimal maximal projection containing α, a governor of α and a SUBJECT accessible to α.

Recapitulating, it has been indicated in this section that the reformulation of the binding principles (13') triggers

a number of changes: the generalization of the notion "accessibility" (cf.27' and 27") and the choice of $\bar{S}$ and not S as the governing category. The reader, no doubt, has noticed that some cases accounted for in terms of the empty category principle in P.L. (the contrast between (35 a-b), for instance) may be handled by the binding theory as reformulated in (13'). It is, then, legitimate to ask whether this redundancy can be eliminated: given the discussion of the GB-framework in sections 1 and 2, is it possible to dispense with the ECP - at least for variables- ? Before doing so, however, we will illustrate the application of the system on an NP-level and indicate that it solves some problems mentioned in sections 1 and 2.

3.3.4. Variables on an NP-level.

Recall that in section 2.1., it was indicated that the SSC seems to hold for variables left by extraction from NP in Italian and French. As pointed out then, this is in opposition with the behavior of variables on a sentential level for which the SSC does not hold. Consider the following paradigm:

37-a) tu as vu $[_{NP}$ le portrait d'Aristote de Rembrandt $]$
"You saw the portrait of Aristotle of (= by) Rembrandt"

b) l'artiste dont$_i$ tu as vu $[_{NP}$ le portrait d'Aristote X_i $]$
"the artist of whom you saw the portrait of Aristotle"

c) *l'homme dont$_i$ tu as vu $[_{NP}$ le portrait X_i de Rembrandt $]$

"the man of whom you saw the portrait of (= by) Rembrandt".

The contrast between (37 b) and (37 c) illustrates the fact that a subject (37 b) but not anobject (37 c) can be extracted by wh-movement.[22] To account for this contrast, we need to assume that the NP is the governing category for the extracted elements in (37 b-c) and to assume that in (37 b) but not in (37 c) the variable is $\bar{A}$-bound in this governing category. This is the general idea; it may be achieved as follows. Let us assume that in (37 a-b) the subject is coindexed with the determiner <u>le</u> (this is proposed in Zubizarreta 1979) which is cliticized to the head-noun. Like all clitics, <u>le</u> is not in an A-position: adopting essentially an idea of R.Huybregts suggested in an unpublished work, it will be assumed that clitics are in $\bar{A}$-position (cf.also P.L.):

37-a) tu as vu $[_{NP}$ le_i portrait d'Aristote de Rembrandt$_i$ $]$

b) l'artiste dont$_i$ tu as vu $[_{NP}$ le_i portrait d'Aristote X_i $]$

c) *l'homme dont$_i$ tu as vu $[_{NP}$ le_j portrait X_i de Rembrandt $]$

In essence, what we are suggesting is to consider that the relation holding between the subject and the determiner is similar to the relation between the subject NP and the AGR on a sentential level: AGR and determiner are both SUBJECTS coindexed with the subjects.[23]
Let us determine, now, the governing category of $\underline{X_i}$ in (37 b-c): the governor is <u>portrait</u>, the accessible SUBJECT is $\underline{le_i}$; therefore, the governing category is NP. $\underline{X_i}$ is $\bar{A}$-bound by <u>le</u> in (37 b) but is $\bar{A}$-free in (37 c). (37 c),

thus, violates the binding principle A since the variable is not $\bar{A}$-bound in its governing category.
The same analysis accounts for the contrast between (38 a-b) (the judgments are J-R.Vergnaud's):

38-a) tu as vu $[_{NP}$ le portrait d'Aristote de quel artiste$]$

b) *tu as vu $[_{NP}$ le portrait de quel homme de Rembrandt$]$

Assuming as in (7) that move α in L.F. raises the wh-quantifier which didn't undergo movement in syntax and adjoins it outside the NP (cf.Chomsky 1973 , Kayne 1980 , Aoun, Hornstein and Sportiche 1981), the respective L.F. representations of (38 a-b) will be similar to that of (37 b-c):

38-a) $[$de quel artiste$]_i$ tu as vu $[_{NP}$ le$_i$ portrait d'Aristote $X_i]$

b) $[$de quel homme$]_i$ tu as vu $[_{NP}$ le$_j$ portrait X_i de Rembrandt$_j]$

Again in (38 a), but not in (38 b), the variable is $\bar{A}$-bind by the determiner <u>le</u> satisfying principle A of the binding theory. Examples such as (38 a-b) are of interest in that they show that the binding principles apply in L.F.- but not necessarily in L.F. only- since the variable in these examples is generated by an L.F. rule.[24]

In summary, it appears that the extraction of wh-elements from inside an NP can be accounted for by the binding theory if it is assumed that the determiner in French functions as accessible SUBJECT for the arguments contained in the NP. As such, the governing category of these arguments is the NP in which they are contained. Furthermore, being a clitic coindexed with the subject, the

determiner counts as an $\bar{A}$-binder of this subject but not of the non-subjects. Thus, only the variable left by the extraction of the subject will be $\bar{A}$-bound in its governing category.
The extraction of non-subjects will be prohibited by the binding theory since the variable left by this extraction will be free in its governing category.

3.3.4.1. Extraction in Hebrew.

A striking confirmation of the analysis put forward is illustrated by the behavior of variables in the construct state in Modern Hebrew. The construct state in Modern Hebrew indicates genitival relations between the head N and the complement NP which can be lexical (39 a) or a clitic (39 b):[25]

39-a) ktivat Dan
writing Dan"
"Dan's writing"

b) ktivato
writing- his
"his writing"

The clitic attached to the head noun can appear with a coreferential NP[26]; this is another instance of the so-called clitic doubling phenomena:

40-a) ktivato$_i$ šel-Dan$_i$
writing-his of Dan
"Dan's writing"

b) ktivat-o$_i$ šel-hasefer$_i$
writing-it of the book
"the writing of the book"

The NP co-occuring with the clitic can also be disjoint

from this clitic:[27]

41-a) Dan biker ?et ktivat-o$_i$?et ha-sefer$_j$
Dan criticized acc.writing-his acc.the book
"Dan criticized his writing of the book"

Consider, now, the following pair where the NP co-occuring with the clitic is a wh-element:

42-a) mi biker ?et ktivat-o$_i$ <u>šel ?eize sefer</u>$_i$
who criticized acc.writing-it of which book
"who criticized the writing of which book"

b)*mi biker ?et ktivat-o$_j$?et ?eize sefer
who criticized acc.writing-his acc.which book
"who criticized his writing of which book".

The contrast between (42 a-b) is exactly parallel to the one holding between (38 a-b) and the same analysis can be applied to (42 a-b). Assuming that move α in L.F. raises the wh-quantifier, the L.F. representations of (42 a-b) will be:

42-a) [for which X_i , X_i a book] ...
[$_{NP}$ N + cl$_i$ X_i]

b)*[for which X_i , X_i a book] ...
[$_{NP}$ N + cl$_j$ X_i]

The variable X_i in (42) has a governor N[28] and an accessible SUBJECT the clitic; the governing category is NP. The variable X_i is $\bar{A}$-bound by this clitic in (42 a) but not in (42 b) which is, thus, ruled out by the binding principle A since a variable (X_i) is $\bar{A}$-free in its governing category.

From the French and the Hebrew examples discussed, it appears that the extraction of a wh-element from inside an NP can be accounted for by the binding theory if it

is assumed that the determiner in French or the pronominal clitic in Hebrew function as accessible SUBJECTS and $\bar{A}$-binders. This cannot always be the case. Consider the following English examples:

43- who criticized $[_{NP}$ his writing of which book $]$

After Move α, the L.F. representation of (43) will be (irrelevant details omitted):

43- who, of which book$_i$ ... $[_{NP}$ his writing $X_i]$

If <u>his</u> counts as an accessible SUBJECT in (43), NP will be the governing category and the sentence will incorrectly be ruled out as ungrammatical: the variable is $\bar{A}$-free in its governing category. The fact that <u>his</u> may not count as an accessible SUBJECT for the variable in (43) is presumably to be related to the fact that the pronoun in English contrary to the possessive in French or in Hebrew is not cliticized (at least syntactically)(but cf. infra). It is, thus, in an A-position and by the binding principle C cannot function as an accessible SUBJECT since the variable will be A-bound. This proposal predicts that when a variable is replaced by a reciprocal, <u>his</u> may function as an accessible SUBJECT since principle C of the binding theory is irrelevant for reciprocals. The prediction is fulfilled:

44- * they like $[_{NP}$ his pictures of each other $]$

In (44), NP is the governing category for <u>each other</u>; it contains the governor <u>pictures</u> and an accessible SUBJECT <u>his</u>. The derivation is ruled out since the reciprocal is A-free in its governing category. (44) where the governing category is NP contrasts with (43) where

$\bar{S}$ is the governing category: the difference is that in (43), contrary to (44), his cannot function as an accessible SUBJECT for the variable X_i. In (43), X_i has a governor but not an accessible SUBJECT; by the extension of the notion of the governing category suggested earlier (cf.29), the main clause will count as the governing category for the variable X_i which is $\bar{A}$-bound in this category.[29] Consider finally the following sentence:

44-a) they$_i$ like [$_{NP}$ the pictures of each other$_i$]

In (44a), if the determiner the counts as an accessible SUBJECT, the NP will be the governing category for the reciprocal and the sentence will incorrectly be ruled out ungrammatical since each other will be A-free in its governing category. Thus, it appears that the determiner in English does not function as an accessible SUBJECT.

Note that the sentence corresponding to (44 a) is ungrammatical in French (the judgments are those of J-R. Vergnaud and P.Jacob):

44-b) ils aiment [$_{NP}$ les photos l'un de l'autre]

This exactly is the contrast expected if the determiner in French -but not in English- counts as an accessible SUBJECT: in (44 a), the NP will be the governing category and the sentence will correctly be ruled out as ungrammatical by the binding theory since the anaphor l'un de l'autre will be A-free in its governing category (cf.footnote 24).

As pointed out in P.L., it cannot be argued that in English, only agentive SUBJECTS may count as accessible SUBJECTS excluding,thus, determiners like the in (44)

from this class:

45- *he thinks $[_{\bar{S}}$ $[_{S}$ it bothered himself that S $]]$

In (45), AGR which is coindexed with <u>it</u> and is presumably non agentive functions as an accessible SUBJECT: $(_{\bar{S}})$ is the minimal category containing the governor <u>bother</u> and AGR. The ungrammaticality of (45) is thus ruled out by the binding principle A since the reflexive is A-free in its governing category.

It is quite possible, as suggested in P.L., that the notion "accessibility" admits some degree of parametric variation between languages or even between speakers of the same langauge:

45-a) they found $[_{NP}$ some books $[_{\bar{S}}$ for each other to read $]]$

Most speakers tend to regard this sentence as grammatical while others reject it as ungrammatical (cf. P.L.). A way of accounting for this dialectal difference may be to consider that for speakers who permit binding of <u>each other</u> by <u>they</u>, <u>some</u> (or <u>some books</u>) does not count as an accessible SUBJECT allowing, thus, for the main clause to be the governing category. For speakers who consider (46) ungrammatical, <u>some</u> (or <u>some books</u>) counts as an accessible SUBJECT; NP will be the governing category and the reciprocal will be A-free in this governing category violating, thus, the binding principles.

The difference between English and French may be looked at in a slightly different way. It has been noticed by R.S. Kayne that in English, but not in French, an NP may appear in prenominal position inside the noun phrase (cf. <u>John's book</u> v.s. *<u>Jean livre</u>). One way to characterize the difference between English and French is to

say that the Specifier in English, but not in French, may contain an A-position (cf. Chomsky 1970 ,Jackendoff 1977). Let us, furthermore, assume that in French, the Specifier of the NP counts as the most prominent element (= SUBJECT) for the elements occuring in this NP and that in English, the A-position of the Specifier counts as the most prominent(SUBJECT). This proposal has a number of consequences. It automatically accounts for the contrast between (44) and (44 a); in (44), but not in (44 a), the noun phrase contains a SUBJECT (his) accessible for the reciprocal. Thus, only the NP of (44) counts as the governing category for the reciprocal. Since this reciprocal is free in this governing category, (44) will be ruled out by the binding theory.

It also accounts for the contrast between (44 a) and (44 b). Only the Specifier of (44 b) counts as accessible SUBJECT for the reciprocal (l'un de l'autre) which will thus be free in its governing category. It finally may be relevant for the following considerations. Recall that variables which occur as a complement of a verb V have no accessible SUBJECT. Therefore, the root clause counts as the governing category for these variables; thus, accounting for the long cases of wh-movement as in (34). The fact that these variables do not have an accessible SUBJECT follows from principle C (or from whatever principle ($\mathcal{S}$) replacing it, cf. Chomsky, forthcoming). AGR is coindexed with the NP in subject position, if this AGR were to count as an accessible SUBJECT for these variables, they would end by being A-bound by the NP in subject position:

46-a) NP_i AGR_i V X

But notice that so far, we have assumed that in French, the determiner in noun phrases is coindexed with the subject and that this determiner counts as accessible SUBJECT for the non-subject variables:

46-b) $[_{NP}$ le_i N X $subject_i$ $]$
object

In brief, as we indicated earlier, the relation holding between the subject and the determiner in noun phrases seems to be similar to the relation holding between the subject and the AGR element of the clause: AGR and determiners are SUBJECTS coindexed with the subject. This, however, is not quite accurate. If the relation holding between AGR and the subject of a clause and the one holding between the determiner and the subject of a noun phrase were identical, we would expect the variable in object position in (44 b) not to have an accessible SUBJECT for the same reasons preventing the variable in the object position of a V from having an accessible SUBJECT (cf.46 a).

If, however, we assume that it is the Specifier of the noun phrase in French which is the most prominent element (= SUBJECT) no problem arises: in (46 b), the NP will count as the governing category for the variable in object position since it is the minimal category containing the governor (N) and the accessible SUBJECT for this variable. In this governing category, the variable is not $\bar{A}$-bound since it is not coindexed with an element in an A-position (such as the determiner). Reviewing the basic points, we are now assuming a generalized binding theory applying in L.F. and incorporating the binding principles (13') and principle (24 I). The

notion "governing category" is defined as in (24' II) in terms of accessibility (cf.27,27',27"). This theory yields the positive results of the earlier version of binding theory restricted to a theory of A-binding and accomodates a complex range of cases such as the behavior of variables in noun phrases (cf.the French,Italian and Hebrew examples discussed above) which cannot be naturally accounted for in terms of the earlier version. It has been also pointed out that the new theory seems to handle same cases accounted for in terms of the ECP in P.L. It remains to see whether the redundancy between the binding theory and the ECP can be eliminated from the system. We will start by discussing constructions where the variable violates the ECP and will then discuss constructions where the NP-trace violates the ECP. (cf. Part II).

4. Variables and E.C.P.

4.1. Explanatory power of E.C.P.

From the binding theory as formulated in P.L., it follows that a variable, while $\bar{A}$-bound by definition, is A-free and thus exempt from any effect of the NIC or the SSC; these being theorems of the binding theory (cf. P.L.). Variables are therefore similar to names with regard to the binding theory.

In sections 1 and 2, we mentioned some examples where variables violate the SSC (cf.examples 1,2) and the NIC (cf.3). In the previous sections, it was pointed out that the situation is more complex and that there are cases where variables appear to obey the SSC (cf. 5,6). This neccessitated the reformulation of the binding principle and the extension of principle A to all empty

categories in the sense of P.L.(chapter 6) including variables.

It was also pointed out that the conclusion that variables do not obey the NIC raises problems because in other respects they do seem to obey this condition. The structure (47) is excluded if.... is non-null,where t is nominative and is the variable bound by α :

47- * $[_{\bar{S}}\ \alpha\ \ldots\ [_{S}\ t$ INFL VP $]]$

This seems, prima facie, to be a violation of the NIC. Examples include indirect questions, that-trace effects and the superiority condition as in (47 a-c) respectively:

47-a) *who$_j$ do you wonder $[_{\bar{S}}$ how $[_{S}\ t_i$ solved the problem $]]$

b) *who$_i$ do you think $[_{\bar{S}}\ t_i$ that $[_{S}\ t_i$ saw Bill $]\ ]$

c) *it is unclear $[_{\bar{S}}$ what $[_{S}$ who saw t $]\ ]$

In (a) the trace t is $\bar{A}$-bound by who, and in (b) it is bound by who or perhaps by a trace in the embedded COMP (t that). Similarly in (c), if we assume that a movement rule in the L.F. component adjoins who to its COMP giving the L.F.-representation (48).(48) contrasts with the grammatical example (49) which has the L.F.-representation (49 a) (cf.supra). We will return to these sentences:

48- it is unclear $[_{\bar{S}}\ [_{COMP}$ who$_i$ $[_{COMP}$ what$_j$ $]\ ]$ $[_{S}\ t_i$ saw t_j $]\ ]$

49- it is unclear $[_{\bar{S}}$ who$_i$ $[\ t_i$ saw what $]]$

49-a) it is unclear $[_{\bar{S}}\ [_{COMP}$ what$_j$ $[_{COMP}$ who$_i$ $]\ ]$ $[_{S}\ t_i$ saw t_j $]]$

The examples in (47 a-c), then, are cases of (47), and

appear to show that variables are indeed subject to NIC. In P.L., the phenomenon illustrated in (47), while similar to the NIC effects, is treated as a separate phenomenon, referred to as the "RES (NIC)". Some other principle is involved in RES (NIC), a phenomenon that holds at the level of L.F.-representation rather than S-structure, if (47 c) does belong to this complex. The relevant principle is the ECP; it requires traces to be properly governed in L.F. To define the notion of proper government, the notion of government is extended. In the previous sections (cf. footnote 3), governors were restricted to elements of the form $\underline{X^{\circ}}$ of the X-bar system: i.e. $(\pm N \pm V)^{\circ}$. For proper-government, it is assumed that a coindexed NP in COMP may be a governor for ECP:

50- $[\ldots \gamma \ldots \alpha \ldots \gamma \ldots]$ where:

(a) $\alpha = \underline{X^{\circ}}$ or is coindexed with γ

(b) where φ is a maximal projection, if φ dominates γ then φ dominates α.

(c) α c-commands β.

In this case, α governs γ.

Proper-government is defined as in (51 a) and ECP formulated as in (51 b):

51-a) α <u>properly governs</u> β iff α governs β and α is <u>lexical</u>

b) $[_{\alpha} \quad e]$ must be properly governed.

The similarity between the superiority condition and the other RES(NIC) phenomenon (cf. 47) provides some reason to suspect that the ECP holds of all variables at the L.F.-level. Some direct evidence that ECP holds for variables formed by L.F. rules, hence at the level of L.F.,

are provided by Kayne(1979) (cf.also Aoun, Hornstein and Sportiche 1981). Consider sentences (52):

52-a) I don't remember which man said that John saw which woman

b)* I don't remember which man said that which woman saw John.

Assuming as in our earlier discussion the existence of the L.F. rule which moves the wh-phrase <u>which woman</u> to a COMP containing a wh-phrase, the L.F. representations of (52 a-b) will be (irrelevant details omitted):[30]

52-a) $[_{\bar{S}_1}\ [_{COMP}$ which woman$_i$ $[_{COMP}$ which man$_j$ $]]$ $[_{S_1}$ X_j said $[_{\bar{S}_0}$ that $[_S$ John saw X_i $]]]]$

b) $[_{\bar{S}_1}\ [_{COMP}$ which woman$_i$ $[_{COMP}$ which man$_j$ $]]$ $[_{S_1}$ X_j said $[_{\bar{S}_0}$ that $[_{S_0}$ X_i saw John $]]]]$

The contrast between (52 a) and (52 b) may be accounted for by the ECP since the variable $\underline{X_i}$ in (52 b)- but not in (52 a)- is not properly governed.

We, thus, see that despite the conceptual remarks mentioned in section 2, ECP achieves a considerable level of empirical and explanatory adequency: it accounts in a unified way of such different phenomena as multiple interrogation (cf. 52), the <u>that-t</u> effect (cf.47 b) and the superiority condition (cf.47 c). Recall ,however, that, at least for the examples discussed (cf.35), the ECP seems to be redundant with the binding principles as reformulated in (13').Before attempting to eliminate this redundancy we would like to consider in detail some of the constructions which obey the ECP.

4.2. Superiority.

Despite what has been said in the preceding section, it is not obvious how superiority is to be accounted for by the ECP in P.L. since at the relevant level (i.e. L.F.), the variable in subject position is not c-commanded by who in (48) or (49 a) repeated here for convenience:

48- it is unclear $[_{\bar{S}}$ $[_{COMP}$ who_i $[_{COMP}$ $what_j$ $]]$ $[_S$ t_i saw t_j $]$ $]$

49-a) it is unclear $[_{\bar{S}}$ $[_{COMP}$ $what_j$ $[who_i$ $]]$ $[_S$ t_i saw t_j $]]$

(48) and (49 a) will incorrectly be ruled out by the ECP since the variable t_i is not c-commanded by the operator who.[31]

A solution for what appears to be merely a technical problem is to assume that the movement rule in L.F. which raises the wh-quantifier adjoins this quantifier to $\bar{S}$ marked (+ wh)[32] and that proper-government requires a kind of adjacency.[33] In that case, t_i will be properly governed in (49 b) but not in (48a):

48-a) it is unclear $[_{\bar{S}}$ who_i $[_{\bar{S}}$ $[_{COMP}$ $what_j$ $]$ $[_S$ t_i saw t_j $]$ $]$

49-b) it is unclear $[_{\bar{S}}$ $what_j$ $[_{\bar{S}}$ $[_{COMP}$ who_i $]$ $[t_i$ saw t_j $]$ $]$

In Aoun, Hornstein and Sportiche (1981), sentences like (47 b) (repeated for convenience), are ruled out without reference to the notion c-command:

47-b)* who do you think $[_{\bar{S}}$ t_i that $[_S$ t_i saw Bill $]$ $]$

This, however, is irrelevant for the purpose of our discussion. Their analysis could have been chosen as well. These authors assume the existence of the following general rule which applies at S-structure (henceforth, this rule will be referred to as the COMP indexing rule):

<u>COMP indexing rule</u>

$$[_{COMP}\ \bar{\bar{X}}_i \ldots] \rightarrow [_{COMP_i}\ \bar{\bar{X}}_i \ldots]$$

iff COMP dominates only i-indexed elements.

This rule will correctly rule out (47 b) since the presence of <u>that</u> in COMP will prevent the application of the COMP indexing rule; the trace in subject position will not be properly governed (cf. Aoun, Hornstein and Sportiche, op. cit. for further details). Note that in order for this analysis to distinguish between (47 b) and (49 a), it is necessary to stipulate that the COMP indexing rule applies no later than S-structure.

Suppose it were to apply at L.F.; in (49 a), the presence of <u>what</u>$_j$ in COMP will prevent the application of the COMP indexing rule and the sentence would incorrectly be excluded for the same reasons excluding (47 b). If, however, it is assumed that the L.F.-movement rule which raises the wh-quantifier adjoins this quantifier to $\bar{S}$ marked [+ wh]- i.e. if a representation such as (49 b) is assumed instead of (49 a)- we would not need to stipulate that the application of the COMP indexing rule is restricted to S-structure.

This approach has a number of consequences. In a paper presented at NELS XII, H. Koopman indicates that in French, movement to COMP in L.F. (i.e. wh-Raising) does not create proper-government. Her proposal is based on the behavior

of quoi in French. As noted in Obenauer (1976), quoi cannot appear in the complementizer of a tensed clause (cf. "* quoi as-tu vu? "what did you see?"). H. Koopman indicates that this restriction is to be accounted for by a filtering mechanism applying in the L.F. component. The reason is that wh-Raising which applies in L.F. does not obey this restriction:

53-a) tu as vu quoi $\longrightarrow$ by wh-Raising
"you saw what"

b) $[_{\bar{S}}\ [_{COMP}\ \text{quoi}_i\ ]\ [\text{tu as vu}\ X_i\ ]]$
what you saw
"what did you see?"

A derivation such as (53 a-b) is possible in French because the syntactic wh-movement is optimal. If a wh-element has not been moved in syntax, it willl be raised in L.F. (cf. Aoun, Hornstein and Sportiche, op.cit.). Consider now, the following derivation discussed by Koopman:

53-c) $[_{\bar{S}}\ [_{COMP}\ ]\ [_S\ \text{quoi est arrivé}\ ]\ ]$
$\longrightarrow$ by wh-Raising

d)* $[_{\bar{S}}\ [_{COMP}\ \text{quoi}_i\ ]\ [_S\ e_i\ \text{est arrivé}\ ]\ ]$

Contrary to (53 b), (53 d) is ungrammatical. As argued by Koopman, this contrast may be accounted for it is assumed that the COMP indexing rule applies no later than S-structure. In that case, the variable in (53 b) will be properly governed by the verb. The variable in (53 d) will be left non-properly governed; thus violating the ECP. Koopman concludes that since the COMP indexing rule applies no later than S-structure , movement to COMP in L.F. does not create proper-government.

Assuming that the COMP indexing rule applies in L.F., the

insights of Koopman's analysis may be captured if wh-Raising adjoins the wh-quantifier to $\bar{S}$-marked [+wh] rather than to COMP (as in 49 b). In that case, the L.F. representation of (53 c) after the application of wh-Raising will be (53 e) and not (53 d):

53-e)* $[_{\bar{S}}$ quoi$_i$ $[_{\bar{S}}$ $[_{COMP}$ $]$
$[$ e$_i$ est arrivé $]$ $]$ $]$

(53 e) will be ruled out for the same reason ruling out (48 a): the wh-element will not be (structurally) adjacent to the empty element in subject position and thus, will fail to properly govern this empty element (The adjacency requirement will be dispensed with in the next section).

To sum up the content of this section, it was suggested that wh-Raising adjoins the wh-quantifier to $\bar{S}$ marked [+wh] and that proper government requires (structural) adjacency. In particular, this allowed us to account for the superiority condition by the ECP. We will return to the superiority condition in a somewhat different framework using some of the suggestions mentioned in this section. Before turning to other considerations it is to be kept in mind that if the COMP indexing rule provides the correct analysis, we will not need to refer to the notion of c-command to account for the *[<u>that-t</u>] effect (cf.47 b). For ease of exposition, however, we will continue to refer to the notion of c-command to account for the *[<u>that-t</u>] effect in subsequent sections.

4.3. Elimination of E.C.P. for variables.

In the previous sections, the application of ECP was illustrated. This principle rules out cases where the

variable is in non-properly governed positions. It was also briefly indicated that at least for variables, this principle was redundant with the binding principles as generalized in (13'): some ungrammatical constructions (cf. 35 a) are excluded at the same time by ECP and the binding theory. We will, now, consider the possibility of eliminating this redundancy; it will be suggested that ECP can be dispensed with as an independent principle in the grammar . We will discuss first constructions where variables are in non-properly governed positions; it will be indicated that the binding principles suffice to exclude these constructions. As for NP-traces, some independent condition applying on the chain of coindexed elements will account for the cases covered by ECP. This condition will be discussed in the second part of this chapter.

For variables, the core cases covered by ECP are those illustrated in (47) repeated here for convenience:

47-a)* who$_i$ do you wonder $[_{\bar{S}}$ how $[_S$ t$_i$ solved the problem $]$ $]$

b)* who$_i$ do you think $[_{\bar{S}}$ t$_i$ that $[_S$ t$_i$ saw Bill $]$ $]$

c)* it is unclear $[_{\bar{S}}$ what $[_S$ who saw t$_i$ $]$ $]$

These ungrammatical examples are ruled out by the binding principles. Let us consider the first two sentences. In (47 a) and (47 b) the embedded $\bar{S}$ counts as the governing category for the variable in argument-positions; it contains a governor INFL (AGR) and an accessible SUBJECT (AGR):

47'a)* who$_i$ do you wonder $[_{\bar{S}}$* how $[$ t$_i$ $[_{INFL}$ AGR $]$ solved the problem $]$ $]$

b)* who_i do you think $[_{\bar{S}}$* t_i that $[_S$ t_i saw Bill $]$ $]$

In neither construction, is the variable $\bar{A}$-bound in its governing category: in (47' a) there is no potential $\bar{A}$-binder if it is assumed that there is no intermediate trace in COMP. If, however, it is assumed that there is an intermediate trace in COMP, (47' a) reduces to (47' b). In (47' b), the potential $\bar{A}$-binder $\underline{t}_i$ in COMP fails to c-command the variable in argument-position. (47' a-b) are, thus, excluded by the binding principle A which requires variables to be $\bar{A}$-bound in their governing category.

As for the superiority cases (47 c), recall that it was assumed that the movement-rule which raises the wh-element in argument position adjoins this quantifier to $\bar{S}$ marked $[_{+wh}]$ rather than to COMP (cf.48 a):

48-a) it is unclear $[_{\bar{S}}$ who_i $[_{\bar{S}o}$ $what_j$ $[$ t_i saw t_j $]$ $]$ $]$

Recall,also, that in order to distinguish between (48 a) and (49 b), it was suggested that proper-government requires a kind of adjacency:

49-b) it is unclear $[_{\bar{S}}$ $what_j$ $[_{\bar{S}o}$ who_i $[$ t_i saw t_j $]$ $]$ $]$

The adjacency requirement can be dispensed with.

In (48 a) and (49 b), the minimal $\bar{S}$ containing a governor INFL (AGR) and an accessible SUBJECT (AGR) for $\underline{t}_i$ is $\bar{S}o$. Only the variable $\underline{t}_i$ of (49 b) is $\bar{A}$-bound in this category; (48 a) will, thus, be excluded by the binding principles;

Summarizing, in this section we illustrated the fact that for variables, the core cases excluded by the ECP may be accounted for by the binding principles. We will, now, turn to more complex cases involving extraction of subjects from post-verbal position in Italian.

4.3.1. Extraction of subjects from a post-verbal subject position.

Contrary to English, Italian allows phonetically null subjects in tensed clauses (cf. Rizzi 1980):

54-a) verrà
b)* will come

55-a) verrà Gianni
b)* will come Gianni

56-a) chi$_i$ credi che t$_i$ verrà ?
b)* who$_i$ do you think that t$_i$ will come ?

Assuming the existence of a non-properly governed empty element in subject position, the ungrammaticality of examples (b) is accounted for by ECP. The grammaticality of examples (a) illustrates the fact that ECP does not seem to hold in languages allowing null subjects (PRO-drop languages).

The conclusion that ECP appears to be void for Italian faces a number of problems. It is pointed out in Rizzi (1980) that the *[that-t] effect-accounted for by ECP-holds in Italian inspite of prima facie evidence to the contrary. Consider the following examples in Italian:

57-a) non voglio che tu parli con nessuno
I neg want that you speak with nobody
b)* non voglio che nessuno venga [35]
I neg want that nobody comes

c) voglio che nessuno venga
I want that nobody comes.

The corresponding L.F.-representations are (58):

58-a) [for no X], I want that you speak with X.
b) [for no X], I want that X comes
c) I want that [for no X], X comes.

The L.F.-representations are derived on the following assumptions:[36]

59-a) The particle <u>ne</u> is a scope operator, determining the scope of <u>nessuno</u>.
b) <u>nessuno</u> undergoes the quantifier-movement rule in the L.F.-component.

The ungrammatical example (57 b) illustrates a *[<u>that-t</u>] effect exactly as in (47 b)and, thus, falls under ECP. It appears, then, that the ECP holds for variables formed by rules of the L.F.-component in Italian but not for variables left by wh-movement. A solution to this problem is indicated by Rizzi (1980), who points out that in Italian, there is a fourth option in (57), namely (60):

60- non voglio che venga nessuno
[for no X], I want that X comes.

Thus, while (57 b)is barred, its sense can be expressed by (60), in which the subject follows the verb. Example (60) does not violate the ECP anymore than (57 a) does. In other words, PRO-drop languages actually observes the ECP exactly as the non-PRO-drop languages do. The apparent examples to the contrary illustrated in (56) are spurious; what in fact is happening is that movement in these cases is not from the subject position but from the post-verbal position in which the subject in PRO-drop languages may appear by virtue of a process of free inversion. Specifically,

wh-movement of the subject in PRO-drop languages, which appears to violate the $^{*}[$ that-t $]$ filter (cf. 56 a) is actually from the post-verbal position which is properly governed by V rather than from the subject position, and, contrary to appearances, wh-movement does observe the $^{*}[$that-t$]$ filter in Italian. The underlying structure for (61), then, is (62) rather than (63), (irrelevant details omitted):

61- chi credi che verrà
"who do you think that will come"

62- credi $[_{\bar{S}}$ che $[_{S}$ α verrà chi $]$ $]$

63- credi $[_{\bar{S}}$ che $[_{S}$ chi verrà $]]$

It now follows that there is no contradiction between the apparent violation of the $^{*}[$ that-t $]$ filter in the PRO-drop languages and the assumption that ECP (from which the filter derives) holds of variables quite generally, as a property of L.F.-representations.
Recall that our purpose is to show that for variables, all cases accounted for by ECP can be treated by the binding theory as generalized in (13'). This is why the Italian cases were bought into consideration. Before illustrating how the binding theory accounts for cases of post-verbal subject extraction, we need to study the "inverted structure" more carefully. The analysis of these structures that will be adopted is the one outlined in P.L. As indicated there, the basic problem is to determine the nature of α in the structures of (64) where α is missing in surface structure:

64-a) α VP (cf. 54 a) verrà ("he will come")
α V NP (cf. 55 a) verrà Gianni
(" Gianni will come")

It is not possible to consider that α is an empty element $[_{NP}$ e $]$ or trace. The reason is that this assumption does not distinguish the grammatical cases (64 a-b) from the ungrammatical case (58 b) which is excluded by the ECP. The only other possibility is to consider that α is the non-phonetically realized pronominal or PRO. The PRO-drop languages will differ from the non-PRO-drop languages in that PRO may appear instead of a pronoun in subject position. From the binding theory it follows that PRO must be ungoverned. We are led to the conclusion that in the PRO-drop languages the subject position may be ungoverned -thus allowing PRO-, while in the non-PRO-drop languages, this position is invariably governed. In the previous sections, the assumption was that the subject position in the PRO-drop languages is governed by the AGR element in INFL. It follows that in the PRO-drop languages the subject may fail to be governed by AGR (cf. P.L.).

As indicated in P.L., there are various ways to execute this idea. One way is to focus on the fact that while INFL is a constituent of S outside VP in S-structure, its elements -specifically AGR- appear within VP in verbal morphology in surface structure. Therefore there is a rule R of Affix-movement which assigns the elements of INFL to the initial verbal element of VP. If R applies in the PF-component, then AGR governs the subject position at S-structure and at L.F. If R applies in the syntax, then the resulting S-structure is (65):

65- NP $[_{VP}$ V - INFL ... $]$

In (65), AGR (in INFL) does not govern the subject position at S-structure or L.F.; therefore PRO may appear in this position.

It is possible, now, to take the PRO-drop parameter to be (66):

66- R may apply in the syntax.

The PRO-drop languages accept this option; R-applies in the syntax yielding (65), or in the PF-component, as in the non-PRO-drop languages.
The non-PRO-drop languages reject option (66), so that R applies only in the PF-component and the subject is always governed by AGR at S-structure and at L.F. (cf. P.L. for more details).
With this in mind, we can now return to the contrast between a representation such as (58 b) (cf. 67 a) and (60) (cf. 67 b):

67-a)* $Q_i \ldots [_{\bar{S}}$ che $[_S X_i$ V $]$ $]$

b) $Q_i \ldots [_{\bar{S}}$ che $[_S \alpha_i [_{VP}$ $[_{VP}$ V...$]$ X_i $]$ $]$ $]$

In the government-binding framework, this contrast is accounted for by the ECP. In (67 a) the variable is not properly governed [38] and the sentence is ruled out. In (67 b), however, ECP is not violated since the variable which is Chomsky adjoined to VP is properly governed by V, (cf. P.L., Rizzi 1980).

As for the affix-movement rule R, its application is irrelevant in (67 a) since AGR is not a proper-governor[39]. In (67 b), however, this is not the case. If it doesn't apply in syntax, α which we assumed to be a PRO will be governed by AGR and the sentence excluded by the binding principles. If it does apply in syntax, α will not be governed and the sentence will be grammatical. In other words, there is a grammatical derivation where the affix-

movement rule applies in syntax and adjoins INFL(AGR) to V.

Summarizing, the extraction of post-verbal subjects in Italian is elegantly accounted for if the existence of a principle such as the ECP is assumed. Let us try now to see how it is possible to account for the contrast between (67 a) and (67 b) without ECP by appealing to the binding principles as generalized in (13').

Let us consider first (67 b). As indicated in the preceding paragraphs, the affix-movement rule has to apply in syntax; otherwise α in preverbal subject position will be governed:

68- $[_{\bar{S}}$ Qi $[_{S} \ldots [_{\bar{S}o}$ che $[_{So} \alpha [_{VP} [_{V^{\circ}} V+$
$[_{INFL}$ AGR $] \ldots]$ X_i $]]]]]$

As a result of the application of this rule, AGR which is in INFL is attached to the head V of VP, or to present the matter differently, the effect of the affix-movement rule is to <u>cliticize</u> AGR to V. Recall that clitics are in $\bar{A}$-position and $\bar{A}$-bind a variable(cf. examples 40-42 and footnote 15). With this in mind,consider the derived structure (68). The variable $\underline{X}_i$ in post-verbal subject position is in the c-command domain of AGR which thus counts as a governor and an accessible SUBJECT. The minimal category containing AGR is the embedded $\bar{S}o$. In this category, the variable $\underline{X}_i$ is $\bar{A}$-bound by AGR satisfying, thus, the binding principles.[40]

In other words, (68) is treated on a par with the Hebrew example (42) where the clitic $\bar{A}$-binds the variable left by the extraction of the wh-element:

42-a) Qi .... $[_{NP}$ N + cl_i X_i $]$

In brief, the affix-movement rule cliticizes the AGR element onto the verb V. Being like all clitics in non-argument position, this element will $\bar{A}$-bound the variable left in post-verbal subject position by the extraction rules. When attached to V, AGR counts as a governor, an accessible SUBJECT and an $\bar{A}$-binder[41]. This takes care of (67 b).

As for ungrammaticality of (67 a):

67-a) * Qi... $[_{\bar{S}}$ che $[_{S}$ X_i V $]$ $]$

Two derivations are to be considered. In the first one, the affix-movement rule R applies (cf. 69) and in the second it does not (cf. 70), (irrelevant details omitted):

69- * Qi... $[_{\bar{S}o}$ che $[_{So}$ X_i $[_{VP}$ $[_{VP}$ V-AGR $]$ $]$ $]$ $]$

70- * Qi... $[_{\bar{S}o}$ che $[_{So}$ X_i AGR VP $]$ $]$

In (70) where R didn't apply, the minimal category containing a governor(AGR)and an accessible SUBJECT (AGR) is $\bar{S}o$. In $\bar{S}o$, the variable X_i is $\bar{A}$-free and the derivation will be ruled out by the binding principles. This illustrates the standard case of *[that-t] effect.

In (69) where R did apply in syntax, the empty element $\underline{X_i}$ is not governed. Assuming that nominative case is assigned or checked under government after the application of the affix rule R [42], the derivation will be excluded by the θ-criterion under the assumption that only empty elements with the relevant feature bears θ-role. To be more precise, it is assumed in P.L. that empty elements of the form $[_{\alpha}$ β $]$ are "invisible" to rules of the L.F. component unless β contains some feature: PRO and case-marked traces are visible but $[_{NP}$ e $]$ is invisible when

it contains no case. If so, then no θ-role will be assigned to the invisible trace in (69)[43] and the θ-criterion which requires every θ-role to be assigned to an R-expression[44] will be violated. In brief,(69) will be excluded for the same reason ruling out (71) (we will return to the visibility convention in more detail):

71- who did you try [t to win]

In (71) the trace t is not case-marked and cannot bear the θ-role assigned by the VP to win; the sentence will be ruled out by the θ-criterion, cf. P.L. for more details.[45] Note that any treatment of (67 a) given in the GB-framework may be applied here. The analysis of (67 a) does not involve any proposal specific to the approach that we are trying to outline.

Recapitulating, the general goal is to indicate that all cases of variables covered by ECP may also be covered by the generalized binding principles, thus, rendering ECP unecessary. The core cases such as the *[that-t] effect, the superiority condition etc...(cf.47) were considered first and it was indicated that the binding principles may be used instead of ECP to account for these cases. The more complex case of Italian was, then, considered: in embedded structures, the post-verbal but not the pre-verbal subject position may be questioned.[46] The non-extractability of an element in pre-verbal subject position is not surprising, it illustrates the well-known phenomena of *[that-t] effect.[47] The post-verbal subject element, on the other hand, may be extracted since the affix-movement rule cliticizes the AGR element to V; being in an Ā-position AGR will be able to Ā-bind the variable left by the extraction rule.

4.3.2. Ne-cliticization and the two notions of c-command.

The account given in the previous section of the extraction from post-verbal subject position made use of the notion of c-command defined in (10): the AGR element cliticized onto V c-commands the post-verbal subject position and serves as an accessible SUBJECT and as an $\bar{A}$-binder for this position:

72- $[_{VP}\ [_{VP}\ \ V\ \ +\ AGR\ ]\ \ NP\ ]$

Let us consider,now, sentences containing post-verbal subject position in more detail (cf. 64 b). We have such examples as (73):

73-a) telefonato molti studenti
"many students telephone"

b) arrivano molti studenti
"many students arrive"

There is evidence that the structures differ in the two cases. In case (a), we have the adjoined structure (74 a); in case (b), the VP internal structure (74 b):

74-a) $[_{VP}\ [_{VP}$ telefonato $]\ [_{NP}$ molti studenti $]\ ]$

b) $[_{VP}$ arrivano $[_{NP}$ molti studenti $]\ ]$

One type of evidence supporting this conclusion is the fact that ne-cliticization is possible in (b) but not in (a) giving (75)[48]:

75-a)* ne telefonato molti
of-them many telephone

b) ne arrivano molti
of-them many arrive

Assuming that the relation between ne and its trace requires c-command [49], these facts are explained by assuming structures (74). Burzio (1981) presents

evidence supporting this conclusion, and also the further conclusion that in case (a) a rule of inversion from subject position has applied -an adjunction rule, adjoining the subject molti studenti (or molti ne) to the VP- whereas in case (b) the subject molti studenti (or molti ne) is base-generated in the object position of the VP (cf.also Belletti and Rizzi 1980).

Assuming that this analysis is correct, two notions of c-command are referred to in these constructions; the weak one defined in (10) allowing the V or the AGR element cliticized onto the verb to c-command the post-verbal subject position in (74 a) and the strong one similar to the one defined in (10') which prevents ne-cliticization from the post-verbal subject position in (74 a) (cf.75 a) (For the motivation of (10')cf. Aoun and Sportiche 1981):

10'- α c-commands β iff $\forall\ \gamma$, γ a maximal projection, γ dominates α iff it dominates β and $\alpha \neq \beta$.

One may hope to dispense with this distinction. To achieve this, some general remarks are in order.

In Aoun (1979), and Aoun, Sportiche, Vergnaud and Zubizarreta (1980), the parallelism between case-assignment and "mood assignment" is noticed. In Standard Arabic, for instance, there are two types of complementizers appearing with completive clauses. The occurence of each one of these complementizers depends on the choice of the matrix-verb: believe-type verbs (ʔaʃtaqidu, ʔaẓunnu ...) require ʔanna and want-type verbs (ʔawaddu, ʔuriːdu ...) ʔan.

?anna is a case-assigning element and ?an a mood-assigning element: ?anna and ?an assign accusative and subjunctive (muda:rif manşu:b) respectively:

76-a) ?anna
+acc

b) ?an
+subj

The accusative and subjunctive features generated with the complementizers will respectively be paired with a lexical NP and a verb. As usual this pairing requires adjacency, cf. P.L., Vergnaud (forthcoming), Aoun (1979), Stowell (1981); it follows that ?anna must be followed by a lexical NP and that ?an must be followed by a verb:

77-a) ?anna +acc NP ⟶ ?anna NP[50] +acc

n) ?an +subj V ⟶ ?an V +subj

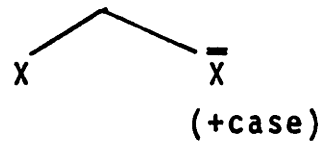
It is tempting to collapse the two features into one: (± mood) for instance. (+mood) will be interpreted as subjunctive and (-mood) as accusative. Or to put things in a slightly different way, it is possible to suppose that there is one complementizer for completive sentences:

78- COMP
± mood

and that the matrix verb selects the feature (+mood) or (-mood). When (+mood) is selected, the complementizer is realized as ?an and when (-mood) is selected, the complementizer is realized as ?anna[51]. Note that the same formal mechanism, namely government is used in Standard Arabic for case and mood-assignment: the complementizer governs the element to which it assigns a feature[52].

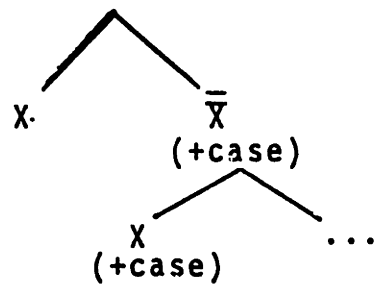
Let us try to generalize these remarks and consider that verbs receive mood via government. Let us also try to keep the parallelism between Case and mood-assignment as close as possible.
The case-feature is assigned by a governor X° to a governed nominal element $\bar{X}$:

79-a)



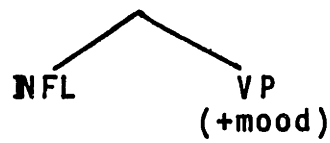
This case-feature percolates down (or is copied) onto the head of $\bar{\bar{X}}$:

79-b)

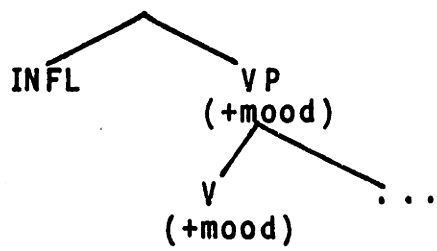


Assuming the same mechanism for mood-assignment: INFL may be viewed as the governor assigning mood to VP [53]; this mood will percolate down (or will be copied) onto the head V:

80-a)



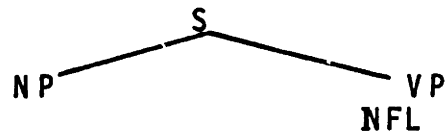
b)



The similarity between (80) and the affix-movement rule is obvious: in both cases, the mood-feature or NFL end up by being attached to V. Let us tentatively assume that they are the same and that (80) illustrates the application of the affix-movement rule. In other words, affix-movement is done in two steps, the first consists in attaching INFL to VP which then percolates down (or is copied onto) the head V:

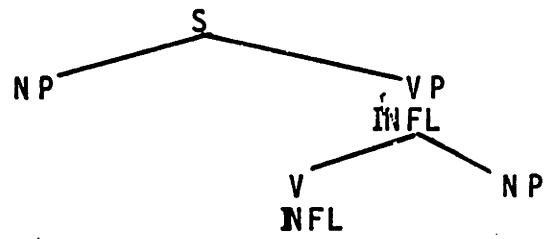
81-a)

b)



54

c)



Returning to the facts which motivated this excursus, recall that structure (72) illustrated the need for two notions of c-command:

72- $[_{\bar{S}o}\ [_{\bar{S}o}\ [_{VP}\ [_{VP}\ V + AGR\ ]\ NP\ ]\ ]\ ]$

The weak one defined in (10) allows the AGR element on the verb to c-command the post-verbal subject and the strong one defined in (68) prevents <u>ne</u>-cliticization from the post-verbal subject position (cf. 75 a). The way affix-movement applies may help to dispense with this distinction. NFL (AGR) is first attached to VP and then percolates down (or is copied) onto the head V.

Let us assume the existence of the more restricted notion of c-command only, cf.(10'). INFL or more precisely AGR is able to c-command the post-verbal subject since it is first attached to VP. However, the head V of VP will not c-command this NP. As a consequence, AGR may serve as an accessible SUBJECT for the NP,as a governor assigning Case to this NP and as an $\bar{A}$-binder for the empty element left by the extraction of this NP, cf.(68) but ne-cliticization which adjoins the clitic ne to V will create a structure where the trace is not c-commanded by ne. The result will thus be filtered out under the assumption that the relation between ne and its trace requires c-command[55](cf.supra).

Summarizing, we started by pointing out the need for two notions of c-command (cf.10 and 68) and we tried to dispense with this distinction by exploiting the similarity between case and mood-assignment[56].

4.3.3. Preposition stranding and Empty QPs.

We still are reviewing the cases covered by ECP and are trying to show that they can be accounted for by the generalized binding principles. Another problem accounted for by ECP is the problem of preposition-standing[57];

82- who did John speak to X_i

83- * qui_i Jean a parlé avec X_i

As indicated in P.L., if it is assumed that prepositions are not proper-governors, preposition-standing would be excluded in general by ECP since the empty category left behind will not be properly governed. It would be permitted only in case a marked rule allows

proper-government by V: a rule which in effect permits the preposition to "transmit" proper-government from the verbal-head (cf. references of footnote 57). In this respect, English but not French displays this marked option. Consequently, preposition-stranding is allowed in the former but not in the latter.

In a framework where ECP is dispensed with, this proposal cannot be maintained. There is, however, some evidence which may suggest that preposition-stranding is not to be accounted for by ECP.
Consider the following contrast in French:

84-a)* Jean veut que qui vienne
"who does John want to come"

b) Jean veut que Marie voit qui
"who does John want Mary to see"

Extending the analysis suggested in Kayne (1979) to French, it is indicated in Aoun, Horsntein and Sportiche (1981) that the contrast between (84 a) and (84 b) may be accounted for by ECP if it is assumed -following Chomsky 1973-. that Move α in L.F. raises the wh-quantifier to the matrix COMP[58] , (irrelevant details omitted):

84-a)* qui_i Jean veut que X_i vienne

b) qui_i Jean veut que Marie voit X_i

In (84 b) -but not in (84 a)- the variable is properly governed by V:(84 a) will be ruled out by ECP.
Consider now, the following sentence:

85- Jean veut que $[_{NP}$ le portrait de qui $]$ soit vendu
"whose portrait does John want to be sold".

The grammaticality of (85) indicates that there is no pied-piping in L.F. To see why, consider the representation where the whole NP has been pied-piped in L.F. and the one where it has not:

85-a) [le portrait de qui]$_i$ Jean veut que X_i soit vendu

b) $\langle_a$ de$\rangle$ qui$_i$ Jean veut que [$_{NP}$ le portrait $\langle_b$ de$\rangle$ X_i] soit vendu

either a or b.

In (85 a), where the whole NP has been pied-piped, the variable is left in non-properly governed position like the one in (84 a); the derivation should be ruled out by ECP. The grammaticality of (85) leads us to choose the L.F.-representation (85 b) where the variable is presumably properly-governed [60]. To be more precise, the discussion of (85) is also compatible with the assumption that pied-piping is optional in L.F. The following facts, however, indicate that this is not the case and that the stronger conclusion according to which there is no pied-piping in L.F. should be adopted. Consider the following sentence (cf. P.L.,Aoun,Sportiche,Vergnaud and Zubizarreta 1980):

86-a) quels livres que Jean a lu a-t-il aimé

which books that Jean read did he like

In (86 a) where the phrase containing the wh-element has been moved in syntax, coreference between <u>Jean</u> and <u>il</u> is possible. Consider, now, the following sentence where the phrase containing the wh-element has not been moved in syntax (syntactic wh-movement

being optional in French, cf. Aoun, Hornstein and Sportiche 1981):

86-b) il a aimé quels livres que Jean a lu

In (86 b), intended coreference between il and Jean is impossible. Suppose that pied-piping were optional in L.F., two L.F-representations would be available for (86 b), the one where the whole phrase containing the wh-element has been fronted by Move α in L.F. (derivation 1) and the one where only the wh-element has been fronted (derivation 2). The output of derivation 1 will essentially be similar to (86 a). In other words, if an optional pied-piping in L.F. were assumed, there would incorrectly be a derivation allowing il and Jean in (86 b) to be coreferential. If, however, it is assumed that there is no pied-piping in L.F., the contrast between (86 a) and (86 b) will be correctly accounted for: in (86 b) -but not in (86 a)- coindexing of il and Jean will violate principle C of the binding theory since a name Jean will be A-bound by il (or more precisely by the empty element left by the clitic in subject position).

Having established that there is no pied-piping in L.F., let us turn, now, to the following sentence: (the conclusion concerning the non-existence of pied-piping in LF will be reconsidered in chapter 2).

87- Jean a parlé avec qui
"who did John speak to"

Assuming the non-existence of pied-piping in L.F., the L.F.-representation of (87) will be:

87-a) qui_i Jean a parlé avec X_i

In (87 a), the variable X_i generated by an L.F.-movement rule is left in non-properly governed position. The derivation must be ruled out by ECP which applies in L.F.. However, (87) is grammatical.

In other words, (87) where the wh-element has been left in its base-generated position has exactly the same L.F.-representation as (83) where the syntactic wh-movement rule has applied. (87) but not (83) is grammatical; ECP which applies in L.F. will not distinguish between the two sentences: it will mark both sentences as ungrammatical if it is assumed that prepositions are not proper-governors or will mark both of them as grammatical if it is assumed that prepositions are proper-governors. Whatever option is chosen, it is clear that ECP cannot account for the phenomenon or preposition-standing (cf. 82-83)[61].

Another phenomenon accounted for by ECP concerns NPs of the form de N... in French. In certain negative environments, French permits objects of the form de N... (the following discussion is based on Kayne 1981):

88-a) Jean n'a pas trouvé de livres
Jean (neg) has not found (of) books

b)* Jean a trouvé de livres

In Kayne (1975), it is suggested that these NPs may be analyzed as [NP zero element-de- articless NP], the idea being that (88) is entirely comparable to (89), except that where (89) contains beaucoup, (88 a) contains a zero element of the same category.

89- Jean n'a pas trouvé beaucoup de livres
Jean (neg) has not found many (of) books

As indicated in Kayne (1981), there is a clear advan-

tage to consider the zero element of (88 a) as an instance of an empty category -an empty QP- subject to ECP. This move straight forwardly accounts for the asymmetry between (88a) and (90 a-b):

90-a)* de livres n'ont pas été trouvés (par Jean)
(of)books (neg) have not been found (by Jean)

b)* de gâteaux ne me deplairaient pas
(of) cakes (neg) me would displease not

The fact that $[_{NP}$ $[_{QP}$ e$]$ de ...$]$ is not permitted in surface subject position follows from the ECP, since in such positions QP is not properly governed. Similarly, the ECP accounts for the asymmetry between (91 a) and (91 b):

91-a) Jean ne voudrait pas que tu boives de bière
Jean (neg) would not like that you drink (of) beer

b)* Jean ne voudrait pas que de bière lui coule dessus
Jean (neg) would not like that (of) beer spill on him

and for the ungrammaticality of (92 a-b):

92-a)* Jean n'a pas parlé à de linguistes
Jean (neg) has not spoken to (of) linguists

b)* Jean n'a pas voté pour de communistes
Jean (neg) has not voted for (of)communists

Once again by excluding prepositions from the set of proper governors the ECP can be invoked to account for (92 a-b) (cf. Kayne 1981 for further details).
Some restrictions must be made with respect to the conclusion that the ECP accounts for the ungrammaticality of (92 a-b). These restrictions may be traced back

to the discussion of the preposition-standing phenomenon treated in the preceding paragraphs (cf.83 vs.87) and to the following facts concerning ne...personne. The discussion of ne...nessuno in Italian, presented earlier (cf. 59), was a generalization of the analysis of the ne...personne facts put forward in Kayne (1979) for French (cf. footnote 36). Recall that it was assumed that:

93-a) The particle ne is a scope operator, determining the scope of nessuno (personne)

b) nessuno (personne) undergoes the quantifier-movement rule in the L.F. component.

These assumptions permit an ECP account of the following contrast (cf. Kayne 1979):

94-a)? je n'exige que tu vois personne
I (neg) want that you see nobody

b)* je n'exige que personne vienne
I (neg) want that nobody comes

Assuming (93), the L.F.-representations of (94) are (95):

95-a) [for no X] I want that you see X

b) [for no X] I want that X comes

As indicated for the Italian examples (cf. 57-58), the ungrammatical example (94 b) illustrates a *[that-t] effect and, thus, falls under ECP.

Consider, now, sentence (96):

96- ? je n'exige que tu parles avec personne
I (neg) want that you speak with nobody

with the following L.F.-representation:

96-a) [for no X] I want that you speak with X.

This L.F.-representation is derived on assumptions (93) and the assumption that there is no pied-piping in L.F. In light of the proposal that prepositions are not proper-governors (cf. the discussion of 92), the grammaticality of (96) comes as a surprise:since the variable is not properly governed in (96 a),we should expect the derivation to be excluded on a par with (92 a-b). The situation, thus, is similar to the one concerning preposition stranding (cf.83 vs.87). ECP which applies in L.F. will not distinguish between (92 a-b) on one hand and (96) on the other: it will mark both sentences as ungrammatical if it is assumed that prepositions are not proper-governors or will mark both of them as grammatical if it is assumed that prepositions are proper-governors (cf.footnote 61).

Summarizing, the discussion of preposition stranding and that of empty QPs were brought into discussion for their relevance with respect to the ECP. It has been suggested that these phenomena are accounted for by the ECP; consequently any attempt which tries to suggest that the cases covered by ECP may be accounted for by the generalized binding principles has to deal with these phenomenon too. However, upon more scrutinity it appeared that these constructions cannot be accounted for by the ECP. The latter principle which applies in L.F. does not distinguish between the ungrammatical representations where the empty element is generated in syntax either by Move α as in (83) or by the base rules as in (92 a-b) and the grammatical representations where the empty element is generated by L.F. movement rules (cf.87 and 96) since in L.F.

both representations will be identical. On the other hand, for the reasons mentioned in P.L., Kayne (1981), Rizzi (1980), Aoun, Hornstein and Sportiche (1981) it cannot be suggested that empty element generated by L.F. rules are no subject to ECP (cf.also the discussion of ne...nessuno facts in this chapter and sentences 38 a-b). Note, however, that any P.F. principle such as the one referred to in footnote 61, will distinguish between the ungrammatical representations where the empty element is generated in syntax and the grammatical ones where it is generated by L.F. movement rule.

Despite all this, let us assume that the phenomenon of preposition stranding is to be accounted for in terms of ECP,i.e. that prepositions are not proper-governors. In the framework that we are assuming, where ECP is dispensed with, a governing category is the minimal category containing a governor and an accessible SUBJECT. A possibility in this framework will be to consider that the notion of accessible SUBJECT enters in the definition of governing categories only for those categories (NP,S...) which may have SUBJECTS .[62] For NP and S, two elements will be required for the definition of governing category; a governor and an accessible SUBJECT (cf.also the discussion of.29). For prepositions, only a governor will be required .[63]

As expected, this proposal will have a number of consequences and will face a number of problems. To mention some, consider the following structure:

97- NP V $[_{PP}$ P anaphor $]$

Assuming the modification of the notion of governing category suggested above, PP will count as the governing category of the anaphor in (88). This, practically, excludes anaphors from within PP. The facts are inconclusive; anaphors are sometimes allowed inside PPs and sometimes not, (cf. P.L. where these examples are taken from):

98-a) John spoke to me about himself
b) Jean m'a parlé de lui

99-a) John always keeps his wits about him (* himself, * Bill)
b) the melody has a haunting character to it (* itself, * Bill)

100-a) John pushed the book away from him [64]
b) John drew the book towards him
c) John saw a snake near him
d) John turned his friends against him
e)* John turned their friends against each other
f) they turned the arguments against each other.

SUMMARY OF PART I.

Recapitulating, in the first part of this chapter, we started by indicating some empirical and conceptual problems in the government-binding framework. The empirical facts had to do with the extraction of wh-elements from an NP which seems to obey the SSC. The conceptual problems have mainly to do with a redundancy between the binding principles and the ECP. To overcome these problems, the binding theory was generalized from a theory of A-binding to a theory of X-binding (A-binding and $\bar{A}$-binding). Once this is done, ECP becomes

unecessary for variables: the core cases covered by ECP are also accounted for in terms of the generalized binding principles. At this point, it is possible to maintain ECP for NP-traces only or to try to get rid of ECP completely. The second approach -if achieved- would have the advantage of eliminating the redundancy between ECP and the binding principles alluded to in the first sections. There it was indicated that both the binding principles and ECP require an antecedent for the trace left by NP-movement: principle A of the binding theory requires the NP-trace (an anaphor) to have a c-commanding antecedent and the ECP also requires a c-commanding antecedent (or a lexical governor). To eliminate the need for ECP will be the main concern of the second part of this chapter.

PART II: ELIMINATION OF E.C.P. FOR NP-TRACES.

The Empty Category Principle as stated in P.L. is not restricted to variables left by the extraction of wh-elements or quantifiers. It also applies to traces left by the extraction of NPs as in (101)-(102):

101- * John$_i$ is illegal $[_{\bar{S}}$ $[_S$ t_i to leave $]$ $]$

102- * John$_i$ is probable $[_{\bar{S}}$ $[_S$ t_i to leave $]$ $]$

Derivations such as (101-102) are ruled out by ECP since the trace $\underline{t}_i$ is left in non-properly governed position. It is obvious that the binding principles cannot account for the ungrammaticality of (101) since the trace $\underline{t}_i$ does not have a governor: the embedded infinitival clause lacking AGR, the trace $\underline{t}_i$ will not be governed in this clause. Assuming that $\bar{S}$ is an absolute barrier for government (cf. the definition of government adopted in Part I), $\underline{t}_i$ is not governed in the matrix clause either. Therefore, this trace which is an anaphor does not have a governing category and the binding principle A will be inoperative.

In the attempt to derive the effect of ECP from other principles at work in the grammar, a constant use will be made of such notions as the "Projection Principle", "θ-criterion", "chains"... The following sections will introduce these notions as they were originally developed in P.L.

5. The Projection Principle, the θ-criterion and the notion "chain".

5.1. The Projection Principle.

At the various level of representations (D-structure, S-structure, L.F.-structure), the structure of a sentence is constrained by the projection principle. This principle amounts to saying that representations at each grammatical level (D.,S-structure...) are projected from the lexicon in the sense that both subcategorization properties and thematic properties are observed at each level (cf. P.L.). In the following discussion, it suffices to have in mind the intuitive idea behind the projection principle: that representations at each of the three syntactic levels are projections of lexical properties.

To illustrate the meaning of the projection principle, consider the verb persuade which takes an NP object and a clausal complement as a lexical property. By the projection principle, an L.F.-representation including this verb will be well-formed only if it is assigned an NP-object and a clausal complement at this level of representation. Sentences (103) will have L.F.-representations of roughly the form (104):

103-a) we persuaded John that he should finish college

b) John was persuaded that he should finish college

c) we persuaded John to finish college

d) John was persuaded to finish college

(with he = John in 103 a-b).

104- ... $[_{VP}$ persuade $[_{NP}$ John $]$ $[_{\bar{S}}$ that he should finish college $]]$

In accordance with the projection principle, the categorial components of the verb persuade expressed in (104) must be satisfied at D- and S-structure as well. The S-structure of (103) will be (irrelevant details omitted):

105-a) we INFL $[_{VP}$ persuade $[_{NP}$ John $]$ $[_{\bar{S}}$ that he should finish college $]$ $]$

b) John INFL $[_{VP}$ be persuaded $[_{NP}$ e $]$ $[_{\bar{S}}$ that he should finish college $]$ $]$

c) we INFL $[_{VP}$ persuade $[_{NP}$ John $]$ $[_{\bar{S}}$ PRO to finish college $]$ $]$

d) John INFL $[_{VP}$ be persuaded $[_{NP}$ e $]$ $[_{\bar{S}}$ PRO to finish college $]$ $]$

The D-structures differ from (105) only in replacement of $[_{NP}$ e$]$ by its antecedent John: the D-structures are mapped onto S-structures by the rule Move α ,which has an effect in cases (b) and (d) of (105), leaving the trace $[_{NP}$ e$]$ which is coindexed with its antecedent by the movement rule.

As for the thematic properties alluded to above, L.F.is so designed that such expressions as the man, John, he are assigned θ-roles (= thematic roles such as "agent of action", "goal of action"...). These expressions referred to as "arguments" are distinct from such terms as the non-referential it (as in it is certain that John will win) or the existential there (as in there are believed to be unicorns in the garden)which assume no θ-role. NP arguments include names, variables,anaphors , pronouns, and non-arguments include non-refe-

rential expressions (there, impersonal pronominals...)

A position to which a θ-role is assigned in L.F. is called a"θ-position". Informally speaking, each complement position is a θ-position. Furthermore,a θ-role may (though it need not) be assigned in the position of subject. The θ-positions are those parenthetized in (106):

106-a) (they) persuaded (John) (that (he) should leave)

b) (we) put (the books) (on the table)

c) the books were put (t) (on the table)

More specifically, it is assumed that θ-role is determined in part by a representation in terms of grammatical functions (GFs) such as subject-of, object-of. . In the S-structure (107),for example, they is the subject of the sentence and John is the object of the verb phrase killed John:

107- $[_S\ [_{NP}$ they $]$ INFL $[_{VP}\ [_V$ kill $]$ $[_{NP}$ John $]\ ]\ ]$

Particular lexical properties of the verb kill assign to its object a specific θ-role; thus, kill θ-marks the object position. Analogously, properties of the VP in (107) require that this VP θ-marks the subject of (107),cf. P.L.

Thus, two factors enter into the determination of θ-role: intrinsic lexical properties of elements which are heads of phrase categories (as the verb is the head of VP) and GFs such as subject,object,clausal complement...To assign θ-role properly in sentence (107),for example, it is necessary to know that John is an object and that kill is the head of the verb phrase VP (cf. P.L.).

5.2. θ-criterion.

The assignment of θ-role is further constrained by the following well-formedness condition referred to as the θ-criterion:

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

The projection principle adds the following requirement concerning the assignment of θ-roles: a category is θ-marked at L.F. if and only if it is θ-marked at D-struture. This has two consequences. If subject is a θ-position it must appear at both S- and D-structure. Second, the θ-criterion holds at D- and S-structure, as well as at L.F. It follows that the parenthetization indicated in (106) must appear at every syntactic level.

5.3. Chains.

We said that GFs enter into the determination of θ-roles. In complex structures, an element may have more than one GF. Consequently, it is legitimate to ask whether each GF assumed by this element is relevant to the assignment of θ-roles. Consider sentence (109) with (110) as the S-structure:

109- John was believed to have been killed

110- $[_{S_1}$ $[_{NP}$ John $]$ INFL $[_{VP}$ be believe $[_{S_2}$ t' INFL have been kill t $]$ $]$ $]$

Each trace is the trace of <u>John</u>: <u>John</u> is subject of S_1, <u>t</u>' is subject of S_2 and <u>t</u> is object of <u>kill</u>. Thus, <u>John</u> bears the GF_1 subject of S_1 by virtue of its actual position in the S-structure (110), and bears the GF_2

subject of S_2 and object of kill by virtue of the positions of its traces t',t respectively. In an obvious sense, the various GFs assumed by John represent the derivational history of this NP by successive application of Move α. Let us associate with each NP in S-structure the sequence of GFs $(GF_1 \ldots GF_n)$, where GF_i is the position of the element filling position p_i in the S-structure configuration: the NP itself for $i=1$, a trace in each other case. Then GF_n in the GF of the NP in question at D-structure. $(GF_1, \ldots GF_n)$ will be referred to as the "chain" of the NP filling GF_1. Returning to example (110), John is assigned the function chain (GF_1, GF_2, GF_3) where GF_1 is subject of S_1 and GF_3 is object of kill.

Suppose now that an NP has the function chain $(GF_1, \ldots GF_n)$ in some S-structure; then we have the following consequences of the θ-criterion and the projection principle:

111-a) If NP is an argument, then GF_n is a GF-θ (i.e. a GF relevant to the assignment of θ-role).

b) For $i \neq n$, GF_i is a GF-$\bar{\theta}$ (i.e. a GF not relevant to the assignment of θ-role).

The projection principle yields (111 a) directly since it implies that the θ-criterion holds at D-structure. Where NP is an argument, (111 b) follows directly from (111 a) by the θ-criterion, for if GF_i is a GF-θ, the NP will be doubly θ-marked. If NP is a non-argument, (111 b) holds by virtue of the θ-criterion, for if GF_i is a GF-θ then this non-argument will be assigned a θ-role by GF_i (cf. P.L. for more detail).

In short, a chain is a sequence of categories at S-structure coindexed by Move α , each member except the first being a trace of the first member called the head of the chain. From the previous discussion, it appears that θ-roles are assigned to chains and that the GF relevant to the assignment of θ-role is GF_n.

Some adjustments are in order. Recall the discussion of the binding principles in the first part of this chapter. There a distinction was made between A-positions (in which A-GFs are defined) corresponding to what are often called "argument positions" and $\bar{A}$-positions (in which $\bar{A}$-GFs are defined).The A-positions are subject and complements to heads of constructions: object, clausal complement... $\bar{A}$-positions are adjuncts; for example, the position of the wh-phrase in COMP. Moreover, this wh-operator itself is not an argument,i.e. a referential expression to which a θ-role may be assigned. We will, for the moment, restrict attention to chains in which each GF_i is an A-GF. These chains will be referred to as A-chains. An element in COMP will not have an A-function chain, but an NP in S will have one. In the S-structure (112), for example, where t and t' are the traces of who, t has an A-function chain (subject of S,object of killed) but who does not:

112- who [t was [killed t']]

The appropriate objects for θ-role assignment are chains where each element (including the head) is in an A-position (A-chains). It follows that the trace of the operator (i.e.the variable) not the opera-

tor itself will have a θ-role. This takes care of θ-role assignment in cases where wh-movement has applied. Henceforth, the term "chain" will be restricted to A-chains (cf. P.L.).

5.3.1. Chains and improper movement.

From the restriction of chains to A-chains, it follows that the variable left by the extraction of the operator and not the operator itself will bear a θ-role; it also follows that an element in COMP breaks a chain into two separate chains for the purpose of θ-role assignment. Consider the following structure where the head is in A-position:

113- $[_{NP_i}$ V ... [t [t' V ...]]]

In (113), there are two chains: the first one is constituted by NP_i with the GF subject of S_1 and the second one by t' with the GF subject of S_0.
With this in mind, consider the following cases of improper movement:

114-a)* John tried [t [t' to win]]
b)* John seemed [t [Bill would see t']]
c)* John is possible [t [Bill will see t']]
d)* it seems [t [t' to rain]]
e)* it seems [t that [John expected [t' [t" to rain]]]]

Sentences (a) and (d) are grammatical but not with the derivation indicated, with the matrix subject moving from the D-structure position of t' to the COMP position of t and then to the matrix position. Similarly, (b),(c), and (e) are excluded.

As indicated in P.L.,it is doubtful that we can exclude these sentences by appealing to principle C of the binding theory. The reason is that there are other grammmatical derivations whose structure is similar in form to (114); for example, (115 a) derived by Move α from the D-structure (115 b):

115-a) John bought a book $[_{\bar{S}}\ [_{NP_i}\ \alpha\ ]$ for $[$ Mary to read t_i $]\ ]$

b) John bought a book $[_{\bar{S}}$ for $[$ Mary to read $[_{NP_i}\ \alpha\ ]\ ]\ ]$

Clearly, the NP a book in (115 a) is coindexed with $[_{NP_i}\ \alpha\ ]$, so that the L.F.-representation is in fact (116):

116- John bought $[$ a book $]\ [_{\bar{S}}\ [_{NP_i}\ \alpha\ ]$ for $[$ Mary to read t_i $]\ ]$

The L.F.-representation (116) is quite similar to (114). As distinct from (114), however, the structure (116) is grammatical (cf. P.L. for a detailed treatment). In fact, examples (114) are ruled out by the θ-criterion under the projection principle. In case (a), the D-structure violates the θ-criterion since the matrix subject lacks an argument. Examples (d) and (e) are ruled out by the θ-criterion applying at L.F. since the variable[65] has no θ-role, and variables, being arguments (R-expressions) must have θ-roles[66]. In (b) and (c), the argument <u>John</u> appears in a non-θ-position in L.F., so that the examples are grammatical only if <u>John</u> is assigned a θ-role (through a trace).Recall, however, that θ-roles are assigned to A-chains but in (114 b-c), there are two A-

chains: one containing just John and one containing just t'. The latter is assigned no θ-role; the examples are ungrammatical by the θ-criterion applying at L.F. Therefore, all the examples of (114) are barred by the θ-criterion ,cf. P.L. .

Note that this analysis does not exclude the grammatical example (116) which is similar in form to (114 a). The reason is that the D-structure (115 b) of (116) satisfies the θ-criterion since a book is base-generated in place. The θ-criterion thus distinguishes properly between the case of movement (cf.114) and the case of control (cf.116) even though the resulting structures are identical in L.F. (cf. P.L.).

Summarizing, the restriction of θ-role assignment to A-chains implies that the variable left by the extraction of the operator, and not the operator itself, receives a θ-role and accounts for the cases of improper movement.

5.3.2. Chains and Post-verbal subjects.

Let us consider the notion chain in more detail. A chain is a sequence of categories in A-position coindexed by Move α . Each member of this chain is in an A-position and each member except the first is a trace of the first member which is called the head of the chain. As was implicitely assumed in the previous discussion, chains are maximal in the obvious sense of this term.

Suppose that C = ($\alpha_1, \ldots, \alpha_n$) is one of these chains. Each pair (α_i, α_{i+1}) will be called a link of the chain C. In the cases discussed so far, each link is a case of local binding: α_i locally binds α_{i+1}. We also saw that

an element in COMP breaks a chain into two separate chains for the purpose of θ-role assignment. It is, therefore, possible to assume that in each link (α_i, α_{i+1}), α_i locally A-binds α_{i+1}. The <u>head</u> α_1 of the chain is a lexical category PRO or a variable; for $i > 1$, α_i is a trace coindexed with α_1 (cf. P.L.)

The notion of chain may be extended to include the cases where the subject is in post-verbal position in Italian. Recall that we have either (117 a) or (117 b) (cf. 75), the former base-generated and the latter derived by Move α :

117-a) β $[_{VP}$ V NP $]$
b) β $[_{VP}$ $[_{VP}$ V ... $]$ NP $]$

β -which is filled by PRO cf. P.L. and supra- is coindexed with the post-verbal subject. Clearly, this indexing has to be distinct from the indexing relevant for the binding theory; otherwise, a name in post-verbal subject position will be A-bound by β. In P.L., this indexing is taken to be similar to the one existing between <u>there</u> and the post-verbal NP in English or between <u>il</u> and the post-verbal NP in French:

118-a) <u>there</u> is <u>a tree</u> in the garden
b) <u>il</u> est arrivé <u>trois hommes</u>
"three men arrived"

Assuming the framework of Rouveret and Vergnaud (1980), it is possible to distinguish between subscripting relevant for the binding theory and superscripting at work in (118) or (117) between β and the post-verbal subject. As indicated in P.L. and in Burzio (1981), the post-verbal subject position, in (117 b), is not a θ-position.

The post-verbal subject receives its θ-role through the position with which it is coindexed. This may be achieved if the notion chain is extended to include cases (117): θ-roles being assigned to chains, the post-verbal subject will receive its θ-role by virtue of its occurence in the chain (β ,NP) (cf. P.L. for more details).

In (117), β and the post-verbal subject are co-superscripted, i.e. coindexed by an indexing distinct from that involved in binding. These two notions of indexing relevant for the definition of chains and for the assignment of θ-roles to chains may be brought together by defining "BIND" similarly "X-BIND","locally-BIND" etc...analogously to "bind" etc...(cf. definitions 32) but now including superscripting as well as subscripting. Thus, α BINDS β if α and β are coindexed and α c-commands β , where coindexing includes either co-superscripting or co-subscripting ; similarly for X-BIND etc... cf. P.L.

The notion "chain" meeting these conditions will be defined as follows:

119- C = ($\alpha_1, \ldots, \alpha_n$) is a <u>chain</u> if and only if:

i) α_i locally A-BINDS α_{i+1}

ii) for $\underline{i} > 1$,(a) α_i is a non-pronominal empty category or (b) α_i is A-free.

iii) C is maximal, i.e. is not a proper subsequence of a chain meeting (i) and (ii).

In case (ii b), since α_i is A-free but A-BOUND it must be co-superscripted with α_{i-1}; that is, α_i is the post-verbal NP subject of (117) and α_{i-1} is β of(117).

Since chains are maximal and since every NP is in a chain (at least a chain with n=1), it follows that each NP is in exactly one chain (cf. P.L.).
Case (ii a) singles out the pronominal empty category or PRO [67] and virtyally amounts to saying that PRO must be the head of the chain[68]. Thus, consider the following structure:

120- John_i wants [[PRO_i to leave]]

In (120), PRO is coindexed (co-subscripted) with its controller John which is in an A-position; it is not A-free. By clause (ii b), John and PRO must be taken to be in distinct chains. To each of these chains, a (distinct) θ-role is assigned. Suppose they were in the same chain: PRO will receive a θ-role from to leave and John from the matrix VP. The derivation will be ruled out by the θ-criterion redefined as a well-formedness condition on chains, cf. P.L., since two θ-roles will be assigned to the same chain according to (121):

121- Suppose that the position P is marked with the θ-role R and $C=(\alpha_1,\ldots,\alpha_n)$ is a chain. Then C is assigned R by P if and only if for some i, α_i is in position P and C has Case or is headed by PRO.

108ⁱ θ-criterion redefined: given the structure S, there is a set K of chains, $K=\{C_i\}$, where $C_i=(\alpha^i_1,\ldots,\alpha^i_{n_i})$ such that

i) if α is an argument of S, then there is a $C_i \in K$ such that $\alpha=\alpha^i_j$ and a θ-role is assigned to C_i by exactly one position P (in which case, α has this θ-role).

ii) if P is a position of S marked with the θ-role R, then there is a $C_i \in K_i$ to which P assigns R, and exactly one α_j in C_i is an argument.

Principle (121) of θ-role assignment to chains include the visibility convention alluded to in the first part of this chapter:case-marked lexical elements, case-marked traces (i.e.variables) and PRO are visible for θ-role assignment but NP-traces are not; cf.71 repeated here for convenience (irrelevant details omitted):

122- who did you try [t [t' to win]]

In (122), the non-case-marked trace t' constitutes an A-chain by itself. For this chain the VP to win will not assign its θ-role since t' is neither a PRO nor case-marked; the derivation will be filtered out by the θ-criterion.

Note that there is a redundancy between the definition of chain given in (119) and principle (121) of θ-role assignment; although for different reasons both single out PRO as the head of the chain. This redundancy will be taken to indicate a deficiency -at least in the formulation of these notions- that we will seek to eliminate. Before such attempt, however, we must consider the derivations where an NP-trace occurs in non-properly governed position in more details.

6. $\bar{S}$-deletion.

As indicated in the first section of this part, the ECP accounts for the ungrammaticality of examples such as (101) repeated in (123) where the NP-trace is not properly governed:

123- * John$_i$ is illegal $[_{\bar{S}}$ $[_S$ t_i to leave $]$ $]$

Sentence (123) is in direct contrast with (124):

124- John$_i$ is likely $[_{\bar{S}}$ $[_S$ t_i to be a nice fellow $]$ $]$

This contrast may be accounted for by ECP if it is assumed that in (124), the trace is properly governed. Given the definition of (proper) government, the sole candidate to be a proper governor in (124) is the matrix predicate. Thus, in (124) -but not in (123)- the trace $\underline{t_i}$ is properly governed by the matrix predicate. Assuming that $\bar{S}$ is an absolute barrier for government (cf. the definition of government adopted in the first part of this chapter), this amounts to saying that in (124), $\bar{S}$ is "transparent" in that it allows proper government by the matrix predicate. This is the general proposal ;cf. P.L. that will be considered in more detail:

The predicate in (124) is often referred to as "raising predicate". Other examples of raising predicates are given in (125):

125-a) John$_i$ seems $[_{\bar{S}}$ $[_S$ t_i to be nice fellow $]$ $]$

b) John$_i$ is certain $[_{\bar{S}}$ $[_S$ t_i to leave $]$ $]$

The D-structures of examples such as (125 a) or (124) are (126); exactly as (127) with empty NP becoming <u>it</u> in(127):

126-a) NP seems $[_{\bar{S}}$ $[_S$ John to be a nice fellow $]$ $]$

b) NP is likely $[_{\bar{S}}$ $[_S$ John to be a nice fellow $]$ $]$

127-a) it seems $[_{\bar{S}}$ that $[_S$ John is a nice fellow $]$ $]$

b) it is likely $[_{\bar{S}}$ that $[_S$ John is a nice fellow $]$ $]$

As (127) indicates, a lexical property of seem and likely is that they take clausal complements and assign no θ-role to their subject. Therefore, the D-structures for the sentences corresponding to (125 a) and (124)must be (126). The embedded clause may be finite or not ($\pm$ Tense). If it is finite (+Tense), we derive (127). If it is not finite (-Tense) as in (126), the embedded subject receives no Case; so to satisfy the Case-filter, which requires every lexical element to have Case, application of Move α is obligatory yielding (125 a) and (124). As for ECP, it is satisfied if we assume that the predicates seem, likely delete $\bar{S}$, so that the trace in (125 a) or (124) will be properly governed. The option of deleting $\bar{S}$ is in part a lexical idiosyncracy; thus, it is a property of likely but not of illegal in (123) or probable in (128). It is this property which characterizes raising predicates (cf. P.L.):

128- * John$_i$ is probable $[_{\bar{S}}$ $[_S$ t$_i$ to win $]$ $]$

As indicated in P.L., this process of $\bar{S}$ deletion occurs after verbal or adjectival predicates such as those exemplified in (124)-(125) and is restricted to infinitival clauses. When an infinitival complement is not in this context, the subject position of this complement will be ungoverned; only PRO may appear:[59]

129-a) I persuaded Bill [PRO to leave]
b) I persuaded Bill [that he should leave]

130-a) I was sorry [PRO to leave]
b) I was sorry [that Bill left]

Summarizing, in general, the subject of an infinitival

is PRO. A language such as English permits a marked exception after certain predicates which trigger a process of $\bar{S}$-deletion or $\bar{S}$-transparency[70]. For concretness, it will be assumed that this process rewrites $\bar{S}$ as S ,cf. P.L. .

Recapitulating, our general goal is to eliminate the redundancies between ECP and the binding principles by eliminating the former principle. For cases of wh-traces excluded by ECP, it was indicated that they can be accounted for by the generalized binding principles. In the second part of this chapter, we started by pointing out that the cases of NP-traces excluded by ECP cannot be handled by the binding principles. Before attempting to derive the effect of ECP for NP-traces from other principles at work in the grammar, a presentation of these principles is necessary. That is why such notions as the "Projection Principle", the "θ-criterion", "A-chains" were introduced.
Among other things, these notions help to account for the cases of improper movement,assignment of θ-roles to post-verbal subjects in Italian, $\bar{S}$-deletion. In the course of the presentation, some redundancies were noticed; thus, both the definition of chain (cf.119) and that of θ-role assignment (cf.121) single out PRO as the head of the chain. In the following sections, it will be indicated that a slight modification of some elements which enter into the definition of chains will eliminate the redundancy alluded to and will account for cases of NP-traces covered by ECP.

7.The notion chain reconsidered.

Recall that (ii a) in the defintion of chain (CP.119)makes an explicit reference to empty categories and prevents the pronominal empty category or PRO from being other than the

head of the chain. Recall also that cases of improper movement were accounted for by assuming that (an element in) COMP breaks a function chain. These cases may be brought together by assuming that $\bar{S}$ breaks a chain [71]. Consider first example (120) repeated as (131):

131- John_i wants $[_{\bar{S}}$ $[_S$ PRO_i to win $]$ $]$

As indicated above, since PRO starts its own chain we have two chains in (131): the first one contains John and the second PRO. Consequently a distinct θ-role is assigned to each of these chains. Recall also that given the binding theory from which it follows that PRO must be ungoverned, PRO cannot be in a context of $\bar{S}$-deletion. By assuming thus that $\bar{S}$ breaks a chain, we assure the correct result in (131): PRO and John will be in different chains.

The assumption that $\bar{S}$-breaks a chain accounts also for the cases of improper movement discussed in (114), repeated as (132):

132-a)* John tried $[_{\bar{S}}$ t $[_S$ t' to win $]$ $]$

b)* John seemed $[_{\bar{S}}$ t $[_S$ Bill would see t' $]$ $]$

c)* John is possible $[_{\bar{S}}$ t $[_S$ t' to rain $]$ $]$

d)* it seems $[_{\bar{S}}$ t $[_S$ t' to rain $]$ $]$

e)* it seems $[_{\bar{S}}$ t $[_S$ that John expected $[$ t' $[$ t" to rain $]$ $]$ $]$ $]$

Cases (a), (d), (e) are accounted for by the θ-criterion as above. As for cases (b)- (c), recall that under the assumption that an element in COMP breaks a chain, it follows that John and the trace t' are in two different chains. The chain constituted by John is not assigned

a θ—role; the examples are ruled out by the θ-criterion. The same analysis can be kept if it is assumed that $\overline{S}$ breaks a chain. In (132 b-c), John and t' will still be in two different chains.

Let us, now, try a slightly different approach. Suppose we generalize case (i) of definition (119) to "BIND" instead of "A-BIND" and maintain the idea that $\overline{S}$ breaks a chain:

119'- $C=(\alpha_1,\ldots,\alpha_n)$ is a chain if and only if

i) α_i locally BINDS α_{i+1}

ii) for $i > 1$ (a) α_i is a non-pronominal empty category or (b) α_i is A-free

iii) $\overline{S}$ does not intervene between α_i and α_{i+1}

iv) C is maximal i.e. is not a proper subsequence of a chain meeting (i)-(iii).

For (131), nothing is changed: PRO and John will be in different chains:

131- $John_i$ wants $[_{\overline{S}}\ [_S\ PRO_i$ to win $]\ ]$

Cases (132) of improper movement will be accounted for as above. Consider, however, more complex derivations where improper movement occurs in a context of $\overline{S}$-deletion which was assumed to be a process rewriting $\overline{S}$ as S:

132-f)* $John_i$ seems $[_S\ [_{COMP}\ t\ ]\ [_S\ t'$ to have left $]\ ]$

g)* John seemed $[_S\ [_{COMP}\ t\ ]\ [_S$ Bill would see t' $]\ ]$

Derivations such as (132 f-g) are ruled out by the θ-criterion. Assuming (119') instead of (119), John and t' will be in the same chain; the derivation will be ruled

out by the θ-criterion since two arguments John and the variable t' will be assigned the same θ-role (recall that a variable is an $\bar{A}$-bound empty element) This approach indicates that there is no need to account for cases of improper-movement by assuming that an element in COMP breaks a chain(cf. P.L. and supra) or by assuming that $\bar{S}$ breaks a chain(unless the process of $\bar{S}$-deletion is prevented from applying when COMP is filled by an overt or an empty element such as t).

The generalization of A-BIND to BIND has other consequences. Consider once again (112):

112- $[_{\bar{S}}$ who $[_{S}$ t was killed t' $]$ $]$

who, t and t' will be in the same chain: t' being in a θ-position, kill assign a θ-role to this chain. No undesirable consequences follow: who is not an argument, the θ-criterion will not be violated. Similarly, consider:

112-a) $[_{\bar{S}}$ who $[_{S}$ do you think $[_{\bar{S}}$ t' that $[_{S}$ John saw t" $]$ $]$

Assuming that bridge verbs [72] such as think do not trigger $\bar{S}$-deletion ,cf. P.L., the embedded $\bar{S}$ will break the chain into two separate chains: who will constitute a chain and t', t" another. who is not an argument hence does not require a θ-role[73]; the other chain will receive a θ-role from the embedded verb saw. If, however, it is assumed that bridge verbs trigger $\bar{S}$-deletion, (112 b) reduces to (112):

112-b) $[_{\bar{S}}$ who $[_{S}$ do you think $[_{S}$ t' that $[_{S}$ John saw t " $]$ $]$ $]$ $]$

Consider now, (122): 74

122- who did you try $[_{\bar{S}}$ t $[_{S}$ t' to win $]\,]$

Whether $\bar{S}$-deletion applies or not, the derivation is filtered out by the θ-criterion: lacking Case, the chain, which contains an argument t' will receive no θ-role. Suppose, however, that PRO and not an overt wh-element moved to COMP as in (122 a-b):

122-a)* the man $[_{\bar{S}}$ PRO that $[_{S}$ you tried $[_{\bar{S}}$ t $[_{S}$ to win $]\,]\,]\,]$

b)* $[_{\bar{S}}$ PRO $[_{S}$ t to win $]\,]$ is difficult

(122 a) reduces to (122) if it is assumed that the embedded $\bar{S}$ is not deleted and to (122 b) if it is assumed that it is deleted. In (122 b), nothing prevents a θ-role from being assigned to the chain (PRO, t) since it is headed by PRO. In P.L., this PRO is assumed to be marked (+wh): like all wh-elements in COMP, it is neither an argument nor is in an A-position. Principle (121) of θ-role assignment will be reformulated so as to require that the PRO relevant for θ-role assignment be an argument. In that case, (122 b) will be ruledout by the θ-criterion;the chain (PRO, t) does not have Case and does not contain an argument PRO. (In P.L., for independent reasons, principle of θ-role assignment is reformulated so as to refer to argument PRO):

121'- Suppose that the position P is marked with the θ-role R and C= $(\alpha_1, \ldots, \alpha_n)$ is a chain. Then C is assigned R by P if and only if for some i, α_i is in position P and C has Case or contains an argument PRO.[75]

Recall that both the definition of chain (119)/(119') and principle (121) of θ-role assignment single out PRO as the head of the chain. In (121), this requirement is dispensed with. In fact, there seem to be cases where PRO is not the head of the chain. Consider the following case of cliticization in French:

133- Pierre le voit
" Pierre sees him"

which has the D-structure (134), cf. P.L., Kayne (1975), Jaeggli (1980) and the references cited there:

134- Pierre $[_{VP}$ le voit NP $]$

In P.L. and Jaeggli (1980), it is assumed that clitics "absorb" government. Thus, the object NP which is taken to be coindexed with the clitic is ungoverned, hence PRO. The coindexing must be distinct from the one relevant to the binding theory. As in the cases of post-verbal subjects constructions in Italian, it is considered to be co-superscripting in P.L. As indicated there, the clitic is not an argument; rather the co-superscripted NP is the argument. However, it is the clitic which is in the position θ-marked by the verb; being co-superscripted with this clitic, the object NP will be θ-marked. In other words, the clitic and the NP form a chain to which a θ-role assigned.

If this analysis is adopted, we will have a clear case where PRO is not the head of the chain. (121') is compatible with this case[76]; neither (119) nor (119') are. Consequently, the definition of chain will be reformulated as follows:

119"- $C=(\alpha_1,\ldots,\alpha_n)$ is a chain if and only if
i) α_i locally BINDS α_{i+1}

ii) for $i > 1, \alpha_i$ is A-free if not empty

iii) $\bar{S}$ does not intervene between α_i and α_{i+1}

iv) C is maximal i.e. is not a proper subsequence of a chain meeting (i)-(iii).

Definition (119"') no longer singles out PRO as the head of the chain. These changes have also the advantage of eliminating the redundancy between the definition of chain (119) and principle (121) of θ-role assignment; inaccurately, both single out PRO as the head of the chain. In (119") and (121'), this redundancy is eliminated.

In this section, the definition of chain and that of θ-role assignment have been modified. The major change involved the assumption that $\bar{S}$ breaks a chain. This assumption ensures that PRO and its controller are in different chains without requiring that the former be the head of the chain. In the following section, it will be indicated that this assumption will handle the cases of NP-trace in non-properly governed position.;thus, eliminating the need for ECP.

8. NP-traces in non-properly governed positions.

The intuitive idea behind the proposal that $\bar{S}$ breaks a chain is that the proposition is the domain in which a chain may occur where proposition is taken to be delimited by $\bar{S}$ rather than S. This proposal will account for cases of NP-trace left in non-properly governed position. Consider, once again, the contrast between (123) and (124) repeated as (135)-(136):

135- * John is illegal $[_{\bar{S}}$ $[_{S}$ t_i to leave $]$ $]$

136 John is likely $[_{S}$ t to win $]$

Recall that following P.L., we assumed a process of $\bar{S}$-deletion or $\bar{S}$-transparency whereby $\bar{S}$ is rewriten as S in (134). As a consequence, the trace $\underline{t_i}$ in (136),but not in (135), was properly governed by the matrix predicate. Assuming the process of $\bar{S}$-deletion, the contrast between (135) and (136) can be accounted for by the θ-criterion. In (135) and (136), the argument <u>John</u> appears in non θ- position[77]. These examples are grammatical only if <u>John</u> is assigned a θ-role. Since $\bar{S}$ breaks a chain, there are two chains in (135): one containing <u>John</u> and the other $\underline{t_i}$. The former is assigned no θ-role since <u>John</u> is not in a θ-position; the latter is assigned no θ-role either since $\underline{t_i}$ is not case-marked.
Thus, (135) is excluded by the θ-criterion. In (136),however, <u>John</u> and $\underline{t_i}$ are in the same chain and <u>John</u> is case-marked; the VP <u>to win</u> will assign a θ-role to this chain and the θ-criterion will be satisfied. Consider, now, the following examples:

137-a) Bill was believed to have seen Tom

b)* Bill was preferred (for) to have seen Tom

c)* Bill was wanted to have seen Tom

At the level of S-structure, the corresponding forms are (138),cf. P.L.:

138-a) $Bill_i$ was believed $[_{S}$ t_i to have seen Tom $]$

b)* $Bill_i$ was preferred $[_{\bar{S}}$ for $[_{S}$ t_i to have seen Tom $]$ $]$

c)* $Bill_i$ was wanted $[_{\bar{S}}$ for $[_{S}$ t_i to have seen Tom $]$ $]$

Example (138 a) is unproblematic in a framework where ECP is assumed. The embedded trace is properly governed by <u>believed</u> (cf. footnote 70); therefore the sentence is grammatical. Examples (b) and (c) are excluded by ECP since <u>for</u>, like all prepositions, is not a proper governor.

If ECP is dispensed with, examples (138) may be accounted for by the θ-criterion. In (138 a), where $\bar{S}$-deletion applies (cf. footnote 70), <u>Bill</u> and <u>t'</u> belong to the same chain; to this chain, a θ-role is assigned by the embedded V. In (138 b) and (138 c), $\bar{S}$-deletion does not apply, cf. P.L.; <u>Bill</u> and $\underline{t_i}$ are in separate chains: <u>Bill</u> will not receive a θ-role because it is not in a context of θ-role assignment[78]. Therefore, (138 b) and (138 c) are ruled out by the θ-criterion.

<u>Conclusion of Part II.</u>

Recapitulating, the contrast between representations such as (139 a) and (139 b) is accounted for by the ECP in P.L.:

139-a) NP V ..... $[_{\bar{S}}$ $[_S$ t VP $]$ $]$

b) NP V ..... $[_S$ t VP $]$

In a framework where the ECP is dispensed with, this contrast may be accounted for by assuming that $\bar{S}$ breaks a chain. In (139 a), NP and its trace will be in separate chains. The chain containing the NP will not be in a context of θ-role assignment and the chain containing the trace -being non-case-marked- will not receive the θ-role assigned by the embedded VP.
Representation such as (139 a) will thus be ruled out by the θ-criterion. The only way to obtain a well-formed

representation is to assume a process of $\bar{S}$-deletion (cf.139 b): the NP and its trace will thus be in the same chain. Being case-marked, this chain will receive a θ-role. No violation of the θ-criterion occurs. In brief, $\bar{S}$-deletion is closely related to the assumption that $\bar{S}$ breaks a chain and is to be understood by reference to the latter assumption.

At this point some remarks are in order. The first concerns sentences ruled out by the ECP which, a priori, do not seem to be accounted by the θ-criterion (pointed out by N.Chomsky):

140- * There_i^k is unclear [$_{\bar{S}}$ how [$_S$ t_i^k to be a unicorn^k in the garden]]

In (140), there has been raised from a non-properly;the derivation is ruled out by the ECP. Neither there nor its trace are arguments or in a context of θ-assignment; the θ-criterion, therefore, seems irrelevant. Note,however, that the conclusion concerning the non-relevance of the θ-criterion is not correct. Recall that in order to be assigned a θ-role a chain must be case-marked or headed by an argument PRO. We also will see in chapter 3 that this convention concerning the assignment of θ-role will allow the elimination of the case-filter as an independent filter in the grammar. In P.L., it is assumed that there and the post-verbal NP are co-superscripted and that they form a chain (cf. section 5.3.2):

140-a) there^k is a unicorn^k in the garden

Assuming that this analysis is correct,(140) will be ruled out by the θ-criterion under the assumption that $\bar{S}$ breaks a chain. In (140), there will be two chains: the one containing there and the one containing the empty element

and the post-verbal NP (t, a unicorn) . The latter chain, is neither case-marked nor headed by an argument PRO;therefore, it will not receive a θ-role. The derivation will thus be ruled out by the θ-criterion since the chain containing the argument a unicorn will not receive a θ-role. This analysis, crucially, assumes that the post-verbal NP receives its Case by virtue of being coindexed with there and not directly from the verb to be. This assumption is necessary if, as suggested in P.L., the Case-filter follows from the θ-criterion and is not an independent principle in the grammar (cf.chapter 3). Suppose that in (140) the post-verbal NP receives its Case directly from the verb to be ,we would incorrectly predict that (141) is grammatical since the whole chain (there, a unicorn) would be case-marked:

141- * there^{k} to be a unicorn^{k} in the garden.

Suppose, however, that it were to turn out that the θ-criterion and the Case-filter are independent principles, (140) will still be ruled out by the assumption that $\bar{S}$-breaks a chain. In the following chapter, it will be argued that in order to be interpreted, there must obligatory be lowered to the same sentence containing the NP with which it is coindexed co-superscripted (a unicorn in 140) and that the domain of this lowering process is the chain. In (140), since $\bar{S}$-breaks a chain, the non-referential there will not be lowered; it, thus, will not be interpreted. The representation, therefore, will be excluded. In other words, the assumption that $\bar{S}$-breaks a chain will account for all cases of NP-traces covered by ECP.

Another remark more conceptual in nature concerns the assumption that $\bar{S}$-breaks a chain itself: what does the existence

of such an assumption mean? To phrase the question differently: is it possible to further motivate the existence of such an assumption by relating it to a more general principle at work in the grammar? These questions will be dealt with in chapter 3 where it will be suggested that the assumption that $\bar{S}$-breaks a chain is to be related to a general prohibition preventing the extraction of elements from an $\bar{A}$-position.

SUMMARY OF CHAPTER 1.

Recapitulating the basic content of this chapter, in the first sections some empirical and conceptual problems in the government-binding framework were discussed: the extraction of wh-elements from inside an NP in Italian and French indicated that -contrary to what is it assumed in this framework- the SSC does apply to variables. The conceptual problems had to do with some redundancies between the binding theory and the ECP: essentially both require an antecedent for the NP-trace. In order to overcome these problems, a rearrangement of the different elements of the government-binding framework was suggested. In this framework, variables must be A-free by the binding principles and $\bar{A}$-bound (or more precisely properly governed) by ECP. These different requirements were brought together by generalizing the binding theory from a theory of A-binding to a theory of X-binding (where X= A or $\bar{A}$) as follows: for empty elements, the definition of anaphors was changed to include variables; as anaphors, variables will be subject to principle A of the binding theory (which requires anaphors to be X-bound in their governing category). As place-holders for names, they will also be subject to

principle C of the binding theory (which requires names to be A-free). To satisfy both principles, X-bound must be taken to mean $\bar{A}$-bound; variables have to be $\bar{A}$-bound in their governing category. It was shown that this modification accounted for the extraction of wh-elements from inside an NP in Italian and French and thus, solved the empirical problems raised earlier. As for the conceptual problems concerning the redundancy between ECP and the binding principles, the effect of this modification is to increase them: in P.L., since the binding theory is a theory of A-binding, the redundancy is restricted to NP-traces. In the rearrangement of this framework suggested in this chapter, the binding theory is generalized to a theory of X-binding. As a consequence, the redundancy is extended to variables too: both the binding theory and ECP require variables to have an antecedent. It was obvious, then, that the elimination of ECP will solve this redundancy. This elimination was conducted in two steps: for variables first then for NP-traces.

For variables, the elimination was straightforward; the cases covered by ECP were also covered by the generalized binding principles. For NP-traces, the binding principles are irrelevant: in the derivations filtered by ECP, the trace is not governed, hence lacks a governing category. Principle A of the binding theory which requires NP-traces to be bound in their governing category is thus inoperative. The θ-criterion, however, was shown to account for the cases of NP-traces covered by ECP. For independent reasons having essentially to do with the distribution of PRO, the definition of chain was modified and

its domain restricted to $\overline{S}$. As a consequence of this modification, in the derivations covered by ECP, the trace and its antecedent will be in different chains. Since by the projection principle and the θ-criterion the antecedent of a trace is in a non-θ-position, it will not receive a θ-role and the derivation will be filtered out by the θ-criterion (cf. also 40). In this account ECP is a spurious generalization; the RES(NIC) cases accounted for by this principle do not constitute a unified phenomenon: non-properly governed variables are excluded by the binding principles and non-properly governed traces by the θ-criterion.

FOOTNOTES

1 -Where $\bar{S}$ -but not S- counts as a bounding node (cf. Sportiche 1979).

2 -The effect of the NIC on wh-movement as in (4) cannot be directly observed in Italian because of an interaction with the PRO-drop parameter and its consequences (cf. Rizzi 1980).

3 -Roughly speaking, a governor is the head X° of the major category $\bar{\bar{X}}$ immediately dominating $\bar{\bar{X}}$ (cf. P.L., Aoun & Sportiche 1981 and infra).

4 -For a characterization of the notion subject in NP, cf. Milner (forthcoming), Milner (1975), Cinque (1979) and Zubizarreta (1979); cf. also the latter for the characterization of the θ-role played by this subject.
As indicated in the latter reference, the characterization of the subject in an NP seems to be determined according to a thematic hierarchy:

i-a) possessor (or source)
b) agent
c) theme

Thus, consider the following phrases:

ii-a) le portrait d'Aristote de Rembrandt de Pierre
"the portrait of Aristotle of Rembrandt of
(theme) (agent)
Pierre"
(possessor)

b) le portrait d'Aristote de Rembrandt
"the portrait of Aristotle of Rembrandt"
(theme) (agent)

c) le portrait d'Aristote
(theme)
the portrait of Aristotle

According to the thematic hierarchy (i), de Pierre will be characterized as the subject in (ii a), de Rembrandt as the subject in (ii b) and d'Aristote as the subject in (ii c). As illustrated by the following phrases only subjects can be extracted:

iii-a) Pierre dont$_i$ le portrait d' Aristote de Rembrandt X_i...
"Pierre of whom the portrait of Aristotle of Rembrandt" (cf. ii a)

b) *Rembrandt dont$_i$ le portrait d'Aristote X_i de Pierre
"Rembrandt of whom the portrait of Aristotle of Pierre"

iv-a) Rembrandt dont$_i$ le portrait d'Aristote X_i...
"Rembrandt of whom the portrait of Aristotle" (cf. ii b)

b) *Aristote dont$_i$ le portrait X_i de Rembrandt...
"Aristotle of whom the portrait of Rembrandt"

v- Aristote dont$_i$ le portrait ...
"Aristotle of whom the portrait" (cf. ii c)

(cf. Zubizarreta 1979 for more details); with respect to sentences (iii-v), there are some dialectal variations which won't be discussed, cf. Milner (ref. cit).
Note also that this hierarchy is at work for de NP complements only. As indicated by the ungrammaticality of (6 b), other prepositional phrases cannot be subject; therefore they cannot be extracted. Assuming with Vergnaud (1974) that de NP complements are real NPs and not PPs, i.e. that de is simply a case-marker, it is possible to say that the thematic hierarchy is at work for NPs but not for PPs inside an NP: only NPs can be subjects.

In the chapter concerned with clitics, we will return to the assumption that de NPs are NPs and not PPs with greater detail.

5 -The fact that the same seems to hold for clitic movement out of the NP need not concern us. On this matter, cf. Cinque(1979) and Steriade (1980*a*). In an unpublished work, Huybregts suggested that the empty element left by the clitic is interpreted as a variable. Thus, it is not surprizing that clitics behave like wh-elements. We will return to this observation in this chapter and the following one.

6 -Later on, this assumption will turn out not to be necessary.

7 -Noted in Borer (1980).

8 -Presumably to the matrix COMP (cf. Aoun, Hornstein & Sportiche 1981).

9 -Note that both the ECP and the binding principles refer to the two notions of antecedent and governor. The P.L. formulation of the ECP is given below. For different formulations, cf. Kayne (1981), Jaeggli(1980).

10 -It follows from the binding theory that PRO is excluded from the governed position by virtue of being subject to principles A and B of the binding theory, cf. P.L. and infra.

11 -It gives essentially the following results accounting for the fact that where anaphors are allowed, pronouns are disjoint in reference, cf. P.L.:

i-a) $[_S$* they saw each other $]$

b)* they said that $[_S$* Mary saw each other $]$

ii-a)*$[_S$* John$_i$ saw him$_i$ $]$

b) John$_i$ said that $[_S$* Mary saw him$_i$ $]$

12 -As well as a conceptual one: one may wonder why NP and S are the two governing categories,cf. P.L.

13 -The conceptual problem raised in the preceding footnote receives a rather natural interpretation in terms of (24 II):why are NP and S the two governing categories? The answer is that NP and S are the two categories containing SUBJECTS;cf. P.L.

14 -The indexing of the embedded AGR and the reciprocal would violate the well-formedness condition (26).

15 -In an unpublished work,Huybregts suggested that the trace left by the clitics is a variable,(cf.footnote 5).Althought not an operator the clitic is an $\bar{A}$-binder.We will return to this observation later on.

16 -"R-expression" is replaced by "name" in (C);in part to avoid the problem of pronouns such as I,you that one may want to treat as R-expressions.This terminological modification is not crucial;the original formulation given in P.L. could have been kept as well.

17 -This reformulation of the binding principles tries to capture the insight behind the theory developed in Chomsky (1980)("On Binding Theory") according to which variables are treated like anaphors and the insight behind the theory developed in P.L. according to which variables are name-like elements.
Note also that the fact that variables must be $\bar{A}$-bound and not A-bound seems to follow from clause C of the binding principles.
One may hope to derive the fact that reflexives,reciprocals and NP-trace must be A-bound.But cf.the following chapter where it is indicated that some variables -those left by clitics- are not subject to principle C. These variables must however be $\bar{A}$-bound in their gover-

ning category. If this is so, the fact that <u>all</u> variables must be $\bar{A}$-bound does not follow from the binding principles; it has to be stipulated.

18 -For concretness, (34) is adopted as the L.F.-representation of (2). Another possibility is to assume that a kind of reconstruction is involved in (2). This is irrelevant for our discussion, cf. P.L., Longobardi (1978), Williams & Van Riemsdijk (1981), Aoun, Sportiche, Vergnaud & Zubizarreta (1980), Guéron (1980, 1981)

19 -As in P.L., potential rather than actual coindexing is assumed.

20 -The following logical possibility is allowed: AGR counting as accessible SUBJECT for a variable in non-subject position when there is no subject. However, as indicated in P.L., subjects on a sentential level are always obligatory. (cf. chapter 2, footnote 4 for the exact nature of the indexing mechanism at work between AGR and the subject).

21 -As indicated by N. Chomsky, p.c., it is not necessary in P.L. to stipulate that S and not $\bar{S}$ is the governing category if (16) is adopted. This follows from the minimality of the governing category. Note also that in P.L., it is not necessary to stipulate that $\bar{S}$ is the governing category if the definition of governing category incorporating the notion accessible SUBJECT is adopted (cf. 24 II).

One may plausibly challenge the structure given in (36) (assumed in P.L.) and replace it by the following:

i- $[_{\bar{S}}$ $[_{S}$ they'd prefer $[_{PP}$ for $[_{\bar{S}}$ $[_{NP}]$ $[_{S}$ to win $]]]]]$

Structure (i) may be preferable to structure (36) since it solves the following problem mentioned in P.L.:

ii- John V $[_{\bar{S}}$ $[_{COMP}$ $[_{NP}]$ for$]$ $[_{S}$...t'...$]$ $]$

In (ii),the $\bar{A}$-binder $[_{NP}]$ does not c-command the variable t' if (36) is chosen. We,thus, expect the sentence to be ruled out for the same reasons excluding(35 b): failure of c-command of the variable by the $\bar{A}$-binder (cf. Kayne 1979 , Rizzi 1979). If however,(i) is chosen, the problem is solved since the $\bar{A}$-binder will c-command the variable:

iii- John V $[_{PP}$ for $[_{\bar{S}}$ $[_{NP}]$ $[_{S}$....t'... $]$ $]$ $]$

Note also that if (i) is adopted,for will assign Case to the NP across an $\bar{S}$. We, therefore,would need to assume that the complementizer for triggers $\bar{S}$-deletion. On the status of $\bar{S}$-deletion, cf. P.L. and Part II of this chapter. The choice of (i) instead of (36) is irrelevant for our discussion. The matter will not be further pursued.

22 -(37 c) is grammatical if the variable is construed as the subject: "the portrait that a man made of Rembrandt".

23 -To push the analogy to its limits requires to consider the NP as the maximal projection of the determiner in the same way as S is considered as the maximal projection of INFL (cf. Zubizarreta 1979).
A difference between AGR and the determiner is that the former cannot function as an $\bar{A}$-binder,cf.(35). But cf. infra where it is indicated that in some constructions, AGR,when cliticized,functions as an $\bar{A}$-binder.
Relevant to this proposal is the discussion in chapter 6 of P.L.,where it is suggested that the determiner and the clause in an NP form a chain to which the θ-role is assigned. A natural way to achieve this result is to assume that the determiner and the clause are coindexed.

24 -In the government-binding framework, ECP accounts for the distribution of variables generated in L.F. (cf. Kayne 1979 and P.L.). It is possible to account for the constrast between (37 b-c) or between (38 a-b) by ECP if it is assumed that le$_i$ is coindexed with the variable and $\bar{A}$-binds this variable. This is not, however, in the spirit of ECP as formulated in P.L. where the empty element must be properly governed by a lexical element. Obviously le is not a lexical element.

25 -The examples are from Borer (1980) where they are given to support the proposal that clitics function as proper-governors.

26 - In this case, a case-marker šel appears in front of that NP. This need not concern us, cf. Borer (1980) and the references cited there.

27 -In this case ?et is inserted; cf. the preceding footnote.

28 -Or the clitic itself in (42 a); this is irrelevant.

29 -The discussion of the accessibility of the SUBJECT in (43), (44) should not be confused with that of the definitness condition which accounts for the ungrammaticality of such sentence, cf. Fiengo & Higginbotham (1979):

i- * who$_i$ do you see John's picture of X$_i$.

As indicated in Fiengo & Higginbotham (1979), it is this constraint and not the SSC which is at work in (i). One may consider the need for such constraint and the binding principles as indicating a weakness in the theory adopted.

30 -It is assumed that this rule is a "one step movement rule" and not a successive cyclic movement such as syntactic wh-movement, cf. P.L. and Aoun, Hornstein & Sportiche (1981). Note that this assumption is not crucial in (52 a-b).

31 -In other words, we expect (48) and (49) to be excluded for the same reson excluding (47 b), but cf. infra:

who$_i$ do you think [t$_i$ that [t$_i$ saw Bill]]

32 -This can be technically achieved if it is assumed that $\bar{S}$ is a projection of COMP as it has been frequently suggested and that the features of the head percolates up to the projection ($\bar{S}$)of the head.

33 -It is suggested in P.L. that if some kind of adjacency condition is imposed on proper-government,an independent mean will be provided to exclude such structures:

i-a) ——— [$_{VP}$ V NP [t to VP]]

b)* John was persuaded Bill [t to win]

c)* who did John persuaded Bill [t to win]

As indicated in P.L.,if there is no $\bar{S}$-deletion in the embedded clausal complement, the structures of (i) will be excluded by ECP. If $\bar{S}$-deletion takes place in such constructions,then ECP would not be violated if proper-government does not require adjacency.

34 -Note that the relative scope of <u>who</u> and <u>what</u> does not arise if the absorption mechanism of Higginbotham & May (1979 a-b) is assumed. The exact nature of the absorption mechanism -although interesting in that it may affect structures (48-49)- will be ignored.

35 -Irrelevantly, (b) may have the reading "not (I want that for no x, x come)"

36 -This analysis was put forward by Kayne (1979) for French and generalized to Italian by Rizzi (1980). For a different analysis,cf.Milner (1979).

37 -For a justification of the derived structure (67 b), cf.Burzio (1981),Belletti & Rizzi (1980).

38 -Recall that AGR is not a proper-governor.

39 -The fact that $\underline{x}_i$ may have Case and that case-assignment requires government is discussed below,cf. P.L.

40 -This accounts correctly excludes anaphors from post-verbal subject position since they will be A-free in $\bar{S}_0$ .It is to be assumed that when it does not undergo affix-movement,AGR which is in INFL is not in $\bar{A}$-position. As to whether it is in A-position,cf. P.L.,where the isuue is raised. Assuming that INFL is the head of S and that AGR is in INFL,it will not be, like all heads,in an A-position either.Cf.chapter 2,footnotes 4 and 41 for the nature of the coindexation holding between AGR and the subject.

41 -Other examples of clitics $\bar{A}$-binding the variable left by the extraction of the wh-element will be considered in the following chapters.

42 -In any situation, it is necessary to assume that case-assignment is done after the application of the affix-movement rule. To see why consider the following structure in Italian (from P.L.):

i-* NP V $[_{\bar{S}}$ $[_{S}$ anaphor $[_{VP}$ V-INFL]]]

In (i), the affix-movement rule applied. The anaphor is not governed and has no accessible SUBJECT.Consequently,the binding principles are inoperative and nothing excludes the sentence. If, however, it is assumed that case-assignment or case-checking is done after the affix-movement rule (at S-structure for instance) and that this assignment requires government, (i) will be ruled out by the Case-filter since the anaphor -a lexical element- will receive no Case. Two questions can be raised. The first one concerns case-assignment of wh-elements in COMP. The second one

concerns (ii) where the anaphor is not lexical:

ii-* NP V $[_{\bar{S}}$ $[_{S}$ t $[_{VP}$ V-INFL $]$ $]$ $]$

cf. P.L. where these problems are discussed.

43 -Or will be assigned but will be invisible in L.F. where the θ-criterion is presumably checked, cf. P.L.

44 -A quantifier in COMP is not an R-expression, cf. P.L.

45 -This amounts to saying that a variable must be case-marked or that wh-movement takes place from a case-marked position, cf. P.L.

46 -Actually the situation is more complex since the extraction of preverbal elements is excluded even in matrix clauses in Italian, cf. Rizzi (1980). This is, however, irrelevant to our discussion, cf. P.L.

47 -Although the situation is complicated by the existence of the affix-movement rule applying in syntax in Italian.

48 -The analysis of Kayne (1975) which suggests that there is clitic-movement in these constructions in French, is assumed. On ne-cliticization in Italian, cf. Burzio (1981), Belletti & Rizzi (1980).

49 -The notion of c-command referred to is the one defined in the following paragraph (cf. 10') and not the one defined in (10).

50 -Irrelevantly ?anna may be followed by a clitic for a PP., cf. Aoun (1979) and Ayyoub (1980) for further details.

51 -The situation is somewhat similar in English where that appears with a tensed clause and for with a non-tensed clause; the latter but not the former assigns Case, cf. P.L.

52 -The idea of treating COMP as a governor was first suggested by Rouveret (1980); cf. also Aoun, Hornstein & Sportiche (1981).

53 -This may help to understand why the basic structure of S is as in (i)

i- NP INFL VP

or to put the matter differently: why don't we start with a structure like (ii) ?

ii- NP [VP V + INFL ...]

The reason is that INFL will fail to govern NP and VP, hence to respectively assign Case and mood to these elements. The considerations of footnote 42 are also relevant in this respect. To put matters differently, it is suggested in P.L. that INFL subcategorizes the subject NP and the predicate VP. Under the assumption that subcategorization involves government (cf. P.L., Aoun & Sportiche 1981), INFL must govern both the subject NP and the predicate VP; thus precluding a D-structure like (ii).

54 -On the status of the empty element left by the affix-movement rule, cf. P.L.. Percolation down to the head V may presumably be viewed as a PF phenomenon

55 -Note that we assume that INFL (AGR) is first attached to VP then percolates down (or is copied onto) the head V presumably in P.F., cf. footnote 54. Being attached, or more precisely adjoined to VP, AGR will c-command the post-verbal subject NP; it will thus count as an accessible SUBJECT for this NP; being cliticized and coindexed with this NP, it also will count as an $\bar{A}$-binder of this NP (cf. 68). However, as pointed out by L. Rizzi, p.c., in (72) there are two VPs. If INFL is attached to the higher one, AGR which is contained in INFL will dominate the post-verbal subject and thus will not count as an accessible SUBJECT, a governor or an $\bar{A}$-bin-

der. In short, we need to assume that INFL is attached to the lower VP.Note that if INFL does not govern the post-verbal subject, this subject will not receive Case and the derivation will be filtered out by the Case-filter. We are assuming that Case-assignment applies in a context of governance,cf. P.L. and that Case is not transmitted from the preverbal subject position,cf.chapter 3.

To obtain this result, many possibilities come to mind. The simplest is to assume that INFL randomly attaches to any of the two VPs. There will,thus be a grammatical derivation namely the one where INFL attaches to the lower VP. This is the result needed.Another question to be asked with respect to these constructions is the following:since AGR may count as an $\bar{A}$-binder for the empty element left by the extraction of the post-verbal subject, why doesn't it count as an $\bar{A}$-binder for the empty element left by the cliticization of <u>ne</u> from inside this subject? Recall that in order for an empty element to bind another element,it must c-command this element and be coindexed with it. INFL (AGR) is coindexed with the subject NP (cf.24 I) and c-commands it;it, thus, may count as a binder of this subject. However, it may not bind an empty element contained in this subject because it is not coindexed with this empty element. Furthermore, AGR <u>cannot</u> be coindexed with this empty element because it would be coindexed with the subject and with an empty element contained in this subject; thus, violating the well-formedness condition i/i (cf.26):

$$AGR^{p} \ldots\ldots [_{NP}{}^{p} \ldots\ldots e^{p}]$$

This incidentally indicates that AGR does not count as an accessible SUBJECT for the empty element left by ne-cliticization from a post-verbal position. Recall that we assumed that ne and its trace requires c-command (cf. P.L. and Burzio 1981). It,obviously, would be a welcome step in any framework to derive the c-command requirement from the binding principles. Note,however, that AGR will not count as an accessible SUBJECT; it remains to see whether this empty element is governed.

Ne in Italian (as en in French,cf. Kayne 1975) corresponds to a genitival noun. Assuming that case-assignment is a special case of governance,cf. P.L., this means that the genitival noun which corresponds to ne received its Case by virtue of being governed in the phrase in which it occurs (presumably by the head of this phrase). Assuming, now, that the trace left by the cliticization of the genitival noun from the subject position is governed, the root clause will count as a governing category for this empty element since it lacks an accessible SUBJECT (in a simplex sentence for instance). The derivation will be ruled out by the binding theory, since in the root clause the empty element will be free.

Suppose, however, that it appears that the empty element left by ne-cliticization is not governed. This empty element will lack an accessible SUBJECT (in simplex sentence for instance) and will be ungoverned. The derivation will be ruled out if it is assumed that empty elements are anaphors and that as a matter of linguistic principle anaphors must be bound in order to be interpreted. Note that this is not quite redun-

dant with the binding theory. As a matter of linguistic principle, anaphors must be bound; what the binding theory determines is the domain -if any- in which these anaphors must be bound (the governing category). The assumption that anaphors must be bound has obvious consequences for PRO (cf.Chomsky 1980 , P.L., Lasnik 1981) and for the extension of the notion governing category (24 II) that will not be pursued here.

Finally, as pointed out in Belleti & Rizzi (1980) (henceforth B.R.), in sentences such as (75 a), neither ne-cliticization nor the Ø option (cf.i) are allowed (cf. the following chapter for a detailed discussion of these constructions).

i- * telefonato molti Ø

These authors assimilate the Ø element to PRO.They suggest that (i) is ungrammatical because PRO is governed by V and they account for the impossibility of ne-cliticization from this position (cf.75 a) as follows.Roughly, the post-verbal subject in (75 a) - contrary to the one in the ergative construction (75 b)- is not an argument of the verb. They reformulate the subjacency principle in such way as to take into account this difference between (75 a) and (75 b). It follows that the post-verbal subject in (75 a) -but not in (75 b)- will not be subjacent to the verb.Therefore,the cliticization of ne in (75 a) will violate the subjacency principle. They, moreover, indicate that such a reformulation of subjacency may account for the non-extraction from an adverbial position.As pointed out,however, by A.Rouveret,p.c.,there is a clear case in French where an element is extracted

from an adverbial position:

ii- combien sont-ils venus de fois
how many be-they come of times
"how many times did they come"

In the approach we suggest, in order to account for the ungrammaticality of (i), it is not possible to suggest that AGR which is attached to VP governs the empty element inside the post-verbal subject: recall that AGR governs an element by being coindexed with this element (cf. supra); if AGR were to govern the $\emptyset$ element inside the post-verbal subject, there would be a violation of the well-formedness condition (26) since AGR is coindexed with the whole post-verbal subject. At this point, it is possible to assume that AGR, when attached to VP, can govern like other governors, i.e. that it does not need to coindex the element in order to govern it (but cf. supra). Another possibility will be to assume that AGR by virtue of being cliticized to VP "lexicalize" in some sense this VP which thus become a governor on a par with x° governors. In both cases, the $\emptyset$-element identified as PRO - will be governed. Each of this proposal has a number of consequences that we will not discuss. The first sections of the following chapter concerning some quantified phrases in Italian (<u>tre settimane</u> "three weeks") bear on some of these issues.

The discussion of <u>ne</u>-cliticization (cf. 75 a-b) and that of (i) suppose then that in quantified phrases of the form $[_{NP}$ quantifier-noun$]$, the noun position may be ungoverned. (in order for PRO to appear in this position) or may be governed (in order for <u>ne</u>-

cliticization to take place, if it is assumed that <u>ne</u> corresponds to a genitival noun which is governed, cf. supra). In other words, the phrase $[_{NP}$ quantifier-noun$]$ may ambiguously be characterized as a phrase where the noun is governed or not. In the first case, the noun is the head of the phrase (cf. Kayne 1981 , Belleti & Rizzi 1980). In the second, the quantifier, presumably, is the head of the phrase and governs the noun. It is interesting to note in this respect that in Standard Arabic, the quantifier in the constructions $[_{NP}$ quantifier-noun$]$ bears the case assigned to the whole NP and the noun bears the genitive case. The implication of each analysis goes beyond the scope of this work, for extensive analysis concerning quantified phrases, cf. Vergnaud 1974 , Kayne 1975 , Milner 1978). Thanks to R.S. Kayne for fruitful discussions.

56 -It is possible now to adopt the following definition of government, cf. Aoun & Sportiche (1981):

i- $[_{\beta} \ldots \gamma \ldots \alpha \ldots \gamma \ldots]$ where

(i) $\alpha = x^{\circ}$

(ii) where φ is a maximal projection, φ dominates α iff φ dominates γ

cf. Aoun & Sportiche (1981) where it is suggested that government is the symmetrized relation of c-command.

57 -Cf. P.L., Van Riemsdijk (1978), Weinberg & Hornstein (1981), Kayne (1981).

58 -Cf. Chomsky (1973) and P.L. where it is indicated that this is a one step-movement rule.

59 -The pied-piping of the preposition <u>de</u> is irrelevant in (85 b): "de NP" form an NP and not a PP in (85), cf. Vergnaud (1974).

60 -By N if it is assumed that nouns are proper-governors or by <u>le</u> (but cf. footnote 24).

61 -Since (83) and (87) have essentially similar L.F. representations, an L.F.principle such as ECP will not be able to distinguish between the two sentences. In P.F., however, (83) and (87) will have distinct representations. This suggests that the phenomenon of preposition stranding is to be accounted for by a P.F.-filter;presumably along the lines of Weinberg & Hornstein (1981).A similar problem can be raised in English with respect to the following sentences mentioned in P.L.:

i- it is unclear who read which book

ii- it is unclear who left the book near what.

Assuming once again that there is no pied-piping in L.F., the L.F.-representation of (i) and (ii) will be (irrelevant details omitted):

i- it is unclear $[_{\bar{S}}$ which$_i$ who$_j$ $[_S$ e$_j$ read $[_{NP}$ x$_i$ book $]\,]\,]$

ii- it is unclear $[_{\bar{S}}$ what$_i$ who$_j$ $[_S$ e$_j$ left the book $[_{PP}$ near x$_i$ $]\,]\,]$

In (i),the variable $\underline{x_i}$ is left in non-properly governed position since nouns are not proper-governors(cf. section 2.2.);in (ii),<u>near</u> is a preposition which does not allow preposition-stranding (cf Weinberg & Hornstein 1981) and like all prepositions is not a proper-governor: $\underline{x_i}$ is thus left in non-properly governed position.Both sentences should be ruled out by ECP.

In an unpublished work, basing himself on different facts,J.Huang reaches similar conclusions concerning the non-existence of pied-piping in L.F.

62 -Cf. Manzini (1980) where it is argued that prepositions do not have SUBJECTS. On this matter, cf. also Stowell (1980 a).

A problem with this proposal may be raised by the ungrammaticality of the following sentence where NP seems to count as the governing category despite the absence of an accessible SUBJECT in this NP:

i-* which$_i$ did you read $[_{NP}$ x_i book $]$

(where x_i is generated by the syntactic wh-movement rule).

This sentence is to be contrasted with the grammatical sentence (i) of the preceding footnote (repeated here in ii):

ii-a) it is unclear who read which book

b) it is unclear $[_S$ which$_i$ who$_j$ $[_S$ e_j read $[_{NP}$ x_i book $]$ $]$ $]$

Assuming that nouns are not proper-governors (cf. the preceding footnote), in (i) and (ii) the variable $\underline{x}_i$ is left in a non-properly governed position. Once again, ECP will not account for the contrast between (i) and (ii). Cf., however, Chomsky (forthcoming) where an account of (i) in terms of Case is suggested.

63 -This is the counterpart of restricting proper-governors to lexical categories: a PP is a governing category if it contains a governor. An NP (or S) is a governing category if it contains a governor and an accessible SUBJECT.

64 -As indicated in P.L., in (99) a proximate pronoun is obligatory; in (100) it is optional. Judgements tend to waver as to whether a proximate pronoun or an a-

naphor should be used in some of the examples of (100). Obscure factors enter into one way or another as indicated in P.L.; compare (100 d) with:

i- John turned the argument against himself
(* him with <u>him</u> coreferential to <u>John</u>)

With respect to the analysis of (98 b), .M. Ronat in an unpublished work suggests that the clitic <u>lui</u> in French may be characterized as an anaphor or as a pronoun.

65 -Recall that a variable is an $\bar{A}$-bound empty element.

66 -As indicated in P.L., the same considerations exclude "*what [t rains] ".

67 -Recall that PRO, NP-trace and wh-trace are considered to be different ocuurences of the same (empty) category; wh-trace is an $\bar{A}$-bound empty category, NP-trace is A-bound by an element in a non-θ-position and PRO is an empty element which is free or A-bound by an element in a θ-position, cf. P.L.

68 -The post-verbal subject position in infinitival clauses will not be discussed. In P.L., PRO cannot occur in this position since it will be governed by V. According to the analysis outlined in the first part of the chapter, it can since AGR which is taken to be the governor of the post-verbal subject position is missing in infinitival clauses. The assumption that PRO must be the head of the chain will be questioned below.

69 -By the projection principle, the embedded construction in each case is clausal (whether finite or not).

70 -Other cases are to be considered. They involve such examples as the following:

i-a) John believes Bill to be a fool

b) John believes that Bill is a fool.

Believe triggers $\bar{S}$-deletion too. It, however, differs from examples (124-125) in that it assigns Case to the embedded subject in non-passive constructions, cf. P.L.

71 -Definition (119) will be reformulated accordingly and (ii a) eliminated from this definition, cf. infra.

72 -Informally speaking, a distinction is made between bridge verbs allowing wh-movement over them, cf. (i) and non-bridge verbs which do not allow this process, cf. (ii); (cf. Erteschik 1973):

i- who do you think that Peter saw?

ii-* who do you murmur that Peter saw?

73 -For the Case assigned to the element in COMP, cf. P.L.

74 -There is a grammatical derivation for (122 b); [PRO to win] is difficult.

75 -Derivations where a wh-element receives Case in the course of the movement will not be discussed, cf. Kayne (1979).

76 -It is possible to suggest that case (ii b) of definition (119) cover these cases; but cf. Borer (1980) where it is suggested that clitics function as A-binders.

Note that the assumption that clitics are in an A-position is implicit in P.L. since it is suggested there that clitics are in the position θ-marked by the verb: usually θ-roles are assigned to A-positions.

This analysis is not directly compatible with the assumption that a clitic is in $\bar{A}$-position. It will be questioned later on. For the sake of the discussion, it will be assumed that it is the correct one.

77 -Cf."it is illegal clause" and "it is likely that John will win".

78 -As for t_i ,if it is assumed that for assigns Case optionally,two possibilities will have to be considered;if t_i does not receive Case,the θ-criterion will be violated since the θ-role of the embedded VP will not be assigned to t_i. If t_i receives Case, the embedded VP will assign its θ-role to t_i.Assuming, however, that a case-marked trace is a variable, the derivation will be ruled out since this variable will not be $\bar{A}$-bound.Note that the latter assumption is not crucial in this system; no matter what, the derivations will be excluded since Bill does not receive a θ-role.

CHAPTER 2: THE LOGICAL NATURE OF THE BINDING THEORY.

0. Presentation.

The generalization of the binding theory from a theory of A-binding to a theory of A and $\bar{A}$-binding outlined in the preceding chapter was made possibly by assuming the main principles of the government-binding framework as elaborated in P.L. This chapter will discuss and, when necessary, modify some of the principles on which the binding theory is based. It will be divided into three parts:

The first part discusses the application of the well-formedness condition commonly referred to as i/i. It will be indicated that this condition plays a crucial role in accounting for the distribution of pronominal elements in quantified phrases and for the scope of negation in Romance languages.

The second part deals with a particular instance of Moveα in L.F: lowering rules.
It will be argued that:
-Lowering processes which apply in L.F. affect not only quantifiers but also some pleonastic elements such as there.
-Chains are the domain of lowering processes
-The output of these lowering processes is subject to the binding principles; thus, providing further evidence for the L.F. nature of these principles.
These lowering processes are made possible by the existence of a general process inserting in L.F. an non-referential PRO in case-governed contexts. After more investigation of the nature of the inserted element and of the insertion mechanism, it will be shown that:

-This insertion process- like other insertion processes affecting pronominal elements,cf. P.L.- can be eliminated. As such the contextual restrictions constraining "insertion" processes will be derived from the existing grammatical principles (such as the binding theory) at work in the grammar.

-As for the insertion of PRO in case-governed context which one expects to be banned by the binding theory, it will be argued that pronominals are generated as a set of features (α person, β number, γ gender) and that they get phonetically realized as pronouns in P.F. when they have Case; otherwise, they will be interpreted as PROs. Pronominal elements, thus, will be distinguished by the feature ($\pm$ Case): if a pronominal has Case, it will be interpreted as a pronoun (<u>he</u>, <u>she</u>, <u>it</u>,...) otherwise it will be interpreted as PRO. Only non-case-marked pronominals (i.e. PROs) will have to be ungoverned.

-The theoretical implication of the proposals is a reinterpretation of the notion "empty category" defined in P.L. (cf.chapter 1). It will be suggested that <u>there is no (type) distinction between pronouns and the so-called empty (non-overt) categories</u> (NP-traces, wh-traces, PROs): pronouns are just a different occurence of the "empty category" identified as such in terms of properties of the structure they appear in.

The last section of Part II will be concerned with the interpretation of these empty elements: when do these elements function as arguments, bear a θ-role ? In particular,two kinds of variables will be distinguished: Q-variables (variables coindexed with an operator in an $\bar{A}$-position) and non-Q-variables (variables coindexed

with a non-operator in an $\bar{A}$-position). Only Q-variables will be treated as (quasi-) arguments. As such, they will be subject to principles A and C of the binding theory and will, thus, escape the effect of the Specified Subject Condition (SSC). Non-argument variables (i.e. non-Q-variables), on the other hand, will only be subject to principle A of the binding theory and will, thus, obey the SSC. Evidence for this proposal will be drawn from the interaction of the SSC and the French causative constructions.

The application of the SSC to the causative constructions of French will be pursued in greated detail in Part III. These constructions indicate that the opaque domain defined by the subject is affected by the following factors (cf. Rouveret and Vergnaud 1980):

a) the cliticization of this subject: the opaque domain defined by the cliticized subject differs from the opaque domain defined by the non-cliticized subject.
b) the application of a rule which fronts the verb and its object ($\bar{V}$-preposing): the opaque domain defined by the subject when $\bar{V}$-preposing applies differs from the opaque domain defined by this subject when $\bar{V}$-preposing does not apply.

To account for (a) and (b), it will be suggested that:

- the notion of <u>accessible SUBJECT</u> defined in the previous chapter is to be replaced by that of <u>accessible chains</u>.
- a SUBJECT (or a chain) is accessible to the elements bearing the same index, i.e. to the elements which belong to the same argument-structure.

PART I: ON THE APPLICATION OF THE WELL-FORMEDNESS CONDITION I/I.

In the following section, we will illustrate the application of the well-formedness condition commonly referred to as i/i which played an important role in the definition of the notion accessible SUBJECT. It will be indicated that this condition is relevant in various constructions such as quantified phrases of the form (Q PRO) (section 1) and negative constructions of the form ninguno (nobody) in Spanish and similar negative constructions of other Romance languages (section 2).

In Italian, as in other Romance languages, the distribution of quantified phrases of the form (Q PRO) is restricted: they appear in preverbal subject position only (cf. Belletti and Rizzi 1980):

i -a) [tre settimane] passano rapidamente
"three weeks elapse rapidly"

b) [tre PRO] passano rapidamente
"three elapse rapidly"

c)* Gianni trascorrerà [tre PRO] a Milano
"Gianni will spend three in Milano"

As it will become clear, the ungrammaticality of (c) comes as no surprise if it is assumed that in (c), the head PRO of the quantified phrase is accessible to government by the verbal element trascorrerà, cf. Belletti and Rizzi (1980): sentence (c) will be excluded by the binding requirements from which it follows that PRO must be ungoverned.

In light of the above remarks, the grammaticality of (b) becomes puzzling: why isn't PRO governed in subject position by AGR which in tensed clauses was assumed to govern

the subject position?
It will be argued that the grammaticality of sentence (b) is straight-forwardly accounted for by the well-formedness condition i/i adopted in the previous chapter. Recall that following P.L., it was assumed that AGR is coindexed with the NP it governs and that this coindexing is subject to the well-formedness condition i/i. (Bearing this in mind consider the representation of (b):

i.b) $[_{NP}{}^{k}$ tre PRO $]$ AGR^{k} passano rapidamente

Since government of the subject NP is done by coindexation with AGR, the well-formedness condition i/i will prevent the index from percolating to the head PRO of this NP. In brief, PRO cannot be governed by AGR in (b) (section 1).
Other constructions where the well-formedness condition i/i accounts for a somewhat puzzling array of facts concern the quantifier <u>ninguno</u> ("nobody") in Spanish. Consider the following contrast which was first pointed out by Milner (1979) for the equivalent sentences in French:

i.d)* la foto de ninguno esta en la mesa
"the picture of no one is on the table"

e) no vi la foto de ninguno
"I have seen the picture of no one"

In preverbal subject position <u>ninguno</u> may not appear inside the NP. In object position, however, it can. To account for the contrast between (d) and (e), it will be suggested that:

i.f) the particle <u>no</u> and <u>ninguno</u> are coindexed.

g) <u>no</u> is in INFL and has the same index as AGR.

Assumptions (f) and (g) combined with the existence of a rule which deletes <u>no</u> if there is a preverbal <u>ninguno</u> (cf. Rizzi 1980 and Jaeggli 1980) will explain the contrast between (d) and (e) as follows:

i-d)* $[_{NP}{}^{b}$ la foto de ninguno^{b} $]$ $[_{INFL}$ no^{b} AGR^{b} $]$ ...

e) $[_{INFL}$ no^{b} AGR^{b} $]$ vi $[_{NP}$ la foto de ninguno^{b} $]$

In (d), the subject NP has the same index as an element (ninguno) contained in it; the derivation will be filtered out by the well-formedness condition i/i. In the remaining part of the section dealing with negation, some predictions of the analysis outlined will be discussed. In essence, these predictions have to do with the interpretation of negative sentences which appears to be constrained by the well-formedness condition i/i; thus, providing further evidence for this condition and for the framework in which it is embodied (section 2).

1. The distribution of PRO and the well-formedness condition i/i.

Directly relevant to the approach outlined in the previous chapter as well as to the government-binding framework is the analysis of ne-cliticization in Italian suggested in Belletti and Rizzi (1980) (henceforth B.R.). Their extensive analysis cover the possibility of ne-cliticization in various contexts. In this section, the attention will be restricted to the contexts which motivated a redefinition of the notion governing category in B.R.: they essentially concern the preverbal subject and the object position (cf. also Burzio 1981). As in B.R. the facts concerning ne-cliticization will be presented first. (These facts as well as the presentation are directly drawn from B.R.).

In an indefinite quantified NP of the form $[_{NP}$ Q N $]$ the N modified by the quantifier can be pronominalized in two different ways in Italian: either with clitic <u>ne</u> or with a zero pronoun (Ø). As indicated,however, by the following paradigm, the two options do not alternate freely and their occurences seem to obey intricate descriptive constraints. Thus, consider the Ø/<u>ne</u> alternation in preverbal subject and object position:

1-a) tre settimane passano rapidamente
"three weeks elapse rapidly"

b) tre Ø passano rapidamente
"three Ø elapse rapidly"

c)* tre <u>ne</u> passano rapidamente
"three <u>ne</u> (of them) elapse rapidly"

2-a) Gianni trascorrerà tre settimane a Milano
"Gianni will spend three weeks in Milano"

b)* Gianni trascorrerà tre Ø a Milano
"Gianni will spend three Ø in Milano"

c) Gianni <u>ne</u> trascorrerà tre a Milano
"Gianni <u>ne</u> will spend three in Milano"

Of the four possible occurences of <u>ne</u> and Ø,only two turn out to be grammatical: in preverbal subject position only Ø is possible (cf.1) and in object position only <u>ne</u> is possible (cf.2.).The complementarity which shows up in (1) and (2) raises two major problems , (cf.B.R.):

a) Why is the <u>ne</u> pronominalization only possible in object position (cf.2 c) ?

b) Why is the Ø pronominalization only possible in preverbal subject position (cf.1 b)?

Considering first problem (a), a movement analysis of ne-cliticization (cf. Kayne 1975) is assumed in B.R.:

3- Adjoin clitics to V.

Formulation (3) permits the derivation of both (1 c) and (2 c); the corresponding S-structures would be:

4-a)* $[_{\bar{S}}$ $[_{S}$ $[_{NP}$ tre e_i $]$ $[_{VP}$ ne passano rapidamente $]$ $]$ $]$

b) $[_{\bar{S}}$ $[_{S}$ $[_{NP}$ Gianni $]$ $[_{VP}$ ne_i trascorrerà $[_{NP}$ tre e_i $]$ a Milano $]$ $]$ $]$

In B.R., the contrast between (4 a) and (4 b) is accounted for by the Empty Category Principle: as indicated below, the subject position is taken to be ungoverned in B.R. Since in (4 a), the clitic ne which is adjoined to the verb does not c-command its trace, the empty category left in subject position would be non-properly governed, and as such would produce a violation of ECP. (cf. also Kayne 1979 where this explanation is suggested for the parallel cases of French). In the framework of the previous chapter where ECP is dispensed with, this amounts to saying that e_i is not bound in its governing category violating thus the binding principles[1].

Consider, now, the second problem raised by (1-2): why is the $\emptyset$ pronominalization only possible in subject position? In other words, how is it possible to account for the contrast between (1 b) and (2 b)?

Following an idea proposed in Kayne (1979), B.R. make the assumption that the $\emptyset$ pronoun found in (1 b) and (2 b) is essentially to be assimilated to PRO. Recall that it follows from the binding theory that PRO must be

ungoverned. By adopting Kayne's analysis of the PRO-status of the null pronoun, the asymmetry between (1 b) and (2 b) can naturally be reduced to the following: PRO ~~is~~ assigned a governing category in the object position but not in the subject position. Since the internal structure of the NP is the same in both cases, such an asymmetry is to be related to NP-external properties. In B.R., the definition of government (cf. section 3.1. of the previous chapter) is modified so as to restrict the class of possible governors to lexical categories. From this restriction, it follows that:

5-a) The subject position is an ungoverned position in S (since AGR $\neq$ lexical).

b) The object position is governed by V [2].

It follows from this modification that a sentence like (1 b) whose structure is given in (6) is acceptable:

6- $[_{\bar{S}}$ $[_{S}$ $[_{NP}$ tre PRO $]$ $[_{VP}$ passano rapidamente $]$ $]$ $]$

In (6), PRO is neither governed NP-internally, assuming that the specifier Q is not a possible governor, nor NP-externally, the subject position being an ungoverned position in S. As for the object position, consider the structure of (2 b):

7- $[_{\bar{S}}$ $[_{S}$ $[_{NP}$ Gianni $]$ $[_{VP}$ trascorrerà $[_{NP}$ tre PRO $]$ a Milano $]$ $]$ $]$

As in (6), PRO is not governed NP-internally; assuming that it is governed by the verb, the derivation will be ruled out by the binding theory. However, from the definition of government adopted in the previous chapter, NP and $\bar{S}$ boundaries are absolute barriers for

government. In B.R., the notion of government is extended so as:

8- The head of a maximal projection is accessible to an external governor but peripheral positions (i.e. positions different from the NP-head) are not.

From this extension, it follows that PRO in (7) is governed by V, since the boundaries of the object NP are transparent to government of the head: (7) will be excluded by the binding theory which requires PRO to be ungoverned.

B.R. show that these results extend to other constructions:where NP is ungoverned [Q PRO] is possible and where NP is governed it is impossible.

Thus we have (9) where [Q PRO] is in the ungoverned Topic position, and (10) where the subject is governed by Aux in COMP (cf.Rizzi 1979):

9- [di libri] [$_{TOP}$ [$_{NP}$ tre PRO]]
credo che li leggerò domani
"[of books] three, I think that I will read them tomorrow"

10- * [di libri] [$_{S}$ [$_{COMP}$ essendo] [$_{S}$ [$_{NP}$ tre PRO] usciti l'anno scorso]]
"[of books], three having come out last year..."

This analysis raises a major problem: in the government binding framework, AGR -being a governor- excludes PRO from subject position of tensed clauses. In B.R.'s approach it is predicted that PRO should always be possible in this position. In order to overcome this problem, B.R. suggest a refinement of the notion governing category. Following Chomsky (1980), a distinction is made

between instances of case-assignment determined by a governing element and instances of case-assignment determined by the structural context when no lexical governor is available: nominative assignment inside an NP, for example, are instances of structural case-assignment. The definition of "governing category" is defined accordingly:

11- α is a governing category for β iff:

1- β is governed in α

2- β is in a context of (structural) case-assignment in α

where α = S (or $\bar{S}$) NP [3]

(11) will solve the problem mentioned in the previous paragraph: the subject NP position of a tensed clause is assigned a governing category via case (2) of definition (11), hence PRO is always excluded from this position; but PRO properly contained within a quantified NP $[_{NP}$ Q PRO$]$ in preverbal subject position of a tensed clause fulfills neither case (1) nor case (2) of (11), hence its occurence is allowed as desired.

Summarizing B.R.'s analysis, the complementary distribution between <u>ne</u> and PRO in preverbal subject versus object position is accounted for by the ECP. and by the hypothesis that the object position is a governed position while the subject position is not. These results are obtained by modifying the notions "government" (cf.8) and "governing category" (cf.11).

While the extension of the notion "government"(cf.8) seems motivated enough (cf. P.L. where the issue is discussed), the extension of the notion "governing category" (cf.11) faces some problems in gerundial constructions for instance. One of the main reasons that

motivated the definition of government given in P.L. (cf. Aoun and Sportiche 1981 and the previous chapter) is the distinction between gerunds and NPs:

12-a) I like $[_{NP}$ PRO reading books $]$

b) I like $[_{NP}$ his reading books $]$

13-a)* I like $[_{NP}$ PRO book $]$

b) I like $[_{NP}$ his book $]$

The NP objects of (12), (13) are (14 a), (14 b) respectively:

14-a) $[_{NP}$ NP^* VP $]$

b) $[_{NP}$ NP^* $\bar{N}$ $]$

Under the definition of government adopted in the previous chapter, the head of VP in (14 a) does not govern NP^* since it is dominated by a maximal projection (namely VP) that does not dominate NP^*. But the head of $\bar{N}$ in (14 b) does govern NP^* since the first maximal projection dominating this head dominates the NP^* also. From this, it follows that PRO is a possible choice for the ungoverned NP^* in (14 a) (as in 12 a) but not for the governed NP in (14 b) as in (13 a). A phonetically realized NP (e.g. <u>his</u>) is a possible choice for NP^* in either (14 a) or (14 b) since genitive Case is assigned in this structure.

In B.R.'s extension of the notion governing category, this distinction between gerunds and NPs is not preserved. Assuming, as they do, that genitive is an instance of structural case-assignment, PRO will not be a possible choice in neither (14 a) nor (14 b).

Let us consider, now, a different approach to account for the problem concerning the occurence of PRO in tensed

clauses. The general idea according to which PRO in $[_{NP}$ Q PRO$]$ is ungoverned in subject position but governed in object position will be maintained. The fact that PRO in an indefinite quantified NP $[_{NP}$ Q PRO$]$ is ungoverned in subject position will follow from independently motivated constraints -specifically the well-formedness condition i/i discussed in the previous chapter- and not by assuming that AGR is not a governor.

Recall that the well-formedness condition i/i (discussed in the previous chapter) and repeated here as (15):

15- * $[_{\gamma_i} \ldots \delta_i \ldots]$ (where i is a superscripted or a subscripted index, cf. P.L.).

rules out any derivation where a phrase (γ_i) has the same index as an element contained in this phrase (δ_i). This well-formedness condition holds for a variety of constructions as illustrated in (16):

16-a)* $[_{NP_i}$ the friends of $[_{NP_i}$ each other $]\,]$

b)* $[_{NP_i}$ the owner of $[\,[_{NP_i}$ his $]$ boat $]\,]$

c)* $[_{NP_i}$ the friends of $[\,[_{NP_i}$ their$]$ parents$]\,]$

Recall also that AGR is coindexed with the NP it governs:

17- NP^p AGR^p VP

and that the coindexing of AGR with any element contained in this NP violates the well-formedness condition (15):

18- $[_{NP^p} \ldots \delta^p \ldots]$ AGR^p VP

With this in mind, consider the following derivation:

19- $[_{NP^p}$ Q PRO $]$ AGR^p VP

Since government of the subject NP is done by coindexation (cf. P.L.), the well-formedness condition (15) will

prevent the index p of NP from percolating to the head PRO in (19):

19-a)* $[_{NP^p}$ Q $PRO^p]$ AGR^p VP

In brief, PRO cannot be governed by AGR in (19). In (20), however, the well-formedness condition is inoperative; nothing prevents PRO from being governed by AGR:

20- PRO^p AGR^p VP

PRO being governed in (20),the derivation will be filtered out by the binding theory.

Consider, now, a derivation where PRO appears in object position:

21-a)* $[_{VP}$ V $[_{NP}$ tre PRO $]]$

b)* $[_{VP}$ V PRO $]$

In object position there is no reason to assume that V and the object are coindexed.[4] In fact, one may view the necessity of coindexation between AGR and the subject position as following from the application of the agreement rule at work between these two elements. In (21 b), PRO will be directly governed by the object and in (21 a),it will also be governed by V according to the extension (8) of the notion government.

This solution then makes the required distinction: it correctly excludes the occurence of $[_{NP}$ Q PRO$]$ in the object position while allowing it to appear in the subject position of a tensed clause. Note that this solution preserves the core idea of B.R.'s analysis. It does not, however, face the problem concerning gerundial constructions encountered by the particular instantiation of this general idea chosen in B.R. We also can drop their notion

of governing category (cf.11) and restrict Case-assignment to government. This analysis is to be viewed as an improved concretization of their analysis rather than a departure from it.

2. The scope of negation and the well-formedness condition i/i.

Other constructions where the well-formedness condition i/i (15) accounts for a somewhat puzzling array of facts concern the quantifier ninguno ("nobody") in Spanish. As indicated in Jaeggli (1980), the analysis of nessuno outlined for Italian in Rizzi (1980) can be extended to Spanish to account for the behaviour of ninguno.

In Spanish, as in Italian, a preverbal ninguno does not tolerate a no attached to the verb; whereas a post-verbal ninguno requires it (cf.Jaeggli 1980 from which the following sentences are taken):

22-a) no vino ninguno
b)* vino ninguno
c) ninguno vino
d)* ninguno no vino
"no one came"

23-a) no veo a ninguno
b)* veo a ninguno
c)? a ninguno veo
d)* a ninguno no veo
"I don't see anyone"

This may be accounted for by a P.F. rule which deletes the no if there is a preverbal ninguno (cf.Jaeggli 1980 and Rizzi 1980 for the precise characterization of this rule):

24- no ——→ Ø / ninguno ——— x

In L.F., the meaning of ninguno is combined with no to form NEG(Ex);i.e. there is no x or it is not the case that there is an x. The L.F.-representation of (22 a,c) for instance will be:

25-a) NEG (E x) (x vino)

b) NEG (E x) (vino x)

Recall, moreover, that the analysis of nessuno (ninguno in Spanish) in Italian was based on the following assumptions originally suggested for French in Kayne (1979):

26-a) The particle ne (no in Spanish) is a scope operator determining the scope of nessuno (ninguno)

b) nessuno (ninguno) undergoes the quantifier movement rule in L.F.-component.

In light of (24-26),consider the following sentence:

27- no quiero que venga ninguno
"I don't want anyone to come"

According to (26), (27) will have the following interpretation (irrelevant details omitted):

28- NEG [E x] [quiero [que venga x]]

(29) however, cannot have the same interpretation as (27):

29- no quiero que ninguno venga
"I don't want that no one come"

30- * NEG [E x] [quiero [$_S$ que x venga]]

Rather, it has the following interpretation:

31- NEG [quiero [$_S$ que NEG [E x] x venga]] [5]

As indicated earlier, the ungrammaticality of (30) illustrates an ECP effect: the variable x is left in non-properly governed position. In terms of the generalized binding

theory, the variable x, in (30) is not $\bar{A}$-bound in its governing category, the embedded $\bar{S}$; violating, thus, principle A of the binding theory.

Let us consider, now, the following sentences:[6]

32-a)* la foto de ninguno esta en la mesa
"the picture of no one is on the table"

b) no vi la foto de ninguno
"I have seen the picture of no one"

In preverbal subject position, ninguno may not appear inside NP. In object position, however, it can. To account for the contrast between (32 a) and (32 b), I would like to suggest that:

26-c) no is in INFL and has the same index as AGR.[7]

d) The particle no and ninguno are coindexed.

(26 d) may be thought of as an instantiation of the informal observation mentioned above according to which the meaning of ninguno is combined with no to form NEG[E x] (cf.25). Given (26 c-d), the contrast between (32 a) and (32 b) will be accounted for by the well-formedness condition i/i (15). According to (26 c-d), the representation of (32 a-b) will be prior to the deletion rule (24) and the quantifier raising rule as follows:

32-a)* $[_{NP^p}$ la foto de ninguno^p $]$
$[_{INFL}$ no^p AGR^p $]$[8] ...

b) $[_{INFL}$ no^p AGR^p $]$ vi $[_{NP}$ la foto de ninguno^p $]$

In (32 a), the subject NP^p has the same index as an element (ninguno^p) contained in it; the derivation will be filtered out by the well-formedness condition (15). This analysis predicts that the occurence of $[_{NP}$ la

foto de ninguno$]$ in preverbal subject position should be possible if the scope indicator <u>no</u> is in a different clause as in (33):

33- $[_S$ no^p ... $[_S$ $[_{NP}$k la foto di ninguno^p $]$ AGR^k...$]$ $]$

In (33), <u>no</u> which is in the matrix clause is coindexed with <u>ninguno^p</u> and the subject NP like all subjects (cf. P.L.) is coindexed with the AGR of the embedded clause in which it appears. (33) does not violate the well-formedness condition, the derivation should, therefore, be grammatical. This appears to be the case as indicated by the grammaticality of (34)[9].

34- no quiero que la foto de ninguno esté en la mesa
"I want the picture of no one to be on the table"

Another prediction of this analysis concerns the interpretation of (34). Recall that of the two interpretations allowed for (29) one, namely (30), is ruled out by ECP (or by the generalized binding principles):

29- no quiero que ninguno venga
"I don't want that no one come"

30- * NEG $[$E x$]$ $[$quiero $[_S$ que x venga $]$ $]$

31- NEG $[$quiero $[$que NEG $[$E x$]$ x venga $]$ $]$

For (34), the analysis put forward predicts that the opposite holds:

34- no quiero que la foto de ninguno esté en la mesa

The interpretation corresponding to (30) where <u>ninguno</u>

is associated with the matrix no is the only possible one:

35- NEG [E x] [quiero [$_{\bar{S}}$ que [$_{NP}$ la foto de x] esté en la mesa]]

36- * NEG [quiero que [NEG [E x] [$_{NP}$ la foto de x] esté en la mesa]]

Prior to Quantifier-Raising and to the application of rule (24) which deletes no when it is preceded by ninguno,(36) will have the following representation (irrelevant details omitted):

36-a)* no quiero que [$_{NP}$p la foto de ninguno^{p}] no^{p} AGR^{p} esté en la mesa

In (36), the subject of the embedded clause has the same index as ninguno; the derivation will be filtered out by the well-formedness condition (15).

This prediction is fulfilled; the only possible interpretation for (34) is the one corresponding to (35). This can be clearly seen if (34) is followed by quiero que la foto de Pedro esta en la mesa "I want the picture of Pedro to be on the table"; (37) is a contradiction:

37- no quiero que la foto de ninguno esté en la mesa; quiero que la foto de Pedro esté en la mesa
"I want the picture of no one to be on the table; I want the picture of Pedro to be on the table".

Summarizing, the well-formedness condition (15) accounts for the ungrammaticality of sentences where [$_{NP}$ det N de ninguno] appears in the subject position of matrix

clauses (32 a), for the grammaticality of sentences where the NP containing ninguno and the scope marker no are in different clauses (34) and for the non-availability of some interpretation in the latter context.

PART II: ON THE LOGICAL NATURE OF THE BINDING PRINCIPLES: QUANTIFIER LOWERING, DOUBLE RAISING OF "THERE" AND THE NOTION EMPTY ELEMENT.

In the previous chapter, it was argued that the generalization of the binding theory to a theory of A and $\bar{A}$-binding has both conceptual and empirical advantages. In particular, it permits to dispense with the Empty Category Principle (ECP) as an independent principle in the grammar. Since the ECP applies in L.F. and since the generalized binding principles replace the ECP, it follows that these binding principles have to apply in L.F. The study of a particular instance of Move α in L.F.-Lowering rules - will provide further evidence for the L.F. character of the binding theory. Consider the following sentences:

i-a) there seems to be someone in the room

b) ?*there seems to be likely to be someone in the room

Sentence (i b) where <u>there</u> has been moved twice contrasts with sentence (i a) which is grammatical. Similarly, consider:

i-c) some politician is likely to address John's constituency

d) some politician seems to be likely to address John's constituency.

As indicated in May (1977), sentence (i c) is ambiguous: the quantifier may be understood as having either wider or narrower scope than the matrix predicate. In sentence (i d), however, the narrow scope reading is not available. Clearly, the contrast illustrated in (ic-d) is parallel to the one considered in(ia-b). To account for these contrasts,

it will be suggested that:

- there exists in L.F. a process of Lowering applying optionally to quantifiers and oligatorily to some pleonastic elements such as <u>there</u>.
- chains constitute the domain in which Lowering applies: the antecedent of a trace may be lowered to the position occupied by the trace, but the controller of PRO may not be lowered to the position occupied by PRO.

ii-a) NP_i AGR V $[_S$ e_i V ...$]$

Lowering $\longrightarrow$

b) e AGR V $[_S$ NP V ...$]$

Note that the empty element left in the position from which Lowering applies (<u>e</u> in iib) will be free; thus, violating the binding principles which require this empty element to be locally bound. Derivations such as (ii), however, are saved by a process inserting <u>in L.F.</u> a non-referential pronominal:

ii-c) PRO AGR V $[_S$ NP V ...$]$

This insertion process is limited to case-governed contexts and it follows that an element which has been moved twice in syntax will not be lowered in L.F. to its base-generated position (<u>e_2</u> in iii a):

iii-a) NP AGR V $[_S$ e_1 V $[_S$ e_2 V ... $]$ $]$

Lowering and PRO insertion $\longrightarrow$

b)* PRO AGR V $[_S$ e_1 V $[_S$ NP V... $]$ $]$

The reason is that the intermediate empty element (<u>e_1</u> in iii b) will be left free; thus violating the binding theory. This analysis accounts for the ungrammaticality of doubly

raised there and for the ambiguity of sentence (i c) where the quantified NP may have a wide or a narrow scope reading versus the non-ambiguity of (i d). Note that evidence for the L.F. character of the binding theory would have been provided since the output of the LF-Lowering process is constrained by this theory. (sections 3.1. and 3.2.).

The analysis presented so far raises a number of questions concerning the insertion of a non-referential PRO in case-governed contexts: since it occurs in a governed context, how come that the output of PRO insertion is not filtered out by the binding theory? What is the status of the insertion rule?...

With respect to the insertion of PRO in case-governed contexts, it will be argued that pronominals are always generated as a set of features (α person, β number, γ gender) and that they get phonetically realized in P.F. when they have Case. In other words, pronominal elements are distinguished by the feature ($\pm$ Case): if a pronominal has Case, it is interpreted as a pronoun (he, she, it); otherwise, it is interpreted as PRO. Only non-case-marked pronominals -i.e. PROs- have to be ungoverned. (section 3.3.)

With respect to the process of non-pronominal insertion applying in L.F., it will be suggested that it essentially is the counterpart of the overt it-insertion rule discussed in Chomsky and Lasnik (1977) (section 4.1.). Whether applying in syntax or in L.F., it will appear that this insertion process -like other insertion preocesses discussed in P.L. - can be eliminated in favor of more interpretive principles. As such, the restriction of insertion to case-governed contexts will be derived from the gramma-

tical principles (such as the binding principles) at work in the grammar (sections 4.2., 4.3.).

The last sections of Part II will be concerned with the theoretical implications of the previous proposals. In particular, these proposals will suggest a reinterpretation of the notion "empty category" as defined in P.L. It will be argued that there is no type distinction between pronouns and the so-called empty categories (NP-traces, wh-traces, PROs): pronouns are just a different occurence of the empty category identified as such in terms of properties of the structure they appear in (section 5). The structure in which it appears, will identify the occurence of the empty category and will determine whether it is referential or not (sections 5.1.1.,5.1.2.). In particular, it will appear that two kinds of variables have to be distinguished: Q-variables -i.e. variables coindexed with an operator in $\bar{A}$-position- and non Q-variables -i.e. variables coindexed with an non-operator in $\bar{A}$-position. Only Q-variables will be treated as (quasi)-arguments. As such, they will be subject to principles A and C of the binding theory and thus, will escape the effect of the Specified Subject Condition (SSC). Non Q- variables, on the other hand, will only be subject to principle A of the binding theory and thus, will obey the SSC. Evidence for this proposal will be drawn from the interaction of the SSC and the French causative constructions (section 5.1.3.).

3.1. Lowering of "there".

In Dresher and Hornstein (1979), the observation that *there* can only be moved once is attributed to Postal [10]:

38-a) there seems to be someone in the room

b) ?*there seems to be likely to be someone in the room

(38 b) where <u>there</u> has been raised twice contrasts with (38 a) which is grammatical:

38-a) $[_{S_1}$ $there_1$ seems $[_{S_2}$ e_2 to be someone in the room $]\ ]$

b) $[_{S_1}$ $there_1$ seems $[_{S_2}$ e_2 to be likely $[_{S_3}$ e_3 to be someone in the room $]\ ]\ ]$ (where <u>e</u> is the trace left by the extraction rule).

Following P.L., it was assumed in the previous chapter that <u>there</u> is co-superscripted with the post-verbal subject:[11]

39- $there^p$ is $someone^p$ in the room

To account for the contrast between (38 a) and (38 b), the following assumptions will be made:

40-a) In L.F., <u>there</u> is lowered to the minimal clause (S) containing the element with which it is co-superscripted.

b) In raising constructions, there is a process inserting a dummy non-referential PRO in nominative contexts (or more generally in case-governed contexts. We will return to the exact formulation later on).
(a non-referential PRO is the non-phonetically realized counterpart of the non-referential <u>it</u>: "it seems that Peter likes John").

Given assumptions (40 a-b), the contrast between (38 a) and (38 b) will be accounted for by the binding principles.

Consider (38 b): first <u>there</u> is lowered:

41-a) $[_{\bar{S}_1}$ $[_{S_1}$ e_1 seems $[_{S_2}$ e_2 to be likely $[_{S_3}$ there$_3$ to be someone in the room $]$ $]$ $]$ $]$

Then the dummy element will be inserted:

41-b) $[_{\bar{S}_1}$ $[_{S_1}$ PRO$_1$ seems $[_{S_2}$ e_2 to be likely $[_{S_3}$ there$_3$ to be someone in the room $]$ $]$ $]$ $]$

It is possible to think of lowering as undoing the effect of Move α. With this in mind, consider a representation such as (38 b). In (38 b), <u>there</u>, $\underline{e_1}$ and $\underline{e_2}$ are coindexed by Move α. In (41 a) which is generated from (38 b) by lowering, $\underline{e_1}$, $\underline{e_2}$ and <u>there</u> will not be coindexed if lowering undoes the effect of Move α. In other words, $\underline{e_1}$ in (41 a) (or for that matter <u>PRO</u> which is inserted in the position of $\underline{e_1}$ cf.41 b) will not count as the antecedent of the trace $\underline{e_2}$. Derivation (41 a-b) will be ruled out by the binding principles: the minimal $\bar{S}$ containing a governor (<u>seems</u>) and an accessible SUBJECT (AGR of the matrix clause) for $\underline{e_2}$ is $\bar{S}_1$. In this governing category, $\underline{e_2}$ is A-free; the derivation will be ruled out by principle A of the binding theory.[12]

For (38 a), the binding theory is irrelevant:after the lowering of <u>there</u> and the insertion of the dummy element (38 a) will have the following representation:

42- $[_{\bar{S}}$ $[_{S_1}$ PRO$_1$ seems $[_{S_2}$ there$_2$ to be someone in the room $]$ $]$

3.2. Quantifier Lowering.

The analysis suggested to account for the ungrammaticality of doubly raised "there" may be extended to account for some cases of Quantifier-Lowering. Consider the following sentence discussed in May (1977):

43- Some politician is likely to address John's constituency.

May argues that this sentence is ambiguous: the quantifier may be understood as having either wider or narrower scope than the matrix predicate. (43) may be taken as asserting either (a) that there is a politician,e.g. Rockfeller, who is likely to address John's constituency, or(b) that is is likely that there is some politician (or other) who will address John's constituency. (This sentence type is discussed in a somewhat different context in P.L.):

43-a) there is a senator S, such that it is likely that S addresses John's constituency.

b) it is likely that there is a senator S,such that S addresses John's constituency.

May offers an explanation of these judgments in terms of his rule of quantifier movement which, he suggests, can "lower" the quantifier. It is thus possible to derive two logical forms from the S-structure of (43);one by adjoining the quantified noun phrase "<u>some politician</u>" to the matrxi S, the other by lowering and adjoining it to the embedded S:

44-a) $[_S$ $[_{S_1}$ some politician $[_S$ e_1 is likely $[_{S_2}$ e_2 to address John's constituency$]$ $]$ $]]$

b) $[_{\bar{S}}$ $[_{S_1}$ e_1 is likely $[_{S_2}$ some politician $[_S$ e_2 to address John's constituency $]$ $]$ $]]$

Consider, now, the following sentence where the quantified NP has been raised twice in syntax:

45- Some politician seems to be likely to address John's constituency.

As has been noticed, (45) is not ambiguous: it may be taken as asserting (a) that there is a politician,e.g. Rockfeller, who seems to be likely to address John's constituency,but not (b) that it seems to be likely that there is some politician (or other) who will address John's constituency (the judgments are those of N.Chomsky, J.Higginbotham and J-R.Vergnaud in the corresponding French examples):

45-a) there is a politician S such that it seems to be likely that S addresses John's constituency.

b)* it seems to be likely that there is a politician S such that S addresses John's constituency.

Clearly, the paradigm considered in (43-45) is parallel to the one considered in (38 a-b). The analysis suggested for the latter cases may be extended to the former as well (cf.40):

46-a) In.L.F. , a quantifier may be lowered.

b) In raising constructions, there is a process inserting a dummy non-referential PRO in nominative contexts.
(We will return to the formulation of 46 later on).

Given assumptions (46 a-b), the non-ambiguity of (45) may be accounted for by the binding theory. Consider the representation of the two possible readings[13] of (45): (47 a-b) correspond to (45 a-b) respectively:

47-a) $[_{S_1}$ some politician $[_{S_1}$ e_1 seems $[_{S_2}$ e_2 to be likely $[_{S_3}$ e_3 to address John's constituency $]]]]$

b) $[_{S_1}$ PRO_1 seems $[_{S_2}$ e_2 to be likely $[_{S_3}$ some senator $[_{S_3}$ e_3 to address John's constituency $]\ ]\ ]\ ]$

In (47 b), the quantifier has been lowered and adjoined to the embedded S_3 by the two processes of Quantifier-Lowering (cf.46 a) and Quantifier-Raising (cf.May 1977) and a dummy PRO has been inserted in the subject position of S_1 (cf.46 b)[14]. In (47 a-b), the minimal $\bar{S}$ containing a governor (seems) and an accessible SUBJECT (AGR of the matrix-clause) for e_2 is the matrix $\bar{S}$. In this category, e_2 is A-free in (47 b) but A-bound by e_1 in (47 a). Consequently, (47 b) -but not (47 a)- will be ruled out by principle A of the binding theory.

In (44 a-b), however, no violation of the binding principles occurs: in (44 b), the dummy PRO will be inserted in e_1 according to (46 b). In (44 a), e_2 will be bound by e_1 and e_1 will be bound by some politician; and in (44 b), e_2 will be bound by some politician.

In short, the non-ambiguity of (45) v.s. the ambiguity of (43) is accounted for by the binding theory: while the structures corresponding to the two readings of (43) do not violate any grammatical principles, the narrow scope reading of (45) (cf.47 b) violates the binding theory. Note, finally, that if correct, the analysis of there in the previous section and that of the lowered quantifier provide further evidence for the L.F. character of the binding theory since in both cases this theory applies at the output of L.F. rules.

3.3. Some general considerations concerning Lowering.

It is clear that the analysis of doubly raised there and of quantifier lowering raises many questions. It is legitimate to ask when lowering is possible, when the process of dummy insertion operates, what the exact nature of the inserted element is... To answer these and other questions of related interest will be the main concern this section.

Let us start by considering the various assumptions made in the previous section:

40-a) In L.F. , there is lowered to the minimal clause (S) containing the element with which it is co-superscripted.

b) In raising constructions, there is a process inserting a dummy non-referential PRO in nominative contexts.

46-a) In L.F., a quantifier may be lowered.

b) In raising constructions, there is a process inserting a dummy non-referential PRO in nominative contexts.

With respect to the context in which the dummy element is inserted, it need not to be restricted to nominative contexts; it can be generalized to case-governed contexts, i.e. to contexts where a governor assigns Case: after believe-type verbs, for instance, which govern and assign Case to the embedded subject, the same facts discussed in the previous two sections hold:

38[1]a) I believe there to seem to be someone in the room

b)* I believe there to seem to be likely to be someone in the room

43⊥ I believe some senator to be likely to address John's constituency

45⊥ I believe some politician to seem to be likely to address John's constituency

As for lowering itself, cf. (40 a) and (46 a)[15], it does not seem to be possible in all constructions. As indicated in May (1977), it does not apply in want-type constructions. In contrast with (43) (repeated here for convenience) (48) is unambiguously interpreted as (48 a): the reading where the quantifier has narrower scope than the matrix predicate is not available:

43- some politician is likely to address John's constituency

48- some senator wants to address John's constituency

a) there is a senator S, such that S wants that S addresses John's constituency

Recall that the raising constructions such as (43) differ from want-type constructions (48) in that a process of $\bar{S}$-deletion applies permitting the embedded subject to be raised:

49- some politician$_i$ is likely $[_S$ e$_i$ to address John's constituency $]$

50- some senator$_i$ wants $[_{\bar{S}}$ $[_S$ PRO$_i$ to address John's constituency$]$ $]$

As indicated in P.L., the process of quantifier lowering distinguishes, thus, between PRO and trace and provides further evidence for the distinction between these two empty elements. In terms of the definition of chain

suggested in the preceding chapter, the quantifier and its trace e_i in (49) are in the same chain whereas the quantifier and PRO in (50) are in different chains since they are separated by $\bar{S}$. It is, thus, natural to suggest that chains constitute the domain in which lowering may apply. This suggestion will provide the adequate distinction between (49) and (50) while allowing there to be lowered in sentences such as (38)[16].

3.3.1. On the distinction PRO/Pronoun.

Another question raised by the analysis presented in the previous two sections concerns the dummy element: in (40 b) and (46 b), this dummy element was assimilated to a non-referential PRO -the phonetically non realized counterpart of the non-referential it-. The identification of the dummy element raises, however, a major problem. From the binding theory, it follows that PRO must be ungoverned; if the dummy element were PRO, the output of the insertion rule would have to be filtered out by the binding theory since this PRO is inserted in a case-governed context. An ad hoc solution will be to consider that this referential element is not a PRO (hence not subject to the binding theory),or, worse,that -contrary to the referential PRO- an expletive PRO must not be ungoverned. For various empirical and theoretical reasons mentioned in P.L., this proposal cannot be maintained. (cf.also Aoun 1981). Briefly, it appears to be desirable to keep as much as possible the parallelism between phonetically and non phonetically realized nominal elements: non phonetically realized elements differ from phonetically realized elements in that they lack a phonetic matrix (cf. P.L.). Phonetically realized

elements may be referential or not; similarly, non phonetically realized elements will be referential or not. Nominal elements may, thus, be classified with respect to the features (± referential) (± phonetic)[17]:

51-a) + referential -phonetic : PRO
(as in "John wants [$_S$ PRO to win]")

b) + referential + phonetic:lexical names
(like John, pronouns such as he, she...)

c) -referential + phonetic:expletive elements
(like it("it seems that John is sick"),there...

d) -referential - phonetic: expletive elements
non phonetically realized (i.e. dummy PROs)

To illustrate, phonetically realized it is ambiguously identified as referential (as in "it is in the car") or non-referential (as in "it seems that John will win"). Consequently, non-phonetically realized pronominals (or PROs) will be referential (as in "John wants PRO to win") or non-referential. An instance of the latter is the PRO which appears in Italian in preverbal subject position:

52- β [$_{VP}$ VP NP]

In (52), where the subject has been post-posed, β has been identified as PRO (cf.the preceding chapter). This PRO is co-superscripted with the post-verbal subject NP and is the counterpart of the non-referential il of French or there of English (cf. P.L.) (see, however, footnote 15):

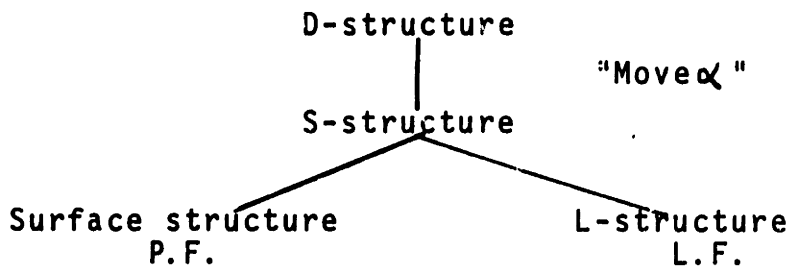
53-a) il est arrivé trois hommes
b) there arrived three men

Furthermore, in Aoun (1981), non-referential PROs are shown to be subject to the binding theory: they cannot appear in governed contexts.

The above considerations prevent us from considering that the dummy element inserted by (40 b) or (46 b) is not a non-referential PRO or that it need not be ungoverned. Let us, therefore, consider a more principled approach to the problem raised by the occurence of the non-referential PRO in case-governed contexts.

In the government binding framework, the various components of the grammar are organized as follows (cf. P.L.):

54-



D-structures are generated by lexical insertion rules and base rules. These structures are mapped into S-structures by "Move α". S-structures are, in turn, mapped into the two interpretive components P.F. (=Phonetic Form) and L.F. (=Logical Form) yielding Surface-structures and L-structures respectively.

PRO is a set of features (α person, β number, γ gender...) It differs from other pronouns in that it lacks a phonetic matrix (cf P.L.). I will assume that pronouns are always generated as a set of features (α person, β number, γ gender) and that they get phonetically realized in P.F. when they have Case. Thus, pronominal elements are distinguished by the feature (± Case): if a prono-

minal has Case, it is interpreted as PRO. To illustrate the sentence <u>He likes Mary</u> would in fact be generated as a set of features (masc., singular, 3rd person...) in subject position. Since this feature matrix receives nominative Case, it will be phonetically realized as a pronoun. This proposal is to be embodied in the general visibility convention suggested in Aoun (1979) according to which Case is the relevant feature in P.F.: in order for an element to be visible in P.F. it must be Case-marked.

With respect to the principles at work in the grammar, the distinction is,thus, between case-marked versus non-case-marked pronominals: for the binding theory, for instance, a case-marked pronominal is subject to principle B and a non-case marked pronominal to principles A and B; case-marked pronominals will have to be free in their governing category whereas non-case marked pronominals or PROs will have to be ungoverned.
To illustrate, consider once again gerunds and NPs (cf.12-15):

55-a) $[_{NP}$ NP^* VP $]$

b) $[_{NP}$ NP^* $\bar{N}$ $]$

Recall that under the definition of government adopted in the previous chapter, the head of VP in (55 a) does not govern NP^* since it is dominated by a maximal projection (namely VP) that does not dominate NP^*. But the head $\bar{N}$ in (55 b) does govern NP^*, since NP is the first maximal projection dominating NP^* and the head of $\bar{N}$.Let us consider that case-assignment is optional and that the set of features (αperson,βnumber, γgender,i.e.

PRO) may be freely inserted in NP^* position. In (55 a), if we choose to assign Case to NP^*, this set of features (= PRO) will be case-marked, hence, phonetically realized; otherwise it will not have a phonetic matrix:

56-a) I like $[_{NP}$ PRO reading books $]$

b) I like $[_{NP}$ his reading books $]$

In (55 b), if we choose to assign Case to NP^* ,PRO (the set of features) will be case-marked, hence, phonetically realized in P.F.; if we choose not to assign case, the non-case marked PRO will have to be ungoverned,thus, precluding its occurence as the subject of the NP:

57-a) I like $[_{NP}$ his book $]$

b)* I like $[_{NP}$ PRO book $]$

This approach solves the problem raised by the insertion of a dummy PRO in case-governed contexts in raising constructions. Recall that this dummy PRO is inserted in the subject position of the matrix clause which is case-governed by AGR. Being case-marked by AGR, this element will not be subject to principles A and B of the binding theory but only to principle B: it does not need to be ungoverned. The only peculiarity with this element is that it gets inserted in L.F., after the application of the lowering rules. Being inserted in L.F., the P.F. rules which phonetically spell out case-marked pronominals will not apply to this element.

3.3.2. Some remarks on anaphora.

One may wonder why non-case-marked pronominals are treated as anaphors. This amounts to asking: what is an anaphor? Far from outlining a theory of anaphora, the follo-

wing remarks must at best be taken as speculative. In P.L., anaphors (such as reciprocals, reflexives NP-traces) are considered to lack inherent reference. Given that we assumed that PROs differ minimally from pronouns in that they don't have Case and that some PROs are not even referential, it is possible to assume that every element with an incomplete matrix is treated as anaphor: tautologically, a matrix is incomplete if it is not fully specified for all the relevant features such as referentiality, Case etc...Reflexives, reciprocals, NP-traces are anaphors since they lack Case.

As for wh-traces, recall that in the above discussion, PROs were distinguished from pronouns by the feature (α Case). In P.L., PROs, wh-traces and NP-traces are all considered to be three occurences of the same type: they all have the feature α person, β number, γ gender but differ with respect to their antecedent: PRO is either free or has an antecedent with an independent θ-role, NP-trace has antecedent in non-θ-position and wh-trace has an antecedent in non-A-position. Furthermore, it is assumed that wh-traces are case-marked whereas PROs and NP-traces are not. In short, with respect to their internal structure, PROs and wh-traces differ by the absence vs.presence of Case. Given what we said earlier concerning the phonetic realization of pronouns, one expects wh-traces to get phonetically realized since they are case-marked. Althought restricted, the phonetic realization of wh-traces occurs in various languages such as Arabic, Hebrew, Vata (cf.Aoun 1979 , Borer 1979 , Koopman 1980).

Note that Case is a necessary but not a sufficient condition for an element to get phonetically realized. Thus, in English, in order for an element to get phonetically realized, it must be case-marked and must not be marked [+ wh] (i.e. it must not be coindexed with a wh-element): only non-case-marked pronominals are phonetically realized in this language.[19]

This raises an interesting question with respect to the status of wh-traces or more generally variables: why are they treated as anaphors? There are at least two possibilities that one can explore: the first considers that variables are anaphors because they lack inherent reference. The second considers that variables are anaphors when they cannot be phonetically realized. The two possibilities make different predictions and it appears that the second one is to be preferred.

As indicated in Koopman (1980), Aoun (1979)(1981), in some languages such as Vata, Modern Hebrew or Arabic, variables left by the extraction of wh-elements are subject to the ECP. If, however, these variables are phonetically spelled out, they escape the effect of the ECP. Thus, consider the following sentences of Arabic:

58-a)* man$_i$ taẓunnu ?anna x$_i$ ḏahaba
who$_i$ do you think that e$_i$ left

b) man$_i$ taẓunnu ?annahu$_i$ ḏahaba
who$_i$ do you think that he$_i$ left
"who do you think left?"

(58 a) illustrates a * [that-t] effect; the variable is not properly-governed and, thus, is ruled out by the ECP. In (58 b), however, where the variable is phonetically spelled out, no more ECP violation occurs[20]. In the frame-

work of chapter 1, this amounts to saying that only the variables in (58 a) is treated as anaphor. This variable, thus, will be subject to principles A and C and as such will display a *[that-t] effect. The variable in (58 b), however, will notbe treated as anaphor and as such will escape the effect of the *[that-t].

With this in mind, let us return to the two possibilities concerning variables. Recall that the first considers that variables are anaphors because they lack inherent reference. In other words, the first possibility will treat both variables as anaphors and, thus, will not be able to account for the contrast between (58 a) and (58 b). For the second, however, no problem arises. It correctly will treat the variable in (58 a) as anaphor because it cannot be phonetically realized; the one in (58 b), however, will not be treated as anaphor. An account of this state of facts is given in chapter 4.

In brief, Case seems to be a necessary and sufficient condition for pronominals to be phonetically realized. As such they are not anaphors. On the other hand,Case, in some languages, does not seem to be a sufficient condition for wh-traces to be phonetically realized. When they cannot be phonetically realized, these elements are treated as an anaphor. In other words, an element is an anaphor (= has an incomplete matrix) if it lacks an inherent reference (reflexives, reciprocals) or if it does not satisfy the conditions which need to be fulfilled in order for this element to be phonetically realized (NP-traces, wh-traces, PROs).

Recapitulating the content of sections (3.3.),there exists in L.F. a process of lowering applying optionally

to quantifiers and obligatorily to co-superscripted elements such as <u>there</u> (but cf. footnote 15). Chains constitute the domain in which lowering applies: the antecedent of a trace may be lowered to the position occupied by this trace, but the cont-roller of PRO may not be lowered to the position occupied by PRO:

59-a) NP_i AGR V $[_S$ e_i V ... $]$

by lowering $\longrightarrow$

b) e AGR V $[_S$ NP V ... $]$

The empty element left in the position from which lowering applies (<u>e</u> in 59) will be free violating thus proper binding which requires empty elements to be locally bound. Derivations such as (59 b) are, however, saved by a process inserting a non-referential pronominal in case-governed contexts: this inserted element "absorbs" (or erases) the free empty element and, like all case-marked pronominals, need not be ungoverned:

59-c) PRO AGR V $[_S$ NP V... $]$

The insertion process is limited to case-governed contexts and it follows that an element which has been moved twice in syntax will not be lowered in L.F. to its base-generated position (e_2 in 60):

60- NP AGR V $[_{S_1}$ e_1 V $[_{S_2}$ e_2 V... $]$ $]$

by lowering and PRO insertion $\longrightarrow$

a)* PRO AGR V $[_{S_1}$ e_1 V $[_{S_2}$ NP_2 V...$]$ $]$

The reson is that the intermediate empty element ($\underline{e_1}$ in 60 a) will be left free (without antecedent). This analysis thus, accounts for the ungrammaticality of doubly raised <u>there</u> (cf. section 3.1.) and for the ambiguity

of (58) where the quantified NP may have a wide or narrow scope reading versus the non-ambiguity of (60) where quantified NP has only the wide scope reading only. As usual, more questions are raised by this analysis than answered: why is the process of pronominal insertion restricted to case-governed contexts? What are the elements that undergo lowering (cf. footnote 16)? Is there an overt process of pronominal insertion applying in syntax? It is to some of these questions that we will, now, turn.

4. On insertion rules.

4.1. "it-insertion".

In the preceding sections, a process of non-overt pronominal insertion applying in L.F. was discussed. This process prevents some derivations where lowering leaves a free empty element in case-governed contexts from being filtered out by the binding theory; thus, providing further evidence for the L.F.-character of this theory. This process is essentially the L.F. counterpart of the overt it-insertion rule, which is discussed in Chomsky and Lasnik (1977)[21].

Given the θ-criterion and the projection principle, the non-referential pronominal element whether overt or not will be inserted in non-θ-position only (i.e. positions to which no θ-role is assigned) as in (61):

61-a) it seems that John left

b) it was believed that John left

If the insertion applies in syntax, the pronominal element will be phonetically spelled out by P.F.-rules; if it applies in L.F., the pronominal element will not be

phonetically realized since P.F.-rules do not have access to L.F. This, clearly supports the organization of the grammar assumed in the government-binding framework where L.F. rules do not feed P.F. rules. Given the assimilation of overt and non-overt insertion processes, the insertion of <u>it</u> in (61) may also be considered as a device to absorb the empty element in the subject position of the matrix clause; thus, preventing the derivation from being filtered out by the grammatical principles (but.cf.infra):

62-a) e seems that John left
b) e was believed that John left
c) e is unclear what to do

It is clear that an ordering problem may be raised;nothing, a priori, prevents the insertion rule from applying in L.F. and not in syntax. Derivations (62) will be saved but the pronominal element will not be phonetically realized:

63-a) PRO seems that John left
b) PRO was believed that John left

To exclude this possibility, one needs to say the insertion rule applies as soon as it may: in (62), the rule may apply in syntax, but in the examples discussed in the preceding sections which involve lowering, it may not apply till L.F. The intuitive idea behind this proposal is clear: the rule applies in such a way as to maximize the phonetic realization of the inserted element. It is hard to imagine that this requirement is specific to rule (61). For the moment, we will assume that it is a general principle contraining insertion rules. If so, no specific condition concerning the application of the

rule inserting it will be necessary.[22] Note that if the binding theory applies at S-structure and at L.F. as it will be suggested below, derivations (63) will be ruled out by the binding theory. In the subsequent sections, the insertion rule will be dispensed with in favor of more interpretive principles.

4.2. On the status of insertion rules.

Up till now, two cases of pronominal insertion were discussed: the first applies in L.F. and has no visible effects; the second in syntax and has visible effects: the inserted pronoun is phonetically spelled out by P.F. rules. It was also suggested that pronominal insertion applies as soon as it may: in syntax first; otherwise in L.F. While the functional considerations behind this ordering requirement seem plausible - the insertion mechanism maximizes the phonetic realization of the inserted element- it may be a welcome step to dispense with any stipulation concerning the mode of application of the rules; i.e., to wonder whether it is possible to assume that insertion rules apply freely. Obviously, the most radical way to dispense with any ordering requirement is to eliminate the need for insertion rules.

As indicated in P.L., the three types of empty category -PRO, variable, NP-trace- partition the class of possible positions of NP. NP is either governed or ungoverned. If ungoverned an empty category is PRO; if governed it can only be trace. This trace is a variable if it is $\bar{A}$-bound and it is an NP-trace if it is A-bound by an element in a non θ-position. Since the three empty categories partition the distribution of NP, it is reasonable to presume that in fact there is only one basic empty category α :

each occurence of α has one of three clusters of properties. This assumption will explain the partitioning which otherwise remains mysterious.

Let us consider this assumption in greater detail. Since PRO enters into typical agreement phenomena, it is quite reasonable to assume that it has the features person, number and gender:

63-a) John tried [PRO to help himself]

b) they tried [PRO to become doctors]

In (63 a), PRO has the feature (masculine) and in (63 b), the feature (plural), triggering agreement just as an overt pronoun would in a comparable position.

A similar argument shows that trace should have these features as well. Thus consider (64):

64-a) who did John think [t would help himself]

b) they seem [t to be doctors]

The same considerations that suggest that PRO has the features in question apply in (64) to indicate that trace also has these features . So that there will be no internal difference in the constitution of trace and PRO. These are some of the conceptual and empirical reasons to suppose that there is really only one basic empty category which may have the grammatical features person, number, gender, Case (cf. P.L.)

It is possible to distinguish between the different occurences of the empty category as PRO, NP-trace, or variable in terms of the derivation: if the empty category is base-generated without a corresponding phonological matrix, we have PRO. If it is "left behind" by a movement rule, we have trace. If this trace is locally $\bar{A}$-bound, it is a variable, otherwise not. It is also possible to

identify occurences of PRO, NP-trace or variable in terms of properties of the structure in which they appear, whether L.F., S-structure or D-structure. Variables will be identified by the fact that they are locally $\bar{A}$-bound. As for distinguishing between NP-trace and PRO, it is possible to do so in a straightforward way: a non-variable occurence of the empty category is PRO if its local A-binder has an independent θ-role or if it is free (not bound), and is NP-trace if it is locally A-bound by a category in a non-θ-position. (cf. P.L. where it is also indicated that the difference between the (local) binders of PRO, NP-trace, and wh-trace follows from the Projection Principle).

Suppose now, that the NP α is moved to a position in which it does not c-command its trace β, as in the cases of subject-inversion in Italian (cf. the previous chapter):

65- β $[_{VP}$ VP $\underset{\alpha}{NP}$ $]$

Then β is the trace of α and α is the antecedent of β. However, since β is free, it is interpreted as PRO. This is the result needed, since the trace of NP left by NP-inversion is in fact PRO, not NP-trace, as we see from considerations of binding theory: in (65), if β is interpreted as NP-trace, the representation will be marked as ill-formed by the binding theory since this trace will be A-free. Thus the characterization of empty categories adopted in the above paragraph incorporates what amounts to the rule of PRO-insertion in (65) (cf. the previous chapter): it follows by definition, that the trace left by NP-inversion is PRO (cf. P.L.).
To make these remarks more precise, following P.L., it

will be assumed that there is some set of grammatical features P that characterizes pronouns. The set P includes person, number, gender, Case. The members of P will be referred to as P-features. We call α an <u>empty category</u> if $\alpha = [_{NP}\ F]$, where $F \subseteq P$, F non-null; if α is not an empty category, we will call it a <u>lexical category</u>. We now have definitions (66) and Principle (67):

66-a) α is a variable if and only if it is locally $\bar{A}$-bound.

b) α is an NP-trace if it is locally A-bound by β in a non-θ-position.

67- If α is an empty category, then it is an anaphor (cf. the previous chapter and section 3.3.2).

The convention associated with Move α is that when α is moved by this rule it leaves behind the trace $[_{NP}\ F]$ coindexed with α, where F is the set of P-features of α.

A pronominal has no grammatical features other than P-features, and may or may not have a phonological matrix:

68- α is a <u>pronominal</u> if and only if $\alpha = [_{NP}\ F\ ,\ [M]\ ]$, where M is a phonological matrix and $F \subset P$ and either (i) and (ii):

(i) α is free;

(ii) α is locally A-bound by an element β with an independent θ-role.

If α $[_{NP}\ F]$, it is PRO; otherwise, α is a pronoun. Since PRO meets (67) as well as (68), it is a pronominal anaphor, as required by the binding theory. If $[_{NP}\ F]$ is locally A-bound by β, in a non-θ-position, it is not a pronominal but rather NP-trace, a non-pronominal anaphor. Finally, if (F) is locally $\bar{A}$-bound, it is a variable.

4.3. On the Insertion Mechanism in Lowered Structures.

It is obvious that these suggestions may be applied to the cases of non-overt pronominal insertion at work in lowering cases (cf. sections 3).

Consider (58) repeated as (69):

69- NP_i AGR V $[_S$ e_i V ...$]$

As indicated earlier, in (69), the NP may be lowered to the position $\underline{e}_i$:

69-a) e AGR V $[_S$ NP V...$]$

The empty element $\underline{e}$ left in the position from which lowering applies in (69 a) will be "absorbed" by the inserted non-referential pronominal:

69-b) PRO AGR V $[_S$ NP V...$]$

The insertion rule can now be dispensed with: in (69 a), the empty element $\underline{e}$ is free; by definition it will be interpreted as a pronominal (PRO). Note that this pronominal is "inserted" in a case-governed context and, like all case-marked pronominals, need not be ungoverned.

Consider now doubly-raised elements (cf. 60 repeated as 70):

70- NP AGR V $[_{S_1}$ e_1 V $[_{S_2}$ e_2 V ... $]$ $]$

Recall that the NP may be lowered to the position of the intermediate trace $\underline{e}_1$ but not to that of $\underline{e}_2$:

70-a)* $\underline{e}$ AGR V $[_{S_1}$ e_1 V $[_{S_2}$ NP V ... $]$ $]$

Previously, the ungrammaticality of (70 a) was accounted for by restricting the insertion rule to case governed contexts: $\underline{e}$ will be absorbed by the inserted pronominal but no $\underline{e}_1$. It was also indicated that the inserted pronominal cannot function as the binder of $\underline{e}_1$. Thus, (70 a)

will be ruled out by the binding theory. By eliminating insertion rules, this solution is not available anymore. In fact, the approach outlined above allows us to account for the ungrammaticality of (70 a). In (70 a), both e and e_1 are free; by definition, they will be interpreted as pronominals:

70-b)* PRO AGR V $[_{S_1}$ PRO_1 V $[_{S_2}$ NP V...$]$ $]$

The pronominal in the subject position of the matrix clause is in a case-governed context and like all case-marked pronominals need not be ungoverned. However, the pronominal in S_1 is not in a case-context. Like all non-case-marked pronominals, it is treated as an anaphor. As a pronominal it is subject to principle B of the binding theory and as an anaphor, it is subject to principle A. The only way to satisfy both principles is for this element to be ungoverned. This is not the case in (70 b): PRO_1 is governed by V. Therefore, the sentence will be ruled out.

5. On Empty Elements.

Notice that we depart slightly from the approach suggested in P.L. which was presented in the previous section. What we are suggesting is that an empty category is interpreted as a pure pronominal, and not as PRO, if it is free or if it is locally A-bound by an element with an independent θ-role. If this pronominal is inserted in a case-governed context, it is interpreted as a non-anaphoric pronominal (i.e. as a pronoun), otherwise it is interpreted as an anaphoric pronominal (i.e. as PRO). As a non-anaphoric pronominal (i.e. as a pronoun) it will be subject to principle B of the binding theory only. As

an anaphoric pronominal (i.e. as a PRO), it will be subject to principles A and B; it, therefore, must be ungoverned. Pronouns and PRO, thus, differ by the presence versus the absence of a ~~case~~-feature. (68) will be reformulated accordingly:

68-a) α is a pronominal if and only if
$\alpha = [_{NP}\ F]$, where $F \subset P$ and either (i) or (ii):
(i) α is free
(ii) α is locally A-bound by an element β with an independent θ-role.

If $F \notin$ Case, α is an anaphor (=PRO); otherwise α is a non-anaphor (= pronoun). If α is identified as a pronoun in syntax; i.e. if α has Case in syntax, it will be phonetically spelled out by P.F.-rules; otherwise, it will not be phonetically realized. This gives us the effect of the ordering requirement discussed in section 4.1. There it was stipulated that the insertion rules applies as soon as they may: in syntax; otherwise in L.F. Assimilating the rule of overt and non-overt pronominal ("it") insertion, this moves was necessary in order to exclude the derivation where the insertion rule applies in L.F. but not in syntax. Consider once again the following underlying representations (cf. 62):

62-a) e seems that John left
b) e was believed that John left

If the insertion rule applies in L.F. but not in syntax, the following ungrammatical structures will be generated:

63-a) PRO seems that John left
b) PRO was believed that John left

This possibility was excluded by the ordering requirement.

This requirement is not necessary anymore: in (62), either e has P-features or not. If it has not, the derivation will be excluded by whatever grammatical principle excluding non-filled matrices (cf. Chomsky 1980). If it has P-features, it will be interpreted as a pronominal since it is free (cf. 68 a). Since this pronominal has Case, it will be identified as a pronoun. This pronoun will be phonetically spelled out by P.F.-rules.

In lowering constructions, there is no empty category which satifies definition (68 a) until L.F. where lowering applies (cf. 69):

69-a) NP AGR V $[_S$ e V ...$]$

by lowering $\longrightarrow$

b) e AGR V $[_S$ NP V ...$]$

In L.F., the empty element in (69 b) is interpreted as a pronominal since it is free. Being case-marked or more precisely case-governed, it will be identified as a pronoun. Thus, definition (68 a) allows us to distinguish between (62-63) and (69) without any ordering requirement.

The approach adopted has some far reaching consequences. Now, an empty element may be interpreted as a wh-trace if it is locally $\bar{A}$-bound, as an NP-trace if it is locally A-bound by an element lacking an independent θ-role. and as a pronominal if its is free or if it is locally A-bound by an element with an indepedent θ-role. This pronominal is identified as a pronoun if it is case-marked or as a PRO if it is not case-marked. In other words, <u>there is no (type) distinction between pronouns and the other empty categories</u>: pronouns are just a different occurence of

the "empty category" identified as such in terms of properties of the structure they appear in. Furthermore, since pronouns may be phonetically realized, there is no (type) distinction between the so-called null or non-overt elements (NP-trace, wh-trace, PRO) and non-null pronouns (i.e. phonetically realized pronouns)[23/24].

5.1. The interpretation of Empty Elements.

5.1.1. The interpretation of Pronouns.

Returning to representations (62-69), recall that the empty element is identified as a pronoun and,as argued in section 4.1., this pronoun is non-referential:when overt, it is realized as "it" (cf.61):

61-a) it seems that John left

b) it was believed that John left

The fact that this pronoun is non-referential follows from the θ-criterion and does not need be stipulated. (cf.P.L.). Consider first lowered structures:

69-b) e AGR V $[_S$ NP V ...]

Suppose that the empty element e in (69 b) were interpreted as an R-expression (as a referential element). Like other R-expressions, it would need a θ-role.Two cases will have to be considered : (a) either the empty element is in the same chain with the lowered element or (b) it is not. Consider (a);in the sentences discussed, the lowered element is either there or a quantified NP; there is usually coindexed with an R-expression (or a quantified NP); i.e. it is with the R-expression (or the quantified NP) in the same chain. The quantified NP in L.F. is subject to Quantifier-Raising which leaves a variable interpreted as an R-expression (cf.P.L.). In

brief, in both cases, the empty element will ultimately be in the same chain with an R-expression. Assuming the empty element to be referential, this representation will be filtered out by the θ-criterion: the chain contains two R-expressions to which a unique θ-role is assigned. As for (b), since the empty element is in a separate chain from the one containing the lowered element, the derivation will again be ruled out by the θ-criterion: the chain containing the empty element will not be in a θ-position.

Similarly, in representations where thepronoun is phonetically realized (as in 61), it cannot be interpreted as an R-expression:

61-a) it seems that John left

b) it was believed that John left

The clause in (61 a-b) is an argument and needs a θ-role (cf. P.L.). If <u>it</u> were interpreted as an R-expression occurring in the same chain as the clause, the derivation will be excluded by the θ-criterion since two distinct arguments occur in a single chain to which a unique θ-role is assigned. If <u>it</u> were an R-expression in a distinct chain from the clause, the chain containing <u>it</u> will not be in a θ-position; the representation will be excluded by the θ-criterion.

In short, the fact that a pronoun is interpreted as an R-expression or not follows from the θ-criterion and need not be stipulated[25].

5.1.2. The interpretation of NP-traces.

This approach may be extended to other occurences of emty element. Consider first NP-traces. Two constructions are to beconsidered: constructions where the antecedent

of the NP-trace is not an argument (cf.71 a) and constructions where it is (cf.71 b):

71-a) NP... t
non-R-expression
(cf."it seems to be certain that John left")

b) NP... t
R-expression
(cf. "John was killed")

The trace and its antecedent are in the same chain. In (71 b), the trace cannot be interpreted as an R-expression; otherwise the chain will contain two R-expressions.

In (71 a), the trace cannot be an R-expression either; two possibilities are to be considered : (a) the antecedent is in a θ-position (b) the trace is in a θ-position. Both (a) and (b) are excluded by the projection principle: if the antecedent were in a θ-position, this θ-position would have been empty prior to movement and if the trace were in a θ-position, this θ-position would have been occupied by a non-R-expression prior to movement. Thus, in (a) and (b), the θ-criterion would not be satisfied at D-structure; thus, violating the Projection Principle. Since in (71 a), neither the trace nor its antecedent may be in a θ-position, the chain containing this trace will not receive a θ-role; therefore, the representation will be excluded by the θ-criterion.

In brief, the only grammatical representation is the one where the NP-trace is treated as a non-R-expression:

72-a) NP... t
non-R-expression non-R-expression

b) NP... t
R-expression non-R-expression

5.1.3. The interpretation of variables.

Let us consider, now, variables bound by an operator such as a wh-element:

73- Q_i ..... X_i

Throughout the previous chapter, we have assumed that the variable is an R-expression (a name-like element) (cf. P.L.): as an empty element it will be subject to principle A of the binding theory and as an R-expression to principle C of this theory.

The fact that variables are R-expressions (or more generally arguments) accounts for a somewhat puzzling array of facts concerning weather-verbs ("it rains","it snows" ...).Recall that a PRO is an empty element which is either free or A-bound by an element in a θ-position.From this definition, it follows that a pleonastic it or there (as in "it seems that...", "there are three men") never binds PRO. However, consider (74):

74- it sometimes rains after (α snowing)

As indicated in P.L., α must be PRO since it is ungoverned; but its controller is "weather-it". Controlled PRO normally assumes the referential properties of its antecedent: weather-it behaves as though it were referential, but it can have no-referent. Moreover, other facts indicate that this it behaves as a non-referential element; for instance, it cannot be questionned:

75- * $what_i$ x_i rains

The ungrammaticality of (75) may be accounted for if it is assumed that variables are R-expressions: in (75),the variable will not be assigned a referential value.

To account for the contrast between (74) and (75), it is suggested in P.L. that one step in the interpretation of L.F. is to posit a domain D of individuals that serve as values of variables and as denotata of names. The natural explanation for the ungrammatical status of (75) is, then, that as a matter of grammatical principle, no element of D meets the requirements imposed by the predicate rains on its subject: weather-it denotes no element of D. Thus, weather-it is similar to arguments in that it can control PRO but unlike them in that it denotes no member of D, as a matter of grammatical principle. Then, it is possible to distinguish two classes of arguments: true arguments with potentially referential function -there are elements of D that they take as values or denotata- and quasi-arguments that lack any such function as a matter of grammatical principle. Correspondingly, it will be assumed that one of the possible θ-role is one of quasi-argument (cf. P.L.).

The pronoun it can be a true argument ("it is on the table") a quasi-argument ("it is raining") or a non-argument ("it seems that John is here"). The same is true of PRO: it can be a true argument ("he wants PRO to win"), a quasi-argument (cf.74) or a non-argument (the impersonal pronominal appearing in lowered constructions or in post-verbal subject constructions of Italian). A variable, however, is a true argument with a potentially referential function.

'he variables considered so far are $\bar{A}$-bound by an ope-
'tor (cf.73). At this point, it is possible to consi-
· that variables are inherently treated as arguments

or that they are arguments by virtue of being coindexed with an operator[26]. The two approaches are different:the first considers that all instances of variables are arguments. The second considers that variables are arguments only when they are coindexed with an operator (cf.footnote 26); it amounts to saying that quantification is restricted to terms referring to elements of the domain D: only such elements i.e.potentially referential expressions, may be quantified. This approach allows the existence of non-argument variables $\bar{A}$-bound by a non-operator. This appears to be the case.

Following P.L., it was indicated in the previous chapter that with respect to binding, the appropriate distinction does not seem to be that of antecedent versus operator-binding but rather antecedent versus peripheral binding. The former holds when the c-commanding element is in an A-position and the latter when it is in an $\bar{A}$-position. It was moreover indicated that clitics are in an $\bar{A}$-position and that they may bind the variable left by the extraction of wh-elments. Obviously, these clitics are not operators. Thus clitics illustrate a clear case where an $\bar{A}$-binder is not an operator.

Consider, now, the following S-structure:

76- Pierre le voit
" Pierre sees him"

which has the following D-structure cf.the previous chapter and the references mentioned there:

76-a) Pierre le voit NP

In the following chapter, it will be argued that this empty NP cannot be PRO (contrary to what was temporarily assumed in the previous chapter), since clitics are in an $\bar{A}$-position, this empty element will be identified as a variable.

Consider, now, the following paradigm in French:

77-a) e il est venu
"he came"

b) e il est difficile de partir
"it is difficult to leave"

c) e il pleut
"it rains"

Since clitics are in an $\bar{A}$-position, the empty element left by the cliticization of the subject is identified as a variable in (77). It is plausible to assume that this variable is an argument in (77 a) but not (77 b). Sentence (77 b) illustrates, then, a clear case where the variable is not an argument.

Furthermore, in the following chapter, it will be indicated that some clitics function as R-expressions (R-clitics) and some others do not (non-R-clitics). It will also be argued that R-clitics cannot occur with another R-expression in the same chain: this will be excluded by the θ-criterion. The same reasons may be invoked to suggest that the variables in (77 a) and in (77 c) are not R-expressions (arguments): in (77 a) and (77 c), if the variable were (quasi-)arguments, the chain in which the clitic and the variable occur would contain two (quasi-) arguments: the variable and the clitic. Similarly in (77 b), the variable cannot be an argument: either it is in the same chain with the clausal argument ("de partir") or it is not. In the first case, two arguments will be in the same chain; in the second, the chain containing the variable will not be in a θ-position or alternatively, "de partir" won't have a θ-role. In brief, when a variable is coindexed with a non-operator, it

cannot be a (quasi-) argument.

If correct, this result may have some important consequences for the application of the binding principles. Recall that variables are subject as anaphors to principle A of the binding theory and as arguments (name-like elements) to principle C of this theory. It is interesting to wonder whether both principles apply to variables which are not arguments as in (76-77).

As formulated, principle C applies to names and name-like expressions (which are arguments). Since some variables are non-arguments, we may expect them not to be subject to principle C of the binding theory. If so, non-arguments variables will be subject to principle A only: they will have to be $\bar{A}$-bound in their governing category. Moreover, recall that AGR or [NP,S] cannot count as accessible SUBJECTS for variables in non-subject position; this was excluded by the fact that variables are subject to principle C of the binding theory (cf. the previous chapter for more details). Suppose, now, that non-argument variables are not subject to principle C. Then nothing prevents AGR or [NP,S] from counting as accessible SUBJECTS for these variables when they occur in non-subject position. In other words, the governing category of these variables will be the same as the governing category of NP-traces occuring in the same position. The difference between these variables and NP-traces will be that the former have to be $\bar{A}$-bound and the latter A-bound in this governing category. This is precisely the case for variables $\bar{A}$-bound by clitics: they are only subject to principle A of the binding theory.

To illustrate the distinction between argument variables and non-argument variables, consider the following two structures:

78-a) $[_{\bar{S}_1}$ what$_i$ $[_{S_1}$ do you want $[_{\bar{S}_0}$ $[_{S_0}$ PRO to eat x_i $]]]]$

b) $[_{\bar{S}_1}$ $[_{S_1}$ je veux $[_{\bar{S}_0}$ $[_{S_0}$ PRO l_i'acheter x_i $]]]]$

"I want to buy it"

In (78 a), neither PRO nor the AGR element of the matrix clause count as accessible SUBJECTS for the variable because this variable would be potentially A-bound by the subjects of S_0 or S_1. Thus, this variable -which is governed by the embedded verb <u>eat</u>- has no accessible SUBJECT, therefore the main clause counts as the governing category.

In (78 b), however, assuming that non-argument variables are not subject to principle C of the binding theory,nothing prevents PRO from counting as accessible SUBJECT for this variable. The governing category for this variable will be the embedded $\bar{S}$ since it is the minimal category containing a governor V and an accessible SUBJECT.

In brief, the domain in which the argument variable in (78 a) must be $\bar{A}$-bound is the main clause and it is the embedded clause for the non-argument variable in (78 b). To present the matter differently, only the variable in (78 b) is subject to the Specified Subject Condition (SSC) it must be $\bar{A}$-bound in the domain delimited by the subject of the clause in which it appears.

As pointed out in Kayne (1975), Rouveret and Vergnaud (1980), Zubizarreta (1979a), the distribution of clitics

in French causative constructions follows from the SSC.

79-a) Marie a laissé Paul lire ces romans
"Marie let Paul read these novels"

b) Marie a ~~laissé~~ Paul les$_i$ lire x_i
Marie let Paul them read
"Marie let Paul read them"

c)* Marie les$_i$ a laissé Paul lire x_i
Marie them let Paul read
"Marie let Paul read them"

The SSC correctly predicts that if cliticization takes place in (79), the (b) sentence is the only possible output, since, in (79 c), the clitic <u>les</u> has been "extracted" from the domain of its subject. In terms of the binding principles, the governing category of the variable in (79 b-c) is the embedded clause: it contains an accessible SUBJECT (<u>Paul</u>) and a governor (<u>lire</u>). In (79 b) only, the variable is $\bar{A}$-bound (by the clitic) in its governing category. (79 c) will be excluded by the binding theory.

Summarizing the content of this section, it is possible to distinguish two kinds of variables: those which are arguments and those which are not. The first are left by the extraction of quantifiers (such as wh-element, some, every...); they are marked (+Q) (=Quantifier) cf. footnote 26. The second are coindexed with a non-operator in an $\bar{A}$-position. As anaphors, the two kinds of variables will be subject to principle A of the binding theory[27]. However, only Q-variables are arguments and as such subject to principle C of the binding theory. In terms of the SSC, only Q-variables are not subject to this condition.

SUMMARY OF PART II.

Recapitulating the content of Part II, we started by dissussing a particular instance of Move α in L.F. It was argued that:

- There exists a process of lowering in L.F. applying optionally to quantifiers and obligatorily to co-superscripted pleonastic element such as there.
- Chains constitute the domain in which lowering applies: the antecedent of a trace may be lowered to the position occupied by the trace. The controller of PRO, however, may not be lowered to the position occupied by PRO.
- The output of these lowering processes is subject to the binding principles; thus, providing further evidence for the L.F. nature of these principles.
- These lowering processes are made possible by the existence of a general process inserting in L.F. a non-referential PRO in case governed contexts (sections 3.1. and 3.2.)
- By assuming that pronouns are always generated as a set of features (α person, β number, γ gender) and that they get phonetically realized in P.F. when they have Case, the output of the non-overt pronominal insertion process which occurs in case-governed contexts is not filtered out by the binding theory: only non-case-marked pronominals (i.e. PROs) have to be ungoverned (section 3.3.).
- The non-overt pronominal insertion process apeeared to be the L.F. counterpart of the overt it insertion rule discussed in Chomsky and Lasnik (1977) (section 4.1.).
- Whether overt or not, this insertion process -like other insertion processes affecting pronominal elements- can be eliminated in favor of more interpretive principles. As such the various contextual restrictions governing this

insertion mechanism do not need to be stipulated:they derive from the grammatical principles (such as the binding theory) at work in the grammar (sections 4.2, 4.3.).

- These proposals entailed a reinterpretation of the notion empty category defined in P.L.: pronouns, we argued, are just a different occurence of the empty category identified as such in terms of properties of the structure they appear in. In other words, there is no type distinction between pronouns and the other empty categories (NP-traces, wh-traces, PROs) (sections 5, 5.1.1.,5.1.2.).
- Pursuing the identification of the various occurences of the empty category, two kinds of variables were distinguished: Q-variables -i.e.variables coindexed with an operator in $\bar{A}$-position- and non-Q-variables -i.e.variables coindexed with a non-operator in $\bar{A}$-position. These two kinds of variables display a different behavior with respect to the binding principles. As anaphors, both Q-variables and non-Q-variables are subject to principle A of the binding theory. As arguments, however, only Q-variables are subject to principle C of the binding theory. Being subject to principle A and C, Q-variables escape the effect of the so-called Specified Subject Condition (SSC). Non-Q-variables,however, are only subject to principle A and obey as such the SSC (section 5.1.3.).

CONCLUSION OF PART II: THE BINDING PRINCIPLES APPLY AT S-STRUCTURE AND L.F.

In chapter 1, we argued that the ECP may be dispensed with if the binding theory is generalized to a theory of X-binding. Since the ECP applies in L.F.(cf.the relevant references mentioned in chapter 1), the binding theory will have

to apply at L.F. too. Obviously, this does not mean that it cannot apply elsewhere. In fact, as matters stand, there is evidence which suggests that it applies at L.F.(cf. sections 3) and evidence which suggests that it applies at S-structure (cf. P.L.).

Let us start by reviewing the evidence . As indicated in sections 3, the output of the L.F. lowering process is constrained by the binding theory; thus providing strong evidence for the L.F. character of this theory. Recall that the relevant constrast is the one illustrated in (i a-b):

i-a) NP_i AGR V $[_S$ e_i V... $]$

b) NP AGR V $[_S$ e_1 V... $[_S$ e_2 V...$]$ $]$

In (i a), but not in (i b), the NP may be lowered to its base-generated position:

ii-a) PRO AGR V $[_S$ NP V ... $]$

b)* PRO AGR V $[_S$ e_1 V $[_S$ NP V...$]$ $]$

(ii a) and (ii b) are generated from (i a) and (i b) respectively by lowering the NP and "inserting" a pronominal element in subject position of the matrix clause. Although the intermediate empty element $\underline{e}_1$ in (ii b) is properly governed by the matrix V, the derivation is ungrammatical. The reason is that this intermediate empty element is free; thus, violating the binding theory. In brief, (ii b) illustrates a context where the so-called ECP is not violated whereas the binding theory is. Since representation (ii b) is generated by the L.F. lowering process, evidence for the L.F. character of the binding principles is provided.

Other constructions which illustrate the L.F. nature of

the binding theory were discussed in chapter 1. They involved extraction of wh-elements from inside an NP and violations of superiority (cf.chapter 1, sections 3,3.4. and 4.2.).We will briefly recapitulate one of these constructions. Recall that in French, the subject of an NP, but not its object, may be extracted by wh-movement:

iii-a) tu as vu $[_{NP}$ le portrait d' Aristote
obj.
de Rembrandt $]$
subj.

b) l'artiste dont$_i$ tu as vu $[_{NP}$ le portrait d'Aristote x_i $]$

c)* l'homme dont$_i$ tu as vu $[_{NP}$ le portrait x_i de Rembrandt $]$

This contrast was accounted for by the binding theory: in (iii b-c), the governing category is the NP. In this category, the variable of (iii b), but not that of (iii c) is $\bar{A}$-bound by the determiner. As indicated during the discussion of these constructions, a similar contrast holds when the wh-elements have not been moved in syntax. (the judgments are J-R.Vergnaud's):

iv-a) tu as vu $[_{NP}$ le portrait d'Aristote de quel artiste$]$

b) tu as vu $[_{NP}$ le portrait de quel homme de Rembrandt $]$

By assuming that wh-raising, which applies in L.F., raises these wh-elements and adjoins them outside the NP (cf. the references mentioned in section 3.3.4 of chapter 1), the respective L.F.-representations of (iv a-b) will be similar to those of (iii b-c). The ungrammaticality of (iv b), will be treated on a par with that of (iii c);

both involve a violation of the binding theory. Once again, this account provides evidence for the L.F.nature of the binding theory since an L.F. movement rule - wh-raising- is constrained by this theory.

Let us, now, review some of the evidence which suggests that the binding theory applies at S-structure (cf.P.L. for the discussion of this evidence). This evidence, essentially has to do with what has been referred to as "parasitic gaps" (cf.Taraldsen 1979 and Engdahl 1981). The evidence which will be presented is based on Chomsky (forthcoming).

Parasitic gaps are constructions where two empty elements are related to a single operator:

v-a) which articles did John file e_1 without reading e_2

b) this is the kind of food you must cook e_1 before you eat e_2

Following Chomsky (op.cit.) we will refer to e_1 as licensing variable and to e_2 as parasitic gap. Parasitic gaps have specific properties which need not concern us (cf. Chomsky op.cit.). For our purpose, it suffices to note that the licensing variable must be present at S-structure as illustrated in (vi):

vi-a) which book did you file e_1 without reading e_2

b)* I forgot who filed which book without reading e

The contrast illustrated in (vi a-b) may be accounted for if it is assumed that the binding theory applies at S-structure. At this level, the quantifier which book has not undergone wh-raising yet; the empty element e is free and

is thus, interpreted as a pronominal. This pronominal is in a case-governed context: if we choose to assign Case, it will be interpreted as a pronoun and phonetically realized in P.F.; there will no longer be a parasitic gap (cf.v ii):

vii-a) I forgot who filed which book without reading it

If, however, we choose not to assign Case, this pronominal will be interpreted as PRO (cf.vi b). Since this PRO is in a governed context, the derivation will be filtered out by the binding theory. This is why (vi b) is ungrammatical. As for (vi a), it does not involve any violation of the binding theory because the parasitic gap is interpreted as a variable bound by the operator which book. As indicated above, this accounts crucially assumes that the binding theory applies at S-structure. Suppose the binding principles apply only at L.F., after the application of L.F. movement rules, (vi a-b)will essentially have similar L.F.-representations and the binding theory will not draw the correct distinction between the two sentences. We will return to parasitic gaps at the end of Part III in a somewhat different context.

In sum we have two types of evidence: some evidence suggests that the binding theory applies at L.F. after the application of L.F. movement rules and some evidence suggests that it applies at S-structure (before L.F.movement rules). If we want the binding theory to apply at both levels, let it do so. We, therefore, will assume that the binding principles apply at S-structure and at L.F.(after L.F.movement rules). In other words, the output of the constructions generated by the syntactic movement rules will be checked at S-structure by the binding principles

and the output of the constructions generated by the L.F. movement rules will be checked at L.F. by the binding principles. Note that we do not want the binding principles to apply at D-structure because many constructions involve a violation of these principles at this level:

viii-a) I want [PRO to be kissed t] at S-structure

b) I want [$\underline{e}_1$ to be kissed $\underline{e}_2$] at D-structure

(at D-structure $\underline{e}_2$ is interpreted as PRO: this PRO is in a governed context).

We do not want the binding principles to apply at P.F. either. Across languages, P.F.-rules such as scrambling rules do not seem to obey the binding principles. In brief, the binding principles apply at L.F. and S-structure only . This matter of fact, in a sense, is not surprising. In the grammar, there are two components where the various anaphoric processes may be determined; syntax and L.F.: in syntax they may be determined by Move α and (free) indexing which applies at S-structure (cf. P.L.). In L.F., they may be determined by L.F. movement rules and (free) indexing which may apply at L.F. too. In other words, syntactic and L.F. movement rules as well as the indexing mechanism create anaphoric relations. The binding principles may be thought of as well-formedness principles checking the various anaphoric relations; they determine which anaphoric relations may (or must) hold and which may not.

It, thus, is natural that the binding principles apply at the output of each component where anaphoric relations are determined; i.e. at S-structure and at L.F. (by definition, P.F.-rules do not affect anaphoric relations). Note, however, that this does not mean that this matter

of fact is logically necessary: the above remarks are consistent with a grammar where anaphoric relations are checked only when all anaphoric relations are determined; i.e. at L.F.

The assumption that the binding principles apply at S-structure and at L.F. does not affect the conclusion that there is no pied-piping at L.F.(cf.chapter 1,section 4.3.3.). Recall that the central motivation for not assuming that pied-piping exists at L.F. had to do with the following French sentences:

ix-a)* il$_i$ a aimé quels livres que Jean$_i$ a lu

b) quels livres que Jean$_i$ a lu a-t-il$_i$ aimé

"which books that Jean read did he like"

In (ix b), but not (ix a), intended coreference between il and Jean is possible. This contrast was accounted for by assuming that pied-piping does not apply at L.F. As a consequence, il will always c-command Jean and the binding principles will prevent Jean and il from being coindexed. In (ix b), however, nothing prevents the two elements from being coreferential since il does not c-command Jean. Under the assumption that the binding principles apply at S-structure and at L.F., this result carries over.

Let us assume that indexing may freely apply at S-structure and at L.F.-i.e.that any element, whether in A or in $\bar{A}$-position, may be freely coindexed with another element-(cf.P.L.). Suppose, now, that pied-piping applies optionally in L.F. Consider (ix a). At S-structure, we may choose not to coindex il and Jean; the binding theory will be irrelevant. At L.F., if pied-piping applies, (ix a) will

essentially have a representation similar to (ix b). Nothing would prevent il and Jean from being coindexed; an undesirable result.

Suppose, however, that pied-piping may not apply in L.F. At S-structure, we may choose not to coindex il and Jean; the binding theory will be irrelevant. At L.F., since pied-piping may not apply, we will not be able to coindex il and Jean because the representation will be excluded by the binding theory: Jean will be A-bound by il. In brief, if pied-piping does not apply in L.F., we correctly account for the ungrammaticality of (ix a); a result which is not possible if it is assumed that pied-piping applies at L.F. Since the assumption that pied-piping does not apply in L.F. carries over if the binding principles are checked at S-structure and at L.F., the conclusions based on this assumption such as the one which indicates that preposition-stranding is not to be accounted for by the ECP are not affected (cf.chapter 1,section 4.3.3.).

Note that we, crucially, assume that indexing freely applies at S-structure and L.F. We, now,would like to explore another possibility. In Chomsky (forthcoming),it is suggested that at S-structure, indexing is to be restricted to A-indexing; i.e. that only elements in A-positions may be coindexed. The reason, essentially, has to do with the behavior of pronouns in parasitic gap constructions. As indicated above, parasitic gaps may be licensed by a variable. Phonetically realized pronouns, however, do not license parasitic gaps; as illustrated in (x):

x-a)* a man whom everyone who meets <u>him</u> knows someone who admires <u>e</u>

b)* a man whom everyone who meets <u>e</u> knows someone who admires <u>him</u>

In (x), since they are contained in relative clauses, both underlined positions are inaccessible to syntactic movement: the putative movement will involve a violation of subjacency. Suppose, now, that indexing, at S-structure, is not restricted to A-positions, i.e. that all elements whether in A or $\bar{A}$-positions may be freely coindexed. Nothing would prevent <u>him</u> and <u>e</u> in (x) from being coindexed with <u>whom</u>; both <u>him</u> and <u>e</u> will be interpreted as variables $\bar{A}$-bound by <u>whom</u>. As a consequence, sentences (x a-b) should be treated on a par with other constructions involving parasitic gaps. This is not the case: parasitic gaps are marginal (cf. v) whereas (x a-b) are completely ungrammatical.

Suppose, however, that indexing at S-structure is restricted to elements in A-positions; we will have a mean to distinguish constructions like (x) from parasitic gap constructions: in (x), the empty element <u>e</u> will be free; hence interpreted as PRO. Since this PRO is in a governed position, the constructions will be excluded by the binding principles.

As indicated in Chomsky (forthcoming), however, one shortcoming of this approach is that it predicts that (xi) ought to be treated on a par with sentences (x); they ought to be excluded for the same reasons excluding (x a-b): both empty elements in (xi) will be free; hence interpreted as PROs. These PROs being in governed positions, (xi) should be excluded by the binding principles:

xi- ?? a man whom everyone who meets e knows someone who admires e

Unfortunately, (xi) seems to be better than (x a-b). Despite these remarks, let us assume that indexing at S-structure is restricted to A-indexing. Furthermore, let us assume that at L.F. the opposite holds; i.e. that at L.F., the relevant indexing is $\bar{A}$-indexing: elements in A or $\bar{A}$-positions may only be indexed with elements in $\bar{A}$-position. With thisin mind, let us return to (ix a). At S-structure, if il and Jean are coindexed, the derivation will be excluded by the binding theory. Suppose, however, we choose not to index il and Jean at S-structure. At L.F. we will not be able to index them if it is assumed that il (or the empty element coindexed with it), like Jean is in A-Position (but cf. section 5.1.3). In brief, if indexing at L.F. is restricted to $\bar{A}$-indexing, we correctly account for the fact that il and Jean in (ix a) will not be coreferential. Note, also, that we do not need anymore to assume that pied-piping may not apply at L.F. If so, the conclusions based on the assumption that pied-piping may not apply at L.F. will have to be reconsidered and treated along the lines suggested at the end of section 4.3.3., chapter 1.

Recapitulating the content of this conclusion, it was indicated that the binding principles apply at the output of each component where anaphoric relations may be determined; i.e. at S-structure and L.F. (cf. also Chomsky, forthcoming, for evidence attributed to E. Williams, suggesting that the binding theory applies at L.F.).

PART III: THE CHARACTERIZATION OF OPAQUE DOMAINS: ACCESSIBLE SUBJECT V.S. ACCESSIBLE CHAINS.

In the preceding sections, it was indicated that the distribution of clitics in the causative constructions in French follows from the SSC. There a distinction was made between Q-variables (i.e. variables coindexed with an operator in an $\bar{A}$-position) and non-Q-variables (i.e. variables coindexed with a non-operator in an $\bar{A}$-position). Q-variables are subject to principles A and C of the binding theory and as such escape the effect of the SSC. On the other hand, non-Q-variables are only subject to principle A of the binding theory and as such, obey the SSC.

We, now, will consider in greater detail the application of the SSC in the causative constructions of French. These constructions will motivate a redifinition of the notion governing-category discussed in chapter 1.

Recall that the distribution of nominal expressions (such as reciprocals, reflexives, NP-traces, pronominals) is constrained by the binding principles which impose various locality requirements on the choice of possible antecedents for these nominal expressions. The domain in which these principles apply is defined in terms of governing category. A governing category for an element α is defined as the minimal maximal projection containing α, a governor of α and a SUBJECT accessible to α. In this part, we will argue that in delimiting the governing category, we must take into consideration not only the accessible SUBJECT but also all the elements coindexed with this SUBJECT; i.e. the whole chain containing this SUBJECT. To illustrate, consider the following abstract representation (irrelevant details omitted):

i- $[_S\ NP_i\ V\ [_S\ t_i\ V\ NP_0\ ]\ ]$

In (i), the trace $\underline{t_i}$ counts as a SUBJECT accessible to $\underline{NP_0}$. According to the definition of governing category, adopted in the previous chapter, the governing category for $\underline{NP_0}$ is the embedded clause since it is the minimal maximal projection containing $\underline{NP_0}$, the governor ($\underline{V}$) of $\underline{NP_0}$ and a SUBJECT accessible to $\underline{NP_0}$ ($\underline{t_i}$). According to the proposal which will be suggested in this part, the governing category is the matrix clause since it is the minimal maximal projection containing $\underline{NP_0}$; its governor and the whole chain $[NP_i, t_i]$ containing the accessible SUBJECT. The essence of this proposal amounts to treat the trace and its antecedent as a discontinuous element which as, a whole, is relevant for delimiting the governing category.

This modification is essentially motivated by the distribution of clitics in French causative constructions. In French, as indicated in Kayne (1975), the subject embedded under the causative verbs defines an opaque domain -a governing category- in which cliticization may occur. In (ii b), for instance, the clitic $\underline{y}$ originating in the position $\underline{t}$ is adjoined outside the opaque domain delimited by the subject <u>à Paul</u>:

ii-a) $[_S$ Jean $[_{VP}$ fera $[_S\ y_i$ comparer cette sonatine à Paul $t_i\ ]\ ]\ ]$

b)* $[_S$ Jean $[_{VP}\ y_i$ fera $[_S$ comparer cette sonatine à Paul $t_i\ ]\ ]\ ]$

"Jean will have Paul compare that sonata with it"

Surprisingly enough, as indicated in Rouveret and Vergnaud (1980), when in (ii b), the embedded subject is itself

cliticized, this sentence becomes grammatical:

iii- $[_S$ Jean $[_{VP}$ leur$_j$ y$_i$ fera
$[_S$ comparer cette sonatine t$_j$ t$_i]]]$

The extension of governing category informally presented above (cf. i) straightforwardly accounts for the contrast between (ii b) and (iii). In (iii), the opaque domain delimited by the subject is not the embedded clause since it is not the minimal category containing the subject t$_j$ and its antecedent leur$_j$.(This essentially may be viewed as a way of incorporating Rouveret and Vergnaud (1980)'s results in a government-binding framework).

The following question, now, arises: is it the matrix clause or the matrix VP which, in (iii) counts as the opaque domain delimited by the chain $[$leur$_j$,t$_j]$? It will be indicated that the opaque domain is the matrix verb phrase. The evidence will be provided by the possibility of coreference between the matrix subject and the prepositional clitic originating in the lower clause (non-relevant details omitted):

iv- $[_S$ Jean $[_{VP}$ me les lui fera
$[_S$ acheter $]]]$
"Jean will make me buy them to him"

In (iv), pointed out by R.S.Kayne, the matrix subject Jean and lui may be understood as coreferential. If the matrix clause were to count as the opaque domain, Jean and lui would incorrectly be marked as disjoint (cf. sections 6.1., 6.2.)

Other questions concerning the distribution of clitics in French causative constructions will be discussed.

To mention some, contrary to the indirect object, the direct object of the embedded clause may cliticize onto the causative verb even though the embedded subject is not itself cliticized. This object, however, cannot be understood as coreferential with the matrix subject ((v)contrasts with (iib) and (iv)):

v- [Jean le fera [voir à Marie]]
"Jean will make Marie see him

It will be argued that this contrast too follows from the analysis of causative constructions assumed. More generally, it will be argued that this analysis:

- provides a unified account for cliticization and pronominal coreference in causative constructions. This, exactly, is what we expect if the domain in which an anaphor (such as the trace of the clitic) must be bound is the one in which a pronoun must be free (disjoint reference).
- illustrates the fact that a SUBJECT (or a chain) is accessible to the elements which belong to the same argument structure (cf.section 6.3.).
- allows us to characterize the relevant notion of chain in the grammar: the notion "thematic-chain" (θ-chain) will be introduced (cf.section 6.4.).

6.1. Causatives in French.[28]

In the previous section, the causative constructions given to illustrate the SSC involve the verb laisser ("to let"). As illustrated in (79) (79 a is repeated for convenience), laisser can be followed by a lexical subject:

79-a) Marie a laissé Paul partir
"Marie let Paul leave"

Contrary to laisser, however, faire cannot be followed by a lexical subject (cf. Kayne 1975 , Rouveret and Vergnaud 1980 , henceforth R.V.):

80- * Jean a fait Marie partir
Jean had Marie leave
"Jean had Marie leave"

With both faire and laisser, the subject of the embedded sentence can appear to the right of the infinitive:

81-a) On a fait sortir Marie du bureau
"they had Marie leave the office"

b) Marie a laissé partir Paul (cf.79 a)
"Marie let Paul leave"

The derivation of the structures with post-infinitival subjects involves the application of a transformation -$\overline{V}$-preposing- which moves the embedded verbal constituent to the front of the clause. To illustrate the manner in which the rule operates, consider the base structure (82):

82- on fait $[_{\overline{S}}$ $[_{COMP}$ e $]$ Marie $[_{\overline{\overline{V}}}$
$[_{V}$ sortir $]$ du bureau $]$ $]$

In (82), the verb may be fronted by $\overline{V}$-preposing:

82-a) on fait $[$ sortir Marie V du bureau $]$
"they made Marie get out of the office"
(V is the trace of sortir)

The above discussion was restricted to intransitive infinitives. When the infinitive takes a direct object , the underlying subject appears after the object complement preceded by à as in (83 b) derived from (83 a), (for further details cf. Kayne 1975 and R.V.):

83-a) Marie fera $[_{\overline{S}}$ Jean lire ce livre $]$

b) Marie fera lire ce livre à Jean
"Marie will make Jean red that book"

The insertion of à does not need to be stipulated. It has been suggested that a general property of causatives is to assign the G.F. (in) direct object to the subject of clausal complement (cf. P.L. which refers to Aissen and Perlmutter(1976), and Postal(1977)),cf. however, Marantz (1981) : in French, when $\overline{V}$-preposing occurs, the subject of the clausal complement is assigned indirect object in presence of direct object; otherwise it is assigned direct object as evidenced by the cliticization of this subject (cf.Bordelois 1974):

84-a) j'ai fait manger la pomme à Jean
ind.obj.

I made eat the apple to Jean

"I made Jean eat the apple"

b) je lui ai fait manger la pomme
ind.obj.

I him made eat the apple

"I made him eat the apple"

85-a) j'ai fait manger Jean
direct.obj.

"I made Jean eat"

b) je l'ai fait manger
direct.obj.

I him made eat

"I made him eat"

In other words, suppose we assume that in French, the primary object is direct object and the secondary object is indirect object. In causative constructions, when $\overline{V}$-preposing occurs, the subject becomes a dependent of (governed by) the fronted $\overline{V}$ (cf.R.V.) and must look for

a grammatical function G.F. : if primary is taken as in (84), it assumes the secondary etc...[29] The secondary object in French is of the form à NP. Consequently, when a subject assumes the G.F. of secondary object, the case-marker à is inserted in front of its subject.[30]

Note finally that $\overline{V}$-preposing affects only the verb and the direct object (the small VP in the sense of Williams 1974) but not the other complements; (86) is to be contrasted with (82 a) (repeated here for convenience):

86- * on fait [sortir du bureau Marie $\overline{V}$]
($\overline{V}$ is the trace of sortir du bureau)

82-a) on fait [sortir Marie V du bureau]
(V is the trace of sortir)[31]

Summarizing, there is a process of $\overline{V}$-preposing in French affecting causative constructions. After a verb like faire, $\overline{V}$-preposing is obligatory (cf.80 and 81 a) but after a verb like laisser the application of this rule is optional (cf.79 a and 81 b). Here too, the obligatory application of the rule does not need to be stipulated. In laisser constructions, the embedded subject can get a case-feature directly from laisser (laisser is, thus, an $\overline{S}$-deletion verb, cf. P.L. and the previous chapter) or by the process of $\overline{V}$-preposing (as indicated by à-insertion) which is characteristic of $\overline{V}$-preposing, cf. supra):

87-a) j'ai laissé Paul acheter un gâteau
"I let Paul buy a cake"

b) j'ai laissé acheter un gâteau à Paul
"I let Paul buy a cake"

On the other hand, in faire-constructions, the subject cannot get a Case-feature directly from faire (faire is not

an $\bar{S}$-deletion verb). Consequently, $\bar{V}$-preposing must apply in order for this subject to get Case ,(for further details,cf.R.V.):

88-a)* Jean a fait Marie partir (cf.80)

b) Jean a fait partir Marie

"Jean had Marie leave"

6.2. Accessible chains v.s. accessible SUBJECTS.

The causative constructions were brought into discussion for their relevance with respect to the application of the SSC. Recall that in causative constructions, the subject defines a domain in which cliticization may occur. The sentences considered involved causative constructions where $\bar{V}$-preposing did not apply i.e. where the subject of the embedded clausal complement gets its Case from the matrix verb laisser (cf.79 repeated for convenience):

79-a) Marie a laissé Paul lire ces romans

"Marie let Paul read these novels"

b) Marie a laissé Paul les$_i$ lire x_i

"Marie let Paul read them"

c)* Marie les$_i$ a laissé Paul lire x_i

As indicated in Kayne (1975) and R.V., the SSC still holds when $\bar{V}$-preposing applies (in the following examples, x_i is the trace of the prepositional clitic y, $\bar{V}'$ is the trace of the moved verbal constituent):

89-a) Jean fera [comparer cette sonatine à Paul à une symphonie]

"Jean will have Paul compare that sonata with a symphony"

b) Jean fera [y_i comparer cette sonatine à Paul $\overline{V}$ x_i]
Jean will make with it compare that sonata to Paul
"Jean will have Paul compare that sonata with it"

c)* Jean y_i fera [comparer cette sonatine à Paul $\overline{V}$ x_i]
Jean with it will make compare that sonata to Paul
"Jean will have Paul compare that sonata with it"

90-a) Jean fera [mettre ce livre à Pierre sur l'étagère]
"Jean will have Pierre put that book on the shelf"

b) Jean fera [y_i mettre ce livre à Pierre $\overline{V}$ x_i]
Jean will have on it put that book to Pierre
"Jean will have Pierre put that book on it"

c)* Jean y_i fera [mettre ce livre à Pierre $\overline{V}$ x_i]
Jean on it will have put that book to Pierre
"Jean will have Pierre put that book on it"

The paradigm (89)-(90) is parallel to the one exemplified in (79); the (c) sentences illustrate an SSC violation: the trace of the clitic has its antecedent outside the domain delimited by the embedded subject (<u>à Paul</u> in 89 and <u>à Pierre</u> in 90 c)[32].
Surprisingly enough, as indicated by R.V., when the embedded subject is itself cliticized is sentences (c), these sentences become grammatical (in the following examples, <u>x</u> is the trace of the prepositional clitic <u>y</u>, <u>x'</u> the trace

of the cliticized subject and $\overline{V}$ the trace of the moved verbal constituent): (89 d) and (90 d) are to be contrasted with (89 c) and (90 c) respectively:

89-d) Jean leur y_i fera [comparer cette sonatine x' $\overline{V}$ x_i]
Jean to them with it will make compare that sonata
"Jean will have them compare that sonata with it"

90-d) Jean leur y_i fera [mettre ce livre x' $\overline{V}$ x_i]
Jean to them on it will make put that book
"Jean will have them put that book on it"

The generalization that emerges from the paradigm (89)-(90) is that a prepositional clitic originating in the lower clause cannot be adjoined to the causative verb if the embedded subject is not itself cliticized onto this causative verb. In terms of the framework adopted in the previous chapter, when in causative constructions, the embedded subject is not cliticized, the embedded clause functions as the governing category for the trace left by the prepositional clitic; however, when the embedded subject is cliticized, it is the matrix clause (but cf. infra) which functions as the governing category for this trace: it is as if the cliticized subject -and not the empty element left by cliticization- which functions as (an accessible) SUBJECT.

Recall that the notion SUBJECT assumed in the previous chapter includes the subject of an infinitive or an NP and also AGR but not the subject of a tensed clause (SUBJECTS are underlined):

91-a) NP <u>AGR</u> V... (where the sentence is finite as in "John <u>AGR</u> saw Bill")

b) <u>NP</u> V (where the sentence is non-finite as the embedded clause in "John wants <u>PRO</u> to go")

Intuitively, the notion SUBJECT characterizes the most prominent element in a given configuration. The cliticization facts illustrated above indicate that the chain constituted by the cliticized subject <u>and</u> its trace - rather than the trace left in subject position- functions jointly as (an accessible) SUBJECT. Let us, therefore, replace the notion of accessible SUBJECT discussed in the previous chapter by the notion of accessible chain:

92- A chain α is <u>accessible</u> to an element β iff α contains a SUBJECT accessible to β.

The definition of accessibility will be kept as it is and the definition of governing category (24' II) will be modified so as to refer to the notion of accessible chain instead of accessible SUBJECT:

24'II β is a governing category for α iff β is the minimal maximal projection containing α, a governor of α and a SUBJECT accessible to α (cf. chapter 1, section 3.3.3.).

24'II revised

β is a governing category for α iff β is the minimal maximal projection containing α, a governor of α and a chain accessible to α.

To illustrate consider sentences such as (90 c-d) repeated for convenience:

90-c) *Jean y_i fera [mettre ce livre x' $\bar{V}$ x_i]

d) Jean leur y_i fera [mettre ce livre x' $\bar{V}$ x_i]

In (90 c), the governing category for the trace $\underline{x_i}$ of $\underline{y}$ is the embedded clause; it is the minimal maximal projection containing an accessible chain (à Pierre) and a governor (mettre). This trace is free in its governing category; thus, violating the binding principles. In (90 d), however, the minimal maximal projection containing an accessible chain (leur, x')and a governor is the matrix verb phrase (VP). In this category, the trace $\underline{X}$ is $\bar{A}$-bound by $\underline{y}$.
Note that the definition of governing category (cf.24' II) is formulated in terms of minimal maximal projection, and not in terms of minimal $\bar{S}$ or NP. This is why in (90 d), the matrix verb phrase (VP) -and not the matrix clause ($\bar{S}$)- is to be taken as the governing category for the non-direct object $\underline{y}$. A confirmation of the fact that the matrix VP and not the matrix $\bar{S}$ is to be taken as the governing category for the non-direct object $\underline{y}$ in sentences similar to (90 d) is provided by the coreference possibility between the non-direct object and the matrix subject. Consider the following sentence which was pointed out in a different context by R.S. Kayne (irrelevant details omitted):

90-e) Jean $[_{VP}$ me les$_j$ lui$_i$ fera $[$ acheter x_j $\bar{V}$ x_i $]$ $]$
Jean me them to him make buy
"Jean will have me buy them to him"

In (90e), the minimal maximal projection containing the governor of the non-direct object trace $\underline{x_i}$ is the matrix VP. In this VP, $\underline{x_i}$ is bound by lui. Since the matrix VP is the governing category for $\underline{x_i}$ or, for that matter, for the chain (lui, $\underline{x_i}$), nothing prevents Jean and this chain from being understood as coreferential: this pronominal chain

(lui, x_i) will still be free in its governing category. If, however, the matrix clause is to be considered as the governing category for the trace x_i (or for the chain lui, x_i) instead of the matrix $\overline{V}P$, we incorrectly would predict that Jean and (lui, x_i) cannot be coreferential. The reason is that the pronominal chain (lui, x_i) will be bound in its governing category; thus, violating principle B of the binding theory.

Summarizing, we started by presenting the analysis of causative constructions presented in R.V. for French: in the embedded clausal complement of causatives, $\overline{V}$-preposing may apply or not. Whether it applies or not, the embedded lexical subject functions as an opaque subject blocking the cliticization of any complement to the higher clause. However, when this embedded subject is itself cliticized, it becomes tranparent and does not prevent the cliticization of any complement to the higher clause[33]. To account for this, we introduced the notion accessible chain and replaced in the definition of governing category, the notion of accessible SUBJECT by that of accessible chain. As a consequence of this change, in delimiting the governing category for an element α, it is necessary to take into consideration not only the governor of α and its accessible SUBJECT but also the whole chain containing this SUBJECT.[34]

6.3. $\overline{V}$-preposing and the SSC: the argument-structure.

In the previous section, it was indicated that the cliticization of the subject in causative constructions extends the opaque domain defined by this subject. We will, now, consider constructions involving $\overline{V}$-preposing where the opposite seems to hold: in these constructions, the

opaque domain defined by the subject is more limited than the opaque domain defined by the subject when $\overline{V}$-preposing does not apply.

As illustrated in sentences (79), (89), (90), the SSC applies in causative constructions regardless of the application of $\overline{V}$-preposing. Some tightening up is in order: it is true that when $\overline{V}$-preposing applies, the SSC still holds. However, the elements which obey the SSC when $\overline{V}$-preposing applies are a sub-class of the elements which obey the SSC when $\overline{V}$-preposing does not apply (cf.R.V.). Thus, consider (93):

93-a) Marie a laissé [Paul lire ces romans dans la cuisine]
"Marie let Paul read these novels in the kitchen" (cf.79)

b)* Marie y_i a laissé [Paul lire ces romans x_i]
Marie in it let Paul read these novels
"Marie let Paul read these novels in it"

c)* Marie les_i a laissé [Paul lire x_i dans la cuisine]
Marie them let Paul read in the kitchen
"Marie let Paul read them in the kitchen"

(93) illustrates the SSC when $\overline{V}$-preposing did not apply: both the locative complement in (93 b) and the direct object in (93 c) have been cliticized outside the domain delimited by the subject <u>Paul</u> (i.e. outside the embedded clause) in violation of the SSC.

However, when $\overline{V}$-preposing applies, neither the locative nor the direct object are subject to the SSC. As illustrated in (94), the subject becomes transparent (cf. R.V.):

94-a) Marie a laissé [lire ces romans à Paul dans la cuisine]
Marie let read these novels to Paul in the kitchen
"Marie let Paul read these novels in the kitchen"

b) Marie y_i a laissé [lire ces romans à Paul x_i]
Marie in it let read these novels to Paul
"Marie let Paul read these novels in it"

c) Marie les_i a laissé [lire x_i à Paul dans la cuisine]
Marie them let read to Paul in the kitchen
"Marie let Paul read them in the kitchen"

In (94 b-c), the subject is transparent as illustrated by the fact that the locative and the direct object are cliticized onto the matrix verb. (94 b-c), thus, contrast minimally with (93 b-c). When $\bar{V}$-preposing applies, neither the direct object, which has been fronted by $\bar{V}$-preposing, nor the circumstantial complements are subject to the SSC (for further details, cf.R.V.). The only complements which remain subject to the SSC are the complements subcategorized by the verb which are not fronted by $\bar{V}$-preposing; i.e. the subcategorized non-direct objects as illustrated in (89)-(90) repeated for convenience: (the well-formed (b) sentences where clitic is attached to the embedded verb are omitted; $\bar{V}$ is the trace of $\bar{V}$-preposing):

89-a) Jean fera [comparer cette sonatine à Paul à une symphonie]
"Jean will have Paul compare that sonata with a symphony"

c)* Jean y_i fera [comparer cette sonatine à Paul $\overline{V}$ x_i]
Jean with it will make compare that sonata to Paul
"Jean will have Paul compare that sonata with it"

90-a) Jean fera [mettre ce livre à Pierre sur l'étagère]
"Jean will have Pierre put that book on the shelf"

c)* Jean y_i fera [mettre ce livre à Pierre $\overline{V}$ x_i]
Jean on it will have put that book to Pierre
"Jean will have Pierre put that book on it"

To sum up, the relevant situations where the SSC applies, cf. R.V.:

95-a) $\overline{V}$-preposing does not apply, the embedded subject is opaque in all cases (cf. * Marie y a laissé Paul lire ces romans (93 b)).

b) $\overline{V}$-preposing applies, the subject behaves like a transparent subject with respect to the direct object, moved by $\overline{V}$-preposing (cf. Marie les a laissé lire à Paul dans la cuisine (94 c)).

c) $\overline{V}$-preposing applies, the subject behaves like a transparent subject with respect to the circumstantial object not subcategorized by the verb (cf. Marie y a laissé lire ces romans à Paul (94 b))

d) $\overline{V}$-preposing applies, the subject behaves like an opaque subject with respect to the subcategorized non-direct object (cf. * Jean y fera mettre ce livre à Pierre (90 c)).

To this summary, we should add the result of the previous section:

e) The embedded subject is cliticized onto the causative verb, it becomes transparent (cf. <u>Jean leur y fera mettre ce livre</u> (90 d)).

Cases (a) and (e) have been accounted for previously. Case (a) illustrates a standard application of the SSC and Case (e) motivated the extension of the notion accessible SUBJECT to that of accessible chain.

Let us turn, now, to cases (b),(c),(d). We saw earlier that when the subject of the embedded clause is cliticized onto the causative verb, the opaque domain defined by this subject extends to include the verb phrase containing this causative verb. What cases (b),(c),(d) seem to indicate is that this opaque domain is narrowed when $\overline{V}$-preposing applies. To illustrate these remarks, consider the following configurations:

96-a) $[_{NP}$ causative $[_{GC}$ $\underset{subj.}{NP}$ VP ... $]\,]$

b) NP $[_{GC}$ $clit_i$ + causative $[$ $\underset{subj.}{x_i}$ VP ... $]\,]$

c) NP causative $[\,\overline{V}$-preposing $\underset{subj.}{NP}\,]$

(where GC = governing category)

(96 a) illustrates the standard application of the SSC: the domain of the subject is the embedded clause or to phrase the matter in terms of the framework adopted in the previous chapter, the subject NP in (96 a) functions as an accessible SUBJECT (accessible chain) for the various complements of the embedded clause; the governing category for these complements will thus be the embedded

clause. (96 b) illustrates the extension of the domain of the subject: the accessible chain for the complements contained in the embedded clause is $[\text{clitic}_i \ldots x_i]$ the minimal category containing this accessible chain is the matrix verb phrase; therefore, the governing category for these complements is the matrix VP .(96 c) illustrates a narrowing of the domain of the subject: this subject is opaque for the non-direct object subcategorized by the verb only (cf.95 d) but not for the fronted direct object (cf.95 b) or for the circumstantial object not subcategorized by the verb (cf.95 c). In other words, the governing category seems to be neither the embedded clause nor the matrix verb phrase.[35]

To account for (96 c) let us assume that:

97-a) $\bar{V}$-preposing is a rule adjoining $\bar{V}$ to the embedded clause[36].

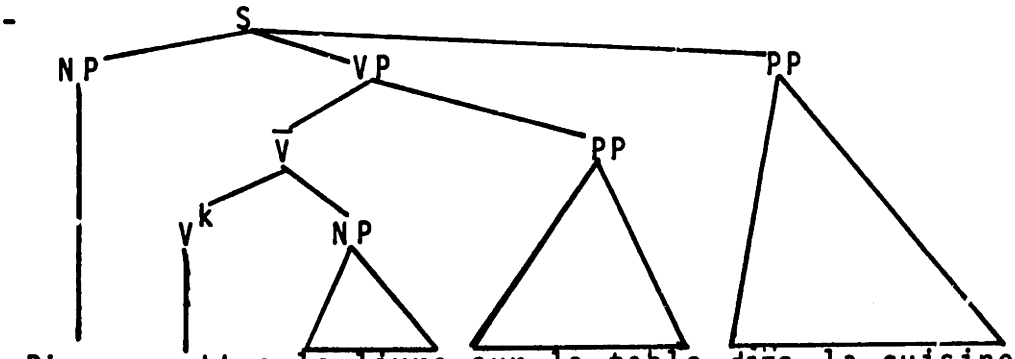
b) The preposed $\bar{V}$ governs and co-indexes (co-superscripts the subject NP (cf.R.V.).

c) When $\bar{V}$-preposing applies, the subject NP becomes the most prominent element(=SUBJECT) with respect to the elements bearing the same index (i.e. with respect to the elements in the same argument structure).

(97 b) is an instantiation of the proposal discussed in section 6.1. according to which, in causative constructions when $\bar{V}$-preposing occurs, the subject becomes a dependent of (governed by) $\bar{V}$ and as such receives its case-feature from the verb (cf. the discussion of the <u>à</u>-insertion rule in section 6.1.). (97 b-c) are to be considered in the light of the framework outlined in R.V.: it is possible to consider that a verb assigns an index to the

elements it subcategorizes[37]. This relational index is the mean by which a verb marks its complements. Thus, consider the following representation (irrelevant details omitted):

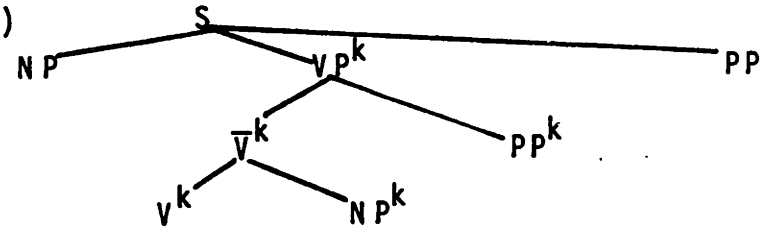
98-



Pierre mettre le livre sur la table dans la cuisine
Pierre put the book on the table in the kitchen

In (98), the verb V subcategorizes for an NP and a non-direct object; it therefore, assigns an index k to these elements. We, also, will assume that the index k of V percolates up to the various projections of V (V̄ ,VP) and will say that the elements bearing the same index(k in 98 a) belong to the same argument structure:

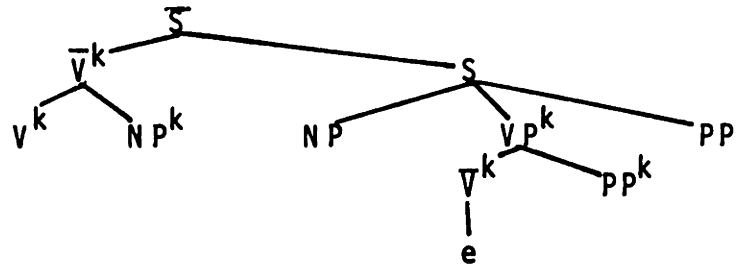
98-a)



Note that neither the subject nor the PP hanging from S is subcategorized (governed) by the verb. Consequently they will not receive the index k of V (see footnote 38). Now, recall that in causative constructions when V̄-preposing applies,the subject becomes a dependent of (governed by) V̄ and assumes the first available GF in the VP.(97 b)

is but the mechanism expressing this dependency (irrelevant details omitted)[38]:

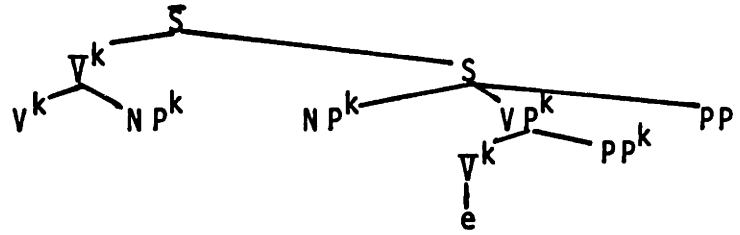
99-a)



(where $[_{\bar{V}}$ e $]$ is the trace left by $\bar{V}$-preposing)

by (97 b), (99 b) is generated:

b)



All the elements bearing the index k of V are interpreted as dependents of V; they are in the same argument structure. Thus, in (99 b), the object NP, the subject NP and the non-direct object PP are dependent of V; the subject NP is integrated in the verbal complex[39]. According to (97 c), the subject NP becomes the most prominent element (i.e. the SUBJECT) with respect to the elements bearing the same index. In other words, it becomes the most prominent element with respect to the complements of the verb only. As such, the subject behaves like a transparent subject with respect to the PP hanging from S (cf. sentence 94 b). This accounts for (95 c), (cf. 100).

Returning to the complements of V, i.e. to the direct and non-direct objects, the subject NP functions as the SUBJECT with respect to these elements (cf. 97 c). However, it

functions as an <u>accessible</u> SUBJECT with respect to the non-direct object PP only, because it fails to c-command the direct object (see footnote 36). Thus, for the non-direct object, the governing category containing the first accessible SUBJECT will be the minimal clause $\bar{S}$ containing this SUBJECT (the embedded clause in 100): the non-direct object will have to cliticize in this governing category; otherwise, the empty element left by cliticization will be free in its governing category (cf. sentence 90 c). This accounts for case (95 d). For the direct object, however, since the SUBJECT of the embedded clause is not accessible, this clause will not count as the governing category. The minimal clause containing an accessible SUBJECT (NP in 100) for the direct object will be the higher clause (the matrix clause in 100); this clause will, thus, count as the governing category for the direct object. As such, the direct object can cliticize onto the causative verb of this higher clause (cf. sentence 94 b). This accounts for case (95 c):

100- $[_{\bar{S}}\ [_{S}\ NP\ [_{VP}\ \text{causative}\ [_{\bar{S}}\ [_{\bar{V}}\ V^{k}$
$NP_{1}^{k}\ ]\ [_{S}\ NP^{k}\ PP^{k}\ PP\ ]\ ]\ ]\ ]\ ]$

The embedded $\bar{S}$ is the governing category for PP^{k}.
The matrix $\bar{S}$ is the governing category for NP_{1}^{k}.
The matrix $\bar{S}$ is the governing category for PP.

Recapitulating, in causative constructions when $\bar{V}$-preposing does not apply, the embedded lexical subject is an accessible SUBJECT to all the complements hanging from S or not (cf. 95 a). When $\bar{V}$-preposing applies, this lexical subject counts as a SUBJECT for the elements bearing the same superscript (i.e. for the elements in the same argument structure) but not for the non-subcategorized non-

direct objects. For the elements for which it is a SUBJECT, we must distinguish between the direct objects and the subcategorized non-direct objects. For the former, the SUBJECT of the embedded clause is not accessible (cf. 95 b); for the latter it is accessible (cf.95 d).

At this point, it is useful to mention some consequences of the analysis presented so far. Recall that in causative constructions, when the subject of the embedded clause has been cliticized, the governing category for the non-direct object is the matrix VP (cf.section 6.2.). Thus, in (90 e), repeated for convenience, the subject of the matrix clause (Jean) and the non-direct object of the embedded clause (lui_i, x_i) can be coreferential (irrelevant details omitted):

90-e) Jean $[_{VP}$ me les lui_i fera acheter x_i $]$

In this section, we said that when $\bar{V}$-preposing applies,the governing category for the direct object of the embedded clause is the matrix clause since it is the minimal maximal projection containing a SUBJECT accessible for this direct object. If this analysis is on the right track, we expect the pronominal direct object, contrary to the pronominal non-direct object, to always be disjoint from the matrix clause: if they were coreferential, the pronominal direct object would be bound in its governing category;thus, violating principle B of the binding theory. This seems to be the case: in (90 f), the pronominal direct object (le) cannot be construed as coreferential with the matrix subject (Jean) (irrelevant details omitted):

90-f) [Jean le <lui> fera voir<à Marie>]
Jean him to her make to see to Marie
"Jean will let {her / Marie} see him "

It, thus, is a striking confirmation of the analysis presented so far that it provides a unified account for cliticization and pronominal coreference in causative constructions. In (100), for instance, repeated for convenience:

100- $[_{\bar{S}}\ [_{S_k}\ NP\ [_{VP}\ \text{causative}\ [_{\bar{S}}\ [_{\bar{V}}$
$V^k\ \ NP_1^k\ ]\ [_S\ NP^k\ \ PP^k\ \ PP\ ]\ ]\ ]\ ]\ ]$

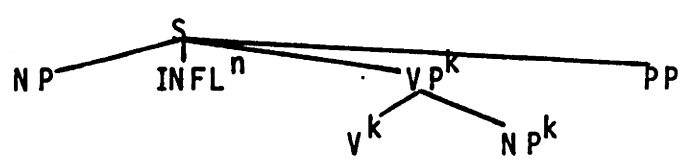
The matrix clause is the governing category for the direct object NP_1^k. Therefore, according to principle A of the binding theory, this element can cliticize onto the causative verb (cf.94 c), but, according to principle B, it must be disjoint from the subject of this causative verb (NP) (cf.90 f). For the non-direct object PP^k, the embedded clause is the governing category. Therefore, according to principle A of the binding theory, this element cannot cliticize onto the causative verb, (cf.90 c) but according to principle B, it can be coreferential with the subject of the causative verb (cf.<u>Jean fera lui acheter ce livre à Marie</u>,"Jean will make Marie buy him this book").

A more complex case has been discussed in section (6.2.). In causative constructions where $\bar{V}$-preposing applies and where the subject of the embedded clause NP^k is cliticized onto the causative verb, the governing category for the non-direct object becomes the VP of the matrix clause. Therefore, this non-direct object can cliticize onto the causative verb (cf.94 b) and can be coreferential with the subject of this causative verb (cf.90 e) without violating principles A and B of the binding theory. For the direct object, however, even when the subject of the embed-

dded clause is cliticized onto the causative verb, the governing category is the matrix clause because the SUBJECT of the embedded clause (i.e. NP^k in 100) does not c-command the direct object NP_1^k. Consequently, the direct object NP_1^k can cliticize onto the causative verb (cf. 90 f) (principle A of the binding theory) but will be disjoint from the subject of this causative verb (principle B). In brief, the analysis presented in sections (6.2.), (6.3.) is able to provide an explanatory account for a highly intricate distribution of facts in French causative constructions by appealing to the binding theory; more specifically, to principles A and B of this theory. It, thus, may be viewed as a confirmation of the empirical adequacy of these principles[40].

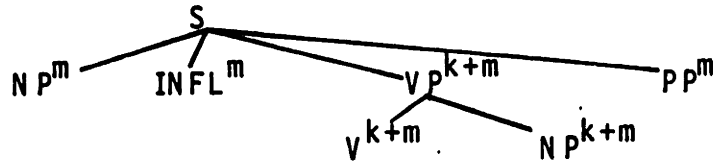
Before closing this section, a final remark is in order. The analysis presented in this section indicates that at least for causatives, in delimiting the SUBJECT, we have to take into consideration not only the element (AGR or [NP,S] but also the argument structure in which this element appears. Note that the co-superscripting mechanism at work in the VP may be extended in obvious ways to a sentential level if it is assumed that INFL selects the subject NP, the predicate VP (cf. P.L.) and the PP hanging from S:

100-a)



Assuming that INFL indexes the elements it selects, the subject NP, the VP and the PP hanging from S will be coindexed:

100-b)



(the index assigned to VP percolates down to the head V and the complements selected by the head)[41].

Note that if a representation such as (100 b) is adopted, (97 c) may be generalized as follows:

97-c') The SUBJECT is the most prominent element with respect to the elements bearing the same index (i.e. with respect to the elements in the same argument structure).

Thus, in (100 b), AGR contained in INFL and bearing the same superscript as INFL will count as the SUBJECT for all the elements in S if the clause is finite. If the clause is non-finite, NP will count as the SUBJECT (cf. the previous chapter). Note that if AGR is co-superscripted with all the elements in S, it is plausible to assume that the specific indexing mechanism holding between AGR and the subject NP is subscripting. This in a sense was implicit in the previous chapter where it was indicated that AGR -in some constructions- may act as an $\bar{A}$-binder of the subject.

6.4. The notion "accessible chain".

In section 6.2., the notion of accessible SUBJECT was replaced by that of accessible chain. As a consequence of this change, in delimiting the governing category for an element α, it is necessary to take into consideration not only the governor of α and its accessible SUBJECT but also the whole chain containing this SUBJECT:

A chain α is <u>accessible</u> to an element β iff α contains a SUBJECT accessible to β.

24'- II revised:

β is a governing category for α iff β is the minimal maximal projection containing α a governor of α and a SUBJECT accessible to α.

Let us consider, now, the consequences of this proposal. As indicated by N.Chomsky (p.c.), the following sentences appear prima facie to pose some problems to the extension of the notion accessible SUBJECT to that of accessible chain:

101-a)* he$_j$ seems to the man$_i$ [t$_j$ to like each other$_i$]

b)* who$_i$ did they$_j$ expect [t$_i$ [x$_i$ AGR would see each other$_j$]]

c)* who$_i$ did they$_j$ believe [x$_i$ to have seen each other$_j$]

Let us consider, first, (101 b-c). In (101 b), the accessible SUBJECT for the reciprocal (<u>each other</u>) is AGR and the governor is <u>see</u>. If AGR forms a chain with the subject <u>x</u> and its antecedent the wh-element, (101 b) will constitute a problem for the notion of accessible chain: the putative chain will be (<u>who</u>, <u>t</u>, <u>x</u>, <u>AGR</u>) ; the governing category of <u>each other</u> will, thus, be the matrix clause: it is the minimal category containing the whole accessible chain and the governor <u>see</u> of the reciprocal. The sentence will incorrectly be marked as grammatical since the reciprocal is A-bound by <u>they</u> in this governing category. However, no problem arises if AGR does not form a chain with

the subject x or if the variable in subject position does not form a chain with the wh-element in COMP (e.g. if chains are restricted to A-chains, cf.chapter 1). If the first option is adopted, the accessible chain will be AGR and in the second it will be (x,AGR)[42] . In both options, the embedded clause will be the governing category for the reciprocal since it is the minimal category containing the accessible chain of this reciprocal: (101 b) will correctly be excluded by the binding theory since the reciprocal is free in its governing category.

The same reasoning will lead us to conclude that in (101 c), the variable in subject position does not form a chain with the wh-element in COMP. Suppose the wh-element and the variable in subject position form a unique chain; since the variable is in an accessible SUBJECT for the reciprocal, the minimal category containing the accessible chain will be the matrix clause. The sentence will incorrectly be marked as grammatical since the reciprocal is A-bound by they in this governing category. If, however, the variable in subject position does not form a chain with the wh-element in COMP, no problem arises. The accessible chain will be (x) and the embedded clause will be the governing category since it is the minimal category containing the accessible chain[43]. In this governing category, the reciprocal is A-free and the sentence will correctly be excluded by the binding theory.

We, therefore, conclude that, for the notion of accessible chain, the variable and its antecedent in COMP do not form a chain.

As for (101 a), undoubtly the trace t and the raised subject he are in a single chain; this chain is accessible to each other: the governing category containing this accessible chain and the governor of each other (like) is the matrix clause. The sentence should be well-formed since the reciprocal is not free in its governing category. At this point, it is possible to suggest that the sentence is not grammatical because the potential A-binder of the reciprocal (the men) fails to c-command it. This proposal, however, will face some problems. Consider the following sentences from P.L.:

102-a) I spoke angrily to the men about each other

b)* I spoke angrily about the men to each other

Case (102 b) is accounted for by the binding theory since each other is not c-commanded by the men. Case (102 a) indicates that the c-command requirement is satisfied. It, thus, is possible to consider the phrase to the men is an NP along the lines discussed by Vergnaud (1974),George (1980), Jaeggli (1980) with to a case-marker (cf.the following chapter) . (102 a) will be grammatical with binding of each other by to the men (cf. P.L.). It, thus, appears that the c-command account of the ungrammaticality of (101 a) cannot be maintained. Note that the phrase to the men in (101 a) cannot easily be questioned:

103-??? to which men does he seem to like NP

(103) is to be contrasted with (104):

104-a) it seems to the men that he likes NP

b) to which men does it seem that he likes NP

Similarly, (103 a) is to be contrasted with (104 c) where $\bar{S}$-deletion does not occur (These sentences have been poin-

ted out to me by N.Chomsky):

103-a)* which man did he seem to to like

104-c)? which man did he appeal to to speak to Bill.

The contrast between (103) and (104 b) or between (103 a) and (104 c) may be accounted for along the following lines. It is indicated in P.L. that proper-government requires some kind of adjacency. We will assume that $\bar{S}$-deletion requires adjacency[44]. We, moreover, will assume that an A-position -but not a peripheral position ($\bar{A}$-position)- breaks the adjacency requirement necessary for the $\bar{S}$-to-S rule to apply between the matrix verb and the embedded clause[45]. With this in mind, consider (101 a) repeated for convenience:

105-(cf.103) he seems to the men [t to like NP]

The verb seems and the embedded clause are separated by the phrase to the men. Assuming that this phrase is an A-position, $\bar{S}$-deletion will not apply. He and the trace t will be in separate chains under the assumption discussed in the previous chapter that $\bar{S}$ breaks a chain. The sentence will be ruled out by the θ-criterion since neither the chain containing he nor the one containing the trace will receive a θ-role: the first because it is not a θ-position, the second because it lacks Case. Assuming, however, that the phrase to the men is in a peripheral position ($\bar{A}$-position) with respect to the verb seem the phrase to the men will not break the adjacency requirement necessary for the $\bar{S}$-to-S rule to apply: he and its trace t in (105) will be in the same chain. To this chain, a θ-role will be assigned and the sentence will be grammatical. However, in a sentence where no $\bar{S}$-deletion need occur (cf. 104 a repeated for convenience), the prasal element inter-

vening between the matrix verb and the embedded clause may be in an A-position or in an peripheral position ($\bar{A}$-position) with respect to the matrix verb:

104-a) it seems to the men that he likes NP _____

In brief, the phrasal position occuring after <u>seem</u> may be ambiguously characterized an an A-position or as an $\bar{A}$-position (cf.104 a). However, in a context where $\bar{S}$-deletion needs to occur, the representation where this phrasal position is treated as an A-position will prevent the application of $\bar{S}$-deletion and it will be excluded by the θ-criterion. The only remaining possibility, then, is to treat the phrasal position as an $\bar{A}$-position in a context where $\bar{S}$-deletion needs to occur[46]:

106-a) NP seem to NP $[_{S}$ t VP infinitival clause$]$

<u>to NP</u> is in an $\bar{A}$-position in (106 a) where $\bar{S}$-deletion needs to occur. (cf.105)

b) NP seem to NP $[_{\bar{S}}$ NP VP $]$

<u>to NP</u> may be in an A-position or an $\bar{A}$-position.(cf. 104 a)

In the following chapter, it will be suggested that an element in an $\bar{A}$-position cannot be extracted by movement rules. If so, our analysis predicts that since the position in which <u>to the men</u> occurs in (101 a) and (105) is necessarily an $\bar{A}$-position (cf. 106 a), no movement will apply from this position. In (104 a), however, the position of <u>to the men</u> may, ambiguously, be characterized as an A-position or an $\bar{A}$-position (cf.106 b). There is, thus, a representation in which <u>to the men</u> may be extracted by a movement rule. Both predictions are fulfilled. As illustrated in (103) and (104 b): when $\bar{S}$-deletion

occurs, to the men cannot be questioned (cf.103) and when it does not occur, to the men can be questioned (cf.104 b).

Returning to (101 a), since the position to the men is an $\bar{A}$-position, the sentence will be ruled out by the binding theory: the reciprocal is A-free in its governing category.

A final potential problem also indicated by N.Chomsky (p.c.) involves sentences containing small clauses:

101-d)* John$_j$ strikes / impresses us$_i$ [$_S$ t$_j$ as like each other$_i$]

In (101 d), the NP John has been raised from the subject position of the small clause (S) (cf. P.L. for further details). The ungrammaticality of (101 d) constitutes a problem for the proposal that the notion "accessible SUBJECT" is to be replaced by the notion "accessible chains": the putative chain will be (John, t). The governing category of each other will, thus, be the matrix clause: it is the minimal category containing the whole accessible chain and the governor (strikes or impresses) of the reciprocal. The sentence will incorrectly be marked as grammatical since the reciprocal is A-bound by us in the governing category. Note that the account suggested for (101 a) does not carry over: in (101 d), us is in an A-position as indicated by the fact that it can be extracted:

107- who$_i$ did John strike / impress x$_i$ as being intelligent

Recall, however, the discussion of "parasitic gaps" outlined in the conclusion of Part II of this chapter:

parasitic gaps are constructions where two empty elements are related to a single operator:

108-a) which articles did John file e_1 without reading e_2

b) this is the kind of food you must cook e_1 before you eat e_2

Following Chomsky (forthcoming), we referred to $\underline{e_1}$ as licensing variable and to $\underline{e_2}$ as parasitic gap. As indicated in Chomsky (op.cit.), in this kind of constructions the licensing variable cannot c-command the parasitic gap. The reason is that the derivation will be excluded by the binding theory since the parasitic gap, which is a variable, will be A-bound by the licensing variable $\underline{e_1}$. In other words, parasitic gaps may provide some insights with respect to the constituent structure of a sentence: in sentences involving parasitic gaps,the position filled by the licensing variable does not c-command the position filled by the parasitic gap.

With this in mind, consider the following sentences which have the same status as other parasitic gap constructions (cf.108):

109-a) who did the pamphlets strike $\underline{e_1}$ $[_S$ as being insulting to $\underline{e_2}$ $]$

b) who did John impress $\underline{e_1}$ $[_S$ as being concerned about $\underline{e_2}$ $]$

Sentences (109 a-b) are parallel to (101 d): they all involve a small clause. Since parasitic gap are allowed,we conclude that in (109 a-b), the position occupied by the licensing variable $\underline{e_1}$ does not c-command the parasi-

tic gap $\underline{e}_2$. (101 d) has the same representation as (109 a-b): this means that the position filled by us does not c-command the position filled by the reciprocal each other. Since it fails to c-command the reciprocal, us cannot A-bind each other. (101 d) will be excluded by the binding theory: the reciprocal is free in its governing category. In brief, (101 d) does not constitute a problem if the notion "accessible SUBJECT" is replaced by the notion "accessible chain".[47]

Summarizing, we started by considering some sentences which may be problematic for the extension of the notion accessible SUBJECT to that of accessible chain. It was indicated that at least for the notion of accessible chain, these problems may be overcome if AGR does not constitute a chain with the subject with which it is coindexed or if the empty element in subject position does not form a chain with its antecedent (the wh-element) in COMP. (cf. 101 b-c). It was also indicated that in raising constructions, the "object" of the verb which triggers $\overline{S}$-deletion is in an $\overline{A}$-position with respect to this verb and, thus, cannot bind an anaphor (cf. 101 a) and that in constructions involving small clauses the object of the verb does not c-command the small clause and, thus, cannot bind an anaphor in this clause (cf. 101 d).

Let us try now to characterize the notion chain relevant for the definition of accessible chain. As indicated in section 6.2., the clitic which is in an $\overline{A}$-position and the empty element in subject position coindexed with this clitic may constitute an accessible chain (cf. 91 a-b) (cf. 110 a). Similarly a trace of an NP and its antecedent may constitute an accessible chain (cf. 110 b). However,

a wh-trace and its antecedent do not constitute a chain (cf.110 c):

110-a) ... clitic_i ... x_i ——constitute a chain

b) NP_i... t_i... ——constitute a chain

c) wh_i... t_i... —— do not constitute a chain

To (110), we should add the facts concerning post-verbal subjects in Italian (cf.chapter 1): in chapter 1, it was indicated that the empty element left in subject position and the post-verbal NP constitute a chain (cf. P.L.):

110-d) βP [VP NP^p]

Notice that if we restrict the notion chain to A-chain (i.e. to chains whose members are in A-positions) as in P.L. (cf.chapter 1), we, automatically, exclude (110 c) since the wh-element in COMP is in an $\bar{A}$-position but we also exclude (110 a) under the assumption that clitics are in an $\bar{A}$-position (cf.the previous chapter). If, however, we do not make this restriction,i.e. if the notion chain is not restricted to A-chains, we will need to exclude (110 c) from the relevant set of chains. This may be taken as indicating that clitics are in A-positions, at least in French, contrary to the evidence presented in Huybregts's work, Aoun and Sportiche (1981a) and in the previous chapter. Another possibility may be to assume that the relevant notion is that of <u>θ-chains</u>, i.e.chains whose members are in positions which may -although need not- receive a θ-role. This proposal will include chains whose members are in an A-positions (an A-position may receive a θ-role) or clitic-positions (if it is assumed that clitics, although in $\bar{A}$-positions, may receive a

θ-role from the elements they are attached to or from the NP position they are coindexed with and will, correctly, prevent wh-elements in COMP from being in a chain since the COMP-position does not receive nor inherit a θ-role. If the latter proposal is adopted, the definition of chains adopted in the previous chapter will have to be reformulated in obvious ways[48].

SUMMARY OF PART III.

Recapitulating the content of Part III, we started by indicating that in the embedded clausal complement of causatives, $\bar{V}$-preposing may apply or not (cf. section 6.1.). In these constructions, the embedded lexical subject functions as an opaque subject blocking the cliticization of any complement to the higher clause. However, when this embedded subject is itself cliticized, it becomes transparent and does not prevent the cliticization of any complement to the higher clause.
To account for this, we introduced the notion of accessible chain and replaced in the definition of governing category, the notion of accessible SUBJECT by that of accessible chain. As a consequence of this change, in delimiting the governing category for an element α, it is necessary to take into consideration not only the governor of α and its accessible SUBJECT but also the whole chain containing this SUBJECT. The essence of this proposal amounts to treat the trace and its antecedent(s) as a discontinuous element which, as a whole, is relevant for delimiting the governing category (cf. section 6.2.).

Pursuing the study of causative constructions, it was noted following R.V., that when $\bar{V}$-preposing does not apply, the embedded lexical subject is an accessible

SUBJECT to all complements hanging from S or not. However, when $\overline{V}$-preposing applies, this lexical subject counts as SUBJECT for the elements bearing the same superscript (i.e. for elements in the same argument structure). In other words, to identify the SUBJECT, we have to take into consideration not only the nature of the element (AGR or [NP,S]) and its position but also the argument structure in which it appears: an element may not be the most prominent (SUBJECT) with respect to the elements which are not in the same argument structure (cf. section 6.3.).

The analysis of causative constructions put forward in sections 6.2. and 6.3. provided a unified account for cliticization and pronominal coreference. This, exactly, is what we expect if the domain in which an anaphor (such as NP-trace) must be bound (cf. principle A of the binding theory) is the one in which a pronoun must be free (disjoint reference) (cf. principle B of the binding theory). It, also, provided a mean to specify the relevant notion of chain in the grammar: the notion "thematic-chain" (θ-chain) was introduced (cf. section 6.4.).

APPENDIX OF PART III: ON THE RELEVANCE OF THE BINDING THEORY IN CAUSATIVE CONSTRUCTIONS.

In sections 6.2., 6.3., the analysis presented to account for the distribution of clitics in causative constructions makes a crucial reference to the binding theory, or for that matter to the SSC. As indicated in section 6.3., for French causative constructions, an analysis based on the binding theory is attractive because it captures a significant generalization: it provides a unified account for

cliticization and pronominal coreference in these constructions (cf. also footnote 40). In this appendix, we will discuss some apparent counter-examples to the relevance of the SSC or the binding theory in French causatives. It will appear that these apparent counter-examples are not problematic at all.

Recall that in section 6.2., it was indicated that in causative constructions, the subject of the embedded clause is opaque with respect to the non-direct object which has not been fronted by $\overline{V}$-preposing but that this subject becomes transparent when cliticized onto the causative verb. The relevant contrast was the one illustrated in (90 c-d) (repeated as A1 a-b) respectively):

A1-a)* Jean y_i fera mettre ce livre à Pierre x_i

"Jean will have Pierre put that book on it"

b) Jean leur y_i fera mettre ce livre x_i

"Jean will have them put that book on it"

In (A1 a), the subject is opaque and prevents the cliticization of the non-direct complement. It, however, is transparent in (A1 b). If this analysis is correct, we expect the subject to become transparent in constructions parallel to (A1 a-b) where $\overline{V}$-preposing did not apply:

A2-a)* Pierre y_i a laissé Paul mettre le livre x_i

"Pierre let Paul put the book on it"

b) Pierre les y_i a laissé mettre le livre x_i

"Pierre let them put the book on it"

In (A2), $\overline{V}$-preposing did not apply. As expected,in (A2 a), the non-cliticized subject of the embedded clause, is opaque and prevents the non-direct object from being

cliticized onto the causative verb. In (A2 b), however, where the subject is cliticized onto the matrix verb, we expect this subject to become transparent and to allow the cliticization of the non-direct object onto the causative verb. The fact is that (A2 b) is grammatical for some speakers and ungrammatical for others. To account for this dialectal variation, some remarks are in order.

In Chomsky (forthcoming), it is suggested that cliticization is restricted to constructions in which the source of the clitic (i.e. the empty position the clitic is related to) is a thematic argument of V. Chomsky's suggestion is motivated by the discussion of ne-cliticization from post-verbal subject position in Italian. An element originating in the post-verbal subject cannot cliticize onto the verb in Italian (cf. chapter 1, section 4.3.2.):

A3- * <u>ne</u> telefonato molti
of-them many telephone
"many of them telephone"

Recall that the subject receives its thematic role from the VP and not from the V in P.L. Since the post-verbal subject is not a thematic argument of the verb, the ungrammaticality of (A3) is straightforwardly accounted for[49].

Similar assumptions are put forward in Vergnaud (forthcoming) where it is indicated that an element α cliticizes onto β iff α receives its Case from β, and in Aoun (1979) where it is indicated that each argument of α receives a specific index from α which may be realized as a Case-feature and/or θ-feature. The following

generalization is also suggested: an element α clitizes onto β iff it is coindexed with β (cf. footnote 37)[50]. This amounts to saying that for an element of a clause α to cliticize onto the verb of a clause β, two conditions must be met:

A4-a) The subject of α must be transparent.

b) The cliticized element must be an argument on the verb in β (cf. footnote 50).

In R.V., it is indicated that in the causative constructions of French, the embedded verb becomes "thematically related" to the causative verb. Informally speaking, the causative and the embedded verb form a complex verb. In that case, the arguments of the embedded verb become arguments of the complex verb. They furthermore indicate that this complex verb formation occurs only when $\overline{V}$-preposing applies.

With this in mind, let us return to (A2 a-b) where $\overline{V}$-preposing did not apply. Given what we said, it is not surprising that some speakers do not accept (A2 b) as a grammatical sentence. Assuming as indicated in R.V., that the complex verb formation occurs only when $\overline{V}$-preposing applies, condition (A4 b) will not be satisfied; thus, y will not cliticize onto the causative verb. As for the speakers accepting (A2 b), it is plausible to assume that for them, the complex verb formation occurs in causative constructions even when $\overline{V}$-preposing does not apply. It also may be the case that (A2 b) is derivatevely generated; we will not develop this last remark (on derivative generation, cf. George 1980 and Stowell 1981).

If the approach suggested in the preceding paragraph is correct, we expect constructions where (A4 b) is irrelevant,

i.e. where (A4 a) is a necessary and sufficient condition, to be grammatical even for the speakers rejecting (A2 b). This seems to be the case as evidence by constructions where respectivement ("respectively") occurs.

As indicated in Rouveret (1975), respectivement must be associated with a noun phrase which has to be interpreted distributively. The association between respectivement and its antecedent is subject to the Specified Subject Condition (SSC) as illustrated in (A5) where the SSC prevents respectivement from being associated with the subject of the matrix clause; it can only be associated with Marie which does not allow the distributive interpretation:

A5- Pierre et Jean ont laissé Marie parler
"Pierre and Jean let Marie talk

respectivement de littérature et de cinéma
respectively about litterature and movies"

However, as indicated in Milner (1979),if the subject of the embedded clause is cliticized onto the matrix verb, respectivement may be associated with the matrix subject: the distributive interpretation seems to be available.

A6- Pierre et Jean l'ont laissé parler respectivement
"Pierre and Jean let her talk respectively

de littérature et de cinéma
about litterature and movies"
(The intended interpretation roughly is:"Pierre and Jean let her talk one about litterature and the other about movies",cf.Milner 1979).

Finally, consider the following sentences discussed in R.V.:

A7-a)* Marie y a fait se rencontrer Pierre et Jean
Marie in it made each other meet Pierre and Jean
"Marie had Pierre and Jean meet there"

b)* Marie les y a fait se rencontrer
Marie them in it had each other meet
"Marie had them meet there"

One way of accounting for the ungrammaticality of (A7 b) is to assume that the complex verb formation does not apply there, i.e. that condition (A4 b) is not satisfied. In that case, the clitic y cannot attach to the causative verb faire. What prevents the complex verb formation from applying in (A7 b)?
The complex verb formation amounts to saying that the embedded verb looses the ability to assign Case and/or θ-role, i.e. it is not anymore an autonomous element. It is the complex verb which assigns Case and/or θ-role. Let us assume, as argued in the following chapter, that clitics absorb the Case and/or the θ-role assigned by the element they are attached to. If this is correct, the fact that a clitic is attached to the complex verb clearly indicates that the complex verb formation did not apply since this verb still is an autonomous Case and/or θ-role assigner: it assigns the case and/or the θ-role which are going to be absorbed by the clitic. (For relevant considerations along similar lines,cf. Wehrli 1981).

Let us turn, now, to other apparent counterexamples to the relevance of the binding theory (or the SSC) in French causative constructions. Consider the following pair from Wehrli (1981):

A8-a) Jean fait douter Marie de ses capacités
"Jean makes Marie doubt her abilities"

b) Jean en fait douter Marie
"Jean makes Marie doubt it"

Recall that in causative constructions, the complement of the embedded clause escapes the effect of the SSC when it is fronted by $\overline{V}$-preposing. In (A8 a), however, the complement has not been fronted by $\overline{V}$-preposing; we, thus, expect this complement to be subject to the SSC. In other words, we expect the cliticization of this complement onto the causative verb to yield an ungrammatical result. This, however, is not the case as indicated by the grammaticality of (A8 b). In brief, the SSC seems to make a wrong prediction.

The problem raised by sentences (A8 a-b) dissolves if the following remarks are taken into consideration. As indicated in P.L. and Stowell (1981 a), case-assignment requires adjacency: in order for a direct object to get accusative Case, it must be adjacent to its case-assigner the verb (cf. Stowell 1981 a and Van Riemsdijk 1981 for an extensive discussion of the adjacency requirement). With this in mind, let us return to sentences (A8 a-b). In (A8 a), the subject which becomes a dependent of the fronted verb, receives accusative Case from this verb by virtue of being governed by and adjacent to it. In (A8 b), where cliticization takes place, nothing prevents from considering that the empty element coindexed with the clitic has been fronted with the verb by $\overline{V}$-preposing. In that case, the representation of (A8 b) would be as in (A8 c):

A8-c) Jean en_i fait $[_{\overline{V}}$ douter x_i $]$ Marie

Thus, the empty element $\underline{x}_i$ escapes the effect of the SSC, because it is fronted with this the embedded verb by $\overline{V}$-preposing. Notice, that in (A8 c), the adjacency requirement is not violated since the non-case-marked empty element $\underline{x}_i$, like other non-case-marked empty elements, do not count for adjacency (on this matter cf. P.L. and Pulleyblank 1980). In brief, even though the complement of the verb has not been fronted by $\overline{V}$-preposing in (A8 a), nothing prevents $\overline{V}$-preposing from fronting this element in (A8 b). Thus, the representation of (A8 b) will be as in (A8 c). In that case, the empty element coindexed with the clitic will escape the effect of the SSC; whence the grammaticality of (A8 b). This takes care of sentences (A8 a-b).

Another apparent problem facing an SSC account for the distribution of clitics in French causative constructions is illustrated by the following sentence also cited in Wehrli (1981):

A9- Jean lui fait porter une lettre à Marie
"Jean makes him bring a letter to Marie"

Examples such as (A9) are discussed in Ruwet (1972). In (A9) ,the clitic <u>lui</u> is interpreted as the subject of the embedded clause and not as the indirect object of the verb <u>porter</u>. As indicated in Wehrli (1981), in order for SSC to account for (A9), it is necessary to assume that $\overline{V}$-preposing fronts the verb and the direct object but not the indirect object. Not being fronted, the indirect object will, thus, be subject to the SSC (cf. section 6.3). In brief, the structure of (A9) is (A9 a) and not (A9 b):

A9-a) Jean fait $[_{\overline{V}}$ porter une lettre $]$ à NP à NP
subj. ind.obj.

b) Jean fait [porter une lettre à NP] à NP
ind.obj. subj.

Such an analysis, however, directly conflicts with Ruwet's observation that for the speakers accepting (A10), it is the second à-phrase and not the first which is understood as the subject of the infinitival verb (cf.Wehrli 1981):

A10- Jean fait porter une lettre à Marie à Paul
"Jean makes Paul brings a letter to Marie"

Wehrli (1981) indicates that the correct interpretation of (A10) follows if the whole phrase has been raised by $\overline{V}$-preposing, i.e. it follows if the representation of (A9) is (A9 b). But if so, the cliticization of the indirect object in (A9) should escape the effect of the SSC: in other words, there should be an interpretation where lui is construed as the indirect object of the verb porter.

Note that for the argument to go through, it must be assumed that the ordering of the à-phrase in (A10) is not a superficial phenomenon. The following considerations seem to suggest that this is the case. Let us distinguish following Williams (1980),between "external" and "internal" arguments. Roughly speaking, the subject (on a sentential level) is the external argument and the complements are the internal arguments. Now, recall the discussion of the internal distribution of arguments in noun phrases which was raised in chapter 1, footnote 4. As indicated there, the characterization of the subject in an NP seems to be determined according to a thematic hierarchy (cf.Zubizarreta 1979):

A11-a) Possessor (or source)
b) Agent
c) Theme

Thus, in the following sentences:

A12-a) le portrait d'Aristote de Rembrandt de Pierre
"the portrait of Aristotle of Rembrandt of Pierre"
(theme) (agent) (possessor)

b) le portrait d'Aristote de Rembrandt
"the portrait of Aristotle of Rembrandt"
(theme) (agent)

c) le portrait d'Aristote
"the portrait of Aristotle"
(theme)

According to the thematic hierarchy (A11), de Pierre will be characterized as the subject in (A12 a), de Rembrandt as the subject in (A12 b) and d'Aristote as the subject in (A12 c). Recall also that this hierarchy is at work for de NPs arguments only. By assuming that de NP complements are real NPs and not PPs; i.e. that de is simply a case-marked as argued in Vergnaud (1974), it is possible to say that the thematic hierarchy inside a noun phrase is at work for NPs arguments but not for PPs: only NPs can be subject (cf.chapter 1,footnote 4). But notice also that the subject in (A12) is always the most peripheral with respect to the other arguments: it is the "external" argument with respect to the other arguments. In brief, there seems to be a strategy which places the subject at the periphery of the noun-phrase in (A12).

It is plausible to suggest that in (A10), a similar strategy is at work: in the sequence of two à NPs, the subject is the most peripheral. In causative constructions, this

strategy seems to be at work for à NPs in case of ambiguities. If, for some reasons,for instance selectional restrictions, no ambiguity arises, the subject does not need to be the most peripheral as illustrated by the two possible orderings in (vi)(cf.89 a):

vi-a) Jean fera comparer cette sonatine à Paul à une symphonie

b) Jean fera comparer cette sonatine à une symphonie à Paul
"Jean will have Paul compare that sonata with a symphony"

It, also, is worth noting that the strength of this strategy seems to vary from speaker to speaker. For these reasons, it is plausible to view this strategy as a disambiguating strategy rather than an absolute syntactic constraint. If this approach is on the right track, the problem raised with respect to (A9) dissolves: the representation of (A9) will be as in (A9 a) even though the subject is the most peripheral in (A10). In other words, sentences such as (A9) do not constitute a problem for an SSC account for the distribution of clitics in French causative constructions.

Recapitulating the content of this appendix, we started by reviewing some apparent counterexamples to the relevance of the SSC in French causative constructions.Upon more scrutinity, these counterexamples appeared not to be problematic at all. Before closing this appendix,it is to be mentioned that our analysis does not pretend to be exhaustive. Obviously, there are many other aspects of cliticization in causative constructions such as the various co-occurence restrictions between clitics dis-

cussed in Emonds (1976)[51]. Our main concern was to study the behavior of the SSC, or for that matter the binding theory, in French causative constructions. This behavior appeared to be of some theoretical interest: it motivated the replacement of the notion "accessible SUBJECT" by that of "accessible chain" (cf. section 6.2.) and indicated that in determining what counts as SUBJECT, the notion "argument structure" is relevant: the SUBJECT is the most prominent element with respect to the elements in the same argument structure.

FOOTNOTES.

1 -cf. footnote 55 of the previous chapter.

2 -The fact that there exists in Italian a rule which attaches INFL (AGR) to the verb is irrelevant for B.R.: whether the rule applies or not, the subject position will be ungoverned since AGR is not a governor for them (cf. P.L. and the previous chapter where this rule is discussed).

3 -In the framework assumed in the previous chapter, this definition will have to be extended to include the notion accessible SUBJECT.

4 -If it turns out to be necessary, the indexing mechanism used in B.R. to indicate "argumenthood" is to be considered as different from the one applying between AGR and NP in that it is not subject to the well-formedness condition i/i (cf.15). Thus it is possible to assume that AGR is co-subscripted but not co-superscripted with the subject NP, cf. footnote 41.
Another possibility suggested by N.Chomsky, p.c., is to assume that indices never percolates. Thus, in (19), PRO and AGR will not be coindexed. Since AGR governs an element α iff it is coindexed with α (cf. the previous chapter), it follows that AGR will govern the head PRO of the NP (but cf. footnote 7).

5 -D. Salammanca and E. Torrego point out that there seem to be some speakers accepting (30). Although this is not directly relevant to the discussion that will follow, this may be taken to indicate that (26 a) is not at work for these speakers or that <u>ninguno</u> is to be treated as a flagged variable (cf. Aoun, Hornstein and Sportiche 1981 , and Hornstein 1981 , escaping thus, ECP (or prin-

ciple A of the bidning theory).

6 -The ungrammaticality of (32 a) was first pointed out for French by Milner (1979) where a different analysis ~~of nega~~tion than the one suggested in Kayne (1979) is outlined. The solution which will be presented is neutral with respect to these two analysis.

7 -This may be achieved by assuming that INFL has an index which percolates to the elements dominated by INFL. Note that the percolation is not subject to the well-formedness condition i/i (cf.15). The reason may be that all the elements contained in INFL may be viewed as features (and not independent categories) specifying the same matrix INFL: thus, INFL will contain the set of features ($\pm$ tense), (β number, γ gender, α person, i.e.AGR) and ($\pm$negative) specifying the matrix INFL. Instead of a deletion rule such as (24), which deletes <u>no</u> when preceding by <u>ninguno</u>,we will have a rule which specifies the contexts in which (+negative) is phonetically realized.

8 -For the speakers consulted, the sentence is still ungrammatical (at best slightly less ungrammatical)when the subject is in post-verbal subject position:

i- no esta en la mesa la foto de ninguno
"the picture of no one is on the table"

I wish to thank D. Salamanca,E.Torrego and M-L.Zubizarreta for their help.

9 -The same facts are illustrated in Italian (thanks to M-R.Manzini):

i-* la foto di nessuno è sul tavolo (cf.32 a)
"the picture of no one is on the table"

ii- non voglio la foto di nessuno sul tavolo
"I neg want the picture of no one on the table"

In French, the intuitions are obscured by the marginal character of the "ne...personne" constructions (cf. Kayne 1979).

iii-a)* je n'exige que personne vienne
"I neg want no one to come"

b)? je n'exige que la police arrête personne
"I neg want the police to arrest no one"

As pointed out by N.Ruwet, there are speakers who reject both (i a) and (i b). It comes, thus, as no surprise that judgments are more obscure for (iv):

iv- je n'exige que la photo de personne soit détruite
"I neg want the picture of no one to be destroyed"

As pointed out by J-C.Milner (p.c.), the choice of the matrix verb <u>seems</u> to be relevant in French: (v) is worse than (iv) (cf.Milner 1979):

v- je ne crois que la photo de personne est sur la table
"I neg. think that the picture of no one is on the table"

Nevertheless, Milner indicates that to the extent that a distinction can be made, (vi) is worse than (iv):

vi- * la photo de personne n'est sur la table
"the picture of no one neg. is on the table"

R.S.Kayne (p.c.) points out that <u>aucun</u> does not seem to behave like <u>personne</u>:

vii- le sourire d'aucun garçon ne m'accueillera ce soir

"the smile of no boy neg.will welcome me tonight"

However,according to the speakers consulted, (vii) seems to have the same status as (vi) when garçon is omitted:

vi-a) le sourire d'aucun ne m'accueillera ce soir

and it is possible to improve (vi) as in (vii a):

vii-a) la photo de personne d'autre n'est sur la table
"the picture of no one else neg. is on the table"

In brief, sentences (vii) are to be treated on a par; they are to be contrasted with sentences (vi).The analysis suggested in the text straightforwardly accounts for sentences (vi). As for sentences (vii),it is possible to assume that ne is not coindexed with personne (cf. vii a), aucun (cf.vii). Hence i/i will be irrelevant. The fact that ne is not coindexed with personne and aucun in sentences (vii-vii a) may follow from the fact that ne is not a scope indicator of these elements. In that case, it is plausible to assume that the nominal expressions personne d'autre (vii a) and aucun garçon (vii) do not undergo Quantifier Raising.

If this suggestion is correct,we expect these nominal expressions not to display the standard subject/object asymmetry characteristics of elements which undergo movement.This seems to be the case, as illustrated in(viii):

viii-a)? je n'exige que personne d'autre vienne
b)? je n'exige qu'aucun garçon vienne

According to the speakers consulted sentences (viii) are better than (ix) which undergo movement in L.F. (cf.Kayne 1979 and the previous chapter).

ix-a)* je n'exige que personne vienne

b)* je n'exige qu'aucun vienne

Some relevant considerations concerning these constructions are discussed in chapter 4.

10 -It is to be pointed out that there seem to be speakers accepting (38 b).

11 -Cf.Milsark (1974),Stowell (1978) and the references mentioned there for the analysis of these constructions.

12 -For this analysis to go through,it is necessary to assume that lowering, like Move α , applies in a successive fashion. In other words, in (38 b),Move α raises there to the subject position of S_2 first then to the subject position of S_1 .Similarly, in (41 a), we need to assume that lowering lowers there to the subject position of S_2 first then to the subject position of S_3. It also is necessary to assume that PRO_1 and e_2 in (41 b) do not get reindexed by free indexing. In the conclusion of Part II of this chapter, we will argue that A-indexing -i.e.indexing between elements in A-position- does not apply in L.F. (cf.Chomsky, forthcoming). This,automatically,will prevents free indexing from applying between PRO_1 and e_2 since these elements are in A-position.

It may turn out that these assumptions are relevant for the observation made in footnote 10. There,it was pointed out that there seem to be speakers accepting (38 b). It may be the case that for these speakers, the constraint concerning the successive application of lowering or the one concerning A-indexing in L.F. are relaxed. Note also that, contrary to there,it can be raised twice (cf.38 b):

i- it_i is expected e_i to appear e_i to be likely that John will come.

It, thus, may be the case that for the speakers accepting (38 b), there is treated like it. Although these considerations are of interest, they will not be pursued, cf. footnote 15 and chapter 4 for some relevant discussions.

13 -We will disregard the intermediate reading where some senator is lowered and attached to the intermediate S; it is irrelevant for our discussion. For an extensive discussion of constructions involving doubly raised there and doubly raised quantifiers, the reader is referred to the forthcoming work of Mats Rooth

14 -The insertion process will be dispensed with in subsequent sections.

15 -There differs from the quantifier in that it must be lowered. Recall that there and the post-verbal NP (someone in 38') are co-superscripted whereas the raised quantifier is not co-superscripted with its trace. A possibility is then to assume that co-superscriped elements must be interpreted in the same clause (another locality requirement, cf. Koster 1978 , Burzio 1981). In other terms, it is possible to assume that the agreement applying between co-superscripted elements is local; lowering will thus be necessary to satisfy this locality requirement. The implication of this proposal will not be further pursued. Note, however, that it raises some questions with respect to the relation holding between it and the clause as in (i) (cf. footnote 12):

i- it seems that John left.

In chapter 4, a more principled account of the obligatory lowering of there will be given.

16 -For the ungrammaticality of sentences such as (i), cf.

the summary of Part II, chapter 1.:

i- * there is unclear $[_S$ how $[_S$ t to be a unicorn in the garden $]$ $]$

L.Rizzi (p.c.) points out that the analysis we outlined correctly predicts that the quantifier in (ii b), contrary to the one in (ii a) may only have a wide scope interpretation:

ii-a) many senators seem to be incompetent

b) many senators$_i$ seem to each other$_i$ to be incompetent.

Consider the L.F. representation of the narrow scope interpretation of (ii b),(irrelevant details omitted):

iii- PRO seems to each other $[_S$ many senators to be incompetent $]$

In (iii), the reciprocal <u>each other</u> is free: the non-referential PRO cannot count as the antecedent of this reciprocal.Therefore, (iii) will be ruled out by the binding theory. Note that we have further evidence for the L.F. nature of the biding theory since at S-structure -i.e. before lowering- no binding theory violation occurs in (ii b).

17 -Cf.however,P.L.,where it is argued that this classification is to be refined to include quasi-arguments.

18 -A similar proposal for the phonetic realization of pronouns was first suggested in Jaeggli (1980) where the following rule is given:

i- Pronounce PRO if it has Case and is c-governed (= categorial government)

By assuming that case-assignment is a special instance of government,i.e. that case-assignment occurs when a governing category happens to be a Case-assigner (cf.P.L.) the c-government requirement may be dropped.Thus, our

proposal may be viewed as a slight modification of Jaeggli's proposal.

19 -It is interesting to note in this respect that there seem to be no clear cases where NP-traces are spelled out as pronouns. Given the fact that they lack Case, this comes as no surprise, (cf. however, Burzio 1981 where such a case seems to occur; however, it is not clear that the emphatic pronouns discussed there are not cases of apposition rather than a realization of the NP-trace).

Note also, that with respect to the visibility convention suggested in Aoun (1979) and alluded to above, Case seems to be a sufficient condition for an element to be visible in P.F.: wh-traces, for instance, which are case-marked are relevant for P.F. mechanisms such as contraction (cf. P.L., Lightfoot 1977 , Jaeggli 1980 a, and the references mentioned there).

20 -Contrary to the normal resumptive pronouns, these spelled out variables do obey the usual constraints on movement such as the Complex-NP-Constraint (cf. Aoun 1981).

21 -Cf. Chomsky & Lasnik (1977) for further details concerning <u>it</u>-insertion.

22 -This ordering requirement will be dispensed with in the following sections.

23 -Consequently the definition o anaphors adopted in the first part of the previous chapter (cf. 8) will have to be reformulated accordingly:

i- if α is an empty element but not a <u>pronoun</u> it is an anaphor.

Recall that in the previous chapter, the naturalness of definition (8) repeated here for convenience was questioned:

8- if α is an empty element but not a <u>variable</u> it is an anaphor .

and it was indicated that (8') no doubt represents an improvement:

8'- if α is an empty element it is an anaphor.

A priori, it seems that definition (i) is subject to the same criticism as (8): what are the natural class (es) singled out by (i)?

Two classes are singled out by (i): the first is constitued by PRO, NP-traces and (non-phonetically realized) variables (cf.section 3.3.2.) and the second by the phonetically realized pronouns. In section 3.3.2. it was assumed that an element with an incomplete matrix is an anaphor. It follows from this assumption that reflexives, reciprocals,are anaphors since they lack inherent reference (cf. P.L.). It also follows that non-phonetically realized pronominals (i.e. PROs) -whether referential or not- NP-traces and wh-traces are anaphors too since they cannot be phonetically realized. In brief, the first class containing PROs, NP-traces and wh-traces is natural; all the members of this class by opposition to the second class share a common feature: they have an incomplete matrix. Actually a stronger conclusion is implied: (i) does not need to be stipulated and follows from the assumption of section 3.3.2.; therefore the naturalness of (i) cannot be raised.

24 -In Koopman & Sportiche (1981), the weak cross-over effects are accounted for by the Bijection Principle which states that there is a one to one relation between $\bar{A}$-binders and variables. Thus, consider:

i- * which $girl_i$ did her_i mother beat x_i

In (i), which girl locally $\bar{A}$-binds two variables her and x_i whence a violation of the Bijection Principle. As indicated by these authors, in order for this account to be maintained, the definition of variable must be generalized to include pronoun as well:

ii- α is a variable iff

a) α is an empty element or a pronoun

b) α is an A-position

c) α is locally $\bar{A}$-bound.

Note that under the approach outlined in section 5 according to which there is no type distinction between pronouns and empty categories, the fact that pronouns can be interpreted as variables comes as so surprise. In fact, (ii a) makes sense only if pronouns and empty categories are of the same type. But in that case, (ii a) can be reformulated as follows:

ii- α is a variable iff

a) α is an empty element

b) α is in an A-position

c) α is locally $\bar{A}$-bound.

25 -This is a transposition of the results reached in P.L. for non-phonetically realized pronominals (PROs).

26 -For concretness, it is possible to assume that the feature (+Q) (=Quantifier) is among the features copied by Move α onto the empty element when a (quasi-)quantifier (such as some, every, wh-elements...) is extracted.

27 -Non-Q-variables are only subject to principle A of the binding theory and, nevertheless, must be $\bar{A}$-bound and not A-bound. This indicates that the stipulation that variables are $\bar{A}$-bound cannot be derived from the fact that they are subject to principles A and C of the

binding theory contrary to what was tentatively assumed in footnote 17 ,Part I,chapter 1.

28 -The content of this presentation is from Rouveret & Vergnaud (1980). The modifications,in their majority, are a restatement of their analysis in the G.B.-framework.

29 -Note that it is implicitely assumed that in the same clause,two elements may not assume the same G.F.This is reminiscent of such well-formedness conditions as the θ-criterion (two elements in the same clause may not assume the same θ-role,cf. P.L.), the biuniqueness principle (two elements in the same clause may not have the same Case,cf.Vergnaud,forthcoming);cf.Aoun (1979)for an attempt to subsume these two well-formedness conditions under a more general one.

It goes without saying that the fact two <u>à + NPs</u>,for instance, occur in the same clause does not mean that they have the same Case:

i- Jean a fait comparer cette sonatine à Paul
"Jean had Paul compare that sonata

à une symphonie
with a symphony"

As evidencedby their corresponding clitics, <u>à une symphonie</u> and <u>à Paul</u> have different Case:

ii-a) Jean fera y comparer cette sonatine à Paul
"Jean will have Paul compare that sonata with it"

b) Jean leur fera comparer cette sonatine à
"Jean will have them compare that sonata with

une symphonie
a symphony"

30 -This may be taken as the insight behind the à-insertion rule of R.V. This account does not mean that the à-insertion rule is not subject to further conditions; cf.R.V. for the discussion of such conditions (cf.also Williams 1981a where it is indicated that the à-insertion rule may be affected by considerations such as the thematic roles assigned to the elements in the clause embedded under the causative verb).

31 -Actually, this presentation is somewhat misleading,cf. R.V. where it is indicated that the fact that $\bar{V}$-preposing affects $\bar{V}$ does not need to be stipulated; it follows from case-theory.

32 -This domain is the embedded clause; i.e. the embedded clause contains a governor (the verb) and an accessible SUBJECT for the trace of the clitic. The embedded clause, therefore, is the governing category for this trace.

33 -For expository purposes, we will informally distinguish between opaque and transparent subjects. Roughly speaking, the subject of a clause α is opaque when it prevents an element in α from being related to an element outside α; it is transparent otherwise. Thus, in (90 c), the subject of the embedded clause (à Pierre) is opaque because it prevents the cliticization of y onto the matrix verb. In (90 d), the cliticized subject (leur) is transparent because it does not prevent the cliticization of y.

34 -We will return to the consequences of this proposal in section 6.4.

35 -The structure where the subject is cliticized onto the matrix verb and where $\bar{V}$-preposing applies:

i- NP clit + causative [$\bar{V}$-preposing x_i...]

is a special case of (95 a). The analysis suggested to account for (95 a) also accounts for (i).

36 -The fact that $\overline{V}$ is adjoined to COMP, to the embedded $\overline{S}$ or outside the embedded $\overline{S}$ is not directly relevant. As it will become clear, we only need to assume that the fronted direct object is not c-commanded by the subject of the embedded clause. According to the definition of c-command given in Aoun & Sportiche (1981) and adopted in chapter 1, $\overline{V}$ will have to be adjoined to $\overline{S}$ or outside the embedded $\overline{S}$ but not to COMP, cf. Burzio (1981) and Vergnaud (forthcoming) for the derived structure of $\overline{V}$-preposing. It also is to be pointed out that the fact that "$\overline{V}$-preposing" is generated by a movement rule or base-generated is irrelevant for our purpose.

37 -Cf. Aoun (1979) where it is considered that each argument of α receives a specific index from α which may be realized as a case-feature and/or θ-feature.

38 -In other words, in (99 a-b), we need a special indexing rule which assigns the index of $\overline{V}$ to the subject adjacent to $\overline{V}$. Note that in (99 b), the PP hanging from S does not become dependent of $\overline{V}$. This may follow from the fact that the special indexing rule which assigns the index of $\overline{V}$ to an element α requires adjacency between $\overline{V}$ and α. We also need to assume that there is no rule assigning the index of VP to the PP hanging from S. Cf. Williams (1974), Hornstein (1977), Weinberg & Hornstein (1981) for some relevant discussions concerning PPs hanging from S. The PPs hanging from S enter into some selectional restrictions with the tense of the verb (cf. Hornstein 1977) and may be viewed as selected by INFL.
For similar considerations, cf. footnote 44, where it is indicated that after $\overline{S}$-deletion, the subject of the em-

bedded clause becomes dependent of (governed by) the verb which triggers $\bar{S}$-deletion. There too, the incorporation process requires adjacency: $\bar{S}$-deletion requires adjacency in order to apply.

39 -Cf. the discussion of the ā-insertion rules discussed in section 6.1..(97 b) is a simplified version of the original proposal given in R.V..Apart some modifications, the analysis outlined in this section may be viewed as a restatement of the analysis given in R.V. in a different framework where the notion accessible SUBJECT is incorporated.

40 -This amounts to claiming that any analysis which denies the relevance of the binding theory, or for that matter the SSC, in French causative constructions,looses a significant generalization: a unified account for cliticization and pronominal coreference in these constructions.Cf. the appendix for the discussion of some apparent counterexamples to the relevance of the SSC in French causative constructions.

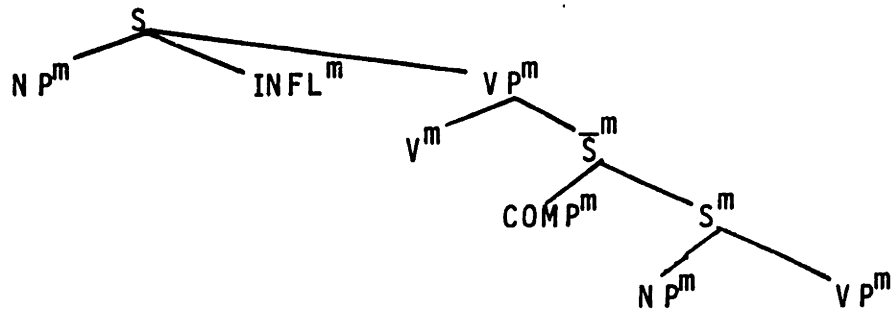
41 -Other questions will have to be answered before a representation such as (100 b) is adopted. In particular, consider the following sentence discussed in the previous chapter:

i- they said that pictures of each other would be on sale

As indicated in the previous chapter, the embedded clause does not contain an accessible SUBJECT for the anaphor <u>each other</u>; the matrix clause, however, does and thus, counts as the governing category for the anaphor. Given that AGR of the matrix clause counts as accessible SUBJECT for the anaphor, it must be in the same argument structure with this anaphor. This indicates that the embedded senten-

ce and all its elements receives (by percolation) the same index as that of the matrix INFL (irrelevant details omitted):

ii-



With respect to the analysis suggested, some obvious questions may be raised: what is the relation of the superscripting mechanism holding between the verb and its complements (cf.R.V.) and the one holding between the post-verbal NP and the subject position in Italian (cf.chapter 1) or between <u>there</u> and the post-verbal subject, cf. (iii)?

iii- there^p is a man^p in the garden

As matters stand, we have, at least, three indexing mechanisms:

a-the standard co-subscripting holding between an antecedent and its trace;

b-the superscripting mechanism holding between a governor and its complements;

c-the superscripting mechanism holding between two NP positions (cf.i).

It is clear that (a) and (c) differs from (b): (a) and (c) involve two elements of the same nature (two NPs for instance) whereas (b) involves two elements of different nature (generally an X category such as V and $\bar{\bar{X}}$ such as NP). In the previous chapter, we saw that (a) and (c) may be brought together under the notion BINDING relevant to the

definition of chains. The mechanism (b) is the mechanism needed for case-assignment or θ-assignment: an element X° assigns Case or θ-role to an element it indexes (cf. Vergnaud forthcoming, footnote 38 and Aoun 1979 ; cf. also the latter reference for the application of mechanism (b) in VSO languages).

42 -Obviously both solutions are not incompatible. That is, AGR may be in a separate chain from the one containing the subject and the variable in subject position may be in a separate chain from the one containing the wh-element in COMP.

43 -Recall that in chapter 1, it was indicated that $\bar{S}$ and not S is to be taken as the governing category. However, in (101 c) and (i), where $\bar{S}$-deletion occurs, we need to consider that the embedded clause is the governing category for the reciprocal:

i- * they believe $[_{S_1}$ $[_{S_0}$ John to have seen each other $]]$

To accomodate this with the assumption that $\bar{S}$ and not S is to be taken as the governing category, it it possible to view the so-called "$\bar{S}$-deletion" process (cf. P.L. and the previous chapter) as an $\bar{S}$-transparency process marking an $\bar{S}$-transparent with respect to the verb triggering this process (by coindexing this $\bar{S}$ for instance).

44 -After $\bar{S}$-deletion, the subject of the embedded clause becomes dependent of (governed by) the verb which triggers $\bar{S}$-deletion. We, already, have encountered a somewhat similar situation in causative verbs where the subject of the clause embedded under the causative verb becomes dependent of (governed by) the fronted verbal expression. There too, we indicated that the incoproration process requires adjacency: only the adjacent subject becomes dependent of

the verbal expression (cf. footnote 38).
Returning to the contrast between (103) and (104 b), A. Rouveret (p.c.) points out that a similar contrast holds in French.

45 - This may be the case if such a peripheral position is in a different dimension from the one containing the matrix verb and the embedded clause. (cf. Halle & Vergnaud 1981 for a multidimensional approach to phonology). Note that this peripheral position which has been identified as an $\bar{A}$-position will not be able to $\bar{A}$-bind an empty element in a different dimension if it is assumed that the binder and the "bindee" have to be in the same dimension. It goes without saying that these remarks only scratch the surface of the phenomena.

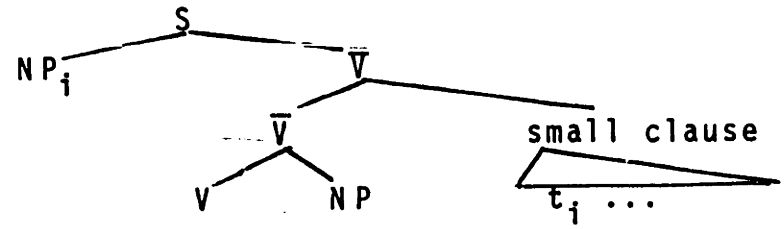
46 - If the phrasal position after seem is treated as an A-position, it will be governed by seem and will receive its case and its θ-role from the verb seem. If it is treated as an $\bar{A}$-position, it will not receive its case nor its θ-role from seem. Presumably, it will receive the same Case assigned to appositives (cf. the following chapter). As for the θ-role it is tempting to consider that it is the same as the one assigned in (i) to the clitic te (i.e. a benefactive):

i- Pierre te les frappera
Pierre you them hit
"Pierre will hit them for you".

47 - Incidentally, this discussion bears on certain issues discussed previously. Obviously, in (101 d), the empty element left by the extraction of John is not adjacent to the matrix V although it is properly governed by this verb. This constitutes a problem for the assumption that proper government requires adjacency (cf. chapter 1, foot-

note 33) unless is it assumed that small clauses are adjoined to the small VP (in the sense of Willams 1974):

i-



In that case, one may suggest that the trace is properly governed by this small VP ($\bar{V}$ in i).This solution involves an extension of the proper-governors to include such categories as $\bar{V}$. In a framework where the ECP is dispensed with, no problem arises since the trace $\underline{t_i}$ is A-bound by NP$_i$.

This discussion bears also on the various definitions of c-command discussed in chapter 1,section 4.3.2. In (i), the small clause is subcategorized by the matrix verb. If subcategorization is tied to government -i.e., if the subcategorized element must be governed by its verb, cf. P.L. and Aoun & Sportiche 1981)- the small clause must be governed by the matrix verb. This observation does not conflict with the remark of the previous paragraph: although it does not properly govern the trace contained in the matrix clause, the matrix verb may govern the small clause or even the trace contained in this small clause. The reason is that proper-government -but not government- may require adjacency. In brief, in order to be governed by the matrix verb, the small clause must be inside the VP as in (i) and not be attached to the matrix S. To this remark, we must add the result of the previous discussion where it was indicated that the object of the matrix verb does not c-command the trace contained in the small clause; or for

that matter, does not c- command the entire small clause. If the extended notion of c-command is adopted (cf.chapter1,definition10),the object NP will c-command the small clause; an undesirable result. If, however, the restrictive notion of c-command is adopted (cf.chapter 1, definition 10'), no problem arises: the object NP in (i) will not c-command the small clause.

48 -For the notion of accessible chain, the variable and its antecedent do not act as a single chain. This does not mean that for different principles, they do not act as a single chain. In other words, given the notions "A-chains" "θ-chains", it may be the case that each notion is relevant to the definition of accessibility as suggested in these sections. It is plausible to assume that for purely logical principles where operator-binding is involved, the notion of $\bar{A}$-chain will turn out to be relevant.

49 -Chomsky's suggestion is presumably too strong. It, for instance, predicts that in the following sentences where the subject of the embedded clause is case-governed by the matrix verb, cliticization of this subject or of an element inside this subject cannot occur. The reason is that the subject does not receive its θ-role from the matrix verb. The sentences, however, are grammatical:

i-a) Pierre a laissé Marie partir
"Pierre let Marie leave"

b) Pierre l'a laissée partir
"Pierre let her leave"

c) Pierre en a laissé trois partir
Pierre of them let three leave
"Pierre let three of them leave"

50 -In Vergnaud (forthcoming) and Aoun (1979),the notion of argument referred to is not that of "thematic argument".

Rather, it is the one referred to in section 6.3. where the concept of argument structure is discussed (cf.R.V.). As such, their proposals do not face the problems raised in footnote 49.

51 -As well as the animacy constraint concerning the extraction of clitics discussed in a forthcoming work by L. Rizzi who reinterprets some results of Wehrli (1981) concerning contrasts such as the following:

i-a) Jean le fait épouser à Marie
"Jean makes Marie marry him"

b)* Jean te fait épouser à Marie
"Jean makes Marie marry you".

CHAPTER 3: ON ANAPHORIZATION PROCESSES

0. Presentation.

The litterature concerning cliticization is abundant and many aspects of clitic constructions have been discussed in a generative framework (cf. the following section and the references mentioned there). Lately, a particular aspect of clitics has been brought into consideration; it concerns what is referred to as the doubling phenomenon: a doubled construction is a construction where a lexically realized NP (or PP) co-occurs with a coreferential clitic (cf. the following section for a detailed presentation of cliticization):

a) lo vimos a Juan (River Plate Spanish)
"we saw Juan"

The studies concerned with doubled constructions are mainly interested in the distribution of the pair clitic/ doubled element. More precisely, two aspects of doubled constructions have been focused on. The first concerns the following generalization (referred to as Kayne's generalization):

b) An object NP may be doubled by a clitic only if this NP is preceded by a preposition.

The second concerns the extractibility of doubled elements. In some dialects of River Plate Spanish, for instance, a doubled dative -but not a doubled accusative- can be affected by movement rules:

c)* a quién la viste? (doubled accusative)
"who did you see?"

d) a quién le han regalado ese libro? (doubled dative)
"to whom have they given that book?"

Most of the proposal which in a generative framework have been put forward to account for these phenomena are based in some way or another on the Empty Category Principle (ECP). To mention some, it is argued in Jaeggli (1980) that the non-extractibility of doubled accusatives illustrated in (c) may be directly accounted for by the ECP if this principle is restricted to empty NPs. Roughly speaking, assuming that the position filled by a doubled element is ungoverned, the empty element left by the extraction of the doubled accusative will not be properly governed, hence the derivation will be filtered out by the ECP.
Since, however, the ECP does not apply to empty PPs and since doubled datives in Spanish are PPs, the derivations where doubled datives have been extracted will not be filtered out (cf.Jaeggli 1980 for more details).

In Borer (1981), the opposite view, in a sense, is adopted. It is argued that in order to be well-formed, the empty category left by the extraction of a doubled element must be properly governed. According to this approcah,the extraction of a doubled datives in River Plate Spanish is possible not because the ECP does not apply to these elements, but rather because this position is well-formed with respect to the ECP: the empty element left by the extraction of doubled datives is properly governed by the dative clitic. As for the non-extractibility of doubled accusative, it, also, may be accounted for by the ECP if some case-agreement requirement between the governor and the governee is imposed on the ECP: assuming that the empty element left by the extraction of a doubled "accusative" and the accusative clitic (the potential proper governor) do

not , in fact, agree in Case, this empty element will not be properly governed and the derivation will be filtered out by the ECP (cf. the appendix of Part I).

It goes without saying that in a framework such as the one outlined in the previous chapters where the ECP is dispensed with, the two approaches briefly described above cannot be maintained. It, therefore, is our task not only to show that such a framework while preserving the insights embodied in these approaches can account for the different behavior of doubled elements across languages but also that this account is more satisfactory in that it does not face the problems that the analyses based on the ECP encounter.

The chapter will be organized as follows: after a brief presentation of cliticization and doubling (section 0.1.), we will review an account of Kayne's generalization originally suggested in terms of case-theory. According to this analysis, Kayne's generalization may be accounted for if it is assumed that clitics are nominal elements and as such absorb the case-feature assigned by the governing element. Since clitics absorb the case-feature assigned by the governing element, there will no longer be any available case-feature for the doubled NP. The insertion of a case-marker, which is generally a preposition, is thus, necessary; otherwise the derivation will be excluded by the case-filter (section 1).

According to another proposal, case-absorption may be generalized to "government-absorption" if it is assumed that the subcategorization feature associated with an element α governs the lexical element subcategorized by α and that

case-assignment is a special case of governance (as suggested in P.L.). Clitics may then be viewed as absorbing the subcategorization feature of the verb. As a consequence, the doubled NP will no longer be able to receive Case and the derivation will be ruled out unless a case-marker is inserted (section 2.). This approach has the advantage of being more general; it also, accounts for the non-extractibility of doubled accusatives illustrated in (c).To do this, it suffices, as indicated above, to assume that the ECP is restricted to empty NPs: since government is done via subcategorization and since clitics absorb the subcategorization feature, the empty element left by the extraction of doubled accusatives will not be properly governed. The derivation will, thus, be ruled out by the ECP. Extraction of doubled datives, however, is not prohibited: these elements are prepositional and escape as such the effect of ECP (section 2.1.).

This analysis predicts that there cannot be instances of cliticization appearing in contexts of case-assignment but not of subcategorization. It also predicts that there cannot be instances of doubled NPs which may be extracted and of doubled PPs which may not be. Both predictions appear not to be fulfilled. In Lebanese Arabic, as in other semitic languages, there are instances of cliticization appearing in contexts of case-assignment but not of subcategorization (section 3). The extraction possibilities of doubled elements, on the other hand, do not seem to correlate with a categorial difference between doubled elements· across languages, some doubled NPs and PPs may be extracted whereas some others may not; examples will be drawn from Rumanian,Modern Hebrew, French and Lebanese Arabic (sections 4.1. and 4.2.).

Furthermore, some dialectical variations of Spanish sometimes referred to as Leismo and Loismo, will indicate that it is the nature of the doubling clitic rather than that of the doubled element which determines the extraction possibilities in a given language (section 4.3.). It, therefore, will be suggested that the extraction possibilities of doubled elements is to be accounted for in terms of the θ-criterion:

I- A clitic may absorb a θ-role

Like case-absorption, θ-role absorption follows from the existing grammatical principles. Assuming that some clitics function as R-expressions (R-clitic) and some others do not (non-R-clitic), it follows from the θ-criterion that an R-clitic absorbs θ-role and cannot occur in the same chain with another argument. Thus, when an R-clitic is doubled, the doubled element will be in a separate chain and bear a θ-role similar to the one assigned to appositive or (right) dislocated elements. Like these elements it will not be in an argument-position and will not be able to undergo movement (section 5). This non-argument position will be identified as an $\bar{A}$-position and it will be suggested that there is a general prohibition concerning extraction of elements from an $\bar{A}$-position (it will also be indicated that cases of successive cyclic movement do not constitute counter evidence to this proposal):

II- Movement rules affect only elements in an A-position

It will appear that this prohibition is relevant to the considerations mentioned in chapter 1 concerning the assumption that an $\bar{S}$-breaks a chain or for that matter the ECP: these principles may be viewed as peculiar cases of the

prohibition. In this respect, a process such as $\bar{S}$-deletion is to be considered as a device that a language may use to evade the effect of the prohibition concerning extraction from $\bar{A}$-positions (section 6). The analysis outlined in sections 5 and 6 will have two implications: theoretical and typological. The first has to do with the status of the case-filter in the grammar: is it a principle which follows from the θ-criterion or not (cf. P.L.)? (sections 7 and 8). With respect to the typological implications, it will be indicated that the system suggested predicts the existence of four clitics-types which appear to occur in natural languages (conclusion of Part I).

In the second part of the chapter, the various aspects of the relation which holds between the clitic and the coindexed element will be discussed. Further evidence for the assumption that the clitic and the coindexed element form a chain will be provided in section 9.1. In section 9.2., it will be indicated that the clitic may be coindexed with an empty element or in the case of doubling, with a lexically realized NP. This clitic, however, may not be coindexed at the same time with an empty element and a doubled element. This biuniqueness relation which holds between the clitic and the coindexed element follows from various principles at work in the grammar such as the binding principles. Finally, in section 9.3., it will be suggested that in doubled constructions, the case-marker inserted in front of the doubled element anaphorizes this element. Being anaphor-(ized), the doubled element will have to be bound; the clitic will serve as an $\bar{A}$-binder of this element. This- we shall argue- is a special instance of various anaphorization processes applying in the grammar. For instance, the marker <u>self</u> (in <u>himself</u>, <u>herself</u>...) may be viewed as a marker

which anaphorizes the pronoun it is attached to. More generally, it is possible to distinguish between two kinds of anaphoric markers: the first requires the element it is attached to to be A-bound (A-anaphorizer) (self, for instance). The second requires the element to be $\bar{A}$-bound ($\bar{A}$-anaphorizer) (the case-marker inserted in doubled constructions, for instance). The existence of such anaphorization processes will provide a mean to formalize the notions proximate/abviative.

0.1. Cliticization and doubling.

In English, a (direct) object position may be filled by a full lexical element or a pronoun:

1-a) Mary likes your friends
b) Mary likes us

In French, however, the post-verbal object position may be filled by a non-pronominal element only:

2-a) Marie aime vos amis
b)* Marie aime nous

The pronominal object must appear preverbally as in (3):

3- Marie nous aime

In other environments, full lexical elements and pronouns alternate freely (the following examples are from Kayne 1975):

4-a) Marie parle de mes amis
"Marie speaks of my friends"
b) Marie parle d'eux
"Marie speaks of them"
5-a) j'ai fait ça pour mes amis
"I did that for my friends"
b) j'ai fait ça pour eux
"I did that for them"

Many personal pronouns have a different shape in a sentence like (3) than in sentences like (4-5). Compare (6) with (4 a) for instance:

6- Marie les connaît
"Marie knows them"

The form of the pronoun that occurs in environments such as (4-5) may be referred to as "strong" form. This class includes eux, nous, moi, toi, lui, elle, vous, elles. Conversely, the form of the pronoun that occurs in sentences like (6) is referred to as "weak" form or clitic. (cf. Kayne 1975 from which the content of this presentation is taken). The direct object clitics corresponding to the above strong forms are les, nous, me, te, le, la, vous, les.

The French pronominal paradigm consists of two classes at least: the NP like strong forms and the non-NP like direct object clitics. In English, the distinction does not occur. Thus, with respect to English, French differs by the existence of a process accounting for the two classes of pronoun. Informally, when pronouns undergo this process they are morphologically realized as clitics; otherwise, they are realized as full strong pronouns. This process is referred to as "cliticization" (cf. Kayne 1975 for more details).

Parallel to the direct object clitics (or accusative clitics) exemplified in (3) and (6), it is possible to isolate a class of indirect object clitics (or dative clitics) in French:

7-a) Marie parle à mes amis
"Marie talks to my friends"

b) Marie leur parle
"Marie talks to them"

In French, accusative and dative clitics are in complementary distribution with lexical elements: in the same clause, an accusative clitic or a dative clitic cannot co-occur with an accusative or a dative nominal expression, respectively:

8- * Marie les connaît mes amis (cf.6)
Marie them knows my friends

9- * Marie leur parle à mes amis (cf.7)
Marie them talk to my friends

This complementary distribution is not a necessary characteristic of cliticization. In Spanish, for instance,clitics may co-occur with a nominal element (the following material is from Jaeggli 1980):

10-a) Miguelito <u>le</u> regaló un caramelo a <u>Mafalda</u>
"Miguelito gave Mafalda a piece of candy"

b- Miguelito <u>les</u> regaló caramelos a <u>unos chicos</u>
"Miguelito gave some candy to some neighborhood

<u>del barrio</u>
Kids"

Sentences (10 a-b) illustrate cases of clitic doubling:the dative clitics (<u>le</u>, <u>les</u>) "double" the indirect object phrases (<u>a Mafalda</u>, <u>a unos chicos del barrio</u> respectively).Clitic doubling is not restricted to indirect objects; direct objects may be doubled in Spanish as well:

11- lo vimos a Guille
"we saw Guille"

Doubling of direct objects, however, does not occur in all dialects of Spanish. In Standard Spanish, there is no clitic doubling with direct objects; in the dialects spoken in the River Plate area of South America (Argentina, Para-

guay, Uruguay, including some areas of Chile), animate specific direct objects may be doubled. Of course, in all these dialects the object phrase may be absent and a clitic present:

12-a) Miguelito le regaló un caramelo (cf.10 a)
"Miguelito gave him/her a(piece of) candy"

b) lo vimos (cf.11 b)
"we saw him"

As illustrated in the previous examples, a doubling clitic must agree in number, person and gender with the doubled NP. With dative clitics, gender agreement is not visible. Accusative clitics, however, are marked for gender (cf.11) (cf. Jaeggli 1980 , and Zubizarreta 1979a for more details). The literature concerning cliticization is abundant and many aspects of clitic-constructions have been discussed.The discussions range from the generation of clitics (should clitics be generated via movement or not?) to the cases of "climbing" where clitics get attached to the causative verb rather than to the verb by which they are subcategorized (cf. Kayne 1975 , Quicoli 1976 , Milner 1978, Rivas 1977 , Rizzi 1978 , Rouveret & Vergnaud 1980 , Ruwet 1972, Strozer 1976 , Zubizarreta 1979 , Jaeggli 1980 , Borer 1981 , and the references mentioned there):

13- je les ferai manger à Jean
I them make eat to John
"I will make John eat them"

Lately, another aspect of clitics has been brought into consideration; it concerns what we referred as the doubling phenomena. The studies dealing with doubled constructions are mainly interested in the distribution of the pair clitic/ doubled element: when is doubling possible? What may be dou-

bled (NP, PP...)? What is the nature of the relation holding between the clitic and the doubled NP? Does clitic doubling interact with other grammatical processes?

This chapter will deal with these questions too. As a point of departure, I will start by laying out the problems as they were originally presented in some recent works concerned with doubled constructions and the various solutions suggested. I will then discuss these solutions and propose others when necessary.

PART I: A PARAMETRIC ACCOUNT OF DOUBLING.

1. Case-marking and cliticization.

One striking aspect of doubled constructions concerns what has been referred to as Kayne's generalization. R. Kayne has pointed out that doubling occurs only when the doubled NP is preceded by a preposition:

14- An object NP may be doubled by a clitic only if this NP is preceded by a preposition.

To illustrate (14), consider the distribution of clitics in Lebanese Arabic (henceforth L.A.). In L.A., clitics are locally attached to the verb, the noun or the preposition. Roughly, clitics are attached to the head X° of the major phrasal category $\bar{\bar{X}}$ they belong to. The head X° will be identified as the governing element of $\bar{\bar{X}}$ (cf. the definition of government assumed in chapter 1), (the relevant clitics are underlined):

15-a) šeːfito
saw-she-him
"she saw him"

b) ħkiːt maʃo
talked-I with him
"I talked with him"

c) štre:t kte:bo
bought-I, book-his
"I bought his book"

Now, when an NP is doubled, a preposition is inserted in front of it (cf.14):

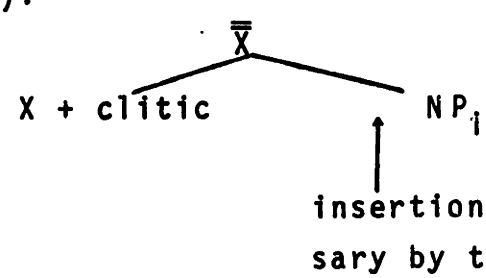
16-a) šeːfito la Kari:m
saw-she-him to Kari:m
"she saw Kari:m"

b) ħki:t mafo la Kari:m
talked-I with-him to Kari:m
"I talked with Kari:m"

c) štre:t kte:bo la Kari:m
bought-I book-his to Kari:m
"I bought Kari:m's book"

To account for generalization (14) illustrated in (15-17), it is suggested in Aoun (1979) that clitics "absorb" the case-feature. More precisely, it is assumed that case-assignment is a special case of governance i.e. that case-assignment occurs when the governing element happens to be a case-assigner (cf. P.L.). Since the clitic absorbs the case-feature assigned by the governing element, there will no longer be any available case-feature for the doubled NP. The insertion of a case-marker, such as the preposition la in (16), is necessary; otherwise, the derivation will be ruled out by the case-filter which requires every phonetically realized NP to have Case (cf.Chomsky 1980 , Rouveret & Vergnaud 1980):

17-



insertion of a case-marker necessary by the case-filter.

It is useful to point out that the absorption of the case feature by the clitic follows from the case-filter: like other nominal elements, clitics need a case-feature;otherwise, the case-filter will be violated. Note also that, for this analysis to be maintained, it is necessary to assume that the clitic and the doubled NP cannot share the same Case. This assumption, too, does not to be stipulated; it may follow from the biuniqueness condition discussed in Vergnaud (forthcoming).
This condition prevents two distinct nominal expressions from having an identical case-feature. By assuming that the clitic is nominal and that it is distinct from the doubled NP, it follows from the biuniqueness condition alluded above that the clitic and the doubled NP will not be able to share the same Case. In section 8, however, it will be mentioned that case-absorption by the clitic may be analyzed without reference to the case-filter.

2. Government and Cliticization.

In Jaeggli (1980), "case-absorption" is generalized to "government-absorption" as follows: following P.L., it is assumed that the subcategorization feature associated with an element governs the lexical element subcategorized by this element and that case-assignment is a special case of governance, (cf.supra). Clitics are, then, viewed as absorbing the subcategorization feature of the verb. As a consequence, the doubled NP will no longer be able to receive Case and the derivation will be ruled out by the case-filter unless a case-marker such as the preposition la in (16) or a in the Spanish examples (10-11) is inserted[1].

With respect to theanalysis presented in the previous section where clitics are considered to absorb the case-feature

only, the one outlined in Jaeggli (1980) has the advantage of being more general in that it also accounts for the different behavior of doubled accusatives and doubled datives in Spanish.

2.1. Extraction of doubled elements.

The analysis of (Spanish) clitics presented in Jaeggli (1980) states that a clitic absorbs government leaving a post-verbal complement position ungoverned. In sentences which contain only a clitic, a PRO appears in this position. In doubled constructions, a lexical NP may appear in this position provided that there is an alternative mechanism to assign Case to that NP. For example, in the following sentence of River Plate Spanish:

18- los vimos a los chicos
"we saw the children"

The clitic los absorbs direct object government, while the NP los chicos receives Case from inserted a.
As indicated in Jaeggli (1980), this analysis predicts that the extraction of an NP out of a clitic doubled structure should be impossible:

19-a)* ¿ a quién la viste?
"who did you see?"
b)* ¿ a quién me dijiste que Maria la vió?
"who did you tell me that Mary had seen?"

Sentences (19) illustrate the fact that a clitic doubled direct object cannot be displaced by wh-movement. If the clitic is absent, the sentences become grammatical:

20-a) ¿ a quién viste?
b) ¿ a quién dijiste que Maria vió?

The contrast between (19) and (20) may be directly accounted for if clitics are considered to absorb government: since government is done via subcategorization and since clitics absorb subcategorization features, the empty element left by the extraction of the doubled NP in (19) is not properly governed:

19-a)* ¿ a quién la visté t?

b)* ¿ a quién me dijiste que Maria la vió t

The derivation will be ruled out by the Empty Category Principle (ECP) which requires every empty element to be properly governed.

However, extraction of doubled indirect objects by wh-movement is not disallowed in Spanish:

21-a) ¿ a quién le han regalado ese libro?
"to whom have they given that book?"

b) ¿ a quién le han mandado todas esas cartas?
"to whom have thay sent all these letters?"

The same facts are repeated in relative clauses:

22-a)* Maria, a quién la he visto ayer, estaba muy preocupada

b) Maria, a quién he visto ayer, estaba muy preocupada
"Maria, who I saw yesterday, was very worried"

23- Maria, a quién le han regalado ese libro,estaba muy preocupada
"Maria, to whom they have given that book was very worried"

Relativization of doubled indirect object -but not of a doubled direct object- is possible. This difference may be accounted for if it is assumed that indirect objects in Spanish are PPs and that only empty elements left by NPs

are subject to ECP: in (21), for instance, the empty element is also left in an ungoverned position. The derivation is, however, well-formed since traces of PPs are not subject to ECP (cf.Jaeggli 1980 for more details):

21-a) ¿ a quién le han regalado ese libro t?

b) ¿ a quién le han mandado todas esas cartas t?

Another appealing feature of this analysis is that it covers the L.F.-extraction of doubled elements. Assuming quantified NPs to undergo a raising process in L.F. (referred to as Quantifier Raising or Q.R.)(cf.May 1977), it should prove impossible to double a direct object quantified NP: the empty element left by this extraction rule would violate the ECP since clitics absorb government:

24-a)* las vi a todas las chicas

b)* las encontré a algunas mujeres

c)* no lo vi a ningùn chico

As expected, if the clitic is not here, the sentences are grammatical:

25-a) vi a todas las mujeres
"I saw all the women".

b) encontré a algunas mujeres
" I found some women"

c) no vi a ningùn chico
" I didn't see any kid"

On the other hand, clitics doubled indirect objects may contain quantified NPs:

26-a) les regalaron libros a todos los chicos
"they gave books to all the kids"

b) ne le regalaron libros a ningùn chico
"they didd't give books to any kid"

c) le mandó sus libros a algún descuidado que los perdió
"he sent his books to some careless person who lost them"

Assuming that Q.R. moves a PP in these cases and that the trace of PPs is not subject to ECP, the grammaticality of (26) comes as no surprise.
Finally, another restriction on doubled direct objects may be accounted for by the analysis assumed so far: only definite NPs may be doubled in direct object position:

27-a)* lo vi a un chico
b)* la busco a una chica que sepa inglés

Assuming that indefinites also undergo Q.R. (cf.May 1977), the ungrammaticality of (27) will once again be accounted for by ECP since the empty element left by the extraction rule will not be in a governed position.

Indefinite NPs may be doubled in indirect object position:

28-a) le regalaré todos mis libros a un chico que sepa leer
"I will give all my books to any kid who can read"
b) les mandaron cartas a unos desconocidos
"they sent letters to some strangers"

Thus, the restriction concerning the definitness restriction on accusative doubling does not need to be stipulated; it forms part of the general clustering of facts predicted by the analysis of clitic doubling outlined in Jaeggli (1980).

Summarizing, two interacting factors account for the distribution of doubled constructions in Jaeggli's analysis:

29-a) the absorption of the subcategorization feature by the clitic

b) the categorial nature of the doubled element (NP v.s. PP).

(29 a) accounts for Kayne's generalization: since the clitic absorbs the subcategorization feature which assigns Case, the doubled NP receives Case through the insertion of a case-marker. (29 a and b) together with the assumption that the ECP is restricted to empty elements left by the extraction of NPs account for the fact that a doubled dative, but not a doubled accusative, may undergo Move α in Syntax (wh-movement) or in L.F. (Q.R.). We will, now, consider each factor separately.

3. Absorption of subcategorization feature.

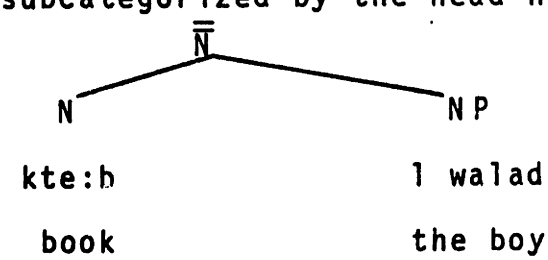
Consider first (29 a); it cannot be maintained that clitics always absorb subcategorization features. There are instances of cliticization appearing in contexts of case-assignment but not of subcategorization. Recall that in L.A.,clitics are locally attached to the verb, the noun or the preposition.

Consider, once again, the cases where the clitic is attached to the head noun:

30-a) štre:t kte:b l walad
bough-I book the boy

In (30 a), it is not very plausible to say that the genitive NP l walad is subcategorized by the head noun:

30-b)



This NP can, however, cliticize to the noun (cf.15 c):

30-c) Štre:t kte:bo
"I bought his book"

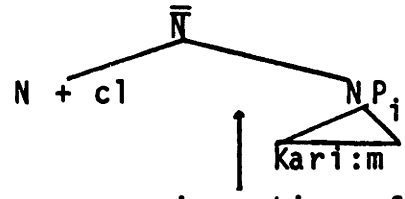
To accomodate this fact, one may tentatively consider the following modification of (29 a): recall that in Jaeggli (1980), it is assumed that the subcategorization feature of the verb governs the element subcategorized by the verb. It is possible to generalize this proposal and to suggest that what the clitic does is to absorb the government feature of the governor. In other words, when a clitic occurs, the governing element is no longer able to govern the NP associated with the clitic.[3]

29-a') Clitics absorb the government feature of the governor.

This modification has the advantage of accomodating the facts illustrated in (30) while keeping the insights of Jaeggli's analysis: since case-assignment is done via government, since the clitic absorbs the government feature, the governing element is no longer able to assign Case to the doubled element; the derivation will be filtered out unless a case-marker is inserted. This takes care of Kayne's generalization:

30-e) Štre:t kte:bo la Kari:m (cf.16 c)
"I bought Kari:m's book"

f)



insertion of the case-marker la

The non-extraction of doubled accusatives in Spanish is accounted for as before: since clitics absorb government, the extraction of a doubled accusative will leave a non-governed element in violation of the ECP.

4. The categorial nature of the doubled element (NP vs. PP).

Let us turn, now, to (29 b). Recall that it follows from the analysis assumed in Jaeggli (1980) that a doubled PP, but not a doubled NP, may undergo wh-movement or Quantifier Raising. We will indicate, now, that there are constructions where the doubled NP may be extracted by Moveα and constructions where the doubled PP may not be extracted.

4.1. Extractions of doubled NPs.

4.1.1. The case of Rumanian.[4]

Clitic doubling in Rumanian affects direct and indirect objects. An object may be doubled only if it is specific or definite and either pronominal or human:[5]

31-a) l - am văzut pe Popescu
him I have seen Popescu

b) O caut pe fată de la noi din sat
her I am looking for a girl from our village

32-a) caut pe alticineva
"I am looking for somebody else"

b) caut un bucătar
"I am looking for a cook"

In (31 a), the doubled NP is definite and human and in (31 b) it is specific and human. In (32 a-b), the object NP -although human- is neither definite nor specific; hence, it may not be doubled.

Surprisingly, this doubled NP may be extracted by movement

rules:

33-a) pe care credeai că am văzut-0?
"which one did you think that I have seen it?"

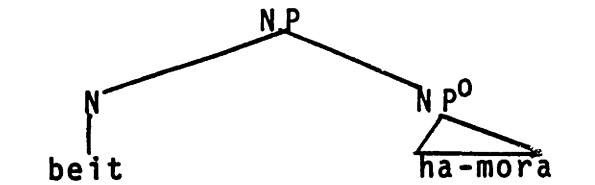
b) ce credeai că am vazut?
"what did you think that I have seen?"

In (33 a), the doubled element which has been fronted is specific and presumably, like all wh-elements, pronominal. In (33 b), the wh-element is not specific and -according to what has been said above- cannot be doubled.[6]

4.1.2. Extraction in Modern Hebrew.[7]

The extraction of doubled NPs is not restricted to Rumanian; it occurs in Modern Hebrew (henceforth M.H.) in the construct state. The construct state which indicates genitival relations between the head N and the complement NP has the following structure (cf.Borer 1980):

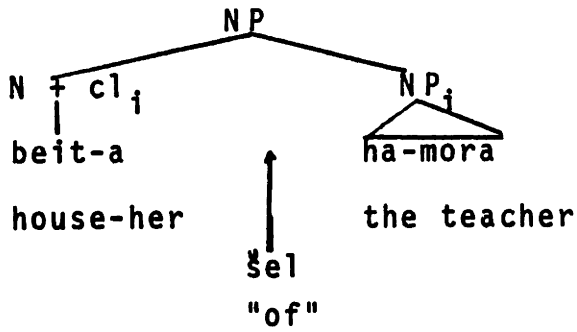
34-



"the teacher's house"

The genitive noun phrase ha-mora in (34) may be doubled; in that case, a case-marker šel is inserted, thus enabling the doubled NP to receive Case:

35-



Once again, this doubled NP may be extracted; in free relatives, for instance:

36- zo mi_i še-ra?iti ?et $beit\text{-}a_i$
this who that-saw-I acc. house-her
"this is the one whose house I saw"

As in Rumanian, (cf.footnote 6), it is not very plausible to assume that no movement has taken place in (36): these constructions cannot violate constraints on movement such as the Complex NP constraint (cf.Borer 1980):

37- * zo mi_i še- pagasti ?et ha- $?iš_j$ še- ra?a
this who that met-I acc. the man that saw

?et $beit\text{-}a_i$
acc. house-her

(37) is to be contrasted with full relative clauses (i.e. relatives clauses with a lexical head) of M.H. where violations of constraints on movement are possible. As argued in Borer (1979), contrary to free relatives, no movement takes place in full relative clauses:

38- zo ha- ?iša še-pagašti ?et $ha\text{-}?iš_j$
this the-woman that-met-I acc. the-man

še- ra?a ?et $beit\text{-}a_i$
that-saw acc. house-her

<u>4.1.3.Definitness restriction and extraction of doubled NPs</u>.

Summarizing, in the analysis of clitic doubling assumed so far, it is predicted that a doubled NP may not be extracted by movement rules. Contrary to Spanish, this prediction is not fulfilled in Rumanian or M.H. where a doubled NP may be extracted. The same facts hold in L.A. where doubled NPs may be quantified:

39-a) šifto la kill walad
saw-I-him to every boy
"I saw every boy"

b) šiftun la kill lwale:d
saw-I-them to all the boys
"I saw all the boys"

or extracted by wh-movement:

40- ?ayya walad sifto [8]
which-boy saw-you-him
"which boy did you see?"

Another conclusion can be drawn from the discussion of Rumanian. Recall the definitness restriction concerning doubled accusatives in Spanish: only definite accusatives may be doubled. It is to be pointed out in this respect, that not all indefinites are subject to this restriction: only non definite non-specific accusatives may not be doubled; non definite specific accusatives may be doubled.

41-a) la busco a una cocinera que sabe hablar inglés
indicative
"I am looking for a cook who can speak English"

b)* la busco a una cocinera que sepa hablar inglés
subjunctive
"I am looking for a cook who can speak English".

As indicated in Jaeggli (1980), the direct object in (41 a) is specific as evidenced by the indicative mood on the verb in the relative clause and is not specific in (41 b); only the specific object of (41 a) may be doubled.
However, whether specific or not, an indefinite dative object may be doubled:

42-a) le regalaré todos mis libros a uno chico sabe hablar inglés - indicative

"I will give all my books to a kid who can speak English"

b) le regalaré todos mis libros a uno chico sepa hablar inglés
subjunctive.

Recall that in Jaeggli's analysis, the definitness restriction concerning doubled accusatives followed from the ECP which is restricted to empty elements left by noun phrases but not by prepositional phrases: (non specific) non definite elements are subject to Q.R., the trace left by this extraction in doubled contexts will be ruled out by the ECP if the moved element is an NP.

The Rumanian examples discussed above indicate that this explanation cannot be maintained. Recall that in Rumanian a doubled NP may be extracted. The logic of the analysis which accounts for the definitness restriction by the impossibility of extraction will lead us to expect that in a language where doubled elements may be extracted, this definitness restriction does not exist. This expectation is not fulfilled: in Rumanian, a doubled NP may be extracted; it cannot, however, be non-specific non-definite (cf. 31-32).

A similar observation can be made in L.A. where a non-specific non-definite element may not be doubled although the extraction of doubled elements seems possible (cf.39-40):

39-c) bɐtžawwaza la mara mitl hayde
marry-I-her to woman like this one
"I will marry a woman like this one"

d) * bɐtžawwaza la mara (kbi:re)
"I will marry a big (woman)"

In other words, the definitness restriction and the extractability of doubled elements are distinct phenomenon and are not always linked: there are languages where a doubled element may be extracted and where the definitness restriction holds.

Summarizing what has been said so far, the analysis of doubled constructions in Spanish was based on the assumption that a doubled PP -but not a doubled NP- may be extracted. In this section, some languages exhibiting doubling were considered. It appears that in these languages a doubled NP may be extracted. We will turn, now, to cases of doubled PPs; it will be indicated that there are instances of doubled PPs which cannot be extracted.

4.2. Extraction of doubled PPs.

Assuming that a clitic absorbs the case-feature or more generally the government possibility of a category, clitic doubling of a noun phrases is possible when a language has an extra mean of assigning Case to the doubled NP. In a language like French, this supplementary mechanism of case-assignment is lacking; therefore, the clitic and the full NP will be in complementary distribution (cf.8 repeated here for convenience):

43- * Marie les connaît mes amis
Marie them know my friends

In a language like River Plate Spanish, the element inserted before an animate specific direct object may function as a case-assigner. With respect to direct objects, the difference between River Plate Spanish and another Romance language such as French is reduced to the fact that Spanish has an a-insertion while no such rule exists in French.

With indirect objects, the situation is more complex. In both languages, the indirect object has the surface form P NP; but only in Spanish is clitic doubling possible (cf. 9 repeated as 44):

44- * Marie leur parle à mes amis [9]
Marie them talk to my friends

Jaeggli discusses this problem and skillfully converts it into an argument for the analysis of clitics he assumes. In French, there are some facts which indicate that indirect objects are not PPs, but rather NPs. Since indirect objects are NPs in French, the theory of clitics presented may account in a straightforward way for the lack of clitic doubling in French. The account proceeds basically as with direct objects: if a clitic is present, it could absorb government, not allowing for a doubled NP.

It has been pointed out in Vergnaud (1974) that there are two ways in which indirect objects do not behave like other Prepositional Phrases[10]. First, a conjunction of Prepositional Phrases cannot have as the antecedent of a relative clause:

45-a)* il a compté sur l'homme et sur la femme qui se sont rencontrés hier
"he counted on the man and the woman who met yesterday"

b)* Maxwell s'est accroché sous l'électron et sous le photon qui se sont percutés
"Maxwell attached himself under the electron and the photon which struck each other"

But this restriction does not extend to indirect objects:

46-a) il a parlé à l'homme et à la femme qui se sont rencontrés hier

"he spoke to the man and the woman
who met yesterday"

b) il a écrit à l'homme et à la femme
qui se sont rencontrés hier
"he wrote to the man and the woman
who met yesterday"

In this sense, indirect objects behave like NPs. Secondly, a complement of preposition can be a conjunction of noun phrases:

47-a) ils se sont assis sur la table et les chaises
"they sat on the table and the chairs"

b) ils se sont cachés derrière les arbres et les buissons
"they hid behind the trees and the bushes"

But this is not possible with indirect objects:

48-a)* ils ont acheté cette maison à Marie et le directeur
"they bought this house for Marie and the director"

b)* ils ont parlé à Marie et le directeur
"they talked to Marie and the director"

(48) becomes grammatical if à is repeated in front of each conjunct:

49-a) ils ont parlé à Marie et au directeur

b) ils ont acheté cette maison à Marie et au directeur.

The above facts lead Vergnaud to conclude that à is only a case-feature and not a true preposition.

As indicated in Jaeggli (1980), not all à are case-markers. Some act as true prepositions by Vergnaud's test. These are

those whose object do not cliticize as dative clitics. Referring to Kayne (1975), Jaeggli indicates that not all complements in à are possible sources for a dative clitics. Some verbs like penser and prendre intérêt take complements in à:

50-a) je pense à Marie
"I am thinking about Marie"
b) il a pris intérêt à Marie
"he got interested in Marie"

but not dative clitics:

51-a)* je te pense
b)* il t'a pris intérêt

Furthermore, these à's accept conjoined noun phrases as complements:

52-a) tu penses à Paul et la directrice
"you are thinking about Paul and the governess"
b) il a pris intérêt à la photographie et le cinéma
"he got interested in photography and cinema"

These facts and others indicate that some à-objects are PPs whereas some others are NP in French (cf.Jaeggli 1980 for a detailed analysis).

In Spanish, however, indirect objects are assigned the status of PP. Some of Vergnaud's tests appear to point in this direction. The following sentences, with a conjunction of NPs as the complement of dative a, seem acceptable (cf.Jaeggli 1980):

53-a) les compraron una Casa a Maria y el director
"they bought a house for Maria and the director"
b) les mandaron cartas a los padres y los a buelos del interesado
"they sent letters to the parents and the grandparents of the interested party"

If dative a is a real preposition in Spanish, this should be possible.

In brief, the assumption that indirect object are NPs in French accounts for the lack of clitic doubling in a natural way: since clitics absorb the government feature of the verb, since French does not have a special mechanism to assign Case to the doubled NP, the only option is to have PRO. In Spanish, however, since indirect objects are PPs, the doubled element does not need to get Case through a special mechanism (cf. Jaeggli 1980 for more details).

In fact, the conclusion about French has to be somewhat relativized. Vergnaud's tests show that some à-NPs are to be treated as true NPs; it does not follow, however, that all indirect objects are NPs in French. Some subcategorized indirect objects are true PPs. We have already mentioned some of these subcategorized PPs[11]: there are precisely those à-NPs which behave like true PPs by Vergnaud's tests as indicated in Jaeggli (1980) (cf. 50). As illustrated above, when cliticized, the morphological form of these clitics is not that of the other "datives" (cf. 51); rather, they cliticize as y:

51-c) j'y pense
d) j'y ai pris intérêt

Since these indirect objects PPs are subcategorized by the verb and since they can be cliticized onto the verb, nothing prevents them from being doubled as the indirect objects PPs in Spanish. This is not the case, however:

52-a) j'y pense à Pierre
b) j'y ai pris intérêt à Marie

Sentences (52) are grammatical with the full (à NP) preceded, like all other appositives, by a pause (cf. Kayne 1975).

Let us assume, however, for the sake of the discussion, that (52) are cases of doubling. Since PPs are not subject to ECP, we expect these "doubled" PPs to be freely extracted by wh-movement or by Q.R. This is not the case as indicated by the ungrammaticality of the following sentences:

53-a)* à quel garçon tu y penses?
"about which boy are you thinking?"

b)* à quel garçon tu y a pris intérêt?
"in which boy are you getting interested?"

c)* tu y penses à chaque garçon
"you are thinking of every boy"

d)* tu y a pris intérêt à chaque garçon
"you are getting interested in every boy"

Of course, these sentences become grammatical if the clitic is omitted:

54-a) à quel garçon tu penses?

b) à quel garçon tu as pris intérêt?

c) tu penses à chaque garçon

d) tu a pris intérêt à chaque garçon

Summarizing, the generalization of case-absorption to government-absorption seemed to account for the behavior of doubled elements in Spanish; since clitics absorb government, the empty element left by the extraction of the doubled NP will be left in a non-properly governed position in violation of ECP. On the other hand, since PPs are not subject to ECP, the doubled indirect object will be freely extracted (cf.section 2). In section 4, some languages (Rumanian, Modern Hebrew and Lebanese Arabic) were reviewed; it appeared that doubled NPs may be freely extracted in these languages. As for indirect object PPs, it appears that they cannot be freely doubled

or to present the matter differently, what appears to beacase of PP doubling does not behave as expected: it does not allow the "doubled" element to be freely extracted by movement rules. We are then left with no explanation for the different behavior of doubled elements in a single language (cf.Spanish) or accross languages. We turn, now, to a tentative account of these differences [12].

4.3. Leismo, Loismo, Laismo.

From the preceding sections, it appears that doubled elements do not have a uniform behavior accross languages: whether nominal or prepositional, a doubled element may be freely extracted in some languages and may not undergo movement in some others. This raises some doubts with respect to any approach which tries to trace back the different behavior of doubled elements to their categorial nature. Other phenomenon which raises further doubts concerns some dialectical variations in Spanish referred to as "Leismo","Loismo" and "Laismo".

4.3.1. Leismo.[13]

In some dialects of Spanish,it is possible to use a dative clitic (le) instead of an accusative clitic (lo or la). This phenomenon is commonly referred to as "Leismo". Thus, the verb to see (ver) normally subcategorizes for an accusative object:

55-a) viste a Juan
"you saw Juan"

b) lo viste (a Juan)
"you saw him (Juan)"

[14]

In the Leismo dialects, a dative clitic may be used instead

of an accusative clitic (cf. 56 a) even in doubled constructions (cf. 56 b):

56-a) le viste
"you saw him"

b) le viste a Juan
"you saw Juan"

Surprisingly enough, whereas a doubled direct object normally cannot be extracted by movement rules:

57-a)* ¿ a quién la vistê? (cf.19 a)
"who did you see?"

b)* las vi a todas las mujeres (cf.24 a)
" I saw all the women"

it can be extracted if a dative clitic is used instead of an accusative clitic:

58-a) O. K. ¿ a quién le viste?
"who did you see?"

b) O. K les vi a todas las mujeres
"I saw all the women"

4.3.2. Loismo and Laismo.[15]

For the Loismo or Laismo dialects, the opposite holds: an accusative pronominal clitic may be used instead of a dative clitic. This accusative clitic is either masculine (lo: loismo) or feminine (la: laismo). Thus, the verb to give (di) normally subcategorizes for a dative object:

59-a) le di el libro (a Juan)
"I gave him the book (to Juan)"

which can be freely extracted by movement like all other datives:

60-a) les di el libro a todas las mujeres (cf.26)
"I gave the book to all the women"

b) ¿ a quién le di el libro? (cf.21)
"to whom did you give the book?"

However, when Loismo or Laismo is used, the doubled indirect object cannot be extracted anymore:

61-a)* las di el libro a todas las mujeres
"I gave the book to all the women"

b)* ¿ a quién lo di el libro?
"to whom did you give the book?"

It is hard to imagine how these dialectal variations are to be accounted for in terms of the categorial nature of the doubled element. Intuitively, the opposite seems to hold: it is the nature of the doubling clitic rather than that of the doubled element which determines the extraction possibilities in the different dialects of Spanish[16].

Summarizing the content of this section, the categorial nature of the doubled element does not seem to account for the extractibility of this element. The following sections will be mainly concerned in suggesting an analysis that will provide an account for the different behavior of doubled elements.

5. Thematic roles absorption.

It will be suggested that the account is to be given in terms of θ-roles (= thematic-roles, cf. P.L. and chapter 1):

62- A clitic may "absorb" θ-roles.

Informally speaking, when the clitic absorbs the θ-role, the doubled element is demoted from its argument-status (as object of the verb, the noun or the preposition) and receives an interpretation (a θ-role) similar to the one an appositive or a (right) dislocated element receives.

Furthermore, under the assumption that only elements in argument position can undergo movement, the doubled element will no longer be able to be extracted by wh-movement or by Quantifier-Raising. In other words, the impossibility of questioning or quantifying a doubled accusative in Spanish is treated on a par with the impossibility of questioning or quantifying an appositive or a (right) dislocated element as illustrated in (63):

63-a) tu l'as mangé, le gâteau
"you ate it, the cake"

b)* tu l'as mangé, chaque gâteau
"you ate it, each cake"

c)* quel gâteau l'as-tu mangé?
"which cake did you eat it?"

In a language like Rumanian, Modern Hebrew or Lebanese Arabic, the clitic does not absorb the θ-role: the doubled element is not demoted from its argument-status; hence, it may be questioned or quantified (cf. section 4.1.). In Spanish, however, accusative clitics -but not dative clitics- absorb θ-roles; consequently doubled accusatives -but not doubled datives- are frozen and cannot be moved (cf. section 2).

This is the general idea that we will try now to instantiate. Recall that in the government-binding framework, θ-roles are assigned to chains (cf. P.L. and the discussion of θ-role assignment in chapter 1). It follows from the θ-criterion that each relevant element (such as clauses, R-expressions...) receives a <u>distinct</u> θ-role and that each chain receives <u>at most</u> one θ-role. With this in mind, consider the informal analysis of cliticization suggested above (cf. 62): if a clitic absorbs θ-role, the doubled ele-

ment receives a θ-role similar to the one an appositive element receives. Since chains receive at most one θ-role, when a clitic absorbs θ-role, this clitic and the doubled element will be in separate chains: the first one (i.e. the one containing the clitic) receives the θ-role assigned by the verb, the second one (i.e. the one containing the doubled element) will receive the θ-role that an appositive receives. In this case, the clitic is treated as an independent R-expression receiving a distinct θ-role. When a clitic does not absorb θ-role, nothing prevents the clitic and the doubled element from being in the same chain; in this case, the clitic is not treated as an independent R-expression.

In brief, if a clitic is treated as an independent R-expression, it will not be in the chain containing the doubled element, otherwise, they will both be in the same chain. These results follow from the θ-criterion: if a clitic functioning as an independent R-expression (R-clitic) is in the same chain with the doubled element, the representation will be excluded by the θ-criterion : two distinct R-expressions will have the same θ-role. Conversely, if a clitic which does not function as an R-expression (non-R-clitic) is in a distinct chain from the one containing the doubled element, the representation will also be excluded by the θ-criterion: the chain containing the non-R-clitic receives the θ-role assigned by the verb but will not contain an element which may bear this θ-role (cf.case (ii) of the definition of θ-criterion). Suppose however, that the θ-role is directly assigned to the doubled element; the representation will still be excluded: the non-R-clitic may be viewed as an agreement element which needs to agree with the doubled element (cf.Borer 1981 for some relevant considerations con-

cerning this assumption). Assuming that agreement is done via coindexing (cf. P.L.) or to put the matter differently, assuming that the domain of agreement is the chain, agreement will fail to apply between this non-R-clitic and the doubled element if they are in separate chains: the non-R-clitic will not be interpreted and the derivation is filtered out . The situation is somewhat similar to the one holding between the AGR element of INFL and the subject NP: if they are in separate chains (not coindexed), agreement fails to apply and AGR will not be interpreted .[17.18]

Summarizing, when a clitic absorbs a θ-role, it is treated as an R-clitic and the doubled element is demoted from its argument-status: like all non-arguments, it cannot be moved. If, however, the clitic does not absorb the θ-role, it co-occurs with the doubled element in the same chain; like all arguments, the doubled element will be able to undergo movement[19].

6. Extraction from $\bar{A}$-position.

A terminological clarification is in order. In the θ-theory (cf. P.L. and chapter 1), a distinction is made between arguments (such as clauses, R-expressions...) and non-arguments (such as *there*...). Only arguments may receive a θ-role. In the precedeing discussion, it was suggested that when a clitic functions as an R-expression, the doubled element is demoted from its argument-status. The latter notion of "argumenthood" differs from the one relevant for the θ-criterion: for the θ-criterion argument refers to the "content" of the (lexical) element; thus, *it* is treated as an argument in "it is beautiful" and as non-argument in "it is clear that John left" (cf. P.L. and chapters 1,2). For extraction rules argument refers to the position rather than the content of the

element. Thus, in both sentences "it is beautiful" and "it is clear that John left", <u>it</u> is in an argument position[20].

It is interesting at this point to wonder whether the non-argument position referred to can be assimilated to the $\bar{A}$-position discussed in chapter 1. There, following P.L., a distinction was made between antecedent-binding versus peripheral-binding: the former holds when the c-commanding binder is in an A-position and the latter when it is in an $\bar{A}$-position. To illustrate, the trace $\underline{t}_i$ is A-bound by the subject NP of the matrix clause in (64 a) and $\bar{A}$-bound by the operator in COMP in (64 b):

64-a) John_i seems t_i to have left

b)* who_i t_i left

Suppose we assimilate the informal notion of non-argument to $\bar{A}$-position. We now restate the prohibition concerning the extraction of elements from a non-argument position as follows: an element in an $\bar{A}$-position cannot be extracted by Move α .

This generalization is supported by the following considerations concerning the interaction of syntactic movement and L.F.-movement. In Aoun, Hornstein and Sportiche (1981), a distinction was made between the syntactic rule of wh-movement and the L.F. rule affecting wh-phrases (referred to as wh-Raising). Wh-Raising affects wh-elements which have not been subjected to the syntactic rule of wh-movement (henceforth wh-in-situ):

65- The interpretation of wh-in-situ is performed through the application of a movement rule, call it Wh-Raising (wh-R), which preposes a wh-in-situ into a (+ wh) COMP.

This rule is essentially an instantiation of a general proposal stated in Chomsky (1973) (cf.also Huang 1980). Consider for instance, the following sentences:

66-a) qui sait faire quoi?
"who knows to do what?"

b) qui sait quoi faire ?
"who knows what to do?"

The interpretation of these sentences can be informally represented as in (66' a) and (66' b) respectively:

66'-a) [W x, y] , x sait faire y

b) [W x], x sait [[W y], faire y]

i.e. quoi must have scope over the whole sentence in (66 a) and must have scope restricted to the embedded clause in (66 b). Let us consider (65 b) in more detail. The representation of this sentence at S-structure is:

67- qui sait $[_{\bar{S}}$ $[_{COMP}$ $quoi_i$]
$[_S$ PRO faire e_i]]

If nothing further happens to (67) in L.F., it will receive its intended interpretation, namely (66' b). If, on the contrary, quoi is moved by wh-R into the matrix COMP, (67) will receive the interpretation (66' a) which is impossible. In other words, wh-R does not apply to elements in COMP:

68- Wh-R affects wh-phrases in argument-position (A-position).

(68) implies in particular that the syntactic wh-movement cannot feed wh-R. As indicated in Aoun, Hornstein and Sportiche (1981) principle (68) could be strenghtened so as to preclude any L.F. movement rule from applying to a target-phrase in an non-argument position. In particular, this would have the consequence that QR cannot apply from

a non-argument position ($\bar{A}$-position) such as TOP etc.[21]
In essence, what I am suggesting is a generalization of (68) to all movement rules:

69- Movement rules affect only elements in an A-position.

(69) will cover the cases accounted for by (68) and those where a <u>syntactic</u> movement affects an element in an $\bar{A}$-position (cf. 63 repeated here for convenience):

63-a) tu l'as mangé, le gâteau
"you ate it, the cake"

b)* tu l'as mangé, chaque gâteau
"you ate it, each cake"

c)* quel gâteau, l'as-tu mangé?
"which cake did you eat it?"

The L.F.-representation of (63 b) and (63 c) are (70 b and c) respectively (irrelevant details omitted):

70-a) chaque gâteau$_i$ tu l'as mangé x_i

b) quel gâteau l'as-tu mangé x_i

In (70 a-b), the empty element x_i has been left by the application of Move α from an $\bar{A}$-position (apposition); the derivation will be excluded by (69).
Some adjustments are in order. As stated (69) precludes successive cyclic movement of a wh-element from the embedded COMP to the matrix COMP:

71- $[_{\bar{S}_1}$ wh $[_S$ V... $[_{\bar{S}_0}$ t_i $[_S$ t_i...$]]]]$

The reason is that once the wh-element is raised to the COMP of the embedded $\bar{S}_0$, it will be in an $\bar{A}$-position;the movement from the intermediate COMP to the matrix COMP will be prohibited by (69). To overcome this problem,it is possible to relativize the notion of A or $\bar{A}$-position

Specifically, we may assume that a position is identified as an A or an $\bar{A}$-position with respect to a domain D; taking D to be $\bar{S}$, each position is characterized as an A or an $\bar{A}$-position with respect to each $\bar{S}$ in which it occurs. To illustrate, in (70), the COMP position of the embedded clause is identified as an $\bar{A}$-position with respect to $\bar{S}_0$. Assuming that this COMP is governed by the matrix verb[22], it will be identified as an A-position with respect to $\bar{S}_1$. In that case, movement from this COMP to the COMP of the matrix clause will not be prohibited. (cf. Stowell 1981 for relevant considerations concerning the relativized approach to A and $\bar{A}$-positions).

This proposal may have a number of consequences. Recall that in chapter 1, it was suggested that $\bar{S}$ breaks a chain. Among other things, this accounted for the cases of NP-traces covered by ECP:

72-a)* $[_{\bar{S}}$ $[_S$ John$_i$ is illegal $[_{\bar{S}}$ $[_S$ t_i to leave $]$ $]$

b) $[_{\bar{S}}$ $[_S$ John$_i$ is likely $[_S$ t_i to leave $]$ $]$ $]$

In (72 a), <u>John</u> and $\underline{t_i}$ are in separate chains: both chains will not receive a θ-role. The chain containing <u>John</u> will not receive a θ-role because <u>John</u> is not in a θ-position and the one containing $\underline{t_i}$ will not receive a θ-role because it is neither case-marked nor headed by PRO. Consequently, the derivation will be excluded by the θ-criterion. In (72 b), however, the trace and the antecedent <u>John</u> are in the same chain; the θ-criterion is not violated since a θ-role is assigned to this chain (cf. chapter 1 for more details).

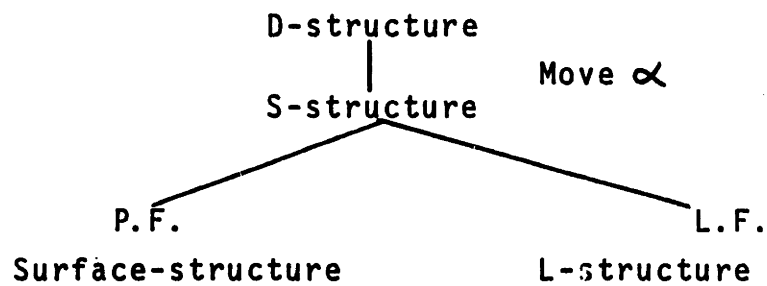
Another possibility is to relate the ungrammaticality of (72 a) to prohibition (69). Following P.L., I will assume that the distinction covered by A vs. $\bar{A}$-position is the one between argument position (with respect to a domain D) and peripheral position (with respect to this domain): an $\bar{A}$-position is any position which is not identified as an A-position. In (72 a), with respect to the domain delimited by the embedded clause, t_i is in an A-position but with respect to the domain delimited by the matrix clause it is a peripheral position (an $\bar{A}$-position). In (72 b), however, the trace t_i is in an A-position with respect to the embedded and the matrix clauses: with respect to the embedded clause, it is in the A-position of "subject" and with respect to the matrix clause, it is in an A-position too since it is governed by the matrix verb. We can, now, appeal to principle (69) to account for the difference between (72 a) and (72 b): in (72 a) -but not in (72 b)- John has been extracted from an $\bar{A}$-position; thus, violating prohibition(69).

Note that prohibition (69) does not conflict with the account given in chapter 1 and briefly restated above. Rather, it helps to understand why $\bar{S}$ breaks a chain: in (72 a),the presence of $\bar{S}$ prevents the subject position of an embedded clause from being governed by the matrix clause; hence, this position does not count as an A-position with respect to this clause. In other words, in (72 a), prohibition (69) rules out the possibility that John and the empty element are generated by a movement rule, they may not be coindexed (co-superscripted). Since they may not be coindexed, they do not constitute a chain. Representation (72 a) will be ruled out by the θ-criterion: the chain containing

John and the one containing the trace will not receive a θ-role.
Note that the Projection Principle and the θ-criterion, i.e. the θ-theory, rule out the derivation where John and the empty element in (72) are base generated in their S-structure position and coindexed by the process of free-indexing which is assumed to apply at S-structure (cf. chapter 2, conclusion of part II). At D-structure, John will be in a non-θ-position in (72 a-b); whence a θ-theory violation.

The above discussion is neutral with respect to the status of prohibition (69) as a condition on the application of movement rules or as a condition on the representation of a given structure. This remark may become clear when it is embodied in the following general considerations.
In the government-binding framework, the organization of the grammar is as follows:

73-



D-structures are generated by base-rules and lexical insertion rules. These structures are mapped onto S-structures by Move α . One system of interpretive rules, those of the P.F.-component, associates S-structures with representations in phonetic form (P.F.); another system, the rules of the L.F.-component, associates S-structures with representations in "Logical Form" L.F..
The organization of the grammar may be viewed in a slightly

different way. **S-structure** may be taken as the fundamental level of syntactic representation: in that case, D-structure is derived from S-structure by abstracting from all effects of Move α , cf. P.L.
In terms of the notion "chain" discussed in chapter 1, each relevant element (such as clauses, NPs...) of an S-structure is assigned a function chain (G.F.$_1$,..., G.F.$_n$) . Usually, G.F$_n$ determines the θ-role for arguments and G.F.$_i$'s ($i \neq n$) may play other roles in determining L.F.-representation (cf. P.L.). That is, S-structure is decomposed into two factors: D-structure which is a representation of G.F.$_n$ (or G.F.-θ for arguments) and a rule adding G.F.s to function chain: Move α (cf. P.L. for more details):[23]

With this in mind, consider once again (72 a-b) (repeated for convenience):

72-a)* $[_{\bar{S}}\ [_S$ John$_i$ is illegal $[_{\bar{S}}\ [_S$ t_i to leave$]\ ]$

b) $[_{\bar{S}}\ [_S$ John$_i$ is likely $[_S$ t_i to leave $]\ ]$

Assuming that each S-structure is to be factored into chains and that principle (69) is a well-formedness condition on representations, John and the trace t_i will be in separate chains in (72 a) since $\bar{S}$-breaks a chain. Or, to present the matter differently, since the presence of $\bar{S}$ prevents the subject position from counting as an A-position with respect to the matrix clause, principle (69) rules out the possibility that John and t_i are coindexed by a movement rule. Since they are not coindexed, they do not constitute a single chain. Thus, (72 a) contains two chains: the first is formed by John and the second by the empty element t. Both chains will not receive a θ-role; the first because it is not in a θ-position, the second because it lacks Case (if it is assumed

that t is not interpreted as PRO). Structure (72 a) will thus, be ruled out by the θ-criterion.
In (72 b), however, nothing prevents John and t_i from being in the same chains since the well-formedness condition (69) is inoperative. By the maximality requirement which forces chains to be maximal (cf. the definition of chains adopted in chapter 1), John and t_i will have to be in the same chain. To this case-marked chain, a θ-role will be assigned by the embedded VP to leave. This accounts draws the correct distinction between the two sentences.

Summarizing, we started by indicating that some doubled elements may undergo movement whereas some others may not. As illustrated by the various languages discussed, the extraction possibility does not correlate with a categorial difference between doubled elements: across languages,some doubled NPs and PPs may be extracted whereas some others may not. At this point, some dialectal variations in Spanish were brought into consideration: in some dialects of Spanish, a dative clitic may be used instead of an accusative clitic (Leismo); in that case, the doubled element, which cannot be normally extracted, is able to undergo movement. Conversely, in some other dialects, an accusative clitic may be used instead of a dative clitic (Loismo and Laismo); in that case, the doubled element, which can normally be extracted, is no longer able to undergo movement. These facts strongly suggest that it is the nature of the doubling clitic rather than that of the doubled element which determines the extraction possibilities of the doubled element. It was suggested that some clitics function as R-expressions (R-clitic) and some others do not func-

tion as independent R-expressions (non-R-clitics);they behave more like AGR elements. By the θ-criterion, these R-clitics must have a θ-role and like all arguments cannot co-occur in the same chain with another argument. Thus, when an R-clitic is doubled, the doubled element is in a separate chain bearing a θ-role similar to the one assigned to appositive or (right)-dislocated elements. Like appositive or right-dislocated elements,the doubled element will be in a non-argument position and will not be able to undergo movement. A non-R-clitic, however, co-occurs with the doubled element in the same chain; the doubled element is not demoted from its argument-status and can undergo movement. Subsequently, the non-argument position was identified as an $\bar{A}$-position and it was suggested that there is a general prohibition concerning extraction of elements from an $\bar{A}$-position. This general prohibition appeared to be relevant to the considerations mentioned in chapter 1 concerning the assumption that $\bar{S}$-breaks a chain. By relativizing the notion of an A-position or an $\bar{A}$-position to a domain D where D is taken to be the clause ($\bar{S}$), it was suggested that cases of NP-traces covered by ECP or by the assumption that an $\bar{S}$-breaks a chain can be related to the general prohibition concerning extraction from an $\bar{A}$-position:

74- $[_{\bar{S}_1}\ [_S\ V\ [_{\bar{S}_0}\ [_S\ X\ V$ infinitive...$]\ ]\ ]\ ]$

In these cases, the presence of an $\bar{S}$ ($\bar{S}_0$ in 74) prevents <u>X</u> from being considered as an A-position with respect to $\bar{S}_1$. As a consequence, an element contained in the position <u>X</u> will not be able to be moved to a position in $\bar{S}_1$. The process of $\bar{S}$-deletion may, thus, be viewed as a device allowing the position X to be governed by the matrix verb;

thus, to function as an A-position with respect to the matrix $\bar{S}$ in (75):

75- $[_{\bar{S}}\ [_{S}\ V\ [_{S}\ X\ V$ infinitive $]\ ]\ ]$

Being in an A-position, an element in $\underline{X}$ will be able to be moved in $\bar{S}$.

The existence of a general principle such as the ECP may be understood in the light of the above considerations, i.e. one may consider that at least for NP-traces, the ECP or for that matter the assumption that $\bar{S}$-breaks a function chain (cf.chapter 1) are peculiar cases of the general prohibition concerning extraction from an $\bar{A}$-position. It is interesting to note, in this respect, that the language once again has a mean of evading the effect of such a prohibition by using a process such as $\bar{S}$-deletion.

It is to be indicated finally that although related to the general prohibition concerning extraction from an $\bar{A}$-position, the treatment of clitics is independent from this prohibition. Should it turn out to be the case that this prohibition is not accurate, the treatment suggested for clitics will still hold: in case the doubling clitic is an R-clitic, the doubled element will not undergo movement for whatever reason preventing the extraction of appositions or (right)-dislocated elements.

7. On Case-absorption.

It was suggested in the previous sections that some clitics function as R-expressions (R-clitics) and some others do not (non-R-clitics). It follows, from the θ-criterion,that an R-clitic absorbs θ-role whereas a non-R-clitic does not. Let us return, now, to Kayne's generalization in detail

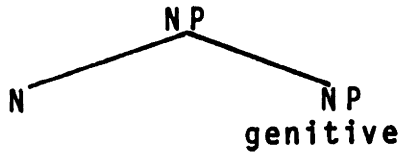
(cf.14 repeated for convenience):

14- An object NP may be doubled by a clitic only if it is preceded by a preposition.

To account for this generalization two possibilities were discussed. The first one considers that clitics absorb the case-feature. The second one considers that clitics absorb the subcategorization feature which governs and assigns Case to the subcategorized element. Both approaches account for generalization (14), since clitics absorb the case-features (option one) or the subcategorization feature (option 2), the doubled element will no longer be able to receive Case and the derivation will be ruled out by the case-filter unless a case-marker is inserted. As indicated in footnote 1, this case-marker need not always be a preposition.

In section 3, it was indicated that the assumption that clitics always absorb the subcategorization feature cannot be maintained: there are instances of cliticization appearing in contexts of case-assignment but not of subcategorization. In Lebanese Arabic, a genitive noun can cliticize onto a nominal element in the following configuration (cf.30):

30-



To accomodate this fact with the second approach, a generalization of subcategorization absorption to government-absorption was suggested (cf.29 a'):

29-a') Clitics absorb the government-feature of the governor.

Generalization (14) will still be accounted for: since case-assignment is done via government and since the clitic absorbs the government-feature of the governor (cf. footnote 3), the doubled element will not receive Case; a case-marker is, thus, necessary.
Government-absorption was also suggested to maintain the account of the extraction possibilities of doubled elements: since clitics absorb government, a doubled NP - but not a doubled PP- will not be able to be extracted; the empty element will be left in an ungoverned position by extraction rules and the derivation will be filtered out by the ECP restricted to NP-traces. However, in the preceding sections, it was indicated that the extraction possibility is not directly related to the categorial nature of the doubled element: there are instances of extracted doubled NP's. As a consequence, (29 a') cannot be maintained as such. We therefore return to the first approach where it was suggested that:

76- When they occur in case-governed contexts, clitics absorb the case-feature assigned by the governor.

Actually, a stronger version than (76) is intended:

77- Clitics must occur in case-governed contexts; in that case they absorb the case-feature assigned by the governor.

To clarify the difference between the two formulations, the following considerations are in order. As indicated earlier, for the core cases, the case-assigning element must govern the case-receiving element. However, not all governors are case-assigners. Thus, consider the following two structures:

78-a) NP_0 seems NP_1 to VP
b) NP_0 believes NP_1 to VP.

Both <u>seems</u> and <u>believes</u> are verbs which trigger $\bar{S}$-deletion (cf. P.L. and the discussion of $\bar{S}$-deletion in chapter 1) and, govern, thus, the embedded subject position; but <u>believes</u> alone is a case-assigning element. It follows that in (78 a), but not in (78 b), the phonetically realized element in NP_1 must be raised to NP_0 to get Case:

79-a) John seems t to have left
b) Bill believes John to have left

Consider, now, formulations (76)-(77). (76) will be compatible with the existence of constructions where clitics occur in governed contexts where no Case is assigned: a case-feature is absorbed when there is one. (77) precludes the existence of such constructions: it requires clitics to appear in case-governed contexts only. The "passive" constructions indicate that (77) is to be favored over (76).
The passive constructions may be characterized by the following two properties, cf. P.L.:

80-a) The subject does not receive θ-role
b) The object does not receive Case within VP.

In the D-structure (81) underlying "John was killed", the subject position is assigned no θ-role and (so may be filled by non-arguments, as in 82) and the object is assigned no Case,(cf. P.L. and Rouveret and Vergnaud 1980):

81- $[_{NP}$ e $]$ was killed John

82- <u>it</u> was believed that John left

Assuming that the participle <u>killed</u> in (81) is not a case-assigner (property 80 b), <u>John</u> must be moved or the case filter will be violated. As a consequence of the θ-criterion

(cf. chapter 1), John can only be moved to a non-θ-marked position such as the subject position of (81). In this position, it receives Case and inherits a θ-role through the medium of its trace, which is a θ-position in this case (cf. P.L.).

Consider now the interaction of passivization and cliticization. The two properties of passive constructions hold in French as illustrated by (83):

83-a) $[_{NP}$ e $]$ a été tué Jean

b) Jean a été tué
"Jean was killed"

84- il a été convenu d'acheter une voiture rouge
"it was agreed to buy a red car"

(84) illustrates property (80 a): the subject position of passive constructions may be filled by a non-argument in French.

Let us consider the following sentence:

85- Jean a persuadé Bill d'acheter une voiture rouge
"Jean persuaded Bill to buy a red car"

The verb persuader subcategorizes for an object (Bill) and a clausal complement (d'acheter une voiture rouge). The NP object may cliticize onto this verb:

86- Jean l'a persuadé d'acheter une voiture rouge
"Jean persuaded him to buy a red car"

The passive counterpart of (85) is (87):

87- Bill a été persuadé d'acheter une voiture rouge (par Jean)
"Bill was persuaded to buy a red car (by Jean)"

The D-structure underlying (87) is (88) (irrelevant details omitted):

88- $[_{NP}$ e $]$ a été persuadé Bill d'acheter une voiture rouge

(87) is derived from (88) by the anteposition of Bill to the non-θ-marked subject position.
Returning to formulations (76)-(77), recall that (76) but not (77) allows for the possibility where a clitic appears in a governed context where no Case is assigned. Passive constructions provide such a context: the object NP is governed (subcategorized) but not case-marked by the verb. According to formulation (76), we should be able to cliticize this governed object onto the verb; the subject position will be filled in this case by the non-argument il. As illustrated by the ungrammaticality of (89), this is not the case:

89- * il l'a été persuadé d'acheter une voiture rouge

In short, (77), and not (76), is to be chosen: clitics appear in case-governed contexts only and absorb the case-feature assigned by the governor. In other words, clitics behave like phonetically realized nominal elements; they must be case-marked. As indicated earlier, a principle such as (77) does not need to be stipulated; it follows from the case-filter: being nominal expressions, clitics will have to be case-marked (to absorb Case) or the case-filter will be violated.

8. On the autonomy of the Case-filter.

The above considerations were brought into discussion for their relevance with respect to the status of the case-filter (cf. P.L. and Rouveret and Vergnaud 1980):

90- Every lexical NP is an element of a chain with Case.

As stated in (90), the case-filter requires each lexical NP to be a member of a chain with Case. In the litterature, the overlap between case theory and θ-theory has often been noted and various attempts have been made to eliminate it. In P.L., it is suggested that the case filter, which is the basic principle of case theory, may be derived from the θ-criterion; thus, eliminating the redundancy between the two theories.

Phonetically realized lexical categories may be divided into three classes: (i) arguments that are not post-verbal superscripted NPs as in (91); (ii) post verbal superscripted NPs (cf. 91): (iii) non-arguments:

91-a) β $[_{VP}$ V NP $]$

b) β $[_{VP}$ $[_{VP}$ V... $]$ NP $]$

As indicated in P.L., it is possible to show that for an element of each of these classes, the case-filter follows from the θ-criterion. Consider first class (i), i.e. an argument that is not a post-verbal superscripted NP. Suppose that case is not assigned to the chain C of α. Since $\alpha \neq$ PRO, and since θ-role assignment to chains applies if and only if the chain has Case or contains PRO (cf. chapter 1), no θ-role will be assigned to the chain C containing this argument and the θ-criterion is violated. Therefore, for an argument that is not a post-verbal superscripted NP, we need not stipulate that the case-filter holds:

92- θ-role assignment: (cf. chapter 1, part II)
Suppose that the position P is marked with the θ-role R and C = $(\alpha_1, \ldots, \alpha_n)$ is a chain. Then C is assigned R by P if and only if for some i, α_i is in position P and C has Case or contains an argument PRO.

Consider now a chain C= ($\alpha_1, \ldots, \alpha_n$) where some α_i is a post-verbal superscripted NP (cf.91). Recall that α_1 is in fact the non-argument co-superscripted with it: English <u>there</u>, French <u>il</u>, Italian impersonal PRO ($\alpha = \beta$ in 91) (cf.chapters 1 and 2). The θ-criterion requires that a θ-role be assigned to C only if C has Case or contains an argument PRO. Since the post-verbal superscripted NP may not be a PRO (at least in tensed clauses cf. chapter 1, footnote 68), C must have Case or the θ-criterion is violated. Therefore for class (ii), the case-filter follows from the θ-criterion.
As for class (iii),i.e. non argument <u>it</u> as in "it is clear that John will win", the clause in the VP is considered as an argument coindexed (co-superscripted) with impersonal <u>it</u>. The definition of chain permits a clausal argument as a member of the chain. Now this class reduces to class (ii). If C = ($\alpha_1, \ldots, \alpha_n$) is a chain with α_i a clausal argument,(92) requires that C be assigned Case or be headed by an argument PRO. Since the latter is impossible, C must be assigned Case. Therefore, the case-filter also follows from class (iii) (cf.P.L. for more details).

In brief, the case-filter follows, <u>in toto</u>, from the θ-criterion and it can therefore be eliminated as an independent principle of the government-binding theory.

This conclusion, however, must be tempered: in P.L., since Case is assigned to chains, it suffices that an element be in a case-marked position for the whole chain to be case-marked (cf.93):

93- The chain C = ($\alpha_1, \ldots, \alpha_n$) has the case K if and only if for some i, α_i occupies a position assigned K by β.

Consider, now, a chain containing two coindexed elements where α is case-marked and β is an argument. Since α is case-marked, the chain as such will be case-marked by (93): it is not necessary to assign a distinct case-feature to β. Furthermore, being case-marked the chain will be able to receive a θ-role by (92). Suppose, now, that contrary to what is expected, β still needs a distinct case-feature from the one assigned to α; two conclusions may be drawn: (a) distinct elements of a chain may have distinct case-features; (b) the case-filter does not follow from the θ-criterion since (92) and the θ-criterion will be satisfied if β does not have Case but the case-filter will not be. This hypothetical case does occur in doubled constructions.

Recall that the absorption of the case-feature by a clitic does not need to be stipulated: it follows from the assumption that clitics are nominal elements. Being nominal expressions, clitics will have to be case-marked (to absorb Case) or the case-filter will be violated. Recall also that some clitics do not function as R-expressions; in that case they co-occur with the doubled element in the same chain (they do not absorb θ-roles). Once again, this does not need to be stipulated: it follows from some agreement requirement between the clitic and the doubled element or from the maximality requirement which forces chains to be maximal (cf. section 5 and footnote 18).

In brief, neither case-absorption nor θ-absorption need to be stipulated. Assuming that clitics may be treated as R-expressions and/or nominal expressions, Case and θ-absorption follow from the θ-criterion and the case filter.

Consider now the following structure where the clitic is treated as a nominal non-R-expression (i.e. where it co-occurs with the doubled NP in the same chain):

94- ... V + clitic NP

As a nominal expression this clitic requires Case and as a non-R-expression it is in the same chain as the doubled NP. Since the clitic is case-marked, the chain as a whole is case-marked and according to (92) a θ-role may be assigned to this chain by the verb V. If the case-filter were a principle which follows from the θ-criterion we would not expect Case to be necessary for the doubled NP since the θ-criterion is not violated in (94). A case-feature is, however, necessary for the doubled element. This was the insight behind Kayne's generalization: when an element is doubled a case-marker is necessary:

94-a) ... V + clitic ↑ NP
(insertion of a case-marker)

In other words, clitic doubling illustrates a clear case where the case-filter and the θ-criterion are dissociated: the latter would be satisfied if no case-marker is inserted but not the former. We, therefore, conclude that the case-filter and the θ-criterion are independent principles; the former is not subsumed by the latter.

For this argument to go through, it is crucial to assume that the clitic bears an independent case-feature. Aoun (1979)'s proposal discussed in section 1 of this chapter suggests that the clitic absorbs Case. It, however, does not necessarily follow that since the clitic absorbs Case, it is case-marked contrary to what was suggested in section 1. In the grammar, we have encountered two instances of case-absorption: a nominal expression needs Case; in this sense,

it absorbs the case-feature assigned by the governor. The second instance of case-absorption is at work in passive constructions; it is assumed that passive morphology absorbs the case-feature normally assigned by the verb to its object (cf. P.L. and section 7). In the latter instance, there is no nominal element responsible for this case-absorption; i.e. there is no nominal expression bearing the absorbed case-feature. The two instances of case-absorption may be characterized as follows: in the first instance, it is possible to say that the nominal element absorbs and manifests (bears) the case-feature. In the latter, the passive morphology absorbs but does not manifest Case (cf. Chomsky forthcoming where case-manifestation is discussed).

With this in mind, let us return to doubled constructions. In order to argue for the autonomy of the case-filter, we assumed that the clitic in doubled constructions such as (94)-(94 a) absorbs and manifests (bears) Case. However, as pointed out by N.Chomsky (p.c.), it is possible to assume that in these constructions, the clitic absorbs Case à la passive ; i.e. that it absorbs but does not manifest (bear) Case: it is not case-marked. If the latter suggestion can be maintained, then clearly doubled constructions do no constitute counter evidence with respect to the proposal that the θ-criterion subsumes the case-filter.

Other constructions may constitute a problem to the attempt of deriving the case-filter from the θ-criterion. In the examples discussed previously in this section, non-arguments (such as expletive <u>it</u>) form a chain with an argument.Thus, in "it is clear that John will win",<u>it</u> and the clause in the VP form a chain. In order for this chain to get a θ-role,it will have to be case-marked. This is why it was possible to

assume that the case-filter follows from the θ-criterion even for non-arguments (cf. the discussion of class iii in this section). There, however, seem to be constructions where an expletive element is not coindexed with an argument. If the case-filter is to follow from the θ-criterion we expect these expletive elements to be able to appear in non-case-marked contexts: since the chain formed by the expletive element does not need a θ-role, it does not need a case-feature. This does not appear to be the case. Such constructions are exemplified by "impersonal passives" in German (es wurde getanzt, "it was danced"). In these constructions, the expletive element es ("it") is not coindexed with a referential expression; nevertheless, this expletive element cannot appear in a non-case-marked context such as the subject of an infinitive (* es getanzt zu werden "it to be danced"). If the case-filter is viewed as an independent principle in the grammar, this fact may straightforwardly be accounted for: this expletive element cannot appear in a non-case-marked context because the case-filter will be violated. Note that the problem raised by this construction may be overcome if it is possible to argue for the existence of an argument coindexed with the expletive element. This argument, if it exists, would presumably, be treated like the indefinite pronoun on in French, (cf. on a cassé la vitre "someone broke the window") and it would, plausibly, be part of INFL (like French on, cf. Belletti 1981).

Summarizing, the content of this section, doubled constructions may be relevant to the status of the case-filter as an independent principle in the grammar: if case-absorption by the clitic is due to its nominal character -i.e. if the clitic, as a nominal element, needs to bear a case-feature- then doubled constructions illustrate a case where the case-

filter and the θ-criterion are dissociated. If, however, a distinction is made between case-absorption and case-manifestation -i.e. if the clitic absorbs but does not manifest Case-, then one can maintain that the case-filter follows from the θ-criterion.

CONCLUSION OF PART I.

Recapitulating what has been said so far with respect to doubled constructions, we started by discussing Kayne's generalization:

> An object NP may be doubled by a clitic only if this NP is preceded by a preposition.

and pointed out that this generalization may be accounted for if it is assumed that clitics "absorb" the case-feature: since the clitic absorbs the case-feature assigned by the governing element there will no longer be any available case-feature for the doubled NP. The insertion of a case-marker, which is generally a preposition, is thus necessary; otherwise, the derivation will be filtered out by the case-filter. It was, further, pointed out that the absorption of the case-feature follows from the case-filter too: like other nominal elements, clitics need a case-feature; otherwise the case-filter will be violated (section 1).

Another proposal based on some dialects of River Plate Spanish and designed to account for Kayne's generalization was discussed in section 2. According to this proposal, case-absorption may be generalized to "government-absorption" assuming that the subcategorization feature associated with an element α governs the lexical element subcategorized by α and that case-assignment is a special case of governace (cf. P.L.), clitics may be viewed as absorbing the sub-

categorization feature of the verb. As a consequence, the derivation will be ruled out by the case-filter unless a case-marker is inserted in front of the doubled element (section 2). With respect to the analysis presented in section 1 where clitics are considered to absorb the case-feature only, the second approach has the advantage of being more general; it, also, accounts for the extractibility of the doubled elements in some dialects of River Plate Spanish where doubled datives -but not doubled accusatives- may be affected by movement rules. To this end, it suffices to assume that ECP is restricted to empty elements left by the extraction of NPs: since government is done via subcategorization, since clitics absorb the subcategorization feature, the empty element left by the extraction of doubled accusatives is not properly governed; the derivation will be ruled out by the ECP. Extraction of doubled datives, however, is not prohibited since these elements are prepositional and escape as such the effect of the ECP (section 2.1.).

This analysis predicts that there cannot be instances of cliticization appearing in contexts of case-assignment but not of subcategorization. It also predicts that there cannot be instances of doubled NPs which may be extracted and of doubled PPs which may not be. These predictions appeared not to be fulfilled: in Lebanese Arabic, as in other semitic languages, there are instances of cliticization appearing in contexts of case-assignment but not of subcategorization (section 3). As for the extraction possibilities, it does not seem to correlate with a categorial difference between doubled elements: across languages, some doubled NPs and PPs may be extracted whereas some others may not as illustrated in such different languages as Rumanian, French and Lebanese Arabic

(sections 4.1. and 4.2.). Further doubts with respect to any approach which tries to trace back the extractibility of doubled elements to their categorial nature are raised by some dialectal variations in Spanish referred to as Leismo and Loismo. The variations indicate that it is the nature of the doubling clitic rather that that of the doubled element which determines the extraction possibilities in the different dialects of Spanish (sections 4.3.).

At this point, we suggested that the extraction possibilities of doubled elements is to be accounted for in terms of the θ-criterion:

A clitic may absorb a θ-role.

Some clitics function as R-expressions (R-clitics) and some others do not (non-R-clitics). Like case-absorption, θ-role absorption does not need to be stipulated. From the θ-criterion, it follows that an R-clitic absorbs θ-role and, like other arguments, cannot co-occur in the same chain with another argument. Thus, when an R-clitic is doubled, the doubled element is in a separate chain bearing a θ-role similar to the one assigned to appositives or (right)-dislocated elements. Like appositives or right-dislocated elements, the doubled element will be in a non-argument position and will not be able to undergo movement. A non-R-clitic, however, co-occurs with the doubled elements in the same chain; the doubled element is not demoted from its argument-status and can undergo movement (section 5).

Subsequently, the non-argument position was identified as an $\bar{A}$-position, and it was suggested there is a general prohibition concerning extraction of elements from an $\bar{A}$-position. This general prohibition appeared to be relevant to the considerations mentioned in chapter 1 concerning the assumption

that an $\bar{S}$ breaks a chain. By relativizing the notion of an A-position or an $\bar{A}$-position to a domain D where D is taken to be the clause ($\bar{S}$), it was suggested that cases of NP-traces covered by the ECP or by the assumption that an $\bar{S}$ breaks a chain may be related to the general prohibition concerning the extraction from an $\bar{A}$-position: these principles may be viewed as subcases of the prohibition. In this respect, processes such as $\bar{S}$-deletion are to be considered as means that languages may use to evade the effect of the prohibition concerning extraction from an $\bar{A}$-position (section 6).

This approach has two implications: theoretical and typological. The first has to do with the status of the case-filter in the grammar and its relation to the θ-criterion: is it possible to derive the case-filter from the θ-criterion and, thus, eliminate it an as independent principle of the government-binding theory? One of the main assumptions of our approach is that clitics necessarily absorb Case; this is illustrated by doubled constructions (cf. Kayne's generalization) and by passive constructions of French where the direct object deprived of Case cannot cliticize onto the verb (section 7). The second assumption is that some clitics are R-expressions and some others not; non-R-clitics -but not R-clitics- occur with the doubled element in the same chain. If the case-filter were a principle which follows from the θ-criterion, we would not expect configurations where the latter is satisfied but not the former.

We discussed the possibility that this may be happening in doubled constructions: if case-absorption by the clitic is due to its nominal character -i.e. if the clitic, as a nominal element, needs to bear a case-feature-,then doubled

constructions illustrate a case where the case-filter and the θ-criterion are dissociated. If, however, a distinction is made between case-absorption and case-manifestation - i.e. if the clitic absorbs but does not manifest (bear) Case-, then one can maintain that the case-filter follows from the θ-criterioh.

As for the typological implication, note that clitics absorb case-feature and may or may not absorb θ-role. In fact, the absorption of case-feature -like the absorption of θ-role- is not systematic across languages. This is exemplified in a language such as Greek. As indicated in Ingria (1981), "Modern Greek differs in a striking manner from other languages which possess clitic doubling, in that a (nominal element) may be doubled by a clitic pronoun and retain the Case which it normally would receive in the position in which it occurs":

i-a) o Petros me filise emena
(acc) (acc)
the Peter me kissed me
"Peter kissed me"

b) o kinogos ton skotose ton liko
(acc) (acc)
the hunter him he killed the wolf
" the hunter killed the wolf"

c) tis to zitisa aftis
(gen) (gen)
from-her it I-asked from-her
"I asked her for it"

d) tu tilefonises tú patera
(gen) (gen)
to-him you called to-the-father
"did you phone father"

In our approach, clitics in Greek are not independent nominal expressions and, as such, do not absorb the case-feature. Note that the fact that a clitic does not absorb the case-feature does not mean that this clitic is not overtly case-marked. Since it agrees with the doubled element in gender, number and person, it may also agree with this nominal element in Case. This situation is exemplified in Greek where accusative clitics differ morphologically from genitive clitics (cf. Ingria 1981):

i-e) o kinogos ton skotose ton liko
(acc) (acc)
the hunter him he-killed the wolf
"the hunter killed the wolf"

f) tu tilefonises tu patera
(gen) (gen)
to-him you called to the father
"did you phone father?"

In other words, there are two ways for a clitic to get Case: either directly from the governor or through the doubled element with which it agrees. Both possibilities do not overlap; the first applies when the clitic is a nominal element: it absorbs the case-feature assigned by the governor; otherwise the case-filter is violated. The second holds when the clitic is not an independent nominal element; it behaves more as an agreement marker which gets its features (person, number, gender and Case) from the element with which it agrees[24].

Greek is also interesting in that a doubled NP may not be extracted by movement rules as exemplified in (g):

i-g) pyan ton idate
(acc) (acc)
who him you saw
"who did you see?"

In brief, in terms of our analysis, clitics in Greek behave like R-clitics: they absorb θ-role; consequently the doubled element is frozen and cannot be moved. They however, do not absorb Case. This is why Kayne's generalization is not verified in this language: a case-marker does not need to be inserted in front of the doubled element.

Given the above remarks, clitics in natural languages may be classified with respect to the features (± nominal) (± referential) : a nominal clitic absorbs Case and a referential clitic θ-role. This classification predicts the existence of four possibilities which appear to occur in natural langaues :[25]

ii- + θ-role + Case: accusative clitics in Spanish;
+ θ-role - Case: clitics in Greek
- θ-role - Case: clitics in Warlpiri (if it is assumed that this language is not non-configurational, cf. Van Riemsdijk (1981). For a different approach, cf. Hale (1978);
- θ-role + Case: clitics in Rumanian, Hebrew, Lebanese Arabic;

where + θ-role = absorbs θ-role (i.e. when the clitic is in an R-expression)
- θ-role = absorbs Case (i.e. when the clitic is nominal).

The classification in (ii) holds for doubling clitic; i.e. for clitics which co-occur with a coindexed element overtly realized. It is interesting to wonder whether it holds for non-doubling clitics as well; i.e. for clitics which are coindexed with an empty (non-overt) element as in (iii):

iii- Pierre l'a vu [e]

The evidence seems to indicate that non-doubling clitics are, always, treated as R-clitics: they absorb θ-role. Recall that in chapter 2,section 5.1.3., two kinds of variables were distinguished: Q-variables (variables coindexed with an operator in an $\bar{A}$-position) and non-Q-variables (variables coindexed with a non-operator in an $\bar{A}$-position). Q-variables are (quasi-)arguments.As such, they are subject to principles A and C of the binding theory and , thus, escape the effect of the Specified Subject Condition (SSC). Non-Q-variables, on the other hand, will only be subject to principle A of the binding theory since they are not (quasi-) arguments. They, thus, obey the SSC. As an example of non-Q-variables, empty elements coindexed with the clitic in constructions such as (iii) were mentioned: since clitics are in an $\bar{A}$-position, the empty element coindexed with the clitic is identified as a variable. Furthermore, it was indicated that the clitic itself is an R-expression. From this, it follows that the variable coindexed with the clitic will not have an independent θ-role. Otherwise the θ-criterion would be violated: the chain formed by the clitic and the empty element would contain two R-expressions. In brief , if the analysis outlined in section 5.1.3. of the preceding chapter is correct, it, clearly, indicates that the empty element coindexed with the clitic does not bear a θ-role; it is the clitic which bears a θ-role. Another evidence in favor of this analysis is provided by some coreference facts discussed in a forthcoming work by L.Rizzi. L.Rizzi notes the following contrast:

iv-a) Gianni ha mandato $[_{NP}$ la sorella di Piero$_i$]

$[_{PP}$ incontra a lui$_i$]

b)* Gianni gli_i ha mandato $[_{NP}$ la sorella di $Piero_i$ $]$ $[$ incontra e_i $]$
"Gianni send Peter's sister to meet him"

In (iv a), Piero and the pronoun lui may be understood as coreferential. In (iv b), however, the dative clitic gli and Piero cannot be construed as coreferential.
The facts noted by L.Rizzi may be interpreted as follows. Let us assume that co-reference relations may only hold between elements bearing a θ-role. Since only R-expressions (or more generally arguments) bear a θ-role. This, tautologically, amounts to saying that co-reference relations hold between R-expressions (referential expressions) only. With this in mind, consider (iv a-b). In (iv a), the R-expressions Piero and lui may be understood as coreferential. In (iv b), however, assuming that the clitic and not the empty element bears the θ-role, co-reference between gli and Piero will be excluded by considerations along the lines of principle C of the binding theory (cf.Chomsky forthcoming): Piero would be coreferential with a c-commanding element bearing a θ-role. Assuming, however, that the empty element and not the clitic bears a θ-role, we incorrectly would predict that (iv a) and (iv b) should be treated on a par.

A corroboration of this analysis is provided by the following facts in Spanish also discussed in Rizzi's work

v-a) le presentamos la admiratora de Juan
b) le presentamos la admiratora de Juan a el
"we presented the admiror of Juan to him"

In (v b), but not in (v a), the dative clitic le co-occurs with a doubled pronoun a el. In (v a), coreference between

the clitic an Juan is not possible. In (v b), coreference between Juan and the chain (le, a el) is possible. This exactly is the contrast expected. The impossibility of co-reference between the clitic and Juan in (v a) is parallel to the one illustrated in (iv b). As for (v a), recall that we assumed that the dative clitic in doubled constructions such as (v b) is not an R-expression and does not absorb the θ-role. Since co-reference relations hold between R-expressions only, it follows that in (v b), the coreference relation holds between the doubled pronoun a el and the NP Juan and not between the doubling clitic le and this NP. In other words, (v b) is to be treated on a par with (iv a) and not with (iv b).

Summarizing, the coreference facts discussed in (iv-v) clearly indicate that in non-doubled constructions, the clitic -but not the empty element coindexed with it- bears the θ-role.

Up to this point, we mentioned some evidence indicating that in non-doubled constructions, the clitic -and not the empty element coindexed with it- bears the θ-role. In brief, in non-doubled constructions, it is the clitic which is the R-expression. But how is it possible to account for this? Some possibilities come to mind. Thus, one may explore the parallelism between the chain formed by an NP and its trace (cf. vi a) and the chain formed by the clitic and the empty element coindexed with it:

vi-a) NP_i ..... e_i

b) clitic... e_i

As indicated in chapter 2, section 5.1.2., it is the NP,and not its trace, which bears the θ-role -if any- assigned to the chain in (vi a). Similarly, the discussion of constructions (iii) to (v) indicated that in non-doubled constructions, the clitic, and not the empty element coindexed with

it, bears the θ-role assigned to the chain in (vi b).

Recall that in chapter 1, following P.L., chains were characterized as a sequence of categories ($\alpha_1, \ldots, \alpha_n$) at S-structure, each member except the first being a trace of the first member, which was referred to as the head of the chain. In (vi a) and (vi b), the heads will be the NP and the clitic respectively. The head of the chain may be thought of as the most prominent element in the chain in the same way as the SUBJECT is characterized as the most prominent element in the sentence (cf. P.L. and chapter 1). It is plausible to assume that the head of the chain, the most prominent element, bears the θ-role assigned to this chain. To present this in a slightly different way, it follows from the θ-criterion that each chain to which a θ-role is assigned must contain one and only one R-expression (or more generally one and only one argument,cf.chapter 1). It is plausible to assume that the head of the chain is the R-expression (the argument) which satisfies the θ-criterion requirement. If this characterization is on the right track, the θ-role assigned to the chain (clitic, e) in (vi b) will be satisfied by the head of the chain -the clitic- which will be the R-expression bearing the θ-role.

Usually, in chains containing R-expressions, (arguments), the head is unambiguously characterized. It precisely is the R-expression (argument) which will bear the θ-role. In general, if, as in P.L., the case-filter is to follow from the θ-criterion each chain will contain an R-expression or more generally an argument (but cf.supra). Thus, consider the following sentences:

vii-a) $John_i$ seems t_i to have left

b) PRO^p arrivano $Gianni^p$
"Gianni arrived"

c) I do not want [PRO_i to be arrested t_i]

In (vii a), the head of the chain [$John_i$, t_i] will be the R-expression John; in (vii b), the head of the chain [PRO, Gianni] will be Gianni and in (vii c), the head of the chain [PRO, t] will be PRO. The characterization of PRO in (vii c) as the R-expression follows from the definition of θ-assignment adopted in chapter 1: if PRO were not referential in (vii c), it would not be possible for the verb to assign a θ-role to the chain [PRO, t] since θ-roles are assigned to case-marked chains or to chains headed by an argument PRO. Therefore, the θ-criterion would be violated since the verb cannot assign its θ-role.

Sentences (vii) are interesting from another point of view. Recall that in chapter 1, following P.L., the definition of chains was extended to include co-superscripted chains such as the one in (vii b). These kinds of chains indicate that the head of a chain cannot always be structurally characterized as the first member of the chain: in the chain [PRO, Gianni], the head -the θ-bearing element- is Gianni. This remark is not relevant to chains such as the one in (vii a-c) where the θ-bearing element is unambiguously characterized. It, however, is relevant to chains whose members may ambiguously be characterized as R-expressions or not. Since a clitic may be referential (R-clitic) or not (non-R-clitic) and since an empty category may bear a θ-role or not (cf. chapter 2, section 5.1.), the chain constituted by the clitic and the empty element (cf. vi b) precisely is a chain whose members are not unambiguously characterized. In other words,

how is it possible to ensure that in (vi b), the clitic and not the empty element bears the θ-role? An answer was given in the preceding paragraphs since we assumed that the head of the chain, which bears the θ-role, is the first member of the chain. Being the first member, the clitic will bear the θ-role. It is to be noted that this solution does not take into consideration subject cliticization where the clitic is not the first member of the chain (cf. e il est venu "he came"),(cf.chapter 2).

This, however, may turn out not to be problematic since one may argue that subject cliticization is a process of phonological and not syntactic cliticization contrary to what was implicitely assumed in chapter 2.

Returning to our problem, since there are chains where the head is not the first member, how is it possible to ensure that the clitic in (vi b) bears the θ-role? Assuming that the head of a chain will bear the θ-role assigned to the chain, how is it possible to characterize the head in chains where the head is not unambiguously characterized (cf.vi b)? Here too, many answers suggest themselves. Thus, one may distinguish between co-superscripted chains and co-subscripted chains, and assume that in co-subscripted chains, the head is always the first element. The clitic and the empty element are co-subscripted as evidenced by the fact that the relation between the clitic and the empty element is constrained by the binding theory; the clitic, thus, will be characterized as the head in (vi b).Another possibility is to depart from a structural characterization of the notion head of a chain and to assume that in cases of ambiguity other considerations will come into play to

identify the head. For instance, one may assume that in (vi b), the clitic will be characterized as the head since it is overtly realized: all other things being equal, an overt element is more prominent than an non-overt one. Being the head, the clitic will bear the θ-role in chains such as (vi b).

In summary, the discussion of (iii) -(v) indicated that the clitic bears the θ-role assigned to the chain formed by this clitic and an empty element. To obtain this result, it was suggested that the head may be thought of as the most prominent element in a chain and that the most prominent element will bear the θ-role assigned to the chain. If it is possible to characterize the clitic, and not the empty element it is coindexed with, as the most prominent element in the chain, it will follow that this clitic will bear the θ-role.

APPENDIX TO PART I: PROPER-GOVERNMENT AND THE CASE-AGREEMENT REQUIREMENT.

In Part I of this chapter, we discussed some proposals concerning extractibility of doubled elements and suggested an analysis based on the θ-criterion. In this Appendix, we would like to discuss an account of the extractibility of doubled elements based on some case-agreement requirement imposed on the ECP.

Recall that in some dialects of River Plate Spanish, a doubled dative -but not a doubled accusative- can be extracted by movement rules as illustrated in (1 a) and (1 b):

A1-a)* a quién la viste (doubled accusative)
"who did you see?"

b) a quién le han regalado ese libro (doubled dative)
"to whom have they given that book?"

It is argued in Borer (1981) that the extraction of a doubled element is possible when the empty category left by this doubled element is properly governed by the doubling clitic. This is why, the extraction of doubled elements in Rumanian or Hebrew (cf. sections 4.1.1. and 4.1.2. of this chapter) is possible. In chapter 1, where we tried to get rid of the ECP, the insight behind the proper government requirement by the doubling clitic was incorporated. There we argued that the clitic functions as an $\bar{A}$-binder for the doubled element. Thus, consider the following contrast discussed in chapter 1:

A2-a) mi biker ?et ktivato$_i$ šel eize sefer$_i$
"who criticized the writing of which book?"

b)* mi biker ?et ktivato$_j$?et ?eize sefer$_i$
"who criticized his writing of which book?"

In (2 a), the clitic is coreferential with the wh-phrase in situ and in (2 b), it is disjoint from this clitic. After the extraction of the wh-quantifier in L.F., the representations of (2 a-b) will be (irrelevant details omitted):

A3-a) [for which x_i , x_i a book] ... [$_{NP}$ N + cli$_i$ x_i]

b)* [for which x_i , x_i a book]... [$_{NP}$ N + cli$_j$ x_i]

In (3 a), the variable left by this extraction is $\bar{A}$-bound by the clitic. In (3 b), however, this varibale is free; the derivation will be filtered out by the binding principles which require every empty element to be bound (cf. chapter 1 for more details).

As for the contrast illustrated in (1), i.e. for the extractibility of doubled datives, versus the non-extractibility of doubled accusatives, it is accounted for in Borer

(1981) by imposing a case-agreement requirement on proper government. Recall that :

A4- α properly governs β iff α governs β and
a) α is (+ V) or
b) α is coindexed with β.

In Borer (1981), it is assumed that "the coindexing referred to in (b) is well-formed only if α agrees in all its features with β . Such agreement of features will include agreement in gender, person and number and also Case". This case-agreement requirement is only valid if β has Case.

It is now possible to account for the contrast between (1 a) and (1 b) by assuming that in the relevant dialect of River Plate Spanish where this contrast holds, the marker a assigns dative not accusative Case. Thus, in (5):

A5- Lo vimos a Juan
(dat)

the clitic is accusative and the doubled element Juan is dative. When this doubled element is extracted by Move α (cf.1 a repeated for convenience in 6), the empty category is marked as dative, like its antecedent a quién. The clitic, however, is a spell-out of the case feature of the verb, and thus, is accusative:

A6- * a quién la viste (e)
(dat) (acc) (dat)
"who did you see?"

Following the requirement that coindexed governors agree in Case with the empty elements they properly govern, the ungrammaticality of (6) is accounted for.

Let us turn, now, to sentence (1 b). In this sentence , the a phrase was extracted leaving a dative empty category.

Since dative clitics are a spell-out of dative case-features, the case-agreement requirement between the proper governor and the governee is satisfied:

A7- a quién le han regalado ese ~~libro~~ (e)
(dat) (dat) (dat)
"to whom have they given that book?"

The analysis presented above predicts that extraction of doubled elements should always be possible if the clitic and the doubled element agree in Case. This prediction is not fulfilled as illustrated by the behavior of doubled elements in Greek.

Recall that in Greek, the doubled element and the doubling clitic have the same Case: the nominal element may be doubled and retain the Case which it normally would receive. Thus, in the following examples, direct objects are accusatives and indirect objects are genitive (from Ingria 1981):

A8-a) to idane to Kastro
(acc) (acc)
"they saw the castle"

b) tu tilefonises tu patera
(gen) (gen)
"did you phone the father?"

Recall also that doubled elements in Greek may not be extracted by movement rules (cf. the preceding section):

A9-a)* pyon ton idate
(acc) (acc)
who him you saw
"who did you see?"

Greek, thus, is a language where the prediction of the analysis presented in this section is not fulfilled: although it agrees in Case with the doubling clitic, the extraction of

the doubled element is not possible.

A somewhat parallel situation was encountered in chapter 1 where the extraction of post-verbal subjects in Italian was discussed. There, we argued that the extraction of the post-verbal subject is possible because AGR which attaches to the predicate $\bar{A}$-binds the empty element left in the post-verbal subject position. In terms of proper-government this means that AGR when attached to the verbal predicate may count as a proper-governor of the empty element left in the post-verbal subject position. Assuming that the AGR element in Italian is not case-marked, we have another construction where the analysis presented in this appendix does not hold: a proper-governor is not case-marked, although the governed element is. Note, however, that the extraction of the post-verbal subject is less problematic than the doubled constructions in Greek. It is possible to assume that the case-agreement requirement between the proper-governor and the properly-governed element is not relevant when the proper-governor is not case-marked at all. Another possibility is to assume that the post-verbal subject and AGR share the same Case.

Recapitulating, in this appendix we discussed an analysis which tries to account for the non-extraction of some doubled elements by imposing a case-agreement requirement between the proper-governor and the governed element. Some of the predictions of this analysis do not appear to be fulfilled; this is why the one outlined in sections 5 and 6 which is based on the θ-criterion will be preferred.

PART II: ON ANAPHORIZATION PROCESSES.

In this part, the various aspects of the relation which holds between the clitic and the coindexed element will be discussed. In section 9.1., further evidence for the assumption that the clitic and the coindexed element form a chain will be provided. In section 9.2., it will be indicated that the clitic may be coindexed with an empty element or in the case of doubling, with a lexically realized NP. This clitic, however, may not be coindexed at the same time with and empty element and a doubled element. This biuniqueness relation which holds between the clitic and the coindexed element does not need to be stipulated; it follows from various principles at work in the grammar such as the binding principles. Finally, in section 9.3., it will be suggested that in doubled constructions, the case-marker inserted in front of the doubled element anaphorizes this element. Being anaphor(ized), the doubled element will have to be bound; the clitic will serve as an $\bar{A}$-binder of this element. This -we shall argue- is a special instance of various anaphorization processes applying in the grammar. For instance, the marker self (in himself, herself...) may be viewed as a marker which anaphorizes the pronoun it is attached to. More generally, it is possible to distinguish between two kinds of anaphoric markers: the first requires the element it is attached to to be A-bound (A-anaphorizer) (self, for instance). The second requires this element to be $\bar{A}$-bound ($\bar{A}$-anaphorizer) (the case-marker inserted in doubled constructions, for instance).

9.1. Do the clitic and the coindexed element form a chain?

In the previous section, it was indicated that the clitic and the doubled NP may be in the same chain or not. The fact

that the clitic and the doubled NP are in the same chain or not does not need to be stipulated: if a clitic is an R-expression (R-clitic), it will not occur with another R-expression, the doubled element, in the same chain; otherwise, the θ-criterion will be violated. If, however, the clitic is not an R-expression, (non-R-clitic), nothing prevents it from occuring in the same chain with the doubled element. Actually, it was suggested that they must co-occur in the same chain. Based on the assumption that the non-R-clitic and the doubled element are in the same chain, it was further indicated that doubled constructions may turn out to be relevant to the discussion concerning the status of the case-filter. The reason is that these constructions may illustrate a Case where the θ-criterion, but not the case-filter, is satisfied: in clitic doubled constructions, the chain containing the non-R-clitic and the doubled element will be case-marked since the clitic is case-marked. As such, the θ-criterion will be satisfied and a θ-role may be assigned to this case-marked chain. Despite this,the doubled element needs Case (cf. Kayne's generalization); otherwise, the case-filter will be violated. If the case-filter were a principle which follows from the θ-criterion, we would not expect Case to be necessary for the doubled NP since the θ-criterion is not violated. Therefore, the case-filter cannot be eliminated as an independent principle from the grammar. Subsequently, this conclusion was tempered by considerations concerning a distinction between case-absorption and case-manifestation (cf. section 8).

It clearly appears from this recapitulation that the discussion concerning the independence of the case-filter is based on the assumption that the non-R-clitic and the doubled element are in the same chain. This assumption, however, is not

self-evident and it is possible to suggest that the non-R-clitic and the doubled element are not in the same chain. Let us, therefore, look for some independent facts which indicate that the non-R-clitic and the doubled element are in the same chain.

Recall that two (nominal) elements are in the same chain if they are coindexed. This coindexing may be either co-subscripting or co-superscripting (cf.chapter 1).Suppose, now, that it is possible to show that the clitic and the doubled elment are coindexed and that this coindexation is relevant to the binding theory. Since coindexed elements are in the same chain, we may conclude that the clitic and the doubled element are in the same chain. In fact, these constructions have already been discussed in the first chapter where some facts from Modern Hebrew (MH.) were mentioned in order to indicate that clitics are $\bar{A}$-binders.

Recall that the construct state in M.H. indicates genitival relation between the head N and the complement NP which can be lexical or a clitic (cf.Borer 1981 from which these facts are drawn):

95-a) ktivat Dan
writing Dan
"Dan's writing"

b) ktivato
writing his
"his writing"

Recall also that the clitic attached to the head noun can appear with a coreferential NP; this being another instance of the clitic-doubling phenomenon:

96-a) ktivato$_i$ šel-Dan$_i$
writing-his of Dan
"Dan's writing"

b) ktivato$_i$ šel-hasefer$_i$
writing-it of the book
"the writing of the book"

and that the NP co-occuring with the clitic can also be disjoint from this clitic. In the latter constructions, the case-marker ?et appears instead of šel in front of the NP:

97- Dan biker ?et ktivat-o$_i$?et ha-sefer$_j$
Dan criticized acc. writing acc. the book
"Dan criticized his writing of the book"

As indicated in chapter 1, only the doubled element coindexed with the clitic can be extracted:

98-a) lo barur la-nu mi biker ?et ktivat-o$_i$
not clear to-us who criticized acc.writing it
"it is unclear to us who criticized the writing

šel ?eize sefer$_i$
of which book
of which book"

b)* lo barur la-nu mi biker ?et ktivato$_i$
not clear to-us criticized acc.writing-his
"it is unclear to us who criticized his writing

?et ?eize sefer$_j$
acc which book
of which book"

The contrast between sentences as (98 a) and (98 b) was accounted for in chapter 1 by assuming that the clitic may count as an $\bar{A}$-binder for the element it is coindexed with. In (98 a) -but not in (98 b)- after the extraction of the wh-element in L.F., the clitic coindexed with the variable may function as an $\bar{A}$-binder for this variable. As such, the

variable in (98 a) -but not in (98 b)- will be $\bar{A}$-bound in its governing category (the NP) (cf. chapter 1 for further details):

98-a) [for which x_i, x_i a book]... [$_{NP}$ N + cl_i x_i]

b)* [for which x_i, x_i a book]... [$_{NP}$ NP+ cl_j x_i]

In short, the extraction facts in M.H. indicate that the clitic and the doubled element are coindexed and that this coindexing allows the doubled element to be bound, hence to be extracted from its governing category. Since the clitic and the doubled element are coindexed and since coindexed nominal elements form a chain, it is possible to conclude that the clitic and the doubled element constitute a chain. Notice that it is possible to challenge this conclusion by assuming that since the clitic is in an $\bar{A}$-position and since chains were originally restricted to A-chains (cf. P.L.) the chain constituted by the clitic and the doubled element is not relevant since it is not an A-chain. Recall however, that in chapter 1, the notion chain was extended to include non-A-chains (cf. also part III of chapter 2). Despite this, let us consider this objection in greater detail. It may be useful, at this point, to wonder what is achieved by the notion chain. What is the usefulness of such notion? Recall that among the motivations put forward for the existence of such notion, is the fact that it is the domain of θ-assignment: θ-roles are assigned to a chain. Presumably, the fact that the chain is relevant for θ-assignment reflects the more general fact that feature-assignment (or feature transportation) has the chain as domain.

With this in mind, recall that in chapter 2 (section 5.3.), a distinction was made between variables bound by an operator

(Q-variables) and variables bound by a non-operator (non-Q-variables). Q-variables are arguments and need a θ-role whereas non-Q-variables are not arguments; it is rather the elements with which they are coindexed which have θ-roles. It was also indicated that Q-variables are subject as anaphors to principle A of the binding theory and as arguments to principle C,whereas non-Q-variables are subject to principle A only since they are not arguments.The empty element coindexed with a wh-element is a Q-variable and the empty element coindexed with a clitic is a non-Q-variable:

99-a) $wh_i \ldots \underset{(+Q)}{x_i}$

b) $clit_i \ldots x_i$

As mentioned in the preceding paragraph, the clitic in (99 b) bears a θ-role. Recall also that clitics are in $\bar{A}$-positions and that θ-roles are assigned to A-positions.This being the case, it is either possible to assume that the clitic receives its θ-role by virtue of being coindexed with the empty element which is in an A-position or that it receives its θ-role directly. In the latter option, θ-assignment must be extended to apply to $\bar{A}$-positions. In the first option,however, we will have a clear case where the θ-role is transmitted from the empty element to the clitic. Since chains are considered to be the domain of feature transportation, the first possibility may be taken as indicating that the clitic and the element it is coindexed with form a chain. These remarks are to be added to those mentioned in chapter 2 (section 6.2.). There it was indicated that the notion accessible SUBJECT is to be replaced by that of accessible chain and that the subject clitic and the element it is coindexed

with may form an accessible chain. This is additional evidence indicating that the clitic and the element it is coindexed with form a chain.

Summarizing, in this section, some evidence indicating that the clitic and the element it is coindexed with form a chain were discussed. As indicated earlier, this conclusion is relevant to the discussion concerning the status of the case-filter in the grammar. As we will see in the subsequent sections, it will also be relevant to the precise characterization of chains containing clitics and to the various anaphorization processes which will be discussed.

9.2. On the relation clitic-empty element/ clitic-doubled element.

Let us turn, now, to some other aspects of the relation which exists between the clitic and the element it is coindexed with. In general, in non-doubled constructions, the clitic is coindexed with an empty element (cf. chapter 2, section 6.2.) and in doubled constructions, it is coindexed with a lexical element phonetically realized (cf. 100 a and b respectively):

100-a) $\text{clitic}_i \; [_{NP_i} \; e \;]$ (e = empty element)

b) $\text{clitic}_i \; \underset{\text{lexical}}{NP_i}$

A priori, it is possible that in doubled constructions, the clitic is coindexed with an empty element and a lexical element:

101- $\text{clitic}_i \; \ldots \; [_{NP_i} \; e \;] \; \ldots \; \underset{\text{lexical}}{NP_i}$

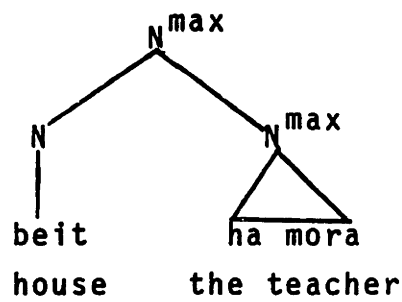
There are, however, some facts in Modern Hebrew (M.H.) indi-

cating that this possibility is not fulfilled. We will start by presenting these facts and will, then, suggest an account of the impossibility of (101).

Recall, once again, that the construct state in M.H. indicates genitival relation between the head noun and the complement:

102-a) beit ha mora
house the teacher
"the teacher's house"

b)



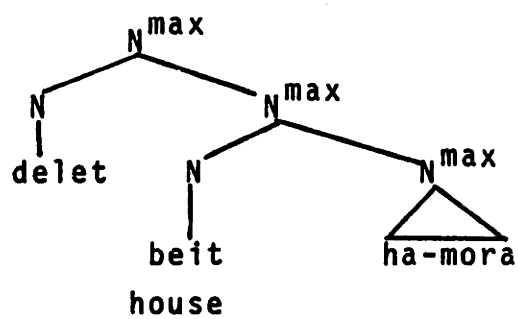
(where N^{max} is the maximal projection of N)

(102a) -which has the structure (102 b)- yields itself to further embedding (cf.103) (cf. Borer 1981 from which these facts are taken):

103- delet beit ha-mora
door house the teacher
"the door of the house of the teacher"

(103) has the following structure (cf.Borer 1981):

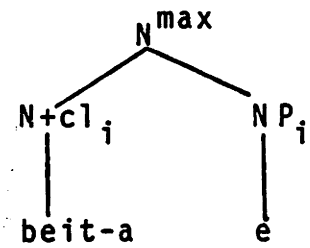
104-



Nouns in M.H., as in other Semitic languages, take clitics which may be viewed as a spell-out of the genitive case-feature (cf. the preceding sections); otherwise assigned to the complement NP. The combination noun + clitic, as in (105 a) is assumed to have the structure (105 b):

105-a) beit-a
house-her
"her house"

b)

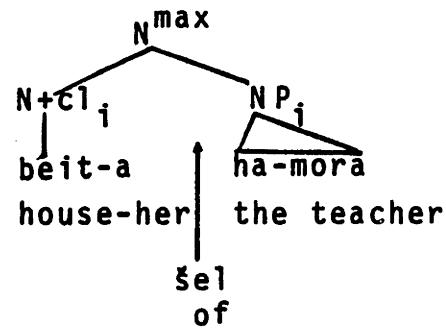


(where $[_{NP_i}$ e $]$ is the empty element coindexed with the clitic)

As indicated previously, the clitic in (105) may be doubled provided that a case-marker <u>šel</u> is inserted in front of this doubled NP.

106-a) beita$_i$ <u>šel ha-mora$_i$</u>
house-her of the teacher
"the teacher's house"

b)



Assuming that the clitic absorbs the genitival case assigned to the complement by the head N of the construct state, the insertion of <u>šel</u> is necessary in order for the doubled NP to get Case. A failure to insert <u>šel</u> would lead to ungrammaticality accounted for by the case-filter:

107- * beit-a$_i$ ha-mora$_i$
house-her the teacher

The distribution of <u>šel</u> in M.H. is not restricted to doubled constructions. It is possible to use <u>šel</u> in order to express genitival relations in a way different syntactically from that expressed by the construct state. In brief, in M.H., there are two alternate forms for expressing genitival relations: one uses the construct state as in (102 a) repeated in (108 a) and the other uses the genitival preposition <u>šel</u> as in (108 b):

108-a) beit ha-mora
house the-teacher
"the teacher's house"

b) ha-bayit šel ha-mora
the-house of the teacher

These two ways of expressing genitival relations may be combined as in (109) which consists of a construct state along with <u>šel</u> phrase:

109- tmunot ha-yalda šel ha-mora
pictures the-girl of the-teacher (fem)

(109) can be construed with either the following bracketings:

110-a) [pictures [[the girl] of the teacher]]
"the pictures of the teacher's daughter"

b) [[pictures [the girl]] of the teacher]
"the girl's pictures of the teacher"

Compare, now, (109) with a phrase in which <u>yilda</u> ("girl") is replaced by a feminine clitic:

111- tmunot-ha šel ha-mora
pictures-her of the-teacher

(111) cannot have the meaning of either (110 a) or (110 b): the clitic ha in (111) can only refer to the teacher ha-mora. In fact, the clitic ha must refer to the teacher ha-mora as indicated by the ungrammaticality of (112 b) where the feminine clitic is replaced by a masculine one:

112-a) tmunot ha-yeled šel ha-mora
pictures the-boy of the-teacher (fem)
"the pictures of the son of the teacher"
"the boy's pictures of the teacher"

b)* tmunot-av šel ha-mora
pictures-his of the-teacher (fem)

Thus, it seems that šel phrase is obligatorily coindexed with the clitic in structures which corresponds to (111)[26]. However, in structures which corresponds to (109) -i.e.structures where there is no clitic- the šel-phrase is not -in fact cannot be- coindexed with a lexical NP. As argued in Borer (1981a), the fact that šel-phrase cannot be coindexed with a lexical NP follows from the binding theory. Thus, if the object of šel is a pronominal element and the complement of the construct state is a full NP they cannot be understood to co-refer:

113- * beit ha-mora$_i$ šel-a$_i$
house the teacher of her

Borer (1981) shows that the positions occupied by ha-mora and šel-a in (113) c-command each other. As such (113) will violate the binding theory since a name (ha-mora) and a pronoun (šel-a) are A-bound in their governing category. As evidence for the analysis she advances, Borer (1981) indicates that a reflexive anaphor in the position of either NP will be correctly A-bound by the other:

114-a)? re?iyat ha-mora$_i$ šel ʃacma$_i$
view the teacher of herself
"the teacher's view of herself"

b) re?iyat ʃacma$_i$ šel ha-mora
view herself of the teacher
"the teacher's view of herself"

Recapitulating, in genitival constructions:

115-a) The clitic and the complement šel are obligatorily coindexed (cf. 112 b).

b) The complement šel is obligatorily disjoint from another full complement (cf. 113)

The impossibility of coindexing between a šel-phrase and another complement is accounted for by the binding conditions. Furthermore, as pointed out in Borer (1981), since the clitic and the šel-phrase are coindexed and since they do not enter the binding (A-binding) conditions, the clitic cannot possibly occupy an A-position. This conclusion is perfectly compatible with our assumption that clitics are in $\bar{A}$-positions (non-A-positions). We will now, consider in greater detail the obligatory coindexing which holds between the šel-phrase and the clitic in construct-phrases. Consider the following sentences:

116- misgeret tmunot ha-yalda šel ha-mora
frame pictures the girl of the -teacher

(116), which is a regular construct state formation without clitic or doubling combined with a šel-phrase permits the following bracketings (cf. Borer 1981):

117-a) [[frame [pictures [the girl]]] of the teacher]
"the teacher's frame of the pictures of the girl"

b) [frame [[pictures [the girl]] of the teacher]]
"the frame of the girl's pictures of the teacher"

c) [frame [pictures [[the girl] of the teacher]]]
"the frame of the pictures of the teacher's daughter"

Surprisingly, the corresponding sentence with a clitic (and coindexing) does not avail itself to the same range of bracketing:

118- misgeret tmunot-ha$_i$ šel ha-mora$_i$
frame pictures-her of the teacher

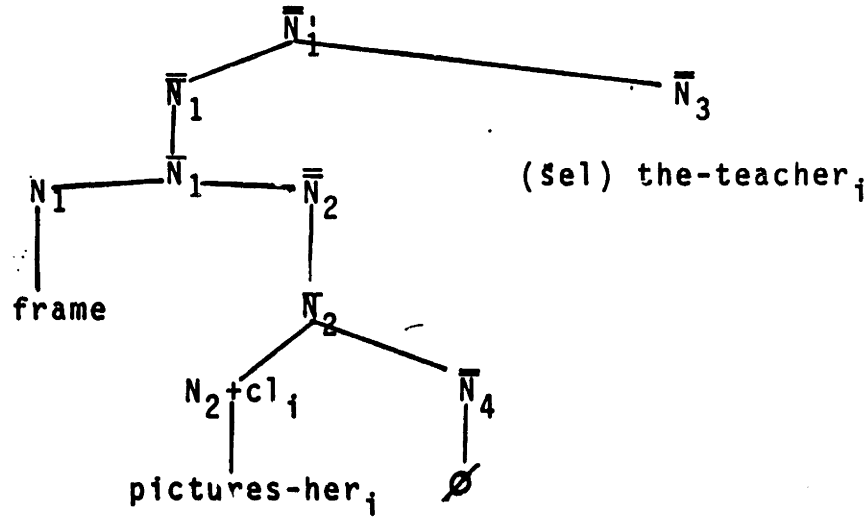
119-a)* [[frame [pictures-her [Ø]]] of the teacher]
"the teacher's pictures frame"

b) [frame [[pictures-her [Ø]] of the teacher]
"the frame of the teacher's pictures"

c) [frame [pictures-her [[Ø] of the teacher]]]
"the frame of the teacher's pictures"

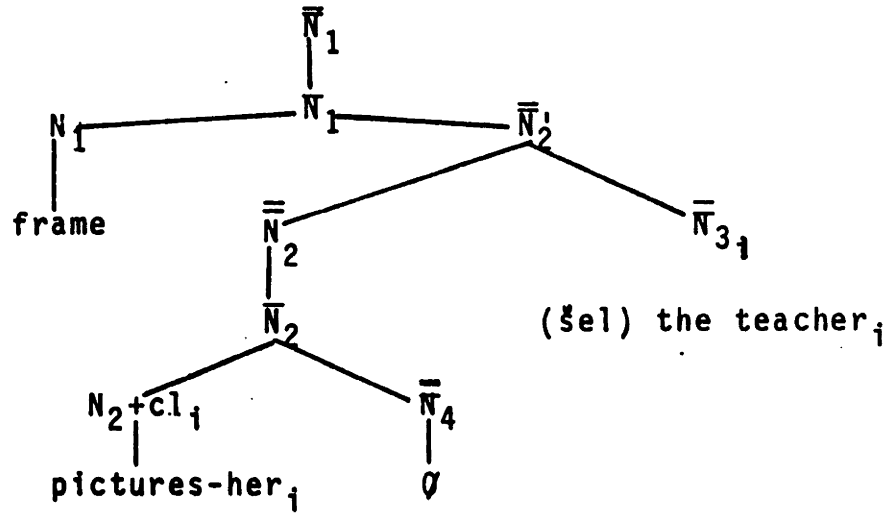
Interpretation (119 a) (which corresponds to 117 a) is unavailable and (119 b-c) have the same meaning.
Assuming that (119 a) has structure (120), Borer (1981) argues that the unvailability of (119 a) is due to the fact that the clitic does not c-command the NP which is coindexed with:

120-

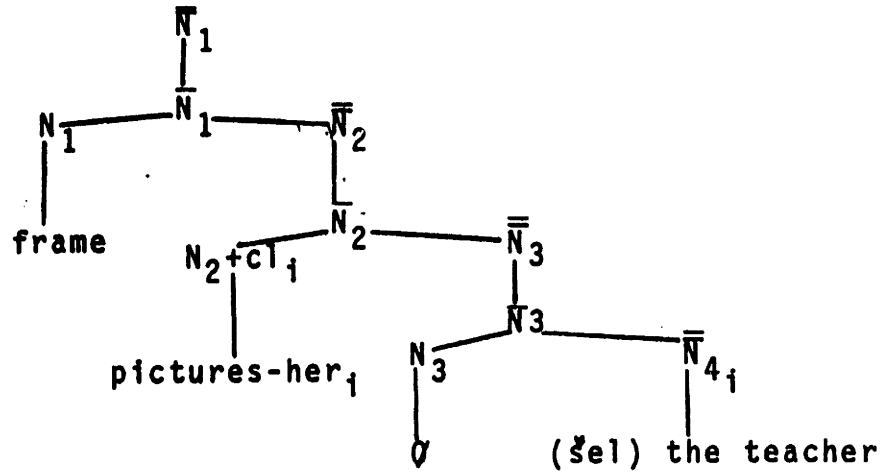


In (119 b-c), however, the clitic does c-command the coindexed argument. (121,122 correspond to 119 b-c respectively).[27]

121-

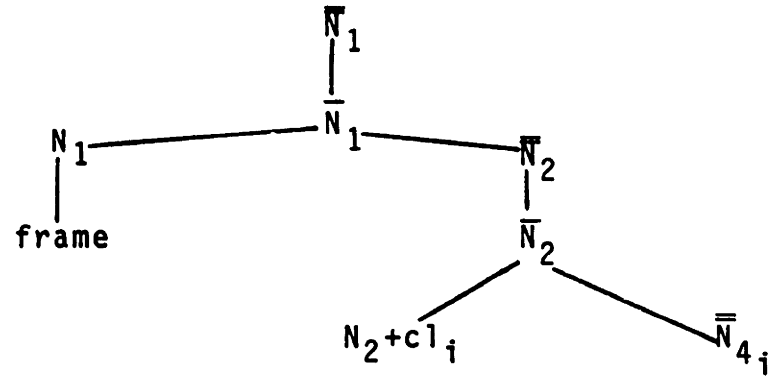


122-



To account for the identity of meaning between (121) and (122), Borer indicates that no element whether overt or not can appear in the position occupied by "Ø": PRO will be governed, an empty element will not be properly governed (in our terms will not have an antecedent), a lexical NP will not be assigned Case. In brief, if this node is generated every possible derivation will be ruled out. She, therefore, concludes that this node cannot be generated. Thus, (121, (122) will have identical structures:[28]

123-



pictures-her$_i$ (šel)the teacher$_i$

It is, now, clear that the identity of meaning between (121) and (122) may be traced back to an identity of structure. Let us sum up what we presented so far:

124-a) The co-indexing of the clitic and the argument NP is obligatory and subject to c-command relationship between the clitic and the argument which it is coindexed with (cf.120).

b) This relationship is unique in the sense that every clitic can be coindexed with exactly one NP.

c) The clitic "prefers" to be coindexed with a fully expanded NP, if such is available. Only if it is not available will the clitic be coindexed with an empty element (Ø).

These facts were brought onto discussion in part for their relevance with respect to the relationship which holds between the clitic and the NP position. The Hebrew facts clearly indicate that the clitic cannot be coindexed with more than one NP position (argument position) (cf.124 b):

125- * clitic$_i$ ... NP$_i$ ... (šel) NP$_i$

This is precisely the problem which concerns us and which was outlined at the begining of this section (cf.101). To account for the ungrammaticality of (125), it is useful to remember that the šel-phrase cannot be coindexed with another NP in non-doubled constructions (cf.115 b) (113 is repeated for convenience):

113-	* beit	ha-mora$_i$	šel-a$_i$
	house	the teacher	of her

The ungrammaticality of (113) was traced back to the binding theory: the two NPs in (113) c-command each other; thus, violating the binding principles. If so, the same explanation may be put forward to account for the ungrammaticality of (125): if the clitic were coindexed with more than one NP, two NPs would c-command each other in violation of the binding principles[29]. This takes care of (124 b).

9.3. On anaphorization processes: characterizing the notion proximate/obviative markers.

Let us now, turn to (124 a and c). We will suggest that it is possible to account for these facts it it is assumed that šel is a proximate marker and that a proximate marker anaphorizes the element it is attached to. This is the formal characterization of the notion proximate. Being an anaphor, the šel-phrase will have to be bound; the clitic will count as the

binder of this anaphor. From this, it follows that the šel-phrase must be obligatorily coindexed with the clitic and that this coindexing requires c-command (cf. 124 a and c). In the remaining part of this section, it will be suggested that this anaphorization process is part of a more general one: the marker self in himself for instance may be viewed as proximate marker which anaphorizes the pronoun it is attached to. Two kinds of anaphorization markers will be distinguished; the first kind -like šel- $\bar{A}$-anaphorizes the element it is attached to: it requires this element to be $\bar{A}$-bound. The second -like self- A-anaphorizes the element it is attached to: it requires this element to be A-bound.

In (124 a and c), it was indicated that the clitic is obligatorily coindexed with a fully expanded NP if there is one; otherwise with an empty element and that the clitic must c-command this empty element. The obligatory coindexing between the clitic and an NP position -whether this position is empty or not- may follow from the fact that the clitic receives its features (person, number, gender features, θ-roles...) through the NP position it is coindexed with[30]. As for (124 c) -i.e. for the fact that the clitic "prefers" to be coindexed with a fully expanded-, it is possible to view the matter in the opposite way: it is the doubled NP, rather than the clitic which "prefers" to be coindexed with a clitic. The following considerations will help to clarify this remark . Recall that in M.H., there is a distinction between šel-phrases and ʔet-phrases: šel-phrases are obligatorily coreferential with the clitic whereas ʔet-phrases are obligatorily disjoint from the clitic (cf. 96 a-b and 97 repeated as 126 a-b, respectively):

126-a)	ktivato$_i$	šel	Dan$_i$
	writing his	of	Dan
	"Dan's writing"		

b) ktivato$_i$ šel ha-sefer$_i$
writing-it of the-book

127- Dan biker ?et ktivato$_i$?et ha-sefer$_j$
Dan criticized acc writing his acc the book
"Dan criticized his writing of the book"

This clearly indicates that the coindexing between the clitic and the fully expanded NP is triggered by the fully expanded NP and not by the clitic: šel-phrase looks for a clitic to be coindexed with if such clitic is available. šel may be viewed as a proximate marker whereas ?et may be viewed as an obviative marker[31].

Let us try to integrate these informal remarks into the system outlined in chapter 1. Recall that the binding principles require name like elements to be free and anaphors to be bound (cf. P.L.).
Among the modifications of the government-binding framework suggested in chapter 1 is the extension of the binding principles to a theory of A- and $\bar{A}$-binding. According to this extension there are two kinds of anaphors: those which are A-bound (reflexives, reciprocals, NP-trace ...) and those which are $\bar{A}$-bound (wh-traces). Recall also that wh-traces are subject as anaphors to principle A of the binding theory which requires anaphors to be X-bound in their governing category and as name-like elements to principle C which requires R-expressions to be A-free; thus, to satisfy both principles wh-traces have to be $\bar{A}$-bound in their governing category. Let us assume now that the proximate marker šel "anaphorizes" the NP it is attached to. Being a name, it has to be A-free according to principle C of the binding theory. Being anaphor(ized), it has to be X-bound. Once again, the only way to satisfy both principles is for this doubled NP

to be $\bar{A}$-bound. Since we assumed that clitics are $\bar{A}$-binders, this clitic may (in fact, must) $\bar{A}$-bind the šel-phrase. This takes care of (124 c) the šel-phrase needs to be coindexed with a clitic because it is an anaphor and like all anaphors, needs an antecedent. This also accounts for the c-command requirement between the clitic and the fully expanded NP with which it is coindexed: like all anaphors, the šel-phrase must be c-commanded by its binder[32].

Before considering the case where the anaphorized NP is a pronoun, it may be useful to wonder whether there are other cases of anaphorization. Consider, for instance, himself. It is possible to think of the marker self as a proximate marker too. In other words, self -like šel- anaphorizes the element it is attached to. The difference, however, between self and šel is that self requires the element it is attached to to be A-bound whereas šel requires the element it is attached to to be $\bar{A}$-bound. We will refer to self as an A-anaphorizer and to šel as an $\bar{A}$-anaphorizer.

With this in mind, let us return to šel. We discussed in the previous paragraph, the case where the anaphorized element is a name, we will now discuss the case where it is a pronoun. Recall that the binding principle B requires pronouns to be X-free (i.e. A-free and $\bar{A}$-free) in their governing category. šel $\bar{A}$-anaphorizes the element it is attached to; this amounts to saying that for šel-pronouns, the requirement that they be $\bar{A}$-free is dropped from principle B. Now, according to this principle, these pronouns have to be A-free in their governing category. Moreover, since they are anaphorized, they have to be X-bound (principle A). This may be satisfied if šel-pronouns are $\bar{A}$-bound in their governing category.

The same process applies to a pronoun anaphorized by self (himself, herself...) with the proviso that $\bar{A}$ is to be replaced by A. self A-anaphorizes the element it is attached to. This amounts to saying that for self-pronouns (himself, myself...), the requirement that they be A-free is dropped from principle B. Now, according to this principle, these pronouns have to be $\bar{A}$-free in their governing category. Being anaphorized, they have to be X-bound in their governing category (principle A). This may be satisfied if self-pronouns are A-bound in their governing category. In brief, šel and self (ʕacma = herself in M.H.,cf. 114) respectively, $\bar{A}$-anaphorizes and A-anaphorizes the element they are attached to[33].

Pursuing the discussion of the anaphorization processes which apply to pronouns, we said that a pronoun may be $\bar{A}$-anaphorized or A-anaphorized. If a pronoun is $\bar{A}$-anaphorized, the requirement that it be $\bar{A}$-free is dropped from principle B and if it is A-anaphorized, the requirement that it be A-free is dropped from principle B:

128-a) $\bar{A}$-anaphorizer + pronoun: By B, this pronoun has to be A-free in its governing category
By A, it has to be X-bound in its governing category.
To satisfy both requirements, this element will have to be $\bar{A}$-bound in its governing category.

b) A-anaphorizer + pronoun: By B, this pronoun has to be $\bar{A}$-free in its governing category
By A, it has to be X-bound in its governing category.
To satisfy both requirements, this element will have to be A-bound in its governing category.

Some remarks are in order. The conclusion that emerges from (129 a-b), is that when an element is A-anaphorized, it must be A-bound <u>in its governing category</u> and when it is $\bar{A}$-anaphorized, it must be $\bar{A}$-bound <u>in its governing category</u>. This is reminiscent of some considerations mentioned in chapter 1 (cf. Footnote 55). There, we mentioned that there are independent principles and definitions in the grammar which characterize an element as an anaphor.[34] We saw in this section that the kind of anaphor (A-anaphor or $\bar{A}$-anaphor) may also be characterized: an A-anaphor must be A-bound and an $\bar{A}$-anaphor must be $\bar{A}$-bound. The binding principles, thus, do not characterize an element as an (X)-anaphor. What they do is specify the <u>domain</u> in which these anaphors will be bound; there is no overlap between the binding principles and those characterizing an element as anaphoric or not.

Another remark concerns the status of PRO. Recall that in chapter 1, it was indicated that the fact that PRO is ungoverned follows from it being subject to principles A and B of the binding theory (cf. P.L.): principle A requires PRO to be X-bound in its governing category and principle B requires PRO to be X-free in its governing category. The only way to satisfy both principles, thus, is for PRO to be ungoverned. But we now suggest that when a pronoun is $\bar{A}$-anaphorized, the requirement that it be $\bar{A}$-free is dropped from principle B and when it is A-anaphorized, the requirement that it be A-free is dropped from principle B. For the first case, principle B will require this pronoun to be A-free and for the second case it will require this pronoun to be $\bar{A}$-free. The only way to satisfy both principles to which it is subject is for the pronoun to be $\bar{A}$-bound when $\bar{A}$-anaphorized and A-bound when A-anaphorized. Note, however, that

the theorem according to which PRO is ungoverned follows only if PRO must be $\underline{\bar{X}}$-bound and $\underline{X}$-free in its governing category. But since we allow, in the case of $\bar{A}$-or A-anaphorization of a pronoun, principle B to require that the pronoun be A-free or $\bar{A}$-free but not both, nothing,a priori, prevents PRO from being A-anaphorized or $\bar{A}$-anaphorized (but cf.infra). If so, principle B will require this anaphorized PRO to be A-free or $\bar{A}$-free but not both. If this is possible, the fact that PRO appears in ungoverned contexts only does not follow from the binding theory anymore. Recall, however, that by definition,an empty element, such as PRO, is an anaphor. What sense, then does it make to anaphorize an element which is by definition, an anaphor already? In brief, an anaphor cannot be anaphorized.[35]

From the above discussion, it appears that a pronoun may be A-anaphorized or $\bar{A}$-anaphorized and that a name may be $\bar{A}$-anaphorized. There, however, do not seem to exist cases where a name is A-anaphorized:

129-a)* [John's self]

To account for this, various possibilities may be explored. The simplest will be the one which appeals to the existing grammatical principles, such as the binding principles,to exclude (129 a). Thus, it is plausible to assume that the anaphorizer defines an opaque domain with respect to the element it is attached to; i.e. that it functions as a SUBJECT accessible to this element. To illustrate, consider:

129-b) $[_{\bar{S}}$ John$_i$ likes $[_{NP_i}$ him + self $]\,]$

If <u>self</u> counts as a SUBJECT accessible to the pronoun <u>him</u>, the governing category for this pronoun will be the NP.

According to principle B, this pronoun has to be free in its governing category, which it is. Since self is an A-anaphorizer, the whole NP [him + self] has to be A-bound in its governing category (the matrix clause), which it is. Consider, now, (129 c):

129-c)* $[_{\bar{S}}$ he_i likes $[_{NP_i}$ John's + self]]

The governing category for the name John is the NP since it is the minimal category containing the SUBJECT accessible to this name (self). Since self is an A-anaphorizer, the whole NP [John's + self] has to be A-bound in its governing category (the matrix clause) which it is: the whole NP [John's + self] is A-bound by the subject he. But we now have a violation of principle C of the binding theory: assuming that the index of the NP percolates down to John's and self (cf. chapter 2, section 1), the name John contained in the object NP will end up by being A-bound by the subject he. Therefore, (129 c) is ungrammatical.

Thus, it appears that although a name may be $\bar{A}$-anaphorized, it may not be A-anaphorized without violating the binding theory (principle C). The discussion of (129 b-c) has some consequences on the presentation made in (128 a-b). Since anaphors such as (himself) may be factored in two entities, (him and self), it is not necessary anymore to assume that when pronouns are A-anaphorized (or $\bar{A}$-anaphorized), the requirement that they be A-free (or $\bar{A}$-free) is dropped from principle B. In (129 b), for instance, the pronoun him is X-free in its governing category (the object NP) and the whole NP is A-bound in its governing category (the matrix clause).

Recapitulating, the main results reached in this section:

- The coindexing of the clitic and the šel-phrase is obligatory and subject to c-command relationship (cf.124 a) because the šel-phrase is an anaphor and like all anaphor need to be bound.
- Every clitic cannot be coindexed with more than one NP (cf.124 b) otherwise the NPs will c-command each other; thus, violating the binding principles.

These results are to be embedded in the more general considerations concerning anaphorization processes. It was suggested that there are two kinds of anaphorization processes affecting nominal elements: the first $\bar{A}$-anaphorizes a name or a pronoun; it requires that this name or pronoun be $\bar{A}$-bound. The second A-anaphorizes a pronoun; it requires that this pronoun be A-bound. The šel-marker attached in Hebrew to a doubled NP was considered as an $\bar{A}$-anaphorizer. The self marker attached to a pronoun was considered as an A-anaphorizer. It was also indicated that the informal notions of proximate and obviative markers lead themselves to a characterization in terms of these anaphorization processes. A proximate marker is a marker which anaphorizes the element it is attached to whereas an obviative marker does not change the status of the element it is attached to. Since non-anaphors may be anaphorized, it is legitimate to wonder whether there are inherent anaphors i.e. element which may inherently be characterized as anaphors. In other words, is the notion "anaphor" a primitive notion in the grammar or not? Are the nominal expression to be divided into three classes (anaphors, pronominals and R-expressions (cf. P.L. and chapter 1) or into two only (pronominals and R-expressions)? Note that by definition , an empty element such as PRO, NP-trace or wh-trace is an anaphor. This seems to indicate that these empty elements are inherently characterized as anaphors; they are not

anaphorized by an overt marker (cf. the considerations mentioned in footnote 19, chapter 2)[35].

Modulo this observation, the question raised above may be reformulated as follows: is there an overt nominal expression which is inherently marked as anaphor?[36] In English, for instance, there are two kinds of overt anaphoric nominal expressions: reflexives (himself, herself...) and reciprocals (each other). For reflexives, we suggested that self is a proximate marker which anaphorizes the pronoun it is attached to. For reciprocals, it is possible to consider each as a proximate marker which anaphorizes the noun it is attached to. This being the case, it is tempting to suggest that, at least for English, there is no overt nominal expression which is inherently marked as anaphor. Rather overt nominal expressions, in this language, are to be subdivided into pronouns and nouns (R-expressions); there are markers which anaphorize these nominal expressions when they are attached to them.[37-38]

FOOTNOTES

1 -Note that both analysis account for Kayne's generalization but no longer require the presence of a preposition. Any alternative mean of case-assignment will do; it need not always be a preposition (cf. Jaeggli 1980 where the issue is discussed).

2 -The definition of ECP assumed in Jaeggli (1980) is different from the one discused in chapter 1. Roughly, it requires an empty element to have both an antecedent and a governor. This difference, however, is irrelevant for our discussion. There are some speakers which accept (19 a-b), the account given applies to the relevant dialect where these sentences are not grammatical.

3 -There are many ways to instantiate this idea; one is to assume that the governor bears a governing feature and that the clitic absorbs this governing feature (cf. Vergnaud 1979 and Aoun 1979 where this suggestion is applied to V.S.O. languages; cf. also footnote 41 of the previous chapter).

4 -The content of this section is from Steriade (1980).

5 -I will only consider doubling of direct objects; for indirect objects, doubling is irrelevantly more complex (cf. Steriade 1980).

6 -It cannot be suggested that the wh-element in (33) is base-generated in its COMP position. As indicated in Steriade (1980), conditions on movement (essentially subjacency) cannot be violated in Rumanian regardless of the existence of the clitic.

7 -The content of this section is from Borer (1980). It is further argued in Borer that clitics act as proper-governors; thus, permitting movement to occur (cf. Borer

1980 , for more details), (cf.also chapter 1, section 3.3.4.1).

8 -On the absence of the case-marker la in (40), cf.Aoun & Sportiche (1981a).

9 -Both (43) and (44) are acceptable with a pause before the object NP. They are then treated as normal appositions (cf.Kayne 1975). We will return to this later on.

10 -Vergnaud's analysis is presented in detail in Jaeggli (1980).

11 -Given in Jaeggli (1980) as evidence that some à-NPs are PPs.

12 -Note incidentally that the account given for the behavior of doubled elements in terms of ECP may not be directly compatible with the framework of chapter 1 where ECP is dispensed with.

13 -The Leismo facts were brought to my attention by E.Torego and M-L.Zubizarreta. I have benefited from extensive discussions with them.

14 -Doubling of an NP is possible in the relevant dialects i.e. River Plate Spanish.

15 - I am embedded to E.Torego for fruitful discussions concerning Loismo and Laismo. Loismo and Laismo are less frequent than Leismo. They are mainly found in some dialects of Spain.

16 - It goes without saying that the non-explanatory assumption that verbs in Spanish subcategorize freely for a direct or an indirect object is not desirable. Note that this assumption is not straightforwardly compatible with the Projection Principle discussed in chapter 1, although it may be formulated in such a way to accomodate this principle.

17 -Note that the R-clitic and the doubled element are in

separate chains, but still have to "agree" in person, gender and number. Thus, the R-clitic, too, seems to be interpreted by reference to the doubled element. This agreement, however, is distinct from the one holding between the non-R-clitic and the NP; it is to be assimilated to the one holding between appositives (cf. i) or across discourse (cf. ii):

i- I saw Peter and Paul, the lawyers

ii- Speaker A: I saw Mary yesterday
Speaker B: what was she doing?

Loosely speaking, there seem to be two agreement processes: one generated by a grammatical rule and one holding across discourse. The latter, which assures discourse cohesiveness, is presumably at work in such sentences as (iii):

iii- Bill told Mary that they will go to Spain
(where <u>they</u> refers to <u>Bill</u> and <u>Mary</u>)

cf. (iv):

iv- Speaker A: Bill was talking to Mary yesterday
Speaker B: what did they decide?
Speaker C: they will go to Spain

18 -More simply, one may investigate the possibility of ruling out a representation where a non-R-clitic and the doubled element are in different chains by appealing to the maximality requirement which forces the maximization of chains (cf. chapter 1) or by assuming that the non-R-clitic is the element of the verbal complex which assigns a θ-role to the doubled element.

19 -For purposes of the language acquisition device, we must assume that clitics are considered as R-clitics unless positive evidence indicate the opposite. This evidence may be provided by sentences containing quantified or questioned doubled elements.

20 -Obviously, I am assuming that PPs hanging from S are in an argument-position (cf. Weinberg & Hornstein 1981). It is tempting to suggest that the PPs are "connected" to (arguments of) INFL. As indicated in Hornstein (1977), they enter into some co-occurence restrictions with the tense element contained in INFL.

21 -Cf. Aoun, Hornstein & Sportiche (1981) for further details. In particular, the discussion of such sentences as (i):

i-a) which men remember which pictures of which women he liked most (example due to Van Riemsdijk & Williams 1980).

b) who wonders the picture of whom you saw

22 -This may be achieved by assuming that the embedded $\bar{S}$ is governed by the matrix verb and that government percolates to the head of $\bar{S}$-COMP. (cf. Belletti & Rizzi 1980 for government-percolation; their analysis is summarized in chapter 2, section 1). It is tempting to account in terms of principle (69) for the bridge phenomena discussed in Erteschick (1973): Stowell (1981) suggests that if we assume that bridge verbs, contary to non-bridge verbs, govern the COMP of the clause they subcategorize for, it is possible to account for the bridge phenomenon by appealing to ECP. To do that, it suffices to extend the proper-government requirement to empty elements in COMP. To illustrate, consider the following contrast:

i-a) who did Peter say $[_{\bar{S}}$ t' [t left]]

b) *who did Peter murmur $[_{\bar{S}}$ t' [t left]]

In (i a), the bridge verb <u>say</u> (properly) governs the trace in COMP. In (i b), however, the non-bridge verb <u>murmur</u> does not (properly) govern the trace in COMP. Therefore,

(i b) will be ruled out by ECP.

Stowell's analysis may be restated in terms of principle (69): in (i a) -but not in (i b)- the trace in COMP is governed by the matrix verb, hence identified as an A-position with respect to the matrix clause. Thus,(i b) will be ruled out by principle (69): who has been extracted from an $\bar{A}$-position. (cf. also Stowell 1981 for relevant considerations concerning the relativized notion of A and $\bar{A}$-position.

N. Chomsky (p.c.) points out that principle (69) may also account for the "boundedness" of rightward movement rules such as extraposition: once an element is extraposed, it is frozen; it cannot be affected by another movement rule. Extraposed elements are, generally, Chomsky adjoined, to an $\bar{X}$ -category such as VP; they, thus, end up by being in an $\bar{A}$-position. Principle (69) will prevent them from being extracted from this $\bar{A}$-position. Note, however, that in a language such as Italian, the subject is extraposed and Chomsky-adjoined to the VP (cf.chapter 1,section 4.3.1.):

i- $[_S \; e_i \; [_{VP} \; VP \; NP_i \;]\,]$

Nevertheless, this subject may be affected by movement rules. This, however, does not constitute a problem with respect to the proposal that principle (69) is to account for the boundedness of rightward movement. Recall that in Italian, AGR is cliticized onto VP and governs the post-verbal subject. In other words, this subject, even though it is Chomsky adjoined to VP, is still identified as an A-position by AGR. That is why it may be affected by movement rules.

Finally, note that the generalization of (68) to (69) looses the account of the non-successive cyclic character of Move

α in L.F. given in Aoun, Hornstein & Sportiche (1981). It is not clear, however, that L.F. wh-Raising is non-successive cyclic. For evidence to the contrary drawn from Chinese, cf. Huang (1980).

23 -The co-superscripting device discussed in chapter 1 is to be taken into consideration in the factorization of S-structures into chains (cf. P.L.).

24 -One may wonder why it is not possible for the clitic which is an independent nominal element to share the same Case as the doubled element. The reason is that two distinct elements cannot have the same Case. This general prohibition first suggested in Vergnaud (forthcoming) was discussed in section 1.

In terms of the notion case-manifestation discussed in section 8, it is necessary, in order to account for Greek, to say that:

i-a) clitics may or may not absorb Case

b) when they absorb Case, they do not bear (manifest) the absorbed Case

c) when they do not absorb Case, they may be overtly case-marked by virtue of agreing with the doubled element.

(i c) will characterize Greek.

25 -With respect to accusative clitics in Spanish, we tentatively have described them as absorbing Case. This is assumed in Jaeggli (1980) and Borer (1981) where <u>a</u> in (i) is viewed as a case-marker:

i- lo vimos <u>a</u> Juan
"wa saw Juan"

This is not self-evident, however. Generally, case-marking elements such as <u>a</u> in (i) are used as a saving device and do not appear when the element is not doubled (but cf. Rumanian):

ii- šəfto la Kari:m
saw-I-him to Kari:m
iii-* šəft la Kari:m
saw-I to Kari:m
"I saw Kari:m"

The a marker of Spanish, however, may appear with a non-doubled element (cf.Jaeggli 1980 , Montalbetti 1981, Zubizarreta 1979a) where the restrictions on the occurence of a are discussed). As for dative clitics of Spanish,it is assumed that they absorb Case (cf.Jaeggli 1980);they however, do not absorb θ-role (cf.sections 2.1. and 4.3.). Returning to the classification of clitics, it is tempting to characterize clitics which do not absorb Case as case-assigning elements which assign Case to the doubled NP and clitics which absorb Case as case-receiving elements which get their Case from the element they are attached to.

26 -Borer (1981) marks (112 b) as ungrammatical. She,however, indicates that the interpretation in which the clitic is disjoint from the complement of the šel-phrase is only possible under a very sharp intonation break between the clitic and the šel-phrase; even then -she adds- (112 b) is very marginal.

27 -In Borer (1981), it is assumed that (120) is ungrammatical because the clitic does not govern the NP it is coindexed with. This is, however, irrelevant for our purpose since the definition of government assumed is based on the notion of c-command (cf.chapter 1). As for the definition of c-command adopted, it is along the extended one given in P.L. and discussed in chapter 1 (cf.10-12, part I,chapter 1). This seems to indicate that the extended one is preferable to the more restricted one discussed in chapter 1 (cf.part I, chapter 1). In fact, this is not the case if

(120) is compared with (123) which ultimately is the real representation of (121)-(122). According to the more restricted one, in (120), the clitic does not c-command the ~~NP~~ it is coindexed with. In (123), however, it does. These distinctions do not bear on the issue discussed in this chapter. They, however, do bear on the discussion of the notion c-command discussed in chapter 1.

28 -Cf. Borer (1981) for further details.

29 -Actually, three cases are to be considered in (125):

i-a) the two NPs are lexically realized

b) the two NPs are empty

c) one of the NPs is empty and the other is lexically realized.

Cases (i a and c) are excluded by the binding theory: at least, the lexically realized NPs are not A-free. Case (i b) would be excluded by the θ-criterion if it is assumed that the coindexed elements in (125) form a chain: this chain would contain two θ-positions. The same account holds for (i a) and (i c). In the following section, it will be suggested that <u>šel</u>-anaphorizes the element it is attached to: a <u>šel</u>-phrase requires to be $\bar{A}$-bound in its governing category. In this account, (113) will still be excluded since the <u>šel</u>-phrase will at the same time be (locally) A-bound by the empty element and $\bar{A}$-bound by the clitic.

30 -Cf. Pulleyblank (1980) where it is indicated that the clitic receives its person, number and gender features through the NP it is coindexed with. This also may be relevant for (124 b), cf. also Borer (1981). We, however, will immediately turn to another explanation of the obligatory coindexing between the clitic and the argument NP.

31 -In Borer (1980), the characterization of <u>šel</u> and <u>?et</u> as

proximate and obviative markers respectively is attributed to D. Pesetsky.

32 -Some precisions are in order. Recall that the distribution of šel in M.H. is not restricted to doubled constructions; it is also possible to use šel in order to express genitival relations in a way different syntactically from the one expressed by the construct state (cf. 106 a and 108 b repeated as i a and i b respectively):

i-a) beita_i šel ha-$mora_i$
house-her of the teacher
"the teacher's house"

b) ha-bayit šel ha-mora
the house of the teacher

It goes without saying that the above remarks concerning the anaphorization of a name by šel do not apply to (i b). At this point, it is thus possible to suggest that there are two different šel in M.H.: the first is a case-marker which anaphorizes the NP it is coindexed with; the second is a case-marker which does not anaphorize the NP it is coindexed with. Another possibility would be to suggest that the šel anaphorizes an NP when there is a clitic (even though this clitic is not or cannot be coreferential with the anaphorized name). This will account for the obligatory coindexing between the clitic and the šel-phrase (cf. 124 a) and for the ungrammaticality of (112 b). or (ii) which illustrate the obligatory coindexing between the clitic and the šel-phrase:

ii- *heyseg av šel ha-mora
(masc)
achievments his of the teacher

Another remark concerns the type of $\bar{A}$-binders that the name may have. As was indicated, a clitic may $\bar{A}$-bind this name.

What about other $\bar{A}$-binders such as wh-operators. Two cases are to be considered: in the first, the wh-operator binds an empty element and the šel-phrase; in the second it binds the šel-phrase directly:

iii-a) wh_i ... e_i... šel - NP_i

b) wh_i ... šel NP_i

(where NP_i is a name).

Recall that a representation such as (iii a) is ruled out by the binding theory (cf. 125 and footnote 29). As for (iii b), it may be syntactically well-formed but logically ill-formed. Some considerations mentioned in Koopman & Sportiche (1981) may be relevant for the status of (iii b). Finally, ?et was characterized as an obviative marker. In the system presented, this amounts to saying that the ?et marker does not affect the status of the element it is attached to.

33 -Note that they cannot both anaphorize the element they are attached to:

i- * šel ʃacma

There are many ways to rule out (i). To mention one, the ungrammaticality of (i) may be traced back to the impossibility for an element to be A-anaphorized and $\bar{A}$-anaphorized at the same time; another uniqueness requirement.

34 -For instance:

i- If α is an empty element but not a pronoun, then it is an anaphor

35 -Cf. also footnote 34.

36 -Of course, there are overt anaphoric markers such as šel, self... They are markers -rather than independent anaphoric expressions- which must be attached to nominal expressions.

37 -Note that this does not preclude the existence of anaphoric

markers non-overtly realized. Thus, for French, M.Ronat argues in an unpublished work that the clitic lui in (i):

i- Jean a parlé de lui
"Jean talked about him"

may be ambiguously characterized an an anaphor (lui/lui-même) or as a pronoun. It, thus, is possible to consider that in this case, the anaphoric marker is not overtly realized.

However, anaphoric elements such as se in French which may be interpreted as a reflexive or a reciprocal (cf.ii) may constitute a potential problem to the proposal that in French there is no overt nominal expression which is inherently marked as anaphor:

ii- ils se détestent
they hate themselves
"they hate each other"

Cf.also Milner (forthcoming) for relevant discussions concerning reflexives. A similar problem is raised by anaphors such as zich in German.

38 -For a general characterization of the various anaphoric expressions,cf. the last chapter.

CHAPTER 4: TWO TYPES OF ANAPHORIC SYSTEMS:THE A-ANAPHORIC SYSTEM AND THE $\bar{A}$-ANAPHORIC SYSTEM.

0. Presentation.

In the preceding chapters, we discussed the various anaphoric relations which exist in the grammar. It may be useful at this point to recapitulate what was presented so far. In chapter 1, where the binding theory was generalized to a theory of A and $\bar{A}$-binding, we introduced the notion of $\bar{A}$-anaphors and we argued that the relation which holds between a wh-trace and the wh-element is an $\bar{A}$-anaphoric relation: the wh-trace is an $\bar{A}$-anaphor which needs to be $\bar{A}$-bound by the wh-operator. Similarly, in chapters 2 and 3 we argued that the empty element coindexed with the clitic is an anaphor $\bar{A}$-bound by the clitic. However, despite the fact that the wh-trace and the clitic-trace are both $\bar{A}$-anaphors, they display different behavior. For instance, the first, but not the latter, escapes the effect of the Specified Subject Condition (SSC). The difference between the two kinds of empty elements was traced back to the fact that a wh-trace is a name-like element:being name-like, wh-trace will be subject to principle C of the binding theory; being an anaphor, it will be subject to principle A of the binding theory. It, thus, follows that a wh-trace does not obey the SSC (cf.chapters 1 and 2). The empty element coindexed with the clitic, however, is not a name. The reason is that the clitic itself is an R-expression which requires a θ-role. Since this clitic is in the same chain with the empty element it is coindexed with, it follows from the θ-criterion that the empty element cannot be a referential expression bearing an independent θ-role. Thus, the empty element coindexed with the clitic will be subject to principle A of the binding

theory only and as such will obey the SSC (cf. chapters 2 and 3).

Furthermore, in chapter 3 where various anaphorization processes were discussed, two types of anaphoric markers (or anaphorizers) were isolated: $\bar{A}$-markers which $\bar{A}$-anaphorize the elements they are attached to (for instance, <u>šel</u> in Modern Hebrew) and A-markers which A-anaphorize the elements they are attached to (for instance, <u>self</u> in English).

In sum, it is possible to distinguish two types of anaphoric relations: the anaphoric relation which relates an anaphor to an antecedent in an A-position (<u>system of A-anaphors</u>) and the anaphoric relation which relates an anaphor to an antecedent in an $\bar{A}$-position (<u>system of $\bar{A}$-anaphors</u>). As an example of A-anaphors consider the reciprocals and the reflexives which need an antecedent in an A-position:

1-a) they$_i$ like each other$_i$
b) they$_i$ like themselves$_i$

and as an example of $\bar{A}$-anaphors consider the variable which must have antecedent in an $\bar{A}$-position:

2- who$_i$ did John see x_i

From the above presentation, a certain parallelism between the two anaphoric systems emerges: A-anaphors may be overt or not; similarly, $\bar{A}$-anaphors may be overt or not. It may be useful to concentrate on this parallelism. In general, A-anaphors -as characterized in the government-binding framework ,cf. P.L.- may be overt or not and may bear an independent θ-role or not. They, thus, may be classified with respect to the features [± θ-role], [± phonetic]:

3- A-anaphors:

a) + θ-role + phonetic:reciprocals, reflexives

b) - θ-role + phonetic: ?

c) - θ-role - phonetic:NP-trace

d) + θ-role - phonetic:PRO

Similarly, $\bar{A}$-anaphors may be classified with respect to the same features:

4- $\bar{A}$-anaphors:

a) + θ-role + phonetic:šel-phrase in Modern Hebrew personne in French, l'altro in Italian

b) - θ-role + phonetic: ?

c) - θ-role - phonetic:clitic-trace

d) + θ-role - phonetic:wh-trace

1. The system of A-anaphors.

Tables (3) and (4) deserve some explanation. Consider A-anaphors first: (3 a), (3 c) and (3 d) are straightforward; these are the various anaphors discussed in P.L. and presented in chapter 1. What about (3 b)? Is there a lexical anaphor which is phonetically realized and which does not bear an independent θ-role. One may be tempted to consider that middle constructions illustrate such a possibility (cf.Williams 1981 , Belleti 1981 , Marantz 1981 , Zubizarreta 1981 and the references mentioned there):

5-a) this book sells itself

b) ce livre se vend

In (5 a-b), itself and se are A-bound by the noun-phrase in subject position. They, however, do not seem to bear an independent θ-role. As indicated in Williams (1981) and in the references mentioned above, middle constructions display the same characteristics as passive constructions (cf.chapter 3, section 7):

of there and lowering discussed in chapter 2. Suppose that there is an anaphor which must be $\bar{A}$-bound. This assumption will account for the fact that there is co-indexed with a post-verbal quantified NP or a non-definite NP because these NPs will undergo QR and, thus, will be able to $\bar{A}$-bind there[8].

2.3.2. On the lowering of there.

This assumption is also relevant for the discussion concerning the ungrammaticality of constructions containing doubly raised there as in (18):

18- * there seems to be likely to be someone in the room.

In chapter 2, section 3, we suggested that the ungrammaticality of (18) is accounted for if there is obligatorily lowered in L.F. to its base-generated position and if the output of this lowering process is subject to the binding theory. The assumption that there is an $\bar{A}$-anaphor may help to understand why it must be obligatorily lowered. To see how, consider the following structure where therehas been raised to the subject position of the matrix clause:

19- there_i seems t_i to be someone in the room.

Assuming that movement from an A-position "creates" a subscripted index (cf. Chomsky 1980), there will be co-subscripted with t_i in (19) . In L.F., Quantifier-Raising (QR) may adjoin someone to the matrix or the embedded clause. Thus, the quantifier will be subscripted with its own trace x_j in (20):

20-a) $[_S$ someone_j $[_S$ there_i seems $[_S$ t_i to be x_j in the room $]$ $]$ $]$

b) $[_S$ there$_i$ seems $[_S$ some man$_j$ $[_S$ t_i to be x_j in the room $]\ ]\ ]$

In (20 a-b), there cannot be $\bar{A}$-bound by someone: in (20 b), it cannot be $\bar{A}$-bound by someone because it is not in the scope of this quantifier. In (20 a), it cannot be $\bar{A}$-bound by someone for slightly more complicated reasons. Suppose that someone $\bar{A}$-binds there in (20 a), it will give its index to the chain (there, t):

20-a') someone$_j$ there$_{i+j}$ seems t_{i+j} to be x_j in the room.

There are many ways to rule out a representation such as (20 a'). To mention but one; in (20 a'), x_j will be locally A-bound by t_{i+j}. Hence it will be identified as a trace and not as a variable. Similarly, t_{i+j} will be identified as a trace because it is A-bound by there. The derivation will be filtered out by the constraint ruling out a derivation containing a vacuous quantifier; i.e. a quantifier which does not bind a variable (cf. Chomsky forthcoming): the quantifier someone in (20 a') does not bind a variable which bears a θ-role. More precisely, the only candidate for being identified as a variable is there. Since there is a non-R-expression and since quantification is over referential expression, there cannot function as a well-formed variable [9]. In brief, in derivations where there is not lowered to its base-generated position, there cannot be $\bar{A}$-bound. These derivations will be ruled out by the binding theory since they contain a free anaphor (there) (cf. 20 a-b).

Consider, now, derivations where there has been lowered in L.F. to its base-generated position:

21- NP seems there to be someone in the room.

(21) is the L.F.-representation of (19) after lowering. Here too, the quantifier may be attached to the matrix or the embedded clause (cf.20 a-b):

22-a) $[_S$ someone$_j$ $[_S$ NP seems $[$ there^k to be x^k_j in the room $]\,]\,]$

b) $[_S$ NP seems $[_S$ someone$_j$ $[_S$ there^k to be x^k_j $]\,]\,]$

In (22 a-b), <u>someone</u> may $\bar{A}$-bind <u>there</u> for the same reasons allowing <u>there</u> to be $\bar{A}$-bound in (17 c): <u>there</u> may freely be coindexed with <u>someone</u>. Since <u>there</u> and <u>x</u> are co-superscripted they will not enter into a binding relation (cf. footnote 7). Thus, in (22 a-b), <u>there</u> will be $\bar{A}$-bound by the quantifier and the whole chain (there,x) will function as a variable with respect to the quantifier. (22a-b) will be treated like (17c). The analysis presented so far makes a distinction between co-superscripted elements and co-subscripted elements. It assumes that co-superscripted elements do not enter into a binding relation even if they are co-subscripted (cf. footnote 6). However, elements which are only co-subscripted do enter into binding relations. That is how it was possible to distinguish between non-well-formed derivations where <u>there</u> has not been lowered (cf.20 a') and well-formed derivations where <u>there</u> has been lowered to its base-generated position (cf.22). The analysis presented amounts to saying that movement is relevant for the binding theory; its creates potential binding relation. Although the instantiation of the idea in constructions containing <u>there</u> seems complicated, the idea itself is uncontroversial in the government-binding framework.

Recapitulating the discussion concerning there, it was suggested that there may be treated as an $\bar{A}$-anaphor. This assumption accounts for the definitness restriction at work in existential constructions (cf. section 2.3.1.) and for the obligatory lowering of there (cf. section 2.3.2.). If this suggestion is correct, then case (4 b) is fulfilled by there: there is an overt $\bar{A}$-anaphor which has no independent θ-role. It is to the $\bar{A}$-anaphor system what itself in English or zich in Dutch (cf. footnote 1) is to the A-anaphor system. Another interesting consequence of this proposal concerns the application of the binding theory. In the conclusion of part II, chapter 2, it was suggested that the binding theory applies at S-structure and at L.F. Note, however, that in sentences such as (17), (19) or (23):

23- there is someone in the room

there is not $\bar{A}$-bound by the quantifier till L.F. Recall that the binding theory as generalized in chapter 1, refers to two separate binding relations A-binding and $\bar{A}$-binding. Recall, also, that following Chomsky (forthcoming), we argued that A-indexing applies in syntax only (cf. chapter 2, the conclusion of part II). With this in mind, it is possible to assume that only A-relations are checked at S-structure ; i.e. that at S-structure, the binding theory is a theory of A-binding and that at L.F., it is a theory of X-binding (A and $\bar{A}$-binding) . This will allow $\bar{A}$-anaphors such as there to be $\bar{A}$-free at S-structure without violating the binding principles.

CONCLUSION: ANAPHORIC RELATIONS AS IDENTIFICATION RELATIONS.

Recapitulating, in the previous chapters were the notion of $\bar{A}$-anaphor was introduced, we discussed various insatnces

of $\bar{A}$-anaphors such as the empty element coindexed with a wh-operator (i.e. a wh-trace) or the empty element coindexed with a clitic (i.e. a clitic-trace). In other words, we assumed that anaphors are of two kinds: A-anaphors and $\bar{A}$-anaphors. A-anaphors are related to an antecedent in an A-position and $\bar{A}$-anaphors to an antecedent in an $\bar{A}$-position. In this chapter, we discussed the parallelism between A-anaphors and $\bar{A}$-anaphors more extensively. Each member of the two anaphoric systems may be characterized with respect to the features ($\pm$ phonetic), ($\pm$ θ-role). That is to say that an anaphor may be overt or not and may bear an independent θ-role or not. This approach predicts the existence of four kinds of anaphors which appear to occur in natural languages:

24-

			A-anaphors	$\bar{A}$-anaphors
a)	+ θ-role	+ phonetic	.reciprocals reflexives in English	.Sel-phrases in M.H., .personne in French, .l'altro in Italian...
b)	- θ-role	+ phonetic	.itself in English .zich in Dutch...	.there in English
c)	- θ-role	- phonetic	.NP-trace	.clitic-trace
d)	+ θ-role	- phonetic	.PRO	.wh-trace

The notion of anaphor assumed departs from the standard one which may be characterized as more "semantic". Roughly speaking, an anaphor is commonly characterized as an element with no inherent reference which inherits its reference from its antecedent. Reflexives and reciprocals

for instance, are characterized in these terms in P.L. In our approach, an anaphor is not necessarily characterized with respect to its semantic (referential) content. This is implicitely assumed in the government-binding framework where NP-traces are treated as anaphors. Thus, in the following sentence:

24- it_i seems t_i to be certain that John will come

The trace t which is an anaphor does not inherit any reference from the antecedent it: the antecedent itself is not a referential expression. In chapter 2, we speculatively characterized anaphors as lacking a complete matrix. Thus, an element may be anaphoric because it lacks an inherent reference (reflexives, reciprocals) or because it lacks Case (NP-trace). More precisely, since it lacks Case, this element cannot be phonetically realized. As such, it is treated as an anaphor. One may wonder why it is the case that when an element cannot be phonetically realized, it is treated as an anaphor. The phonetic realization of an element may be viewed as a way of identifying an element. If this identification fails to apply, other identification strategies come into play. Relating the element which cannot be phonetically realized to an antecedent, i.e. treating it as an anaphor is one of these strategies.

The notion "identification" is distinct from the notion anaphor. Not all identification strategies are anaphorization strategies. Consider, for instance, the relation which holds between an agreement marker and the element it agrees with. It is plausible to say that the agreement element is identified by the element it agrees with. It, however, is not an anaphor. Similarly, the controller of PRO identifies PRO but the relation between PRO and its controller is not

an anaphoric relation: it does not obey the binding theory. In brief, consider the following identification strategies:

25-a) The relation between the controller of PRO and PRO

b) The relation between the agreement marker and the element it agrees with

c) The relation between an anaphoric element and its binder.

These identification strategies obey various locality conditions (cf. Koster 1978). Presumably, (25 b) is strictly local in the sense that it seems to be clause-bound. The locality conditions on (25 a) came recently under investigation and some promising results that will characterize their exact nature may be expected (cf. Chomsky 1981 and the work of M-R. Manzini). As for (25 c), we suggested that there are two types of binders: binders in A-positions and binders in $\bar{A}$-positions. The bindee, itself, is generally in an A-position or more precisely in a θ-chain (cf. chapter 2 and the discussion of l'uno...l'altro in this chapter).

Whether the anaphoric relation is an A-anaphoric relation or an $\bar{A}$-anaphoric relation, the locality conditions on (25 c) are to be stated in terms of the binding principles. To establish the existence of these two kinds of anaphoric relations, to study their behavior and to explore the consequences of their incorporation into the grammatical theory was the central goal of this dissertation.

FOOTNOTES.

1 -It is to be pointed that this analysis is neutral with respect to a base-generation or a movement-generation of these constructions. That is to say Case may be absorbed in the lexicon or in syntax and the element in subject position may be base-generated or moved to this position.
In an interesting paper, Everaert (1980) argues that in Dutch, the anaphor zich, contrary to zichself (himself) lacks an independent θ-role. If his analysis is correct, then zich too illustrates case (3 b). Thanks to P.Coopmans for indicating Everaert's work to me. On the behavior of zich and zichself in Dutch, cf.also the paper presented at NELS X by R.Huybregts.

2 -The discussion in this section is, essentially, a presentation of this work which also indicates that the results of chapter 2,section 2 carry over for all the dialects considered; it also generalizes the theory of chapter 1.

3 -Note that the results of section 2 of chapter 2 concerning the relevance of i/i for ne...ninguno (ne...personne) constructions apply in all dialects, cf.the preceding footnote. If so and if ne and personne are co-superscripted in dialect (C), then the well-formedness condition i/i may turn out to be relevant for co-subscripted and co-superscripted elements contrary to what was suggested in chapter 2. In particular, it follows that in:

i- * there^k is $[_{NP}$ a portrait of my parents^k $]$ in the room

there cannot be superscripted with the whole NP (a portrait of my parents) and with my parents as evidenced by the lack of plural agreement in (i).

4 -Cf. Aoun, Hornstein & Sportiche (1981) for languages such as French, where the syntactic wh-movement is optional:

i- Jean veut que Pierre voit qui?
Jean wants that Pierre sees who
"who does John want Peter to see?"

Roughly speaking, it follows from their account that the matrix COMP will count as the /+wh/ COMP in (i). Thus, the remarks in the text apply to a language such as French.

5 -As indicated in Belleti (op.cit), (12 a) is worse than (16). In (16), the binding requirement is violated (the A-anaphoric expression is A-free in its governing category). In (12 b), two violations occur: a violation of the non-adjacency requirement (cf. the discussion of 11-12) and a violation of the binding requirement (the A-anaphoric expression is A-free in its governing category, the NP).

6 -We depart here from Safir's proposal which was put forth to dispense with co-superscripting. <u>What</u> will not be co-superscripted with <u>there</u> nor with <u>x</u> if it is assumed that co-superscripted indices are not carried over by movement; i.e. that co-superscripting is not a property of Move α.

7 -In order to avoid the possibility of <u>there</u> A-binding $\underline{t}_{\bar{i}}$, it is possible to assume that elements which at the same time are co-subscripted and co-superscripted do not enter into a binding relation (cf. P.L.).

8 -On the definitness restriction cf. Milsark (1974), (1977) Pollock (1981), Stowell (1978) and the doctoral dissertation of K. Safir.

It goes without saying that <u>there</u> which is coindexed with a quantified NP is to be distinguished from the locative <u>there</u> as in:

i-a) there is the table

b) John is there

9 -Note that (20 a') differs crucially from (17 c). In (17 c), x is identified as a variable $\bar{A}$-bound by what since elements which are at the same time co-superscripted and co-subscripted do not enter into binding relation (cf. footnote 7). In (20 a'), x is identified as a trace A-bound by t_{i+j} and not as a variable since t and x are co-subscripted and not co-superscripted (cf. footnote 6). In brief, in (17 c), the quantifier will $\bar{A}$-bind a variable (x or the whole chain there + x as indicated earlier). In (20 a'), there is no well-formed variable to be $\bar{A}$-bound by the quantifier.

REFERENCES.

Aissen,J. & D.Perlmutter (1976): "Clause Reduction in Spanish", Proceedings of the Second Annual Meeting of the Berkeley Linguistics Society.

Aoun, J (1979): "On Government, Case-Marking and Clitic Placement", mimeographed M.I.T.

-------- (1979a): "Indexing and Constituency", mimeographed M.I.T.

-------- (1980) : "Expletive PROs", to appear in M.I.T. working papers, vol.4.

-------- (1981) : "ECP, Move α and Subjacency", Linguistic Inquiry, 12.4.

Aoun, J.,N.Hornstein & D.Sportiche (1981): "Some Aspects of Wide Scope Quantification", Journal of Linguistic Research, vol.1, n°3.

Aoun, J. & D.Sportiche (1981): "On the Formal Theory of Government", mimeographed M.I.T.

---------- (1981a): "The Domain of Weakcross-over Restrictions" in H.Borer and J.Aoun (eds.).

Aoun,J.,D.Sportiche,J-R.Vergnaud & M-L.Zubizarreta (1980): "Reconstruction and Logical Form", mimeographed M.I.T.

Ayyoub,G. (1980): "ʔafʃa:lu l qulu:b en Arabe Standard: éléments pour une analyse", Analyses/Théorie, 1980-1.

Belletti, A.(1980): "On the Anaphoric Status of the Reciprocal constructions in Italian", mimeographed M.I.T. and Scuola Normale Superiore, Pisa.

-------- (1981): "The Impersonal constructions in Italian", mimeographed M.I.T. and Scuola Normale Superiore, Pisa.

Belletti, A. & L.Rizzi (1980): "The Syntax of ne: Some Theoretical Implications", mimeograped M.I.T. and Scuola

Normale Superiore, Pisa.

Belletti,A., L.Brandi & L.Rizzi eds.(forthcoming): Theory of Markedness in Generative Grammar, Proceedings of the 1979 GLOW conference, Pisa, Scuola Normale Superiore.

Bordelois, I. (1974): The Grammar of Spanish Causative Complements, M.I.T. Ph.D. dissertation.

Borer, H. (1979): "Restrictive Relatives in Modern Hebrew", mimeographed M.I.T.

--------- (1980): "On Extraction from Clitic-Doubled Constructions", presented at NELS XI, published in the Proceedings of NELS XI (1981).

--------- (1981): Parametric Variation in Clitic Constructions , M.I.T. Ph.D. dissertation.

Borer,H. & J.Aoun eds. (1981): Theoretical Issues in The Grammar of Semitic Languages: M.I.T. working paper in Linguistics, vol.III, M.I.T.

Brody,M. (1981): "Deriving ECP from the θ-Criterion", paper presented at NELS XII.

Burzio, L. (1981): Intransitive Verbs and Italian Constructions, M.I.T. Ph.D. dissertation.

Chomsky, N. (1973): "Conditions on Transformation", in S. Anderson & P.Kiparsky eds. A festschrift for Morris Halle, Holt, Rinehart & Winston, New-York.

---------- (1979): The Pisa Lectures transcripts of lectures given in the 1979 GLOW Colloquium, Pisa (prepared by J-Y.Pollock & H.G. Obenauer).

---------- (1980): "On Binding", Linguistic Inquiry,11.1.

---------- (1981): Lectures on Government and Binding, Foris Publications, Dordrecht.

---------- (forthcoming):Some Concepts and Consequences of the Theory of Government and Binding,M.I.T. Press.

Chomsky, N. & H.Lasnik (1977): "Filters and Control", Linguistic Inquiry, 8.3.

Cinque, G. (1979): "On extraction from NP in Italian", to appear in Journal of Italian linguistics.

Dresher, E. & N.Hornstein (1979): "Trace theory and NP-movement Rules", Linguistic Inquiry, 10.1.

Emonds, J. (1976): A transformational approach to English Syntax, Academic Press, New-York.

Erteschik, N. (1973): On the Nature of Island Constraints, M.I.T. Ph.D. dissertation.

Engdahl,E. (1981): "Parasitic Gaps", paper presented at the University of Massachusetts, Amherst, January 1981, at Sloan Workshop on Processing of Unbounded Dependencies.

Everaert, M. (1980): " Inherent Reflexive Verbs and the zich/zichself Distribution in Dutch", Utrecht working papers in Linguistics, 10.

Fiengo, R. & J.Higginbotham (1979): "Opacity in NP", to appear in Linguistic Analysis.

Freidin, R. & H.Lasnik (1979): "Disjoint Reference and wh-trace", to appear in Linguistic Inquiry.

---------- (1979a):"Core Grammar, Case Theory and Markedness", to appear in Belletti, Brandi and Rizzi eds.

George, L. (1980): Analogical Generalizations of Natural Language Syntax, M.I.T. Ph.D. dissertation.

Guëron, J. (1980): "On the Syntax and Semantics of PP extraposition", Linguistic Inquiry, 11.4.

---------- (1981): "Logical Operators, Complete Constituents and Extraction Transformations" in Mayand Koster eds.

Hale, K. (1978): "On the Position of Walbiri in a typology of the Base", mimeographed, M.I.T.

Halle, M. & J-R.Vergnaud ( ): "Three Dimensional Phonology", Journal of Linguistic Research, vol.1. n°1.

Higginbotham,J. (1980): "Pronouns and Bound Variables", Linguistic Inquiry, 11.4.

Higginbotham,J. & R.May (1979): "Questions, Quantifiers and Crossing", to appear in Linguistic Review.

---------- (1979a):"Crossing, Markedness and Pragmatics", to appear in Belletti, Brandi and Rizzi eds.

Hornstein, N. (1977): "Towards a Theory of Tense", Linguistic Inquiry, 8.3.

---------- (1981): "Two Ways of Interpreting Quantifiers" mimeographed Columbia University.

Huang,C.-T.J. (1980): "Move wh in a language without wh-movement", to appear in Linguistic Review.

Huybregts, M.A. (1979):"On Bound Anaphora and the Theory of Government-Binding", paper presented at NELS X.

Ingria, R. (1981) : M.I.T. doctoral dissertation.

Jaeggli,O. (1980): "Remarks on to-contraction", Linguistic Inquiry, 11.1.

---------- (1980a): On Some Phonologically null Element in Syntax, M.I.T. Ph.D. dissertation.

Kayne, R.S. (1975): French Syntax: the Transformational Cycle, M.I.T. Press.

---------- (1979): "Two Notes on the NIC", to appear in Belletti, Brandi & Rizzi eds.

---------- (1981): "ECP Extensions", Linguistic Inquiry, 12.1.

Koopman, H. (1980): "Resumptive Pronouns in Subject Position" mimeographed paper, UQAM, Montréal.

Koster, J. (1980): Locality Principles in Syntax, Foris.

Lasnik, H. (1981): "On Two Recent treatments of Disjoint

Reference", Journal of Linguistic Research, vol. 1 n°4.

Lightfoot, D. (1977): "On Traces and Conditions on Rules" in Culicover, Akmajian and Wason eds. Formal Syntax, Academic Press (1977).

Longobardi, G. (1978): "Double-Inf", Rivista di Grammatica Generativa, 3.2.

Manzini, M-R. (1980): "On Control", mimeographed M.I.T.

Marantz, A. (1981): On the Nature of Grammatical Relations, M.I.T. Ph.D. dissertation.

May, R. (1977): The Grammar of Quantification, M.I.T. Ph.D. dissertation.

May, R. & J. Koster eds. (1981): Levels of Syntactic Representation, Foris.

Milner, J-C. (1975): "A propos des Génitifs Adnominaux en Français", in Actes du Colloque Franco-Allemand de Linguistique Théorique, Tübingen.

---------- (1978): De la Syntaxe à l'Interprétation, Le Seuil, Paris.

---------- (1979): "Le Système de la Négation en Français et l'Opacité du Sujet", Langue Française, 44.

---------- (forthcoming): Ordres et Raisons de Langue, Le Seuil.

Milsark, G. (1974): Existential Sentences in English, M.I.T. Ph.D. dissertation.

---------- (1977): "Towards an Explanation of Certain Peculiarities of the Existential Construction in English", Linguistic Analysis, 3.1.

Montalbetti, M. (1981): "Consistency and Clitics", mimeographed M.I.T.

Obenauer, H-G. (1976): Etudes de Syntaxe Interrogative du Français, Niemeyer.

Postal, P. (1977): "Antipassive in French", Linguisticae Investigationes, 1.1.

Pesetsky, D. (1978): "Complementizer-trace Phenomena and the Nominative Island Condition", to appear in Linguistic Review.

Pollock, J-Y. (1981): "On Case and Impersonal Constructions", in May & Koster eds.

Pulleyblank, D. (1980): "Some Binding Constructions in Yoruba", mimeographed M.I.T.

Quicoli, C. (1976): "Clitic Movement in French Causatives" appeared in Linguistic Analysis, 6.2. (1980).

Riemsdijk, H. van (1981): "On Adjacency in Phonology and Syntax", NELS XII.

Riemsdijk, H. van & E. Williams (1980): "NP-Structure" to appear in Linguistic Review.

Rivas, L. (1977): A Theory of Clitics, M.I.T. Ph.D. dissertation.

Rizzi, L. (1978): "Violations of the wh-Island Constraint in Italian and the Subjacency Condition", Montréal working papers in Linguistics, vol.11.

--------- (1979): "Aux to COMP and the wh-Island Constraint" mimeographed Scuola Normale Superiore, Pisa.

--------- (1980): "Wh-Movement, Negation and the null-Subject Parameter", mimeographed Università della Calabria.

Rouveret, A. (1975): "Sur la Notion de Sujet Spécifié", rapport de Recherches du Département de Recherches Linguistiques, Université de Paris VII, n° 5.

---------- (1980): "Sur la Notion de Proposition finie Gouvernement et Inversion", Langages, n° 60.

Rouveret, A. & J-R. Vergnaud (1980): "Specifying Reference to the Subject: French Causatives and Conditions on Representations", Linguistic Inquiry, 11.1.

Ruwet, N. (1972): Théorie Syntaxique et Syntaxe du Français, Le Seuil, Paris.

Steriade, D. (1980): "Clitic Doubling in Rumanian wh-Constructions and the Analysis of Tomicalization", paper presented at the annual meeting of the Chicago Linguistic Society.

---------- (1980a): "On the Derivation of Genitival Relatives in Romance", mimeographed M.I.T.

Safir, K (forthcoming), M.I.T. doctoral dissertation.

Stowell, T. (1978): "What was There before There was There?" in D. Farkas et als, eds. Proceedings from the Fourteenth Regional Meeting, Chicago Linguistic Society.

---------- (1980): "Subjects across Categories", to appear in Linguistic Review.

---------- (1981): Origins of Phrase Structure, M.I.T. Ph.D. dissertation.

Strozer, J. (1976): Clitics in Spanish, U.C.L.A. Ph.D. dissertation.

Taraldsen, K.T. (1979): "The Theoretical Interpretation of a Class of Marked Extractions", to appear in Belletti, Brandi & Rizzi eds.

Vergnaud, J-R. (1974): French Relative Clauses, M.I.T. Ph.D. dissertation.

---------- (forthcoming): Dépendance Formelle et Niveau de Représentation en Syntaxe, Benjamin, Amsterdam.

Wasow, T. (1972): Anaphoric Relations in English, M.I.T. Ph. D. dissertation.

--------- (1979): Anaphora in Generative Grammar, E. Story-Scientia Gent.

Wehrli, E. (1981): "On the Distribution of Clitics in French Causatives", mimeographed M.I.T.

Weinberg, A. & N. Hornstein (1981): "Preposition Stranding

and Case-Marking", Linguistic Inquiry, 12.1.

Williams, E. (1974): Rule Ordering in Syntax, M. I.T. Ph.D. dissertation.

---------- (1980): "Predication", Linguistic Inquiry,11.1.

---------- (1981): "Argument Structure and Morphology", Linguistic Review, 1.1.

---------- (1981a): "French Causative Constructions", mimeographed, University of Massachusetts.

Zubizarreta, M-L. (1979): "Extraction from NP and reformulation of Subjacency", mimeographed M.I.T.

---------- (1979a): "Pour une Restructuration Thématique I", in Recherches Linguistiques, Université de Paris VIII.

---------- (1981): "A Case of Thematic Affixing", mimeographed M.I.T.