SYNTACTIC CHAINS AND THE DEFINITENESS EFFECT

by

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SUBMITTED TO THE DEPARTMENT OF
LINGUISTICS AND PHILOSOPHY
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE
DEGREE OF

DOCTOR OF PHILOSOPHY

at the

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

July 1982

Signature of author _____
Department of Linguistics and Philosophy
1982

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Submitted to the Department of Linguistics and Philosopy
on July 14, 1982, in partial fulfillment of the
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ABSTRACT

This study investigates the role of syntactic chains, more specifically "θ-chains," in grammatical theory. Very roughly speaking, a "θ-chain" is a set of positicns sharing the same semantic role, or "θ-role," wherein each higher member of the chain "binds" each lower member. "Binding" is assumed to consist of C-command and coindexing. A central hypothesis of this study, expressed as the "Unity of Indexing Hypothesis," asserts that the notion of "binding" relevant to the formation of θ-chains is exactly the same notion of "binding" relevant to the conditions on anaphora, Chomsky's (1981a) "Binding Conditions" (BC's).

In the first two chapters, this study is put into the wider context of recent research, and several central principles are introduced, defined, and individually motivated, most notable among these, θ-chains and the UIH. Additional principles that interact directly with θ-chains, such as Case inheritance, the Empty Category Principle, and the θ-Criterion, add a range of diagnostic consequences to the formation (or non-formation) of θ-chains in a given context. Moreover, since the UIH requires that binding for θ-chain formation correlate with binding for the BC's the ill-formedness of a wide range of otherwise possible analyses is predicted. The remainder of this research assesses the consequences of the UIH in contexts where formation of a θ-chain, independently required by other principles, such as the Case Filter and the θ-Criterion, would create an instance of binding that violates the BC's.

In Chapter III, for example, it is argued that there is no θ-chain relation between *it* and $\overline{S}$ in the construction commonly known as "*It*-Extraposition." This conclusion leads to a revision of the Case Filter, the introduction of the "Case Realization Conditions," the motivation of an additional principle excluding $\overline{S}$'s from Casemarked θ-chains, and the postulation of the "external θ-set," an analysis which permits the

assignment of an "external" θ-role to either preverbal subjects or VP-adjoined subject (both sisters of VP).

In Chapter IV, the consequences of the UIH are examined with respect to *there*-sentences in English and impersonal constructions in many languages. In these contexts, it will be argued, the Case Filter requires that a θ-chain be formed to permit Case inheritance, but the resulting θ-chain contains a violation of the BC's. The mediation of this conflict results in what is commonly known as the "Definiteness Restriction," or, as I shall call it, the "Definiteness Effect" (DE). Chapter IV demonstrates that the distribution of the DE correlates exactly with the formation of "unbalanced" θ-chains of this sort.

An attempt to explain why unbalanced θ-chains can be saved by indefiniteness, as opposed to some other property, is developed in Chapter V, and the formal expression of the definite/indefinite distinction is further motivated and integrated within a theory of the LF component.

Given the above analysis, the absence of the DE ought to correlate exactly with the absence of an unbalanced θ-chain. Precisely this implication is examined with respect to free inversion in Italian, where no DE holds. Contrary to most recent accounts, I shall demonstrate that no unbalanced θ-chain need be formed to permit postverbal definite subjects in Italian, as no Case inheritance is required to satisfy the Case Filter (rather NOM(inative) Case is assigned directly to the postverbal position by the effect of the "Free Inversion Parameter") and θ-assignment to the postverbal subject is direct under the "external θ-set" proposal mentioned above. It is also demonstrated that 'free inversion' and 'missing subjects' result from separate parameters rather than from a single so-called "PRO-drop Parameter," and that the four types of possible languages predicted by the existence of separate parameters are in fact evidenced among the Romance languages. The parameter responsible for missing subjects, the NOM-drop Parameter, is then extended to German wherein only expletive subjects can be missing, exactly as predicted by the revised inventory of empty categories proposed in Chapters II and VI, and the assumption that German lacks clitics parallel to those in Romance languages.

This thesis is dedicated to

Etta Weisberger

and to

my parents

With all my love

All of these chains ... and they

ain't the kind that you can

see

The Shirelles

ACKNOWLEDGEMENTS

How do you thank fifty people without lumping them all together, dividing them up into artifical categories, or taxing the patience of the reader, more interested in syntax than acknowledgements, with fifty personalized expressions of gratitude?

The problem doesn't arise in some cases, when people can be thanked for tangible tasks. My committee, for example, performed the much too tangible task of cleaning up a very sloppy act. Ken Hale's sharp eye for detail and Jim Higginbotham's extremely reasonable suggestions saved me from a number of stylistic and analytic blunders. Noam Chomsky cannot be thanked enough for managing to find the time to read and comment on the numerous fragmentary drafts of this thesis that have crossed his desk this year. His advice and inspiration have influenced every aspect of this work, and it is a pleasure to acknowledge my intellectual debt to him.

Morris Halle deserves special thanks for being a benevolent moral force, and for making a closet phonologist out of some very base material.

I would also like to thank Jay Keyser for helping to keep our heads above water in rough financial weather.

In a class by themselves are my fellow first year students, Hagit Borer, Lauri Carlson, Yukio Otsu, David Pesetsky, and Tim Stowell. Without their friendship, support and ideas, the last few years would have been infinitely poorer. The

syntax junkies among us, Tim, David, Hagit and I have been through enough theories together to say we know each other well. My special thanks go to David Pesetsky, my erstwhile collaborator, who has hung on with me to the bitter end.

I also thank all those people, most of them good friends, who have been especially helpful as both linguists and informants, among them, Parizia Cordin, Isabelle Haik, Jaklin Kornfilt, Rita Manzini, Eric Reuland, Anne Rochette, Mamoru Saito, Jean-Roger Vergnaud and Leo Wetzels.

A number of people in addition to those mentioned above made substantial contributions by commenting on partial drafts or simply listening better than anyone else, among them Neil Elliott, Richard Kayne, Robert May, Danilo Salamanca and Barry Schein.

The rest of the people come in a lump because I can't think of any other way to thank so many people at once for such various things, including friendship, inspiration, support, tactful, but unmistakeable, refutations, and half baked ideas (many of them warmed over in this thesis). They are Mark Baltin, Adriana Belletti, Denis Bouchard, Luigi Burzio, Dick Carter, Janet deCarrico, Francois Dell, Wilson Gray, Jacqueline Gueron, Roger Higgins, Jim Huang, Bob Ingria, Osvaldo Jaeggli, Phil Lesourd, Marcia Lind, Robert Matthews, Gary Milsark, Hans Obenauer, Jean-Yves Pollock, Bill Poser, Henk van Reimsdijk, Luigi Rizzi, Tom Roeper, Donca Steriade, Tarald Taraldsen, Esther Torrego, Edwin Williams, Michael Brody, Eric Wehrli, and Maria-Luisa Zubizarreta. I am sure I have forgotten many people

in my rush to get this done and I hope that those I have forgotten will find it in their hearts to forgive me some day.

For somehow preparing the manuscript with more care than time has allowed, I would like to thank Isabelle Haik, Kyle Johnson and especially my principal typist for friendship beyond the call of duty.

At this point the applause meter goes off scale, as I thank my grandmother, Etta Weissberger, for keeping the hounds from the door when it really counted.

Last, and probably most, I thank Susan Sidlauskas with all my love for loving a thesis machine as if he were a human being.

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Chapter I

1.0. Grammatical Theory and Syntactic Theory.

Since the earliest work in generative grammar, a prerequisite for any theory of syntax has been the postulation of a basic set of syntactic relations in terms of which hypotheses about the structure of universal grammar can be stated. Indeed the postulation of these formal syntactic relations themselves represents a highly significant claim about the 'notation' of universal grammar, especially since the rich interdependencies typical of natural language must be expressed in terms of these relations.

This research is, for the most part, an inquiry into one of the newest members of the vocabulary of primitive syntactic relations, the notion 'X is coindexed with Y,' and the 'theory of indexing' that has sprung up around it. In particular, I shall construct and motivate a theory of 'syntactic chains' which avoids some of the recent extensions of the relation 'X is coindexed with Y' to independent styles of indexing. If the theory developed here is correct, then with respect to syntactic chains, syntactic theory need not be enriched, nor its generality weakened, by the introduction of additional primitive indexing relations.

The business of constructing and defending this theory of chains begins in the next chapter, but first it is necessary to provide a context for this project by being more explicit about what is meant by a 'theory of grammar,' and by reviewing some recent developments in syntactic theory that

Chapter II

2.0. Indexing and Syntactic Chains.

Now that the context of this research is somewhat clearer, I turn to the relations and interdependencies to which the rest of this work is devoted, namely, those relations and interdependencies that are stated on, or interpreted from, syntactic chains resulting from the distribution of indices in a given derivation.

I shall begin this inquiry into indices with a short sketch of their development as a formal device within grammatical theory of the last twenty years or so. In section 2.2, I will introduce binding theory and θ-theory, two central developments of Chomsky's (1981a) Government-Binding approach that rely crucially on coindexing relations, and I will propose the Unity of Indexing Hypothesis, which represents a significant restriction on the descriptive power of indexing relations in grammatical theory. The notion "syntactic chain" is then develped in 2.3. In 2.4, the relations between syntactic components of grammar, as they are regulated by Chomsky's (1981a) Projection Principle, are discussed from the point of view of the theory of indexing and syntactic chains that is developed in this chapter. Section 2.4 also introduces and modifies Chomsky's "functional definitions of empty categories." In section 2.5, my treatment of syntactic chains is extended to interactions with constraints in the LF component, particularly the Empty Category Principle. The chapter concludes with a brief summary.

will figure prominently or at least periodically in the rest of my discussion.

1.1. The Theory of Grammar.

The goal of linguistic theory is to provide an accurate characterization of the innate human language faculty, commonly known as "universal grammar" (UG). Chomsky (1981a) has described the basic problem posed by this goal as follows:

> The theory of UG must meet two obvious conditions. On the one hand, it must be compatible with the diversity of existing (indeed, possible) grammars. At the same time, UG must be sufficiently constrained and restrictive in the options it permits so as to account for the fact that each of these grammars develops in the mind on the basis of quite limited evidence . . . it is a near certainty that fundamental properties of the attained grammars are radically underdetermined by the evidence available to the language learner and must therefore be attributed to UG itself (p. 3).

I shall assume universal grammar to be a set of principles that hold of every language (universal principles of grammar) and a set of yes/no options (parameters) that break up the classes of possible languages into intersecting sets. The language learner is presumed to have the universal principles of grammar (UPG's) at birth, as well as a schema of parameters that have marked and unmarked values. In learning a language 'X,' the language learner must fix the values for all of the parameters of X on the basis of the limited data to which he is exposed, and acquire a lexicon for X (also presumably constrained by UPG's and parameters). The final state linguistic competence of a native speaker of X includes knowledge of the lexicon of X (Lx) and the values

for the parameters of X (Px); the rest of the native speaker's knowledge of X should follow from the interaction of Px and Lx with the UPG's. This interaction is called the "core grammar of X."

One highly successful strategy for uncovering properties of UG has been the detailed study and comparison of adult, or "final state" grammars for given natural languages (which, at the relevant level of abstraction, may be thought of as exemplified core grammars). Comparative study of final state grammars has grown increasingly fruitful in recent years as detailed, theoretically informed work on particular languages has accumulated, and as the increasing sophistication of linguistic theory has permitted more specific cross-linguistic hypotheses to be constructed and tested. Within this framework of research, UG itself has emerged, methodologically speaking, as the abstraction from final state grammars of principles true of all possible final state grammars. Under the idealization proposed in Chomsky (1965), particularly the assumption that language is instantaneously acquired, it follows that the UPG's of the final state abstraction form a model of the innate (initial state) human language faculty. Parameters, from this point of view, are formal properties that hold of classes of final state (again, read "core") grammars.

Part of the focus of this thesis, particularly Chapter VI, will be to examine the formal properties of some of the parameters that distinguish the Romance languages both from

each other, and from the Germanic languages.

The central theme of this research, however, concerns properties of universal grammar, namely, the theory of syntactic chains, the properties of syntactic chains, and the theory of syntactic relations, especially the theory of indexing, within which these chains are defined.

1.2. The Vocabulary of Syntactic Relations.

The primitive vocabulary of syntactic relations, some of which date back to structuralist grammars, may be stated quite informally as in (1).

1) Primitive Syntactic Relations

a) X is (string) adjacent to Y
b) X is in configuration with Y (e.g., sister, daughter)
c) X shares the feature [+F] with Y
d) X is coindexed with Y

Every syntactic relation or interdependency is expressed in terms of one or more of these primitive formal relations.

For example, adjacency is held to be crucial for the operation of rules of contraction, such as those in (2) and (3).

2a) *I probably'm sick

b) I'm probably sick

3a) *I wan' John'na leave

b) I wanna leave

Though these issues are more complex than they seem at first (cf. 2.4.1 for discussion), and though appeal to a more abstract notion of adjacency than string adjacency is required, the role of adjacency in these matters is uncontroversial.

The feature-sharing relation is commonly appealed to

in attempting to explain the parallel behavior of syntactic constituents on the basis of the fact that they are of the same type. Any treatment of nouns or noun phrases assumes that these elements are identifiable due to the categorial features they bear. In most recent accounts, Chomsky's (1970) system of syntactic categorial features is assumed.

4)

	N	V
noun	+	-
preposition	-	-
adjective	+	+
verb	-	+

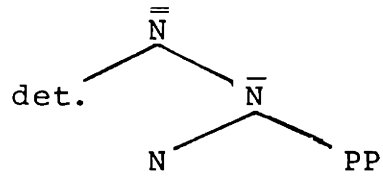
Behavior common to verbs and prepositions, for example, is that they assign Casemarking, whereas adjectives and nouns are generally assumed not to assign Case.[1] Adjectives and verbs, however, more often act as predicates than nouns and prepositions. I shall thus assume the feature system in (4), but cf. van Riemsdijk (1980), Jackendoff (1977) and Stowell (1981) for further discussion and references.

Configurational relations have played a particularly prominent role in recent theoretical developments, especially the $\overline{X}$ system, government and C-command.

The basic idea of $\overline{X}$ theory, introduced in Chomsky (1970) and further developed in the references cited above, is that the rewriting relation $X \rightarrow Y$ is constrained as to the possible values for the syntactic features of X and Y. For a given lexical category, $[\alpha N, \beta V]$, every node dominating $[\alpha N, \beta V]$ up through a certain number of dominating nodes must bear the same categorial features. Thus in the diagram below of an NP, it is assumed that there are two "projections," $\overline{N}$ and $\overline{\overline{N}}$, of the

"head" N.

5)



the princess of Cleves

The highest projection of a head "X" is the "maximal projection of X." These sorts of relations, of course, are expressed in terms of a combination of configurational and feature-sharing relations. Further extension of this sort of relation might be to define "complement of" as being, say, "sister of X" as opposed to, say, "sister of X^{max}." In later chapters I will discuss some further configurational definitions of this nature.

"Government" is a configurational relation that has been at the center of many new theoretical developments. I shall assume the following formulation, due essentially to Aoun and Sportiche (1981).

6) Government

α governs γ in a structure $[_{\beta} \ldots \gamma \ldots \alpha \ldots \gamma \ldots]$, where

i) $\alpha = X^{\circ}$
ii) Where Φ is a maximal projection, Φ dominates α if and only if Φ dominates γ.

I depart from the Aoun and Sportiche definition in my interpretation of "maximal projection," however. Consider the definitions in (7) and (8).

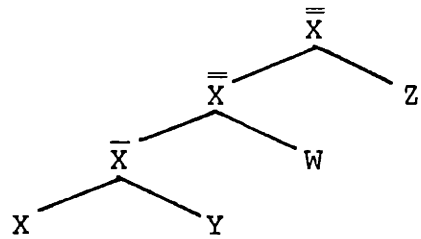
7) Base Maximal Projection[2]

X^n is the base maximal projection of X° if n is the highest value for the category X in the base.

8) Maximal Projection

A maximal projection of X is the highest projection of X^0, X^n, where X^n is base maximal

9)

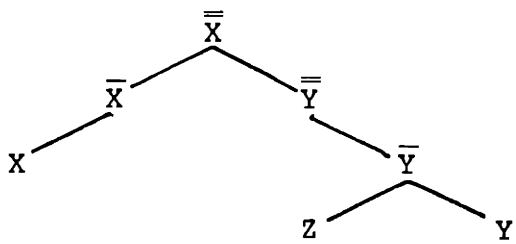


The notion assumed by Aoun and Sportiche corresponds to 'base maximal' projection, and thus X governs Y and W in their account, but X does not govern Z because X and Z do not share all the same base maximal projections. Under the interpretation adopted here, the maximal projection in question is uniquely the node that dominates Z.[3] It follows from (6) that

10) Maximal projections are absolute barriers to government.

Thus in diagram (11), X does not govern any daughter of $\bar{\bar{Y}}$ if $\bar{\bar{Y}}$ is a maximal projection.

11)



The basic idea incorporated in this definition is that a head governs all of its complements within the domain of its own maximal projection, but does not govern those within the domain of any other maximal projection.

Government interacts with many subtheories of grammar, including Binding Theory, Case Theory, and the ECP, all of which will be discussed in the course of my presentation, but

here it is possible to illustrate one simple instance where the consequence of government in (10) has an effect. Case assignment is generally assumed to be constrained by government (Rouveret and Vergnaud (1980), Chomsky (1980)). Thus a verb which assigns Accusative Case must govern an NP in order to assign Case to that NP successfully. Consider (12).

12a) John believed him/*he

b) John believed [$_{\overline{S}}$ he/*him was innocent]

c) [$_{\overline{S}}$ For [$_{S}$ him to leave]] was foolish

Under the assumption that $\overline{S}$ is the maximal projection of INFL[4], *believe* does not govern the pronoun in (12b), since a maximal projection intervenes between *believe* and the pronoun. In (12c), however, the prepositional complementizer *for* is within $\overline{S}$, and can govern the subject of the infinitive, just as a verb can govern its object as in (12a).

Finally I adopt a notion of C-command very similar to that of Aoun and Sportiche (1981), which I formulate as in (13).[5]

13) C-Command

> α C-commands β if the first maximal projection dominating α also dominates β, and α does not contain β.

A typical example of the operation of C-command concerns the contrast in (14).

14a) *<u>He</u> likes the woman [$_{\overline{S}}$ who kissed <u>John</u>]

b) The woman [$_{\overline{S}}$ who kissed <u>John</u>] [$_{VP}$ liked <u>him</u>]

It is well known that a name cannot be coreferent with a pronoun that C-commands it. In (14b), the first maximal projec-

tion dominating *John* is the $\overline{S}$ within the subject relative clause, while in (14a), the first maximal projection dominating *he* is the matrix $\overline{S}$, and the matrix $\overline{S}$, of course, dominates everything in the sentence. Thus *he* C-commands the name *John* in (14a), and *he* and *John* must be disjoint in reference, whereas *him* and *John* can corefer in (14b) because neither NP C-commands the other (cf. Lasnik (1976) and Reinhart (1976)). C-command is also considered to be a crucial factor for determining quantifier scope, a matter that will be touched on in Chapters II and V.

The variety of relations definable on the primitive syntactic relations in (1) is already vast, and permits a great deal of descriptive precision. Any addition to the class of primitive syntactic relations is therefore to be avoided, since it increases the class of possible syntactic relations that can be expressed. The primitive relation 'X is coindexed with Y' will be viewed from this perspective in the next chapter, where syntactic relations that depend crucially on coindexing are defined.

1.3. From Systems of Rules to Systems of Principles.

As Chomsky (1981a) has pointed out, the recent shift in focus from systems of rules to systems of principles is perhaps the most striking and most promising theoretical development of the last decade. There are a number of new directions of research resulting from this research, some of which enhance the explanatory role of syntactic relations in

ways relevant to the analysis of indexing in the next chapter.

The shift from rules to principles had its origin, in part, in the formulation of general constraints on transformations, such as those in Ross (1967). Nonetheless, most investigation that followed still aimed at the discovery of rules characterizing constructions and generalizations across the latter, such as the Complex Noun Phrase Constraint. The unification of some of these generalizations under more abstract principles, such as subjacency and opacity (the Tensed S Condition and the Specified Subject Condition), in Chomsky (1973) marked a change of focus toward abstract theorems and their empirical consequences, rather than, or in addition to, the more data-driven sorts of generalizations across descriptive rules that characterized much of earlier research.

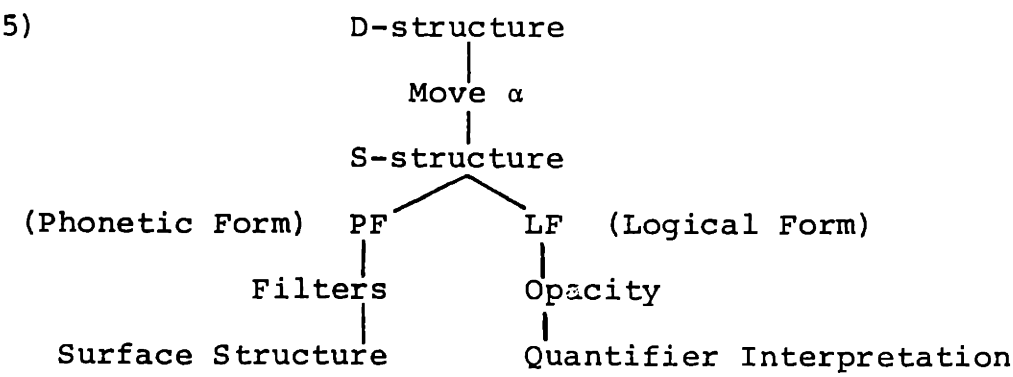
Another part of this shift, however, was the abandonment of the hypothesis that all semantic interpretation is at D-structure. Under the latter hypothesis (Katz and Postal (1964)), it had to be assumed that transformational rules could not apply so as to produce the wrong output at surface structure. Many of the complexities of transformational rules and phrase structure rules were then justified as a means of avoiding the generation of ungrammatical strings after semantic interpretation. The shift to surface interpretation in the early seventies (cf. Jackendoff (1972) and Chomsky (1972)) made it possible to marshal general interpretive constraints

to rule out overgeneration, that is to say, the idea emerged that the constraints of one component might filter out the over-abundant production of other components.

The first casualty of this shift were complex transformational rules, both in terms of their structural descriptions (which limited the contexts where they could apply), their obligatory or non-obligatory character, and their ordering with respect to one another. Chomsky's (1976) introduction of "minimal factorization," and finally the even simpler "Move α" in Chomsky (1980), places the burden of explanation on general principles rather than on specific rules encoding constructions.

It should be noted, however, that although Move α obliterated ordered transformational rules, it did not vitiate (indeed it enhanced) the claim that derivations have beginnings and ends and pass through distinct levels at which major principles hold. Thus the ordering of rules largely gave way to the ordering of components and levels, and to the means by which one level is mapped onto another. A very simplified version of the Chomsky and Lasnik (1977) model is presented below.

15)



An important aspect of the overgeneration/filtering approach that emerged in Chomsky and Lasnik's work is the role of conspiracies in ruling out the various ungrammatical members of paradigms generable by base rules and Move α. While many of the particular filters and results achieved by conspiracies between filters that they proposed have since been derived by more general principles (e.g., the *that-e* Filter, see Chapter II), the conspiratorial force of interacting syntactic principles has since become a major theoretical focus.

Notice, however, that emerging also in this shift from rules to principles, and out from behind the secondary syntactic relations such as government and C-command, is a new explanatory role for the basic vocabulary of syntactic relations. For example, the primitive relation of configuration is now, in effect, conditioned by $\overline{X}$ Theory, thus allowing a vastly decreased class of possible phrase structures, yet dominance and sisterhood remain central relations increasingly associated with diagnostic properties precisely because of the impoverished descriptive power of base rules. In some recent studies, base rules have been virtually eliminated altogether in favor of the interaction of other principles and components, thereby increasing the explanatory force of configurationality.

Although it is beyond the scope of this study, this discussion could be extended considerably with respect to languages for which it has been claimed that configurationality is not a relevant primitive relation, i.e., the suggestion is that con-

figurationality is parameterized (Hale (1979)). Though I am skeptical about the claim that 'non-configurational languages' exist (though it seems plausible that minimally configurational languages do, cf. Hale (1982)), the fact that such a parameter could be proposed exemplifies the new explanatory role of the primitive syntactic relations as they have become more closely identified with diagnostic properties.

To forecast, once again, the preoccupations of the next chapter, the same sort of reasoning will be applied to the primitive relation of coindexing, in that rules that specifically require coindexing will be (or rather have been) pretty much eliminated, and the presence of indexing patterns in the form of syntactic chains will be associated with diagnostic properties. The interaction among principles that filters the output of possible coindexing relations will then determine the distribution of the properties diagnostic of coindexing, and thus coindexing, like configurationality, will also emerge as a primitive relation with an interesting explanatory force.

1.4. Subtheories of Grammar: Case Theory.

I turn now to the internal organization of the particular theory of syntax that I shall be assuming, revising, extending, and, indirectly, defending in the chapters to come, the "Government-Binding Theory" (GB) developed in Chomsky (1979c) and (1981a). GB consists essentially of a number of subtheories and the interaction of these subtheories with the levels and components of grammar. Each of these subtheories

consists of a principle or cluster of principles, some definitions, and sometimes a particular syntactic relation or set of syntactic relations.

Many of these subtheories, including θ-theory, binding theory, and indexing theory will be introduced in the next chapter, while government theory and $\overline{X}$ theory have already been discussed. Some other subtheories, such as control theory (determining the antecedent of PRO) and bounding theory (the issues surrounding subjacency) will be touched upon later, but are of no direct concern to the central issues of this research.

This leaves one subtheory, about which I shall have quite a bit to say in later chapters, in need of exposition. The subtheory I have in mind is Case theory, first introduced in Rouveret and Vergnaud (1980) and Chomsky (1980) both building on the ideas of J.-R. Vergnaud (1978). Case theory is of special interest in that it provides a good illustration of the interaction of the primitive syntactic relations as they are synthesized within a particular subtheory of grammar.

The basic insights behind Case theory are threefold. First it is the perception that having or not having Case features is a syntactically significant property beyond having a particular Case feature in some context and not some other Case feature. Second it is the idea that certain configurational contexts are Case assigning contexts and others are not, and finally it is the observation that lexical NP's lacking Case features, given a set of Case assigning contexts, are ungrammatical at the level of S-structure, or at least at

some level after Move α. Thus Case theory touches on configurationality, feature-sharing, and the ordering of levels. Adjacency too is relevant to Case assignment, as I shall illustrate shortly, and in the next chapter, coindexing will be shown to interact with Case theory as well.

It is generally assumed that Casemarking occurs or is assigned in the following contexts (from Chomsky (1980)).

16) Case Assignment Contexts

a) NP is oblique when governed by P and certain marked verbs
b) NP is objective when governed by V
c) NP is nominative when governed by tense

The role of government has already been illustrated in (12), but it may be added that adjacency also appears to play a role. Consider the following examples.

17a) John wanted (*very much) Harry to leave

b) John wanted very much *(for) Harry to leave

c) Bill read (*quickly) the book

It seems that when *Harry* is not adjacent to *want* or the Case assigning prepositional complementizer *for*, the sentence fails, just as it does when the direct object is separated from the verb by an adverb in (17c) (cf. Chomsky (1980), Stowell (1981)). This failure may then be atrributed to the Case Filter, which may be stated as in (18).

18) Case Filter

*NP [-Case] if NP is lexical (applies at S-structure)

The failure of Case assignment in (17) then predicts the pattern of ungrammaticality.

The motivation for the Case Filter is extensive. It motivates, for example, obligatory movements, such as those in passive and raising constructions which need no longer be distinguished by construction specific transformations, as illustrated expecially by (19c).

19a) $Jack_i$ was killed e_i

b) $Jack_i$ seemed e_i to hate fish

c) $Jack_i$ was believed e_i to hate fish

The generalization captured by the Case Filter also extends to infinitives.

20) It is impossible *(for) John to leave

If no prepositional complementizer is available, then the subject position of an infinitive cannot be Case assigned at all, as in an infinitival indirect question.

21) I don't know who (*John) to trust

Also, a number of instances where Case assigning formatives must be inserted also fall under the generalization captured by the Case Filter, as in the complement position of NP's and AP's.

22a) the destruction *(of) Rome

b) Bill is proud *(of) Mary

Additional results of this sort have been pointed out by Rouveret and Vergnaud (1980) with respect to the insertion of à in causative constructions, and some extensions of this reasoning have been applied to instances of clitic doubling and other clitic configurations in a number of studies (cf. Aoun (1979), Jaeggli (1980), Borer (1981), Elliott (1982) and

references cited in these works).

Thus Case theory has strong empirical motivation, and involves the primitive syntactic relations of configurationality, adjacency, and feature-sharing (+Case vs. -Case NP's). In the next several chapters, the relation of Case theory to indexing relations and syntactic chains will play a crucial role in my discussion, and the interaction between Case theory and other subtheories of grammar, particularly binding theory and θ-theory will be examined in detail.

FOOTNOTES: Chapter I

1. When referring to morphological "Case" and to the theory of "Case" (introduced in 1.4), the word "*Case*" will be capitalized, as has become common practice, so as to avoid confusion with the word "*case*" meaning "instance" or "class of examples."

2. This terminology is first introduced in Safir (1981b).

3. This definition differs from that of Chomsky (1981a) in that C-command, as he formulates it, is crucially a part of the definition of government, though he uses the interpretation of 'maximal projection' that I have called 'base maximal.' Chomsky's definition of C-command is reproduced below.

C-command (p. 166)

α C-commands β if and only if

i. α does not contain β
ii. Suppose that $\gamma_1, \ldots, \gamma_n$ is the maximal sequence such that
   a. $\gamma_n = \alpha$
   b. $\gamma_i = \alpha^j$
   c. γ_i immediately dominates γ_{i+1}

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

If 'maximal projection' as it is defined in (8) is the correct notion for the definition of government, then (with (8)) the definition of government in (6) has the same empirical coverage as using 'base maximal' in (6) and adding Chomsky's definition of C-command. It should be noted, however, that a more formal definition of 'base maximal' would have to encode (ii.a-c) of Chomsky's definition of C-command in order to express the

requirement that every projection between the head and the base maximal one is of the same type.

The empirical coverage of (6) using 'maximal projection' as in (8) is intended to allow for the possibility of post-verbal *wh*-extraction from VP-adjoined positions in Italian, which is also a result of Chomsky's definition, but not Aoun and Sportiche's definition. The principle relevant to this prediction, the Empty Category Principle, will not be introduced until the next chapter, but I return to this matter in note 5.

4. Cf. Safir (1981b) for an argument to this effect. To my best knowledge, the first scholar to propose that INFL is the head of $\bar{S}$ was Ken Hale in his 1977 class lectures.

5. This treatment of C-command differs from that of Aoun and Sportiche with respect to the proviso 'α does not contain β,' which, as they point out, might follow from the 'i over i' condition; see their paper for details. This issue will not concern us here.

An issue that could arise, however, concerns whether or not C-command uses the notion 'maximal projection' or 'base maximal' projection. If 'base maximal' is used for C-command, but not for government, then there may be a way to distinguish contexts where an element is governed (daughter of a maximal projection derived by adjunction) but not C-commanded. In the diagram in (9), this would mean that Z is governed, but not C-commanded by X, while Y and W are both governed and C-

commanded by X. This difference between C-command and government might be exploited to account for the difference in Italian between grammatical post-verbal extraction from VP-adjoined positions or direct object position, on the one hand, and *ne*-cliticization on the other, which is a construct that is only possible when the clitic binds an element in a direct object NP, but not an element in a VP-adjoined NP (cf. Chapter VI for discussion and references). If this direction is correct, it would mean that *ne*-cliticization depends on C-command, while extraction possibilities by *wh*-movement are only dependent on government relations (i.e., "proper government" and the ECP, which are discussed in the next chapter). I shall not pursue the possible distinction between C-command and government just described in this study, however.

2.1. Indexing in Generative Grammar: Historical Sketch.

Indices have long been used as mere descriptive markers for indicating 'coreference.' Differences in coreference interpretation, for example, have commonly been expressed by means of indexing, as in (1).

1a) John_i told Bill_j he_i was sick.

b) John_i told Bill_j he_j was sick.

Used in this way, indices and the coindexing relation had no special formal status in grammatical theory. This situation began to change when the first theories of coreference were attempted within the generative framework (e.g. Langacker (1969), Lees and Klima (1963), Postal (1970) and Ross (1967)). In these early accounts within Standard Theory, conditions on 'Pronominalization transformations' required that identical NP's in deep structure could be replaced by pronouns if certain structural and linear relations held ('precede' and 'command,' for example). A prominent part of the program of Standard Theory, however, was the Katz-Postal Hypothesis, the assumption that transformations could not be permitted to change meaning. Thus the output of transformational rules had to preserve the identity relations stated at deep structure. Constraints, however they were formulated, ruled out cases where identity relations, expressed explicitly or implicitly with indices, were not preserved by transformational rules.

As interpretivist theory was introduced, the treatment of coreference played a central role (cf. Jackendoff (1972)). This approach allowed pronouns to be inserted at D-structure,

and permitted transformations to apply without reference to meaning. The class of possible coreference relations could then be determined at S-structure without crucial reference to indices. With the introduction of 'traces' in Chomsky (1973), and 'proper binding' in Fiengo (1974), the role of indices began to gain substance in interpretivist 'Extended Standard Theory.' Nonetheless, as late as Lasnik (1976) indices are treated more or less as descriptive, while the notion 'coreference' is conditioned by 'precede' and structural relations (Lasnik's 'Kcommand').

Discussion of indexing as a formal device in interpretivist theory is made explicit as a 'theory of indexing' for the first time in Chomsky (1977). In that theory, indices are introduced in the base and propagated by movement, which leaves behind a coindexed empty category. The moved element carries its index with it, cancelling out any index that might be generated on the empty position that it is substituted for. Thus the D-structure of (2b) is (2a).

2a) e_j was seen $John_i$

b) $John_i$ was seen e_i

The coindexing in these cases expresses the fact that *John* is still bearing the grammatical relation and selectional restrictions assigned to its D-structure position. The indices generated by *wh*-movement were also used to form LF representations of quantifier/variable relations. Thus (3a) was translated into (3b).

3a) Which man_i did John see e_i

3b) for which x, x a man, John saw x

Insofar as rules of grammatical interpretation apply to representations that crucially include indexing, indices become, from this point on, a formal device with explanatory potential.

By the time that Chomsky (1977) appeared, the parallel between constraints on anaphora and conditions on traces had already been well developed (cf. Chomsky (1973,1975)). The opacity conditions first introduced in Chomsky (1973) are explicitly assumed to apply to representations involving coindexing in Chomsky (1977) where the notion "involves X and Y" is taken to mean "assigns [+anaphoric to i]" (p. 75) for rules of construal as well as for the coindexing resulting from movement. The notion of 'proper binding,' first introduced by Fiengo (1974) and later Chomsky (1975) was also seen as a condition on both traces and anaphors, and, after Reinhart's (1976) notion of C-command (cf. Chapter I) was incorporated into it (as, for example, by May (1977)), it has been understood simply as the requirement that "binding," more or less as Chomsky (1980) describes it below, must hold of the elements in question.

> We say that an anaphor α is *bound* in β if there is a category C-commanding it and coindexed with it in β; otherwise α is *free* in β (p. 10).

The basic characteristics of current theories of indexing are all now introduced. Indices originate in D-structure. They are propagated by coindexing associated with movement. Coindexation indicates coreference or translates

into quantifier/variable relations. Proper binding is a condition on anaphors like traces, reflexives and reciprocals. The opacity conditions are stated as conditions on coindexing relations. Coindexing resulting from movement also preserves D-structure grammatical relations. These are the properties of the theory of indexing, all of them more or less explicit in Chomsky (1977) (except proper binding), that we shall be tracing further.

2.2. The Unity of Indexing Hypothesis.

This is an appropriate point to pause and consider some of the relations and interdependencies expressed so far.

4) Coreference

> If α and β are NP's and they are coindexed, then they are coreferent.

I intend this to be a completely neutral statement of coreference as a diagnostic property of coindexing, as I shall not be examining the semantic notion "coreference" any further. The notation of "binding" I assume is just a restatement of Chomsky's definition quoted above without any reference to anaphors.

5) Binding

> If α is coindexed with β and α C-commands β, then α binds β.

The binding relation will play a central role in almost every issue I shall discuss, either because it must hold, or because it must not hold, in a given context.

One set of principles that regulates the pattern of possible binding contexts is the Binding Conditions, Chomsky's

(1981a) reformulation of the opacity conditions.

6) The Binding Conditions (hereafter, the BC's)

a) An anaphor must be bound in its governing category.
b) A pronoun must be free in its governing category.
c) A name (or variable) must be free.

I will take "governing category" to mean 'the NP or S in which an element is governed,' but see Brody (1981), Chomsky (1981a) and Aoun (1980). Principle (A) of the BC's is illustrated in (7).

7a) *The men$_i$ expect Mary to kill each other$_i$

b) *John$_i$ seems that Bill killed e$_i$

In both cases an anaphor is unbound in the S that contains its governor (in both cases, the verb *kill*). Principle (B) is illustrated in (8).

8a) *John$_i$ hates him$_i$

b) John$_i$ expects Mary to hate him$_i$

In (8a), the pronoun *him* is bound in its governing category by *John*, but not in (8b), where *John* is outside the S containing the governor of *him* (the verb *hate*). Principle (C), a descendant of Lasnik's (1976) treatment, accounts for the examples below.

9a) *He$_i$ saw John$_i$

b) *He$_i$ said Mary saw John$_i$

c) Mary says he$_i$ is honest, but I think the bastard$_i$ is a liar.

d) *He$_i$ says the bastard$_i$ is a liar.

In (9a,b), the name *John* is bound, and Principle (C) excludes both sentences. Examples (9c), where the epithet *the bastard*

is not C-commanded by *he* (even though they are coindexed), contrasts with (9d), where the epithet, which acts like a name, is bound. The important point for our present discussion, however, is that the BC's are crucially stated on binding, and thus they are crucially stated on indices as well.

Another set of principles that regulates the appropriate contexts for binding is Chomsky's (1981) θ-Criterion (cf. also Borer (1980)), a descendant of Freidin's (1978) 'Functional Uniqueness' and 'Functional Relatedness' conditions.[1] Informally, the θ-Criterion can be stated as (10).

10) The θ-Criterion (provisional)

a) Every argument must be assigned a unique θ-role.
b) Every θ-role must be assigned to a unique argument.

The notion "argument" includes referential expressions ("R-expressions"), which are NP's generally thought of as 'referential' in some relevant sense, such as names, definite descriptions and variables (see below). Other elements rounding out the class of "arguments" include pronouns and lexical anaphors (like *each other*, *himself*, etc.) as well as the empty element "PRO" (see below). A "θ-role" is a semantic argument of a predicate such as *theme*, *agent* or *goal* to use the "thematic relations" terms of Gruber (1965) and Jackendoff (1972). A given predicate has a certain number of such θ-roles, and it assigns a given θ-role to a specific position, according to the information supplied by its lexical entry. Thus a verb like *kill* assigns an *agent* θ-role to its subject position and a *theme*[2] θ-role to its direct object position. Positions

assigned a θ-role by a given predicate are called θ-positions.

Now one function of traces is to relate a moved element to its position in D-structure. By virtue of the coindexing resulting from movement, S-structure interpretation can correctly relate an argument to the position where its θ-role is assigned. If this relation is not established, then the θ-Criterion (hereafter, the θ-C) applies to rule out the sentence because the displaced NP is without a θ-role. Consider the example in (11).

11) $John_j$ was killed e_i

In a passive sentence, the subject θ-role is suppressed by a morphological rule (cf. Williams (1981), Chomsky (1981b) for some recent discussions), and so only the direct object position is a θ-position. The argument *John* must have a θ-role, but it is not related to any θ-position at any point in the derivation if the indexing in (11), as is possible, is base-generated. Thus *John* has no θ-role, and the θ-C is violated.

Another sort of θ-C violation occurs when the same θ-role is assigned to two arguments. Consider the representations in (12).

12a) e_i seems $John_j$ to have killed $Bill_k$

b) $John_j$ seems e_j to have killed $Bill_k$

c) $John_j$ seems $Bill_k$ to have killed e_k

Examples (a), (b) and (c) can be taken to be consecutive steps in a derivation. Example (a), if it were permitted to reach the surface without alteration, would be excluded by the Case Filter mentioned in the last chapter (and to which we will

return) since *John* is not related to a Casemarked position. Example (b) is grammatical because both *John* and *Bill* are assigned Case, and *John* is related to a θ-position, while *Bill* occupies a θ-position. Example (12c) is plausibly well-formed with respect to the Case Filter, since *Bill* binds a Cased position (as does *who* in "Who$_i$ did Bill see e_i"). In order to rule out (12c), it is necessary to assume that *John* has no θ-role, since it can no longer be related to its θ-position. One could imagine a different assumption however. Suppose that a θ-role were simply a feature assigned to an argument in D-structure that could be carried along subsequently by movement without being related back to its point of origin. Then (12c) would be grammatical, since both *John* and *Bill* receive θ-roles in D-structure which they carry with them subsequently. Obviously, the 'carry along' theory makes the wrong prediction, since (12c) is ungrammatical. Thus an argument must be related back to a θ-position if the θ-C is to be satisfied.[3] Relations of this sort, let us call them "θ-chains," thus rely crucially on coindexing, and since the θ-C is a condition on θ-chains (as will be stated more precisely in 2.3), it follows that both the θ-C as well as the BC's rely crucially on the coindexing relation.

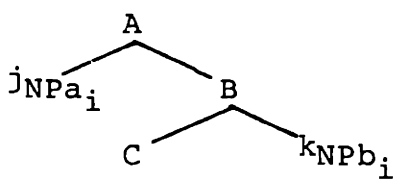
Now we may ask whether or not the coindexation relations that are relevant to the BC's are the same as those that are relevant to the θ-C. The simplest theory would certainly seem to be one in which the same coindexing relation that forms θ-chains is also the coindexing relation regulated by the BC's,

relations are the core of the descriptive power of grammatical theory, though as these primitive relations are increasingly associated with diagnostic properties, as in the case of configurationality, these relations also enter into principles with explanatory force. Any imaginable relation, however, can receive a formal expression in terms of indexing if a new style of indexing can be introduced for each new kind of relation. In effect, this virtually reduces coindexing to the level of a purely descriptive device. Although a slightly more explanatory proposal would be the claim that some limited number of index types is innately available to the language learner, clearly the most plausible hypothesis is the simplest one: There is only one type of index. I shall call this view of indices the "Unity of Indexing Hypothesis." If this hypothesis is correct, then when a child determines that a relation of coindexing holds between two constituents, a variety of consequences concerning the possible patterns of coindexation, as well as the syntactic and semantic effects these patterns induce, is immediately deducible. Put another way, the Unity of Indexing Hypothesis firmly establishes the link between the relation 'X is coindexed with Y' and a wide range of diagnostic properties.

Naturally, as is always the case when the descriptive power of grammatical theory is limited, independently motivated principles and relations must be appealed to to take up the slack. The primitive vocabulary of syntactic relations including adjacency, configuration, and feature sharing already pro-

other things being equal. Nonetheless, it is possible that the simplest theory is not the right one. One can imagine, for example, that there might be a system in which 'binding" can be defined on another sort of index, call them 'ultra-scripts' as opposed to the normal 'subscripts,' and that 'binding' can hold between NPa and NPb with respect to sub-scripts, but not with respect to ultrascripts, as in (13).

13)



One could then define 'binding' as a relation interpreted 'with respect to subscripts' or 'with respect to ultrascripts,' where the two notions deal with quite separate domains. For example, one might claim that 'ultrascript binding' holds between two NP's with respect to the formation of a θ-chain without any entailment as to whether or not one NP binds the other with respect to the Binding Conditions. This theory, which permits 'ultrascript relations' thus loses the general-ization of 'binding' across θ-chain formation and coreference relations. A system very much like the 'ultrascript theory' has indeed been proposed and argued for in Chomsky (1981a). Is a unified theory of indexing possible?

Before answering the latter question, it is worth con-sidering what is at stake in more general terms. In the last chapter I illustrated how some grammatical interdependencies and relations are stateable in terms of adjacency, configur-ation, or feature comparison. These primitve syntactic

vide, I shall argue, sufficient descriptive power to capture some of the generalizations that have recently been stated in terms of auxiliary indices parallel to ultrascripts. Insofar as the impoverishment of indexing schemes shifts the burden of description to the other members of the basic vocabulary of syntactic relations, the explanatory force of these other syntactic relations is enhanced.

Thus it seems that the Unity of Indexing Hypothesis (hereafter, the UIH) is, methodologically speaking, a highly desireable constraint, since if it is correct, it permits us to construct a model of syntactic theory that is both more explanatory (from the point of view of the linguist) and more simple (with respect to the learning task). One way of stating the UIH is as in (14).

14) Unity of Indexing Hypothesis

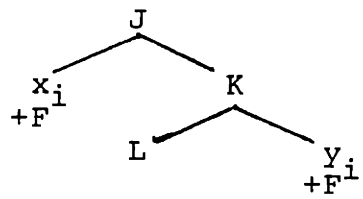
Suppose that α and β are in a relation $\alpha R \beta$ such that α and β are

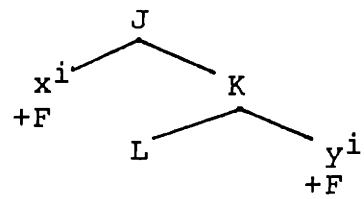
a) in configurational relation Y
b) share the features X
c) are in the adjacency context Z
and d) α and β are coindexed
Then if (a), (b), and (c) hold of relation R' for $\gamma R' \delta$, and γ is coindexed with δ, then $\gamma R \delta$.

The basic idea expressed here is that two relations which both include the notion 'X is coindexed with Y' cannot be distinguished from each other on the basis of coindexing, other things things being equal. Put as simply as possible, (14) amounts to the following claim.

14') There is only one type of indexing.

To see how the UIH excludes certain distinctions, consider (15).

15a) 

b) 

In (a) and (b), x and y are both [+F] (suppose [+F] = NP-hood), x and y are in the same configurational relation (x C-commands y) and x and y are nonadjacent. Now let us pick the relation 'binds' (for which adjacency is irrelevant) so that xBy. Since there is no configurational distinction between the structures in (15a) and (15b), and the two elements, x and y, bear the same feature (although this too is irrelevant), there can be no way in which 'binding' in (15a) differs from 'binding' in (15b). Thus all coindexing relations reduce to 'coindexing,' which is interpreted unambiguously. (Note also that (13) is therefore contradictory and uninterpretable.)

To return to the issue that sparked this discussion, the UIH requires that if x binds y with respect to θ-chains, then it must be the case that x binds y with respect to the BC's, since both the BC's and θ-chains (as we shall see in the next section) refer to the notion 'binding.' Almost all of my discussion concerns the viability of this particular prediction of the UIH.

The last issue is perhaps more clear if illustrated with a natural language example. Consider the strings in (16).

16a) e is $[_\alpha$ a man in the room]

b) $There_i$ is $[_\alpha$ a man_i in the room]

Let us assume that Stowell (1978) is correct when he argues

that (16a) is the D-structure for (16b), where α is a 'small clause'[4] and *a man* gets its θ-role from *in the room*. I assume further that the verb BE does not assign Case in this context (but cf. 4.4). As introduced in Chapter I, the Case Filter requires that every lexical NP must have Case at S-structure. Let us assume that the Case Filter is satisfied if a lexical NP is in a θ-chain with Case. This means that *a man* must form a θ-chain with a Cased position that has no θ-role of its own, such as the subject position containing *there* (inserted, let us suppose, at S-structure). I shall return to all of these assumptions in later sections, but for the moment, all that is important is that the Case Filter requires *a man* to be in a θ-chain with *there*, and so *there* and *a man* must be coindexed. Moreover, *there* binds *a man* in this θ-chain because *there* C-commands *a man*.

Now let us assume further, as is generally done, that *a man* counts as a 'name' with respect to the BC's, which apply at S-structure. This means *a man* falls under Principle (C) of the BC's, which requires that names be free. It follows that (16b) should be, contrary to fact, thoroughly ungrammatical, since *a man* is bound by *there*.

An attempt to solve this dilemma appears in Chomsky (1981a) (cf. also Burzio (1981) and Stowell (1981)). These writers assume that a special coindexing called 'superscripting' holds between *there* and the NP it binds in (16b). Superscripting is exactly like subscripting with respect to forming θ-chains, but if *there* C-commands some NP and *there* and the

NP are cosuperscripted, then *there* "BINDS" the NP (in Chomsky's terminology) but *there* does not "*bind*" the NP since "*binding*" is only possible with subscripts. If only *binding*, but not BINDING, is relevant to the BC's, it follows that *a man* is not *bound* in (16b), and is therefore "*free*," although it is BOUND by *there* with which it is cosuperscripted.

17) There^{i} is a man^{i} in the room.

The alert reader will see immediately that the 'superscripts' of the above-mentioned writers are exactly parallel to 'ultrascripts.' Indeed Chomsky appeals to just the sort of distinction between (12a) and (12b) excluded by the UIH when he distinguishes "*binding*" from "BINDING." Thus either the dilemma concerning *there* sentences remains unsolved, or the UIH appears to be falsified.

Dilemmas like those involved with *there* sentences arise systematically due to the constraint on syntactic relations imposed by the UIH. In the chapters that follow, I shall demonstrate that in every case where superscripting has been proposed to avoid some sort of violation, a more explanatory account can be constructed either from the remaining vocabulary of syntactic relations described above, or from independently motivated principles I shall introduce. The dilemma arising with respect to *there* sentences, for example, is examined in Chapters IV and V, while *it*-extraposition is treated in Chapter III, and PRO-drop is treated in Chapter VI. In all of my analyses, however, the notion '0-chain' will play a central role, and so it is to this notion that I now

turn.

2.3. Syntactic Chains.

In this section, the 'syntactic chains' that will be of interest to us in the remainder of this study are defined, and the properties of these chains, particularly those of θ-chains, will be examined and motivated.

"Syntactic chains" in the sense I shall be using the terms here, are first introduced in Chomsky (1981a). Chomsky introduces "Grammatical Function Chains" as records of derivational history after the application of Move α. Each position in the chain, in this view, records a point of the derivation at which the head of the chain (the moved element, in this case) bore some grammatical function ('subject-of,' object-of,' etc.) that it may not directly bear at S-structure. The notion of 'syntactic chain' is not limited to instances of Move α, however, as is shown by the case of *there* sentences (to which I shall return in Chapters IV and V), but is, in effect, simply an extension of the notion 'local binding' which I shall define shortly. It follows that syntactic chains, since they rely crucially on the coindexing required by binding relations, are creatures of the theory of indexing, and are therefore constrained by the UIH in the fashion described in the previous section.

Before the relevant notions can be defined, however, a little more terminology must first be introduced. In the last section I defined θ-positions as in (18).

18) A θ-position is a position to which a given predicate assigns a given θ-role.

The following set of definitions is based on the definition of θ-position in (18) (but essentially following Chomsky (1981a)).

19) A non-θ-position ($\overline{\theta}$-position) is any position that is not a θ-position.

20) An A-position is any position that can be a θ-position for some predicate.

21) A non-A-position ($\overline{A}$-position) is any position that is not an A-position.

Each type of position is represented in (22).

22) $[_{\overline{S}}[_{COMP}\ who_i][_S\ e_i\ was\ seen\ e_i]]$

The direct object position in (22) is a θ-position for the *theme* θ-role of *seen*, while the subject position, which is also empty, is a $\overline{\theta}$-position, since passivized verbs assign no subject θ-role. As the subject position can be assigned a θ-role by other predicates, such as the active form *see*, the subject position is also an A-position. The position of *who* in COMP, on the other hand, is never assigned a θ-role directly by any predicate; therefore COMP is both a $\overline{\theta}$-position and a $\overline{A}$-position.

Now let us look more closely at the notions of 'binding' that will be pertinent to the definitions of syntactic chains. As remarked above, the UIH excludes the existence of different binding relations distinguished only on the basis of indices, but nothing prevents the formulations of binding relations that are distinct with respect to some other syntactic relation, such as configuration. Chomsky's (1981a) dis-

tinction between 'A-binding' and '$\bar{A}$-binding' exemplifies a distinction of this type.

23) If α binds β and α is in an A-position, then α A-binds β.

24) If α binds β and α is in an $\bar{A}$-position, then α $\bar{A}$-binds β.

An example of A-binding is the binding relation between the subject trace in (25) below, and the lexical anaphor *each other* in direct object position. The matrix subject position A-binds both its trace and *each other*, since it is also in an A-position.

25) They$_i$ seem [$_S$ e_i to love each other$_i$]

Binding from COMP in (22) and (26) below is $\bar{A}$-binding.

26) Who$_i$ did John see e_i

It is assumed that A-binding is the relevant notion for the BC's. This cannot be otherwise if we assume that variables, such as *wh*-traces, are treated just like names with respect to the BC's, and thus fall under Principle (C).[5] Since Principle (C) requires that names be 'free,' unless we assume that this means 'A-free,' it would follow that all variables are excluded. The last binding relation that is of interest to us here is 'local binding' as it is defined in (27).

27) Local Binding

α is locally bound by β if β binds α and there is no γ such that β binds γ and γ C-commands α.

Thus in (25), the trace is the local binder for *each other*, since there is no other binder of *each other* that is C-commanded by the trace. *They* is the local binder of the trace

in (25), but *they* is not the local binder of *each other*, since *they* C-commands the trace, and the trace binds *each other*.[6]

Finally we can bring these definitions to bear on the formulation of "syntactic chains" or, as I shall call them, "S-chains."

28) S-chain

An S-chain is a sequence of A-positions $A_1, \ldots, A_n$ such that for each $i < n$, A_i locally binds A_{i+1}.

S-chains as such will be of little interest to us in what follows, but given the definition of S-chains, the following definition, which is of much more use, is simplified.[7,8]

29) θ-chain

A θ-chain is the maximal portion of an S-chain containing one and only one θ-position.

It is perhaps worthwhile to remark here that all of the definitions of this section derive from the notions 'θ-position' and 'binding' defined above, and that even these notions are decomposable into more primitive ones (e.g., binding reduces to coindexing and C-command) that lead us back to the basic vocabulary of syntactic relations introduced in Chapter I. (I shall return to θ-positions from this point of view in the next section.)

Now that I have gone to some trouble to define these chains, it is time to return to the reasoning that motivated them. As was discussed in the last section, the θ-C as it is stated in (10) does not capture the fact that an argument must be related back to its point of origin in those derivations where Move α is involved, as was illustrated in (12). The

relation between the argument and its point of origin is, after all, what the notion θ-chain was introduced in order to capture. Thus it seems that the θ-C is not to be thought of as a principle that holds of arguments and θ-roles, but rather as a principle that holds of a relation between arguments and θ-positions, i.e., of θ-chains. Indeed the part of the definition of θ-chain that distinguishes it from an S-chain recalls part of the θ-C stated in (10), namely, the uniqueness of the θ-position in the θ-chain recalls the uniqueness requirement on the θ-role associated with an argument. The θ-C can therefore be simplified to the formulation in (30).

30) The θ-Criterion

a) Every argument must be in a θ-chain.
b) Every θ-chain must contain one and only one argument.

It follows that if a predicate specifies in its lexical entry that it has a θ-position, then that θ-position is in a θ-chain by definition (29), and the θ-chain in question must be well-formed with respect to the θ-C. In (12c) (repeated below), for example, *John* is not in a θ-chain, since it is not coindexed with a θ-position; thus it is excluded by the θ-C.

12c) $John_j$ seems $Bill_k$ to have killed e_k

In (31) below, the θ-C excludes the passive version of (31a) in (31b), since the passive of *indicate* allows only one θ-position, and there are two arguments: the NP *his guilty remarks* and the S, *that John was apologetic*.

31a) His guilty remarks indicated that John was apologetic.

b) *[His guilty remarks]$_i$ were indicated [that John was

apologetic]$_i$

31)c That John was apologetic was indicated (by his guilty remarks)

In the next chapter, the role of clausal arguments is discussed in detail, but I shall argue in particular that $\overline{S}$ need not be assigned Case, unlike NP's. Suppose then that this is correct. It then follows that the Case Filter cannot be responsible for excluding (31b), and if *his guilty remarks* and the $\overline{S}$ are coindexed to form a θ-chain, then only part (30b) of the θ-C excludes (31b) (as opposed to the well-formed passive in (31c)). Thus one very interesting property of θ-chains is that the θ-C holds of them.

It is worth noting that any version of the θ-C that results in a one-to-one matching of arguments and θ-positions (and all of the accounts cited have this property) rather than a one-to-one matching of arguments and θ-roles is to be preferred. To see why this is so, consider (32).

32a) John was killed.

b) John ate.

In (32a), the sentence is interpreted as having an unspecified *agent*. The effect of passive morphology, then, is not to suppress the *agent* θ-role, but rather to suppress the function of the subject as a θ-position. The presence of the *agent* θ-role then accounts for the unexpressed *agent* reading. Many recent treatments of passive make this distinction (e.g., Bresnan (1981), Chomsky (1981a,b), Williams (1981)). The consequence of the distinction between suppressing the θ-role and

suppressing the θ-position is that the *agent* θ-role is not assigned to any argument, which is a violation of the θ-C as stated in (10), but not as it is stated in (30).[9] Similarly, the unspecified, but understood, direct object of *eat* ('ate something') may be, once again, a θ-role without a θ-position.

Another property of θ-chains that will figure prominently in the chapters to come is the fact that a lexical NP in a Caseless position can pass the Case Filter if it is in a θ-chain that contains a Casemarked position. Chomsky (1981a) calls this property 'Case inheritance.'

In Chomsky (1980) it was assumed that *wh*-NP must be Casemarked to avoid the Case Filter, and so Case assignment was incorporated into the formulation of Move α when a *wh*-word is moved from what is otherwise a Casemarking position. The notion that a *wh*-NP inherits its Casemarking from the position which it binds follows from the assignment of Case to indices as proposed by Aoun (1980). Following Chomsky (1981a), but for slightly different reasons, I shall assume that elements in $\bar{A}$-positions do not undergo the Case Filter (as discussed in the next chapter) and I will restrict the domain of Case inheritance, again following Chomsky,[10] to θ-chains.

33) Case Inheritance

If NPa is in a θ-chain containing a Casemarked position, then NPa has Case.

In order to extend the parallel between Case and θ-role, under the assumption that both of these are assigned to the index of a θ-chain, Chomsky suggests further that, to be

'visible' (cf. Aoun (1982)) for θ-assignment, a θ-chain must be headed by PRO or an NP with Case. (PRO is introduced in the next section, but I assume with Chomsky (1980) that it is an ungoverned pronominal anaphor.)

34) (= Chomsky's (1981a),(18), p.334)

> Suppose that the position P is marked with the θ-role R and C = $(a_1, \ldots, a_n)$ is a chain. Then C is assigned R by P if and only if for some i, a_i is in a position P and C has Case or is headed by PRO.

Chomsky then incorporates (34) into the θ-C, with the result that if (34) is not satisfied, a chain cannot be assigned a θ-role, and the θ-C is violated. In the next chapter the inclusion of a Case requirement on θ-chains will be rejected, but I shall adopt the assumption that Case inheritance and θ-roles are properties of θ-chains.

Now let us return to Case inheritance. The principal sorts of examples that justify Case inheritance are *there* sentences, like (16b), repeated below, wherein I have thus far assumed that the post-BE NP is in an uncasemarked position (but cf. Chapter IV) which inherits Case by coindexation from the subject position.

16b) There_i is a man_i in the room.

Since *there* is in a $\overline{\theta}$-position (the predicative verb BE does not assign a subject θ-role, cf. Chapter IV) which is also an A-position, *there* and *a man* can form a grammatical θ-chain together containing one argument (*a man*) and one θ-position (the position of *a man* as the subject of the small clause that also contains the prepositional phrase *in the room*). In Chap-

ters IV and V, Case inheritance will be extended to a wide range of examples in several languages, and in Chpater VI, further refinements of Case inheritance are proposed, but examples like (16b) suffice to illustrate the point that Case inheritance can occur in a θ-chain.

Evidence that Case inheritance cannot occur outside a θ-chain is easy to come by.[11] Take, for example, (35b,c), in which we might suppose that *he* could inherit Case from its controller *John*.

35a) $John_i$ hoped PRO_i to leave.

b) *$John_i$ hoped he_i to leave.

c) *$John_i$ hoped he_i to be killed e_i

In both (35c) and (35b), *he* 'heads' (is the highest member of) a θ-chain that contains no Cased position. Since *John* is in a separate θ-chain, it follows that *he* cannot get Case by inheritance, and so both (35b) and (35c) are excluded by the Case Filter.[12]

Thus the principal properties of θ-chains are (A) that the θ-C holds of them and (B) that Case inheritance is possible within them. Both of these properties, particularly the latter, will be developed at length in other chapters. With respect to the UIH, however, the deductive structure of the theory is drawn tighter, since (A) and (B) are now diagnostic properties with respect to any given pattern of indexing which either results in the formation of a θ-chain or strands an NP outside of a θ-chain.

2.4.0. Indexing and Empty Categories.

This section will be concerned with the taxonomy and distribution of empty categories, the relations between components as regulated by the Projection Principle, and the assignment and distribution of indices in the various components. As these issues are quite inter-related, I shall not be able to develop them in a neat linear sequence, and so the reader is requested to bear with a certain modicum of redundancy.

2.4.1. The Functional Definitions of Empty Categories.

Up to this point, I have used the terms "trace," "PRO," and "empty category" without too much elaboration. Historically, and it is a short history, their origins are disparate. Traces were introduced in Chomsky (1973) to preserve the derivational history of a given structural description at S-structure, as discussed earlier with respect to 0-chains. PRO was introduced to account for instances of control in contexts where *self*-deletion was not plausible (in Chomsky and Lasnik (1977)). In an example like (36a), *try* is a verb that never allows an overt subject for the infinitive, hence a rule deleting the formative *x-self* under identity with the subject had to be obligatory, whereas it is not obligatory for verbs like *want*.

36a) John tried [$_S$ PRO to leave]

b) John wanted [$_S$ (himself) to win]

By assuming the element PRO is present in (36a), it is possible

to state opacity effects without appealing to *self*-deletion (cf. also Chomsky (1975)) in contexts where overt subjects can never appear. *Self*-deletion, however, is implausible in cases of arbitrary interpretation, such as (37).

37a) [PRO being the best] is a giddy feeling.

b) It is impossible [PRO to leave]

Abandoning both *self*-deletion and the assumption that PRO is always in complementary distribution with lexical NP's, it is possible to generalize across the contexts where subjects can be missing, the typical cases being infinitives and gerunds. The introduction of Case theory in Vergnaud (1978), Rouveret and Vergnaud (1980) and Chomsky (1980) made it possible to predict that lexical NP's could not appear where Case is not assigned, as in the examples above. It was assumed also, since PRO had to share the features of its controller, it had to have features, i.e., intrinsic content. With the introduction of the BC's in Chomsky (1979a,1979c), it was shown to follow that PRO had to be ungoverned, under the assumption that PRO is intrinsically both pronominal and anaphoric. The reasoning proceeds as follows: if PRO is pronominal, then it must be free in its governing category, but if PRO is anaphoric, then it must be bound in its governing category. PRO can only escape the contradiction of (A) and (B) of the BC's therefore, if it has no governing category. Subsequently, in Chomsky (1981a) it was assumed that PRO counts as an argument for the θ-C, otherwise the subject θ-position of *kill* is without an argument in (38).

38) [PRO to kill fish] is unpleasant.

Thus PRO is treated as non-lexical (to escape the Case Filter), as an argument (to satisfy the θ-C), and as a pronominal anaphor (with respect to the BC's).

Now let us turn to trace. Trace was also treated as having intrinsic properties, the only important one of which was that it marked the site from which something had moved. It was noticed, however, that the trace of NP-movement had different effects from those produced by *wh*-movement. The classic examples are in (39).

39a) Who do you want to visit?

b) Who do you wanna visit?

The second sentence is unambiguous, while in the first, *you* can be the visitee or the visitor. It was proposed in Lightfoot (1976) and Chomsky and Lasnik (1977) that traces block contraction (want to → wanna), while PRO does not, thus accounting for the difference (where *wh*-extraction from the subject position is possible, so is the ambiguity). Pullum and Postal (1978), however, pointed out that if (40) is a raising construction, then contraction can occur across traces.

40a) John used e to be late every day.

b) John usta be late every day.

Jaeggli (1980a) answered Pullum and Postal by observing that Case theory makes the relevant distinction, since *wh*-traces are always Casemarked terminal elements (Rouveret and Vergnaud (1980)), and NP-traces and PRO are not. It is assumed more explicitly in Aoun (1982) that Case is a phonological feature,

and it is the criterion for 'visibility' in the phonological component (PF). *Wh*-traces had already been distinguished from NP-traces by Chomsky (1975), where he had argued that variables are inserted in the place of *wh*-traces in logical form, and likewise in the LF representation of other quantifiers.

With the introduction of the Pisa system in Chomsky (1979a,1979c), variables were treated as intrinsically like names (cf. also Chomsky (1980)), and therefore had to be A-free (as discussed earlier). NP-traces were treated as intrinsically anaphoric in order to distinguish them from PRO (which is also pronominal). This distinction was also partially expressed by the assumption that PRO, unlike trace, had intrinsic agreement features. With the advent of θ-theory, variables are again treated as names, in that they count as arguments, while NP-traces, unlike lexical anaphors, are treated as non-arguments.

As Chomsky (1981a) observes, however, some empirical and conceptual problems arise with respect to the assumption that the distinctions between empty categories is stated in terms of intrinsic properties. For example, treating PRO, but not trace, as having agreement features would predict that *wh*-extraction from subject position of a tensed clause would not result in subject verb agreement with the *wh*-phrase.

41) Which men did you say are/*is going to the opera

More importantly, the distribution of trace and PRO seems complementary, since PRO must appear in ungoverned contexts (due

to the BC's) and trace must appear in 'properly governed' contexts (due to the Empty Category Principle, to be introduced below). For these reasons, Chomsky proposes that these phonologically null NP's, NP-trace, *wh*-trace (variables) and PRO should not be treated as distinct elements defined on the basis of intrinsic features, but rather as the same element defined simply by context.

In order to achieve this result, Chomsky assumes that all empty NP's have what he call "Φ-features." Φ-features are those features of person, number and gender associated with simple pronouns such as *we*, *she*, *it*, etc. The following are Chomsky's (1981a) 'functional definitions of empty categories' (cf. p. 330).

42a) α is a variable if and only if it is locally $\bar{A}$-bound and in an A-position.

b) If α is an empty category and not a variable, then it is an anaphor.

c) α is pronominal if and only if α = $[_{NP}$ F,(P)] where P is a phonological matrix and F ⊂ Φ and either i. or ii.
   i. α is free
   ii. α is locally A-bound by β with an independent θ-role.

In (43), all of the empty categories mentioned above appear.

43) Who_i $[a_i$ wanted $[b_i$ to be kissed $c_i]]$

Suppose that the lower case letters all represent empty categories. Starting from the bottom, *c* is not a variable, since it is locally A-bound by *b*. Thus *c* is an anaphor. It also fails to be pronominal, since it is neither A-free nor A-bound by an element with a separate θ-role. It follows that *c* is only

anaphoric (NP-trace). Like *c*, *b* is anaphoric because it is not locally $\bar{A}$-bound, but unlike *c*, *b* is A-bound by *a* which has a separate θ-role. It follows that *b* is PRO, a pronominal anaphor. Finally, *a* is a variable as it is locally $\bar{A}$-bound.

One significant result of these definitions is that the pronominal and anaphoric properties of PRO follow from them, and then the BC's can predict the distribution of PRO. In (43), PRO (*b*) is ungoverned and therefore licit. Compare (43) with (44).

44) *John killed e .

Since the empty category is not a variable, it must be anaphoric, and since it is A-free, it must be pronominal. As PRO is governed in (44), however, it follows that the BC's exclude it. Thus the existence and distribution of PRO is predictable from general principles.

2.4.2. Expletive Empty Elements.

Some rather subtle questions arise with respect to the above typology of empty elements, and one such question will have an important place in the analyses of succeeding chapters. One of the assumed properties of PRO is that it counts as an argument with respect to the θ-C. Chomsky (1981a) assumes further, however, that there also exists an expletive PRO, that is to say, an element with all the properties and distribution of PRO, except that it does not count as an argument with respect to the θ-C. Thus expletive PRO is limited to chains wherein an argument is otherwise included. No

instance of expletive PRO is discussed in English or French, but this element plays a crucial role in Chomsky's analysis of the 'PRO-drop' phenomenon, which I will discuss critically in Chapter VI. In this short section, my principal concern is to show that the assumption that expletive PRO exists leads systematically to false empirical predictions, and should be modified in favor of another type of empty expletive element, namely, governed expletive [e].

My discussion begins with an observation made by Rizzi (1980). French has a form of adverbial gerund that may or may not have an overt subject.

45a) Ayant mangé, Marie est partie.

"Having eaten, Marie left"

b) Marie ayant tué le chat, l'enfant n'avait rien a faire.

"Marie having killed the cat, the child had nothing to do"

It seems natural to assume, as does Rizzi, that the subject of these gerunds is PRO when the subject is not overt, and the same assumption is standard for English gerunds and infinitives, as stated earlier. Rizzi notes, however, that French adverbial gerunds are ungrammatical whenever the missing subject is an expletive element (example from Rizzi (1980)).

46) *Etant clair que Jean ne viendra plus, nous pouvons partir.

"Being clear that Jean will not come again, we can leave"

Rizzi proposes that the ungrammaticality of (46) is due to a requirement that adverbial gerundives always have controllers

for PRO, and since it is not possible for an expletive empty element to be controlled, (46) is excluded. It is worth considering whether this property is exclusively true of expletive PRO, and if so, why.

To begin let us consider further whether or not the subject position of adverbial gerunds is indeed a context where PRO must be controlled by some argument of the matrix sentence. Notice first that the same construction appears in English, and that the same sorts of contrasts can be observed.

47a) (While) munching on a fig, John broke a tooth.

b) Mary having eaten, we decided to go directly to the movies.

c) *Being obvious that John was late, we decided to go to the movies.

d) It being obvious that John was late, we decided to go to the movies.

One difference between French and English in this respect, however, is that English has a full pronominal lexical element, *it*, which can appear in these contexts, while the French equivalent, the subject clitic *il*, is limited to contexts where Nominative Case is assigned. Since French has no full lexical pronominal, it follows that PRO must always appear in French where in English, *it* can be inserted.[13]

48a) *(It) seeming that the king had been executed, anything appeared possible.[14]

b) *(It) being clear that John was late, we decided to go to work.

Extending Rizzi's claim about French to English, we might attribute the impossibility of expletive PRO in these contexts

to the fact that it cannot be controlled.

If it is true that the subject of a gerundive adverbial has to be controlled, however, then this notion of control must refer to a fairly abstract representation that includes missing passive agents (49a), the subjects of elided clauses (49d), the PRO (?) possessor of *mind* and perhaps some sort of dative argument of *obvious*.

49a) Before PRO making a big decision, every option must be considered.

b) Without PRO ever testing a single example, it's obvious how things will turn out.

c) While PRO smiling warmly at such odious children, ingenious methods of torture come to mind.

d) A: How do you manage to live so well on your salary?

B: PRO making $50,000 a year in kickbacks, it's a cinch!

All of these examples allow the 'arbitrary reading' for PRO, and indeed this is the only possible reading, as no other overt NP is available as an appropriate controller. The examples in (49) have ungrammatical counterparts in (50).

50a) *Before seeming that John was late, a big birthday party was planned.

b) *Without ever seeming that John was guilty, it was obvious how the military court would decide.

c) *While appearing that the children would stay, ingenious methods of torture came to mind.

d) A: How do you avoid getting caught?

B: *Being obvious that I'm a hopeless coward, no one suspects me.

In cases where a lexical NP can be inserted at all, *it* can save the sentence (as in (50b)), but otherwise these examples are

unredeemable. Similar results obtain with infinitival sentential subjects.

51) *(For it) to seem that John is guilty would upset Mary.

Thus in all of these contexts, arbitrary PRO is possible, but expletive PRO is not.

The same results are extendable to French in contexts with infinitival sentential subjects and adverbial infinitives parallel to temporal adverbial gerunds in English.

52a) D'être élu par une majorité serait surprennant.

"To be elected by a majority would be surprising"

b) *De sembler que Jean serait élu par une majorité serait surprennant.

"To seem that Jean would be elected by a majority would be surprising"

53a) Avant de prendre une décision importante, toute possibilité doit être consideré.

"Before making an important decision, every possibility must be considered"

b) *Avant de sembler que Jean etait coupable, il etait évident qu'il serait condamné.

"Before seeming that John was guilty, it was obvious that he would be condemned"

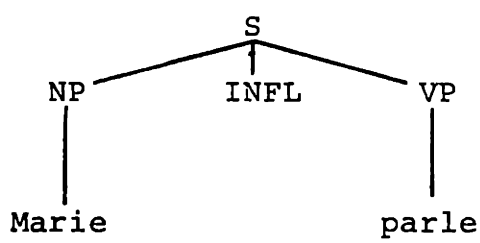
As shown by the possibility of arbitrary interpretation, related perhaps, to highly abstract controllers, the ungrammaticality of the French and English examples above cannot be attributed to the absence of available controllers. In fact, it seems that the ungrammatical results are only unexpected if it is assumed that expletive PRO exists. If there is no such thing as expletive PRO, or to put it another way, if PRO

always counts as an argument, then every time PRO appears it must be the unique argument of a θ-chain. In all of the ungrammatical examples, therefore, PRO and the clausal argument of *seem, be obvious, sembler, être clair*, etc., are competing for a single θ-position, and so these sentences are excluded by the θ-C.

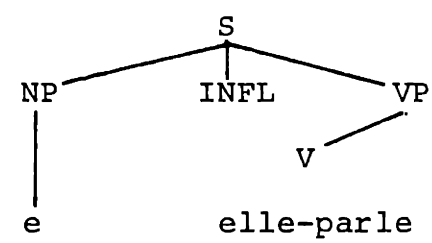
If expletive PRO does not exist, the next natural question to ask is if there is any expletive empty element at all. I believe there is evidence that such an element exists, although most of it will be presented in other sections (cf. especially 2.4.4, 5.1.3, and Chapter VI). It is instructive, however, to consider one such context briefly.

The case I have in mind is that of subject position in French when a subject clitic (SCL) is present. Consider (54).

54a) Marie parle



b) Elle parle



Let us simply assume for the sake of argument that the structure hypothesized for (54b) is correct, where the SCL *elle* is treated as a slot on a verb, and where INFL assigns Nominative Case to either the subject or to the SCL, but not to both. An analysis based on these assumptions will be developed in Chapter VI.

The issue relevant to my inquiry is to determine the status of the empty element in (54b). We have already deter-

mined one property of this element: it lacks Case. In Jaeggli (1980b), it is assumed that if INFL does not assign Case to the subject, then INFL does not govern the subject, in some sense. Jaeggli then concludes that when the SCL appears, the empty category in subject position is PRO. Let us adopt Jaeggli's hypothesis provisionally.

Another relevant fact about the empty category in (54b) is that it is distinguishable from *wh*-trace and the trace of Stylistic Inversion (cf. 4.2 and Appendix I for discussion and references). Consider the construction that Kayne (1972) calls 'Subject Clitic Inversion' (SCL Inversion). In order for SCL Inversion to be grammatical, some element must be present in subject position that is distinct from the traces just mentioned.

55a) *Qui$_i$ e$_i$ est-elle arrivée?

b) *Quand e$_i$ est-elle arrivée Marie?

c) Quand e est-elle arrivée?

d) Quand Marie est-elle arrivée?

In (55a), the subject has been questioned, leaving a trace in subject position. In (55b), both Stylistic Inversion and SCL Inversion have applied, and the former again leaves a trace in subject position. Yet the empty category in (55c) yields a grammatical output parallel to (55d). If the empty category in (54b) and (55c) is PRO, then it is distinguished in an appropriate way from the Cased traces left by *wh*-movement and Stylistic Inversion, which, following Kayne (1980), are both variables at LF (but see Appendix I).

Notice that I am assuming the existence of an empty category in subject position in (54b) and (55c). This proposal is consistent with Chomsky's (1981a) proposal that in universal grammar, the subject node is always obligatory in the base expansion for S.

To summarize then, the empty category in (54b) and (55c) exists, it is not a variable, it lacks Case, and it appears to be governed in certain contexts although I have assumed that it is PRO.

Now notice further that if the empty element in subject position in (54b) and (55c) is PRO, then expletive PRO must exist to occupy the subject position when an expletive subject clitic appears.

56a) Il semblait que Jean était coupable.
"It seems that Jean is guilty"

b) Quand semblait-il que Jean était coupable?
"When did it seem that Jean was guilty"

If expletive PRO does not exist, however, as argued above, then it follows that the examples in (56) should be excluded by the θ-C. If PRO is always an argument, then the PRO and the clausal argument of *sembler* are competing for a single θ-role. As the examples in (56) are grammatical, I must assume that either expletive PRO exists, but its distribution is conditioned by some additional principle, or that some other expletive empty element fills the subject position, and this other element is regulated and/or defined by some additional principle. (On the appropriate level of abstraction, these

options may reduce to the same thing.)

Now we have seen that in all of the gerundive and infinitival contexts above, expletive empty subjects are excluded. A simple way to state this fact is (57).

57) An expletive empty category must be governed.

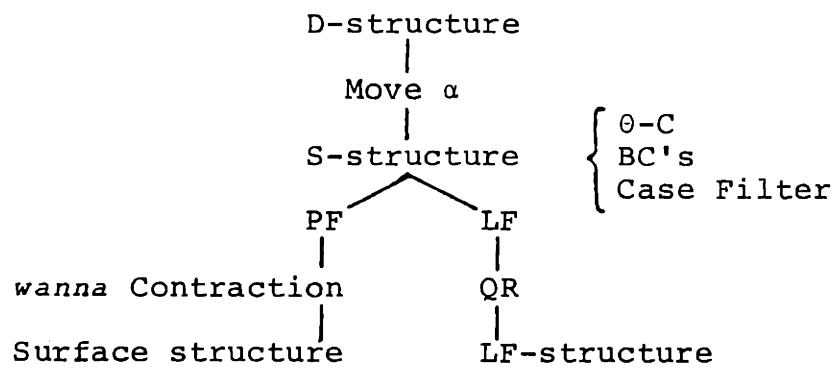
Since PRO is always ungoverned due to the BC's, it follows from (57) that expletive PRO does not exist. Now since we have need of an empty category for the subject position in examples like (54b), (55c), and (56a,b), we are forced to the most natural assumption with respect to these structures, namely, the assumption that the subject position is governed by INFL. Thus governed expletive [e], assuming that it can be appropriately defined, is the element that appears when an expletive empty element is required.

The purpose of this short section has been to show that expletive empty elements are limited to governed contexts, though much of the evidence for this view must await theoretical elaborations to be introduced below. I turn to these elaborations directly.

2.4.3. Relations between Components.

Now it is possible to integrate the theories of indexing and empty categories into the componential model of the grammar presented in Chapter I and slightly elaborated below.

58)



Let us begin by considering the relations between D-structure and S-structure. Recall that in Chomsky's first 'theory of indexing' discussed above, it is assumed that indices are introduced at D-structure. Movement from one position to another by substitution erases the index of the base generated empty category and replaces it with the index of the moved category.

59a) e_i was killed $John_j$

b) $John_j$ was killed e_j

As soon as Chomsky's explicit theory of indices appeared, however, it was pointed out by Bach (1977) that (59b) could be base generated with the appropriate indexing, and that if this is so, no rule of substitution is required. At the time of Bach's observation, it was not clear that there were appropriate independent principles to rule out the overgeneration of such free indexing, but since the advent of principles such as those that apply at S-structure in (58) above, it might be supposed that Bach's suggestion could be adopted. Let us take this issue as a point of departure.

Independently, there is reason to believe that both indexing and coindexing should be permitted without movement.

60) Tom_i hates $himself_i$

In (60), *Tom* must be coindexed with *himself*, or the BC's are violated. In (59b), *John* must be in a Casemarked position, but by the θ-C, it must be in a θ-chain, hence it must be coindexed with the empty NP object. Moreover, the empty NP object in (59b) has to be bound, since it counts as a pronominal anaphor if it is not A-bound by *John*; hence, it would be governed PRO, excluded by the BC's. Thus it appears that we might be able to allow free indexing (restricting our discussion to A-positions) and to use the S-structure constraints in (58) to rule out the overgeneration that would result. We might then ask if there is any reason at all to suppose that substitution operations are a property of Move α. However, this matter is resolved, the answer will depend in part on another issue, namely, the issue of where indices are introduced in the course of a derivation.

The latter questions bear on the appropriate formulation of Chomsky's (1981) 'Projection Principle.' Informally put, Chomsky's Projection Principle (PrP) says that at every syntactic level, D-structure, S-structure, and LF-structure, the lexical properties of predicates must hold. The lexical properties of central relevance are θ-assignment and subcategorization, although I shall only be concerned with the former here (cf. Chapter III for relevant discussion). The requirement that θ-assignment be done in the same lexically specified way at every level has the immediate consequence that traces must exist, or else the θ-C cannot be satisfied.

Recall that it was pointed out (in 2.2) that example (12) provided evidence that an argument must be related back to a θ-position, and that θ-marking was not simply 'carried along.' If θ-assignment must be to the same syntactic position at every syntactic level, then the 'carry along' theory is impossible for a principled reason.

A stronger hypothesis, also proposed by Chomsky, is that the PrP requires further that the θ-C hold at every level. This is stated informally in (61).

61) The θ-C and the lexical properties of θ-assignment hold at every syntactic level.

This means that a θ-position must be in a θ-chain that is well-formed at D-structure with respect to the θ-C. Now the question of where indices are introduced into the derivation is crucial. Consider (59b). If indices can be freely generated at D-structure, it follows that (John,e), if coindexed, can be a well-formed θ-chain at D-structure. If such indices are not introduced at D-structure, then *John* cannot be related to a θ-position, and is thus excluded by the θ-C at D-structure. The only well-formed D-structure of *John was killed* under the 'no indexing at D-structure' hypothesis is (59a), if the θ-C must be satisfied at D-structure according to the PrP. If (59a) is the D-structure of *John was killed*, however, then (59b) can only be an S-structure representation. This does not mean that the indexing of (59b) is generated by movement (dissociating coindexing from movement). The indexing of (59b) might be introduced by free indexing at S-structure. It does

follow, however, that *John* must move to whatever $\overline{\theta}$-position it occupies at S-structure.[15] The properties of the theory just described, call it Theory A, are listed below.

62) Theory A

a) No indexing at D-structure
b) θ-C holds at every level (61)
c) Move α includes substitution rules, but not coindexing
d) Free indexing at S-structure

One can imagine quite a number of opposing theories that can be constructed by altering any one of the assumptions of Theory A. It is not useful here to pursue all of the lines of reasoning that would be required to determine if any variant of Theory A is to be preferred, but at least Theory A limits the class of possible D-structures in an interesting way (as compared, for example, with a theory that lacks (62b) and/or permits free indexing at D-structure). Let us therefore use Theory A as a place to start, and motivate changes in it based on further investigation.

Now notice that Theory A does not jibe with the theory of empty categories proposed above. If there is no indexing at D-structure, then in a sentence like (63), the contextual definitions of empty categories indicate that both empty categories are PRO at D-structure, as they are both A-free and $\overline{A}$-free.

63) e to be kissed e is thrilling.

Since PRO must count as an argument with respect to the θ-C (if infinitives in control contexts are to be grammatical at all), it follows that the θ-C is violated at D-structure because

the matrix empty category is PRO and not in a θ-chain. Let us call this the 'PRO problem.' The PRO problem only arises for the strong form of the PrP, and not for the weaker form of the PrP that only requires that θ-assignment hold at every level.

To put it another way, the PRO problem only exists because the lack of indexing at D-structure makes it impossible to distinguish the argument status of a PRO in a θ-position from a PRO in a $\overline{\theta}$-position with respect to the contextual definitions of empty categories (EC's). We cannot conclude that the contextual definitions do not apply at D-structure for the reasons mentioned above (PRO must exist as an argument at D-structure in infinitives with θ-position subjects). The following statement suffices to solve the problem.

64) An empty category is optionally an argument.

(64) seems an optimally simple statement. It follows from (64) that if PRO is treated as an argument, then the θ-C will rule it out at D-structure unless it is in a θ-position. Thus if PRO is in a non-θ-position at D-structure, then it must be expletive (= nonargument). We have already seen that expletive EC's must be governed (57), and so (64) allows expletive PRO (EPRO) to appear where it is governed in (65),

65) e was killed John. (D-structure)

but not in (63). In (63), the subject position of the passive sentence is ungoverned, as well as being a non-θ-position outside a θ-chain (it bears no index at D-structure), and so (57) should rule it out at D-structure. The obvious move is to

make (57) an S-structure principle and permit the derivation of (63) in (67).

66) An expletive empty element must be governed at S-structure.

67a) EPRO to be kissed PRO is thrilling (D-structure)

b) PRO_i to be kissed e_i is thrilling (S-structure)

So far then, we may conclude that expletive EC's exist and that their distribution is regulated by (66) and the θ-C. I will return to the distribution of EC's in the next section.

At this point, the introduction of indices into the componential model is maximally simple: index freely at S-structure. The next question to ask is whether Move α affects the pattern of indexing between D-structure and S-structure.

Some evidence bearing on this issue has recently been put forward by Chomsky (1982) in his reanalysis of a phenomenon first studied by Taraldsen (1982). Consider, for example, (68).

68) $What_i$ did John [file t_i][without reading e_i]

Descriptively speaking, the position marked by t_i is the trace of *wh*-movement and e_i is a 'parasitic gap' which is understood to be bound to *what* in the same way t_i is. One characteristic property of parasitic gaps, is that the trace cannot C-command the gap nor vice versa.

69) *Who_i [t_i said that John [liked e_i]]

This first property follows from the contextual definitions of empty categories interacting with the BC's, since e_i is A-bound

by the trace, which has a separate θ-role. Therefore e_i is pronominal and anaphoric, i.e., PRO, and the BC's exclude it in this context because it is governed. In order for the gap to be well-formed then, its local binder must be in an $\bar{A}$-position.

70) Which antelope$_i$ [did the lion [wound t_i][before killing e_i]]

In (70), both trace and the gap have *which antelope* as their local $\bar{A}$-binder. The θ-C is not violated even though two $\bar{A}$-chains (an $\bar{A}$-bound θ-chain) cross. Thus a second property of parasitic gaps is that they are only parasitic $\bar{A}$-bound gaps, or else the contextual definitions will treat them as PRO (A-bound by a separate θ-role), and the BC's exclude them from governed contexts.

Another property of parasitic gaps is that they can appear in positions inaccessible to movement, which I assume to be constrained by subjacency.[16]

71) the juicy stories which$_i$ [$_S$[$_{NP}$ any gentleman [who$_j$ t_j knew e_i]][$_{VP}$ wouldn't tell t_i] in front of relatives]

The object of *knew* can be a parasitic gap, though regular *wh*-movement from the same position is blocked.

72) *the juicy stories which$_i$ [$_{NP}$ any gentleman who knew t_i] wouldn't lie

Chomsky notes further that it is independently necessary to relate base generated *wh*-words to A-positions in islands in resumptive pronoun structures.

73) ?the boy who$_i$ Mary knows the car his$_i$ father drives

Examples like (73) are totally ungrammatical if *his* is not understood as bound to *who*. Chomsky suggests that this is simply due to the fact that there is no vacuous quantification, and so the *wh*-word, which acts like a quantifier in this sense, (cf. Chomsky (1976)), must be coindexed with *his* or quantification is vacuous.[17]

As Chomsky notes, however, free indexing at S-structure will generate (72) as grammatical as well as (71) and (73). The problem is that a non-movement derivation for (72) becomes possible with free indexing at S-structure and base generation of the *wh*-word, since the *wh*-word can be connected to the base-generated gap without movement. All of the correct predictions of subjacency are thus lost.

Chomsky preserves the force of subjacency by making the following assumptions.[18]

74a) Free indexing of only A-positions at S-structure
b) Move α entails coindexing between the moved element and its trace
c) Free indexing of all positions at LF-structure
d) The constraint against vacuous quantification applies at LF-structure

This means that a base-generated *wh*-word cannot bear an index at S-structure. It follows that the empty category in a movement inaccessible position will be $\bar{A}$-free, and therefore a governed PRO as in (72) above and in the schematic diagram below.[19]

75) wh ... $[_{NP}$ ... e_i ...] (S-structure)

Since the BC's apply at S-structure, (75) is excluded. The same configuration is grammatical if the empty category is

replaced by a pronoun, however, as in (73) (modulo a variation in acceptability). In cases like (73), the pronoun is well-formed at S-structure as long as it is free in it governing category. At LF-structure, where the ban against vacuous quantification applies, the *wh*-word must be, and can be, coindexed with the pronoun. If the *wh*-word arrives in COMP by movement, then it obeys subjacency, and binds a variable in that subjacent domain. Free indexing of A-positions at S-structure then permits a parasitic gap to bear an index matching the *wh*-word, as in the derivation in (76).

76a) ... wh ... ... e ... D-structure

b) wh_i ... e_i ... ... e ... Move α

c) wh_i ... e_i ... ... e_i ... S-structure

This, then, is the system of Chomsky (1982).

One question that arises in considering a system like that in (74) is whether or not there need be any indexing at D-structure. Theory A assumes that there is none in order to limit the class of possible D-structures. The analysis of parasitic gaps only shows that *wh*-words and their traces must be coindexed by S-structure. It need not be assumed that there is any indexing already available at D-structure, as it might be the case that indexing is either introduced on both elements by Move α, or simply that the A-position trace is assigned an index freely at S-structure, while Move α assigns an index only to the moved element.

There is, however, empirical motivation for assuming that indexing is introduced at D-structure (although it turns

out that the properties of Theory A are preserved). Consider the following examples.

77a) John lost his/*my way.

b) John stubbed his/*my toe.

c) Quentin quit his/*my job.

d) Don doffed his/*my cap.

e) Willy waved his/*my hand at the problem.

Idioms such as those in (77) are known to require that the possessive pronoun agree with the subject of the same predicate. Naturally, if this is expressed as indexing, it can be assumed to hold at whatever level indices are introduced. Suppose that this relationship holds at S-structure, under the assumption that indices are first introduced at this level, and items like the x of *x's way* in (77a) are simply marked as anaphoric with respect to the idiomatic interpretation of the verb *lose*, that is to say, the possessive pronoun is treated as a lexical anaphor on a par with *each other* or *himself*. If the possessive pronoun is treated as a lexical anaphor then it need not be stipulated to agree with the subject of the same predicate, as the BC's insure that it must be bound in its governing category. Like reciprocals, for example, these idioms cannot be passivized in a simple sentence.

78a) *Themselves/each other were killed (by the men).

b) *His toe was stubbed (by Sam).

c) *His way was lost (by Larry).

d) *His job was quit (by Quentin).

e) *His hat was doffed (by Don).

78f) *His hand was waved (by Willy) at the problem.

All of the examples in (78) are out under the idiomatic interpretations (if not completely) just like other lexical anaphors as in (78a). These possessive idiom pronouns differ systematically from lexical anaphors, however, in at least one very important respect. Consider the paradigm in (79).

79a) They expect {themselves / each other} to be killed.

b) *John expects his way to be lost.

c) *John expected his toe to be stubbed.

d) *Quentin expected his job to be quit.

e) *Don expects his hat to be doffed.

f) *Willy expects his hand to be waved at the problem.

It seems that the pronoun of possessive idioms must be related to the subject of the predicate that selects them, and not to any other subject.

Now we might conclude from this that possessive idiom pronouns are bound to the subject 0-position, and that when passive suppresses this 0-position, the possessive idiom cannot be bound. This account, however, is merely descriptive, and the parallel with lexical anaphors is abandoned because the position of the antecedent is stipulated.

Instead let us pursue the idea that these possessive idiom pronouns (PIP's) act like anaphors[20] at D-structure and must be appropriately bound at that level. This idea requires, however, that at least some indexing be present at D-structure. Suppose that indexing is permitted at D-structure in the following sense.

80) Only θ-positions are assigned indices at D-structure

(80) wil have the same consequences with respect to the application of the θ-C at D-structure that 'no indexing at D-structure' had in Theory A, since no θ-chains can be formed that have more than one member (recall that a θ-chain can have only one θ-position, and $\overline{\theta}$-positions cannot be indexed under (80)). Now the constraint on the distribution of PIP's can be stated without having to specify that there is any special relationship between the PIP and the subject θ-position.

81) Principle (A) of the BC's holds for PIP's at D-structure.

To see how these hypotheses rule out passives like those in (78), consider the D-structure of (78e) in (82).

82) e was lost his way.

Since the PIP must be bound, it follows that its only possible antecedent is the subject empty category. The subject is not a θ-position in a passive sentence, however, and so it follows from (80) that the subject position cannot bear an index. Thus the subject position is not a binder for the PIP, and (82) fails at D-structure due to (81). In the active cases like those in (77), however, the subject is a θ-position, can bear an index under (80), and can satisfy (81) just in case the index on the subject position matches that of the PIP.[21]

The advantage of this account is that it follows from (80) and (81) that there are no passives of anaphoric PIP's and no special statement about the nature of the antecedent for such anaphors need be stipulated. Only (81) is a state-

ment peculiar to these idioms, and it has the form of a general condition on anaphors normally stated at another level. Suppose then that (81) is the right stipulation about anaphoric PIP's. Why should it hold at D-structure instead of applying at S-structure where other lexical anaphors are analyzed? Recall that the Projection Principle requires that the lexical properties of predicates should hold at every level. Since the anaphoric status of these PIP's is a property assigned by a given predicate (as there are PIP's that are not anaphoric, as in fn. 20 above), we might suppose that this property must hold at every level, including D-structure. Normal reflexives, which are not specifically selected by a given predicate, do not fall under the PrP. It follows that regular lexical anaphors need not be analyzed at every level in the same way as anaphoric PIP's. Thus the argument based on anaphoric PIP's provides evidence both for a separate level of D-structure with indexed 0-positions, and for the PrP, which, under the appropriate interpretation, predicts that (81) should hold at D-structure.

To return to our main line of inquiry, the system of indexing that emerges from these considerations is as follows.

83) Indexing Theory B

a) Only 0-positions are indexed at D-structure
b) Move α 'carries along' the D-structure index of the moved category
c) Free indexing of A-positions at S-structure
d) Free indexing at LF-structure

I assume that none of the rules of Theory B involves reindexing, i.e., there are no index-changing rules (but cf. Higgin-

botham (1980) for discussion of reindexing rules in LF). In the remainder of this study, I shall rely essentially on Theory B as stated above, although parts of it will be slightly elaborated in later chapters.

2.4.4. Expletivity and the Inventory of Empty Elements.

In the last section, empty categories (EC's) were permitted to be expletive or not (64) just so long as they are governed at S-structure (66). While these assumptions suffice to permit the existence of expletive PRO (EPRO) at D-structure to solve the PRO problem (connected with the discussion of (63) and (65)), they do not yet permit the existence of an expletive empty element at S-structure where the BC's rule out pronominal anaphors in governed positions, expletive or not. As argued earlier, however, some such expletive empty element must exist at S-structure in French when a subject clitic appears. How can expletive empty categories be permitted to exist at S-structure and what determines their distribution?

The problem that arises is that expletive EC's, like other EC's, ought to be susceptible to the functional definitions of empty categories in (42). For example, the constraint on vacuous quantification rules out the possibility that an expletive empty category could be a variable, but if an EC is not a variable, then it follows that it is an anaphor by (42b). Expletive anaphoric EC's are already a familiar feature of the theory, since all anaphoric traces are expletive. If anaphoric traces were not expletive, then any

θ-chain that contained one would have more than one argument[22] and be excluded by the θ-C. But let us suppose that we are considering an expletive EC that is free--unlike pure anaphoric traces, which are A-bound by a member of the same θ-chain. If the expletive EC is free, then (42c) should apply as well as (42b), and so the element in question should be EPRO. An expletive PRO of this sort is excluded by the BC's at S-structure, since by (66) expletive PRO must be governed at S-structure.

Notice, however, that a pure pronominal EC, if it were to exist, would not be automatically excluded by the BC's at S-structure in governed positions. An expletive empty element of this sort would be parallel to lexical expletive pronouns like *it* in *it seems that S*. If expletive empty pronouns are to exist, however, something must prevent the contextual definition of anaphor from applying to them. The following revised definition of 'empty anaphor' replaces (42b).

84) If α is an empty category *in a θ-chain* and it is not a variable, then it is an anaphor.

The italicized portion of (84) indicates where it departs from (42b). The basic idea behind the revision in (84) is to distinguish two classes of empty expletive categories. On the one hand, there are EPRO and anaphoric trace which only occur in θ-chains, and on the other hand, there is the pure pronominal empty category (EXE) which can only occur outside a θ-chain, and therefore must always be expletive (or violate the θ-C).

The new definition of empty anaphors in (84) now changes our perspective on the PRO problem at D-structure discussed in connection with examples (63) and (65) in the last section. There it was assumed that EPRO could be present at D-structure, thus avoiding a θ-C violation that would arise with argument PRO. Given the definition in (84), EPRO cannot exist at D-structure, since EC's not in θ-positions are not in θ-chains (hence, they cannot be anaphoric) and EC's that are in θ-positions cannot be expletive (or the θ-C is violated). Rather the D-structure non-θ-positions must be filled by EXE or the θ-C is violated.

Besides resolving the PRO problem, EXE now provides us with an appropriate element to fill subject position in French when a subject clitic appears, although there is a clear prediction that EXE cannot participate in a θ-chain. This prediction will have important consequences for my discussion of PRO-drop in Chapter VI, as well as for my treatments of Quantifier Lowering (next section) and *it* extraposition (Chapter III).

The existence of expletive PRO seems impossible from what I have developed so far, as it is excluded by the functional definitions and the θ-C at D-structure, and by the BC's and (66) at S-structure. Though an instance of EPRO will be shown to exist in 5.1.2 due to a relaxation of the BC's at S-structure, for the moment let us assume that it is excluded.

The inventory of empty categories thus includes EXE,[23] argument PRO, variable and anaphoric trace. This system matches, in part, the distribution of lexical argument types,

as shown by the diagram below.

85)	Lexical	Pronominal	Anaphoric	Empty
	name	-	-	variable
	each other	-	+	NP-trace
	it	+	-	EXE
	ø	+	+	PRO

This system differs from that of Chomsky (1981a) in that in this system (85), EXE exists and expletive PRO does not. (85) differs from Chomsky (1982) in that in his system, an element called 'pro' (cf. also Burzio (1981)), a pronominal empty category, is permitted to be either an argument (like *she*) or an expletive (like *it*). In (85), 'pro' must always be expletive. At the end of Chapter VI, where NOM-drop is discussed, I will argue that an 'argument pro-like' element does exist in some languages, but for now I shall simply adopt the system in (85), each empty element of which has been motivated in this chapter.

2.5.0. Constraints at LF-Structure.

Although I have mentioned that the θ-C applies at every level (by virtue of the PrP) and that the BC's apply at S-structure, I have not discussed, except in passing, the LF component and the constraints that apply there. In this section I shall introduce the most well-known constraint claimed to apply at LF-structure, the Empty Category Principle (ECP), and argue that its domain of application is restricted to θ-chains. This restriction on the ECP will permit the existence of EXE, which will be further motivated, and show that the BC's should apply at LF-structure as well as at S-

structure.

2.5.1. The Domain of the ECP.

The ECP was first introduced by Chomsky (1979c) in order to account for the *that e* effect.

86a) Who_i did John say [$_{\overline{S}}$ that e_i left]

b) Who_i did John say [$_{\overline{S}}$ e_i left]

The history of the treatment of the *that e* effect and the developments that led to Chomsky's proposing it are discussed in Chapter VI in relation to PRO-drop. Here it is enough to understand how the ECP is supposed to operate. Chomsky's statement of the ECP is as follows.

87) ECP: [e] must be properly governed.

I shall take 'proper government,' defined in (88), to refer to the notion of government defined in Chapter I.

88) α properly governs β if α governs β and

a) α is lexical or
b) α is coindexed with β.

(88) differs little from Chomsky's original formulation, if 'lexical' is understood here to include almost any category but INFL. This means that the subject of a tensed sentence is never properly governed if governed by INFL alone (but cf. the discussion of ECP in Chapter VI). If the subject is empty, it must be completely ungoverned, as it is in an infinitive, if it is to be well-formed.

89) [$_{\overline{S}}$ PRO to leave] is dangerous.

Since the ECP does not apply to ungoverned PRO in (89), the ECP must be slightly amended, as in (90) (cf. Chomsky's

(1981a) 'Generalized ECP').

90) ECP: If [e] is not PRO, then it must be properly governed.

Now let us return to the contrast in (86). Since the subject of a tensed sentence is governed by INFL, but not properly so, it follows that the subject in (86) must be properly governed by some other element. As proposed by Kayne (1980) (but cf. Pesetsky (1978) and Aoun, Hornstein and Sportiche (1980) for alternatives that will serve as well), the trace left in COMP by successive cyclic *wh*-movement must C-command the subject in order to govern it (let us suppose), a property that only holds if *that* is not present to create a branching COMP node, as in (91a), the representation of (86a).

91a) *Who$_i$ did John say [$_{\overline{S}}$[$_{COMP}$ e_i that][$_S$ e_i left]]

b) Who$_i$ did John say [$_{\overline{S}}$[$_{COMP}$ e_i that][$_S$ Mary likes e_i]]

Thus *that* must be absent or the ECP is violated. As direct objects are properly governed by V, no ECP violation ensues for (91b).

The ECP emerged as a much more general constraint in the work of Kayne (1981a). Kayne noted that a wide range of subject/object asymmetries could be related to preposition stranding facts if prepositions do not count as proper governors.

92a) *Qui$_i$ Jean a-t-il pensé a e_i

"Who Jean did-he think of"

b) A qui$_i$ Jean a-t-il pensé e_i

English differs from French in than English allows reanalysis

(cf. Weinberg and Hornstein (1981)) which treats the string V P as a verb in the relevant contexts.

93) Who$_i$ did John [$_V$ talk to] e_i

If the preposition is not reanalyzed with the verb, then the P is insufficient as a proper governor. Thus temporal adverbial prepositions, which cannot be reanalyzed with verbs (presumably because these temporal adverbial PP's hang from S instead of VP), cannot be stranded.

94) *What time$_i$ did John leave at e_i

Kayne also extended the ECP to certain cases of quantification (formerly accounted for by the NIC, cf. Kayne (1979b)).

95a) Je ne veux que tu voie *personne*.

"I do not wish that you see anyone"

b) *Je ne veux que personne vienne.

"I do not wish that anybody come"

Under the assumption that LF-movement, May's (1977) QR, applies to *personne*, the LF-structure representations of (95a) and (95b) are (96a) and (96b), respectively.

96a) [$_S$ personne$_i$ [$_S$ Je ne veux [$_{\overline{S}}$ que [$_S$ tu voie e_i]]]]

b) *[$_S$ personne$_i$ [$_S$ Je ne veux [$_{\overline{S}}$ que [$_S$ e_i vienne]]]]

While the object trace is properly governed by the verb in (96a), the subject trace in (96b) is not. If the ECP is responsible for this contrast, and let us suppose that it is, then the ECP applies at LF-structure.

Summarizing so far, the ECP applies to empty categories other than PRO at LF-structure, and prepositions do not count as proper governors (unless they are reanalyzed with verbs).

Notice, however, that there are contexts where the ECP appears not to apply. Consider the following example.

97) At what time did Mary say that John murdered Bill

Notice that (97) can have two interpretations, one where the question concerns the time of the murder, and one where it concerns the time of Mary's statement. Now if the failure of reanalysis in (94) is due to the fact that P cannot be reanalyzed when an adverbial PP hangs from S, then the representation of the narrow scope reading (the time of the murder) is presumably (98).

98) $[_{COMP}$ At what time$_i$$][_S$ did Mary say $[_{\overline{S}}[_{COMP}$ e_i that] $[_S$ John $[_{VP}$ ...$][_{PP}$ $e_i]]]]$

Notice, however, that the PP trace is not properly governed, as it is clear that the trace in CCMP is no more a proper governor in this case than it is in (91) above. Moreover, if INFL governs the S-daughter subject, then it certainly governs the S-daughter PP. Thus the narrow scope reading ought to be impossible, and yet clearly it is not.

In order to restrict the domain of the ECP so that it does not apply in (98), but does apply in all of the standard cases, I make the following proposal.

99) The ECP only applies to members of θ-chains.

Now it is reasonable to suppose that the S-daughter position of the adverbial PP is not a θ-position, as no verb selects for a time adverbial. If the adverbial S-daughter position is never a θ-position, then it is never an A-position (cf. Chapters III and VI). It then follows that if the adverbial

PP is not in an A-position, then it cannot be in a θ-chain, and the ECP does not apply to it. In the case of (94), by contrast, the preposition *at* is assigning a θ-role to its object. Thus the prepositional object is a θ-position, and is therefore in a θ-chain. It follows that the ECP rules out the preposition stranding cases where reanalysis does not apply. The same account extends to NP time adverbials.

100) Which day of the week did John say that Mary was busy?

The trace of *which day* under the narrow scope reading is not properly governed,[24] just as in (98) and (91a). For the same reason as (98), but not (91a) or (94), it is exempted from the ECP, i.e., the trace of the NP time adverbial is not in a θ-position. (Presumably NP time adverbials are interpreted as such intrinsically, as must be said for an NP adverbial, for example.[25]) Thus (99) generalizes across NP and PP cases, and is not just a property of PP's.[26]

2.5.2. ECP and EXE.

Given the analysis of EXE in the last section, we may now ask if it is susceptible to the ECP. The clear prediction of (99) is that it is not, since EXE, though it is always governed (by (57)), is never in a θ-chain (due to the interaction of the BC's with the definition of empty anaphors in (84)). The sort of example where EXE can appear is not available in English at S-structure (for reasons discussed in Chapters III and V), but there does exist a context for EXE in LF-structure where it becomes possible to test whether or not

the ECP applies to it.

The context I have in mind is Quantifier Lowering, first discussed by May (1977). May noticed that sentences like (101) have two interpretations.

101) Some senator is likely to speak at the rally

These interpretations are roughly paraphrased in (102).

102a) There is some senator such that it is likely that he will speak at the rally.

b) It is likely that some senator will speak at the rally.

The wide scope interpretation for *some senator* in (102a) is derived easily enough by applying QR to (101) to produce the appropriate LF-structure in (103).

103) $[_S$ Some senator$_i$ $[_S$ e_i is likely $[_S$ e_i to speak at the rally]]]

In order to derive the narrow scope interpretation of (101) in (102b), May proposed that the quantifier *some senator* could be lowered into S-adjoined position in the lower sentence under the assumption that QR (or Move Q) is defined freely as (104).

104) QR: Adjoin a quantified phrase to S.

The narrow scope interpretation is thus derived by an instance of QR which adjoins the subject of (101) to the lower S as in (105).

105) $e_{(i)}$ is likely $[_S$ some senator$_i$ $[_S$ e_i to speak at the rally]]

(The index on the matrix subject trace is left optionally by movement, assuming that QR is parallel to the convention for

Move α in (83b)).

Now we may ask if (105) is a well-formed representation at LF-structure. Notice that the EC in matrix subject position is governed by INFL (since it is a tensed sentence), but not properly governed. Thus the ECP ought to exclude it unless (99) is correct. Notice further, however, that the operation of lowering has created an $\bar{A}$-position, thereby breaking the θ-chain that connected the matrix subject to the subject of *speak*. The lower subject is now a θ-chain consisting of only one member, a variable which is properly governed by *some senator*.[27] The matrix subject is a non-θ-position, and is not part of an S-chain that contains a θ-position. It follows that the matrix empty subject must be expletive, or the θ-C is violated, and it must be EXE (a pure pronominal), since the contextual definition of anaphor cannot apply to it (cf. (84)). As a pure pronominal, EXE is well-formed, then, with respect to both the BC's and the θ-C. If the ECP applies to all empty categories, however, then the structure in (105) would be excluded by ECP and ECP alone. Since (105) is a grammatical interpretation for (101), the ECP must not apply to EXE, exactly as predicted by the claim that the ECP does not apply to elements not in θ-chains (99).

Now notice also that Quantifier Lowering fails when the matrix subject is a θ-position. There is no lowered interpretation for *some senator* in (106).

106a) Some senator is glad to speak at the rally.

b) $e_{(i)}$ is glad $[_S$ Some senator$_i$ $[_S$ e_i to speak at

the rally]]

(I am abstracting away from the distinction between S and $\overline{S}$ in (105) and (106b) for the subordinate clause, as it plays no role in my discussion.) Since the matrix subject position is a θ-position in (106b), it follows that the EC cannot be expletive, or else the θ-C would be violated; because the EC is free, and not a variable, it must be argument PRO. If argument PRO is licit in a governed position at LF-structure, we would expect at least one reading of (106b) (where the index i is not copied) to be that some arbitrary person is glad that some senator will speak at the rally. No such interpretation is possible. This is surprising, as the ECP does not apply to PRO. A very natural move to rule out (106b), however, is to make the following assumption.[28]

107) The BC's apply at both S-structure and LF-structure.

Under (107), a PRO generated by lowering, as in (106b), will be excluded by the BC's at LF-structure because PRO is governed. EXE in (105), on the other hand, is licit with respect to the BC's precisely because it is only pronominal (thanks to the revision of the definition of empty anaphor in (84)).

To summarize so far, the existence of a pure pronominal, expletive empty element in a non-θ-position (EXE) in (105) contrasts with argument PRO in a θ-position in (106b) with respect to their well-formedness vis-a-vis the BC's at LF-structure. The ECP applies to neither element, but for different reasons; the ECP does not apply to PRO by stipulation, and it does not apply to EXE because EXE, like an adverbial

variable, does not participate in a θ-chain. I conclude that the ECP applies to θ-chain members (99) and that the BC's apply at LF-structure as well as at S-structure (107). The latter result will play a crucial role in the formulations of Chapter V, but in this section, our main concern is the non-application of the ECP to EXE.

A question immediately arises as to the status of traces of expletive elements in contexts where the ECP is usually supposed to apply. Consider, for example, the following instances of raising, where (108a) and (108b) contrast.

108a) $John_i$ is likely $[_S\ e_i$ to leave]

b) *$John_i$ is appropriate $[_{\overline{S}}[_S\ e_i$ to leave]]

It is assumed that raising predicates like *be likely* have the property of deleting the $\overline{S}$ boundary of their complements (cf. Rouveret and Vergnaud (1980)). Thus *be likely*, given the definition of government in Chapter I, properly governs the subordinate subject position in (108a) because it governs the lower subject (the lower subject shares all the same maximal projections as *likely*, once the maximal projection '$\overline{S}$' is deleted) and it is a lexical category (either an adjective or a reanalyzed verb, cf. Kayne (1981a)). *Be appropriate*, on the other hand, is not an $\overline{S}$-deleting predicate, and so it does not govern the lower subject, as the $\overline{S}$ boundary intervenes. Thus the anaphoric trace in (108b) is excluded because it is not properly governed, while the anaphoric trace in (108a) is properly governed by *be likely*, and is thus well-formed. With the ECP analysis of (108) in mind, consider (109).

109a) $It_{(i)}$ is likely $[_S\ e_{(i)}$ to seem that John is guilty]

b) *$It_{(i)}$ is appropriate $[_{\overline{S}}[_S\ e_{(i)}$ to seem that John is guilty]]

In (109), the subject of *seem* is a non-θ-position and is not in a θ-chain (for arguments that *it* and $\overline{S}$ cannot form a θ-chain together, see Chapter III), whether *it* is coindexed with the subordinate subject position or not (*it* is also in a non-θ-position). Thus it is predicted that the ECP applies to the subordinate subject trace in neither example in (109). The contrast in (109) must therefore be captured another way.

Notice, however, that nothing new need be said to predict the contrast in (109) without appealing to the ECP. Recall that expletive empty elments must be governed (57). The subject traces in (109) are EXE. It follows that if EXE is ungoverned in (109b), and it is, it is excluded, while EXE in (109a) is well-formed.

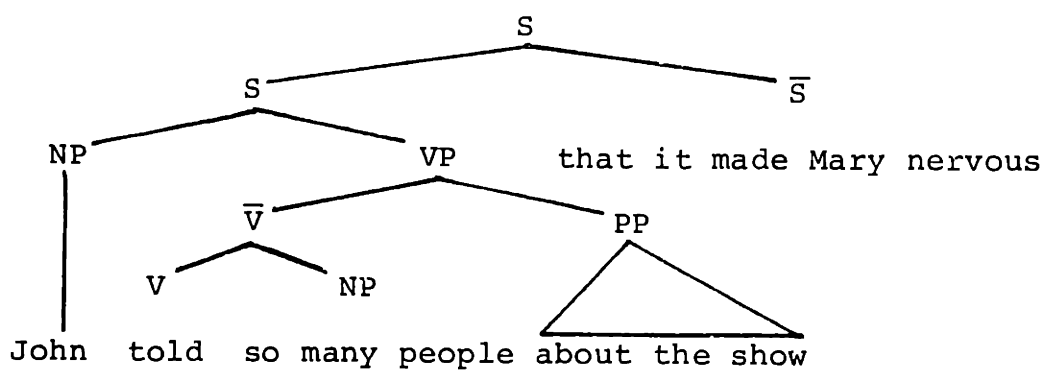
The explanation of the contrast in (109) on the basis of (57) shows that applying the ECP to EXE in (109) is redundant, since (57) is independently motivated. As it has proved a useful strategy in grammatical theory to minimize redundancy, the limitation of the ECP to θ-chains, besides making the correct empirical predictions with respect to the distribution of adverbial variables and lowering contexts, also removes a redundant explanation of the contrast in (109), and is thus to be preferred to the overgeneral formulation of the ECP in (87).

2.5.3. The Domain of the ECP: Further Consequences.

The proposal that the ECP be restricted to 0-chains was first made in a slightly diferent form in Safir (1981a). Since that time, May and Gueron (1982) have exploited this idea in their analysis of extraposition from NP and QP. In order to understand why the ECP as revised in (99) is advantageous within their approach, however, it is necessary to present some of their analytic assumptions.

The central idea in May and Gueron's paper is that the distribution of extraposition from NP or QP depends on the well-formedness of their LF-structure representations. At LF-structure, they propose, the NP or QP head must C-command its complement.[29] Simplifying their analysis somewhat, let us assume that complement clauses of this sort, be they extraposed or result clauses, are attached to S,[30] as in the bracketing below (in this instance, a result clause).

110) John told so many people about the show that it made Mary nervous



In order for (110) to be well-formed at LF-structure, May and Gueron argue, the head of the extraposed clause must undergo QR, which then adjoins the head to S, where it C-commands the

the clause which must be in its scope (under the Aoun and Sportiche definition, cf. Chapter I).

111) $[_S [_S\ so_i [_S$ John $[_{VP}$ told $[_{NP}\ e_i$ many people] about the show]]] $\bar{S}]$

The strategy of their analysis is to explain the distribution of result clauses as a consequence of the limitations QR places on the head, which must move to a C-commanding position, and its trace at LF-structure. (Whether the result clause or extraposed clause is generated in place or moved from deep structure complement position does not bear crucially on the issue.)

The interaction of the ECP with their analysis concerns whether or not the ECP applies to certain traces left by instances of QR and not to others. Consider, for example, the contrast in (112) (from May and Gueron).

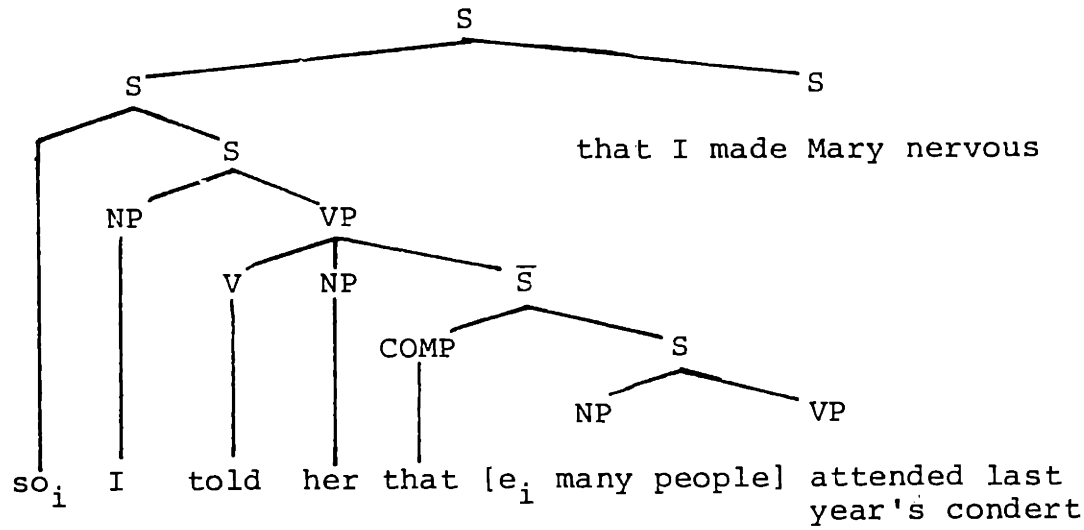
112a) I told <u>her</u> that so many people attended last year's concert that I made <u>Mary</u> nervous.

b) *I told <u>her</u> that many people attended last year's concert that made <u>Mary</u> nervous.

May and Gueron take the success of coreference in (112a) to mean that the extraposed result clause hangs from matrix S (cf. fn. 30) where *her* does not C-command *Mary*, while in (112b), the extraposed clause hangs from the subordinate S, and coreference fails accordingly, due to Principle (C) of the Binding Conditions (the pronoun *her* C-commands *Mary*). If the result clause hangs from the highest S, however, in order to C-command its complement in LF-structure, then *so* must move to the highest clause. This sort of movement of *so*

ought to be excluded, however, since it involves extraction from an ungoverned position, as shown by the diagram in (113) (irrelevant details omitted).

113)



The essential idea is that since *so* is not an NP, it is not in a θ-chain, and therefore the ECP does not apply to it. Compare (112a) to the following contrast from May (forthcoming).

114) So many people$_i$ did I tell her (*that) e$_i$ attended last year's concert that I made Mary nervous.

Thus the *that e* effect holds when the whole NP is extracted, but if only the QP *so* (or perhaps *so many*) is extracted by QR,[31] the the ECP does not apply because a QP is not part of a θ-chain.

Following up the same sort of reasoning, May (forthcoming) also notes the contrast in (115), which I have adapted slightly.

115a) Almost as much caviar was eaten at the party as I thought that e smoked salmon would be.

115b) *Almost as much caviar was eaten at the party as I though that e would be.

Once again, the full NP-trace in a thematic position is excluded, whereas the QP trace, which is not part of a θ-chain, is unaffected by ECP.

Some potential objections to this analysis arise with respect to French, however. Kayne (1981a) has argued that the following contrasts concerning gaps controlled by negation or *en* are regulated by the ECP, as the ungrammatical post-prepositional cases show (parallel to preposition stranding in (92)).

116a) Marie n'aime pas $[_{NP}[_{\alpha}$ e] de garçons]
"Mary does not like boys"

b) *Marie ne pense pas a $[_{NP}[_{\alpha}$ e] de garçons]
"Marie does not think about boys"

117a) Marie en a lu $[_{NP}$ trois $[_{\alpha}$ e]]
"Marie of them has read three"

b) *Marie en a pensé à $[_{NP}$ trois $[_{\alpha}$ e]]
"Marie of them has thought of three"

118a) Marie en aimait $[_{NP}$ la soeur $[_{\alpha}$ e]]
"Marie of her liked the sister"

b) *Marie en pensait à $[_{NP}$ la soeur $[_{\alpha}$ e]]
"Marie of her thought of the sister"

Let us assume that Kayne is correct in attributing all of these examples to the ECP (extending his argument to genitive *en* in (118)). If the larger NP is the only category which constitutes a member of a θ-chain, then it is predicted that

all the examples in (116) through (118) should be grammatical with respect to ECP, as α is only a subpart of a member of a θ-chain, and not a member of the θ-chain itself. The last of these cases is not problematic in this repsect, however, since α in (118) is in fact a genitive prepositional phrase (e.g., *la soeur de Jean* "Jean's sister") which, assuming genitive *de* is only inserted in NP's to provide Case for a complement, may be seen as a θ-position of the head noun.[32] It then follows that the ECP applies to α in (118), and, under the appropriate formulation of proper government, predicts the contrast.

The contrasts in (116) and (117), on the other hand, require a slight, but natural, extension of the notion 'member of a θ-chain,' namely, the head of a member of a θ-chain must be counted as a member of a θ-chain with respect to the application of the ECP. This immediately extends ECP to (117), for example, since α in (117) is most plausibly N (*trcis livres*). In (116), it must be assumed that α is the structural head of the NP as well, even though this position is typically filled with quantifier words which, unlike English, are separated from the N head by a preposition (e.g., *beaucoup de garçons* "many boys"). This explanation then extends to the following sort of examples immediately from Kayne (1981a)).[33]

119a) Combien est-ce qu'elle a [e d'argent]
"How much is it that she has (of) money"

b) *Combien est-ce que [e d'argent] se trouve dans le

coffre?

"How much is it that of money is found in the safe"

The treatment of most quantifiers as N heads in French predicts that French comparatives should contrast with English examples like (115a). Just such a contrast exists, as illustrated by (120b), which in turn contrasts with examples where the gap is in object position, as in (120a).[34]

120a) Jean a invité plus de femmes que Marie (ne) pensait qu'elle a invité [e de garçons]

"Jean invited more women than Marie thought that she had invited men"

b) *Jean a invité (beaucoup) plus de femmes que Marie (ne) pensait que [e de garçons] ont demander de venir

?"Jean invited (many) more women than Marie thought that boys had asked to come"

The contrast between (120b) and its relatively grammatical English translation,[35] in fact, suffices to show that the ECP applies to the French quantifier trace, which acts like an N head, but not the English quantifier, which, unlike French, is not an N head.

To conclude, limiting the domain of application of the ECP to members of θ-chains is empirically motivated by (A) the existence of adverbial variables that are not properly governed, (B) the existence of EXE, which is not properly governed (specifically in lowering contexts, but as we shall see, elsewhere as well), (C) the less redundant explanation of the absence of raising in examples like (109b), (D) the possibility of *so*-extraction by QR in the English result

clause cases, and (E) the contrast between the NP-internal trace of comparatives in French, which is susceptible to ECP, and the NP-internal trace of comparatives in English, which is not.

2.6.

The goal of this chapter has been to construct a theory of indexing and syntactic chains constrained by the Unity of Indexing Hypothesis. Within this theory, I have argued that the ECP applies within a domain I have called a 'θ-chain,' and not to elements outside of θ-chains, such as adverbial variables and expletive [e]. Thus the range of possible indexing patterns for a given structure is severely limited, since every choice of indexing will have clear empirical consequences with respect to ECP, the θ-C, the BC's and the Case Filter based on whether or not a θ-chain is formed. The UIH, by limiting the vocabulary of syntactic relations in a very significant way, reinforces the empirical predictions entailed by constraints on θ-chains, since these constraints can no longer be circumvented by special indexing.

It may well be that the UIH is simply too strong, as it rules out a wide variety of indexing proposals that extend well beyond the range of cases discussed in this thesis. The focus of this research, however, is on syntactic chains, and within this domain, I believe that I can show that the UIH is not only tenable, but likely to be correct.

FOOTNOTES: Chapter II

1. Chomsky adds (10b), in effect, to Freidin's conditions.

2. Strictly speaking, the object of *kill* is not a *theme* in Jackendoff's sense, as all of the cases he discusses are instances where the object semantically undergoes movement (e.g., with verbs like *push*). In the loose sense in which thematic relations are used with respect to the θ-C, it may be simply assumed that the object of *kill* is a *theme* because it undergoes an action.

3. Cf. 2.4.3 where this result is derived from the Projection Principle.

4. Cf. Williams (1974). For recent discussion and references, cf. Chomsky (1981a) and Stowell (1981).

5. Unless variables are treated as anaphors. Cf. Chomsky (1980), Aoun (1982).

6. One can imagine a ternary structure XYZ where each element C-commands the others (but see Kayne (1981c)) and each element binds the others, but by (27), none of these elements has a local binder. So far as I know, the situation does not arise.

7. This definition has a peculiar, and probably undesireable, consequence discussed in note 12.

8. Elements of these definitions are similar to Chomsky's (1981a) definition of "chain," though neither (28) nor (29)

corresponds to Chomsky's definition. Chomsky's definition does not refer to θ-positions at all. See Chomsky's discussion, pp. 332-334.

9. If a passivized verb only fails to have an external θ-position, rather than failing to have an external θ-role, then one may think of the agentive preposition *by* as providing an auxiliary external θ-position when VP does not assign one. This would explain why agentive *by* cannot appear with verbs that have no external θ-role, or already have one assigned.

i. *John fell by Mary.

ii. *John killed Bill by Mary.

10. Chomsky (1981a) does not use the term "θ-chain," nor the notion of 'θ-chain' as I have defined it here, but the effect of his definitions is similar with respect to Case inheritance. Cf. note 17, Chapter II.

11. This does not mean that a *wh*-word does not have the Casemarking of its extraction site, as in *Who(m) did you give it to?*. If nouns are inserted with Case and their Case is checked at S-structure, it may not be necessary to check the Case of the *wh*-phrase, but only the Case of its extraction site (i.e., the variable). For some discussion of Case-checking, see 3.1. If this view is correct, then it is not necessary to assume that *wh*-phrases 'inherit' Case in the same way that NP's in θ-chains do.

12. In example (35c), (John,he) is actually a θ-chain by the

definition in (29), and is excluded by the θ-C. Some slight adjustment of 'maximal portion' in (29) may be required to avoid a θ-chain 'reaching down' below the θ-position in the θ-chain.

i. A θ-chain is the maximal portion of an S-chain above and including one and only one θ-position.

Thus in ii., (John,PRO) could count as a θ-chain and be excluded unless i. is the correct definition.

ii. $John_i$ hoped $[_{\overline{S}}$ PRO_i to be killed $e_i]$

No issues of particular interest arise in this connection, and so I shall ignore this more precise point in subsequent discussion.

13. I am making no special assumptions about how Case is assigned to the subject of a gerund (adverbial or not) in French or English, except that the Case assigned is not compatible with subject clitics in French. This may be because the Case assigned is not Nominative, or because gerundive morphology is incompatible with clitics. With respect to how Case is assigned in gerunds, cf. Reuland (1980) and Aoun and Sportiche (1981) for opposing views.

14. My use of the notation *(x), whether the star is on the left or right, indicates that the presence of *x* is necessary for the sentence to be grammatical. When this notation is used for the first word of a sentence, the star is placed to the right of the parentheses, as in (48), to avoid the interpretation that the whole sentence is ungrammatical with or

without the item in parentheses. The notation (*x) means that if *x* is present, then the sentence is ungrammatical.

15. This is not as obvious for complex adjectival structures. Cf. Chomsky's discussion (1981a), pp. 308-314.

16. Subjacency is introduced in Chomsky (1973) as a condition on movement rules. It is proposed by Freidin (1978) and Koster (1978b) that subjacency may in fact be a constraint on representations, and a proposal with similar effects appears in Bresnan and Grimshaw (1978). Kayne (1981a) suggests that subjacency can be subsumed under ECP, but he does not explain *wh*-island effects, such as the $S/\overline{S}$ parameter proposed by Rizzi (1978), and the Complex NP Constraint is handled by a special stipulation.

17. This is not exactly accurate for the relative clause cases, since it is not clear that the relative operator counts as a quantifier in the same sense that, say, a *wh*-question operator does. This is noted by Chomsky (1982), who suggests that relative clause predication cannot be vacuous either.

18. In a very recent paper, Kayne (1982b) proposes a "connectedness" principle, subsuming ECP, and defending the view that parasitic gaps are not an argument for subjacency as a condition on rules. I shall not discuss these new proposals here (cf. also Pesetsky (1982)).

19. One can imagine, however, a structure where a base gener-

ated *wh*-word is coindexed with ungoverned PRO at LF-structure.

i. *a boy who$_i$ it is impossible PRO$_i$ to run

If the Case Filter applies only at S-structure, as I am assuming in this study, then it is not obvious as to why i. is ungrammatical. I leave this question unanswered.

20. There are some possessive idioms that do not treat the PIP as an anaphor. For example, in my dialect, *blow x's cool* can involve two people, and similarly *burn x's bridges*.

i. ?Every time she makes a nasty comment, she/it blows my/John's cool.

ii. ?After she finally left him, he really burned her bridges by suing for divorce.

Speakers who accept the above sentences also allow passives in simple sentences with these idioms.

iii. ?Mary's/her bridges were burned

iv. ?By that time, John's/his cool was totally blown

These possessive NP's seem to act just like *x's book* for any other predicate, i.e., *blow x's cool* and *burn x's bridges* do not seem to place any restriction on 'x' other than that it cannot be null. Thus the possessive pronoun can be free or bound depending on arbitrary indexing and the BC's at S-structure.

21. It is not obvious why the whole NP *x's way* should not count as a governing category for *x*, but this is true quite independently of PIP idioms. I thus leave the matter aside.

i. The men liked each other's work.

22. One could imagine a case where the head of a θ-chain (the highest member) is expletive and a lower member is an anaphoric trace that counts as the argument of the θ-chain. It is reasonable to suppose, however, that a non-argument can never be an antecedent for an argument anaphor.

23. Cf. Pesetsky (1982) for an interesting application of EXE (as it was proposed in Safir (1981a)) to problems in Russian syntax.

24. In Baltin's (1981) account, traces left by adverbial PP's and NP's count as properly governed if INFL is taken to be a proper governor for elements which it selects, C-commands (under a 'first branching node' definition) and governs. The subject position under this reasoning, is not properly governed by INFL, since the subject is not selected by INFL. Baltin extends this treatment to account for the clause-boundedness of PP extraposition. Although the account presented here does not achieve the latter result, Baltin's proposal, on the other hand, is not extendable to the treatment of EXE in 2.5.2. A theory combining the advantages of both analyses remains a topic for future research.

25. It need not be concluded from this that the trace of *which day of the week* or *at what time*, an adverbial NP and an adverbial PP, respectively, are not variables, although strictly speaking, the definition of variable in (42a) requires that variables are found in A-positions. The reason for the A-

position requirement was to avoid the consequence that traces in COMP could count as variables. I leave this matter open.

I do assume that only variables in A-positions count as arguments, however, otherwise the *wh*-fronted NP time adverbials would leave variables that count as arguments, and these arguments would be excluded by the θ-C, since they are not in θ-chains (i.e., if they are not in A-positions, then they cannot be in θ-chains).

26. Cf. Jaeggli (1980b) who suggests that the ECP does not apply to PP traces.

27. This variable is not Casemarked, but since the Case Filter applies at S-structure, and not at LF-structure, this problem does not arise here, as pointed out to me by Hagit Borer (personal communication). Cf. note 19, however.

28. This proposal is due to Aoun (1982), though I do not necessarily adopt his development of this proposal, which has only just appeared.

29. This C-command requirement at LF-structure is due in various forms to Liberman (1974) and also Rouveret (1978), who develops the analysis of result clauses in some detail. Cf. May and Gueron (1982) for further references.

30. Williams (1975) first proposed that NP-extraposed clauses hang from S, but he did not distinguish these from it-extraposition in this respect. In Reinhart (1980) and Baltin

(1978), however, the position of the clause extraposed from NP, which hangs from S is distinguished from the position of the extraposed clausal argument, which hangs from VP. Cf. also Gueron (1980) and Taraldsen (1982).

With respect to result clauses, I am simplifying the analysis of May and Gueron for purposes of presentation. They actually claim that result clauses are daughters of $\bar{S}$. This distinction will not play a role in my discussion, but cf. their paper for details.

31. One may well ask why i. is ungrammatical, since it is not an ECP violation.

i. *So many did I tell her (that) [e people] attended, that ...

This seems to be due to some sort of left branch condition (cf. Ross (1967)) on movement in syntax, but not LF. There is no subject/object asymmetry in these cases.

ii. *So many did John like [e people], that ...

32. For a discussion of the subtypes of *en* cliticization within a recent framework, cf. Haik (1981). Cf. also Couquaux (1981) for an analysis of the distribution of *en* cliticization.

33. Kayne's (1981a) analysis of *combien* extraction is re-examined by Obenauer (1981), who points out that *combien* extraction combined with Stylistic Inversion (cf. 4.2 and the Appendix) of the remaining subject constituent is more acceptable than the uninverted structure.

i. ?*Combien$_i$ dis-tu que [e$_i$ de filles] voulaient partir

"How many did you say of women wanted to leave"

ii. ?Combien$_i$ dis-tu que e$_j$ voulaient partir [e$_i$ de filles]$_j$

Obenauer suggests that *combien* extraction is better in ii. because the stylistically inverted NP, [e de filles], is in VP, and is therefore governed by V. Though this is quite compatible with my claim that the trace of *combien* is subject to ECP, I shall argue in the Appendix that Stylistic Inversion results in an S-adjoined subject, and not VP-adjoined. Examples like ii. are left unexplained in the account presented in the Appendix, however.

34. For a recent discussion of French comparatives, cf. Milner (1978).

35. These judgements are not so clearcut for Parisian French speakers, for whom (120b) is either '??' or '?,' but for Québecois speakers, the contrast between (120a) and (120b) is sharp. Cf. Kayne (1981a), note 9, for a pertinent detail.

Chapter III

3.0. Case Theory and Clausal Complements.

Now that a fairly explicit theory of θ-chains and their properties has been introduced and constrained by the Unity of Indexing Hypothesis, it is possible to examine a number of constructions where theoretical considerations can inform our choice of analytic approach. Since a wide range of empirical consequences may be expected to follow in every instance where a syntactic relation or interdependency is expressed in terms of indexing, it should be fairly easy to permit, exclude or require a given indexing pattern on the basis of general considerations, especially when conditions on θ-chains are brought into play.

In this chapter, for example, I shall develop an analysis of Casemarking and clausal arguments that is largely determined by the theory of θ-chains already adopted. In particular, I shall reject the claim that the relation between *it* and an 'extraposed' clause is one of coindexing that forms a θ-chain (as suggested in Chomsky (1981a)). If these elements were coindexed, I shall argue (in section 3.1), the result would be an 'unbalanced θ-chain' which would always be excluded by the conditions on θ-chains. Instead I shall propose (in section 3.2) that *it* and $\overline{S}$, in those instances where they are related at all, are not related by coindexation, but by membership in a 'configurational set.' I shall also argue that $\overline{S}$'s need not be assigned Case in any context. These results are shown to indicate that Chomsky's (1981a)

proposal to derive the Case Filter from the θ-C is inappropriate, and that the Case Filter should be reformulated as a condition on lexical NP's in A-positions. This formulation of the Case Filter, under an independently motivated interpretation of 'lexical NP,' will then be shown to derive the result that a variable must be Casemarked (in section 3.3). In 3.4, an additional principle is introduced, which, interacting with the rest of my account, explains the distribution of clausal arguments on the basis of the fact that they cannot appear in Casemarked θ-chains at all. The results are summarized in 3.5.

3.1. Case and the θ-Criterion.

In Chapter I, I assumed that the Case Filter of Rouveret and Vergnaud (1980) and Chomsky (1980) applies at S-structure to all lexical NP's. As discussed in Chapter II, however, Chomsky (1981a) proposes that Case is a condition on the well-formedness of θ-chains; that is to say, θ-chains without Casemarking are not 'visible' to θ-assignment unless, it must be added, they are headed by PRO (cf. (34) of Chapter II), as stated informally below.

1) A θ-chain must have Case or be headed by PRO.

The reference to PRO is required because the constraint is stated on θ-chains, and at least some θ-chains have to be headed by PRO ('PRO to eat fish is dangerous'). The fact that Case inheritance is a property of θ-chains, as discussed in the last chapter, adds plausibility to the idea that θ-chains

rather than individual NP's, have to have Case. Moreover, it is possible to derive (2) from (1).

2) Variables must be Casemarked.

I shall present evidence for (2) in a later section, but given the contextual definitions of empty categories, it follows from (1) that whenever a variable heads a θ-chain, it must be Cased because it is not PRO. This will then rule out examples like (3).

3) *Who$_i$ was it impossible e_i to win

Now notice that if (1) is part of the θ-C, then it follows by the strong formulation of the PrP that a θ-chain must be Cased or headed by PRO at every level. In order to permit θ-chains to pass this requirement at D-structure, Chomsky assumed that NP's are lexically inserted with Case and are 'checked' at S-structure (cf. also Jaeggli (1978)) to certify that they are in an appropriate context to bear the Case they are lexically inserted with.

4) The Casemarking of NP's inserted at D-structure is checked at S-structure.

What Case checking does not insure, however, is that a lexical NP *must* have Case. If we assume only (4), and not (1), a lexical NP without Case can be inserted in a position where no Case is assigned or inherited at S-structure. The absence of Case features on the lexical NP in question will match its Caseless context, and (5) is generated.

5) *John to win would be surprising.

(5) is only ruled out by (1), since *John* is Caseless (or else

it is excluded by (4)) and it heads a one member θ-chain (in the subject θ-position of *win*).

Notice, however, that any device of Case-checking will have to have access to Case inheritance information. In order to determine that the Casemarking on *a man* in (6) is appropriate, for example, Case-checking must have access to the fact that *a man* is in a θ-chain with whatever Casemarking is pertinent.

6) There_i is a man_i in the room.

Thus the notion 'Case inheritance' is required independently of (1).

With these considerations in mind, let us adopt (1) provisionally and examine some of its consequences, the most perspicuous of which is (7).

7) Elements that are not in θ-chains need not be assigned Case.

An immediate question arises with respect to semantically empty elements, such as weather *it*.

8) It is raining.

9) (For)* it to rain would be depressing.

It seems that weather *it* must be in a θ-chain if (9) is to be accounted for by (1). Chomsky suggests that weather *it* should be treated as a "quasi-argument," that is, an argument specially selected by a particular predicate as having a particular form. He notes that the quasi-argument weather *it* can, on occassion, count as a controller (but cf. 2.3).

10) It_i rained before PRO_i snowing.

Thus weather *it* acts like an argument with respect to the θ-C, and therefore it must satisfy (1) as desired.

The expletive *it* of 'it-extraposition,' however, cannot be treated as a quasi-argument, since its distribution is almost entirely predictable independent of any particular predicate (but see below), and it does not count as a controller in the same way as weather *it*, as shown in (11).[1]

11) *It_i seemed that John was guilty after PRO_i appearing that he had a strong motive.

But expletive *it* must appear in Casemarked positions just like weather *it*.

12) (For)* it to be true that Mary is quirky would be delightful.

If (1) is correct, then it follows that *it* in (12) must be in a θ-chain, presumably linked with the clause following *true*.

Now it is noticed in Chomsky (1981a) that θ-chains in which the argument is not the head of the chain require special treatment, since if the head A-binds the argument and the argument is a name, then Principle (C) of the BC's is violated.[2] For this reason (among others), superscripts, described in Chapter II, were introduced, and the BC's were thereby circumvented. Under the Unity of Indexing Hypothesis, however, superscripts are excluded. It follows that θ-chains that contain an argument that is not the head be excluded by the BC's. θ-chains of this type will be described as follows.

13) A θ-chain is 'unbalanced' if it contains an argument that is not the head of the chain.

It is clear that a θ-chain headed by expletive *it*

(it,$\overline{S}$) fits the description in (13). Moreover, it appears that $\overline{S}$'s act like names with respect to Principle (C).

14a) That John is guilty$_i$ bothered the man who knew it$_i$

b) *It$_i$ bothered [$_{NP}$ the man who knew [that John was guilty]$_i$]

Thus we are faced with a dilemma. If expletive *it* is to be treated as a θ-chain member linked to a clausal argument in order to insure that (1) applies to it, then an unbalanced θ-chain is formed that ought to be excluded by the BC's. Either we must revise (1), which requires the formation of a (it,$\overline{S}$) θ-chain, or we must reject the UIH as too strong a constraint to place on syntactic chains in natural language grammars.

It would be unfortunate to have to abandon as general a constraint on syntactic relations as the UIH, and so the natural prejudice is to favor the UIH over (1). Fortunately, we need not rely on our prejudices; there are firm empirical motivations for rejecting (1) independent from prediction (7), although these considerations will lead us to reject (7) as well. In section 3.3., this reasoning will guide us to a more descriptively adequate restriction on the distribution of Caseless NP's which has the added advantage of being consistent with the UIH.

3.2. $\overline{S}$ Complements.

So far I have not discussed the role of clausal arguments with respect to (1). In Chomsky (1981a) the issue is

treated as potentially problematic, as it is not obvious that $\bar{S}$'s must have Case to be assigned a θ-role. Chomsky cites the following examples (p. 337).

15a) my belief that Bill is intelligent.

b) $John_i$ is believed t_i to be intelligent.

c) $John_i$ seems t_i to be intelligent.

Since nouns do not assign Case, the clause in (15a) is Case-less, and since raising predicates do not assign Case either, the same must be said of the clauses in (15b) and (15c).

In this section I shall argue that clausal complements not only fail to fall under the generalization in (1), but that otherwise puzzling facts can be explained systematically if clausal arguments cannot appear in a Casemarked θ-chain. This conclusion will lead us to abandon (1) altogether, and to replace it with a principle that is neither stated on θ-chains nor on the θ-C, but on A-positions.

In Chomsky (1981a), clausal arguments were assumed to be capable of receiving a θ-role without being in a θ-chain. This is necessary because membership in a 'chain' is restricted by Chomsky's definition of 'chains' to NP's. Nonetheless, in cases of '*it* extraposition,' such as (16), it is assumed that the $\bar{S}$ after *obvious* is in a chain with *it*, both because *it* must be in a chain to fall under (1), and because $\bar{S}$ must be related to a θ-position, which is presumably the subject position in (16).

16) It_i is obvious [that Betty is beautiful]$_i$

Thus it appears that $\bar{S}$'s must be allowed to participate in θ-chains (though I shall argue against this view later), and that they may simply be exempted from (1) in certain circumstances. Let us adopt this modification as a place to begin.

17) An $\bar{S}$ may be in a θ-chain, but it need not satisfy (1) if it is in a θ-position and certain other conditions are met.

3.2.1. Must $\bar{S}$ be Casemarked?

Stowell (1981) attempts to integrate clausal arguments into a theory that assumes (1) and (17). Thus, generally speaking, $\bar{S}$'s must be in a Casemarked chain in order to bear a θ-role. Naturally, the force of such a claim will depend, in part on how extensive the 'other conditions' of (17) are required to be.

Stowell argues that tensed clause complements to nominals, for example, fall under a different generalization; they are not arguments at all. He notes examples like the following (p. 199).

18a) Andrea guessed that Bill was lying.

b) John claimed that Bill would win.

c) Paul explained that he was temporarily insane.

19a) Andrea's guess that Bill was lying.

b) John's claim that he would win.

c) Paul's explanation that he was temporarily insane

Stowell observes that the interpretation of the $\bar{S}$ complements in nominals differs from their interpretation as verb complements. As verb complements, the $\bar{S}$'s are interpreted as

appositives; *that he was temporarily insane* constitutes *Bill's explanation*, but it does not constitute the act of Bill's explaining. Stowell contrasts these cases with true 'action nominals' (cf. Lees (1960)) wherein the infinitival complement bears a θ-role with respect to the predicate in both the verb and the corresponding nominal (p. 200).

20a) Jack attempted to finish on time.

b) Jack pretended to be my friend.

c) Jim refused to go swimming.

21a) Jack's attempt to finish on time.

b) Jack's pretense to be my friend.

c) Jim's refusal to go swimming.

He then concludes that a theory that requires $\overline{S}$'s to have Case predicts that the $\overline{S}$ complements of nominals cannot be arguments if they don't have Case, hence they must be appositives. Let us suppose, for the sake of argument, that this is so.

Certainly the generalization that Stowell has discovered is an interesting one, but I do not believe it should be captured entirely by the fact that noun complement $\overline{S}$'s cannot be assigned Case. As Stowell's own examples show, infinitives like those in (21) can act as θ-role bearing arguments even though they are not assigned Case, and so something special must be said about action nominal complements or about infinitives in general (Stowell chooses the latter approach).[3] Stowell's claim, however, only concerns tensed complements, and is stated in (22).

22) No derived nominal assigns Case to a tensed clause complement.

Notice, however, that (22) is too strong, as the following examples show.

23a) John's proof that the fly is a mammal amused the experts.

b) The clearest indication that the bank was in trouble came from an unexpected source.

c) Confirmation that the cheese wouldn't sell reached gloomy stockholders yesterday.

It seems that all of these nominals can or must have a 'consequent' reading, that is to say, the proposition of the $\overline{S}$ complement is the consequence of the content of the nominal. To bring out this distinction, we can use Stowell's test for the appositive reading, namely, the possibility of separating the $\overline{S}$ complement from its nominal in a copular structure.

24)a John's explanation was that he was temporarily insane.

b *John's pretense was to be my friend.

'True' arguments are not grammatical in this context, as (24b) purportedly shows. Since the nominals in (23) can have the appositive reading, they can also have this reading in the copular.

25) The proof/indication/confirmation was that the judge was late.

Notice also, however, that all of the nominals in (23) can be related to 'additional appositive' clauses, whereas nominals with 'true' appositives cannot be.

26a) The clearest proof/indication/confirmation that John was guilty was that the judge was late.

b) The *claim/*pretense/?explanation that John was guilty was that he might have had a strong motivation.

In all of the examples of (26a) the post-copular clause acts like the subject of the verb from which the nominals are derived, in that the nominal complement is what is shown by the state of affairs in the post-verbal clause. Compare the corresponding verbs in (27).

27) That the judge was late indicated/proved/confirmed that John was guilty.

Thus it seems that the NP complement $\overline{S}$'s in (26a) should count as arguments. The same sorts of facts (except, of course, for (27)) can be observed for nominals with similar meanings that are not derived from verbs, such as *sign*, *signal*, or *evidence* when they are substituted for the 'proof' nominals above. Thus (22) is simply too strong.

Stowell recognizes that another class of predicates must also be exempted from (1).

28) Gil is glad/happy/furious/fortunate that Silvia is safe.

In order to assign "emotive" (Kiparsky and Kiparsky (1971)) adjectives a θ-role, a special rule of "θ-assignment by recognition" is proposed. As Stowell considered this to be the only instance where a special rule is required, he argues that a single stipulation, perhaps attributable to some 'conceptual' property of the meaning of emotive predicates, is a small price to pay for the assimilation of clausal arguments into the generalization in (1). To the special provision for emotive predicates, we must now add one for *proof*

nominals. Notice further that all of these exemptions must refer specifically to $\bar{S}$, as none of the NP complements below can be exempted, and a 'conceptual' account seems unavailable.

29a) *Patty's proof Mary's guilt

b) *Paul's pretense being a good guy

c) *Gary was glad Susan's departure

If the preposition *of* is inserted (except in (29c) where *about* is preferred) then all of the examples in (29) become grammatical, thus indicating that Casemarking is the crucial difference.

The examples in (29), however, hint at a much more serious problem for Stowell's claim, which up to now I have not questioned, that $\bar{S}$'s treated as appositive can be exempted from (1) because they are non-arguments. It is a quite systematic fact that virtually no NP appositives (with meanings comparable to $\bar{S}$'s) appear in non-Casemarking environments.[4]

30a) *Bill's explanation John's being insane

b) *The suspicion our infidelity

c) *Andrea's guess our complicity in the affair

It seems that Stowell's account must distinguish NP's from $\bar{S}$'s with respect to Case assignment in every instance where apposition is supposed to explain why $\bar{S}$'s don't need Case, or where θ-assignment by recognition permits a θ-role to be assigned without Casemarking. Moreover, if apposition by NP vs. $\bar{S}$ is regulated by the same Case requirement whose ancestor is the Case Filter, and if appositives are not arguments in θ-chains, then the Case requirement on surface structures

should not be related to the θ-C at all--the reverse of Stowell's position. The easiest way out seems to be to assume that $\overline{S}$'s, be they arguments or not, do not have to be Case-marked.

3.2.2. $\overline{S}$ and θ-Chains.

Now let us turn to the question of whether or not (it,$\overline{S}$) forms a θ-chain. In section 3.1, it was pointed out that if *it* and $\overline{S}$ do form a θ-chain, then the BC's are violated, given the Unity of Indexing Hypothesis. If (it,$\overline{S}$) does not form a θ-chain, then we are faced with the following consequences:

31) $\overline{S}$ does not have to be in a Casemarked θ-chain.

32) $\overline{S}$ does not inherit Case from *it*

33) $\overline{S}$ does not inherit a θ-role from *it*.

34) *It* is not in a θ-chain and is therefore not conditioned by (1).

(33) will be discussed later in this section, and discussion of (34) is postponed to the next section. I focus now on (31), already motivated in 3.2.1, and particularly on (32).

To begin with, consider the examples in (35) and (36).

35a) John insisted *(on) Mary's leaving.

b) John whined *(about) Mary's leaving.

c) *John remarked/quipped Mary's leaving.

d) Bill was unfortunate *(about) Mary's leaving.

36a) *It seemed Mary's leaving.

b) *It was noticed Mary's leaving.

c) *It annoyed John Mary's leaving.

36d) *It was bizarre Mary's leaving.

e) John resented (*it) Mary's leaving.

In (35), the gerund *Mary's leaving*, which I assume is an NP, cannot appear after the verbs *remark* and *quip* at all, and can appear after *insist* and *whine* only when a preposition is inserted. This seems to indicate that these verbs do not assign Case, and only where a preposition is possible is it it possible to have an NP.[5] The Case explanation could also be extended to account for the examples in (36), where, as Rosenbaum (1967) noted, gerunds cannot appear in the positions of 'extraposed' clauses. Now if (it,$\overline{S}$) formed a θ-chain, we would expect Case inheritance to apply to (it,NP) θ-chains, just as it does in *there* sentences, to license an NP in 'extraposed' position. If *it* and the element in 'extraposed' position are not coindexed, we predict the ungrammaticality of (36). Moreover, if $\overline{S}$ differs from NP in that $\overline{S}$ does not have to be in a Casemarked θ-chain (31), then the grammaticality of (37) and (38) follows immediately.

37a) John insisted that Mary leave.

b) John whined that Mary was leaving.

c) John quipped/remarked that Mary was leaving.

d) Bill was fortunate that Mary was leaving.

38a) It seemed that Mary was leaving.

b) It was noticed that Mary was leaving.

c) It annoyed John that Mary was leaving.

d) It was bizarre that Mary was leaving.

e) John resented it that Mary was leaving.

Thus any theory that assumes that *it* forms a θ-chain with $\bar{S}$ in order to provide the $\bar{S}$ with Case must make some ad hoc distinction between (it,NP) θ-chains and (it,$\bar{S}$) θ-chains.

Some interesting evidence that (it,$\bar{S}$) is not a θ-chain can also be constructed from some of the well-known facts about 'psych' predicates (cf. Postal (1971)).

39) John disgusts/amazes/upsets/pleases me.

I am disgusted/amazed/upset/pleased *(by) John.

In the above examples, psych verbs have been passivized to yield unsurprising results--they pattern just like other transitive verbs do, such as, for example, *kill*. It is possible, however, for clausal 'subject' arguments of active psych verbs to surface postverbally with passivized psych verbs, as in (40c).

40a) That Mary ate cats disgusted/amazed/etc. John.

b) It disgusted/amazed/etc. John that Mary ate cats.

c) John was disgusted/amazed/etc. that Mary ate cats.

There are two curious properties evidenced by (40c). First, an argument that normally appears in a *by*-phrase in passive sentences can appear without *by* just in case it is sentential. Second, if the $\bar{S}$ appearing post-verbally in (40c) is in a non-θ-position, then it cannot get a θ-role from the subject position, where it appeared in the active sentence (40a), since even if the subject is a θ-position in (40a), in (40c) an external θ-position would be absorbed by passive morphology. Moreover, another argument, *John*, occupies subject position at S-structure in the passive sentence. In short, it appears that the $\bar{S}$ cannot be related to the subject position in order to be

assigned its θ-role.

The first property is immediately explained if we adopt a suggestion due to David Pesetsky (personal communication). Pesetsky points out that if $\overline{S}$'s do not have to be Casemarked, then there is no Case constraint on their occurrence in (40c), whereas NP's in the same position, since they must be Casemarked, can only appear if the Case assigning preposition *by* is available. Thus in effect, (31) is the explanation for the first property of (40c).

The second curious property of (40c) seems to be due to the fact that the subject position is not a θ-position in any of the examples in (40). In 4.3.3, this point will play a role in my discussion of German and Dutch, but let us simply assume for now that (41) is the D-structure for (40a) and (40b).[6]

41) e was $[_{VP}$ annoyed John $[_{\overline{S}}$ that Mary ate cats]]

My claim is that *John* is a 'goal' argument which receives Case from *annoy*[7] in the same way as *Bill* gets its Case and θ-role from *tell* in, for example, *John told Bill that Mary ate cats.* The difference between *tell* and *annoy* is only that the former has a subject θ-role. If the θ-position of the clausal argument is internal to VP in (40), then the θ-C does not require an (it,$\overline{S}$) θ-chain to be formed in (40b). Furthermore, *John* is thus permitted to move into the non-θ-subject position in (40c) without disrupting the θ-role source for the clausal argument.[8] Indeed if the $\overline{S}$ in (40c) had to inherit Case and θ-role from subject position, then (40c) would be ungrammatical.

This analysis of psych verbs therefore provides evidence for (31) through (33).[9]

There are, however, sentential arguments for which the subject position *is* a θ-position.

42a) That John is poor proves/indicates/exemplifies his guilt.

b) It proves/indicates/exemplifies his guilt that John is poor.

c) *His guilt was proved/indicated/evidenced that John was poor.

In these examples, just as in (40), the clausal argument presumably does not need Case. The ungrammaticality of (42c) is immediately explained if $\overline{S}$ is in a θ-position in (42a), but not in (42c), since the subject θ-position has been absorbed by passive morphology. It follows that the clausal argument is left without a θ-role in (42c). A question now arises concerning (42b). If the subject position is the θ-position for the clausal argument, then one might conclude that the clausal argument in (42b) has to be in an (it,$\overline{S}$) θ-chain.

In order to account for (42b), I shall appeal to an idea that will be motivated independently in Chapter V and VI. suppose we adopt the terminology of Williams (1980) and refer to a θ-position outside the maximal projection of the θ-assigning lexical head as an 'external argument position' (external θ-position, in Chomsky's (1981a) terminology) filled at D-structure by the 'external argument.' The subject position is outside of VP, and therfore counts as an external θ-position. By contrast, direct or indirect object positions

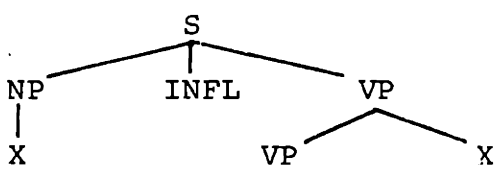
count as internal argument positions because they are within the base maximal projection of the θ-role assigning head. Both arguments of *annoy*, for example, are internal, since both θ-positions are in VP. My definition of 'external θ-position,' stated in (43), differs slightly from Williams' notion, however.

43) External θ-position

Assign θ-role T to a sister of VP.[10]

In diagram (44), notice that both subject position and VP-adjoined position count as external θ-positions.

44)



Since both positions marked with an X fit the definition in (43), I shall treat them as a composite θ-position or 'external θ-set.' Since the external θ-set is really just a discontinuous θ-position, it follows that only one of the two syntactic positions can contain an argument, or else there are two arguments in one θ-position and the θ-C is violated. (For further details, cf. 5.2.3 and 6.1.2.)

Now let us consider the derivation of (42b). The clausal argument begins as a subject NP daughter (cf. next section) and Move α right adjoins this $\overline{S}$ to VP. Recall that since this movement is not to an $\overline{A}$ position, there is no coindexing of the moved element with the trace of movement (we might suppose, though it is not essential, that an element indexed at D-structure carries along the index it may have received). At S-structure the VP-adjoined $\overline{S}$ is assigned a

θ-role in place under (43). Since $\bar{S}$ does not need Case, it is well-formed. The subject position remains empty, and must be expletive, or else the external θ-set contains more than one argument. Expletive *it* will be inserted then at S-structure in order to satisfy a principle not yet introduced (cf. 3.2.3).

One feature of this analysis to take note of is that it predicts that external argument NP's can VP adjoin and be assigned a θ-role in the same way that $\bar{S}$'s can, except that NP's in this position require Case, while $\bar{S}$'s, assuming (31), do not. This analysis predicts that if a Case source for a VP-adjoined NP is available, then NP's could appear in this position at S-structure as well as $\bar{S}$'s. As we shall see in Chapter VI, where external θ-set is further motivated, this prediction is borne out.

Another more general feature of this analysis that is of interest here is that I have stated an interdependency on a configurationally defined set. The advantage of not stating this relationship in terms of indices, besides the fact that θ-sets are independently motivated, is that the consequences of indexing, including Principle (C) of the BC's, can be avoided without increasing the vocabulary of possible syntactic relations (by adding superscripts and BINDING, cf. Chapter II).

3.2.3. The Revised Case Filter and the Case Realization Conditions.

Thus far I have concluded that (it,$\bar{S}$) does not form a θ-chain, and that $\bar{S}$ does not need Casemarking to appear as an

argument or as an appositive. If *it* is not in any θ-chain, it must therefore be expletive. Then we predict that *it* should not be prevented from appearing in Caseless contexts.

45a) Willa wanted very much *(for) it to be true that John had left.

b) (For)* it to be true that Gayla is guilty would upset Earl.

c) It would be depressing (for)* it to be true that Terry takes tea.

It seems that *it* is limited to Case environments just like other NP's, and should be regulated by something like (1). Thus (1) must be extended in some way.

On the other hand, (1) has a certain appeal because it predicts that NP's that are not in θ-chains do not need Case, and this prediction appears to be true for predicate nominals. For example consider (46).

46) I consider John a fool.

The underlined NP *a fool* is predicated of *John* in the same way that the adjective *hopeless* could be predicated of *John* in this context. If one is to argue that *a fool* is Casemarked in this context, then one must claim that *a fool* is either Case-marked by *consider*, gets Case by agreement with *John*, or is assigned a default Case generally available in English. The assumption that the predicate nominal is Casemarked by *consider* seems implausible because even prepositions such as *with* would have to have the property of assigning two Cases (i.e., to both *John* and *an invalid*).

47) With John an invalid, it will be tough to make ends meet.

Moreover, in languages where the Case of the predicate nominal is visible, it generally appears with the same Case as the NP it is predicated of, or with the same Case as the controller of the NP it is predicated of (when that NP is PRO, for example, as in Russian, cf. Neidle (1980), Schein (1980)) or falls into a 'default' Case such as instrumental (again as in Russian). In English there is no independent reason to assume that a default Case exists. Moreover, there is evidence that Case is not always assigned to predicate nominals by agreement.

48) PRO_i to be considered e_i a fool is displeasing.

Since PRO has no controller in (48) and *a fool* cannot get Case by agreement (from Caseless trace or Caseless PRO), it follows that *a fool* is not Casemarked by agreement. Even if we were to suppose that *a fool* is indeed Casemarked by some syntactic process, it would have to be marked with a special Case appropriate to predicate nominals. There is no motivation for such a rule of Case assignment in English. The simplest assumption is thus that the predicate nominal is Caseless.

Since predicate nominals are not in A-positions, it follows that they are not in θ-chains. If they are not in θ-chains, then they are not regulated by (1), and this prediction appears to be correct. On the other hand *it* is in an A-position, but not in a θ-chain, and yet it is sensitive to whether or not it is in a Casemarked environment. It appears that we are faced with a dilemma.

To resolve this problem, it is useful to recall the end of 3.2.1 where it was remarked that appositives are not

arguments, and yet NP appositives of the relevant type are excluded unless they are Casemarked (unlike $\bar{S}$ appositives). These appositives appear in the same positions as arguments, however, even if appositives are not arguments themselves. This suggests that the Case condition should not be stated on θ-positions, but on A-positions.[11]

49) Revised Case Filter

A lexical NP in an A-position must have Case.

(49) has just the consequences we want. Predicate nominals, since they are not in A-positions, do not have to be Case-marked. *It*, because it is not an NP (although it can be an NP-daughter, cf. 3.4) can also be Caseless.

Some problems for the Revised Case Filter (RCF) seem to arise immediately. First of all, if $\bar{S}$'s don't need case, then why are examples like (50) excluded?

50) *PRO to be obvious that John is guilty would upset me.

Recall, however, that PRO always counts as an argument in this system. On the standard assumption that *obvious* assigns a single external θ-role, (PRO,$\bar{S}$) cannot be a θ-chain or else it contains two arguments and is excluded by the θ-C. PRO cannot be outside of a θ-chain without being interpreted as EXE (cf. 2.4.4). If PRO is expletive, however, then it must be governed (2.4.2), and this is not the case in (50). Thus, without any special statement, it follows that (50) is excluded. Finally, notice that the RCF plays no role in excluding (50), and this removes another motivation for the claim that $\bar{S}$ must have case.

Now let us consider a context similar to that in (50),

but where EXE is possible, as in the French examples in (51).

51a) Je crois e évident que Jean est malade.
"I believe obvious that Jean is sick"

b) Je crois ça évident.
"I believe it obvious"

c) Je le$_i$ crois e$_i$ évident.
"I OBJ-CL-believe obvious"

d) *Je crois e évident.
"I believe obvious"

French is like English in permitting (51b) and excluding (51d). In (51d), the empty category (EC) is defined as either PRO or EXE. As PRO, the EC is excluded because it is governed. As EXE, the EC in (51d) is excluded because there is no argument for the external θ-position of the adjective *evident*. The difference between French and English is that French permits (51a), whereas the element *it* must appear in English.[12] Now the EC in (51a) must be EXE or else it is excluded as governed PRO. EXE is possible in (51a) because the $\overline{S}$ is the argument of the external θ-set of *evident*. It follows that if any argument appears in the position of the EC, then (51a) would be excluded. This, then, is further evidence for the existence of EXE.

One question about *it* remains unexplained, however. Why must expletive *it* appear at all if it only appears in positions where EXE can appear? Why isn't *it* always missing, as it is in (51a)? To answer this question, I introduce the Case Realization Conditions.

52a) NOM Case must be phonetically realized

b) ACC Case must be phonetically realized.

c) OBL Case must be phonetically realized.

These conditions are of special interest because in Chapter VI I will argue that they are parameterized (which is why I have stated them separately). I assume the following definition of "phonetically realized."

53) A Case C is phonetically realized if C is assigned directly to a lexical NP at S-structure.

Let us assume for the moment that "lexical NP" simply means an item that is assigned phonetic features in the lexicon, leaving aside, for the moment, whether or not variables are lexical NP's.

Now notice that (52a) is all that requires the presence of *it* as, for example, in (54).

54) It is obvious that John is here.

If the expletive *it* did not appear, then the subject could be EXE, thereby exempting it from the conditions on θ-chains, but not (53). As we shall see in Chapter VI, in languages like Italian, the subject in sentences like (54) can be dropped because Italian is a NOM-drop language in which (52a) does not hold.

The contrast between French and English with respect to (51a) may be simply captured by the assumption that verbs taking small clauses in English assign ACC case obligatorily, whereas in French, the same verbs assign ACC Case optionally[13] (cf. 3.4 on optional Case assignment). It then follows that

if an NP argument appears in the subject position of the small clause in French, then Case must be assigned, or the RCF rules it out. If the small clause subject is expletive, then ACC Case cannot be assigned, as French lacks an ACC expletive pronoun, and assigned Case must be realized by (52b). Thus only EXE is possible in (51a).[14]

Now all the pieces of my analysis of 'it-extraposition' phenomena can be assembled. The Unity of Indexing Hypothesis predicts that (it,$\overline{S}$) cannot be a θ-chain. *It* must appear when the relevant Case Realizations in (52) require it. *It* cannot appear in Caseless positions or else it is excluded by the RCF. The $\overline{S}$ in these structures, which does not have to be Casemarked under the RCF, gets its θ-role as part of the external θ-set (43), or directly as an internal argument of V (as in (41)). Notice that (31) through (34) now follow essentially from (43), the RCF and the UIH.

3.3. Variables and Case.

Recall that the fact that variables must be Casemarked (2) is a consequence of (1) in Chomsky's account, since variables are not PRO (by definition). If variables are not PRO, then they must head Casemarked θ-chains (since they cannot be A-bound, again by definition). Thus a variable must be Casemarked, as illustrated in (55), where the *wh*-phrase has its point of origin in a position that cannot have a lexical NP on the surface.

55a) *Who$_i$ did George try e_i to win?

55b) *Who$_i$ did it seem e_i to win?

Now let us reconsider our earlier result, which was that $\bar{S}$'s, unlike NP's, need not have case. If (1) is the right explanation for the examples in (55) with *wh*-movement, then examples in which a *wh*-word controls an $\bar{S}$ position ought to be grammatical.

56a) That Mary leave, which John insisted *(on), upset Joe.

b) That Mary was leaving, which John whined *(about), upset Joe.

c) *That Mary was leaving, which John quipped/remarked, upset Joe.

d) *That Mary was leaving, which it seemed, upset Joe.

e) That Mary was leaving, which Bill was happy *(about), upset Joe.

f) That Mary was leaving, which (*it) was noticed, upset Joe.

g) That Mary was leaving, which (*it) annoyed Bill, upset Joe.

h) That Mary was leaving, which (*it) was bizarre, upset Joe.

i) That Mary was leaving, which John resented (*it), upset Joe.

The examples in (56) show that the trace of *wh* is ungrammatical in all of those positions where only $\bar{S}$'s (and not NP's) can appear,[15] and that if a Case source in the form of a preposition can be inserted, the grammaticality of these examples can be restored. Moreover, in those cases where the *it* indicates that the trace is in the 'extraposed' position, the sentence is ungrammatical,[16] but if the *it* is missing, then it is possible to construe the trace as being in the Nominative-marked subject

position, and once again the sentence is grammatical. Other *wh*-constructions where a clausal argument controls a gap evidence the same pattern of facts although the sentences are more clumsy, as the topicalization examples in (57) and the Tough-construction examples in (58) show (this fact is pointed out by Emonds (1976)).

57a) That Joan is alone I'll never believe.

b) *That Joan is alone I would never remark.

c) *That Joan is alone it is bizarre.

58a) That Harry is helpless is hard to believe.

b) *That Harry is helpless is hard to remark (in his presence).

c) *That Harry is helpless is hard to consider it accidental.

From (56) through (58), the generalization that emerges is (59).

59) A variable cannot be $[_{\overline{S}}$ e] without Case.

Notice that if the generalization in (59) is correct, then (2) cannot be derived from either a Case condition on θ-chains as in (1), or a Case condition on A-positions, such as I have adopted in the RCF, if it is true that $\overline{S}$'s do not need Case (31). Even adopting Stowell's position, which is that Case is assigned to θ-chains containing $\overline{S}$ in most environments, for any context where θ-assignment is by recognition as in (56e)) or by some other special device (as in (56b) and (56c)) the generalization in (59) also fails to follow.[17]

The problem posed by (59) can be resolved simply if the trace left by *wh*-movement in (56) is, for some reason, always an NP. One might claim, for example, that $\overline{S}$ simply

lacks a *wh*-proform, and so whenever a *wh*-phrase is required, the NP *wh*-word is used. The *wh*-word thus leaves an NP variable, and an NP variable falls under (1). This seems immediately plausible because we know independently that the *wh*-word used in these contexts has to be able to bind subject position, as in the grammatical versions of (56f-h), or the position of the object of a preposition (as in (56a,b, and e)), yet $\overline{S}$ cannot appear in either of these positions (cf. the next section).

The problem with the *wh*-proform explanation above is that it reduces to (59) if there are other proforms for $\overline{S}$, as indeed there appear to be.

60) A: I understand that John is sick.
B: Yes, it seems so.
Yes, I thought so.

If *so* is a proform for $\overline{S}$, then to say that $\overline{S}$ lacks a *wh*-proform is uninformative, especially since there are *wh*-proforms for other categories, such as adjectives.

61) Now Mary is pretty, which she never used to be.
Just how silly do you consider Mary?

In the absence of any other explanation, it seems that any approach that reduces (2) to the general Case requirement on NP's, be it (1) or the RCF, must simply assume (62).[18]

62) Variables in A-positions are always NP's.

Given (62), (59) follows from (1), but since an NP must be lexical to fall under the RCF, (59) still does not follow from the RCF. In order to derive (59) using the RCF, (63) must also

be assumed.

63) A variable counts as 'lexical'.

Unless (63) is independently motivated, it appears that there is still one advantage for (1) over the RCF, even though only the RCF explains the distribution of *it* and $\overline{S}$, given the fact that $\overline{S}$ doesn't have to be Casemarked.

In fact, there is independent evidence for (63). In 3.2.3, the Case Realization Conditions were introduced, which require that a given Case must be directly assigned to a lexical NP at S-structure (52). If the conditions in (52) are correct, then it must be the case that variables count as lexical NP's.

64) Who_i did you say e_i saw Bill?

In (64) (irrelevant details omitted), it appears that no Case is phonetically realized, unless it is realized on *who*. We might suppose that *who* inherits its Case from the position of its variable, or that base-generated Case on the *wh*-phrase is carried along under movement (assuming some version of Case checking). There are, however, contexts where no *wh*-word appears (cf. Chomsky (1981a) and references cited there).[19]

65a) the man e_i Mary said e_i should leave

b) John is tough $[\overline{S}\ e_i\ [S$ PRO to like $e_i]]$

c) Joe, John thinks e_i should leave.

The fact that variables satisfy the requirement that Case be realized in English indicates that they act exactly like lexical NP's do, thus justifying (63) independently. If variables are lexical NP's, moreover, then (2) follows from

the RCF, just as it does from (1).

A brief recapitulation of the reasoning of this section would perhaps be useful. First it was pointed out that if $\overline{S}$'s don't need Case, then it does not follow from either (1) or the RCF that variables cannot be left in Caseless $\overline{S}$ positions (59), even though (2) otherwise follows from (1). It was concluded that variables in A-positions must be treated as NP's (62) in order to derive (59) in either theory (either (1) or the RCF). It was then noted that the RCF could still not derive (59) (or (2), for that matter) unless variables are 'lexical' (63) as well as NP's. The claim that variables are lexical in the relevant sense was then independently motivated by their role with respect to the Case Realization Conditions (52). Given that variables in A-positions are lexical NP's (62),(63), they thus fall under the RCF. Therefore both the RCF and (1) can derive (2) as a consequence.

If both the RCF and (1) can derive (2), then the RCF is to be preferred. If $\overline{S}$ does not have to be Casemarked (31), then only the RCF explains why *it* has to be Casemarked even when it is not in a θ-chain. The fact that the RCF applies to lexical elements not in θ-chains will be further confirmed by the analysis of impersonal sentences in Chapter IV and the treatment of NOM-drop in Chapter VI.

Of course, the reason I propose the RCF in the first place reflects a more general concerns. θ-chains of the form (it,$\overline{S}$) are unbalanced, since Principle (C) is violated, and

there is no Case inheritance. As Principle (C) and Case inheritance are properties that hold of A-binding and θ-chain membership, respectively, only a special form of indexing, such as 'superscripting,' which relaxes these entailments, can save an (it,$\overline{S}$) θ-chain. Under the UIH, precisely this sort of solution is to be rejected. Thus the main appeal of the RCF is that it is consistent with the UIH.

3.4. Can $\overline{S}$ be Casemarked?

A few interesting questions still remain about the treatment of clausal arguments developed in this chapter. Most of my discussion has thus far centered around contexts where $\overline{S}$'s can appear and NP's cannot. Now I shall examine some contexts where the reverse is true, or neither NP or $\overline{S}$ can appear.

First, notice that a rather clear prediction follows from the assumption, amply motivated above, that $\overline{S}$'s do not have to be assigned Case, namely, the prediction that $\overline{S}$ can have the distribution of PRO.

66a) PRO to bother Bill would upset John.

*That Mary will be late to bother Bill would upset John.

b) PRO proving the theory false would be surprising.

*That Mars is a moon of Saturn proving the theory false would be surprising.

Since this prediction is false, something must prevent $\overline{S}$ from appearing in these positions. Chomsky (1981a) proposes a principle (for independent reasons) which has this effect, and

which is stated informally in (67).

67) There is an NP daughter of S at every syntactic level.

(67) is part of Chomsky's 'Extended Projection Principle,' and means that any structure which is clausal at one level is clausal at every level, including the presence of the NP subject. Now we know independently that the structure of gerunds is in some sense sentential, and I will simply assume that this is so (but cf. Aoun and Sportiche (1981) for some interesting argumentation to this effect based on the notion of government adopted in Chapter I).

68) $[_{NP}[_{S}\ NP\ VP]]$

It is thus clear that gerunds will be problematic for $\overline{X}$ theory in the same way as the structure expanded by the rule in (69).[20]

69) $NP \rightarrow \overline{S}$

If (67) through (69) are correct, then the ill-formedness of the examples in (66) is predictable. When NP rewrites as $\overline{S}$, NP has lexical content, and falls under the Case Filter in (49). Thus $\overline{S}$ cannot appear in the positions of PRO subjects, as desired.

A number of contexts have been noted in the literature where $\overline{S}$'s cannot appear, and NP's can (cf. Ross (1967), Kuno (1973)) such as in the object position of a PP, and in the position of Genitive NP's.[21]

70a) Harry is glad (*about) that John is guilty.

b) John's claim (*of) that Harry is sick.

c) Bill whined (*about) that his headache had returned.

70d) *For that John is sick to bother Bill would upset Mary.

71a) *That Mars is a moon of Saturn's proving the theory false would be surprising.

b) *That the earth is flat's proof by careful observation marked a new era in scientific research.

The examples in (70a) especially suggest that $\overline{S}$ is somehow 'allergic' to Casemarking. This observation may be expressed as a principle.

72) *$\overline{S}$ in a Casemarked position.

Principle (72) has been independently discovered by Stowell (1981) and Reuland (1981), who have developed the idea somewhat differently.[22] A number of effects that follow from (72), however, are discussed by Stowell, and so I will treat them only briefly here.

So far it has been shown that $\overline{S}$ cannot appear as a prepositional object or in a position where Genitive NP's appear. The examples in (73) suggest that (72) should also rule out $\overline{S}$'s in the Nominative-marked subject position.[23]

73a) *Is that John is guilty likely?

b) *Mary knows (that) that John is coming is annoying.

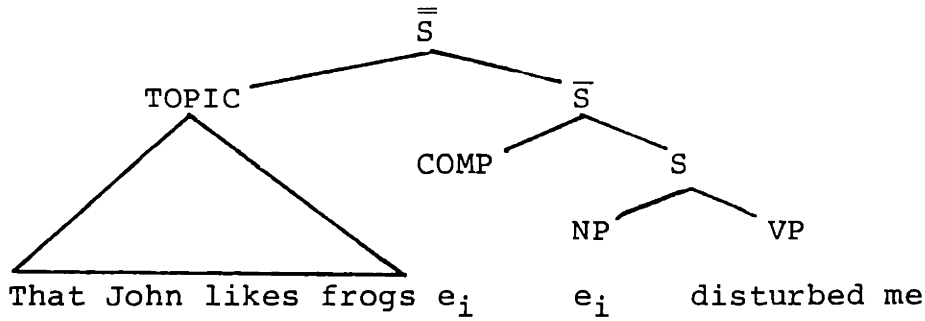
The apparent problem for this account is the occurrence of $\overline{S}$ as a 'sentential subject' in matrix clauses.

74) That John likes frogs disturbed me.

An interesting proposal by Koster (1978) enables us to explain the contrast between (73) and (74). Koster suggests that 'sentential subjects' are actually Topics, in the sense of Banfield (1973) and Chomsky (1977). Koster's analysis is represented

in (75).

75)



Since we know independently that $\bar{S}$ can control a '*wh*-satellite' in COMP which can in turn bind a variable (as in the examples in (56)), the structure in (75) is quite familiar, differing from the appositive relatives in (56) only in that the *wh*-word is not overt. Let us assume that Koster's analysis is correct. Notice then that Koster's analysis is the only possible one for (74), if we assume that $\bar{S}$ avoids Casemarked positions (72).[24] Thus (72) extends quite satisfactorily to Nominative Casemarked positions.

Now let us extend (72) to Accusative Case. Notice, however, if the Case Realization Condition on ACC Case (52b) is correct, some subtle questions arise as to how it applies to the $\bar{S}$ complements of verbs. Stowell's suggestion is that $\bar{S}$'s can be in Case 0-chains just in case they are not in Case-marking positions (just as I have stated it in (72)). He argues that $\bar{S}$'s move away from verb-adjacent position to avoid Case in examples like (76).

76) John said e_i to Bill [that Mary had left]$_i$

This treatment accounts for the tendency of $\bar{S}$'s to appear to the right of other verbal complements in VP. Stowell points out further that the verb-adjacent trace of $\bar{S}$ in (76) can be

Expected to block reanalysis (cf. Weinberg and Hornstein (1980)) of *say to* when *wh*-movement strands a preposition as in (77).

77) *Who$_i$ did John say e$_j$ to e$_i$ [that Mary had left]$_j$

If Acc Case is assigned in these contexts, as Stowell requires (in order to motivate rightward movement of $\overline{S}$), then in order to preserve the Case Realization Condition for ACC Case in English, I must assume a convention like (78).

78) If a trace is controlled by $\overline{S}$, the that trace counts as phonetically realized for (53).

Under the appropriate assumptions about the French examples, (78) keeps (53) compatible with Stowell's result.

Another sort of problem is posed by the distribution of ACC Case, however, which suggests a different approach. Consider the following paradigm.

79a) John insists (*it) that Mary likes mousse.

b) John resents *(it) that Mary likes Max.

c) John knows (it) that Mary left.

The occurrence of *it* seems to be limited by certain lexical properties of the verbs in question. Verbs like *insist*, which can never take NP complements unless the preposition *on* is inserted, probably cannot permit *it* to appear for the same reason; *insist* does not assign ACC Case. It also seems that *resent*-type verbs could easily be characterized as having the opposite property, namely, *resent* perhaps always assigns Case, and assuming that (78) is not sufficient for (52b) to be satisfied, *it* must be inserted. The treatment of *insist* vs. *resent*

can then be carried over to *know*-type verbs, where *it* appears optionally, at least in the following discourse context (cf. Safir (1979)).

80) A: I think that John really hates you.

a) B: I always knew it that he hated me, but I never thought he'd say so.

b) *B: I knew it that statement, but I never thought he'd say so.

(80b) is presented to show that (80a) is not a right dislocation, since only $\overline{S}$ can appear to the right of *it* in this context. Moreover, if *insist* is inserted in the place of *know*, then (80a) becomes ungrammatical as well. From this perspective, the optionality of *it* for *know*-type verbs is simply a matter of whether or not ACC Case is assigned. If ACC Case is assigned, then *know* patterns like *resent*. If ACC Case is not assigned, then no *it* can (or must) appear.

The problem with treating the distribution of *it* in the above fashion, however, is that we expect the appearance of *it* to be required in examples like (76) and (77), where Stowell's assumption that ACC Case is assigned predicts the presence of the trace blocking reanalysis in (77). I shall return to this issue momentarily.

First, however, it is worth considering another question that arises with respect to the appearance of expletive *it* in VP. One may ask whether or not (it,$\overline{S}$) forms a θ-chain in the *resent* cases, and in examples like (81).

81) We were counting on it that John would leave.

The issue is whether or not the $\overline{S}$ must be related to *it* to be

assigned a θ-role. If the bracketing of (81) is (82a) instead of (82b), then (it,$\overline{S}$) must form a θ-chain, or the $\overline{S}$ is without a θ-role, assuming the preposition *on* mediates θ-role assignment. If the preposition is reanalyzed with the verb, then the structure in (82b) should allow assignment of the prepositional object θ-role directly to the $\overline{S}$ as a daughter of $\overline{V}$, and as an internal argument.

82a) We [$_{VP}$ counted [$_{PP}$ on it][$_{\overline{S}}$ that John would leave]]

b) We [$_{VP}$ counted-on-it [$_{\overline{S}}$ that John would leave]]

If there is some way to distinguish the two structures in (82), it is predicted, under the assumption that (it,$\overline{S}$) does not form a θ-chain, that only (82b) could be grammatical. There is, in fact, a way to test this property. In (83), an adverb inserted between the verb and *on NP* is introduced, thus blocking the possibility of reanalysis.

83a) We counted merely/crucially on John's nerve.

b) John's presence was counted (*merely/*crucially) on.

Since reanalysis is blocked in (83b) by the presence of the adverb, the trace of passive is not properly governed, and the ECP is violated,[25] as prepositions cannot properly govern unless reanalyzed with verbs. The same contrast is predicted in (84) if $\overline{S}$ can only get a θ-role from a structure like (82b).

84) We counted (*merely/*crucially) on it that John would leave early.

85a) We had thought merely about John's guilt.

b) John's guilt was thought (*merely) about.

c) We had thought (*merely) about it that John might be guilty.

The ECP cannot be appealed to in (84) or in (85c) because there is no empty category. Thus the hypothesis that $\overline{S}$ can only get a θ-role if reanalysis is possible in (81) is confirmed quite dramatically by (84) and (85).

Actually, the examples in (84) and (85) show not only that ($\overline{S}$,it) is not a θ-chain, but that it cannot be a θ-chain. Though compatible with my analysis, this exclusion does not follow from anything I have said thus far. (84) differs from cases where *it* is in subject position because in (84), *it* does not bind $\overline{S}$ (especially in (82a)), but rather vice versa. One way to exclude this possibility (though not the one I will ultimately adopt) is to assume (86).

86) *It* is an argument if it is in a θ-chain.

Given (86), inclusion of *it* in a θ-chain with $\overline{S}$ will be enough to exclude any θ-chain that also includes an $\overline{S}$ because the θ-C is violated as well as the BC's; Principle (C) is violated in the case of (it,$\overline{S}$) θ-chains, and Principle (B) is violated in the case of ($\overline{S}$,it) θ-chains, since *it* is a pronoun.

Before closing this section, let us return to Stowell's assumption that ACC Case is assigned in (76) and (77), thus predicting a rightward movement of $\overline{S}$ (leaving a trace that blocks reanalysis in (77)). Stowell is assuming that θ-chains (in my terminology) of the form ($\overline{S}$,[e]) are well-formed even when the empty category is Casemarked. This assumption fails to account for examples like (87).

87) *We counted on e_i [that John would be there]$_i$

Examples like (87) cannot be ruled out by ECP, since *count on*

can undergo reanalysis as was shown by (83b). Given that in Stowell's account, a new assumption would have to be introduced in order to rule out (87), the existence of ($\overline{S}$,[e +Case]) 0-chains seems to complicate the analysis of $\overline{S}$ prepositional objects. Moreover, there are also cases exactly parallel to (76) and (77) where ACC Case is clearly not assigned, even under Stowell's assumptions, yet the same effect is observed.[26]

88a) ??John said/remarked that Sally was sure to be late to Bill.

b) John said/remarked to Bill that Sally was sure to be late.

c) *Who did John say/remark to that Sally was sure to be late.

It seems that whatever requires rightward movement of the $\overline{S}$ complement of *remark*, which does not assign ACC Case (*remark* patterns with *insist* in examples (79a) and (80)) is likely to be the same principle that accounts for the rightward movement in (76) and (77). Thus the apparent advantage of Stowell's treatment of ACC Case assignment, that it predicts the rightward movement of $\overline{S}$ in VP, turns out to be of questionable value. If Casemarking is not the appropriate way to force $\overline{S}$ movement in (76) and (77) as well as (88), then there is no further motivation that $\overline{S}$'s are ever in Cased 0-chains.

The latter observation suggests a more radical approach. Suppose we replace (72) by (89).

89) *$\overline{S}$ in a Casemarked 0-chain.

(89) is immediately more appealing than (72) simply because it makes a stronger claim, but it is also preferable because

it enables us to discard two ad hoc conditions, both (78) and (86). Recall that (78) was introduced to permit the Case Realization Condition for ACC Case to be satisfied when ($\overline{S}$,[e +CASE]) is a θ-chain. This assumption (78) made it impossible to explain why *it* had to appear in the VP's of *resent* and *count on* type verbs where an empty category ought otherwise to suffice. By giving up (78) and (72), we also give up the conclusion that (72) is the right explanation for the general appearance of $\overline{S}$ VP-finally, but (88) gives us reason to doubt this conclusion anyway. We can dispense with (86) without any loss of empirical coverage at all, since it is no longer necessary to stipulate anything about *it* (except that it must be distinguished from other pronouns, such as *him*, which can never be expletive, as any account must stipulate).[27] The most obvious consequence of (89), however, is that there are no (it,$\overline{S}$) or ($\overline{S}$,it) θ-chains, as *it*, like any other lexical NP in an A-position, must be Casemarked under the RCF. The absence of such θ-chains has been amply demonstrated in this chapter.[28]

3.5. Summary.

The principal innovations in this chapter include the Revised Case Filter on A-positions (49) (replacing (1)), the Case Realization Conditions (52), the external θ-set (cf. (43) and discussion following) and a principle excluding $\overline{S}$ from Casemarked θ-chains. These principles account almost entirely for the distribution of *it* and of clausal arguments. All of

these principles (except for (89)) will be further motivated in the chapters to come.

An important property of these results is that they are consistent with the UIH. Recall that the UIH requires that (it,$\overline{S}$) could not be in a θ-chain unless the BC's are somehow avoided ($\overline{S}$ acts like a name in that it cannot be A-bound) and Case inheritance is possible (which it is not, since (it,NP) θ-chains are ungrammatical). The search for principles to take up the slack left by the exclusion of (it,$\overline{S}$) θ-chains has yielded a more explanatorily and descriptively adequate theory of the distribution of lexical NP's, clausal arguments and expletive *it*. As the impact of the UIH is traced further, the explanatory force of these principles and results will be enhanced.

FOOTNOTES: Chapter III

1. Ken Hale (personal communication) points out that with strong parallelism, i.e., the exact same verb, the adverbial gerund is somewhat more acceptable. I don't know why this should be so.

i. ??It suddenly began to seem that John was innocent after seeming that he was guilty all last week.

2. Since pronouns cannot be bound in their governing category, Principle (B) is violated as well. With respect to Principle (A), cf. note 18 of Chapter II.

3. Stowell (1981) claims that infinitives, unlike tensed $\bar{S}$'s, do not have to be assigned Case to qualify as arguments with respect to the θ-C, and that they always appear in Caseless contexts when they are verb complements. Purported evidence for this claim is the observation (attributed to R. May) that infinitives cannot be topicalized, as in the ungrammatical examples below (from Stowell (1981), p. 175).

i. *Who to visit, I asked e .

ii. *To be stupid, John seems e .

iii. *To be invited, I never expected e .

iv. *For Scott to arrive late, Bill thinks that we are hoping.

Note, however, that i., ii., and iv. are ungrammatical with tensed complements as well.

v. *Who Bill visited, I asked John e .

vi. *That John is stupid, it seems e .

vii. ?*That Scott will arrive late, Bill thinks that we are hoping.

As for the control verb in iii., one might rule it out on the grounds that C-command fails between the antecedent and the lexically controlled PRO. Stowell (note 62, p. 231) points out that this problem does not seem to arise for questioned predicate adjectives, however, as in viii.

viii. How eager PRO to help us do you think John really is e ?

It seems that Stowell's argument rests on whatever assumptions distinguish *wh*-questions and topicalization structures with respect to reconstruction. If only *wh*-questions can be reconstructed (allowing John to C-command PRO in viii.), then the difference between viii. and iii. has nothing to do with infinitives per se. In short, this would mean that the examples in i. through iv. are not evidence for the claim that infinitives differ from tensed clauses with respect to whether or not they need to be assigned Case.

The view I am developing here assumes that $\overline{S}$'s, tensed or not, need not be assigned Case (and indeed must not be in a Cased θ-chain, cf. 3.4). It is a curious fact, however, (explained by neither approach) that no verb takes an infinitive complement with arbitrary PRO unless it is a *wh*-complement. It this were possible, then we would expect that there could be topicalization of an infinitive, if the matrix verb assigns Case to the trace of the moved infinitive.

4. This is not to say that 'appositive NP's' do not appear.

i. Bill, John's friend, is a postman.

ii. Tenacity, Wendy's only virtue, is tough to come by.

These sorts of 'appositives' are set off by pauses, and appear to have a different sort of reading, in that they do not necessarily express the semantic content of the head noun; rather they seem to identify the relevance of a particular item in discourse. Notice, in any case, that when the 'appositive $\overline{S}$' is set off by commmas, as in iii., it is barely acceptable, if not totally ungrammatical.

iii. ?*The explanation, that John had been delayed, upset Bill.

Insofar as true NP appositives are possible at all, then, they seem to be more parenthetical, rather than structural sisters of N.

5. Stowell is forced to the assumption that a child's innate conceptual system permits him to identify 'manner of speaking' verbs like (35a-c) as being incapable of assigning a θ-role to an $\overline{S}$ complement, a rather drastic move to say the least. He acknowledges that the $\overline{S}$ complements of these verbs do appear to have 'direct object-like' semantic properties, but does not explain why this should be so, or why gerunds should be different in this respect.

Arguments that no θ-role is assigned to the $\overline{S}$ complements of these verbs, as Stowell proposes, should be weighed against the less drastic claim made here that no Case is assigned to these $\overline{S}$ complements. Cf. Stowell's (1981) discussion, pp. 396-403.

6. The order of complements in VP in (41) is predictable from the fact that *annoy* assigns Case, and so *John* must be adjacent to the verb.

7. Notice that if a verb like *annoy* has no subject θ-position, then it should not assign ACC Case to its object, if Burzio's (1981) generalization to this effect is correct. It is reasonable to suppose, however, that, as in German, Dative Case is assigned by verbs like *annoy*. It is generally the situation that *goal* arguments are assigned Dative Case in languages where Casemarking is overt.

8. Suppose that a 'goal' argument of a verb like *annoy* in its active form were to move to subject position, a possible derivation for a D-structure like i. How would ii. be ruled out?

i. e $[_{VP}$ annoyed John $\bar{S}]$ D-structure

ii. *John$_i$ $[_{VP}$ annoyed e_i $\bar{S}]$ S-structure

Suppose psych verbs, like *resent* (cf. 3.4), assign ACC (or Dative, cf. note 7) Case obligatorily. It would then lead to a situation where *John* would bear both NOM and ACC Case, and the sentence would be ruled out by Case conflict. Similar sentences are possible in Dutch, for example (cf. 4.3.3), because it is possible to assign NOM Case to a different position. In English, the only way *John* can move to subject position is if the verb is passivized, and thus no ACC Case is assigned.

There is another way to rule out ii., however, which

has the advantage of ruling it out in infinitival contexts as well. In 3.2.2 (52) it is required that ACC Case be phonetically realized in the position where it is assigned. Since *John* moves to subject position, some other lexical element must be inserted to bear ACC Case. The only element available would be some sort of impersonal formative, such as *there* or *it*, but neither of these can be inserted in a θ-position (cf. 5.1.3 and 5.2.3). Thus the ACC Case will be assigned, but not phonetically realized and the sentence will be excluded by (52) (as would a comparable infinitive). Only where ACC Case is absorbed by passive morphology, as in (41), can an internal object move to subject position.

9. One might try to argue that the passive forms of verbs like *annoyed*, *surprised*, *disgusted*, etc., are in fact adjectives, since they can all be *wh*-questioned by a degree modifier.

i. How annoyed/surprised/disgusted was John that Willa was late?

This possibility does not affect the basic conclusions of the analysis in the text, assuming that the argument structure of these predicates is uniform across categories (i.e., V and A), which is, of course, the simplest assumption. Cf. also Wasow (1977) for some other distinctions between "verbal" and "adjectival" passives.

10. The idea that a VP-adjoined position can count as a θ-position is proposed in Safir (1981a), Marantz (1981) and suggested in Stowell (1981), fn. 39, p.224.

11. Perhaps TOPIC position should be treated as an A-position like appositives. I leave this issue open.

12. Cf. Jespersen (1958) where it is pointed out that in nineteenth century English, the English translation in (51d) was grammatical, just like its French counterpart.

13. The optionality of ACC Case assignment is probably a general property of French, and if so, the fact that French has no elment like expletive *it* follows from Chomsky's (1981a) "Avoid Pronoun" Principle, i.e., 'don't use a pronoun if you don't have to.' In similar contexts in English, where ACC Case assignment is often obligatory, the existence of a lexical expletive pronoun like *it* is required. Cf. 3.4.

14. What this amounts to is that EXE is possible when Case is not assigned but that no argument empty element (other than a variable, which must be assigned Case like any other lexical NP) can appear in these contexts unless it counts as phonetically realized. This is due in part to the absence (in the inventory of empty elements) of a pure pronominal empty element that does not need Case and counts as an argument, but cf. Chapter VI where such an element is introduced.

Notice, however, that if realization of ACC Case required by (52b) were instead optional, virtually the same prediction would be made based on what I have said so far. There are reasons for assuming that the empty subject in (51a) is due to optional assignment of Case rather than optional

realization of Case, however. This reason concerns the analysis of clitics, and the matter is discussed in 6.6.2.

15. The issue of whether or not the *wh*-element is an NP is considered below.

16. Higgins (1973a) was the first to point out that extraposed $\overline{S}$'s could not be *wh*-extracted, as in (56f-h).

17. One might attempt to explain away the cases where *it* appears in (56) through (58) by assuming that if the trace left by movement is A-bound by *it*, then that trace is not a variable by definition, and *it* cannot be the variable for a *wh*-phrase. Notice, however, that the relation between *it* and $\overline{S}$ differs from the relation between *there* and NP.

i. *What was it obvious e?

ii. How many men might there be e in the garden?

This difference is immediately explained if (there,NP) is a θ-chain, thus allowing Case inheritance, while (it,$\overline{S}$/NP) is not a θ-chain at all, and there is no Case inheritance (as must be said independently to account for (36)). It follows that the $\overline{S}$ trace in i. is not Casemarked. Why ii. is grammatical is not transparent here, but I shall attribute the difference in part to Case inheritance in Chapter V.

18. Notice that adjectives are not in A-positions, and so (62) does not necessarily apply to them, nor to predicative NP's, which can sometimes be questioned.

i. Just how much of a fool do you think she is e?

Thus it seems that the only force of (62) is to insure that $\overline{S}$'s always leave NP-variables in A-positions. This is quite close to saying that there is no *wh*-proform for $\overline{S}$, but if this were true, one would expect to find matters different in the next language over. Instead, the phenomenon in (56) appears to be very general.

Noam Chomsky (personal communication) has suggested that this property (expressed by (62)) might be expected to follow from the semantic nature of variables.

19. These cases were problematic for attempts to derive (2) from the Case Filter of Rouveret and Vergnaud (1980) or Chomsky (1980), as no nonempty NP was present to apply the Case Filter to. Chomsky (1981a) resolves this problem by restricting the Case Filter to A-chains (in his terminology). The RCF preserves this part of Chomsky's solution by restricting the Case requirement to A-positions.

20. Cf. Reuland (1980) for a proposal that avoids this consequence.

21. Thrainsson (1979) reports that $\overline{S}$ can routinely appear as the object of a preposition in Icelandic (p. 25).

i. John var að hugsa um [$_{\overline{S}}$ að Maria væri liklega farin]
John was thinking about that Mary had probably gone

It these prepositions assign Case obligatorily, then the $\overline{S}$ must avoid being Casemarked somehow. Perhaps COMP can be Casemarked in Icelandic, for example, instead of the whole $\overline{S}$

(This idea comes from a discussion with Tim Stowell (p.c.).)

22. Stowell, for example, generalizes across some other properties in order to construct his "Case Resistance Principle" which affects other categories, such as PP's. Stowell's extensions of (72) and his attempt to derive it from deeper principles will not be of direct concern to us here, and discussion of it would take me too far afield.

23. Richard Kayne (personal communication) points out that infinitives tend to sound better in these contexts.

i. ?Is to be careful impossible?

ii. ?John knows that to be a fool would embarass Mary

I have no idea why this should be so.

24. Koster's analysis is motivated by an attempt to eliminate the phrase structure expansion NP → $\overline{S}$, which we have seen to be independently required (as NP → S) for gerunds (cf. Aoun and Sportiche (1981)). Thus only (72) motivates an analysis like Koster's in this account.

25. Kenneth Hale (personal communication) points out that sentences like (83b) are much better with *wh*-extraction.

i. ?Whose presence did John count crucially on?

Thus these cases distinguish the possibility of pseudopassive formation from that of *wh*-extraction, and if so, it is far from clear that the ECP is the appropriate principle to rule out (83b). Clearly, whatever prevents pseudopassive formation in (83b) is the same principle regulating the ability to assign

a θ-role to the object position, rather than to the object position of the preposition. The contrast between the possibility of *wh*-extraction and the possibility of forming a pseudopassive is also illustrated in well-known examples like ii. and iii.

ii. *John was given a book to.

iii. Who did Mary give a book to?

I leave the resolution of this issue for future research.

26. Stowell does point out, however, that some of the verbs of speaking, which he agrees do not assign Case, act differently from (77) and (88a) in parallel examples (p. 400).

i. Who did Francine whisper to e that we should turn down the stereo?

Since the $\overline{S}$ complements of manner of speaking verbs do not have to have Case (cf. note 5), no trace should be required adjacent to the verb *whisper*, and hence the reanalysis permitting extraction from the PP is not blocked in i. Unfortunately, the same reasoning applied to *remark* yields the wrong result.

27. Actually, something must also be said about where the formative *it* enters the derivation. Cf. 5.1.3 where impersonal formative insertion is discussed.

28. Recall that no θ-chain is required in the following example either.

i. It seems $[_{\overline{S}}$ e to appear that $\overline{S}]$

Cf. 2.5.2, example (109), and the discussion following.

Chapter IV

4.0. The Distribution of the Definiteness Effect.

Very early in the history of generative grammar it was noted that in certain syntactic contexts, only 'indefinite' NP's were permitted. One such context, generally associated with 'existential' or 'impersonal' sentences includes a subclass of 'post-verbal' or 'rightward displaced NP' positions in English, French, German, Dutch and many other languages. In this chapter, I will show that this restriction, commonly known as the "Definiteness Restriction," need not be stated as a special property of the contexts, constructions or languages in question, as it has always been heretofore, but rather that the distribution of these 'definiteness effects' is due to the interaction of the general well-formedness conditions on θ-chains discussed in Chapter II with a simply stated property of 'indefinite' NP's.

The basic analytic strategy for explaining this interaction will be to exploit the correlation, to be established here, between instances of Case inheritance, required in order for 'post-verbal subjects' to pass the Case Filter, and the distribution of the Definiteness Restriction, or as I shall call it here, the "Definiteness Effect." The pattern of coindexing required by Case inheritance will then be related to properties of the Binding Conditions and 'indefinite' NP's which together predict the distribution of the Definiteness Effect. Moreover, the exact correlation between 'binding'

with respect to the Binding Conditions and 'binding' with respect to the formation of θ-chains, which is required by the Unity of Indexing Hypothesis, will be a crucial property of my analysis. In this respect, my analysis differs crucially from accounts that rely on superscripting, such as those discussed in Chapter II. Thus the analysis of the distribution of the Definiteness Effect in this chapter, and the effort to explain the Definiteness Effect in the next chapter, insofar as they are correct, provide strong evidence in favor of the UIH.

The organization of this chapter is as follows: in order to introduce the central issues addressed here, some background on earlier accounts, most notably that of Milsark (1974), (1977), will be examined in section 4.1 with respect to how the Definiteness Effect is explained. After pointing out some weaknesses in this account, I shall very briefly propose an alternative analysis, and highlight some of the issues that arise which are important to the line of reasoning pursued in this research. The rest of this chapter defends and extends the correlation between Case inheritance contexts and the distribution of the Definiteness Effect in French (4.2), German and Dutch (4.3) and with respect to 'list' and 'presentational' *there* sentences (4.4). A summary (4.5) puts some of the results of this chapter in perspective with respect to evidence for the existence of θ-chains as they are regulated by the UIH.

4.1.0. The Phenomenon.

The standard contrast exhibiting the Definiteness Effect (hereafter, the DE) is examplified in (1).

1a) There is a man in the room.

b) *There is the man in the room.

The NP *the man* in (1b) is excluded in the context *there be* because it is 'definite,' as it is generally put. Although I shall have more to say about the matter below, and particularly in Chapter V, for the moment I shall assume, descriptively speaking, that the class of 'definite' NP's includes all NP's quantified by a universal such as *all*, *every*, *each*, etc., and all NP's that are names, pronouns, or definite descriptions. The class of 'indefinite' NP's will include those quantified by *a*, *some*, *many*, *more*, *several*, *no*, etc., numerals (*one*, *two*, *three*, ...) and bare plurals under the nongeneric interpretation (*people*, *films*, etc.). These lists are neither exhaustive nor explanatory, but they will serve to facilitate my discussion of the examples relevant in this chapter.

Substituting any member of the indefinite class for *a man* in (1a) gives a grammatical result (abstracting away from number agreement), but (1b) is ungrammatical except under the 'list reading' (to use Milsark's term) which is most readily available when some sort of 'heading' for the list is presupposed, as for example, in (2).

2) A: Who do we have to play Othello?

B: Well, there's John, his uncle, and the man with a limp.

I shall discuss the list reading in some depth in section 4.4, but for the next few sections, I will just assume that it is not relevant to the problem that concerns use here, disregard the fact that (2b) is grammatical in the right context, and concentrate on the contrast between (1a) and (1b).

4.1.1. Earlier Analyses.

Any discussion of *there*-sentences requires at least some statement about the relation between (3a) and (3b).

3a) Many men were sick.

b) There were many men sick.

Many researchers have assumed that the relation is a transformational one, although scholars differ as to which derives from which (see, for example, Milsark (1974), Emonds (1976), Stowell (1978), Burzio (1981)). I agree here essentially with Stowell's account, which assumes that (3b) (before the surface structure insertion of *there*) is the D-structure from which (3a) is derived by NP movement, though I shall not argue for it over other accounts nor will I try to show it is preferable to a base generation analysis such as that first proposed by Jenkins (1975). These matters are not central to the issues at hand, and it would take me too far afield to consider them at all further here (but cf. Burzio (1981) for discussion and references).

Of more interest to our present discussion is how the DE has been accounted for in earlier analyses. In the earliest treatments, the requirement that post-verbal NP in *there*-

sentences (TS's) had to be indefinite, which was known as the "Definiteness Restriction," was considered to be a condition on the transformational rule that moved the NP to the right deriving (3b) from (3a). By the mid-seventies, however, the attempt to reduce the power of transformations (as stated, for example, in Chomsky (1976)) had eliminated the possibility of stating conditions such as the Definiteness Restriction on individual rules. Milsark (1974), (1977) thus concluded that the Definiteness Restriction had to be a property of the interpretive component, if stated in the grammar at all. Milsark proposed that TS's are interpreted by a special surface interpretive rule that treats *there be* as an existential quantifier. He then argued that all of the NP's characterized as definites could be ruled out in the relevant (non-list) cases because a definite NP is semantically incompatible with the reading required by the existential quantifier.

To make this a little more clear, consider the following examples.

4a) Many problems (continue to) exist.

b) There (continue to) exist many problems.

c) The serious problems (continue to) exist.

d) *There (continue to) exist the serious problems.

Milsark (1974), following Russell (1905), distinguishes two sense of *exist*. The first, which Milsark calls I-*exist*, can deal with the existence or nonexistence of an individual. Russell, cited by Milsark, describes the meaning of I-*exist* as

> ... the meaning which can be predicated of an individual:

> The meaning in which we inquire whether God exists, in which we affirm that Socrates existed, and deny that Hamlet existed.

I-*exist* is the meaning of *exist* most clearly available in (4c) (and perhaps as a reading of (4a), Milsark continues,

> ... the other sense is that found in logic. For our purposes, we can follows Russell in interpreting the logical exist as a property of classes, a class being said to exist if and only if it has at least one member. This sense of exist, unlike the first sense, is never a property of individuals (p. 179).

The second sense of *exist*, which Milsark calls c-*exist*, is appropriate to the interpretation of both sentences in (3). Thus (3b) can only be true if it is the case that at least some group of men who are 'many' are indeed sick. Similarly, (1a) is true just in case the room is not empty of men. Given these terms, it can now be said that (4a) is perhaps ambiguous, while (4b) appears to have only the c-*exist* reading, (4c), only the I-*exist* reading, and (4d), no reading at all.

The issue that arises with respect to the sentences in (4) is the role of the verb *exist* in interpretation. Milsark assumes that the verb *be* is without semantic content at all, and is only interpreted as an 'existential quantifier' in conjunction with *there*. Notice, however, that if the DE is to be captured, there must be an additional interpretive rule treating *there exist* as c-*exist*, and thereby requiring an indefinite NP in post-verbal position. Notice also that the I-*exist* reading must be supposed to either be suppressed, or coexistent with the c-*exist* interpretation.

Insofar as English is concerned, the latter observa-

tions do not seem very damaging for Milsark's treatment. It appears that *be* and *exist* are the only verbs which would have to be assumed to combine with *there* to produce the 'existential interpretation' that results in the DE. (Other constructions with *there* and other verbs in English are generally interpreted as 'presentational,' and will be treated separately here (4.4), as they are in Milsark's work). With respect to French, however, this treatment of 'existential interpretation' is more seriously problematic, as impersonal sentences can appear with a wide range of verbs in French without a presentational reading (4.4), and yet the DE holds. Thus the French equivalent of the *there V* interpretive rule which insures that only a c-*exist* reading occurs in impersonal sentences must somehow express the fact that the V does not lose its verbal meaning even though it must crucially be interpreted as part of an 'existential quantifier' in Milsark's analysis (cf. 4.2 for discussion).

Notice, however, that even if French were not problematic, it is not at all clear what sort of quantifier *there be* could be, since it does not appear to have a variable. A quantifier without a variable ought to be excluded as an instance of vacuous quantification (cf. the discussion of parasitic gaps in 2.4.3). Unless the interpretive rule in question is either equipped with extra machinery that allows it to take the form of a quantifier/variable structure, the *there be* interpretation rule is in danger of being a rule of quantification sui generis. As such, its explanatory force

is questionable.

Another, perhaps more serious problem for Milsark's interpretive rule is its reliance on the elaborate structural description in (5).

5) there AUX (have+en) be NP X (Milsark (1974), p. 190)

Put bluntly, this rule incorporates the major features of the TS construction. Like most special rules aimed at particular constructions, (5) violates Chomsky's (1976) 'minimal factorization' requirement, which virtually disallows the statement of contexts for transformational rules. Clearly one would want to extend this restriction to the interpretive component (LF, in current terms) to avoid rearming the grammar with descriptive power stripped from another component.

Even if the elaborate structural description in (5) were permitted, however, one can still raise serious questions about the relevance of (5) for characterizing the distribution of the DE. I have already indicated that in English the rule might have to be extended to include the verb *exist*, while in French (and also German and Dutch) the verbs that this construction can appear with are quite numerous and do not fall under any generalization explicable in Milsark's account. Moreover, the rule in (5) would have to be reordered to apply to SOV languages like German and Dutch (cf. 4.3). Still worse, it will be shown in this study that the presence of an impersonal formative, such as *there* in English, does not, in other languages, guarantee the 'existential interpretation'

even in the context of verbs that would otherwise permit this interpretation. Furthermore, there are contexts where the DE occurs independent of any overt impersonal element. In short, the presence of an impersonal element is neither a necessary nor a sufficient condition for predicting the DE.

Thus, Milsark's treatment has both theoretical inadequacies, such as a peculiar treatment of the form of quantification and a violation of the minimal factorization condition, and empirical inadequacies, mainly consisting in the fact that the elaborate structural description in (5) does not succeed in characterizing accurately the distribution of the Definiteness Effect. In fact, I shall argue that the distribution of the DE is based on a totally different generalization.

Before turning to my own proposal, however, it should be pointed out that Milsark's analysis of the meaning of TS's and his analysis of the class of definite vs. indefinite NP's remains an important contribution, most aspects of which will be assumed in this thesis (but cf. 5.3). While I will reject his treatment of the explanation and distribution of the DE, it is useful to keep in mind that I have at my disposal modes of explanation not available at the time of Milsark's research, in particular, syntactic chains and the theory of indexing.

4.1.2. θ-Chains and the Definiteness Effect

I return now to what I have assumed so far before presenting the central proposal of this chapter. It has been assumed that the D-structure of a sentence like (3b) is that

in (6), where "sc" stands for "small clause" (cf. discussion surrounding 2.2 for references).[2]

6) e are $[_{sc}$ many men_i $[_{AP}$ sick$]]$ D-structure

Now let us assume, as was done in 2.2, that *be* does not assign Case (but cf. 4.4 and 5.2.2) and that *many men* gets its θ-role from the adjective *sick*. Now in order for a sentence derived from (6) to be grammatical, the lexical NP, *many men*, which is in an A-position (and a θ-position) as the subject of a small clause, must be Casemarked if it is to satisfy the Case Filter.[3] This result can be achieved in two ways. First, *many men* can move to the empty matrix subject position where, in a tensed sentence, the subject is assigned NOM Case.

7) many men_i are $[_{sc}$ e_i sick]

If *many men* is not coindexed with the θ-position from which it has moved, then it will violate the θ-C, since *many men* will not be in a θ-chain. Thus (7) is well-formed because *many men* is in a Casemarked position and it is in a θ-chain by virtue of being coindexed with a θ-position.

The other way in which a well-formed S-structure for (6) can be derived is of special interest to us here. Suppose that *many men* is left in place in (6) and is simply coindexed with the matrix subject position by free indexing at S-structure. Let us also assume that the expletive impersonal formative *there* is inserted by a simply stateable rule (to be formulated in 5.1.3 and 5.2.3). The output of these operations is (8).

8) There_i are $[_{sc}$ many men_i sick]

Since (there, many men) is a θ-chain, *many men* can pass the Case Filter, as Case inheritance holds in any θ-chain with a Casemarked position (cf. (33) of Chapter II).

Now the key to the analysis of this chapter is that (there,many men) is a θ-chain in which the argument is not the head of the chain, i.e., it is an "unbalanced θ-chain" (cf. (13) of 3.1). As pointed out in Chapter II, chains of this sort appear to be problematic for the UIH, which requires that if *many men* is bound by *there* to form a θ-chain, then *many men* is bound by *there* with respect to the Binding Conditions (BC's). Principle (C), however, requires that names must be free, and since *many men* is bound by *there*, it is not free. Thus it is predicted contrary to fact, that examples like (8) should be systematically ungrammatical. Instead, as I shall argue in this chapter and those that follow, the systematic fact about sentences like (8) is that the DE holds of them.

In order to exploit the apparent contradiction between the requirements of Case inheritance and the requirements of Binding Theory, I propose that indefinite NP's be assumed to have the following very simple property.

9) The Indefinite NP Property (provisional):

Indefinite NP's escape Principle (C) at S-structure

The Indefinite NP Property (hereafter, INPP) will permit (8), but not (1b), since definite NP's undergo the BC's at S-structure, *the man* is bound by *there*, and Principle (C) is

violated.

It will be the task of the next chapter to attempt to explain why the INPP has the form it does and to determine how it interacts with other principles and levels. The goal of this chapter is merely to show that the distribution of the DE is entirely predictable based on the interaction between the INPP, the Case Filter and the BC's. No special rule of *there* interpretation is necessary, nor any reference to the word *there*, nor any reference to *there*-type constructions or contexts. The distribution of the DE will simply be a consequence, given the principles above, of the pattern of indexing that produces unbalanced θ-chains.

The account of the DE I have just proposed makes a very clear prediction that the rest of this chapter shows to be correct in a wide range of cases. Recall that the Case Filter only forces the post-verbal NP (PVNP) to be coindexed with a Casemarked position if the PVNP is not itself in a position that is directly Casemarked. The prediction is that if, by some other mechanism, the PVNP is assigned Case directly in place, then it follows that no coindexation with a higher Cased position is required, no violation of Principle (C) ensues, and the DE should disappear. In the next three sections, I shall investigate several such contexts where this prediction will be shown to be true.

4.2. French *Il* Impersonals.

One construction that permits us to test the prediction

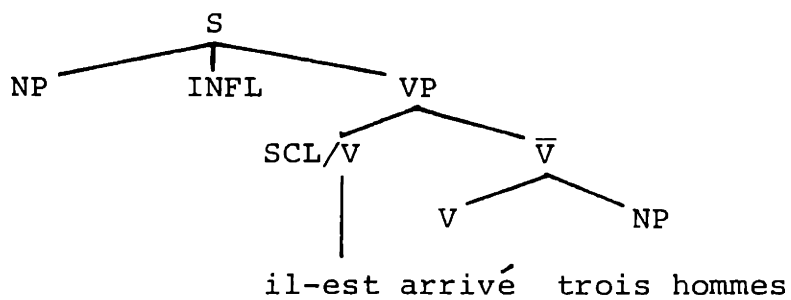
made in 4.1 is the French *il* impersonal construction. The DE generally holds for *il* impersonal sentences.

10) Il est arrivé trois hommes/*les trois hommes.

"There is arrived three men/the three men"

I shall assume the structure of (10) to be as in (11).

11)



Let us suppose that *trois hommes* is base generated in place as the object of *arrivé* as has been argued by Herschensohn (1980), Jaeggli (1980b), Perlmutter (1978) and Burzio (1981). I also assume that clitics are base generated on verbs, that the clitic position is an A-position for subject clitics (SCL's), and that SCL's are optionally arguments. All of these assumptions, as well as alternative ones will be discussed in Chapter VI, and so I will not elaborate here. As far as this section is concerned, the important assumption is that *il* is in an A-position, and that if *trois hommes* is coindexed with it, then the latter is A-bound by the former. Since the verb *arriver* does not assign Accusative Case, the PVNP, in order to satisfy the Case Filter, must get Case by inheritance.[4] Thus *il*, parallel to *there*, binds the PVNP, Principle (C) is violated, and since only the INPP avoids such a violation, the DE is predicted to be in force, as indeed it is.

The cases of special interest to us are instances of

the *il* impersonal construction where the DE does not hold (first brought to my attention by David Pesetsky and Barry Schein). Examples of this type are first reported by Kayne (1975).[5] Consider the following paradigm (adapted from Pollock (1981) GLOW Talk handout).

12a) Jean a tiré sur le bateau.
"Jean shot at/on the boat"

b) Il a été tiré sur le bateau/un bateau.
"There was shot at the boat/a boat"

c) *Il a été tiré (sur).
"There was shot (at)"
(Ignore the referential reading of *il*.)

The first example is ambiguous between the locative interpretation of the PP *sur le bateau* and the idiomatic 'shoot at' reading. This ambiguity disappears, however, in (12b) where only the idiomatic reading is possible. This seems an odd fact until we consider that French, unlike German, does not permit predicates to be 'stripped' of all their arguments.

13a) *Il a été dansé (sur le bateau).
"There was danced (on the boat)"

b) Es wurde getanzt.
"There was danced"

Thus (12c) is altogether ungrammatical, as no argument is available, just as in (13a). In the case of (12b), however, the predicate *tire sur* still has an argument, *le bateau*, and is therefore well-formed. The locative reading is unavailable in (12b) for the same reason that (13a) and (12c) are out, namely,

the locative PP does not count as a verb argument in the relevant sense (as compared to, say, 'object-of'). Now the interesting property of (12b), repeated below as (14b), is that it contrasts minimally with (14a).

14a) Il a été tué trois hommes/*les trois hommes.
"There were killed three men/the three men"

b) Il a été tiré sur un bateau/le bateau.

The striking fact about the contrast in (14) is that the DE holds of the impersonal sentence with *tué*, but not for the one with *tiré sur*, even though the idiomatic reading of *tiré sur* creates a passive interpretation parallel to the agentless passive reading of *tué*. A very simple way of accounting for this contrast is to assume that the preposition *sur* in (14b) assigns Case directly to its object.[6] This means that the PVNP, *le bateau*, need not be A-bound by *il*. Since the PVNP is free at S-structure, it does not have to be indefinite to be well-formed with respect to principle (C), and it is correctly predicted that the DE is neutralized.

While sentences such as (12b) are treated as odd (??) by some speakers, even those who find them so only interpret the PP *sur le bateau* as idiomatic, and never locative. Indeed speakers vary quite a bit about which of the impersonal passives below they prefer. All of the examples in (15) are reported as grammatical by Pollock (1981, GLOW Talk Handout), though my informants report different judgments, as marked below.

15a) Il a été débattu/décidé/traité de cette question.

"There was debated/decided/discussed about this question"

15b) *Il a été protesté/voté/deblatéré contre cette decision.

"There was protested/voted/grumbled against this decision"

c) Il a été sursis/*travaillé/??obtempéré a l'exécution de la peine.

"There was postponed/worked/submitted to(wards) the execution of punishment"

d) Il a été statué/?spéculé/?*insisté sur cette question.

"There was made-a-decision/speculated/insisted on this question"

The differing judgments (and my informants also differ a bit among themselves) seem directly related to whether or not the verb+preposition pair in question can be interpreted as a unit, or as an idiom. Dialectal, and even idiolectal, variation is not surprising if this is so, since it is only a matter of which verb+preposition pairs are represented in a given lexicon as 'closely related.'

The latter point is worth a short digression from the DE (which is, of course, our central concern here). We might suppose that cases of V+P that don't form a 'semantic unit' fail to satisfy the 'no stripped predicate' parameter that holds in French, but not German (as in (13)). The PP's in the starred examples in (15), for example, are not 'closely related' enough to permit an interpretation in which the verb takes the object of these PP's as an argument directly. It is important to distinguish the 'semantic unit' proposal I am making here

from what has been called "reanalysis" (cf. Weinberg and Hornstein (1980)). I am not claiming that the P's of the relevant PP's have been incorporated into the verbs of which they are complements. In English for example, pseudopassives have been interpreted as a case wherein the preposition has been incorporated into the verb that selects it.

16) John$_i$ was talked to e$_i$

The preposition *to* does not assign Case because the verb with which it has been reanalyzed (as per Weinberg and Hornstein above) does not assign Case with passive morphology (as proposed in Rouveret and Vergnaud (1980)). But as Kayne (1981a) has argued, French does not have reanalysis between verbs and prepositions in this context, and so the French equivalent of (16) is out by ECP[17] (prepositions do not properly govern) as shown for *tiré sur* in (12c) and for (15c) in (17).

17) *L'exécution de la peine a été sursis à.

The absence of verb+preposition reanalysis in French predicts, therefore, that the prepositions in (15) and (12) do not have their Case absorbed when the verbs in question are passivized, and thus they assign Case to their objects.[8]

Returning now to our central concern, notice that the very existence of (12b) and the grammatical examples in (15) shows that a special interpretation of impersonal *il* (if there were any) would not be sufficient to predict the DE. Milsark's approach to the DE, which depends crucially on setting up a conflict between definiteness (universality in his account, cf. 5.3) and 'existential quantification' is thus not available

here. His approach would require treating impersonal *il* as an existential quantifier in order to capture the DE in (10), yet if this were so, then the examples in (12b) and (15c) should all be ungrammatical by the same reasoning.

Rather I conclude that the crucial factor in predicting the DE is whether or not the PVNP is in a Casemarked position. When it is not, then the DE holds, as a θ-chain is formed that can only be well-formed if the PVNP is indefinite. Thus Principle (C), Case theory, and the INPP suffice to predict the distribution of the DE in French. I shall return to some of these matters, however, in 4.4 and 6.2.

4.3.0. German and Dutch Impersonals.

I turn now to another construction where the prediction made in 4.1 is borne out, namely, impersonal sentences in Dutch and German. Once again, it will be shown that the DE can be neutralized in contexts where it is otherwise expected whenever a separate Case source obviates the necessity of forming an unbalanced θ-chain to satisfy the Case Filter. Moreover, some properties of the Dutch and German constructions will require interesting adjustments in the statement of the INPP that will prefigure much of the discussion in the next chapter.

4.3.1. Some Analytic Assumptions.

I assume that German is underlyingly SOV as has been argued by Bach (1962), Bierwisch (1963) and more recently by Koster (1975) and Thiersch (1978). I assume further that

A) An instance of Move α fronts final tensed verbs in

matrix clauses to S-adjoined position adjacent to COMP (second position, hereafter, V/2).

B) COMP is always lexically filled in matrix clauses, but not with a complementizer.

C) In subordinate clauses, there is no V/2 (except in special circumstances.

All of these properties follow from the Head Uniqueness Principle and the assumptions associated with it as presented in Safir (1981b) and Safir and Pesetsky (1981), but it will suffice for our purposes here to simply assume that (A), (B) and (C) hold. Thus the structure of (18) is assumed to be (20), and the structure of the subordinate of (19) is (21).

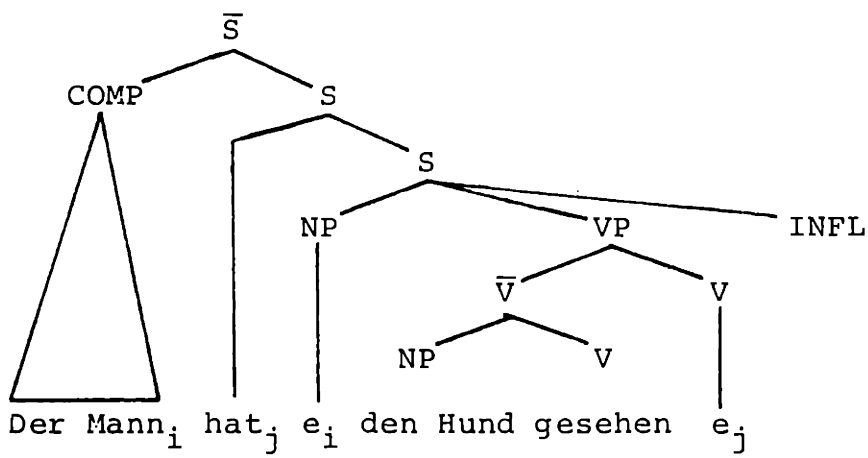
18) Der Mann nat den Hund gesehen.

the+NOM man has the+ACC dog seen

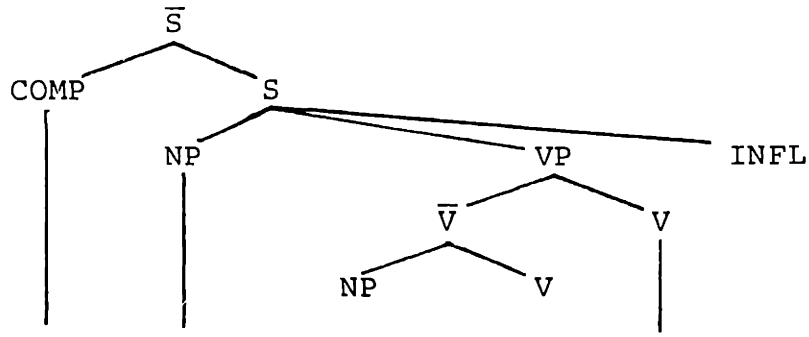
19) Er sagte dass der Mann den Hund gesehen hat.

he said that the+NOM man the+ACC dog seen has

20)



21)



dass der Mann den Hund gesehen hat

I shall call the base generated S-daughter position (occupied by trace in (20) and *der Mann* in (21)) "subject position" and assume that it is assigned Nominative Case in tensed sentences (it will not concern us here whether NOM Case is 'structural' or by government from INFL, but for the sake of concreteness I will assume the latter). I shall call the NP sister of the main verb the "direct object." In the most unmarked order in subordinate clauses, the direct object is also the closest NP (not in a PP) to the main verb by which it is assigned ACC Case, as in (19), though this matter will be discussed further below. Passivized verbs do not assign ACC Case, as is quite generally expected, and so the NP of (22) is overtly Nominative.

22) Der Hund wurde (von Johann) gesehen
the+NOM dog was (by Johann) seen

Dutch is basically the same as German in the above respects, except that Casemarking on full NP's is not overt in Dutch and verbs sometimes line up in a different order clause finally (inflected verb first in subordinate contexts) due to V-raising (cf. Evers (1975)).

23) ... dat Kees twee kinderen heeft gezien

23) ... that Kees two children has seen

Verb raising will not concern us here at all, but I shall routinely exploit the parallelism between German, where Casemarking is overt, and Dutch, where it is not, in order to clarify issues in Dutch.

Essentially, impersonal sentences in German and Dutch are parallel to the French impersonals investigated above. Certain predicates, such as passives, perception verbs, and some verbs of motion permit a NOM NP where ACC objects normally appear, while subject position is normally occupied by the rough equivalent of *there* in English, which is *er* in Dutch and *es* in German. In these cases the DE holds.

24a) Er kwam iemand/*de jongen door de deur.
there came someone/the boy through the door

b) Iemand/de jongen kwan door de deur.

25a) Es kommt jemand/*der Mann zürück.
there came someone/the man back

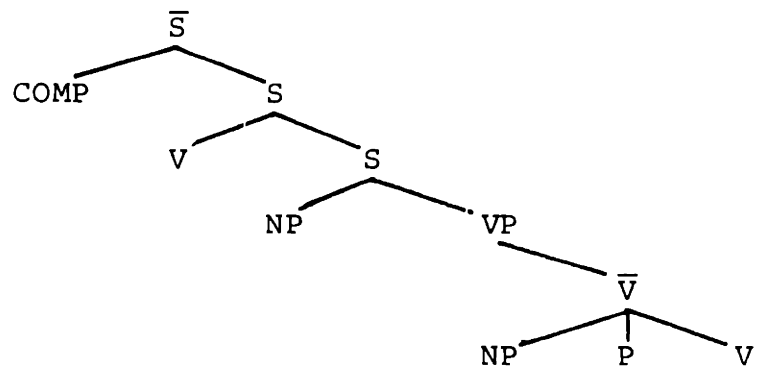
b) Jemand/der Mann kommt zürück.

I shall assume for German and Dutch, as I have in similar cases in French, that the NP *jemand/iemand* appearing (in these examples) to the right of the verb is not in a Casemarked position, and that it is well-formed with respect to the Case Filter only if it is in a Cased θ-chain, i.e., coindexed with *es/er* in Nominative-marked subject position (but see below).

Dutch and German differ with regard to the impersonal construction in the following respect: in Dutch, the impersonal pronoun *er* almost always appears in the surface string,

while in German, impersonal *es* can only appear in V/2 contexts as the element in COMP (though the *es* associated with extraposed sentences must sometimes appear, as must the *es* of weather predicates, cf. Haiman (1974), Breckinridge (1975) and 4.4.3). We may suppose for the time being that *es* is only inserted to satisfy (B) above (essentially Haiman's proposal, but cf. Breckinridge as well). Thus the structure of (25a) (and also of (24a)) is as in (26) (ignoring henceforth the INFL node)

26)



es_i $komm t_j$ e_i jemand$_i$ zürück e_j

The latter assumptions deserve some clarification. In example (25a), diagrammed in (26), where *es* appears in the matrix COMP, it follows that the Ā-bound trace in subject position is a variable. If variables are always arguments, then it should follow that there are two arguments at S-structure in the θ-chain in (26), i.e., the subject empty category (EC), which is a variable, and the indefinite NP in VP. Thus the θ-C should be violated in (26). It is quite reasonable to assume, however, that a variable can only be an argument if it has some semantic content, and that a variable has its semantic content determined in this respect by the element that binds

it.[10]

27) The semantic content of a variable is determined by its binder

Indeed it is hard to see how else a semantic value could possibly be assigned to a variable, if not by (27). If (27) is correct, then the trace in subject position in (26) is simply an expletive variable, as it is bound by an expletive element. If the variable is expletive in (26), then there is only one argument in the θ-chain, and the example is well-formed with respect to the θ-C. Thus the analysis presented here will not distinguish matrix from subordinate clauses with respect to the DE. As we shall see, this is the correct result.[11]

4.3.2. Prepositional Objects and Dative Objects.

Recall that the prediction of 4.1 is that the DE only appears where an unbalanced θ-chain is formed to permit Case inheritance and satisfy the Case Filter. It is further predicted that the DE will be neutralized where it might otherwise be expected if the Case Filter can be satisfied without forming an unbalanced θ-chain. In German and Dutch, just as in French, this prediction is borne out, and, for reasons to be discussed below, the accuracy of this prediction is even more transparent in German and Dutch than it is in French. A more complicated, but even more forceful argument will be developed in the next two subsections.

To begin, let us consider the impersonal passive construction in German.

28a) Es wurde ein alter Hund/*der Hund gesehen.

there was an old+NOM dog/*the+NOM dog seen

b) Es_i $[_S$ wurde $[_S$ e_i $[_{VP}[_{NP}$ ein alter Hund$]_i$ gesehen$]]]$

In the next section it will be shown that *ein alter Hund*, the Case inheriting NP, is in direct object position in similar examples, but for now let us simply assume that this is so. It follows that the θ-chain (e,ein alter Hund) is unbalanced, and that the DE should, and does, hold.[12]

But now consider instances of passive in German where the verb in question selects for a dative NP complement.

29a) Johann hat dem Mann geholfen.

Johann has the+DAT man helped

b) Dem Mann wurde (von Johann) geholfen.[13]

the+DAT man was (by Johann) helped

c) Es wurde dem Mann geholfen.[14]

there was the+DAT man helped

It seems that Dative Case is not absorbed by passive morphology in German. It follows that the NP complement of *helfen* receives Case in place directly in German, even in passive structures. Thus no unbalanced θ-chain need be formed to satisfy the Case Filter, Principle (C) is not violated and the DE is neutralized, exactly as predicted.

The same point can be made for verb-selected prepositional objects. Both German and Dutch lack pseudopassives. Thus there is no Case absorption of the prepositions selected by the verbs in the German and Dutch examples in (30) and (31) respectively.

30a) Johann hat an den Hund gedacht.
Johann has of the+ACC dog thought

b) Es Wurde an den Hund gedacht.
there was of the+ACC dog thought

31a) Kees heeft aan het kind gedacht.
Kees has of the child thought

b) Er werd aan het kind gedacht.
there was of the child thought

Moreover, the overt ACC Case in the German examples above shows that the absence of the DE in (29c) is not simply a product of Dative Casemarking, but of Casemarking in general. In any event, the examples in (30) and (31) are thus parallel to many of the French impersonals discussed in 4.2. As in those cases, the presence of the preposition assigning Case to its object neutralizes the DE, as we have learned to expect.

It is worth pointing out here that in German and Dutch, unlike French, impersonal passives with prepositional objects are found quite generally, and not limited to a special class of verbs, as they are in French. I believe that this is due to the fact that German and Dutch, as pointed out in (13) (for German), allow 'stripped predicates.' Thus whether the verb+preposition combination counts as 'closely related' or not, the impersonal passive will still be grammatical, as the passivized verb need not have an argument to be well-formed. It seems that the "No Stripped Predicate Parameter" is not without some explanatory force.

A point more central to our discussion, however, is that in German and Dutch, the presence of the impersonal element *es* or *er* is not sufficient to predict the distribution of the DE, as is illustrated by (30) and (31), and this presents further difficulty for any analysis of the DE which makes crucial reference to the presence of an impersonal element, such as that of Milsark.

4.3.3. Nominative/Dative Inversion.

Another context where the DE is neutralized in Dutch and German is of special interest, as it prefigures the discussion of PRO-drop in Chapter VI. The construction in question is NOM/DAT inversion, recently discussed by den Besten (1981).

Den Besten shows that a certain type of *wh*-extraction, *was für* split in German and *wat voor* split in Dutch, is only possible from direct object position as in (34), but never from Dative NP's (33)[15] or from subject position (32) in German or Dutch. (Examples from den Besten marked DB.)

32a) **Wat* hebben *voor mensen* jou geholpen? (DB)
Was haben *für Leute* dir geholfen? (DB)
what have for people you helped
"What sort of people have helped you"

b) *Wat voor mensen* hebben jou geholpen? (DB)
Was für Leute haben dir geholfen?

33a) **Wat* heb jij *voor mensen* je stuk gestuurd? (DB)
**Was* hast Du *für Leuten* deinen Aufsatz geschickt? (DB)

what have you for people your paper sent

"What sort of people have you sent your paper to"

33b) *Wat voor mensen* heb jij je stuk gestuurd? (DB)

Was für Leuten hast Du deinen Aufsatz geschickt?

34a) *Wat* heb jij in Italie *voor musea* bezocht? (DB)

Was hast du in Italien *für Museen* besucht? (DB)

what have you in Italy for museums visited

"What sort of museums did you visit in Italy"

Wat voor musea heb jij in Italie bezocht? (DB)

Was für Museen hast Du in Italien besucht?

The (b) examples show that extraction is normally permitted from these positions if there is no split. Perception verbs and the passives of double object verbs show the same properties.

35a) **Wat* zijn *voor rare verhalen* jouw vader verteld? (DB)

**Was* wurden *für merkwürdige Geschichte* deinem Vater erzählt?

what are for strange stories you father told

"What sort of strange stories have been told to your father"

b) *Wat voor rare verhalen* zijn jouw vader verteld? (DB)

Was für merkwürdige Geschichte wurden deinem Vater erzählt?

36a) **Wat* zouden *voor boeken* Peter nou bevallen? (DB)

**Was* wurden *für Bücher* Peter gefallen?

what would for books Peter (now) please

"What sort of books would please Peter (I wonder)?

b) *Wat voor boeken* zouden Peter nou bevallen? (DB)

36b) *Was für Bücher* wurden Peter gefallen?

Wat voor/was für split is possible for what in German is the Nominative NP if the order of the Nominative and Dative NP's is inverted, however. Note also, in the Dutch examples, the presence of *er* is optional.[16]

37a) *Wat* zijn (er) jouw *voor rare verhalen* verteld? (DB)

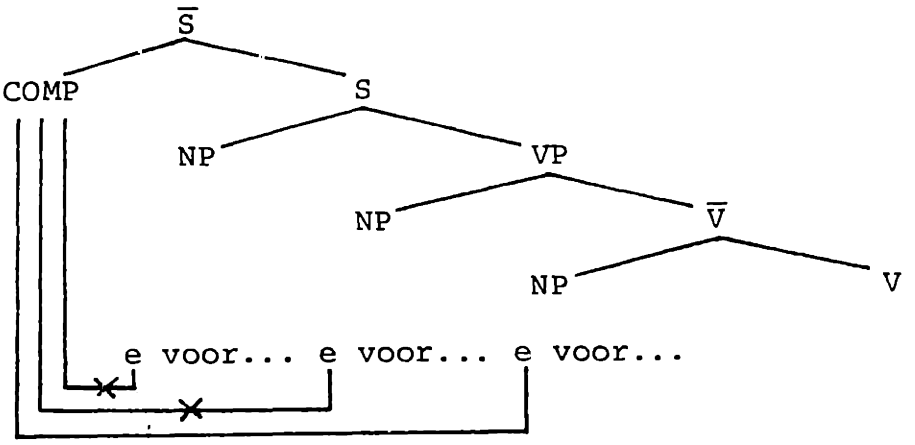
b) ?*Was* wurden da deinem Vater *für merkwürdige Geschichte* erzählt?

38a) *Wat* zouden Peter nou *voor boeken* bevallen? (DB)

b) ??*Was* wurden da Peter *fur Bucher* gefallen?

I thus accept den Besten's conclusion that the Nominative NP's in these 'inverted' structures are in direct object position, and I assume with him that they are base generated there. The pattern of permissable extractions is represented in den Besten's diagram, reproduced in (39).

39)



I now set aside, for reasons to become clear in the next subsection, the parallel with German, and I concentrate on the Dutch construction.

Returning to the DE, notice that when *er* is present in examples parallel to (37) and (38) without any extraction, the

NP that would be Nominative in German must be indefinite.

40a) Hij zie, dat er mijn oom een boek/*het boek gegeven zal worden.

he said that there my uncle a book/the book given will be

"He said that a/the book will be given to my uncle"

40b) Hij zei, dat er Karel een boek/*het boek bevallen is.

he said that there Karel a book/the book pleased has

"He said that the book has pleased Karel"

This is, of course, to be expected, but what is not expected is that when the *er* is absent, the verb-adjacent Nominative NP can be definite.

41) Hij zei, dat Karel een boek/het boek bevallen is.

42) Hij zei, dat mijn oom een boek/het boek gegeven zal worden.

The analysis of the DE we have developed thus far would force us to conclude that the direct object *het boek* is assigned Nominative Case directly in place, rather than by coindexation with the subject position.

In fact den Besten follows an independent path to the very same conclusion. As he notes, *er* is normally obligatory in Dutch (but see 4.3.4) when the Nominative NP appears to the right as in (43) (from Perlmutter and Zaenen (1978)).

43) Ik verwachtte dat *(er) voor Marie's handtas niemand zou terugkomen

I expected that (there) for Marie's purse noone would come-back

"I expected that noone would come back for Marie's purse"

It is only in cases like (41) and (42) where the verb in question takes a Dative complement that Nominative direct objects without *er* are allowed. To account for the phenomenon of Nominative/Dative inversion (the cases with *er*), den Besten makes the following assumptions (to which I have added additional remarks in parentheses).

A) Dative Case is assigned (or inherent) to $\overline{V}$ sisters of the relevant predicates[17]

B) The subject NP position is obligatorily generated (cf. Chomsky (1981a)[18]

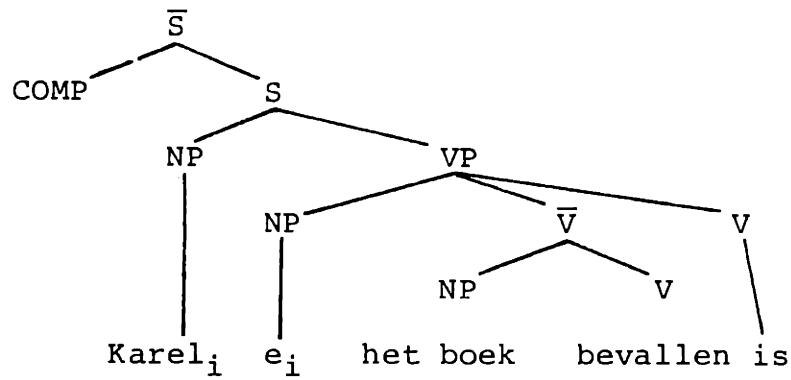
C) A Dative NP can move to subject position retaining its Casemarking (PP's cannot occupy subject position because it is an NP position).

D) In Dutch and German, but not in English, Nominative Case can be assigned to the direct object position if the subject position cannot be assigned Nominative

Den Besten's *was für* split argument supports the 'small VP' analysis (Williams (1974)) in (A), and he gives other arguments as well that do not concern us here (cf. also Jaeggli (1980b) for arguments to this effect in Romance). I have been assuming (B) throughout and I will continue to do so. Part of (D) follows from (C), the θ-C and Case conflict. The Dative NP must be coindexed with its θ-position in the VP in order to be assigned a θ-role, but coindexing within a θ-chain also transmits Case. If a Dative NP in subject position were assigned Nominative Case, Case conflict would arise, and the sentence would be excluded. (I assume without argument that Case conflict is a PF filter.) In any event, (D) is what allows the possibility of Nominative assignment when the subject position is filled with a Dative NP. In terms of the theory developed

here, the NP in object position is Caseless and cannot get Case by coindexation with the subject position, which is both Dative and part of a separate θ-chain. Thus the direct object must get Case directly by (D), or sentences like those in (41) and (42) should not be possible. The subordinate clause of (41) is diagrammed in (44).

44)



Although it is not a point he stresses, it is worth noting that den Besten assumes both perception verbs and the passives of double object verbs have no 'external argument' in Williams' (1980) sense. That is to say, none of these predicates assign a θ-role to subject position, rather both θ-roles are assigned internal to VP, one to direct object position, and one to the V̄ sister Dative position. Thus either of these arguments can move to subject position without violating the θ-C. The 'active' perception verbs are also parallel to the passives of the double NP complement verbs in that neither assigns Accusative Case. This follows from the generalization pointed out by Burzio (1981) and Chomsky (1981) that verbs without external arguments do not assign Accusative Case. These matters do not bear directly on the present discussion, but I shall return to them at least in part in later sections (e.g.,

4.4).

Now let us return to the Nominative Case assignment rule in (D). Den Besten formulates it in terms of 'chain government' which is motivated only by this special case of Nominative assignment.[19] I shall assume instead (45) which, though stipulative, has the right properties for the matters presently under discussion.

45) INFL+tense assigns [+NOM] by government. Otherwise, INFL+tense assigns [+NOM] in $\overline{V}$.

I intend (45) to mean that if INFL cannot assign Case to the subject position which it governs then assign NOM in $\overline{V}$. As is now evident, the direct assignment of Nominative Case in $\overline{V}$ predicts that the DE is neutralized in (41) and (42), but not in (43) where the "otherwise condition"[20] cannot apply because the PP has not moved into subject position.

Thus we have seen that direct Case assignment (be it Nominative, Accusative or Dative), as opposed to inherited Case, is directly correlated with the neutralization of the DE. This correlation follows from the interaction of the INPP with other general principles such as the θ-C, Principle (C) of the BC's and the Case Filter. "Otherwise Nominative assignment" is of special interest, I believe, because it provides the key to languages with inverted (post-verbal) Nominative subjects and no DE, such as Italian. In Chapter VI, I will argue that in Italian, definite postverbal Nominatives must therefore receive Case by direct assignment, rather than by Case inheritance, and this entails a new analysis of the

PRO-drop parameter. These matters can be put aside for now, however. Instead, let us see what more can be learned about Case inheritance and the INPP from Dutch and German impersonal sentences.

4.3.4. Nominative/Dative Inversion and the INPP.

In the last subsection, I postponed discussion of German impersonal sentences with respect to Otherwise Nominative assignment because, as noted earlier, *es* does not appear except in matrix COMP. This means that the argument that Dative NP's move to subject position (replacing *er* in Dutch) is not transparent in German. Given that the Otherwise Nominative assignment rule only applies if a Dative moves to subject position, den Besten's argument for Dutch cannot establish that Dative moves to subject position in German. However, if the DE holds for German sentences parallel to (41) and (42), then we know that the Otherwise Nominative rule has not applied.

46) Er sagte, dass meinem Vater diese Geschichte nicht gefiel.(DB)

he said, that my+DAT father this+NOM story not pleased

47) Er sagte, dass unserem Museum diese Urne geschenkt worden ist.(DB)

he said, that our+DAT Museum this+NOM urn given been has

The DE does not hold, however, and so the Otherwise Nominative rule must have applied. Note that the DE does appear to hold in German where we would expect it to hold in Dutch, as in (48) parallel to the German example (49).

48) Ik verwachtte da er voor Marie's handtas niemand/ *de kind zou terugkomen.

I expected that there for Marie's purse noone would come back

"I expected that noone would come back for Marie's purse" (P and Z)

49) Er sagte, dass im Zimmer ein Mann/*der Mann wartete.

he said that in+the+DAT room a+NOM man/the+NOM man waited

"He said that a man/the man waited in the room"

Since the DE holds in (49), it follows that the NP *ein Mann* must be in VP, bound by an empty category in subject position to the left of the PP *im Zimmer* as in (50).

50) ... [$\bar{S}$ dass [S e_i [S PP ein $Mann_i$ wartete]]]

In (46) and (47), by comparison, the structure must be (51).

51) ... [$\bar{S}$ dass [S NP+DAT$_i$ [VP e_i [$\bar{V}$ NP+NOM V]]]]

The fact that the Dative NP has moved to subject position in (46) and (47) is now detectable only by the prediction made here, namely, that the DE holds in (49), but not in (47) and (48), since in the latter two examples, Case assignment is direct to the direct object (overtly Nominative in German) by Otherwise Nominative assignment, and no unbalanced θ-chain is formed.

Before drawing further conclusions from the German data, however, it is worth pointing out that the same facts also hold for a dialect of Dutch, call it "Dutch A" (DA),[21] which is exactly like standard Dutch (in the relevant respects), except that the *er* of impersonals can always be optionally dropped. Thus the following example (from Perlmutter and

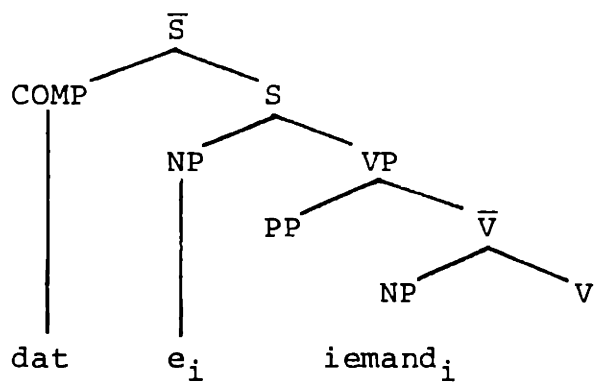
Zaenen (1978), hereafter, P&Z) is ungrammatical in standard Dutch, but permissible in DA, if the verb-adjacent NP is indefinite.

52) Ik verwachtte dat voor Marie's handtas niemand/*de kind zou terugkomen. (adapted from P&Z, gloss as in (49))

I conclude, as P&Z do, that, as in German, an empty element[22] is present in subject position, and that it passes its Nominative Casemarking to the verb-adjacent Nominative in these examples.

There are some important results embedded in this analysis. First of all, it appears, as noted above, that Case can be inherited not only from an empty category, but one that is not bound by any higher NP. In this respect, the subject of the subordinate clause in (52) contrasts with that of (26) in 4.3.1.

53)



Notice that up to this subsection, I have only been able to claim that Case transmission to a full lexical NP by coindexing within a θ-chain is a necessary condition for the DE to hold, but I have not shown that it is a sufficient condition. In every example preceding this subsection, the DE held of sentences that had some impersonal NP, though I showed that

this did not hold for all such sentences. Examples like (49) in German and (52) in DA, however, show conclusively that the DE can be predicted exclusively on the basis of Case inheritance in a θ-chain, and that whether or not the θ-chain is headed by an impersonal lexical item or not is irrelevant for the DE.

Now we may ask what the nature of the empty element is in examples like (50) and (53). Since the empty subject is not a variable and is not in a θ-chain, it is an anaphor, and as it is free, it is pronominal (cf. the functional definitions of empty categories in Chapter II), i.e., it is PRO. If the subject PRO is an argument, however, then it is in violation of the θ-C, since the θ-chain (PRO,iemand) of (53) would then contain two arguments. Thus the subject PRO in (50) and (53) must be expletive (EPRO). If the subject is expletive, then it must be governed, as all empty expletive elements must be governed (cf. Chapter II). The EPRO subject is, in fact, governed in both (50) and (53), since these are tensed sentences. But if any PRO, including EPRO, has a governing category, then it should be excluded by the Binding Conditions. It seems straightforward that sentences like (50) and (53) ought to be excluded, therefore, by the BC's (Principles (A) and (B)) because they contain governed PRO.

Of course, (50) and (53) appear to be ungrammatical for another reason, namely, that the 'names' *iemand* and *ein Mann* are A-bound, and have to be free to satisfy Principle (C) of the BC's. This problem was circumvented by the INPP, which at

the same time permitted us to predict the DE. In order to save the subject empty category of (50) and (53), I propose that the INPP be extended as follows.

54) INPP (provisional)

Indefinite θ-chains are exempted from the BC's at S-structure.

I postpone further modifications and discussion of the INPP to the next chapter, but it is clear that the INPP solves the problem of the governed EPRO of (50) and (53). In both of these examples, the EPRO is in an indefinite θ-chain (a θ-chain containing no definite NP's), and thus is exempted from the BC's at S-structure. In this circumstance, then (and, as we shall see, only in this circumstance), EPRO can exist, Case inheritance succeeds, and the examples in (50) and (53) are now predicted to be grammatical.

The revision of the INPP in (54) extends the explanatory force of this principle beyond the position inheriting Case. From a larger perspective, this is an important result, in that the INPP is now a principle that holds of θ-chains, thus providing further evidence for the central role of these entities (θ-chains) in universal grammar.

4.4.0. The List Interpretation and Presentational Impersonals.

In the preceding sections, I have established that the DE is a property of θ-chains wherein a full lexical NP inherits Case. In this section I shall extend the converse of this analysis (no unbalanced θ-chain, no DE) to the 'list' reading of *there*-sentences (TS's) in English, as opposed to the existen-

tial' reading associated with the DE as discussed in 4.1. The distribution of the list reading will then serve to focus my discussion of the distinction I shall propose between "ergative impersonal sentences" and "presentational impersonal sentences." The latter distinction will group a class of partial exceptions to the DE under a different generalization, and thus enable us to set that class aside in a systematic way.

4.4.1. IBE, PBE and the List Interpretation.

The distinction between the list and existential readings was briefly discussed in 4.1. Up to now, I have been disregarding the list examples, such as (2), repeated below as (55).

55) A: Who do we have to play Othello?

B: Well, there's John, his uncle, and the man with the limp.

It is easy to see why examples such as (55) constitute a problem if *be* does not assign Case. If the latter is true, we predict that the postverbal NP's must get Case by coindexation with *there* at S-structure, but that Principle (C) will then be violated since definite NP's are visible to the BC's at S-structure. On the other hand, if *be* assigns Case to the postverbal NP in list TS's, then the explanation that predicts the DE for existential TS's in 4.1 must be recast.

The dilemma, however, is only apparent. I propose, and the suggestion is hardly novel, that there are at least two quite separate lexical entries for *be*, one of them known variously as "equative," "specificational" (cf. Higgins

(1973b)) or, as I shall call it, "identificational" BE,[23] and the other commonly known as "predicational" BE. I shall argue that the BE that appears in list TS's is the 'identificational' one, hereafter IBE, which assigns Case. Existential TS's, I shall argue, are instances of "predicational" BE, hereafter PBE, which does not assign Case. Other properties peculiar to IBE will also be shown to show up in the list TS's, and these will contrast, as we would expect, with properties of existential TS's that are also attributable to PBE.

IBE is generally considered to be present in (56).

56a) John is the president.

b) The president is John.

Very loosely speaking, IBE 'identifies' or 'specifies' one of its NP's, call it NPa, in terms of some other specific property or label, expressed by NPb, which could also stand for NPa. These sentences are roughly synonymous when the NP's are reversed, although there is a vague presupposition (with unmarked final stress) that *John* is the 'known identity' in (56a), while *the president* is the 'new identity,' this situation being reversed in (56b). However, if the subject is (noncontrastively) stressed, and thereby focussed, then *the president* becomes the 'known identity' in (56a) and *John* is the 'new identity' (similarly in (56b)). Thus it appears that the 'new identity' is the NP, be it the subject or not, that is focussed by sentence stress. Abstracting away from (stress influenced) presuppositions, I shall treat (56a) and (56b) as synonymous (nothing crucial depends on this assumption, how-

ever). This rather sketchy (and somewhat simplistic)[24] treatment of the meaning of IBE will more or less suffice for our discussion, although I shall elaborate further on the interpretation of IBE below.

PBE, on the other hand, is essentially without meaning, although I adopt Stowell's (1978) proposal that it subcategorizes for a small clause (perhaps to be thought of as an internal argument). Thus the 'predicative' property is simply expressed by the structure of the small clause selected by PBE, and not by any intrinsic meaning of PBE.

57) $John_i$ is $[_{sc}\ e_i$ silly]

In fact, PBE is merely a bearer of tense and of aspect features, and can be omitted when no such features are present.

58a) I thought John to be quite silly.

b) I thought John quite silly.

Now let us consider the formal properties of IBE more closely. The parallel between (59a) and (59b), which are virtually synonymous, is well known.

59a) I thought John to be a fool.

b) I thought John a fool.

The *be* present in (59a) appears to be PBE, which, as in the case of (58b) can be omitted. Notice, however, the strong contrast between (60a) and (60b).[25]

60a) I thought Shakespeare to be the author of *The Tempest*

b) *I thought Shakespeare the author of *The Tempest*

Although a number of qualifications must be made, it is gener-

ally the case that definite NP's are not used predicatively (cf. Chapter V). Let us suppose that this is so. Now notice that the small clause containing *Shakespeare* and *the author of The Tempest* in (60b) contains two arguments and no predicate, and therefore constitutes a violation of the θ-C. The example in (60a), on the other hand, has IBE to count as a predicate taking two arguments. Thus if a small clause contains two NP's, then one must be indefinite in order to be a predicate.

Given the assumption that definite NP's cannot, in general, be predicates, the logic of the above paragraph leads to the conclusion that IBE has two arguments filling two θ-positions. If IBE has two θ-positions, however, then there is no θ-chain that can be formed between the postverbal and preverbal positions, and therefore the postverbal NP cannot inherit Case. As discussed in the last chapter, moreover, the NP following IBE cannot get Case by agreement either, as shown by (61), wherein the subject of IBE is PRO.

61) [PRO to be the president] would be terrific.

Since the postverbal NP of IBE sentences cannot get Case by inheritance, and cannot always get Case by agreement (if it ever can), then IBE must assign Case, or else IBE sentences would not exist.

Even more straightforward evidence that IBE assigns Case is provided by sentences like (62).

62) It's me/I

Although some speakers prefer a Nominative pronoun in (62),

most Americans prefer an Accusative pronoun, but the end result is the same: the postverbal NP is assigned Case by IBE.[26] The reading of (62) is clearly identificational, in that the speaker is identified, just as the real villain is identified in (63).

63) The real villain is him.

There is also evidence that PBE does not assign Case, though this depends in part on the assumption, argued for in 5.1.3, that expletive *it* is never inserted in a 0-chain. In the last chapter, for example, it was argued that expletive *it* is not in a 0-chain with an extraposed $\overline{S}$, but can appear to fill a position where Case is assigned and must be realized. With this in mind, consider (64), where *it* has been inserted to realize NOM Case.

64) *It is a man sick.

If *it* is never in a 0-chain, then *it* is not coindexed with *a man*, which is in a 0-chain. If PBE assigned Case to *a man*, then, contrary to fact, we would expect (64) to be grammatical. A further argument against the assumption that PBE assigns Case is presented in 5.2.3 (cf. the parallel with *exist*).

The next step is to show that list TS's are instances of IBE and not PBE. The first argument that this is so is that it would account plausibly for the semantics of the list interpretation. A list, after all, is a specification of the elements that fit under a given 'heading' (cf. Higgins (1973b)). IBE thus routinely allows such interpretations.

65) The starting five are Bob, Carol, Alice, Ted and Lenin

Now suppose that *there* plays a special role in list TS's in that it stands for some discourse-controlled presupposed heading of the list.[27] The list may contain only one member, and/or it may contain indefinites, but the crucial property of the list interpretation is that it permits definite NP's.

66) A: What's left in the back room?

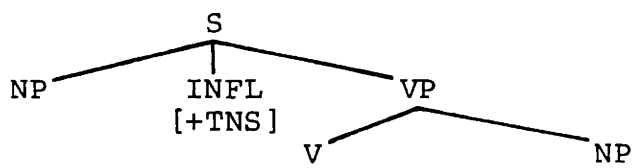
B: a) There's an old hat rack, two pairs of socks, and a Junior Wells poster.

b) There's only the picture of Guitar Slim.

c) There's the bullet mike, the extension cord, and several old 45's.

The structure of examples like (66b) is as in (67).

67)



$there_k$ IBE only the picture of G.S.$_j$

In (67), $there_k$ and *only the picture of Guitar Slim*$_j$ are each in θ-positions, and thus cannot form a θ-chain together. The subject *there* is assigned NOM Case by INFL, and *only the picture of Guitar Slim* is assigned Case by IBE. Since the object of IBE is assigned Case without participating in an unbalanced θ-chain, it follows that definite NP's are permitted there. Thus the Case assigning property of IBE explains how definite NP's can appear in TS's with *be*, and why the list interpretation occurs when they do.

It is perhaps worth digressing here to comment on the role of *there* in list TS's. If the list reading is dependent on the ability of "list" *there* to pick up a 'list heading'

from discourse, then the list reading should not be possible in contexts where *there* cannot get Case, even though other IBE sentences are possible in this context.

68) To be the author of *The Tempest* was easy for Shakespeare.

69) A: I don't think that even five people will show up.

B: a) ?For there to be just John, Bill and Harry would itself be a sort of moral victory.

b) *PRO to be John, Bill and Harry would itself be a sort of moral victory.

(69b) is not exactly ungrammatical, but it has a very peculiar reading whereby 'for some arbitrary person to be John, Bill and Harry would itself be a sort of moral victory.' This latter interpretation is just a fact about ARB PRO, and is thus not relevant to our concerns.[28] This seems to show, however, that for the list reading to be free to pick up any presupposition from discourse, it must be empty of semantic content, as we may suppose *there* to be. Since list *there* is acting like an argument in syntax, however, it must still be in a 0-chain, as it is in the grammatical examples above.

Let us return now from our slight digression to consider another property of the IBE/PBE contrast that also appears in the list/existential reading contrast. This contrast concerns complementation. Consider (70).

70a) There is a man in the garden

b) There is the man in the garden

In (70a), we might be learning where there is a man, but in (70b), the man in question has an attribute by which he is

known, namely, the fact that this particular man is in the garden. Thus *in the garden* is an attribute of *the man* in (70b), whereas in (70a), *in the garden* can be a property that might hold of some individual (*a man*) just in case he happens to be in the garden. The attributive reading is typical of this NP-PP pair when it is a constituent.

71a) A/the man in the garden likes Buddy Guy

b) Junior told a/the man in the garden to leave

It is clear that *in the garden* is attributive when it appears as part of the subject as in (71a), or as part of the object, as in (71b), and so I shall assume that the reason *in the garden* is attributive in (70b) is that it is part of an NP, *the man in the garden*. As discussed earlier, (70a), with PBE, subcategorizes for a small clause. Thus the fact that IBE takes only an NP complement is reflected in the character of list TS's.[29]

The properties of IBE vs. PBE as they are reflected in the contrast between the list and existential readings are summarized below.

72)

IBE	PBE
A. Assigns Case	A. Does not assign Case
B. Has 'identificational' meaning	B. Has no meaning
C. Has two θ-positions, including an external argument	C. Has no external argument
D. Takes only an NP complement	D. Takes a small clause complement

I conclude that the theory of θ-chains that predicts

the distribution of the DE can be extended to list TS's, where, for principled reasons, it is predicted that if the DE does not hold, then direct Case assignment must be available for the postverbal NP, i.e., no unbalanced θ-chain is formed.

4.4.2. Ergative Impersonals and Presentational Impersonals.

This section is largely concerned with descriptive generalizations that seem to correlate with the distribution of unbalanced θ-chains, but that violate the DE. Although these generalizations are not explained by my account of the DE (or by any other), many of the distinctions made here will, however, be instructive with regard to other constructions with postverbal subjects to be discussed in Chapter VI and in Appendix I.

As noted by Milsark, there are at least two classes of TS's with verbs other than *be* in English. Milsark called one of these classes "inside verbals" and the other class "outside verbals."

73a) There hung a coat/*the coat on the wall.

b) There arose a/*the terrible storm.

c) There developed a/*the serious problem.

74a) There hung on the wall the flag of the country John had fled.

b) There walked/ran/drove into the parking lot the old man who hated drive-in movies.

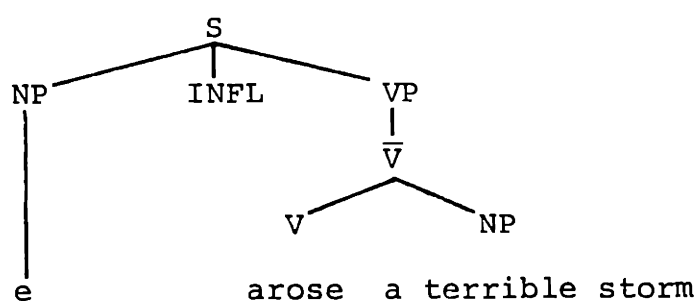
c) There developed at the meeting the view that no amount of toffee would placate the labor negociators.

It is remarked in Milsark (1974) that the DE holds for internal verbals, such as those in (73), and that inside verbals can

be characterized as a class as "verbs of being or coming into being" (as originally observed by Kimball (1973)). Intuitions vary more with respect to verbs like *hang* in (73), which do not quite fit the foregoing description. The outside verbals both fail to observe the DE, and the semantic characterization just above certainly does not extend to verbs of (volitional) locomotion, such as those in (74b). Thus inside verbals and outside verbals are distinct classes of verbs, although it may be that inside verbals are a subclass of the class of outside verbals.

The internal verbals have been analyzed by Burzio (1981) as "ergative" verbs, by which he means intransitive verbs the only argument of which is in direct object position in D-structure. The D-structure of an inside verbal like *arise*, according to Burzio, is as in (75).

75)



Under the analysis proposed here, the fact that the DE holds of the PVNP for inside verbals entails that the postverbal subject must inherit Case from the subject position, and *there* must appear to satisfy the Case Realization Condition for Nominative Case, as in (76).

76) There_i arose a terrible storm_i (S-structure)

Burzio shows that ergative verbs like *develop* and *arise* are

distinct from those like *walk* or transitives like *kill* in that *-er* affixation succeeds with non-ergatives, but not with ergatives, as illustrated in (77).

77a) John is a good walker.

b) John is a shameless killer.

c) *This idea is a terrific developer.

d) *This problem is a fast ariser.

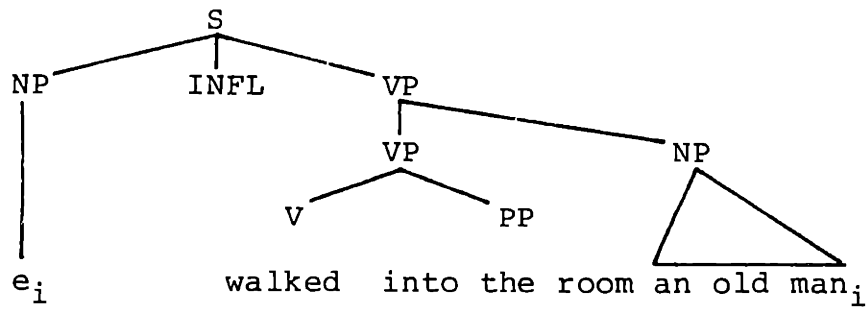
(For further distinctions of this sort, see Burzio (1981)). While evidence such as that in (77) does not show that (75) is necessarily the right structure for ergatives it does show that ergatives form a distinct class of verbs. The fact that the PVNP of inside verbals always appears adjacent to the ergative verb (compare (73c) with (74c) and (73a) with (74a)), suggests that Burzio's analysis is correct. Moreover, if Milsark's observation that inside verbals should fall under the same generalization as *there be* is correct, then Burzio's structure in (75) suggests that verbs for which the DE holds in English are all those that are base generated with a post-verbal 0-position that is a sister to V.

The outside verbals are generally known as "presentational" TS's, and, as illustrated in (74), they are usually VP final. In the case of *walk*, if Burzio's structural analysis of the ergatives is correct (and I shall henceforth assume that it is), then the element that was in preverbal subject position at D-structure must have moved to the right as in the examples in (74), those in (78) and the diagram of (78a) in (79).

78a) There walked into the room an old man.

b) There entered the room an old man.

79)



The reason I assume that the PVNP is in VP, and not adjoined to S, for example, is that *there* must be inserted in subject position in order for NOM Case to be realized where it is assigned. If the PVNP were S-adjoined, it would be unnecessary to insert *there*, as the subject position would be $\bar{A}$-bound (S-adjoined positions are not A-positions because they can never be θ-positions) and therefore count as a variable. In the latter situation, we would expect that *there* sentences like those above could be grammatical without *there*, just as the trace of *wh*-movement is.

80) Who_i did John say e_i saw Bill

These matters are taken up in the next chapter, where *there* insertion is formulated, and in Appendix I, and so I will drop further discussion here. Let us simply assume that English is not a missing subject language, and so the subject must appear if it is not a variable (but cf. Chapter VI where missing subject languages are discussed in detail). Thus the rightward moved subject NP must be adjoined where it does not $\bar{A}$-bind the subject position, and under the general assumption that elements moving to the right adjoin to the right (Baltin

(1978)), it follows that all of the elements in VP are to the left of the PVNP.

Now the structures in (75) and (79), while distinguishable, pose a problem, since the formation of an unbalanced θ-chain is required in both instances in order for the PVNP to inherit Case, yet "presentational impersonals" do not evidence the DE, while "ergative impersonals" do. It seems that presentational impersonals are systematically problematic for the unbalanced θ-chain account of the DE developed here.

While I will not attempt in this study to explain how the interpretation of presentationals arises, or why these cases can violate the DE, it will be relevant to some of the issues in Chapter VI to distinguish the characteristics of presentational impersonals from those of ergative impersonals, on the one hand, and to distinguish the latter two constructions from other less restricted subject inversions, such as free inversion in Italian, on the other. The latter distinctions will be discussed in Chapter VI, and so I restrict discussion here to the ergative/presentation contrast.

As it is generally described in the literature (cf. in particular Milsark (1974), Bolinger (1977), Rochemont (1978), and Gueron (1980), and references cited there), presentational interpretation seems to involve the introduction into discourse of a new element which is presented as the focus of the sentence. Presentational focus of this sort is not limited to TS's.

81) Into the room walked John.

Sentences like (81) will be discussed in Appendix I of this thesis, but it is of interest here to point out that presentational TS's differ from the inversion construction in (81) in that the former require 'heavy' PVNP's, if they are definite, preferably including a relative clause,[31] as noticed by Breckenridge (1975) with respect to German (cf. note 12).

82a) *There walked into the room John.

b) ?There walked into the room the Princess of Cleves.

c) There walked into the room the man who everyone thought would one day rule the world.

As was pointed out in note 4, moreover, with a strong enough presentational context, many unlikely predicates can be accommodated in presentational TS's (cf. also Gueron (1980)).

83) As we watched awestruck and horrified, there destroyed our village a gigantic explosion which lit up the skies for miles around.

The possibility of forcing presentational constructions upon otherwise unwilling predicates, given the appropriate context, is perhaps the most striking evidence of the force of discourse factors on the interpretation of presentational impersonals.

Some of the issues surrounding the interpretation of presentational vs. ergative impersonals can be further elucidated by considering *il* impersonal sentences in French, which appear to be quite uniformly of the ergative kind (for most speakers) and almost never appear to have the freedom of English presentational TS's.[32]

84a) *Il est arrivé l'homme qu'elle voulait aimer pendant toute sa vie.

"There arrived the man that she had wanted to love all her life"

84b) *Il dirigeaient vers la gare une grande foule qui était composée de mutilés de guerre.

"There walked toward the station a large crowd composed of disabled war veterans"

c) *Il marchait vers la gare trois types qui voulaient nous tuer.

"There walked towards the station three guys who wanted to kill us"

In (84a), an ergative impersonal appears with a definite PVNP, but the heaviness of the NP does not save the sentence, while in (84b) and (84c), presentational sentences with non-ergative verbs that are grammatical in English are ungrammatical in French. The failure of the French examples in (84) highlights another fact about French impersonals, which is that their reading does not appear to be presentational in the sense that the English sentences in (84) are.

85a) Il est arrivé un homme.

"There arrived a man"

b) Il a été tue un homme.

"There was killed a man"

French impersonals do not quite convey that some new element is introduced into discourse. Rather, to use Perlmutter's (1976) phrase describing similar sentences in Portuguese, French *il* impersonals provide, in general, "a neutral description of a state of affairs." Since they cannot be legitimized by a presentational context in the way that the English construction can, only the ergative impersonals are possible,

which, as argued in the literature cited earlier (in 4.2) is just what we expect if *il* impersonals are base generated. Moreover, as with English ergative impersonals, the DE holds relatively strictly.[33]

I have no proposal to offer as to why French should lack presentationals and English should not, although this seems to be the fact of the matter. Given this difference, however, it is possible to predict a difference between directly Case assigned PVNP's, such as those in list sentences, and Case inheriting PVNP's in presentationals. If direct Case assignment is crucial to the list interpretation, then list interpretations should not be available for ergative impersonals. With respect to presentationals in English, a list of definite NP's tends to be heavy, and most of the ergative impersonals (see below) can be interpreted as presentational. Thus the presence of a list after a presentational in English might give the impression that the list reading is an instance of the presentational reading.

86) ?There walked into the room John, Bill and Mary

But in French, where no presentational reading is available, it follows that the failure of the list interpretation should be more apparent.

87) A: Qui est arrivé? "Who arrived"

B: *Il est arrivé Jean, Marie, Isabelle et Nathalie.

But French does allow the list interpretation with the *il y a* construction, which otherwise evidences the DE.

88) A: Qui est-ce qu'on a pour jouer le role de Lear?

B: Il y a Jean, Marc, Daniel et Louis.

Of course the verb *avoir* is generally capable of being a Case assigner as a transitive verb meaning 'to have,' and so the possible appearance of definite NP's in this construction is not surprising.[34,35]

One final empirical point should be addressed. Notice that the English translation of (85b) is ungrammatical (repeated below as (89)) unless it is interpreted in some sort of presentational context (e.g., "First they sacrificed a chicken, then a bed of leaves was prepared, and then there was killed a man whose head had been shaved ...").

89) *There was killed a man.

It seems that in languages where the presentational impersonal interpretation is possible, it tends to be the preferred reading. This is a further mystery.

The contrasting properties of the two constructions under discussion in this subsection are summarized in the chart below.[36]

90)	Ergative Impersonals	Presentational Impersonals
	A. 'Neutral description of state of affairs' reading	A. Presentational focus reading
	B. Never permits definites	B. Permits definites if they are heavy, preferably with a relative clause
	C. The subject position is never a θ-position	C. The subject position can be a θ-position (e.g., *walk*)

D. PVNP is base generated in postverbal position	D. PVNP derived by movement and adjunction to VP

While this subsection raises many more questions than it answers, I have muddled through these issues because I intend to show in Chapter VI that presentational impersonals are restricted in ways typical of a subclass of languages in which the DE holds of ergative impersonals. I will argue that properties of the latter sort are both diagnostics for the presence of unbalanced θ-chains. Languages like Italian, by contrast, will be shown to allow PVNP's for ergative impersonals without the DE, and without the same sort of heaviness restrictions on definite PVNP's found in English or German. Thus Italian lacks both diagnostics of unbalanced θ-chains, a fact that will be explained in terms of the Free Inversion Parameter in Chapter VI.

It is important to keep in perspective, however, that the existence of presentational impersonals is not explained by the existence of unbalanced θ-chains. Rather, the presentational impersonals correlate, in the languages where they are possible at all (e.g., English and German, but not French) with the presence of unbalanced θ-chains. In the next chapter, where the explanation of the DE is sought, I shall set presentational impersonals aside as exceptional, as most theories do,[37] and concentrate my discussion on ergative impersonals, on the assumption that the presentational cases await a very different sort of explanation.

4.5. Summary.

The central result of this chapter is that the distribution of the Definiteness Effect can be predicted strictly on the basis of syntactic patterns of indexing induced, in those contexts where the DE holds, by the Case Filter and the mechanism of Case inheritance.

To establish the above conclusion, contrasts between contexts of Case inheritance and contexts of direct Case assignment were shown to correlate with a contrast between the presence of the DE and the absence of it, respectively, in a wide variety of impersonal constructions.

It has also been shown that the DE cannot be successfully correlated with the distribution of impersonal elements, since impersonal elements both appear in many contexts where the DE does not, and are absent in other contexts where the DE still holds (further evidence of the latter sort is presented in 6.3). Since Milsark's (1974,1977) approach to the DE relies on the latter correlation, his account, though an advance when it was proposed, is simply based on the wrong generalization. Moreover, since Milsark's explanation of the DE relies also on an interpretive rule that refers crucially to a specified lexical string (*there be*), the semantic contradiction he claims to generate in this fashion cannot be the correct explanation of the DE. Thus Milsark's account of the DE is both descriptively and explanatorily inadequate.

Some of the properties that, given current theoretical assumptions, any alternative explanation of the DE must have,

have already been isolated. These properties, expressed in the INPP in (54), amount to the claim that indefinite θ-chains can somehow escape the effects of the Binding Conditions at the relevant level. The proper instantiation of this idea within a theory of LF, and an approach to the deeper question of why this distinction between definites and indefinites should exist at all, is the subject of the next chapter.

An obvious consequence of the reasoning in this chapter is that both the Case Filter and Case inheritance within θ-chains must be theorems of grammatical theory. Furthermore, the DE is now established as a diagnostic for the presence of an unbalanced θ-chain. Therefore, where the DE fails to appear, we may conclude that no unbalanced θ-chain has been formed. While this diagnostic is not perfect (I was forced to set aside English presentational *there* constructions), it seems largely correct, and will serve as the basis of my reasoning in Chapters V and VI.

Moreover, the salient property of unbalanced θ-chains, the fact that they violate the Binding Conditions, is only entailed as a consequence of indexing if the same style of indexing relevant to the formation of θ-chains is also the style of indexing that is pertinent to the BC's.[38] This consequence, which informs the approach to the DE proposed in the next chapter, is insured by the UIH, which permits only one style of indexing in grammatical theory.

FOOTNOTES: Chapter IV

1. Further problems arise with respect to raising constructions. Since Milsark stresses that his interpretive rule must apply at S-structure, sentences like (4b) are problematic for even the elaborate structural description in (5). It seems that a crucial variable must be introduced, and then presumably constrained in some way.

i. There X AUX be NP Y

Though there may be a way around examples like (4b), the problem seems simply symptomatic of approaches that formulate rules characterizing constructions.

2. I am also assuming that locational TS's also derive from small clause structures, although I have nothing new to say concerning the ill-formedness of examples like ii. with *space*.

i. There is a man/a lot of space in the room.

ii. A man/*a lot of space is in the room.

Cf. Milsark (1974) for discussion and references.

3. With respect to the discussion in this chapter, the Case Filter of Rouveret and Vergnaud (1980) in Chomsky (1980) will suffice, although everything said in this chapter is compatible with the Revised Case Filter of Chapter III.

4. It is proposed by Pollock (1981) that verbs such as *arriver* as well as passivized verbs, such as *tué*, do in fact assign Case. This is intended to predict the contrast between verbs and true adjectives in i. through iii.

i. Il est arrivé un homme. "There arrived a man"

ii. Il a été tué un homme. "There was killed a man"

iii. *Il était stupide un homme. "There was stupid a man"

in that adjectives, unlike verbs, do not assign Case. The analysis presented here does not have this result, but in section 4.4.2 it is pointed out that French does not have 'presentational there' constructions in the same sense as those found in English, as opposed to 'ergative impersonal' constructions. The ergative construction is the base generated one, and if adjectives only take external arguments, then *un homme* fails to be in a base generated θ-position in iii., but not in i. and ii. The English translations form a paradigm of increasing ungrammaticality in i. through iii., but clearly iii. is the worst, as it lacks the 'coming into view, being, or discourse' reading normally required for presentational *there* structures (and much less so for the ergative structures, cf. 4.4.2). If one could strain to create such a context, one might agree with Bolinger (1977, p. 104) that iv. is grammatical.

iv. For there to be valid even one of those propositions, it first has to be proved that they were arrived at inductively

It would be bizarre to conclude from iv. that *valid*, unlike other adjectives, can assign Case. Rather it seems more plausible that it is possible to create an appropriate presentational context for some adjectives, although it is generally difficult to do so. Thus iii. is ungrammatical first, because no presentational context can be created, and second, because

French, in general, does not permit *il* presentationals with postverbal NP's in non-base positions. Cf. 4.4.2 where the reading of sentences like i. and ii. is discussed.

5. Cf. Kayne (1975), p. 245, note 51.

i. Il a été parlé de vos frères hier soir
"There was spoken of your brothers yesterday evening"

ii. Il les sera détruit
there them+ACC-CL will be destroyed

iii. Il lui a été tiré dessus
there them+DAT-CL was shot at (fired on)

The analysis in the text will explain the grammaticality of i. with a definite NP, exclude the (definite) direct object clitic (no ACC Case is assigned) and permit the Dative clitic in iii. (no unbalanced 0-chain is formed) though it is not obvious why the preposition *dessus* can be stranded. Although I shall present no explicit analysis of object or indirect object clitics, I believe these remarks will become clear as the analysis in the text unfolds.

6. I am ignoring the possibility that a subject clitic might inherit Case from a Casemarked position it binds, as in i. where the prepositional object is an indefinite NP.

i. *d'il être tirer sur un bateau.
for there to be shot at a boat

In 4.1, Case inheritance up in these contexts will be ruled out.

7. This is a simplification. Cf. Kayne (1981a) for details

concerning the assignment of "percolation projections." It is not necessary to assume that percolation projections exist in order to assume that there is not reanalysis in French in these contexts.

8. Pollock (1979) argues that French has reanalysis in a limited class of cases based on his analysis of how Case is assigned in impersonal constructions. He argues that reanalysis must be assumed in instances where movement has not applied to impersonal postverbal NP's (he does not allow Case inheritance and does not attempt to account for the DE). Pollock analyzes i. as a case of reanalysis.

i. Il faut qu(e) il/e soit mis *fin* à la guerre
it is-necessary that there/e be put *an end* to war

In the theory presented here, *fin* can be in a Casemarked chain with the subject empty category (or *il*). In Pollock's theory, by contrast, since *fin* cannot get Case by movement (he does not assume free indexing either), it is therefore incorporated into the verb to avoid the Case Filter which would otherwise apply to it.

Nonetheless, it may still be desireable to adopt reanalysis in the case of *mis fin*, even under the assumptions presented here, when *il* is missing in i. If the subordinate subject in i. is an empty category, and it is assigned Case, then Case ought to be phonetically realized in that position by *il* in every instance. The fact that *il* need not appear must be due to the optionality of assigning NOM Case in French

subjunctives, though NOM Case assignment is otherwise obligatory. The only instances where it is predicted that no Case assignment is necessary, as no Case inheritance is required, are as in ii., also cited by Pollock.

ii. Il faut que soit procédé à l'examen de cette question.

it is necessary that [e] be proceeded to the examination of this question

No NP need inherit Case in ii., since the postverbal NP *l'examen ...* gets case from *à*. Thus no *il* need appear, since no Case needs to be inherited by a postverbal NP. If *fin* is reanalyzed in i., then it is exactly parallel to ii., and *il* need not appear. (I am assuming that neither i. nor ii. is an instance of Stylistic Inversion, following Pollock. Stylistic Inversion will be discussed in Chapter VI and in the Appendix to this thesis.)

While this account of i. and ii. seems very neat, it makes the wrong prediction, at least with regard to the assumptions of this thesis, in examples like iii., also from Pollock (1979).

iii. *Il faut que e soit déclaré que Pierre est innocent

it is-necessary that [e] be declared that Pierre is innocent

If the $\overline{S}$ after *déclaré* does not have to be in a 0-chain with Case, then Case inheritance need not be necessary, and it ought to be possible to drop *il*. It is to be noted, however, that there ought also to be a Stylistic Inversion derivation for iii., although this seems excluded as well. Thus it is not obvious why iii. fails.

9. In the diagrams (20) and (21), the INFL node is treated as distinct from the node dominating *hat* (in (21)) or the trace of *hat* (in (20)). This is a simplification. In Safir (1981b) it is argued that a D-structure rule in German and Dutch collapses the highest V node with the INFL node, so that tense and the tensed verb move together. These matters are discussed in the reference cited and will not concern us here.

10. I assume that if an empty category x is bound by y and y is in turn an empty category $\bar{A}$-bound by z (a full lexical operator, let us suppose), then it is Z which determines the semantic content of y which in turn determines the semantic content of x. An element which is bound by a non-$\bar{A}$-binder may have its semantic content determined somewhat diffently. See the following note.

11. There is a potential problem for the analysis, however, which has been pointed out to me by Noam Chomsky (personal communication). Consider the sentence in i.

i. *It$_i$ is tough [$_{\bar{S}}$ Ø$_i$ [$_S$ PRO to believe [$_S$ e$_i$ to be true [$_{\bar{S}}$ that S]]]]

It might be possible to rule this sentence out because *it* is in an A-position, and thus cannot determine the semantics of the Ø operator (cf. Chomsky (1981a), p. 204). In the latter case, however, something still must be said about cases where the matrix subject is not pleonastic, and must match the construal for the gap in the adjectival complement clause.

ii. John$_i$ is tough [$_{\bar{S}}$ Ø$_i$ [$_S$ PRO to talk to e$_i$]]

It is not clear how this matter is to be resolved even independently of problems that arise for i. I leave this matter open.

12. Definite NP's can appear in the contexts where I have claimed that the DE holds, but when they do they have the properties typical of presentational impersonals. Breckenridge (1975) points out that the "rule which moves new information subjects rightward" permits definite NP's to appear just in case they are either contrastively stressed or include a relative clause. Similar observations will be made about English in section 4.4.2. In discussing the DE in this section I will routinely abstract away from these special circumstances.

13. Notice that there is no NOM Case phonetically realized in this sentence. I assume that the NOM Case Realization Condition does not hold in German. Cf. 4.4 where the matter is discussed in detail.

14. This is another respect in which German and Dutch differ. In Dutch, either Dative Case can be absorbed by passive morphology just as ACC Case can, or *helpen* simply assigns ACC Case. Let us assume that the latter is true, even though Casemarking is not overt in Dutch. It follows that the DE should hold in i.

i. Er werd een/*de kind geholpen.
there was a/the child helped

Thus the argument made on the basis of German impersonal sentences with Dative Case cannot be formulated in Dutch.

15. Many speakers find a much stronger contrast between NOM *was für/war voor* extraction vs. DAT and ACC rather than DAT and NOM vs. ACC extractions, in either case always with a preference for the ACC examples.

Den Besten notes that *wat voor/was für* extraction from predicate nominals is also possible.

i. *Wat* zijn dat *voor mensen*. (DB)
Was sind das *für Leute*. (DB)
what are those for people
"What sort of people are those"

This fact will not figure in my discussion.

16. The presence of *er* does not improve the ungrammatical examples in (35) and (36). The obligatory presence of *da* in the German examples, noted by den Besten (his note 3) remains unexplained, although it may be assumed to be an expletive element of some sort. The important point is that extraction is from direct object position in both languages.

17. It is pointed out by den Besten, at least for the German examples, that *was für* split is not fully grammatical from the complement position of *helfen*, as would be expected if the generalization in (39) extends beyond double object constructions.

i. *Was für Leuten* hast du geholfen?

ii. ?*Was* hast du *für Leuten* geholfen?

"What sort of people have you helped"

18. This is the Extended Projection Principle of Chomsky (1981a), in effect. Notice that if NOM Case does not have to be realized in German and the subject node is not otherwise required to fill a θ-role, then it would follow that it would not have to be generated at all. The presence of the expletive element is required, however, in examples where Case inheritance applies, or else (D) would apply to assign Nominative Case to direct object position routinely in impersonal sentences. As the text shows, this would be the wrong result, as the DE could no longer be predicted from the pattern of indexing required by the Case Filter. This is indirect support for the Extended Projection Principle.

19. Den Besten defines "chain government" as follows:

i. α *chain-governs* β iff α governs γ_1, γ_1 governs γ_2, ..., γ_{n-1} governs γ_n, and γ_n governs β ($n \geq 1$).

20. The "Otherwise Condition" is the opposite of Kiparsky's (1973) "Elsewhere Condition" type of rule. Elsewhere rules assert that if the special case does not apply, one should assume that the general case does. An "Otherwise Condition," to coin a new term, asserts that if the general rule cannot apply, then the special rule can.

21. The terms "Dutch A" and "Standard Dutch" should not be taken too seriously, as it is not obvious which is standard

(though the latter appears to be more formal) nor what the geographical differences are (cf. Maling and Zaenen (1978)). In P&Z, Dutch A is assumed to be a southern dialect of Dutch.

22. In the terminology of Relational Grammar, this element is called a "silent dummy," and is not theoretically parallel to my use of the term "empty element," although the two elements are roughly equivalent analytically speaking with respect to this construction.

23. I use the term "identificational" to avoid committing myself to the implications of other analyses. My main concern in discussing this verb is simply to elucidate its role with respect to list impersonals.

24. The ideas of Frege (1952) lurk behind this discussion. On the one hand, it may be assumed that the two arguments of IBE are identified as having the same "referent." If "coreference" is based on "referents" in this sense, it seems that in a sentence like "John is the president," the index of *John* should be the same as the index of *the president*. Under these circumstances, however, *the president* should violate Principle (C) of the BC's since it is bound. Alternatively, "coreference" can be taken to be a relation between "labels" which indicate "referents," and the IBE asserts that its differently indexed arguments, $John_i$ and $the\ president_j$ have the same "referent," i.e., "coreference" is a statement about "labels" and not about "referents." (This, incidentally, is what I

mean by "simplistic.") The second alternative, of course, avoids the binding problem, but requires some fancy steps, I suppose, as to what "label" means. I assume that this whole issue can be accommodated without affecting the account of list impersonals that will be developed here.

25. The contrast (59) and (60) is an argument against a theory which assumes all meaning is determined at D-structure, that transformations do not change meaning, and that (59b) (and (60b)) are derived by a transformational rule of *to be*-deletion. The rejection of this sort of rule (and of this rule in particular) in Chomsky (1970) was emblematic of the shift to surface interpretation discussed in Chapter I.

26. I am assuming that *it* in (62) is a full argument, the semantic nature of which is specified or identified by the postverbal NP. It is not so clear how this use of *it* differs from list *there*, but it seems to me that *it* in (62) is more indexical or demonstrative than *there* is. In any case, I am treating both *it* in (62) and list *there* as arguments with IBE.

Jim Higginbotham points out that there seems to be a difference in interpretation depending on the choice of Case with this use of *it* and IBE.

i. It is she behind the curtain.

ii. It is her behind the curtain.

Higginbotham suggests that in i., the postverbal NP is inter-

preted as "she, the one behind the curtain" as if in response to "Which one is Mary," whereas in ii. the interpretation is most easily, perhaps, something like "what you see is her behind the curtain." The distinction he suggests is that in i. the postverbal stuff is an NP, while in ii. it is a clause. I have nothing to say about these interpretations.

28. Presumably, an appropriate controller for the PRO would permit the denumeration of a list, although such examples are awkward to construct.

i. For the starting five to be Bob, Carol, Ted, Alice and Lenin would be appropriate.

ii. ?To be Bob, Carol, Ted, Alice, and Lenin would be appropriate for the starting five.

I don't know why ii. should be so awkward.

29. It may be that PBE can take just an NP in certain circumstances, but in these cases it is always 'event-like' and indefinite or presentational.

i. There was a terrible riot.

ii. ??There was an old man.

The second example is better if it has a presentational sort of context.

iii. Once upon a time, there was an old man ...

These examples may be instances of a now slightly archaic *be* which means 'exist,' as in *God is*. Whether this is correct or not, i. through iii. are irrelevant to the point in the text, which is that IBE only takes NP complements.

31. I believe that Tim Stowell (personal communication) was the first to point this out to me.

32. An interesting case has been pointed out to me by Jean-Yves Pollock (personal communication).

i. Il mange beaucoups de linguistes dans ce restaurant.
there eat many linguists in this restaurant

It might be claimed that this is an instance of rightward displacement of *beaucoups de linguistes* from a subject θ-position. J.-R. Vergnaud (personal communication) has remarked to me, however, that *manger* in this sense has a 'verb of motion' or 'go to eat' reading, although this may be too crude a way of putting it. Vergnaud's intuition can be tested using a PP that is not locative, and thus discourages the 'verb of motion' reading as in ii.

ii. *Il mange beaucoups de linguistes avec des fourchettes
there eat many linguists with forks

Thus it seems that *manger* in the sense of 'go to eat' may be interpreted as a sort of ergative verb.

33. It is not abundantly clear that the 'neutral description' reading is operative here because of interference from the presentational reading, which, as noted below, is preferred in most contexts in English. Nonetheless, such sentences seem appropriate in the following context, and with the 'neutral description' interpretation.

i. I know we've argued alot. Some things haven't worked out. As we both know, there still exist some problems, but I think we can work it out.

34. Notice that the appearance of definite NP's in *il y a* list sentences undermines the argument that the meaning of IBE contributes to the list reading (unless the meaning of *il y a* is treated in some special way), but not the more important claim that the DE is neutralized by direct Case assignment because an unbalanced θ-chain need not be formed. It is just not obvious why the *il y a* construction always has a list reading when it appears with definite PVNP's.

35. A number of matters remain unexplained by my account. First, it is not clear why French has no sentences parallel to English *there be*.

i. *Il était un homme tué/malade.
"There was a man killed/sick"

Does PBE have a small clause in French? It seems I must assume not.

Second, the *es gibt* construction in German appears with ACC Case and yet the DE holds.

ii. Es gibt einen Hund im Garten.
"There is a dog in the garden"

This does not mean, however, that an unbalanced θ-chain does not obtain, but merely that such a θ-chain is not required by the Case Filter, unlike every other instance I have discussed. Perhaps some other principle, such as the θ-C, or some other special rule requires coindexing between *es* and *einen Hund* in ii. This matter awaits further study.

36. Another well-known distinction between these two kinds of

impersonal sentences is that *wh*-e ..raction of the postverbal subject is possible in the ergative cases, under circumstances discussed in 5.2.3, while extraction of the postverbal NP in presentationals is always ungrammatical, as in discussed in 6.3.

i. How many men were there in the room?

ii. ?*How many men did there walk into the room?

37. In theories where the word *there* is taken to be derived from some sort of locative reading, it might be possible to construct some sort of account of presentational contexts, as has been attempted by Kuno (1971) and Bolinger (1977). These accounts are, of course, totally unsuccessful with respect to cases wherein either no impersonal element appears, as in German, or one appears without any existential or presentational interpretation, as in French, German and Dutch. I will not consider this possibility further.

38. This result of the UIH, the fact that 'binding' for θ-chains entails 'binding' for the BC's, can be circumvented if the composition of the notion 'binding' is weakened to allow certain elements in appropriate positions not to count as binders because of their semantic content. This weakening of the notion 'binding' is discussed in 4.1 in connection with a proposal made by Rizzi (1980).

Chapter V

5.0. Towards an Explanation of the Definiteness Effect.

In the beginning of the last chapter, I introduced three issues concerning the Definiteness Effect (DE), only one of which I attempted to address in detail. These issues were, in order of decreasing generality,

A) Why does the DE exist?

B) How should the DE be expressed in grammatical terms?

C) How can the distribution of the DE be predicted?

In answer to the last question, it was determined that the DE is evidenced whenever an unbalanced θ-chain is formed to satisfy the Case Filter by permitting downward Case inheritance. A provisional answer to the second question consisted in pointing out that unbalanced θ-chains entail a pattern of indexing that results in a violation of Principle (C) of the BC's, but that indefinite θ-chains appear to save these structures from ungrammaticality.

In this chapter I shall continue working from the bottom up, in that I shall attempt to reformulate the first question by proposing a more specific formal solution to the second one. Roughly put, grammatical constraints regulating 'reference' (i.e., the BC's), which apply without exception to definite NP's, will be relaxed for indefinite NP's. The relaxation of constraints applying to indefinite NP's will be related to the common intuition that indefinite NP's are somehow 'less referential' than definite ones. Then, revers-

ing my perspective (proceeding from the top down), I shall suggest that the DE and its distribution is simply a consequence of the formal expression of the latter distinction.

The chapter is organized as follows: in section 1 I proceed directly to the formal aspects of my proposal for expressing the DE within a theory of LF. This proposal is further motivated and extended in section 2 where various issues touching on matters of analysis are discussed, including the scope of negation, Quantifier Lowering and *wh*-extraction from positions of Case inheritance. In section 3 I turn to some independent justifications for expressing the definite/indefinite distinction as part of formal grammar, and I examine briefly a proposal for distinguishing the two classes semantically. In the last section, a treatment of predicative NP's is presented as suggestive evidence in favor of the particular formal expression of the definite/indefinite distinction that I have proposed.

5.1.0. The Proposal.

In the last chapter, a first approximation for an answer to question (B) was suggested in the form of the Indefinite NP Property (INPP) in (1).

1) INPP: Indefinite θ-chains are optionally exempted from the BC's at S-structure.

This initial formal distinction between definites and indefinites, once integrated into a theory of syntactic levels, forms the cornerstone of my whole approach. The range of the INPP will be extended somewhat in later sections, but first

it is useful to recapitulate briefly the empirical motivations for stating the INPP in this particular way.

5.1.1. Motivating the INPP.

Justification for the claim that indefinite NP's are exempted from the BC's is based, in part, on sentences like (2).

2) There is a/*the battleship in the harbor.

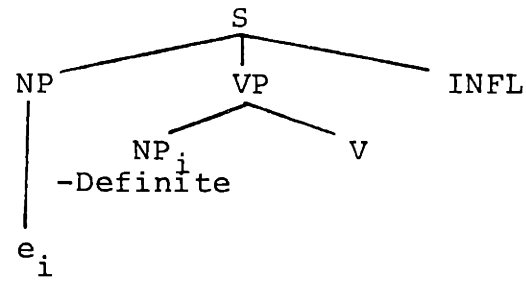
In (2), *a/the battleship*, which must be in a θ-chain with *there* in order to inherit Case from it, is therefore bound by *there*. Since it is generally assumed that NP's like *a/the battleship* count as names with respect to the Binding Conditions, and since names must be free (by Principle (C)), we would expect, were it not for the INPP, that there could be no grammatical outcome for (2). The basic idea behind the INPP is that the BC violation in (2) can be exploited to provide a means of predicting the distribution of the DE. Although it was not stressed in the last chapter, structures like (2), but with pronouns, also violate the BC's with respect to Principle (B).

3) *There are them/they in the room.

Since pronouns must be free within their governing category, examples like (3) are also excluded.[1]

Further motivation for the INPP was provided by the examples from the dialect of Dutch reported by Perlmutter and Zaenen (1978) and from similar examples in German (cf. 4.3.4), all of which have the structure in (4).

4)



Setting aside the bound NP in (4), which falls under the generalizations discussed in the last paragraph, the empty category in (4) is of particular interest because it is governed in the relevant cases (ungoverned counterparts to (4) are discussed further below). As pointed out in 4.3.4, the empty category in (4) is pronominal because it is free and anaphoric because it is both in a θ-chain and not a variable, i.e., it is PRO. Principles (A) and (B) of the BC's normally combine to exclude PRO in governed contexts. Since the relevant examples are grammatical, however, PRO must somehow be exempted from the BC's in these cases. Besides showing that principles (A) and (B) of the BC's are relevant to the statement of the INPP, examples with the structure in (4) also show that the INPP appropriately applies to the whole indefinite θ-chain, and not simply to the element inheriting Case.

5.1.2. The Context of Grammatical Levels.

Thus far I have simply motivated the formulation of the INPP on the basis of what constraints must be relaxed in order to permit indefinite θ-chains, but not definite ones, to be grammatical in the relevant contexts. Now let us take (1) as a point of departure by assuming that it is the correct (and perhaps the only) formal syntactic expression of

the definite/indefinite distinction. Must anything else be said?

The alert reader will have noticed a peculiar, so far unmotivated provision in (1) which specifies that it is true at S-structure. If the BC's only apply at S-structure, then obviously it is unnecessary to state "at S-structure" explicitly in the INPP. If the BC's apply at S-structure only, then (1) simply means that the BC's need not apply to indefinite θ-chains at all. The latter hypothesis makes a clear prediction with respect to sentences like those in (5),

5a) *He$_i$ shot someone$_i$

b) *He$_i$ shot everyone$_i$

namely, that (5a) should be grammatical, since the bound "name" is indefinite, while (5b) should be ungrammatical. In fact, *he* is disjoint in reference from the direct object in both sentences, as one would expect only if the BC's apply to both definites and indefinites without discriminating between them. The ungrammaticality of both sentences in (5) is the sort of fundamental result that one would hope to preserve, and it appears to be lost under the INPP as it is formulated in (1).

In fact, the missing contrast between (5a) and (5b) is expected if, following a suggestion of Aoun (1982), the Binding Conditions apply at both S-structure and LF-structure. If a sentence is marked ungrammatical at either level, we may assume it is excluded. Assuming that QR applies to both quantified NP's in (5), the LF-structures of (5a) and (5b) are

(6a) and (6b) respectively.

6a) someone$_i$ [$_S$ He$_i$ shot e$_i$]

b) everyone$_i$ [$_S$ He$_i$ shot e$_i$]

Both (6a) and (6b) are excluded for the same reason that (6c) is.

6c) who$_i$ [$_S$ did John$_i$ shoot e$_i$]

All of the examples in (6) are instances of strong crossover (Postal (1970)) which, in the system of Chomsky (1981a) can be accounted for under the assumption that variables (conceived as the traces of quantified phrases) fall under Principle (C), and must therefore be A-free. The variables in (6) are all A-bound, and hence excluded. As Dominique Sportiche has pointed out, however, (Noam Chomsky, personal communication) the empty categories in (6) are really not variables at all because they are locally A-bound, and variables must be locally $\bar{A}$-bound by definition. The empty categories in (6) are actually PRO's, since they are A-bound by elements with separate θ-roles--they are not variables. As the empty categories in (6) are all in governed positions, the BC's rule them out at LF-structure in every case, though (6b) and (6c) would be ruled out at S-structure anyway. Thus the fact that (5a) and (5b) do not contrast is not surprising, since both structures are excluded by the BC's, albeit at different levels.

But now let us return to the cases that most interest us here. If the BC's apply at both S-structure and LF-structure, why is there a contrast between (7a) and (7b) that

is missing between (5a) and (5b)?

7a) There$_i$ is someone$_i$ in the garden.

b) *There$_i$ is everyone$_i$ in the garden.

At S-structure, (7a) is exempted from the BC's by the INPP, but (7b) is not. Thus only (7b) is ungrammatical at S-structure. At LF-structure, the structures for (7a) and (7b) are (8a) and (8b), respectively.

8a) someone$_i$ [$_S$ there$_i$ is [$_{SC}$ e_i in the garden]]

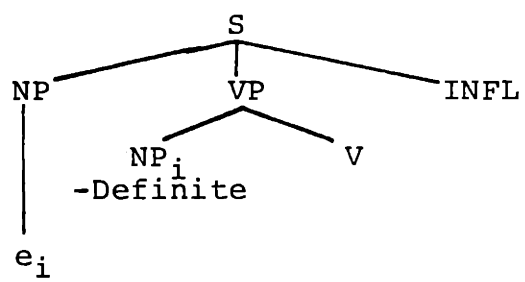
b) everyone$_i$ [$_S$ there$_i$ is [$_{SC}$ e_i in the garden]]

Notice that the structures in (8) differ from those in (6) in a crucial respect, namely, *there* is in the same θ-chain as the empty category. This means that the traces in (8a) and (8b) are simply anaphoric, not pronominal, and as anaphoric traces they are well-formed, because they are bound. The formative *there* is now, by definition, a variable, since *there* is locally $\bar{A}$-bound. As there is no reason to suppose that *there* cannot be a variable at LF-structure, it follows that both (8a) and (8b) would be well-formed, except that (8b) has already been excluded at S-structure in the form of (7b). Thus just the desired result is achieved. At S-structure, indefinites in *there* constructions can escape the BC's but definites cannot, while at LF-structure, indefinite θ-chains are well-formed with respect to the BC's, thanks to the application of QR, which makes *there* a variable binding an anaphoric trace.[2] Thus only indefinite θ-chains are grammatical in *there* constructions. The same results obtain, of course, for French[3] and Germanic impersonal constructions

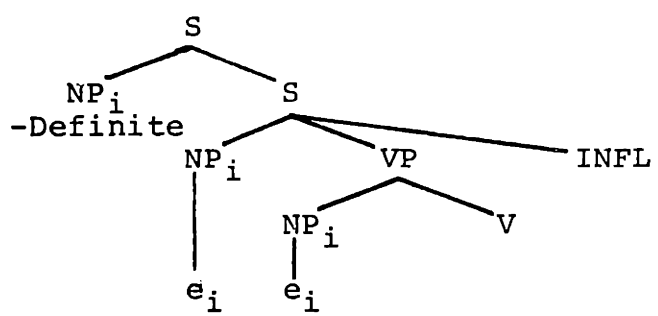
as well.

Now let us consider the interaction of the INPP with the θ-C. As stated earlier, German and Dutch A examples with the structure in (4) (reproduced as (9)) would violate the θ-C at S-structure if the empty category is argument PRO. Thus the PRO in (9) must be expletive PRO (EPRO), and since EPRO is an expletive empty element, it must be governed (Chapter 2.4). In most contexts, the contradiction between the latter requirement and the BC's is enough to exclude EPRO, but in contexts like (9) where the INPP can apply, EPRO is exempted from the BC's and is grammatical at S-structure. Notice, however, that while (9) is only grammatical by virtue of the INPP, the LF-structure of (9) in (10) is well-formed.

9)



10)

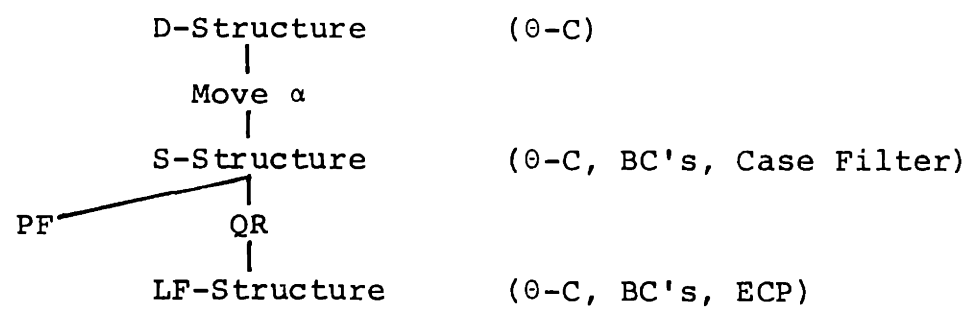


In (10), the empty category left by QR within VP is anaphoric, as it is A-bound by the subject empty category in the same θ-chain. Empty nonpronominal anaphors are never treated as

arguments (or sentences like "John$_i$ was killed e_i" would violate the θ-C). Thus the ony argument in the θ-chain at LF-structure is the subject empty category, which is a variable because it is $\overline{A}$-bound. Thus the empty subject in (9) can be governed EPRO at S-structure only if the INPP obtains, while the LF-structure of the same sentence is grammatical with respect to both the θ-C and the BC's, thanks to the operation of QR.

At the heart of this account are the distinctions between representations at S-structure and representations at LF-structure, on the one hand, and between definite and indefinite θ-chains, on the other. Only the formal expression of the latter distinction as stated in (1) is a novel proposal. Thus the distribution of the DE (the answer to question (C)) follows from the formal expression of the definiteness/indefiniteness distinction (the answer to question (B)) within the model of grammar in (11).

11)



In closing out this section, it is worth pointing out that this treatment of the DE is to be highly preferred on quite general theoretical grounds, in that it resolves the formal conflict between Case inheritance and the BC's, without violating the Unity of Indexing Hypothesis through the

introduction of special indices.

5.1.3. Impersonal Insertion.

In the last section it is tacitly assumed that the presence of *there* in English (or *er* in Dutch) avoids the consequence that the head of an unbalanced 0-chain is PRO, as it is in (9) (where no *er* appears in Dutch A). Nonetheless, the lexical argument of the unbalanced 0-chain is still A-bound, and therefore ruled out by principles (B) and (C) of the BC's. A number of reasonable questions arise. What special properties, if any, must be stipulated for impersonal formatives? Where are they introduced into a derivation? How does *there* differ from *it* in English? How does *there* differ from expletive PRO?

Up to this point I have avoided assigning any special character to impersonal formatives as I have sought to wring out the most general results independent of the lexical properties of particular formatives. Nonetheless, languages differ as to the distribution of impersonal formatives[4] in that some languages have more than one impersonal formative (as in English), others virtually none at all (Italian) and still others have basically one (German). The languages with either no impersonal formatives, or only one impersonal formative, I shall treat as least marked since less needs to be said about them. For this reason I shall treat the distinction between *it* and *there* in English, for example, as requiring a minimal, but additional statement beyond the general

case.

The general case is regulated by the Case Realization Conditions, introduced in Chapter III, which require that a given Casemarking be phonetically realized where it is directly assigned.[5] These conditions were shown to be parameterized with respect to Nominative in Dutch A (and, as argued in 4.4, German as well), where the Case Realization Conditions (CRC's) for the respective Cases are not in effect. Thus impersonal formatives are not required to appear in these positions. In French, for example, there is no Accusative impersonal formative, so none appears, while in Dutch A, *er* is available for Nominative marked positions and can be inserted optionally in the relevant contexts. Moreover, since impersonal formatives are lexical NP's, it follows that they fall under the Case Filter, and so they cannot appear in Caseless positions. Thus the CRC's and the Case Filter already limit the distribution of impersonal formatives considerably. With these independently motivated limitations in mind, let us begin by introducing impersonal formatives into the derivation by the simplest possible rule, and see what more must be said subsequently.

12) Impersonal Insertion (Provisional)

Insert an impersonal formative in the position of [e].

Now one may ask at what level Impersonal Insertion applies. With respect to English, it is clear that both *there* and *it* must be allowed to be inserted after Move α, since

both can appear in positions that are filled at D-structure (if adjoined structures are not base generated). Thus in the cases of presentational *there* sentences and the extraposition of an external argument $\bar{S}$, both of which are derived by rightward movement, the vacated subject position will be filled by *there* and *it* respectively in the (b) examples below.

13a) An old man walked into the room.

b) e_i $[_{VP}[_{VP}$ walked into the room] an old man$_i$]

14a) $[_{NP}$ $\bar{S}]$ proved our theory.

b) $[_{NP}$ e]$[_{VP}[_{VP}$ proved our theory] $\bar{S}]$

Later I shall discuss evidence that *there* is present at LF-structure (5.2.3), and if this is so, then it follows that *there* must be inserted at S-structure, which follows Move α but feeds PF and LF.

Whether *it* or *there* is inserted in a given context is, of course, predictable, and so some English-specific distinction between these formatives must be stated. The following condition on Impersonal Insertion as it applies in English makes the appropriate distinction.

15) Insert *there* if [e] is in a θ-chain, otherwise insert *it*.

It follows from Impersonal Insertion (12), the English-specific provision in (15), and the CRC's that *it* is obligatory in the position of a nonvariable (but cf. 5.2.3) directly Casemarked empty category in a θ-chain.

Although the Case Filter excludes a number of ungrammatical instances of Impersonal Insertion generated by (15),

Impersonal Insertion still overgenerates in a number of cases to be discussed in 5.2.3. One such overgeneration deserves immediate attention, however.

16) *There$_i$ is e_i in the room.

Up to this point I have not said explicitly whether or not *there* can count as an argument to satisfy the θ-C. If we are to judge from (16), the right approach is to treat *there* as a nonargument except when it is a variable (in LF). Since we have been assuming all along that a variable in an A-position is an argument,[6] it is unnecessary to stipulate that *there* is an argument just in case it is a variable. Thus sentences like (16), where *there* is not a variable, are immediately explicable as θ-C violations.

It is now possible to return to an issue postponed earlier. In 2.4.2 it was argued that expletive empty elements must be governed at S-structure. As evidence for this claim, it was pointed out that in adverbial gerunds and infinitives, the subject cannot be PRO if it is expletive. Instead, expletive *it* must be inserted, as in (17).

17a) (For it)* to appear that John was guilty would be upsetting.

b) (It)* appearing that John was guilty, it was obvious that we should leave.

If *it* cannot be inserted (due to the Case Filter, for example), then the subject of *appear* must be argument PRO, and the θ-C is violated, since argument PRO cannot receive a θ-role. The same claim can now be made for *there* constructions.

18a) (For there)* to be trouble ahead would be too bad.

18b) (There)* being a cop on the roof, the situation looked volatile.

c) *Étant arrivé quelques hommes dangereux, il semblait stupide de rester seul

"Having arrived some dangerous men, it seemed stupid to remain alone"

These sentences are ruled out at S-structure by the θ-C if *there* is not inserted because the subjects of these nonfinite clauses are not governed, and therefore must be argument PRO when empty. The θ-C is therefore violated. In the French example, no impersonal element can be inserted (the impersonal formative is a subject clitic, and subject clitics do not appear in this construction), and the sentence is thus unsalvageable. Thus exemption from the BC's at S-structure under the INPP is not sufficient to save the examples in (18) if their subjects are argument PRO. The examples in (18) contrast with the Dutch A example in (9), as the subject empty category in (9) can be expletive PRO because it is governed. Thus no θ-C violation ensues for (9) at S-structure as it does for (18).

It is worth noting, however, that if Case is not assigned to the subjects of these nonfinite clauses, then *a cop, trouble* and *quelques hommes dangereux* will be excluded by the Case Filter anyway. Moreover, if Case is assigned in the adverbial gerund in (18b), then it must be lexically realized or violate the CRC's in English. Thus there are several reasons for excluding the examples in (18). Nonetheless, the θ-C suffices to rule such sentences out in any language, even those

that unlike English, permit the CRC's to be violated (NOM-drop languages, for examples, cf. Chapter VI).

In any event, it is clear that *there* must be present at S-structure in at least some contexts independently from those contexts where it is required by the CRC's. In 5.2.3 an argument is presented to show that *there* must be present at LF-structure, but for the moment I shall simply assume this is so on the basis of the evidence in (18). So far the basic formulation of Impersonal Insertion has been kept optimally simple--a very desireable result, given the cross-linguistic presence of impersonal items of this sort. Moreover, the English-specific statement in (15) is in itself, simple and falls under a natural classification that in other languages would be only a contextually defined contrast between two occurrences of the same formative. Some discussion of such languages is reserved for Chapter VI.

5.2.0. Some Questions of Analysis.

A crucial claim of the analysis of the last section is that QR applies to indefinite NP's, and that the output of this LF-movement can treat *there* as a variable at LF-structure. The novelty of this claim consists merely in extending independently motivated definitions of "0-chain" and "variable" to a context where they have not been applied in this way before. To put this another way, treating *there* as an LF-structure variable is an analytic innovation, not a theoretical one. Thus if *there* could not be a variable, some special provision in

the grammar of English would have to be introduced to say so. Nonetheless, if one is willing to accept such a special provision, one still might argue on empirical ground that treating *there* as an LF-structure variable is the wrong analysis. This section is intended to both defuse some plausible objections of this sort, and to provide both further refinements of the analysis that extend its coverage, as well as evidence for certain aspects of the analysis itself.

Most of the objections I shall consider involve structures like (19b) derived from structures like (19a), where X is some element with scope over NP_i in (19a) but not (19b).

19a) $[_S \text{ there}_i \ldots X \ldots NP_i]$

b) $NP_i \ [_S \text{ there}_i \ldots X \ldots e_i]$

In some cases it seems as if the analysis in (19b) makes the wrong prediction with respect to scope and/or the position of the variable (*there*). Questions of this sort arise with respect to the scope of negation, the scope of indefinites in lowering contexts, and with respect to *wh*-movement. These issues are considered in turn.

5.2.1. QR and the Scope of Negation.

One context where one might claim that the sort of analysis presented schematically in (19) makes the wrong prediction involves the following contrast.

20a) Many men aren't sick.

b) There aren't many men sick.

The most natural (only?) interpretation of (20a) may be paraphrased as (21a), while the interpretation of (20b) is paraphrased in (21b).

21a) There are many men such that they are not sick

b) It is not the case that there are many men sick

Setting aside specificity (about which cf. 5.3), the relevant distinction between these readings is that negation has wide scope in (20b)-(21b), but not in (20a)-(21a). The LF-structure representations of (20a) and (20b) are (22a) and (22b) respectively.

22a) Many men$_i$ [$_S$ e_i aren't [$_{SC}$ e_i sick]]

b) many men$_i$ [$_S$ there$_i$ aren't [$_{SC}$ e_i sick]]

If *there* is simply a variable at LF-structure, then (22a) and (22b) are indistinguishable and, thus, the scope distinction between (20a) and (20b) is not stateable at LF-structure.

The apparent problem posed by (20a,b) is immediately neutralized, however, if there is independent motivation to assume that the scope of negation is at least partially fixed at S-structure, as in (23).

23) The minimal scope of negation is determined by C-command at S-structure.

By "minimal scope of negation" I mean that the scope of negation can be extended by later operations, but not diminished.

For the moment, however, let us restrict our attention to S-structure. It is well-known that certain polarity items can only appear in the scope of negation (as first studied in detail by Klima (1964)).

24) Some/*any dishes don't please Harry

Some dishes don't please any customers

25) The children *(don't) suppose she will ever return

In (24), if polarity *any* is outside the scope of negation, then the sentence is starred. Similarly, the polarity item *ever* is only grammatical in (25) if it is in the scope of negation.

There are, however, well-known cases where negation takes scope outside the clause it occupies at S-structure, as in (26).

26) During the entire four years, she's requested that they read not a single poem. (adapted from Kayne (1982b))

A possible interpretation for (26) is (27) where negation has scope outside of the subjunctive clause.

27) During the entire four years, it is *not* the case that there exists *any poem* such that she's requested that they read *it*

In recent literature (Kayne (1979b), Rizzi (1980)) it has been suggested that the reading in (27) is derived from (26) by the application of QR to *not a single poem* to form the LF-structure in (28).

28) not a single poem$_i$ [$_S$ she's requested [$_{\overline{S}}$ that they read e_i]]

It is clear that the representation in (28) is not the one relevant to determining the well-formedness of polarity items, or *ever* would be well-formed in (29).

29) *During the entire four years, she's *ever* requested that they read not a single poem

Thus it appears that polarity sensitivity is determined at

S-structure.

The same point can be made more simply by contrasting syntactic Neg-preposing with examples that have synonymous scope properties generated by QR.

30a) Not a single person did Mary ever trust.

b) Mary (*ever) trusted not a single person.

The LF-structure of (30b) is identical in the relevant respects to the S-structure of (30a), yet in (30a) *ever* is grammatical, while in (30b), where *ever* is only in the scope of negation after QR, *ever* is ungrammatical.

Exactly the opposite view, however, has been argued by Linebarger (1980), i.e., that the well-formedness of polarity items ought to be checked at LF-structure rather than at S-structure. She points out that there are cases where a negative polarity item is preceded and C-commanded by negation at S-structure, but the sentence is still ill-formed. Consider the following examples.

31a) John didn't yield (politely)

b) John didn't budge (*politely)

As Linebarger observes, (31b) is ungrammatical if *politely* is within the scope of negation (*politely* can be grammatically interpreted as a sentence adverb, e.g., "John did the courteous thing; he didn't budge"), though the same reading is grammatical in (31a). The difference is that *budge*, unlike *yield*, is a negative polarity item. The identical surface forms of these sentences does not permit the correct distinction to be made at S-structure, and so Linebarger proposes

the following constraint.

32) The Immediate Scope Constraint[7]
A negative polarity item is acceptable in a sentence S if in the logical form of S the subformula representing the NPI is in the immediate scope of the operator NOT. An item is in the immediate scope of NOT if (1) it occurs only in the proposition which is the entire scope of NOT, and (2) within this proposition there are no logical elements intervening between it and NOT. 'Logical elements' are defined here as elements capable of entering in scope ambiguities ...

Linebarger's constraint then explains why (31b) is ungrammatical, under the assumption that adverbs like *politely* enter into scope ambiguities, and hence into LF-structures in the same way that quantifiers do, and that the LF-structure of (31b) is as in (33) (which I have simplified somewhat).

33) NOT [politely [John budge]]

If this representation (however it is derived)[8] is correct, then *politely* intervenes between NOT and the negative polarity item *budge*, thus violating the Immediate Scope Constraint (cf. Linebarger for further examples and discussion).

Now notice that Linebarger's account is not necessarily incompatible with the assumption that polarity items are checked at S-structure. Examples like (29) and (30), however, are both problematic for the LF-structure account. Let us suppose then that (34) holds.

34) Negative polarity items must be well-formed at S-structure (C-commanded by negation) and at LF-structure (in the immediate scope of negation).

Thus examples like (29) and (30) are ruled out at S-structure, while examples like (31b) (and many others pointed out by Linebarger, as well as in the literature she cites) are ruled out at LF-structure.

One further advantage of this approach is that it overcomes a problem that Linebarger notices in her own account. In sentences like (35a), quantifier lowering (discussed in 2.5) can apply to produce the structure in (35b).

35a) *Anybody didn't seem to speak at the rally

b) e didn't seem [anybody to speak at the rally]

The fact that quantifier lowering can move *anybody* into the scope of negation at LF-structure does not save the sentence (though it ought to in Linbarger's analysis) because *anybody* is not C-commanded by negation at S-structure.

The fact that negative polarity items must be in the scope of negation at S-structure shows that the scope of negation must be determined at S-structure, at least in terms of C-command, but not that the same scope relations must be preserved at later levels. The minimum scope of negation determined at S-structure must be presereved, however, as the examples in (36) and (37), with all their possible interpretations, show.

36a) Everyone loves noone.

b) There does not exist x such that for all y, y loves x.

c) For all y, there does not exist x such that y loves x.

37a) Noone loves everyone.

b) There does not exist x such that for all y, x loves y.

c) *For all y, there does not exist x such that x loves y.

The missing reading in (37c) seems to be excluded because *noone* C-commands *everyone* at S-structure even though the scope

of negation can be extended for (36a) as in (36b). How can the minimal scope of negation be preserved at LF-structure in (37c) if QR is permitted to move *everyone* in (37a) the same way *noone* is moved in (36a)?

Let us suppose that the minimal scope of negation is fixed by the assignment of a +N feature to every element in the scope of negation at S-structure (as proposed, in effect, by Lasnik (1975)).[9] Negative elements bear this feature, and negative polarity items come to bear this feature at S-structure or they are excluded. The scope of negation at LF-structure is the scope of the highest element bearing the +N feature. Thus any element in the scope of negation at S-structure that is subsequently moved by QR will bear the +N feature with it, thus extending the scope of negation. Compare the LF-structure for (36c) in (38a) with the LF-structure for (37a) in (38b).

38a) $\text{Everyone}_i \; [\underset{+N}{\text{noone}}_j \; [e_i \text{ loves } e_j]]$

38b) $\underset{+N}{\text{everyone}}_i \; [\underset{+N}{\text{noone}}_j \; [e_j \text{ loves } e_i]]$

There is no representation equivalent to (37c) because the +N feature insures the widest scope for negation no matter which element is moved.

Finally, if a +N feature is assigned to the elements within the scope of negation only at S-structure, then the constraint on negative polarity items can be moved entirely to LF-structure, and stated informally as in (34').

34') A negative polarity item must bear a +N feature and

be in the immediate scope of negation at LF-structure.

This approach, if it turns out to be correct, will immediately eliminate the problem with which this section began, namely, the contrast between (20a) and (20b), the LF-structures of which are presented in (39a) and (39)b respectively.

39a) Many men$_i$ [$_S$ e$_i$ aren't$_{+N}$ [$_{sc}$ e$_i$ sick$_{+N}$]$_{+N}$]]

b) many men$_{+N i}$ [$_S$ there$_i$ aren't$_{+N}$ [$_{sc}$ e$_i$ sick$_{+N}$]$_{+N}$]]

It is predicted that the scope of negation in (39b), the LF-structure of (20b) must exceed the scope of *many men* as desired.

Of particular interest here is the fact that the missing wide scope of negation interpretation for (20a)/(39a) (but cf. Lasnik (1975) on intonation, etc.) is predictable if it is assumed that *not* does not undergo QR. If *not* cannot undergo QR, then the +N feature becomes crucial. In cases where *not* C-commands an element at S-structure that later C-commands *not* at LF-structure, the +N feature on the fronted element preserves the S-structure relation, as in (39b). In (39a), however, if *not* cannot undergo QR, then it cannot exceed the scope of *many men*, since *many men* was not C-commanded by *not* at S-structure. In short, *many men* bears no +N feature in (39a), and it follows that wide scope of negation should not be possible in (39a).[10,11]

Although this account is somewhat programmatic, I believe it renders plausible the treatment of negation I have proposed here, and eliminates any problem for the LF-structure

analysis of *there* sentences proposed in the last section.

5.2.2. Raising and Lowering.

The next seemingly problematic case for the analysis of 5.1 concerns possible instances of lowering (as discussed in 2.5). In order to get to the relevant examples, however, some facts about indefinite quantifier scope must be clarified.

In raising contexts, it is not generally possible for an indefinite NP in postverbal position to have scope outside the clause containing the verb that governs it. In (40a), for example, it is not possible for *many ships* to have scope outside of *seem*, as is possible in (40b).

40a) There seem to be many ships in the harbor

b) Many ships seem to be in the harbor

This means that the LF-structure of (35a), which only has scope for *many ships* inside of *seem*, would have to be something like (41) after QR.

41) $There_i$ seem $[_S$ many $ships_i$ $[_S$ e_i to be $[_{sc}$ e_i in the harbor]]]

One may ask whether (41) is a well-formed LF-structure. Certainly the θ-chain consisting of the two EC's is well-formed, since the higher of the EC's is a variable ($\bar{A}$-bound by *many ships*) and the lower EC is anaphoric, as it is bound by the variable. Since the Case Filter only applies at S-structure, the θ-chain containing the two empty categories does not have to include a Casemarked position at LF-structure (as pointed

out by H. Borer (personal communication)), and it does not. Since *there* is not a variable in (41), it does not count as an argument and the index on *there* creates no problem for the variable inside *many ships* because it is outside the scope of the quantifier (cf. Chomsky (1981a) on *tough*-constructions). Thus it appears that (41) is a grammatical LF-structure.[12]

Now recall the structure of the discussion of quantifier lowering in 2.5. As noted earlier, following May (1977), (42) is ambiguous between wide scope interpretation for *some senator* (outside of *likely*) and narrow scope (inside of *likely*).

42) Some senator is likely to speak at the rally.

It was assumed that this ambiguity was rendered possible by quantifier lowering, an instance of QR that chomsky-adjoins a quantifier to the S of a lower clause, as in (43), to permit the narrow scope interpretation.

43) $there_i$ is likely $[_S$ some $senator_i$ $[_S$ e_i to speak at the rally]]

The lower trace is a well-formed variable, and *there*, as in (41) above, is a nonargument, and poses no problem.

Given this analysis of lowering, one might then raise an objection to the analysis of 5.1 on the basis of the following sentences.

44) There are many ships believed to have been sunk.

45) There are believed to have been many ships sunk.

As Milsark (1974) points out, *many ships* must have scope below *believed* in (45) (i.e., "It is believed that many ships have been sunk"), but it must have scope above *believed* in (44)

(i.e., "There are many ships such that they are believed to have been sunk"). If quantifier lowering is permitted to apply in (44), however, it would be expected that (44) could be ambiguous with one of its readings being that of (45). That is to say, the LF-structure in (46) could be derived by an application of lowering to (44) or of regular QR applying to (45).

46) $There_i$ are e_i believed $[_S$ many $ships_i$ $[_S$ e_i to have been sunk]]

Both *there* and the EC after *are* are now expletive, since they are outside of the θ-chain, and the θ-chain below *many ships* is well-formed, just as in (41). Thus the Q-lowering derivation for (44) must be excluded without treating the LF-structure in (46) as generally ungrammatical.

The problem just described arises in any theory that assumes quantifier lowering is possible (and something like it obviously must be), but I believe a slight advantage may be claimed for the analysis treating (there,many ships,...) as a θ-chain, as it permits a simple statement of the appropriate constraint on lowering.

47) Q-lowering only applies to the head of a θ-chain.

The fact that *many ships* is not the head of its θ-chain excludes it from undergoing lowering, and hence from having the narrow scope interpretation. By contrast, (48), at least for some speakers, permits the narrow scope interpretation (as well as wide scope) as predicted by (47).

48) Many ships were believed to have been sunk.

Thus this analysis of Q-lowering is further evidence for the coindexing relation between *there* and its Case inheritor, and presents no problem for the LF-structures hypothesized in 5.1.[13]

Now let us consider a different problem related to raising contexts. The following ungrammatical sentences contrast with similar grammatical versions like those in (40) and (45) above.

49a) *There seems a man (to be) sick.

b) *There are believed many ships (to be) unseaworthy.

Any theory that permits free indexing of A-positions and NP-movement can derive these sentences by moving the indefinite NP to the subordinate subject position, and then coindexing the subordinate subject position with the matrix subject position to permit Case inheritance. The subsequent LF derivation of these sentences as proposed above (allowing for either wide or narrow scope derivations)[14] would yield grammatical LF-structures. Thus it appears that the problem resides at S-structure.

Burzio (1981) has suggested a limitation on Case inheritance as a means of ruling out sentences like those in (49). He proposes that Nominative Case cannot be assigned across a clause boundary, except by the verb *be* in English. Thus in cases like (49), where a Nominative NP appears in a lower clause embedded under a verb that is not *be*, the sentence will be excluded.

Burzio's solution is not available within the analysis

presented here because I have assumed that coindexing between the subject *there* position and the postverbal NP is entirely predictable on the basis of Case inheritance. This pattern of indexing results in the DE. Thus if Burzio's solution is accepted without modification, the distinction between identificational *be* (IBE) and predicative *be* (PBE) is lost, and the distribution of the DE is no longer predictable from a single independently motivated pattern of indexing (i.e., motivated by the Case Filter).[15]

Notice, however, that Burzio's treatment, which allows for the inheritance of Case in other contexts, cannot rule out Case inheritance in (50).

50a) John expects her to leave.

b) John expects there to appear to be a bear in the square.

c) *John expects there to appear a bear to be in the square.

It is clear that *expect* assigns non-Nominative Case (the pronoun *her* in (50a) is non-Nominative) and so there is no reason why this non-Nominative Case cannot be inherited in these contexts. The same objection holds for (51).

51a) For her to lean on the rail would be cheating.

b) For there to seem to be many people drunk would be too bad.

c) *For there to seem many people to be drunk would be too bad.

In light of (50) and (51), one might try to develop Burzio's view to say that Case inheritance does not exist at all, that is to say, there is no coindexing relation between

the upstairs subject and the lower indefinite NP (a view that Burzio does not hold). Following this line of reasoning, (50b) and (51b) are grammatical for the simple reason that they are preceded by Case-assigning *be*, while *seem* and *appear* do not assign Case, thus ruling out (50c) and (51c). As evidence against such a view, consider the simpler case of the verb *exist* in a raising context as illustrated in the contrast below.

52a) There_i seem e_i to exist several solutions_i

b) *It seems e to exist several solutions.

Under the assumption that there is no Case inheritance, the well-formedness of (52a) would be due to the possibility that *exist* could assign Case to its object. In (52b), however, where the upstairs subject is not in a θ-chain (and *it* is therefore inserted instead of *there* under (15)), it would be necessary to assume that *exist* cannot assign Case in order to rule the sentence out. The contradiction disappears if *exist* is never a Case assigner, the crucial factor being whether or not, as evidenced by the choice of *it* or *there*, *several solutions* is in a θ-chain with a Casemarked position, i.e., whether or not *several solutions* inherits Case. If Case inheritance exists, however, then it seems most natural to assume that it applies to any Case, an assumptions confirmed by the examples in (50b) and (51b).

It seems to me that Burzio is on the right track, however, in attempting to limit the inheritance of Case in some way that prevents the generation of examples like (49), but

that the limitation should be generalized to all Cases. The provision in (53) has the desired effect.

53) A lexical NP can only inherit Case from a clausemate unless (a) the NP in question is governed by PBE.

The special condition that exempts PBE small clauses in (53a) is no more exceptional than Burzio's claim that the verb *be* (in all of its instantiations) is an exceptional assigner of Nominative Case across clause boundaries. All other exceptional Case assigners assign non-Nominative Case in English. Moreover, PBE yields results exactly parallel to *exist* in contexts like those in (52).

54a) There_i seem $[_S\ e_i$ to be $[_{SC}$ several solutions_i under consideration]]

b) *It seems to be several solutions under consideration.

(54a) is grammatical by virtue of the fact that *several solutions* can inherit Case from a clausemate (the EC in subordinate subject position which in turn inherits Case from *there*), whereas *several solutions* is not in a 0-chain in (54b), and therefore cannot inherit Case at all. If PBE assigned Case, however, we would expect (54b) to be grammatical. The main provision of (53) rules out the troublesome cases with which this part of my discussion began (49) because the lexical NP, as in (55), does not inherit Case from a clausemate. Examples like (55) are thus Case Filter violations.

55) *There_i seems $[_S$ a man_i to be $[_{SC}\ e_i$ in the room]]

In conclusion, contexts of raising and lowering present no special problems for the LF-derivation of *there* sen-

tences proposed in 5.1 that do not require special statements in other accounts as well. It can be concluded, moreover, that treating *there* as a member of a θ-chain with the indefinite NP it binds is crucial to any account of properties and contrasts discussed above, and thus the S-structure analysis of these constructions assumed since Chapter II is confirmed.

5.2.3. *Wh*-Movement in *There* Sentences.

A clear prediction of the S-structure vs. LF-structure analysis of indefinite θ-chains is that *wh*-movement from a position of Case inheritance should result in *there* being a variable at S-structure, rather than LF-structure.

56) I don't know [$_{\overline{S}}$ how many men$_i$ [$_S$ there$_i$ were [$_{sc}$ e$_i$ in the park]]]

If *there* is a variable at S-structure, then it follows that the θ-chain (there,e) is well-formed with respect to the θ-C, as only the variable *there$_i$* is an argument; the trace is an anaphor by definition, since it is A-bound within the same θ-chain. The θ-chain is also well-formed with respect to the BC's, since the position of the Case inheritor is simply an anaphoric trace bound by *there*. This means that there should be no Definiteness Effect evidenced on the *wh*-word, since no violation of either the BC's or the θ-C is generated at S-structure.

The data with respect to the latter prediction are not quite clear. Consider the following examples.

57a) How many soldiers were there in the infirmary/ drunk?

57b) ??Which one of the two men was there in the room/ *drunk?

c) ??Which actors were there in the room/?*laughing?

d) ?Who was there in the room when you got home?

58a) ??The men/many men who there were in the room were eating guavas

b) *The men/many men, all of whom there were in the back room, ate guavas

c) ??Schools of fish which/Ø/that there were in the river died suddenly

59a) ?Whoever there was in the room was guilty

b) However many soldiers there are in the garrison, it won't be enough

c) ??Whichever of the two brothers there was in the bar at the time of the shooting, both of them will pay for the crime

Insofar as the *how many* and the *however many* examples are best[16] and as the *which* examples are slightly worse, it could perhaps be concluded, under the assumption that *which* is definite and *how many* is not, that the DE is in effect and that the prediction made above is simply false. Let us call this interpretation A.

Another interpretation of the same data, call it interpretation B, would be to say that whatever is going on, it does not obviously involve the DE. Some speakers, for example, find no DE whatsoever with questions like those in (57), though almost all speakers find the full relatives in (58) clearly worse than the questions. The relatives must also be considered from two perspectives: the definiteness of the head and the definiteness of the relative operator. The definiteness of

the head does not appear to be a factor in the examples in (58) and so it seems that if there is a DE in relatives it must be on the operator. But if the DE is a limitation on the relative operator, as (58b) seems to indicate, then how is it that (58c) is not much worse with *which* or ∅, the latter plausibly inheriting its features from the relative head? The operator/head distinction is further complicated by the following data.

60a) The very few books that/∅/which there were on his shelves were all mysteries.

b) Every single man that/∅/who was there in the castle was ready to fight for his life.

c) All the men that/∅/?which there were in the garrison sallied forth en masse to meet the enemy.

The distinction between (58) and (60) seems to be that all of the examples in (60) are unambiguously restrictive relatives describing total amounts, while the relatives in (58) are barely possible where the restrictive reading is available, and not at all where it is not (as in (58b)). Examples like (61) contrast with (58b) more closely.

61) All of the men that there were in the room suddenly began eating guavas.

Significantly, however, all of the designations of amounts in (60) and that in (61) are excluded in *there* contexts without list readings, as is typically the case with universals and definite descriptions.

62a) *There were the very few books that were on his shelves sent to me.

b) *There was every man that there was in the garrison captured.

62c) *There were all of the men that there were in the castle captured.

One might argue, however, that though the heads of the relatives in (60) are definite and excluded in *there* contexts like (62), it might not mean that the relative operators in (60) and (61) count as definite as well. There is strong suggestive evidence, however, that the operators of the relatives in (60) and (61) match the features of their heads, as the agreement of the relative clause verb must match the plurality of the head (though this does not hold for the case of the nonrestrictive relative, as shown in (63b)).

63a) *The very few books that there was on the shelf...

b) The old men, every one of whom was/*were responsible...

Thus the relatives in (60) and (61) provide strong evidence against the conclusion that the DE is operative when there is *wh*-movement from the position of a Case inheritor.

Interpretation B may be summarized as follows: the difference between the relatives in (60) and those in (58), and the difference between the questions in (57) and the relatives in (58), while puzzling, appear to be independent of the DE. Mild effects reminiscent of the DE, perhaps, are seen in the contrast between *how many* and *which* (especially in free relatives) but even these distinctions are unclear. Thus the general conclusion to be drawn from cases of extraction from Case inheritor positions is that the DE is absent, exactly as predicted.

If interpretation B is correct, then there is little

more to say, other than that the theory of the Definiteness Effect proposed here is strikingly confirmed. Residual issues common to both interpretations of the data are left to the end of this section.

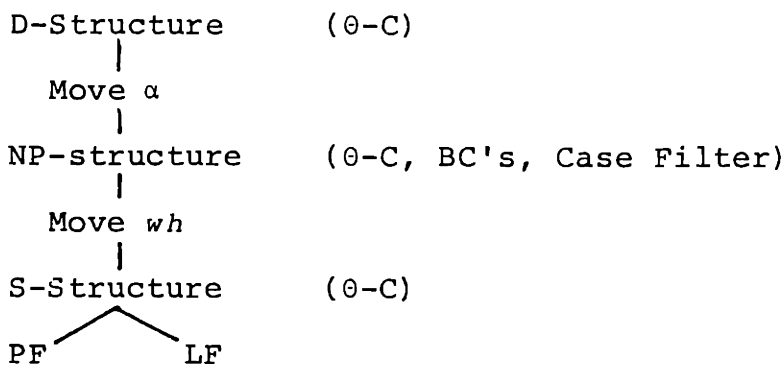
One could plausibly argue, however, that interpretation A is the correct one, i.e., the DE is on even though a number of phenomena obscure its operation. If this is true, then the theory developed in 5.1 must be adjusted in some way, but it should be kept in mind that no other current theory predicts the distribution of the DE at all, no less that it should hold under interpretation A (especially if *there* has no intrinsic meaning or special interpretation, as I have been arguing throughout). Nonetheless if interpretation A should turn out to be correct, it is perhaps worth considering what sort of problems would arise for 5.1.

If interpretation A is correct, then the problem for 5.1 appears to be one of levels. At S-structure, the information relevant to the DE is not available, since the position of the Case inheritor is simply an anaphoric trace. In order to get a representation for the subordinate clause in (56) which includes an unbalanced θ-chain susceptible to the BC's, it is either necessary to mark the trace of *wh*-movement in some way, or to restore the *wh*-phrase to the position from which it has moved. Along the lines of the latter approach, David Pesetsky (personal communication) has suggested to me that the appropriate representation might be sought at a level of syntactic structure proposed by van Riemsdijk and

Williams (1981) which they call "NP-structure."

The basic claim of NP-structure is that there is a level after NP-movement (movement to and from A-positions) and before *wh*-movement at which significant syntactic generalizations hold. A model of grammar including NP-structure, but otherwise much like the model in (11), is what van Riemsdijk and Williams call the "Revised T Model." I have adapted it by adding the θ-C at every level in accordance with the Projection Principle.

64)



A sentence like (65) is given its representations at the various levels in (65b-d) (irrelevant details omitted).

65a) Who was killed

b) e was killed who_i D-structure

c) Who_i was killed e_i NP-structure

d) Who_i $[_S$ e_i was killed $e_i]$ S-structure

The force of the original idea was to say that operations stated on *wh*-variables, which receive special treatment as lexical NP's in the model without NP-structure, may be simply stated at NP-structure where the actual lexical item is still in place. Thus *wanna*-contraction is blocked by the presence of a full *wh*-word at NP-structure in this system, not by a

variable in PF (see discussion in Chapter II). Moreover, variables bound by *wh*-words are treated as names by the BC's in the model without NP-structure, but in the model in (64), the BC's apply to *wh*-words in place, just as they do to phrases like *the man* or *John*. In short, *wh*-words are treated as names falling under Principle (C) of the Binding Conditions at NP-structure.

The latter result is the one relevant to our discussion. If the BC's apply at NP-structure to *wh*-words in their Case inheritor positions, it follows that the *wh*-words should be excluded by the BC's unless indefinite θ-chains are exempted by (1) applying at NP-structure. A grammatical derivation within this model for the subordinate clause in (56) is presented in (66).

66a) e are how many men$_i$ in the room.

b) There$_i$ are how many men$_i$ in the room.

c) How many men$_i$ there$_i$ are e$_i$ in the room?

At NP-structure, the BC's and the Case Filter apply as well as the exemption for indefinite θ-chains in (1). Since *how many men* falls under the Case Filter in (66b), it must be coindexed with *there*, which is inserted at this level. Free indexing of A-positions at NP-structure (instead of at S-structure) accomplishes the coindexing of *there* and *how many men*, but the sentence is ill-formed with respect to the BC's unless (1) applies. Thus only indefinite *wh*-NP's are well-formed at NP-structure in structures like (66), since only indefinite θ-chains can escape the BC's at this level.

Unfortunately for this account, I do not believe it is correct to assume that the BC's apply at NP-structure, or parasitic gaps would be impossible under the analysis proposed by Chomsky (1982) (as discussed in Chapter II). At NP-structure there is no *wh*-binder, and so the parasitic gap is a governed PRO excluded by the BC's (it is free, hence pronominal, and not a variable, hence anaphoric).

67a) Which report did John file without reading?

b) John filed which report$_i$ without PRO reading PRO$_i$ (NP-structure)

At NP-structure, PRO$_i$ is not $\bar{A}$-bound by *which report* because *wh*-movement has not applied yet. As parasitic gaps are grammatical, the BC's cannot apply before *wh*-movement. If the BC's do not apply at NP-structure, however, it would appear that the explanation of the DE for *wh*-words using NP-structure evaporates, along with some of the evidence for NP-structure itself.

The account sketched above is a (failed) attempt to meet the requirements of interpretation A within the theory of 5.1, but it should be kept in mind, of course, that if interpretation B should turn out to be the correct one, the theory in 5.1 need not be extended in any way; rather, the correctness of interpretation B is then predicted. Nonetheless, I have presented this discussion of interpretation A in order to raise the relevant issues and to encourage further research into this matter.

Another issue raised by *wh*-extraction from Case inher-

itor positions concerns instances of overgeneration by Impersonal Insertion. While I have assumed that *there* is not to be treated as an argument generally, I have assumed throughout that *there* must be an argument when it is a variable (just like any other variable in an A-position bound by an element with semantic content). Under this assumption, the following contrast seems unexpected.

68a) I don't know how many men$_i$ there$_i$ were e$_i$ in the the room

b) *I don't know how many men$_i$ Mary knew there$_i$

In (68), *there* has been inserted in the place of a variable. The contrast in (68) does not seem to be just a property of variables with respect to *there*, as the same sort of issue seems to arise when anaphoric traces are spelled out as *there*.

69a) *Someone$_i$ was killed there$_i$

b) *Many people$_i$ seem e$_i$ to be there$_i$ sick

Now it is tempting to rule out both of the overgenerations above on the grounds that *there* is excluded from θ-positions as a property of Impersonal Insertion, but this statement seems problematic with respect to presentational *there* constructions.

70) e$_i$ [$_{VP}$[$_{VP}$ walked into the room] an old man$_i$]

The subject of *walk* is generally assumed to be a θ-position (*walk* is not "ergative" like *arrive* in Burzio's (1981) sense), but recall that the analysis of this construction in 4.4.2 treats (e,an old man) as both a θ-chain (so Case can be inherited) and as a θ-set, since either the S-daughter subject

position or the VP-adjoined position could be assigned the external θ-role. This suggests that the appropriate constraint on *there* is stated not on θ-chains but on θ-sets.

71) Impersonal Insertion (optional at S-structure)

Insert an impersonal formative for $[_{NP}$ e] if $[_{NP}$ e] is not a complete θ-set.

This condition immediately rules out (68b) and (69) because in all of these cases, *there* is the sole inhabitant of a θ-set consisting of a single position. By contrast, Impersonal Insertion can apply in (70) because the subject empty category constitutes only one position within a larger θ-set. *There* can be freely inserted in non-θ-positions, as non-θ-positions are never part of a one-position θ-set, though to satisfy the requirements of *there* in English, the non-θ-position must also be in a θ-chain, as it is in the grammatical (68a), for example. (This is further evidence that θ-sets are significant syntactic entities, cf. Chapter III.)[17]

It is worth pointing out, perhaps, that neither example in (69) is excluded by the Case Filter, since *there* is in a position where it can inherit Case. Recall that the Case Filter and CRC's are responsible for predicting most of the distribution of *there*, and so it would be a step backward to stipulate that *there* must be inserted in a directly Case-marked position (which would account for the examples in (69)). Moreover, the assumption that *there* is simply a lexical NP subject to the Case Filter immediately excludes another possible overgeneration.

72) *Harry$_i$ seems [$_S$ there$_i$ to be [$_{SC}$ e$_i$ sick]]

Assuming it is like any other NP, *there* in (72) cannot inherit Case from a non-clausemate (cf. (53) in 5.2.2) and is thus excluded by the Case Filter.

One more facet of (71) deserves mention. One might attempt to conclude from (71) that *there* is never an argument, even when it is a variable (although this would require special stipulation to this effect). It might then be reasoned that the revision in (71) follows from the θ-C, in that nonarguments never fill θ-positions. This would rule out (68b), but it would also rule out the grammatical (68a), since the θ-chain (there,e) would not contain an argument. Moreover, such a theory would still have to adopt the revised Impersonal Insertion rule in (71) in order to rule out *there* inserted in place of an anaphoric trace in a θ-position. Indeed the very claim that nonarguments cannot fill θ-positions seems dubious since anaphoric traces are never treated as arguments even though they routinely fill θ-positions in chains containing an argument member. For these reasons I have not given serious consideration to any theory that assumes that *there* is not an argument even when it is a variable.

One further remark on *wh*-extraction from *there* sentences is of interest here. In 5.1.2 it was suggested that one might suppose that *there* is invisible in LF and is simply treated as expletive PRO at S-structure. If this were true, we would expect that the representation of (68a) would be (73) at LF-structure.

73) I don't know [$_{\overline{S}}$ how many men$_i$ [$_S$ e_i were e_i in the room]]

Now consider a sentence with long *wh*-extraction from a position of Case inheritance.

74a) How many men did John say that there were in the room?

b) *How many men did John say that were in the room?

If *there* in (74a) were simply a variable at LF-structure, where the ECP applies, we would expect it to be excluded by ECP just as (74b) is. Thus *wh*-extraction provides evidence that *there* is present at LF-structure (as pointed out to me by Barry Schein (personal communication)).

5.2.4. Summary of 5.2.

The bulk of this section has been devoted to showing that some constructions apparently problematic for the analysis of the DE in 5.1 either can be handled by independently motivated devices, or rather point to evidence favorable to the approach developed here. Thus the discussion of the scope of negation eliminated a seeming problem on independent grounds, while independently motivated constraints on lowering and Case inheritance were found to be only stateable within a theory that treats *there* as a member of a θ-chain. The case of *wh*-extraction from positions of Case inheritance, under interpretation B of (56) through (61), has provided evidence in favor of the 5.1 analysis. This evidence, were interpretation A not plausible, would be

especially striking, since it involves the basic mechanism by which the DE is predicted in 5.1. As the latter analysis is moreover the only one that predicts the distribution of the DE in a manner consistent with the Unity of Indexing Hypothesis, I shall conclude henceforth that it is essentially correct and develop other aspects of this proposal in the remaining sections.

5.3.0. Definiteness and Indefiniteness.

Thus far I have claimed that the distribution of the DE follows from the formal property of indefinite θ-chains that permits them to be exempted from the BC's at S-structure. I have not, however, presented evidence that the definite/indefinite distinction is anything more than a classification of convenience separating those NP's that are compatible with *there* contexts and those that are not. This section is intended to address the issue of whether the definite/indefinite distinction is independently motivated or not.

5.3.1. Contextual Tests for Definiteness.

In Chapter IV, the class of definite NP's was described as consisting mostly of proper names, definite descriptions, universals and demonstratives, while indefinites were described as including quantifiers like *some, many, more, a, several, few*, etc., numerals (*one, two, ...*), bare plurals (but see below), and negated constituents. *There* contexts, of course, distinguish these two classes, but there are at least two other contexts that do so.

The first of these contexts is PP-extraposition, as pointed out by Gueron (1980). When a PP is extraposed, the NP left behind must be indefinite.

75) X was/were sold on linguistic theory.

where X =		
	*the books	some books
	*the book	many books
	*each book	a certain book
	*all (the) books	more books
	*most books	no books
	*both books	several books
	*John's books	a book
	?*every book	three books

Notice that some of the 'peculiar' members of the definite class, such as *most* and *both*, which don't fall neatly into the list of definite NP's above, are also excluded in *there* contexts.

76) *There are most/both boys sick

The PP-extraposition test suffices to motivate the definite/indefinite distinction on empirical grounds, therefore, though naturally more evidence of this sort is welcome.

A second test makes the same distinction, though it is complicated by a number of (interesting) interfering factors which must be abstracted away from. Consider the contrast in (77).

77a) The government won't hire many men with any children.

b) *The government won't hire those men with any children.

The polarity reading of the quantifier *any* is blocked in (77b), and so the reading "The government won't hire those men who have children" is not available in (77b), even though a similar reading of (77a), i.e., "The government won't hire many men who have children" is possible in (77a). Let us say that NP's

which block construal of *any* with a negative outside the NP are "opaque" for polarity *any*, while those NP's that permit such construal are "transparent" for polarity *any*. Definites, it works out, are opaque for polarity *any*, while indefinites are transparent.[18] The following judgments are relatively clear.

78) The government won't hire X with any children.

where X =		
	*that man	men
	*all men	many men
	*each man	a (single) man
	*both men	(even) five men
	*Joe's brother(s)	

Two factors interfere with clear judgments in some of the other cases, however. Some quantifiers, such as *every*, *most*, and *a*, bare plurals, and *the* followed by a plural (or sometimes even a singular) can appear with existential *any* independently of the scope of negation, just in case the whole NP is interpreted as generic.

79a) In those days, every/a young man with any ambition went west.

b) Most men with any brains eat rutabagas.

c) Men with any sense avoid installment plans.

d) ?The rich man (??men) with any power will push for tax cuts.

e) *In those days, some/many men with any sense headed west.

f) *Each man with any sense avoids installment plans.

In all of these cases, *with any NP* is interpreted as "having x amount of NP," the same interpretation as polarity *any*. Thus all the NP's that can appear with *any* when they are generically

interpreted can also appear with *any* in contexts like (78). NP's that do not permit the generic interpretation divide along the lines of the definiteness distinction made by *there* contexts and the PP-extraposition test. The generic interpretation can be more or less excluded by choosing a property that is both countable and alienable and by constructing a punctual time frame. Controlling for the generic interpretation, the *any* opacity test distinguishes definites (opaque) and indefinites (transparent) almost perfectly.[19]

80) John didn't expect X with any fresh eggs in it/them to arrive at 3:00 today.

where X =	
*John's basket(s)	a basket
*each basket	more baskets
*all (the) baskets	many baskets
*every basket	three baskets
*most baskets	
*both baskets	*?some baskets
??the baskets	?a certain basket
*the basket	*?several baskets
	??a number of baskets
	a single basket

The only remaing bug in the *any* opacity test is the fact that quantifiers like *some*, *several*, *a certain*, and *a number* all seem rather odd (for many speakers *?) in (80), but this seems to be due to the fact that these quantifiers are simply uncomfortable in the scope of negation.[20]

81) ??John didn't think that several people came.

*John didn't promise a number of people tickets.

John didn't love *some children/?a certain person.

Similarly, the quantifiers in (81) are also excluded in negated *there* contexts.

82) ?*There aren't some men in the room.

82) *There isn't a certain man in the garden

*There aren't several people in the room

*There aren't a number of people in the room

Thus abstracting away from some of the indefinite NP's that cannot appear in the scope of negation, the *any* opacity test provides further independent motivation for the distinction between definite and indefinite NP's as opposing natural classes.

One might object, however, that the *any* opacity test is a test for 'specificity' rather than definiteness. Specificity is sometimes assumed to be a property of NP's the existence of which is presupposed, as in the wide scope reading of *somebody* in (83a) as paraphrased in (83b).[21]

83a) Everybody loves somebody.

b) There is some x such that everyone loves x

One may ask, however, if there are any definite quantifiers that are not specific. One test for specificity is opacity for *wh*-extraction (cf. discussion in Fiengo and Higginbotham (1981)).

84) Who would John by a/*the/*some picture of?

Some is specific in this context. Notice, however, that extraction of this sort is possible from an NP quantified by 'free choice' *any* (e.g., "Pick a picture, any picture").[22]

85) Which rock star would Mary buy any/*the picture of?

Free choice *any* does not imply that any particular picture is being talked about, and thus it appears nonspecific, yet free choice *any* is still excluded in *there* contexts.

86) *There is any picture of Johnny Shines on sale.

Thus definiteness is a crucial property of the quantifiers permitted in *there* contexts, nonspecificity being insufficient to exclude free choice *any* (a point to which I will return in the next section). Now notice that nongeneric *most* also permits *wh*-extraction, just like free choice *any*.

87a) ?Which rock star would John buy most pictures of?

b) *There are most stories about Little Richard told in the bathroom.

If Fiengo and Higginbotham are right to attribute opacity for *wh*-extraction from NP to specificity, then *most* is nonspecific, though the *any* opacity test[23] and *there* contexts class it as definite. Thus the *any* opacity test is a test for definiteness (rather than specificity) parallel to *there* contexts and PP-extraposition.

Now it might be asked what the status of generic NP's should be when the same NP can, in other contexts, be indefinite. Consider the following well-known contrast.

88a) Men are sick.

b) There are men sick.

The generic sense of *men* is only possible in (83a). This contrast is unsurprising if there is some strong independent reason to assume that generic NP's are definite.[24] Although it is certainly a plausible line of argument to assume that generics are definites because they are like universals, or perhaps because they are like proper names of kinds, it is possible here to take a different tack in answering this ques-

tion. Above it was noted that an NP must be interpreted as generic if it contains existential *any* without being in the scope of negation (79a-c). Given the contextual tests discussed above, it is possible to test to see if generic NP's of this sort are excluded in *there* contexts when no negation is available.

89a) *There are men with any sense heading west

b) *There is a man with any sense heading west these days

Similarly, it is possible to test whether these generics with *any* can appear in PP-extraposition contexts, where indefinites are normally possible, as in (90).

90a) Whenever there are jobs like these available, secretaries with any ambition usually apply.

b) Whenever there are jobs like these available, secretaries with good credentials usually apply.

c) *Whenever there are jobs like these available, secretaries usually apply with any ambition.

d) Whenever there are jobs like these available, secretaries usually apply with good credentials.

Sentences (90a) and (90b) contrast in that the latter is ambiguous between the generic reading (secretaries of that type) and the 'pure indefinite' reading (more than one secretary who has good credentials) while (90a) has only the generic reading forced by *any*. When the PP in (90a) is extraposed in (90c), the sentence fails, presumably because generics must count as definite, while PP-extraposition applying to (90b) to produce (90d) is grammatical, but only under the indefinite reading, not the generic one. Thus it is clear

simply judging from the available tests, that NP's that are indefinite in other contexts must be treated as definite whenever they are generic.

A variety of other properties have been associated with definiteness in the literature (cf., for example, Postal (1970), Hawkins (1978), Gueron (1980), Barwise and Cooper (1981))[25] but I know of no other tests that isolate the exact same distinction between classes of NP's that is isolated by *there* contexts, the *any* opacity test and PP-extraposition, although I shall return to the latter two tests briefly below. Although a number of interesting questions arise as to the nature of the two classes of NP's distinguished by these tests, the conclusion central to our concerns here is quite straightforward: the definite/indefinite distinction is not one of convenience constructed to facilitate a newly fashioned principle, but rather an independently motivated distinction between natural classes to which a newly discovered principle, the INPP, refers.

5.3.2. On the Semantic Treatment of Definiteness.

Up to now I have merely motivated a distinction which divides the class of all NP's into two, definites and indefinites, but I have yet to address the issue of whether or not these two classes of NP's can be independently characterized by any sort of semantic distinction. In this section, I shall examine one such proposal, that of Milsark (1974,1977) and attempt to determine whether the semantic distinction

between definites and indefinites corresponds to the formal distinction proposed above.

Milsark's proposal is essentially that the class of definite NP's corresponds to proper names and universals, while the class of indefinite NP's includes all and only "cardinal" NP's. Milsark first notes that all of the obviously universal quantifiers belong to the "strong" class (a neutral term denoting those NP's excluded in *there* contexts), i.e., *all*, *every*, *each*, 'free choice' *any* and (plausibly) generic bare plurals. Then Milsark follows Chomsky's (1975) suggestion that *the* is a universal quantifier (over a unit class when coupled with a singular noun, as in *the man*), and so it remains only to include demonstratives and pronouns in this group, presumably as either pronouns or proper names. The "weak" quantifiers (those that appear in *there* contexts) are "cardinals" in the sense that they characterize quantities or amounts, the paradigm case being numerals such as *one*, *two*, etc. Milsark then treats *a*, *some*, *several*, *many*, *more*, etc., as expressions of cardinality in the above sense as well. Recall that this is consistent with his treatment of *exist*-C, which states that "*Exist*-C is true if the class C has at least one member" (Milsark (1974), p. 182). Thus a sentence like (91) is true just in case the number of men in the room is indeed three/many.

91) There are three/many men in the room

Now let us suppose that Milsark's treatment of definite/indefinite or strong/weak as universal/cardinal is correct.

It does not thereby follow that either of these two classes of NP's should be excluded or required in any of the diagnostic contexts discussed above. Milsark attempts to achieve this result by inventing a semantics peculiar to *there be* which is compatible with cardinals but not with universals, but as we have seen, this approach, relying on the presence of the impersonal formative *there*, is doomed, as it is based on the wrong generalization. Instead I have proposed a formal distinction between definites and indefinites which interacts with the right generalization, the formation of unbalanced θ-chains, to predict the distribution of the DE. These considerations lead to two questions. Is Milsark's semantic distinction between the two classes correct? If so, why should it be the case that the INPP should hold of the weak class and not the strong class? Insofar as the answer to the second question depends, in part, on the answer to the first, the latter question will be answered in the next section.

The first question, however, leads immediately to some slightly murky issues. Milsark's proposal requires that he treat quantifiers like *some* as members of the strong class in some contexts, and these contexts are worth further consideration. Postal (1970) has noted that the phonetically reduced form of *some*, *sm*, requires what Milsark calls the "cardinal" interpretation while full *some* does not. Consider (92).

92) Some/sm fish is on the table.

Sm in (92) can only mean that an amount of fish is on the

table, while the unreduced version in (92) permits another interpretation, namely, that a particular fish is on the table, though it is, perhaps, of a variety unknown to the observer. The problem for Milsark's account is that both readings still seem to be available in *there* contexts, and only the *sm* reading appears to be cardinal.

93) There is some (strange) fish on the table.

To see more clearly that the 'particular fish' reading is available, consider the following well-known sort of example in (94a) followed by a similar *there*-context example in (94b).[26]

94a) Ahab wants to catch a large fish, namely, Moby Dick.

b) There is a large fish attacking the Pequod, namely, Moby Dick.

Of course, this result is not too surprising, given that the routine paraphrase of the wide scope interpretation of *some*, for example, is a *there* sentence, as in (83b), repeated below.

83b) There is some x such that everyone loves x.

Finally, the specific fish reading is permitted with PP-extraposition.

95) Some fish swam by with enormous fins which must have been Moby Dick.

The existence of the 'particular fish' reading is problematic for Milsark's treatment of cardinality, and this suggests either that his account should be extended in some way, or that the class of indefinites permitting 'particular fish' readings (*a certain fish*, for example) should not be characterized as semantic cardinals at all. Rather, it might be that they simply have formal syntactic properties that

largley, perhaps even exactly, overlap with the semantic distinction cardinal/universal. Pushing this view, it could be claimed that this is an argument for the autonomy of syntax. Suppose for example, that the cardinal/universal distinction picks out the right class of NP's to be characterized formally: all those quantifiers that can be interpreted as cardinal in some context are syntactically classed as "indefinite," while all NP's that cannot be cardinally interpreted in any context are syntactically "definite."[27] The syntactic distinction is then correctly made for the classes of quantifiers on the basis of semantic criteria, but this still permits the semantic distinction "cardinal/universal" to treat many of the indefinites as noncardinal, or perhaps even as universals, in certain contexts.

The latter remarks raise serious issues, issues so serious, in fact, that the rest of my remarks on definiteness will beg questions from time to time as to whether certain statements are to be taken as semantic or syntactic facts. To conclude this section, however, it may be simply said that no semantic distinction suffices to explain the Definiteness Effect of *there* contexts, though semantic distinctions may very well underlie the assignment of indefinite NP status to some quantifiers rather than to others.

In any case, one result is clear: the Definiteness Effect is indeed about definiteness and not about specificity, as Milsark suggests.

5.4. Towards an Explanation of Indefinite NP Properties.

At this point it is worth considering what has been explained and what remains mysterious. The simple formal property of indefinites that predicts the complete distribution of the DE has been stated in (1): indefinite θ-chains need not be checked for well-formedness by the BC's at S-structure, while definite NP's always are. The natural question that arises is the one raised earlier, and in the last section: why should indefinite NP's (and θ-chains) differ from definite ones in just this way?

My answer to this question is a bit speculative. It has often been remarked that indefinite NP's are somehow either 'nonreferential' or at least 'less referential' than definite ones. Suppose that the way to express this intuition formally is to say that the constraints that deal with the linguistic notion of reference apply more rigorously to those elements that are most referential, less rigorously to those elements that are least referential. My discussion along these lines in this section is intended to be exploratory rather than definitive.

With this general outlook in mind, consider how two of the tests for the definite/indefinite distinction could be described as involving contexts where definite NP's, as opposed to indefinite NP's, are opaque. In the case of PP-extraposition, the trace left by the PP is within an NP, just as *any* is within an NP in the *any* opacity contexts. Both cases are represented schematically below.

96a) neg ... $[_{NP}$ ... any ...]

b) $[_{NP}$ det N $[_{PP}$ $e_i]]$ ... PP_i

It may be suggested that elements which are more referential are more opaque, and so definite NP's, as opposed to indefinites, must be 'complete' in some sense, perhaps in terms of the Name Constraint of May (1978) and Gueron (1980). The porousness of indefinites, by this reasoning, is due to their less referential character.

Whether or not the latter approach is correct, it at least suggests that a loosening of formal constraints regulating relations between elements across an NP boundary is typical of indefinite NP's because they are, in some sense to be made more precise, less referential. The latter generalization, however, across the *any* opacity test and the PP-extraposition test does not reflect on the particular formal property proposed for indefinites that permits their appearance in unbalanced θ-chains. Can some other property of indefinite NP's be related to this one?

Notice that it is generally the case that predicative NP's, where they appear at all, tend to be indefinite.

97) I believe Mary a/*the fool.

It is possible for superlative NP's to appear in some cases, but in precisely these cases, as pointed out to me by Gary Milsark (personal communication), indefinite determiners are not possible.[28] Nonsuperlative adjectives (except comparatives)[29] in fact, reinforce the distinction in (97).

98a) I consider Mary a/*the fine wife for Bill.

98b) I consider Mary the/*a best wife for Bill.

With the verb *consider*, though less so with *think* and *believe*, if the predicated noun is preceded by *the* with no intervening adjective, then *the N* sounds best if the N is somehow superlative in some extended sense.

99a) I consider John the winner/*the old man/*the pharmacist.

b) I thought/believed John ?the winner/*the old man/ *the pharmacist.

In an appropriate context, moreover, a definite NP otherwise clearly ungrammatical in this context can be made to sound quite natural.

100a) *I consider Hinckley that man over there.

b) Only one man can stop the Republicans in 1984, and I consider Hinckley that man.

Suppose, then, that the variation in predicates (*believe, think, consider*) and the limited appearance of definite NP's as predicative NP's fall under some separate, pragmatically influenced generalization that can be set aside, and that the larger generalization is that all predicative NP's are indefinite.

Now recall that it was argued in the last chapter that in small clauses with two NP's, one of the two has to be a predicate or else neither can be assigned a θ-role. Moreover, the position of the second NP was considered to be a non-A-position (though not an operator position like other $\bar{A}$-positions) which did not have to be assigned Case. Now let us suppose that the predicative NP is coindexed with its argu-

ment as a general property of predication, as has been proposed by many scholars (e.g., Williams (1980)), as in (101).

101) I thought $[_{SC}[_{NP}\ John_i][_{NP}\ a\ fool_i]]$

Under neutral assumptions, the two NP's bind each other, since C-command and coindexing holds between them. The argument NP, since it is neither A-bound nor bound by an operator, may, we suppose, not count as 'bound' at all, but the predicative NP is certainly A-bound, since the argument *John* is in an A-position. It follows that the predicative NP *a fool* would be excluded by the BC's at S-structure, if the BC's apply to it, since formally speaking, *a fool* should count as a 'name' for the BC's in the same way that it counts as a name for the BC's in (102).[30]

102) *$John_i$ saw a $fool_i$

Clearly *a fool* should not be treated as a name when it is a predicate, or else it should be excluded in cases like (101) just as it is in (102).

Intuitively speaking, it is obvious that predicative NP's do not count as referential or as names, but rather as predicates similar to adjectives. It thus makes sense to exempt them altogether from conditions on possible reference such as the BC's. In this light, however, the S-structure exemption permitted for indefinite NP's immediately comes to mind. In the latter case, the BC violation due to an unbalanced θ-chain was exploited to make a distinction between definites and indefinites. Suppose that predicative NP's are precisely those NP's which are not interpreted at any level by

the BC's (also to avoid a BC violation). Argument indefinite NP's, on the other hand, like those discussed in 5.1 must still undergo the BC's at LF-structure, since it is not intended that examples like (102), where *a fool* undergoes QR (see note above), should escape the BC's. With respect to predicative NP's, however, which presumably do not undergo QR,[31] it may be assumed that they must be exempted at both S-structure and at LF-structure. One way to permit this result without losing an account of (102) is to assume the following.

103) Indefinite NP's may be exempted from the BC's at any level.

104) The BC's must apply to arguments at some level.

It follows from (103) and (104) that indefinite NP's not treated by the BC's at any level can only be predicative, since since it they are arguments, then they must undergo the BC's at some level.[32]

Though this treatment is highly programmatic, it is worth noting that the general property of predicative NP's, that they are indefinite, is related by (103) in a formal way to the appearance of only indefinite NP's in unbalanced 0-chains. Thus we approach an answer to the first two questions posed at the beginning of this chapter. Indefinite NP's differ from definite NP's in that the former are 'less referential.' In formal terms, being 'less referential' means that principles regulating referentiality, such as the BC's, are loosened, or apply less rigorously to indefinite NP's. The particular formal way in which this loosening is expressed,

as for example in (103), results in the possibility that indefinite NP's can appear in unbalanced θ-chains and predicative contexts and definite NP's cannot. Independent syntactic factors, such as the Case Filter and the θ-C, which regulate the formation of θ-chains, predict independently when unbalanced θ-chains must be formed, and thus predict the distribution of the DE given the formal property of indefinite NP's as expressed in (103) or the INPP (see note above).

5.5. Summary.

It may be concluded that all of the questions in 5.1 have now been answered, some more unambiguously than others. The interaction of grammatical levels has been proposed and defended, general rules of impersonal insertion have been proposed and defended, and independent motivation for the definite/indefinite distinction has been provided, both on semantic and syntactic grounds. The DE, in this treatment, emerges as a formal syntactic property of a semantically definable class. In this sense, the DE is essentially a syntactic more than a semantic phenomenon, since it is only through the mediation of formal syntactic properties, particularly syntactic chains and the theory of indexing, that the distribution of the DE can be predicted in an explanatory way.

FOOTNOTES: Chapter V

1. As suggested in Chapter II, note 22, it may be assumed that an appropriate antecedent for an argument anaphor must be itself an argument, just as the antecedent of an anaphor must agree in other features. This does not change the fact that an anaphor in i., for example, is bound, albeit by an inappropriate antecedent.

i. *There$_i$ is himself$_i$ in the garden.

2. The idea that QR plays some sort of saving role with respect to *there* has also been independently suggested to me by Robert May (personal communication). Tarald Taraldsen (personal communication) has also independently suggested that QR plays a special role in impersonal constructions, specifically to avoid a binding violation. Taraldsen's idea, however, is to allow QR to adjoin the PVNP to VP, putting *there* outside the scope of the operator. These approaches are within the same spirit as the proposal presented here. Notice, however, that QR, while it plays an important role in the analysis, does not distinguish definites from indefinites. Both sorts of quantifiers undergo QR, yet (7b) is ungrammatical. The INPP is thus crucial to a successful treatment of the DE.

3. There are details of analysis concerning the treatment of subject clitics in French which I abstract away from. I shall discuss these structures in detail in 6.2.

4. I am not discussing the impersonal pronouns that translate as *one* in English, such as *man* in German, *on* in French, or *si* in Italian (in the appropriate sense of *si*).

5. Recall that variables count as phonetic realization of Case, cf. Chapter III.

6. Recall, of course, that the semantic content of a variable is determined by its $\bar{A}$-binder, as in the last chapter. If the $\bar{A}$-binder is expletive, then so is the variable it binds, as came up with respect to some German and Dutch examples wherein *er* or *es* was in matrix COMP (cf. 4.3). When the post-verbal subject is fronted by QR, however, it is never expletive, hence the variable it $\bar{A}$-binds, namely, *there*, is never expletive at LF-structure.

7. "Immediate scope" is first introduced in Kroch (1974), but is used by Linebarger in a more sophisticated theory of LF-structure, and only with respect to polarity items. For other treatments of polarity items, cf. Jackendoff (1972), Lasnik (1972,1975), and Ladusaw (1979), among others.

8. How (33) is derived is not obvious. It must be assumed that *not* has S-scope or VP-scope outside of *politely*, cf. note 10 below.

9. I am abstracting away from many effects of focus and intonation discussed by Lasnik (1975). I do not assume Lasnik's actual, much more specific rule for propagating the feature

+N. Many of the facts which complicate Lasnik's assignment of +N are dealt with by Linebarger's treatment of immediate scope. I shall not be concerned with the comparative adequacy of these accounts.

10. It may be necessary to assume that *not* gets innermost sentence scope in a set of S-nodes generated by QR adjunctions. This would permit *not* to have sentential scope without permitting it to have scope over any element moved by QR.

i. Someone didn't leave (S-structure)

ii. Someone$_i$ [$_S$ not [$_S$ e_i leave]] (LF-structure)

It may be the case that some quantifiers can avoid undergoing QR on the condition that they are interpreted as 'groups' (as suggested by Jim Higginbotham, class lectures).

iii. Everyone didn't leave (S-structure)

iv. not [$_S$ Everyone leave] (LF-structure)

The available reading of iii. with wide scope of negation is that it is not the case that 'the whole group' left. Perhaps the same is true with an indefinite quantifier such as *many men* in the place of *everyone*, but these judgments become very obscure.

11. This account may provide a treatment of the well-known ambiguity with respect to the following pair of sentences with modals.

i. There must be someone in the forest.

ii. Someone must be in the forest.

The second sentence is ambiguous, in that it can mean (A) that

it is required of someone that he be in the forest, and (B) that it is required that the forest not be empty. Only the second reading is possible in i. One can imagine a +M(odal) feature parallel to the +N feature introduced above, and the treatment of negation can then be extended in parallel to modals, but cf. note 13 for another possibility that seems more attractive.

12. It is possible to construct an analysis that requires lowering of *there* so that it can be a variable under the assumption that lowering is to A-positions followed by QR. Versions of this sort of analysis are compatible with the account presented here, although I see no advantage in pursuing them.

13. In note 11 it is remarked that the scope of a modal verb is unambiguous in *there* sentences. An alternative to the feature analysis in note 11 is to treat modals as raising verbs which take small clauses parallel to the verb *seem*.

i. $There_i$ must $[_{sc}\ e_i$ be $[_{sc}\ someone_i$ in the room]]

ii. $Someone_i$ must $[_{sc}\ e_i$ be $[_{sc}\ e_i$ in the room]]

Given this analysis of *must* (and similarly *would*, *should*, *could*, *can*, etc.), it follows that the scope possibilities for *must* are exactly parallel to those in (45) and (48), respectively. This would obviate the necessity of a special modal feature such as that suggested in note 11.

14. Earlier in this section, the following scope generaliza-

tion was proposed.

i. The scope of a quantifier does not exceed the lowest clause containing the verb that governs it

In (49b), for example, since *seem* governs *many ships*, we would expect *many ships* to have scope either above or below *seem*, if the sentence were not ruled out for other reasons.

15. The appropriate indexing pattern could still be forced by assuming that *there* must be coindexed with something, but in this case there would be no reason to suppose that *there* should be inserted at all, rather than *it*, in order to force coindexing.

16. Relative clauses with *how many* are ungrammatical quite independently of *there* contexts.

i. *The men how many John knew was a lot.

17. This argument for the existence of 0-sets is important because it is independent of the arguments for 0-sets based on the 0-C discussed in 3.2.2, 6.1.2 and Chapter VII.

18. The question of whether or not this is a test for specificity rather than definiteness is addressed below.

19. Chomsky (1977) notes the following examples (p. 117).

i. We can't find books that have any missing pages.

ii. *We can't find the books that have any missing pages.

iii. *We can't find certain books that have any missing. pages

On the basis of iii., Chomsky suggests that this is a test for

specificity. (He also notes that examples like ii. are attributed by Hornstein (1977) to an observation by George Horn.) It does seem to be the case that *certain* and a plural count noun is opaque for *any* interpretation, but I also find *certain Ns* odd in the scope of negation. Chomsky cites the following sentence as grammatical, though I find it slightly odd, even where *many* is not related to negation.

iv. ?We didn't see certain pictures of many of the children.

If this judgement is appropriate, then iv. patterns with the examples in (81) and (82). For more discussion of this matter, see note 20.

20. There are contexts where these elements can be construed more successfully in the scope of negation, especially where the negated verb is stressed.

i. I didn't think that several people came.

Lasnik (1975) also treats ii. as fully grammatical.

ii. I didn't attend several lectures.

This seems to be a question of whether or not negation has VP scope, or scope over S. I find only the latter interpretation grammatical.

iii. *The number of lectures I attended was not 'several'

iv. It is not the case that I attended certain lectures, the number of which was many

If quantifiers like *several* are inherently specific, and inherent specifics cannot be negated, then the issue of whether or not NP's quantified by these elements are permeable to nega-

tion does not arise. Still relevant, however, is whether or not all definites are also specific. This question is addressed directly below.

21. Whether or not the specific interpretation of indefinites is always correlated with wide scope is not at issue here. Ioup (1977) argues that specific interpretation of indefinites is also possible with narrow scope.

22. I think that there is a possible reading of (84) with *some* that is reminiscent of free choice *any*, namely, one in which it is 'some picture or other' rather than 'some picture in particular.' The latter reading seems hopeless to me.

23. The status of existential *any* within an NP quantified by free choice *any* is obscure, but I believe it is possible independent of negation.

i. ?John will go to see any film with any starlets in it.

Thus the point made for *most* may not be made for *any*.

24. Carlson (1977) points out a number of contexts where the two interpretations of bare plurals contrast. Most of his concerns are orthogonal to mine, but it is clear that there should be a formal distinction between the two interpretations, even though the nature of the two interpretations derived from the formal distinction (definite/indefinite) may be predictable based on some treatment of the "meaning" of bare plurals.

25. Postal's (1970) tests, for example, are not exact. Postal

suggests that only definites appear in the underlined position in i., but as i.c. shows, indefinites are also possible.

i.a. Fido is John's.

b. *A car is John's.

c. Three dogs are Harry's, the rest are mine.

Only definites, according to Postal, appear in ii., but notice ii.c. (pointed out to me by Noam Chomsky (personal communication).

ii.a. Big as Harry was, he couldn't lift it.

b. *Big as some giant was, he couldn't lift it.

c. Dumb as many politicians are, they still know how to lie on cue.

Hawkins (1978) is mostly concerned with contrasts between *a* and *the* to the exclusion of other quantifiers. He notes, for example, that since a cigarette can result in only one butt, *the* is possible in the context below, but not *a*, since *a* implies the existence of more than one butt per cigarette (p. 242).

iii. He put the/*a butt of the cigarette in the ashtray.

But note that *every* is excluded in this context, presumably for the very same reason.

iv. *He put every butt of the cigarette in the ashtray.

Cf. note 28 below.

26. Hawkins (1978) notes that NP's like *a chap called Bill Snoop* are always specific. These too appear in *there* contexts.

i. There is a chap called Bill Snoop here who says he wants to meet you.

Milsark (1977) argues that only cardinal interpretations are available for indefinites, but he only considers plural indefinites. Even for plural indefinites, I believe sentences parallel to i. are possible.

ii. There are some people named Mary and John here who say they want to talk to you.

27. Some accommodation must be made for indefinite NP's which must count as definite when they are interpreted generically.

28. Hawkins (1978) points out that the indefinite article is impossible in (98b) because there cannot be more than one *best wife*, and the indefinite article implies nonexclusiveness.

29. For reasons I do not understand, both definite and indefinite articles can appear with comparatives in predicate position.

i. I consider Mary the/a better wife for John.

30. Recall, however, the discussion of the exclusion of variables by Principles (A) and (B) of the BC's when they are not $\bar{A}$-bound (in 5.1.2). Relevance for the BC's in this case, rather than simply relevance to Principle (C), is then the crucial issue, but this does not significantly affect the discussion in the text.

31. As suggested to me by Neil Elliott (personal communication).

32. Of course, the INPP proposed in (1) is a property of θ-chains, and predicative NP's, because they are not in A-

positions, do not participate in θ-chains. Thus this generalization must be investigated further before it can be made more precise.

Chapter VI

6.0. Missing Subjects and Free Inversion.

In the last two chapters, the DE was explored in some detail in some of the languages where it is found, but what about those languages where the DE is systematically absent? In principle, the absence of the DE in a given context ought to be as systematically predictable as its presence. To study more closely the substance of this claim, the natural strategy is to consider what sort of language (and what sort of construction) would constitute a serious counterexample to this analysis.

Imagine a language, call it L, that systematically permits the appearance of Nominative definite 'subjects' in VP, where for every case of 'NOM in VP' there is a roughly synonymous sentence with 'NOM in subject position' (let us suppose that 'subject position' is a preverbal S-daughter position as it is in English and French). Imagine further that this property holds only in tensed sentences thus indicating that this is not a property of any particular predicate, but rather a general property of the way Nominative Case can be assigned in L. A language like L will be a systematic counterexample to my analysis of the DE just in case the relation between subject position and the 'NOM in VP' is a Case inheritance relation (θ-inheritance relation), i.e., the subject position and NOM-in-VP are in the same θ-chain.

It has been claimed (cf. Jaeggli (1980b), Rizzi (1980),

Burzio (1981), Chomsky (1981a)) that all of the properties of L are found in Italian and follow from the "PRO-drop Parameter," which entails a cluster of other properties as well. In particular, these writers claim that the NOM-in-VP gets its Case and/or θ-role by inheritance from preverbal position (or INFL) and that this inheritance relies crucially on the same sort of coindexing found in *there*-sentences in English. If this analysis is correct, then my claim that the DE can be predicted from Case inheritance is counterexemplified for any PRO-drop language like Italian.

Fortunately, it is not necessary to conclude that the distribution of the DE remains unexplained by any current theory, as it is not the case that, in Italian, NOM-in-VP must receive its Case and θ-role by inheritance. Instead, it can be argued that both of the latter properties, Case and θ-role, are assigned directly in VP in Italian under the appropriate circumstances. In order to focus more narrowly on this problem, however, it is first necessary to establish the independence of those properties that concern us here from other 'PRO-drop' properties. In particular, I shall show that the PRO-drop Parameter is in some accounts based in part on a false generalization in that it conflates two quite independent parameters: the "NOM-drop Parameter" and the "Free Inversion Parameter." Languages that have the Free Inversion Parameter will be those that, among other things, lack the DE.

My presentation will proceed as follows. In 6.1, I shall review some of the analysis of 'PRO-drop' mentioned

above and discuss the empirical generalizations on which they are based. In 6.1.2, a preliminary version of the counter-analysis I propose will be discussed. Section 6.2 and its many subsections is concerned with showing that the Free Inversion Parameter (FIP) is completely independent from the NOM-drop Parameter (NDP). In 6.3 I shall discuss languages that drop NOM Case, but also lack free inversion, the fourth possibility predicted by the existence of two separate parameters. Next, in 6.4, I extend my treatment of NOM-drop to German, wherein only expletive subjects can be 'missing,' as will be predicted. In section 6.5 I return briefly to some issues of analysis in Italian. Finally, in 6.6, I summarize and extend the theory presented here, and compare it to some other theories of the same phenomena.

6.1.1. The "PRO-drop Parameter" in Earlier Accounts.

Most current research on the "PRO-drop Parameter" stems from "Perlmutter's Generalization," which I have stated below in slightly more current terms.

1) Languages that permit the subject position to be 'missing' systematically in simple sentences, also fail to evidence *that e* effects.

The contrast below is from Perlmutter (1971).

2a) *la personne qu'il a dit que va venir ce soir

"the person that he said (that) is going to come tonight"

b) el tipo que dijiste que salio temprano

"the guy that you said that left early"

The sequence 'tensed complementizer/gap,' or "*that e*," as it is

known, is illicit in French (and English) but grammatical in Spanish. Moreover, in Spanish, but not in French, it is possible to have a 'missing' subject in simple sentences. Perlmutter calls this property "PRO-drop."

3a) Jean mange.
"Jean eats"

b) *Mange.
"He eats"

c) Juan come.
"Juan eats"

d) Come.
"He eats"

The natural question to ask is why these two properties should be related.

In the years that followed, *that e* effects were much studied (cf. Bresnan (1977), Chomsky and Lasnik (1977), Pesetsky (1978), Taraldsen (1978), Kayne (1979b)). Bresnan treated the phenomenon as a constraint on variables, Chomsky and Lasnik as a surface filter, and Kayne, Taraldsen and Pesetsky attempted to derive the *that e* effects from the Nominative Island Condition (Chomsky (1980)). In his Pisa Lectures (1979c), Chomsky introduced the Empty Category Principle as a means of accounting for *that e* effects, and Kayne (1981a) extended this principle to account for a wide range of subject/object asymmetries and preposition stranding facts. The ECP, as I revised it in Chapter II, may be stated as follows.

4) An empty category in a 0-chain must be properly governed

The *that e* effects are accounted for under the assumption that when COMP contains an element that binds the empty category (EC) in subject position, then that element in COMP counts

as a proper governor for the subject EC. If *that* appears in an example like (5), then the element in COMP no longer C-commands the subject (cf. Kayne (1980) for example) because COMP branches, and proper government fails.

5) *Who$_i$ did you say [$\bar{S}$[$_{COMP}$ e_i that][$_S$ e_i left]]

The particular mechanics that achieve this result do not concern us here, but merely the fact that the *that e* effect is attributed to the ECP.

In the same lectures that introduced ECP, Chomsky (1979a) also presented an intriguing way of relating the 'missing' subject property to the *that e* effect by exploiting a suggestion due to Taraldsen (1982). Taraldsen observed that languages that permit PRO-drop tend to be those that have rich verbal inflection. He suggested that some formal property of rich inflection provides a way of 'recovering' information that would otherwise be lost when the subject is 'missing.' Chomsky's proposal was to express Taraldsen's observation formally as the claim that the node INFL, as head of S, counts as a proper governor for the subject position in 'missing subject' languages. This proposal accounted at once for the possibility of an empty subject position, which would otherwise be excluded by the ECP (assuming that the subject position must be generated as an extension of the Projection Principle, cf. Chapter II and Chomsky (1981a)),

6) [$_S$ [$_{NP}$ e] INFL VP]

and permitted *that e* violations to occur, because proper government from the INFL node rendered government from COMP

irrelevant.

7) $[\bar{S}[_{COMP}\ e_i\ that][_S\ e_i\ INFL\ VP]]$

In addition, the same idea explained another property commonly associated with PRO-drop languages, namely, free inversion.

8a) Mangia Gianni. "Eats Gianni"

b) Come Juan. "Eats Juan"

c) *Mange Jean. "Eats Jean"

As the subject moves rightward, it leaves a trace in subject position that is properly governed in Spanish and Italian, but not in French. Thus the permissibility of *that e* violations as well as free inversion simply followed in the Chomsky-Taraldsen account from a very simple formulation of the "PRO-drop Parameter," as the property assumed to be behind these phenomena was then christened.

Although the above explanation seemed straightforward, Rizzi (1980) showed that the subject position in Italian did, in fact, evidence ECP effects in LF, a result Chomsky's account could not predict. Kayne (1979b) had noticed that if QR is a movement rule parallel to syntactic movement, then it is appropriate to ask if the trace of this movement is also subject to the Nominative Island Condition of Chomsky (1980), or, as he suggests later (in Kayne (1981a)), the ECP. Kayne argued that the subject/object asymmetry in (9), for example, could be explained by the ECP under the assumption that *personne* must be moved to the higher clause in order for wide scope interpretation of negation to be possible, as discussed briefly in 2.5.

9a) Je ne veux que tu voie personne.

"I don't want that you see anybody"

b) *Je ne veux que personne vienne.

"I don't want that anyone come"

In (9a) the subject is not governed by INFL or anything else. If LF movement leaves an empty category there, the ECP will exclude the output. Extraction from object position, by contrast, is grammatical (and yields wide scope interpretation). because the verb governs the object position. Rizzi observed, however, that the same contrast with respect to wide scope interpretation of negation that Kayne had noticed in (non-PRO-drop) French also holds for Italian.

10a) Non pretendo que tu arresti nessuno.

"(I) neg. require that you arrest nobody"

b) Non pretendo che nessuno ti arresti.

"(I) neg. require that nobody arrest you

(examples with glosses from Rizzi)

In (10b), *nessuno* cannot be interpreted outside the scope of the higher verb *pretendo*, while this interpretation is available when *nessuno* is a direct object. If the INFL node in Italian counts as a proper governor in LF, then (10b) ought to have an interpretation that permits wide scope of negation, which it does not.[1]

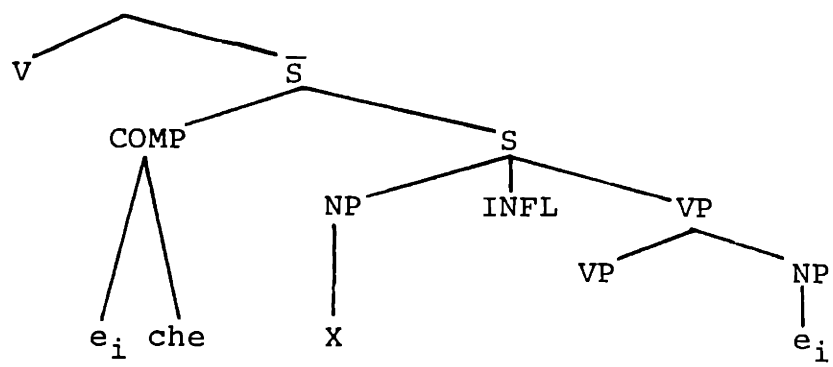
Rizzi then advanced the problem a step further with the observation that a sentence like (10b) could permit the wide scope of negation reading if its subject is inverted in syntax, as in (11) (example from Rizzi).

11) Non pretendo che ___ sia arrestato nessuno.

"(I) do not require that ___ be arrested anybody"

He then reasoned that if *nessuno* could undergo long extraction just in those cases where it appeared postverbally, perhaps this is also true of the *wh*-extractions that appear to permit *that e* violations. Thus, he argued, free inversion places the subject in a VP-adjoined position where it can be properly governed by V, and extraction then leaves a properly governed empty category in VP (governed by V), thus satisfying the ECP. The diagram below illustrates this analysis, where X is the element left in subject position, to which we will return.

12)



Rizzi then showed that there is indeed evidence indicating that long *wh*-extraction of a subject is from postverbal position. The clitic *ne* can normally only appear when an NP is in object position.

13a) Mario ne ha prese alcune ___

"Mario of-them took some"

b) *Alcune (*ne) sono cadute in mare.

"Some (of-them) fell down into the sea"

c) (Ne)* sono cadute alcune ___

"(Of-them) fell down some"

As argued by Burzio (1981) (and references cited there) the only argument of certain verbs is "internal" (in the sense of Williams (1980)) and Burzio calls these verbs, among them verbs like *fall*, "ergative verbs" as discussed in 4.4. *Ne* can appear with postverbal subjects of this type, and obligatorily so when the postverbal subject is *alcune* (cf. also Beletti and Rizzi (1980)). The *wh*-word parallel to *alcune* is *quante*. Given an ergative verb like *cadute*, if *quante* is questioned and is understood as the 'subject,' it is now possible to tell if that 'subject' originates in postverbal position, preverbal position, or either, depending on whether the appearance of *ne* is obligatory, ungrammatical, or optional, respectively.

14) Quante hai detto che *(ne) sono cadute?

"How many did you say that (of-them) fell down"

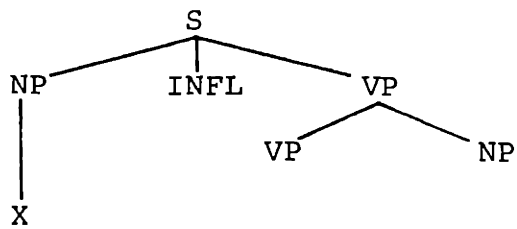
The fact that *ne* must appear shows that *wh*-extraction must be from postverbal position, and not from preverbal position. Thus the violations of the *that e* effect do not stem from the fact that the subject position is governed by INFL, but rather from the assumption that PRO-drop languages also permit empty subjects with free inversion structures.

Rizzi (1980) thus sets up the PRO-drop 'problem' in another way. Instead of relating the 'missing subject' property to the *that e* violation property directly, the problem reduces to the following two questions.

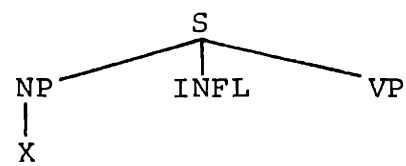
15a) What is the relationship between 'missing subject' languages and free inversion?

15b) If the subject position is not properly governed, what sort of element is in subject position when the subject is 'missing' or inverted, as in the structures below?

16a) Free inversion



b) Missing subject



Given the PRO-drop 'problem' as it is set up in (15), and starting in particular with (15b), essentially three sorts of analyses seem possible.

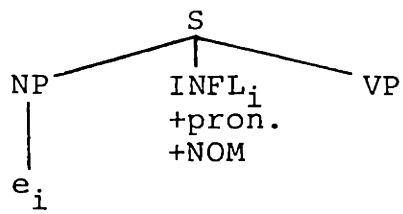
17a) The subject position is properly governed and contains, in effect, trace.

b) The subject position is not governed at all and thus contains PRO.

c) The subject position is governed, but not properly governed, and thus contains some sort of empty element that is not PRO and is immune to ECP.

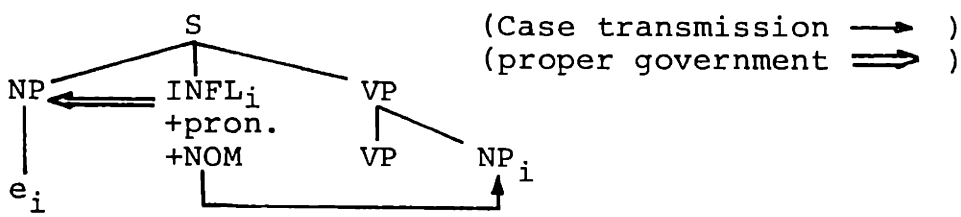
First let us consider how Rizzi (1980) dealt with the PRO-drop problem. The heart of Rizzi's approach is to treat the relation between INFL and the empty subject position as a clitic/trace relation. He suggests that PRO-drop languages have the property that INFL can be pronominal, and that a pronominal INFL can absorb Nominative Case that would otherwise be assigned to the subject position. When INFL absorbs NOM Case, and only then, it may count as a proper governor for the subject position with which it is coindexed at D-structure by a special agreement rule. Thus the 'missing subject' property is due to the possibility that INFL can be pronominal.

18)



The free inversion property is dealt with by what is really an almost totally independent device (as is also suggested by Chao (1980), cf. 6.3.1). Rizzi notes that *there* and *il* in English and French count as dummy subjects that transmit Case and θ-role to a postverbal subject via coindexing. He suggests that pronominal INFL can serve the same function, except that it allows, at the same time, the proper government of subject position as in (19)

19)



The assumption that the pronominal INFL is coindexed with the postverbal NP, however, creates a problem in that Principle (C) of the BC's is violated, since a name is bound. In order to avoid this consequence, Rizzi introduced the notion of "dependence," which I state informally in (20).

20) If X inherits a θ-role from Y, then Y cannot be a binder for X.

This condition is ad hoc, in that it is only invented to account for cases where a postverbal lexical NP is bound by the subject position or INFL, but it has the desired effect of avoiding a violation of Principle (C). The dependence relation also licenses the appearance of postverbal subjects

which may then be extracted, and the latter will remain properly governed by the verb, under the appropriate definition of government (such as the one discussed in Chapter I). The diagram below illustrates the analysis of postverbal extraction with free inversion.

21) $wh_i \ldots [_S [_{NP}\ e_i]\ INFL_i\ [_{VP} [_{VP} \ldots V \ldots [_{NP}\ e_i]]]]$

Thus, in Rizzi's account, the PRO-drop Parameter is simply the possibility that INFL can be pronominal.

An interesting property of Rizzi's analysis is that he does not really relate 'missing subjects' to *that e* violations directly, rather it is free inversion by itself that accounts for the subject extractions. The 'missing subject' property simply renders the dummy element, *there* in English and *il* in French, invisible, thus accounting for the apparent *that e* violations. No explanation distinguishes Italian free inversion, which lacks the DE, from French and English 'postverbal subject' cases (although the distinction is noted, cf. Rizzi's note 20). Thus free inversion is not treated as any sort of special parameter, nor as a property of a parameter, within Rizzi's analysis.

In the latter respect, Rizzi's view of free inversion departs from the assumption of several other analyses (particularly Jaeggli (1980b) and Chomsky (1981a)) expressed informally in (22).[2]

22) The 'missing subject' property and the free inversion property both follow from the correct formulation of the PRO-drop Parameter.

I shall return to this assumption in my discussion in the next

several sections.

Closer to my central concern is Rizzi's actual account of free inversion using the 'dependence' relation. First of all, it does not distinguish French and English from Italian with respect to the DE. Second, the explanation of the DE proposed in the last chapter is neutralized if 'dependence' does not count as binding. Finally, and most importantly, if if a 'dependency' relation is allowed, then the restrictive theory of indexing proposed in Chapter II must be abandoned for a less constrained system, which allows arbitrary modulations of the device of indexing to account for relationships that are otherwise unlike the normal interpretation of indices (binding and θ-chain membership are dissociated). Thus, while I shall adopt much of Rizzi's account, I must crucially reject his treatment of the 'dependence' relation.

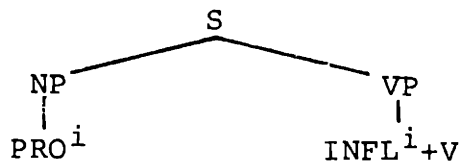
It is important to point out, however, that Rizzi's treatment of 'dependence' does not necessarily violate the UIH under a strict interpretation. The notion that binding is restricted to exclude the possibility that a binder is in the θ-position of the θ-chain (in my terms) is a condition not unlike the claim that a binder must be in an A-position (with respect to the BC's for example). The problem with this account is that the distinction of this instance from all other instances of A-binding is arbitrary, and undermines the BC/θ-chain correlation for A-binding. Moreover, in the case of ergative verbs, to be discussed below, where the V-sister position is a θ-position, no dependence relation exists when

the overt 'subject' is postverbal, as the preverbal subject position is not a θ-position, yet an unbalanced θ-chain is formed nonetheless, as will be discussed below (see example (38)). Thus, in order to avoid serious descriptive inadequacy, the dependence relation would have to specify that only if the binder is pronominal INFL does 'binding' fail to be relevant to the BC's. This account, while it would still not necessarily violate the UIH, would require introducing the additional complication that the content of a binder of x (e.g., A-positions vs. $\bar{A}$-positions), could also be crucial in determining whether x is bound or not. Rather than introduce this additional descriptive power to the notion 'binding,' the more constrained notion, which limits 'binding,' in the spirit of the UIH, to C-command and coindexing is to be preferred.

Now let us turn to the PRO analysis of the 'missing subject' first proposed by Jaeggli (1980b) as it was extended and further developed in Chomsky (1981a). The assumption that the subject position is PRO when the subject is 'missing' requires that the subject position not be governed at all, otherwise PRO would be excluded by the Binding Conditions where INFL governs the subject position (properly or not) as in (16). Chomsky solves this problem by proposing that the INFL node can optionally be absorbed into the verb, leaving no trace. Chomsky calls this Rule R, and when it applies in phonology, as in French and English, it is essentially the time-honored rule of affix hopping. In PRO-drop languages,

Chomsky suggests, Rule R can apply in syntax. If Rule R does apply in syntax, then the subject position is ungoverned, so it is reasoned, and PRO can thus appear there, as in (23), the output of Rule R.

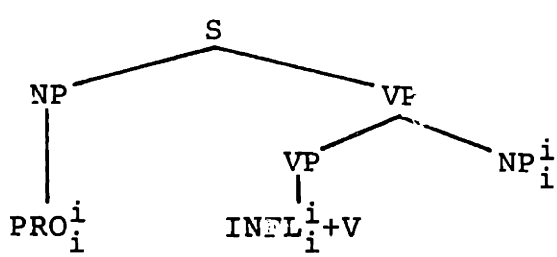
23)



The subject argument of (23) is the PRO in subject position. INFL agrees with the subject at D-structure where the two are cosuperscripted by a special agreement rule, and the superscript of INFL is preserved under Rule R. Thus the verb agrees with the subject PRO.

The free inversion case requires only a slight elaboration under the assumption that the subject moves to postverbal position (adjoined, we may assume, to VP), and Rule R applies in syntax. The subject position and the postverbal position are both cosubscripted and cosuperscripted with each other, assuming that movement involves cosubscripting (but cf. 2.4.3), and that other indices, such as superscripts, are preserved under movement. The structure after free inversion is (24).

24)



Now the question to ask is "how does the postverbal NP get Case and θ-role?" Chomsky answers these questions by assuming that the postverbal NP (PVNP) can assign NOM Case by virtue of

the fact that the INFL on V governs the PVNP and INFL is cosuperscripted with it. The cosuperscripting insures that the agreement on the verb will match the number and person of the postverbal NP. The θ-role of the subject position is also transmitted to the PVNP by coindexation, both cosubscripting and cosuperscripting. It is necessary to permit the subscript in subject position to be deleted by a special rule, however, since if the PVNP is a name, it is excluded by Principle (C) if it is bound. The cosuperscripting is sufficient to form a θ-chain in this theory, however, even though superscripts are not relevant to the BC's. Thus, agreement is by cosuperscripting, Case is assigned by government of $INFL^{i}+V$, and θ-role is transmitted by superscripting.

Insofar as the appearance of PRO in subject position, and the Case assigning role of $INFL^{i}$ on V after Rule R applies in syntax are central features of this account, the existence of free inversion is treated as a property of the PRO-drop phenomenon, as in assumption (22) (denied in Rizzi's account).

The case where the PVNP is extracted now requires little comment, except to say that the VP-adjoined position is an A-position, since otherwise extraction from that position would not count as a variable (variables do not appear in $\bar{A}$-positions in Chomsky's account). Extraction from preverbal position would of course be ungrammatical because the subject position is both ungoverned and unCasemarked.

Recall finally that the subject position EC is PRO by Chomsky's functional definitions of empty categories (cf.

2.4.2). Since it is free, it is pronominal, and since it is not a variable, it is an anaphor. If the subject position is PRO, however, it must be expletive PRO in the inversion case, or the θ-C will be violated because there are two arguments in the θ-chain. By virtue of Rule R in Chomsky's account, PRO is ungoverned, and thus well-formed in this context with respect to the BC's.

Thus the salient features of this analysis are that the subject is occupied by referential PRO in the missing subject case, by expletive PRO in the inversion case by virtue of Rule R applying in syntax, and θ-transmission and agreement are achieved by cosuperscripting, while Casemarking of the postverbal subject is by government from $INFL^{i}$+V.

One sharp difference between Rizzi's account and Chomsky's is that the application of Rule R in syntax relates the 'missing subject' property (the subject has to be ungoverned) to the free inversion property (NOM Case is assigned in VP by $INFL^{i}$+V) much more directly. This is only an advantage over Rizzi's account if indeed the assumption in (22) is correct. Section 6.2 is devoted to showing that (22) is false, and moreover, that free inversion should be treated as the result of a parameter distinct from the 'missing subject' property. This second parameter distinguishes French and Italian in a way that Rizzi's analysis does not capture. The Chomsky-Jaeggli analysis can be adapted to this end, as we shall see in 6.1.2. (Other analyses of PRO-drop will be discussed in 6.5 and 6.6.)

I shall depart from both of the analyses just discussed in that I shall propose that the postverbal NP subject will be assigned both Case and θ-role independently of any special indexing device in Italian. The goal of such a analysis is twofold. First, the fact that Italian, unlike French and English, lacks the DE must be explained in a satisfactory way if my attempt to predict the distribution of the DE is to be successful. Secondly, the theory of indexing in Chapter II does not permit the indexing relationship to lack any property in one context that it has in any other context. Thus, for these two reasons, I must achieve the results of Case transfer and θ-transfer for the PVNP of free inversion without appealing to coindexation.

With these desiderata in mind, I now turn to the analysis that will guide my subsequent discussion.

6.1.2. The NOM-Drop Parameter and the Free Inversion Parameter.

In the last section, the analysis of Rizzi (1980) was opposed to that of Jaeggli (1980) and Chomsky (1981a) in that Rizzi treats the 'missing subject' of question (15b) as a properly governed empty category (17a), while Chomsky and Jaeggli treat it as PRO (17b). I have argued against the view that the 'missing subject' is PRO, remained neutral about the possibility that it is properly governed trace, and have been silent about the third possibility, namely, that the missing subject is neither ungoverned, nor properly governed, but simply governed as in (17c). The latter possibility is the one I shall

sketch and attempt to justify (at least in part) in this section. Comparison with other analyses, or possible analyses, is reserved for section 6.6, where the empirical presentation of the intervening sections will provide a background for discussion.

Now let us consider an analysis a la (17c). If the 'missing subject' is governed, but not properly governed, then the ECP will exclude any empty element to which it applies. The ECP does not apply to PRO, but PRO is excluded by the BC's in any governed position. Of course, one other empty element is not excluded by ECP, namely, expletive [e] (EXE). As discussed in Chapter II, the ECP does not apply to elements not in θ-chains, and EXE does not appear in θ-chains. Thus EXE is licit as the empty category in subject position in 'missing subject' sentences.

If EXE is the subject, however, of an Italian sentence like "Mangia" ("third person singular (specific) ate"), then the agent θ-role of the verb must be assigned to some other element that counts as an argument. As does Rizzi, I propose that that argument is a subject clitic (SCL), but unlike Rizzi, I assume that the SCL is part of the morphology of any verb of Italian (to which NOM Case is assigned) and not of INFL. The assumption that there exists a SCL in Italian is highly plausible since Italian has both object, indirect object and partitive clitics, among others, and the apparent absence of subject clitics is thus a gap in the paradigm. Moreover, neighboring French, which is not a 'missing subject' language, has

SCL's. Finally, as Rizzi points out, the pronominal status of a clitic best accounts for the specific reading associated with the 'missing subject.' Thus I shall assume that Italian has SCL's like French, except that in Italian these SCL's are not phonetically realized (cf. Napoli (1981) who makes virtually the same argument with respect to the distribution of clitics).

The existence of phonetically unrealized clitics in Italian results, I shall argue, from the "NOM-drop Parameter," which thereby accounts for the 'missing subject' property. In 3.2.3, the following notion was introduced.

25) NOM Case must be phonetically realized.

The NOM-drop Parameter may be stated (provisionally) as simply a relaxation of (25) as in (26).

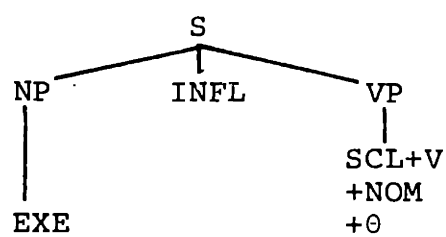
26) NOM Case need not be phonetically realized.

(26) will be understood to apply whenever other principles do not require an overt subject. Lexically full subjects, such as *Gianni*, for example, will have to appear, since they have a phonetic form independent from Casemarking. The typical NOM-drop language will be one that has SCL's that can be 'dropped' or unrealized in phonology. In 6.4 and 6.6 we shall see that other factors can modulate the effects of NOM-drop, but for the time being, the provisional formulation of NOM-drop in (26) will serve for the sake of presentation.

Returning to points of analysis, I shall treat the SCL, phonetically realized (as in French) or not (as in Italian) as an element that optionally counts as a pronominal

argument if it has been assigned Case (in this my account resembles that of Burzio (1981), cf. 6.5 and 6.6 for comparisons). The SCL can be assigned NOM Case by INFL if INFL governs VP, since if INFL governs VP, then it governs the head of VP, V, and the SCL is part of the V node.[3] The subject empty category remains governed, but not properly so, throughout the derivation in syntax, since I assume, unlike Chomsky (1981a), that all movement rules in syntax leave traces, including affix hopping.[4] Finally, I assume that the SCL position on the verb can count as a θ-position. If an SCL can be the agent argument of a verb, and the subject position can be EXE, then it follows that, in the 'missing subject' case, the SCL position must be a θ-position, or the agent θ-role of a verb like *mangiare* cannot be assigned. Further details of my analysis of SCL's as nominals, pronouns, arguments, and Case absorbers will be fleshed out in the following sections. (27) is the structure of a 'missing subject" sentence.

27)



Now let us turn to the free inversion property. As stated above, I shall be following Rizzi in assuming that free inversion is independent of the 'missing subject' property, but but unlike Rizzi, I shall distinguish French and English from Italian by means of a separate parameter, the Free Inversion

Parameter. Recall that the DE in French and English is explained by the fact that the postverbal NP has to be coindexed with the subject position in order to participate in a Cased θ-chain, as required by the Revised Case Filter (as in Chapter III). This θ-chain is 'unbalanced' in the sense of Chapter III, since a name is bound, violating Principle (C). Thus the coindexing of the Cased subject position with the Caseless postverbal NP position creates the unbalanced θ-chain that results in the DE. If the linking of Case to postverbal position in Italian is accomplished by coindexation with the Cased subject position (or SCL position), then we would expect to see a DE in Italian just as we do in French, which also has SCL's. Rather than inventing a new kind of indexing relation, as Rizzi and Chomsky do (and which the theory of indexing in Chapter II does not permit), some other sort of relation must account for the difference between French and Italian.

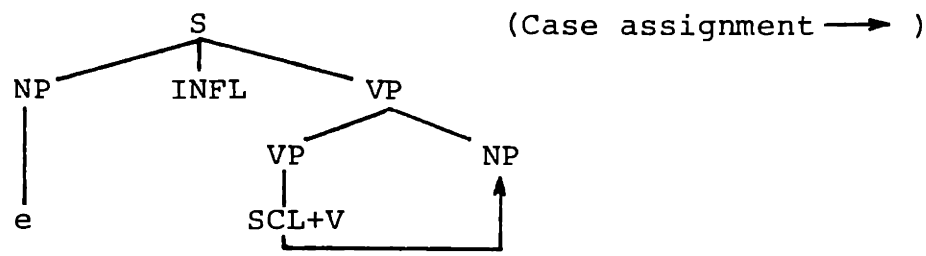
This situation brings to mind the NOM/DAT inversion cases discussed in 4.3.3, where it was argued that direct assignment of NOM Case in VP neutralizes the DE, since the postverbal NP does not have to form an unbalanced θ-chain with an element that binds it. The obvious extension of this idea to Italian is to assume more generally that NOM case is somehow assigned directly to a postverbal NP in Italian under government. This is quite reminiscent of Chomsky's treatment of NOM Case assignment to the postverbal NP of free inversion. The output of Chomsky's Rule R in syntax permitted

INFL+V to assign NOM Case under government. Since my analysis doesn't permit a syntactic movement rule like Rule R (and since I am arguing that the free inversion property and the 'missing subject' property should be dissociated), some other property of the verb (conditioned by INFL) must allow it (the verb) to assign NOM Case. The obvious candidate is the invisible SCL. (28) is a provisional formulation of the Free Inversion Parameter.

28) The Free Inversion Parameter

An SCL assigned NOM Case can, in turn, assign NOM Case.

Thus the SCL, as part of the verb, assigns NOM Case to the postverbal NP it governs, as in (29).

29) 

Given this analysis of free inversion, the postverbal NP gets Case under government, without any appeal to indexing devices, no less special ones.[5]

Now we must consider how the postverbal NP in (29) gets a θ-role if not by coindexing with a θ-position. The obvious conclusion, since coindexation is not permitted, is to assume (30).

30) The VP-adjoined position can count as a θ-position.

This is not a very audacious move if one recalls that Chomsky (1981a) treats the VP-adjoined position as an A-position.

Without (30), the VP-adjoined position is the only one of Chomsky's A-positions for which (31) is not true.

31) An A-position is any position that can be a θ-position for some predicate.

(31) makes it possible to predict the class of possible A-positions from the set of θ-positions permitted by the lexicon and the X-bar structure of a given language. But (31) only holds if (30) does, given that a variable must appear in an A-position in the postverbal extraction case. Thus the VP-adjoined position must be a θ-position.

If (30) is true, however, some theoretical questions arise that deserve discussion. In Chapter II, Chomsky's Projection Principle was introduced, which requires that θ-roles be assigned in the same way at every syntactic level. This assumption requires the existence of traces, since arguments in non-θ-positions have to belong to θ-chains in order to meet the θ-C. It was also assumed in Chapter II that Move α does not involve coindexing. If the postverbal subject of Italian is the VP-adjoined output of movement and it is not coindexed with the subject position, then one may ask if θ-assignment by (30) violates the Projection Principle or not in this case.

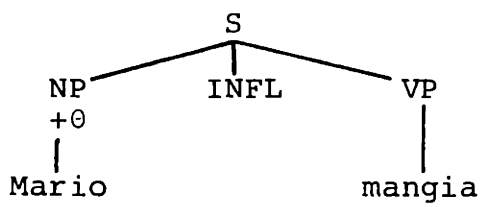
The answer to the latter question is "no" if "assigns an external argument" means (32), as suggested in 3.2.2 and 5.2.3.

32) Assign a θ-role to a sister of VP.

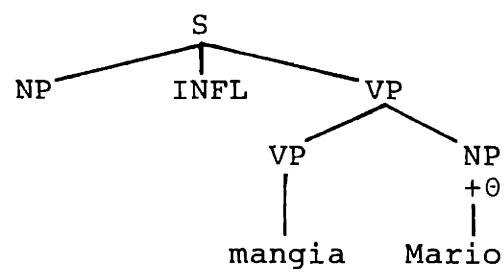
Recall that an external argument in Williams' (1980,1981) sense

is one that is outside the maximal projection of the category of the predicate that assigns the θ-role in question. My treatment of 'external argument' differs from Williams' only in that the S-adjoined position cannot count as an external argument position because it is not a VP-sister. position.[6] Now notice that (32) can hold of different positions at different levels, even though the relevant external θ-role (such as the agent of *mangiare*) is assigned in exactly the same 'way' at every syntactic level, as diagrammed in (33).[7]

33a) D-structure



b) S-structure



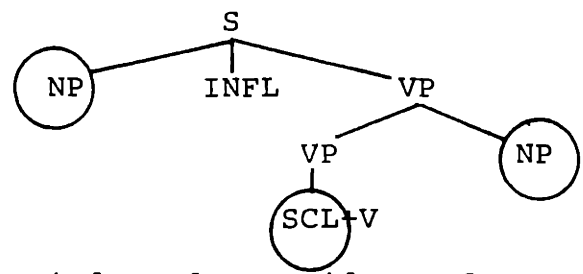
In (33b), notice that since there are two VP nodes, both subject position and VP-adjoined position are VP sisters. Moreover, as mentioned earlier, the SCL position on the verb can count as an external θ-position. All three of these positions, all configurationally defined,[8] are thus "external argument positions," and together I have referred to them as the "external θ-set." Members of the external θ-set may or may not be coindexed with each other, but the following holds of θ-sets regardless of indexing.

34) A θ-set can contain one and only one argument

In Chapter VII, where the notion 'θ-set' is reviewed, it will

be shown that (34) follows from the θ-C, given reasonable assumptions about θ-assignment and a slight revision of the definition of "θ-chain," but for the time being, I shall simply assume that (34) follows from the θ-C. The positions that can be members of the external θ-set are circled in (35).

35)



There is independent evidence for treating these nodes as a "θ-set." Notice that if we assume (30), which was independently motivated by (31), then we would expect, were it not for this interpretation of the external θ-set, that (36) could be ambiguous (meaning also "The fish eats Mario"), which it cannot.

36) Mario mangia il pesce.

"Mario eats the fish"

Il pesce could be a VP-adjoined NP not coindexed with the subject position, as in (37).

37) *Mario$_i$ [$_{VP}$[$_{VP}$ mangia e$_i$] il pesce]

Il pesce gets its θ-role by (30), while *Mario* is part of a θ-chain. Since the external θ-set contains two arguments, however, (37) is excluded as desired. A similar argument with respect to *prove* and $\overline{S}$ complements was presented in 3.2.2.

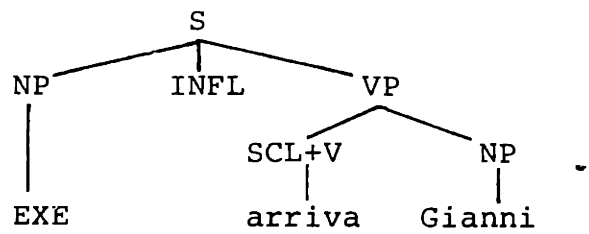
One objection that might be raised against this treatment of external argument assignment could be that Chomsky's superscripts suffice to express the relationship between the

preverbal and postverbal positions, and superscripts are independently motivated since they regulate subject/verb agreement. It may be argued, however, with respect to French impersonal sentences, subject/verb agreement depends on the notion 'closest Nominative,' and not on coindexing of any sort, as elaborated in 6.2.1 below (and extended to Italian in 6.5). Thus subject /verb agreement provides no independent motivation for superscripts, and undesireable consequences that they entail can be avoided.[9]

This treatment of free inversion now explains how both θ-assignment and Case assignment can reach the postverbal NP in Italian without any reliance on coindexing between preverbal and postverbal position. When the θ-role is assigned externally, it can be assigned directly to VP-adjoined position as in (33b). The Free Inversion Parameter (28), which applies in Italian, also permits direct Case assignment of the postverbal position by the Nominative-assigned SCL. Thus there is no DE in Italian, since no unbalanced θ-chain need be formed in order to satisfy Case requirements.

It is also important to note, moreover, that ergative verbs, the 'subjects' of which are base generated in direct object position, also do not evidence the DE, as illustrated in sentences like "Arriva Gianni" ("Gianni arrives"), the structure of which is presented in (38).

38)



Once again, the DE is predicted to be neutralized because the Nominative-assigned SCL in turn assigns NOM Case to the V-sister NP, *Gianni*. Thus no unbalanced θ-chain need be formed to satisfy the Case Filter.

At this point, a number of details of analysis remain undeveloped, and a number of questionable derivations remain to be excluded or made more precise. The next three sections will facilitate these tasks by motivating a certain amount of machinery that will render a more thorough account of these matters more feasible. Nonetheless, the analysis developed in this section solves the problem formulated in the last section. The explanation of the DE and its distribution as proposed in Chapter V can now be extended to Italian, where, as is now predicted, the DE does not appear. Finally, my interpretations of external argument assignment and the Free Inversion Parameter make it possible to avoid positing any new sort of indexing relation, such as 'superscripting' or 'dependence,' and thus to preserve the UIH proposed in Chapter II.

6.2.0. The Independence of the FIP from the NDP.

In this section I challenge the generalization assumed by Burzio, Chomsky and Jaeggli, which may be stated in its

strongest form as (39).[10]

39) L has free inversion if and only if L has missing subjects.

I assume that free inversion entails the properties in (40).

40) Free Inversion

a) Permits NOM-in-VP without the DE
b) Permits postverbal extractions of the NOM-in-VP

In what follows I shall show that (40) holds of at least two languages that do not in general permit 'missing subjects.'

In order to construct a model of a language that would be a counterexample to (39), it is useful first to consider two languages that exemplify (39) in complementary ways. First, consider Standard Italian (hereafter, just "Italian"). Free inversion is possible as in (41b) vs. (41a) and missing (preverbal) subjects are possible as in both (41b) and (41c).

41a) Gianni mangia.

b) Mangia Gianni.

c) Mangia.

Thus Italian fits (39) perfectly. French is the complementary case permitted by (39), as both free inversion and missing subjects are excluded.

42a) Jean mange.

b) *Mange Jean.

c) *Mange/Il mange.

As shown in (42c), some subject must appear in a tensed sentence in French, and in those cases where NOM-in-VP is permitted in French, as in (43), the DE holds (as discussed in Chapter IV).

43) Il est arrivé un homme/*Jean

If the generalization in (39) is correct, a paradigm that should be missing is that in (44), where "Vs" is a tensed verb, "SCL" stands for a subject clitic, and "Joe" stands for any definite NP.

44a) Joe Vs
b) (SCL) Vs Joe
c) *Vs
d) SCL Vs

If I am to claim that some language, call it "Z," is to be a counterexample to (39), then my analysis must show that Z has SCL's parallel to those in French, that each member of the paradigm presented in (44) appears in Z in tensed contexts, and furthermore that (40b) also holds of Z. In what follows, I will try to establish that Trentino and Modenese, two Northern Italian languages much like Italian, do, in fact, exhibit the paradigm predicted to be nonexistent by the generalization in (39). Thus any analysis designed to systematically exclude languages like Z is misguided, and therefore the analysis proposed here, which separates the Free Inversion Parameter from the missing subject property (the NOM-drop Parameter mentioned above), is to be preferred on empirical grounds.

6.2.1. French: A Non-NOM-drop Language.

As pointed out above, French is a typical non-PRO-drop language under the generalization in (39), but note that this is only so if SCL's are considered to be 'overt subjects' with respect to the 'missing subject' property. In the following subsections, the fact that the Northern Italian languages I

shall examine have SCL's parallel to those in French will be treated as important evidence that they are not 'missing subject' languages even though they allow free inversion. In order to present the parallel between French SCL's and those in Trentino and Modenese in an analytically transparent way, it is necessary first to develop more explicitly the assumptions, both descriptive and explanatory, which inform my discussion of SCL's with respect to Case assignment, θ-role assignment and Number Agreement. This treatment will also guide my discussion when I return to the analysis of Italian in 6.5, but for the moment, our focus is on French.

As was sketched in 6.1.2, the analysis presented here assumes that SCL's are generated directly[11] on verbs. This seems quite reasonable in that it is well-known that SCL's appear to be inseparable from verbs superficially. One might might still suppose, however, that SCL's originate elsewhere at D-structure, and only later turn up on the verb. Kayne (1972), for example, assumes that SCL's originate in subject position and are later attached to the verb, while Jaeggli (1980b) originates the SCL under the INFL node. Movement of the SCL, however, does not immediately account (without auxiliary assumptions) for the fact, noted by Kayne (1975), that SCL's cannot be separated from verbs by any intervening element (cf. Kayne (1975), pp. 83-85, for further arguments that SCL's are closely bound to verbs).

45a) Jean, souvent, mange de fromage.
"Jean often eats cheese"

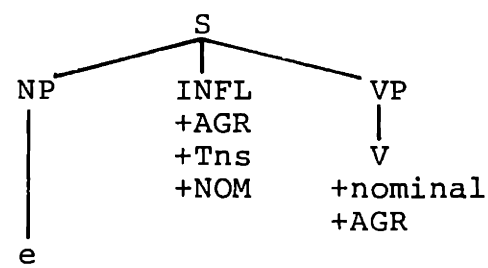
45b) *Il, souvent, mange de fromage.

"He often eats cheese"

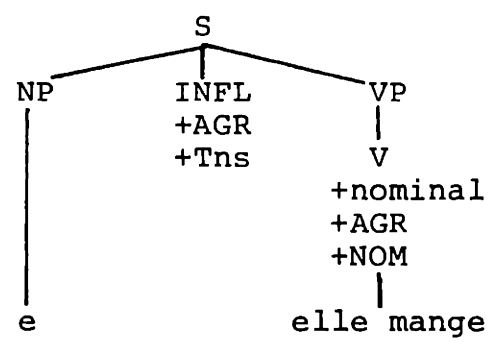
The base generation proposal captures this property without elaboration.

To formulate the latter claim more precisely, we may begin by thinking of an SCL as nothing more than a nominal feature on the verb associated with agreement features (number, person and gender, abbreviated as [+AGR]) which can be "completed" by the direct assignment to it of NOM Case. The [+nominal], or 'NP-like' feature, is what permits the SCL to be assigned NOM Case and be an argument, just like other NP's. Consider the diagram in (46) and the NOM Case assignment rule in (47).

46a) D-structure



b) S-structure



47) Direct assignment of NOM Case

INFL transfers a NOM Case feature to an adjacent nominal it governs.[12]

In the S-structure of *elle mange* in (46), the NOM case feature

has been transferred from INFL by (47) allowing the SCL on the verb to be "complete." In general, we may assume that only complete SCL's can be phonetically realized (although, as we shall see, they don't always have to be realized), and thus the SCL *elle* can appear on the surface. To say that a language lacks SCL's is simply to say that it has no [+nominal] feature on its verbs.

Recall from 6.1.2 and from Chapter II that I assume that INFL governs the subject position, both at LF-structure and at S-structure, but does not properly govern the subject position. Although further evidence that the subject position in (46) is not PRO will be presented in 6.6, here it suffices to recall that expletive EC's are excluded in ungoverned positions. In a sentence like (48), however, if *il* does not originate in subject position, then the subject position must be expletive, or the θ-C is violated (*sembler* assigns no external θ-role).

48) $[_{NP}$ e] il semble que Jean est en retard.
"It seems that Jean is late"

If the empty subject is expletive, however, then it must be governed, as ungoverned expletive EC's are excluded at S-structure, as argued in 2.4.2 and 5.1.2 as well as 6.4.1. The existence of *that e* effects in French, of course, is what indicates that the subject is not properly governed by INFL in French. Thus the assumption that the INFL node governs the subject position in (46), but does not properly govern it, seems amply motivated.

It is suggested above that a completed SCL can count as an argument with respect to the θ-C, but we need not suppose that it must always be an argument. Indeed, if the latter were true then every instance of Complex Inversion (to be discussed in 6.2.2) where both a full subject and a SCL appear, as in (49), would violate the θ-C, since both *Marie* and *elle* would have to have θ-roles, and the verb *arriver* only assigns one θ-role.

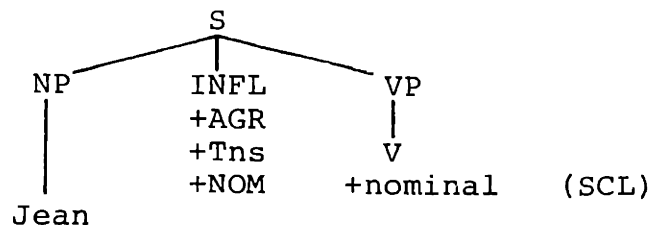
49) Quand Marie arrivera-t-elle?

"When will Marie arrive"

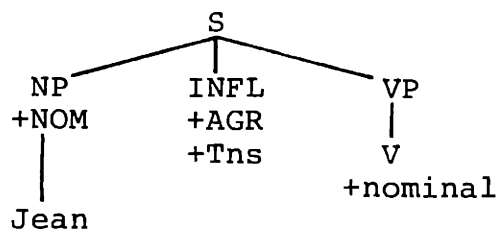
Let us assume that whether or not the completed SCL counts as an argument is an option, and that the θ-C determines which choice is well-formed in any given instance. In (46), for example, some argument must bear the subject θ-role. One possible argument is the empty subject position governed by INFL. If the subject is not expletive, however, it must be pronominal, because it is free, and an anaphor, since it is not a variable (cf. the functional definitions of empty categories as stated in Chapter II)--in short, the subject must be argument PRO in (46). But if the subject is PRO and it is governed, then the BC's rule it out. Thus the subject must be EXE in (46) and some other argument must bear the subject θ-role. Thus the SCL *elle* in (46) is an argument and bears the external θ-role of *manger*.

Now let us suppose that the NOM Case feature is assigned to the subject and not to the SCL as in (50).

50) D-structure



S-structure



In (50), *Jean* must count as an argument since it is a name, and it is well-formed because it has Case. The SCL in (50) cannot be an argument because it has not been completed by assignment of NOM Case. Thus only *Jean* can bear the external θ-role.

In certain respects, this analysis of the complementary distribution of SCL's and full lexical NP's in declarative sentences parallels that of Jaeggli (1980b), in that whether or not a nominal can get Case determines what can appear. A very important difference, however, is that Jaeggli assumes that SCL's cannot count as arguments, while I assume that they can be arguments, and thus bear θ-roles. In Jaeggli's account, whenever a SCL is present, the subject is PRO if it is not overt. We have already seen, however, that this view is untenable (since it requires the existence of ungoverned expletive PRO, and ungoverned expletive PRO does not exist (cf. 2.4.2 and 5.1.3). If, on the other hand, the subject is EXE when a SCL appears, then the SCL must bear the θ-role assigned by a verb like *manger* or the sentence is

ungrammatical by the θ-C. Jaeggli's claim that SCL's do not count as arguments can be considered independently from this portion of his analysis, however.

Jaeggli, following Kayne (1972), notes that SCL's do not enter into coreference with a certain class of NP's such as *cela* and *tout*, or NP's beginning with *ce que S*, or with sentential subjects. (Examples (51) through (54) are from Kayne (1972) cited in Jaeggli (1980b); example (55) is from Jaeggli.)

51) *Rien$_i$ n'est tombé parce qu'il$_i$ (n')était (pas) soutenu par des clous.

"Nothing fell because it was held up by nails"

52) *Tout$_i$ est en ordre aujourd'hui, mais demain il$_i$ sera en désordre.

"Everything is in order today, but tomorrow it will be a mess"

53) *Cela$_i$ est faux parce qu'il$_i$ ne correspond pas à la verité.

"That is false because it does not correspond to the truth"

54) *Ce$_i$ qu'elle dit ne vous intéresse pas et il$_i$ m'intéresse, moi non plus.

"What she says does not interest you and it does not interest me either"

55) *Que$_i$ Jean ait dit cela ne vous intéresse surement pas, et il$_i$ ne m'intéresse pas, moi non plus.

"That Jean has said that surely does not interest you and it does not interest me either"

Jaeggli continues, "Kayne noticed that those NP's which cannot

be possible antecedents for SCL's also cannot enter into coreference relations with full pronouns." The examples in (56) are also from Kayne as cited by Jaeggli.

56a) *Cela$_i$ m'intéresse parce que tu a parlé de lui$_i$

"That interests me because you talked about it"

b) *Ce$_i$ qu'elle a dit, je pense souvent à lui$_i$

"What she said, I think about it often"

c) *Que$_i$ tu sois malin n'intéresse personne; on ne pense plus à lui$_i$

"That you are mischievous does not interest anybody; one doesn't think about it anymore"

d) *Tout$_i$ est tombé parce qu'elle s'est appuyée sur lui$_i$

"Everything fell because she leaned on it"

In this respect, then, SCL's and full pronouns act alike, although the reason for this constraint on coreference with this class of NP's remains obscure (cf. Jaeggli's note 5, p. 207). SCL's are distinguished from full pronouns, however, in that they appear with the forbidden class of NP's in the Complex Inversion construction. The examples in (57) are from Kayne (1972) as cited in Jaeggli, except for (57e) which is from Jaeggli.

57a) Pourquoi cela est-il faux?

"Why is that false"

b) Pourquoi ce que je dis te deplait-il?

"Why does what I say bother him"

c) Pourquoi rien n'est-il tombé?

"Why hasn't anything fallen"

57d) Depuis quand tout est-il en ordre?

"Since when is everything in order"

e) Que Jacques ait dït cela ne vous intéresse-t-il pas?

"Doesn't it interest you that Jacques has said that"

Kayne and Jaeggli conclude from these facts that SCL's never participate in coreference, and Jaeggli goes further by linking the possibility of bearing a θ-role to the possibility of participating in coreference. On the basis of this argument, Jaeggli claims that SCL's never bear a θ-role. When SCL's appear to corefer, as in "Jean$_i$ a dit qu'il$_i$ va venir," Jaeggli argues that the subject PRO and not the SCL is involved in coreference, as in "Jean$_i$ a dit qu' PRO$_i$ il va venir." The argument above, however, does not show that SCL's never participate in coreference, but rather that they do not always do so. This is consistent with the claim that when SCL's do count as arguments, then they do participate in coreference just like other pronouns (e.g., *lui*). In Complex Inversion structures, however, the θ-C alone predicts that the SCL cannot be an argument, since the lexically filled subject position must count as an argument. Thus the argument-like or nonargument-like behavior (with respect to participation in coreference) of the SCL is predictable from a general principle, namely, the θ-C, under the assumption that SCL's may optionally count as arguments. But, we may ask, is there any evidence (independent of my analysis) that SCL's *must* count as arguments?

As a means of answering the latter question affirma-

tively, let us examine Jaeggli's treatment of the distribution of the SCL *ce*. *Ce* appears almost exclusively with the verb *être*, "to be." The following examples are from Kayne (1972).

58a) C'était vrai.
"It was true"

b) Ce sera Jean qui gagnera.
"It will be Jean who will win"

Ce is not a possible subject for most verbs.

59a) *Ce compte énormément.
"It counts enormously"

b) *C'évoque les années 30.
"It evokes the 30's"

Sentences parallel to those in (59) are grammatical with *ça*.

60a) Ça compte énormément.

b) Ça évoque les années 30.

but *ça* can never occur directly before *être*.[13]

61a) *Ça était vrai.

b) *Ça est un type intelligent.

Jaeggli argues that *ça* is a full NP since it also appears in object position (*Je comprends ça*/"I understand that") but never as an object clitic (**Je ça comprends*). *Ce* is treated as a SCL because it inverts just like other SCL's (*Est-ce vrai*). In order to account for the fact that *ça* can only appear where *ce* cannot, Jaeggli suggests that Chomsky's Avoid Pronoun Principle (Chomsky (1981a)) will require the use of *ce* where possible rather than the presumably nonpronominal *ça*. Notice,

however, that it is necessary to stipulate that *ce* only appears with *être* in any account. Suppose instead we assume that *ce* is what Chomsky (1981a, p. 325) has called a "quasi-argument" associated uniquely with a certain predicate or class of predicates. Quasi-arguments bear θ-roles of an idiomatic sort (for example, the *it* of weather predicates). If we treat the SCL *ce* as a quasi-argument of *être*, it follows that *ça* can never appear where *ce* is required by the predicate, just as one cannot say "that rained" to mean "it rained."

If *ce* is a quasi-argument SCL, then this immediately solves a problem that requires a special stipulation in Jaeggli's account. Jaeggli notes (following Kayne (1972)) that while *ce* can appear postverbally, it can never do so if the subject position contains a lexical NP, as in the contrast in (62).

62a) Est-ce faux?
"Is it false"

b) Pourquoi cela est-il faux?
"Why is that false"

b) *Pourquoi cela est-ce faux?

Jaeggli attributes this peculiarity to an additional stipulated property of *ce*, namely, that it cannot inherit NOM Case (in his system) because it fails to have an index routinely associated with other SCL's, all of which do inherit Case. But notice that if *ce* is a quasi-argument of *être*, as I have argued above (to explain the distribution of *ce/ça*), it follows immediately that no other subject can appear in (62c)

or the sentence will have two subject arguments, and will be ruled out by the θ-C. Thus SCL's must count as arguments sometimes, since the hypothesis that *ce* counts as a (quasi-) argument captures a generalization that is missed in Jaeggli's account.[14]

To conclude my discussion of the argument status of SCL's, the coreference facts (51)-(57) from Kayne (1972) as they are discussed by Jaeggli (1980b) confirm my treatment of SCL's as nonarguments when a full lexical subject appears in Complex Inversion, and the behavior of *ce* as a quasi-argument confirms that argument status must be assigned to SCL's in at least some cases. I have extended this claim, within the analysis I propose, to the hypothesis that argument status is optionally assigned to SCL's, but that this option is conditioned by the θ-C. We shall have occasion to return to this claim in later sections.

Now let us consider how Subject-Verb agreement might be formulated in this system. Informally, we might state it as in (63) (which is a slight modification of Jaeggli's (1981b) treatment, p. 167).

63) Subject Verb Agreement (S-VA)

INFL [+AGR] must agree with the Nominative nominal closest to the verb it governs.

(The phrase "verb it governs" will refer to the verb which is also adjacent to INFL.) Let us assume that (23) is a theorem of universal grammar and assume that there are few exceptions to it among languages that mark S-VA.[15] Naturally, given a

choice between subject position and SCL position, it is always SCL position with which the verb will agree, since SCL position is unquestionably "closest" to the verb. The standard example of this sort of choice is exemplified in (64), which is from Kayne (1972) (cited in Jaeggli (1980b)).

64a) Pourquoi Jean et moi ne devrions-nous pas partir tout de suite?

"Why should (1Ppl) Jean and I not leave immediately"

b) Pourquoi Jean et moi ne devrait-on pas partir tout de suite?

"Why should (3Psg) Jean and I not leave immediately"

While in (64a) the subject and the SCL are both first person plural, in (64b) the SCL is grammatically third person singular even though the subject is first person plural.

65a) On doit partir. (3Psg)

"One/we must leave"

b) *On devons partir. (1Ppl)

Verb agreement is with the SCL in both cases, as the contrast between (64b) and (66) shows. (66) is also from Kayne (1972).

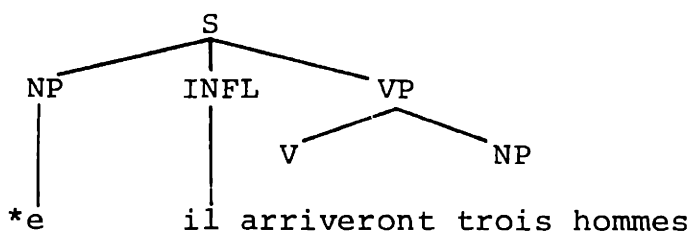
66) *Pourquoi Jean et moi ne devrions-on pas partir tout de suite?

Although I shall have a lot to say in the next subsection about the precise structure of Complex Inversion as in (54) and (56), for the moment we may plausibly assume that the SCL *on* is closer to the verb than the subject, *Jean et moi*.[16] Another case where the verb agrees with the SCL instead of another NOM nominal which is further away is the impersonal construction (discussed in 4.2).

67) Il arrivera un homme/trois hommes

In this case, the assumption that the SCL is located on the verb and not under a node distinct from the verb, such as INFL (as in Jaeggli (1980)), plays a crucial role. Following Herschensohn (1980), Jaeggli (1980b) and Burzio (1981), I assume that (67) is a base generated structure (cf. also discussion in 4.2). The diagram in (68) shows that if the SCL were under INFL, then the closest Nominative nominal would be the direct object *un homme/trois hommes*.

68)



If S-VA contributes to LF, then *il* must be part of the verb at S-structure, as I have claimed above.[17]

The character of impersonal *il* is of particular interest to us since some of the claims in 4.2 rest on the assumption that it is parallel to English *there*. Let us consider it more closely. If the analysis of Chapter V is correct, then the properties that impersonal *il* should share with *there* in English must include the ability to be construed as a variable at LF but to otherwise be a nonargument.

69) Il_i arrivera un $homme_i$

70) $[_S$ un $homme_i$ $[_S[_{NP}$ e] INFL $[_{VP}$ SCL_i+V [e]]]]

The LF of (69) is (70). The subject NP remains as EXE in LF, and so the SCL *il* counts as a variable. Now notice that it is quite plausible to assume that, unlike impersonal *il* which

is not specified for definiteness (again like *there*), most SCL's are definite, since they are just like pronouns. If *il* differs from other pronouns with respect to definiteness, however, then it follows immediately that there can be no Case inheritance from a regular SCL.

71) *Elle$_i$ arrivera un femme$_i$

The ungrammaticality of (71) is due to the fact that the θ-chain includes a definite nominal, *elle*, and therefore must be analyzed at S-structure. At S-structure, however, *une femme* is not free, contravening Principle (C).[18] The property of impersonal *il* that is not shared by *there* in English is that *il* doesn't agree with the other Nominative in the clause, but this appears to be an idiosyncratic fact about certain French SCL's such as *on* and *ce* as well (cf. note 15).[19]

Before concluding this section, a few more derivations, one ruled out by a general principle, the other by a French-specific stipulation, should be considered.

72a) *Jeanne$_i$ INFL [$_{VP}$ elle$_i$-est folle]

b) *Jeanne$_i$ INFL [$_{VP}$ elle$_i$-est folle]

In (72a), INFL assigns its Nominative Case feature to the subject, and the SCL is coindexed with the subject, thereby participating in a θ-chain. Notice, however, that (72a) is still ruled out by the assumption that SCL's must be completed by direct assignment of a Nominative feature by (47), i.e., being in a θ-chain is not sufficient for SCL's. One way of thinking about this requirement is to say that Case inheritance is distinct from Case assignment in that in the

latter instance, a Case feature is transferred, while in the former instance, no Case feature is transferred.[20] However, the distinction is expressed, the following theorem must result.

73a) An SCL can only be completed by direct Case assignment.

(73a) suffices to rule out (72a), but not (72b). For (72b), I must make the following descriptive stipulation (which, as we shall see, does not hold for Trentino).

73b) There is no Case inheritance up in French.[21]

A brief summary of this section is perhaps the best prelude to the one to follow. I have proposed that SCL's are generated as a [+nominal] feature on verbs that is 'completed' by the direct assignment of Nominative Case from INFL (47). INFL governs the subject position in tensed sentences, and for this reason, the subject can never be PRO. SCL's can be optionally treated as arguments as long as the θ-C is satisfied. Subject-verb agreement is with the NOM nominal closest to the verb. The complementary distribution of SCL's and full lexical subjects in declarative sentences is due to the single [+NOM] case feature of INFL which can be assigned to the subject position or to the SCL position but not both. Case inheritance, by contrast, does not involve transmission of a Case feature.

The treatment of French SCL's that is motivated in this section is compatible with the claim that the DE is due to the effects of Case inheritance, and with the claim that Nominative Case must be phonetically realized in French. These

last two claims bear most directly on the central issues of this chapter, and I shall return to them continually in the sections to come. I turn now to a construction in which the interaction of these hypotheses with an explanatory principle of a very different sort can be examined in detail.

6.2.2. Subject-Clitic Inversion in French.

The existence of Subject-Clitic Inversion in French is a boon to the analyst of French SCL's because the intricate pattern of facts associated with it provides us with numerous clues as to how to decide some rather subtle points of analysis. As we saw in the last section, for example, evidence from SCL Inversion helped us determine the argument status of *ce* and the optional nonargument status of other SCL's, as well as providing us with evidence for the formulation of S-VA in (63). In this section, I shall consider SCL Inversion from the point of view of the following questions, and then show how the answers to these questions bear on the status of the NOM-drop Parameter.

74a) Why should SCL Inversion exist?

b) Why is it grammatical in some matrix clauses but virtually never in subordinate clauses?

c) Why is SCL Inversion ungrammatical when the subject is questioned or when Stylistic Inversion applies?

d) Why does SCL Inversion involve SCL's?

The answer to the first three questions reduces to the 'Head Uniqueness Principle' of Safir and Pesetsky (1981) and Safir (1981b). The Head Uniqueness Principle (HUP) is independently

motivated as an answer to the same sorts of questions that can be asked about Verb Second in German and Dutch and about Subject-Auxiliary Inversion in English, which, like SCL Inversion, evidence a matrix/subordinate asymmetry in their distribution. As these matters are treated in detail in the references cited above, I shall restrict my discussion to the relevance of the HUP to SCL Inversion, and present only those elements of the "Inflection-Government Theory" (of which HUP is a part) as are necessary for our discussion.

The basic idea of the Inflection-Government theory is that the matrix/subordinate asymmetry in the distribution of the relevant class of inversions is related to the fact that subordinate clauses ($\overline{S}$'s) are almost always governed, while matrix $\overline{S}$'s are always ungoverned. This government asymmetry is made relevant to the distribution of SCL Inversion by placing a condition on the head of $\overline{S}$, which, as is argued in Safir (1981b), is the node INFL. It is then assumed that if a maximal projection is governed (e.g., $\overline{S}$), then its head is governed (e.g., INFL) The grammaticality of inversion in a given context is then regulated at S-structure by the HUP, which refers crucially to the status of INFL.

75) Head Uniqueness Principle

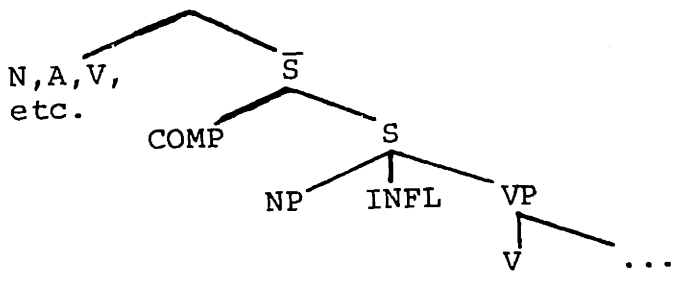
$\overline{S}$ must have one and only one governed head.

Inversion rules of the class mentioned above have the property of moving INFL from an ungoverned position to a governed position, thereby satisfying the HUP in contexts where INFL would otherwise be ungoverned. Let us assume that any X° category

counts as a governor for INFL, just as they are for any other subtheory of grammar.

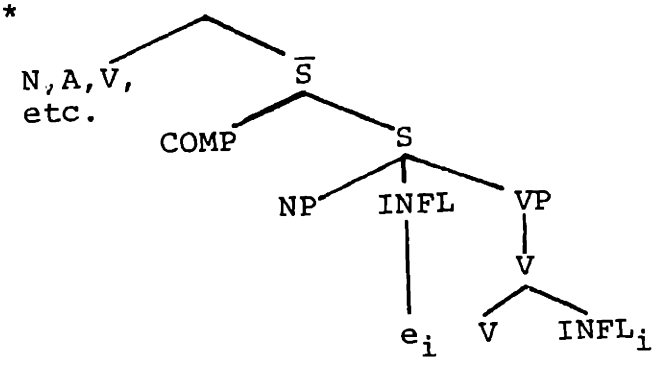
To simplify matters, I shall begin with schematic examples, and then turn to empirical ones. Let us begin with (76).

76)



In (76), INFL is governed because the maximal projection of INFL, $\bar{S}$, is governed by an X° head. No inversion has applied in (76), and so the status of INFL at the head of $\bar{S}$ is unchanged. Since the unique instantiation of INFL is governed, the structure is grammatical with respect to HUP. Now consider (77).

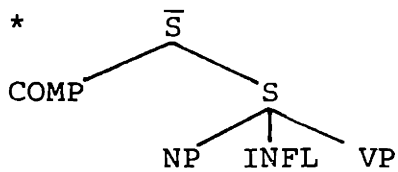
77) *



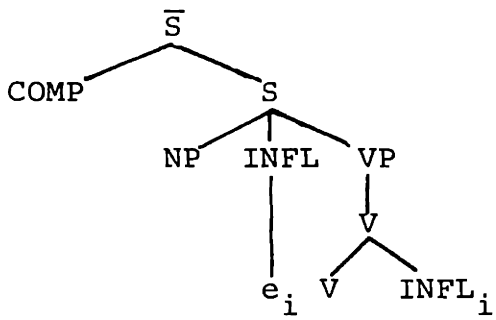
In (77), INFL has right-adjoined to V, an instance of Move α that is freely generated (I adjoin INFL to the right here since it is highly plausible to assume that elements moved to the right adjoin to the right, as in the 'Landing Sites' Theory of Baltin (1978)). The INFL-node is now doubled, since every

instance of Move α leaves a trace.[22] Having two INFL nodes is not sufficient to contravene the HUP, however. The HUP is only violated if more than one INFL node is governed. since both instances of INFL are indeed governed in (77) (INFL-trace is governed because $\overline{S}$ is governed and the moved INFL is governed by V), the structure is ungrammatical. Notice, however, that if $\overline{S}$ is not governed by any X°, i.e., $\overline{S}$ is a matrix clause, then the grammaticality of (76) and (77) reverses, as in (78) and (79), respectively.

78) *



79)



INFL is ungoverned in (78) and so the HUP is violated. In (79) the moved INFL is governed by V, but the trace of INFL is ungoverned because $\overline{S}$ is ungoverned. Thus (79) does not violate the HUP.[23]

The crucial properties of this theory (Inflection-Government Theory) so far, are simply the HUP, the assumption that when INFL moves it leaves a trace (which follows from Move α), that if the maximal projection of some X^n is governed, then X° is governed (a natural extension of government proposed by Kayne (1981a)) and that INFL is the head of $\overline{S}$ (cf.

references above). Although I shall elaborate this theory a bit further to answer (74c) above, these minimal assumptions will suffice to answer (74a) and (74b).

Turning now to the issue at hand, suppose that SCL Inversion in French involves right-adjunction of INFL to V. As we look more closely at the matter, we will see that even this assumption follows from general principles, but first let us consider what follows from our analysis so far. First of all, the existence of the SCL Inversion construction is explained. SCL Inversion is a strategy for satisfying the HUP (there are other possible strategies, some of which we will consider below). In answering (74a) we also answer (74b), in that movement doubles INFL, the trace of INFL must be left ungoverned, and the INFL trace will only be ungoverned in matrix clauses. Thus SCL Inversion is not only possible, but obligatory in matrix nondeclarative clauses,[24] yet always ungrammatical in subordinate contexts. The well-known contrast (first reported by Kayne (1972)) which I have been assuming is exemplified in (80).

80a) *Quand Maximilien est arrivé? (cf. (78))

"When did Maximilien arrive"

b) Quand Maximilien est-il arrivé? (cf. (79))

c) Je ne sais pas quand Maximilien est arrivé. (cf. (76))

"I don't know when Maximilien arrived"

d) *Je ne sais pas quand Maximilien est-il arrivé. (cf. (77))

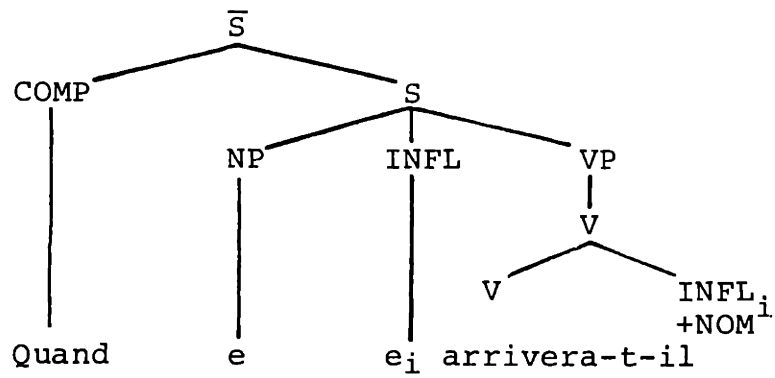
The rightward V-adjunction analysis of SCL Inversion is thus

highly motivated since its interaction with the HUP provides an answer to both (74a) and (74b).

Without extending the V-adjunction analysis any further, let us consider how much of our account is already determined by the analysis of the last section. Consider the structure of (81a) as diagrammed in (81b).

81a) Quand arrivera-t-il?

b)



As discussed above, I assume that NOM Case assignment is only possible where INFL both governs some nominal and is adjacent to it (as in (81b)). Since French is not a NOM-drop language, it also follows that NOM Case must be phonetically realized. Thus the SCL must be both adjacent to the moved INFL and realized as the completed SCL *il*.

This treatment of 'adjacency' requires further comment. If an SCL is just a nominal feature on a verb, one might reason, then the SCL is adjacent to INFL in the same sense that the node V is adjacent to INFL. From the latter point of view, the fact that INFL is to the right of SCL+V should not affect Case assignment by adjacency. Obviously, what must be said is that clitics occupy phonological slots on verbs, and that which kind of clitic can appear in which slot

is partially predetermined by stipulation, as in the case of the relative order of object and indirect object clitics. SCL's differ from other clitics, however, in that they get their Casemarking by assignment from INFL, and must therefore be 'strictly' adjacent to the Case assigner that completes them, namely, INFL. The only assumption that must be made is that the [+nominal] feature that is completable by NOM is unique. Its phonological slot need not be stipulated. In the schematic diagram of the clitic slots on a French verb in (42), the [+nominal] feature associated with NOM Case could be generated anywhere.

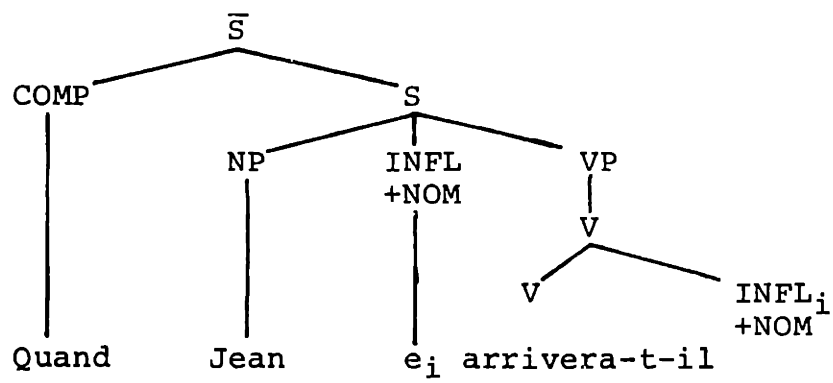
82) # /1/2/3/V/4/5/6 #

The SCL can only be completed where it is assigned NOM Case, however, and this, predictably, is wherever it is next to INFL, i.e., on the outermost right or outermost left.[25]

Now let us consider a case where a full lexical subject appears also.

83a) Quand Jean arrivera-t-il?

b)



The only additional assumption required to account for the possible appearance of a full lexical subject is that when INFL moves, +NOM may be optionally copied onto its trace. If

+NOM is not copied onto INFL trace, then no full lexical subject *must* appear, or a +NOM Case feature is not phonetically realized. For the same reason, the +NOM Case feature of the moved INFL must always be assigned to an adjacent nominal.[26] Thus the SCL must appear to the right of the verb, or the +NOM Case feature on the moved INFL cannot be realized. The most important evidence for this analysis, then, is that the very same mechanism which permits the appearance of two Nominative nominals also accounts for the matrix/subordinate asymmetry in the distribution of SCL Inversion, namely, the doubling of the INFL node that results from Move α. Moreover, the same analysis, under the assumption that NOM Case must be phonetically realized, also answers the question in (74d): SCL Inversion involves SCL's because SCL's must absorb the NOM Case feature from the postverbal INFL.

A class of facts reported by Morin (1979) for some dialects of French is of some interest to us here. In these dialects, Morin notes that the particle *ti* appears postverbally and in all of the same contexts that SCL Inversion appears.

84a) Personne aura-ti le courage de résister?
"Will nobody have the courage to resist"

For example, it cannot appear in subordinate clauses (according to Morin, who does not cite a starred example; cf. his page 20). The curious fact about the particle *ti*, however, is that it can only appear postverbally. Moreover, when *ti* appears and there is no lexical subject, then a Nominative

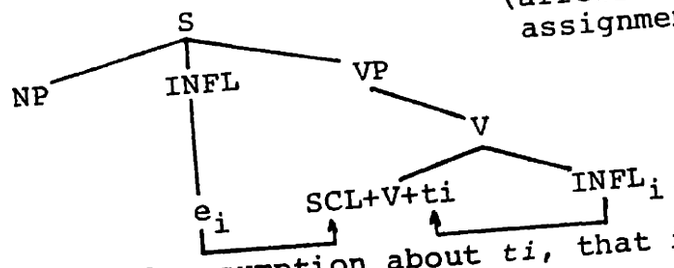
SCL can appear.

85) Je peux-ti ajouter quelque chose?

"May I add something"

Any account of *ti* must state that it only appears postverbally, but otherwise we can suppose that *ti* is like any other French SCL in that it must be completed by a Nominative Case feature. Without further stipulation, the exact distribution of *ti* is immediately predicted. It is predicted, for example, that *ti* only appears where a postverbal INFL can complete it. INFL can only be moved to postverbal position in matrix clauses, however, or the HUP is violated. Moreover, the appearance of a preverbal SCL with *ti* follows as well. Recall that when a SCL appears postverbally, it does so, at the very least, to allow the NOM Case feature of postverbal INFL to be realized. If the SCL is realized postverbally, it obviously cannot appear preverbally, if it is unique (as assumed above). If *ti* is available to realize the NOM Case feature of INFL postverbally, then it also follows that the SCL is free to appear preverbally, just in case it is completed by assignment of NOM Case from INFL-trace (to which it is adjacent).

86) (arrows indicate NOM Case assignment)



Thus the minimal assumption about *ti*, that it is a postverbal SCL, immediately predicts that its distribution is limited to SCL Inversion contexts, and that an SCL can cooccur prever-

bally with postverbal *ti* just in case they are both assigned Case. This last prediction is unavailable in a theory that assumes that *ti* need not be assigned Case.[27]

Given our analysis up to this point, it is now possible to show that the grammar of French need say absolutely nothing about the SCL Inversion construction, as all of its properties are predictable from the interaction of independently motivated factors. The fact that SCL Inversion involves the movement of INFL to a governed position, and that it is only possible in matrix clauses, is predictable from the HUP. The fact that INFL moves to a position where it is adjacent to a V-node follows from the reasonable assumption that tense obligatorily hops onto an adjacent verb in phonology. Moreover, since the NOM Case of INFL must be assigned and realized phonetically, INFL cannot move to any verb-adjacent position, but to the verb that bears an SCL. Quite independently of any statement about SCL's, some principle must require that all the clitics of a clause must appear on the highest verb of the clause.

87a) Jean/il le lui a donné.

b) *Jean/il a le lui donné.

"Jean/he gave it to him"

c) Jean le lui a-t-il donné?

Thus INFL must move to a governed position, a V-adjacent position, and an SCL-adjacent position as a result of HUP, tense-hopping in phonology, and the absence of NOM-drop in French, respectively. (Recall that INFL adjoins to the right of the V

because of Baltin's 'Landing Site' theory.) Thus the right-adjunction to V in the SCL Inversion construction is entirely predictable from independently motivated factors.

It is worth pausing for a moment here to see how far we have come with respect to the questions in (74). The answers to (74a) and (74b) followed from the HUP. The answer to (74d) followed from the necessity that the NOM Case feature of postverbal INFL be realized because French is not a NOM-drop language. I then showed that the fact that INFL right-adjoins to the highest V in SCL Inversion follows from the interaction of a number of independent factors, among them, once again, the HUP and the lack of NOM-drop in French.[28]

Now let us consider the answer to (74c). As presupposed by the question, SCL Inversion is ungrammatical even in matrix clauses whenever either the subject is questioned or Stylistic Inversion moves the subject to the right as first noticed by Kayne (1972).

88a) *Qui est-elle partie?
"Who (FEM.) left"

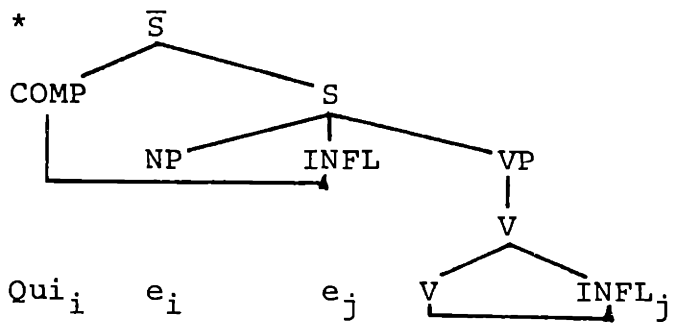
b) *Quand est-elle partie Marie?
"When did Marie leave"

As we shall see directly, (74c), like (74a) and (74b), follows from HUP, but only after two independently motivated assumptions are developed.

The first assumption is that when COMP is lexically filled and adjacent to INFL, it counts as a governor for INFL (this is a simplification of sorts, cf. Safir (1981b) for

details). I also assume that trace is transparent to adjacency of this sort. Both of these assumptions are independently motivated in the reference just cited (cf. especially Section 5.2 of Safir (1981b)). Now notice that the ungrammaticality of (88a), as diagrammed schematically in (89), follows immediately.

89)[29] *

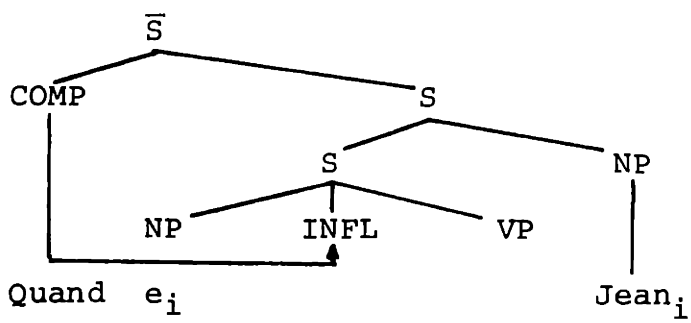


The arrows in (89) represent government of INFL; *qui* governs INFL-trace across the transparent subject trace, and V governs the moved INFL. Since there are two governed INFL's, the sentence is excluded by the HUP.

A similar analysis excludes (88b) if it is assumed that Stylistic Inversion[30] moves the subject to the right and adjoins it to S, as in (90a) diagrammed in (90b).

90a) Quand a téléphoné Jean?

b)



The assumption that Stylistic Inversion is an S-adjunction is independently motivated by the fact that French is not a NOM-drop language. We know already that NOM Case must count as

phonetically realized when a Casemarked position is $\bar{A}$-bound, or *Qui est parti* and *Who left* would be excluded in French and English, respectively. Therefore, since the subject position is empty on the surface and no SCL appears, it must be the case that the empty subject is $\bar{A}$-bound, or the NOM Case assigned by INFL does not count as realized (cf. Appendix I for discussion). Thus it is clear also that the subject position in (90) must be a trace. If the subject position in (90) is a trace, however, then INFL is governed across that trace by lexically filled COMP and the HUP is satisfied.[31]

Notice that the following paradigm is now predicted by HUP.

91a) *Quand Maximilien a téléphoné?

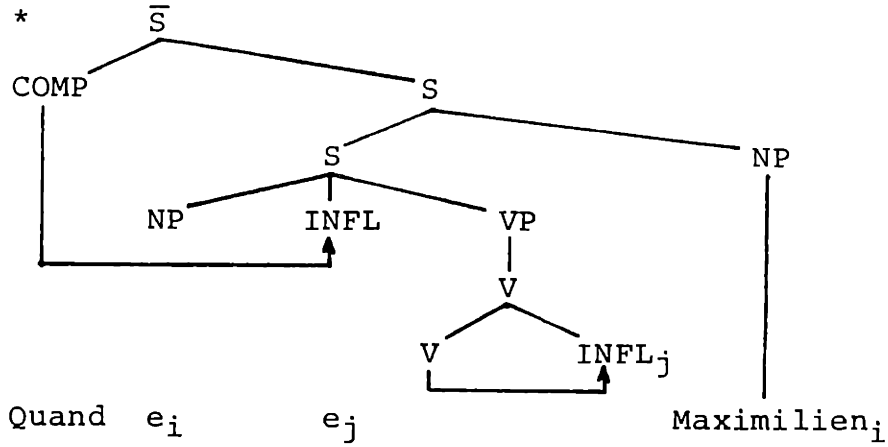
b) Quand a téléphoné Maximilien?

c) Quand Maximilien a-t-il téléphoné?

d) *Quand a-t-il téléphoné Maximilien?

(91a) is grammatical because INFL is ungoverned (cf. (78)), (91b) and (91c) are grammatical because only one instance of INFL is governed, and (91d) is ungrammatical because two instances of INFL are governed, as the arrows in diagram (92) indicate.

92) *

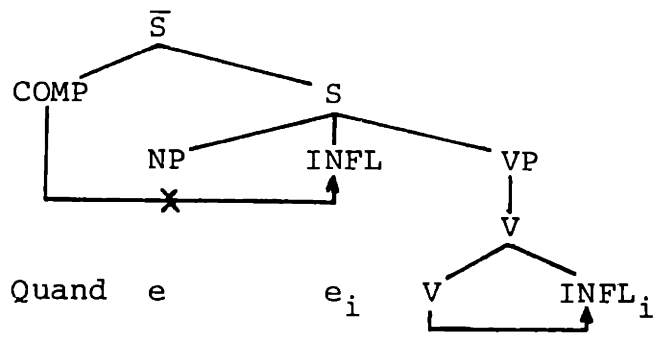


Thus question (74c) is also answered by the HUP.

Before closing out this section, a word must be said about why (93) is not ungrammatical.

93a) Quand est-elle partie?

b)



If empty categories are always transparent to government, then (93) should be excluded for the same reason that (92) is excluded. The obvious difference between (92) and (93) is that the empty category in (93) is EXE, while in (92) it is trace. Thus we must assume that EXE is not transparent to the sort of adjacency relevant to inflection-government.[32] Notice that this is significant evidence that the subject position in (93) must always be generated as Chomsky (1981a) assumes (i.e., the presence of NP as a daughter of S is obligatory, as assumed also in Chapter II). The assumption

that EXE is not transparent to government will play an explanatory role in sections 6.2.4 and 6.2.5.[33]

Returning now to the questions posed at the beginning of this section, it has been demonstrated that the HUP has accounted for the answers to (74a) through (74c). While the HUP is of independent explanatory interest, it is not, however, our central concern here, but merely a means of providing an analytic matrix for our examination of the explanatory role of the absence of NOM-drop in French. To put this presentation in perspective, this entire treatment of French SCL's has been introduced and developed in detail in order to give some content and motivation to the claim that French is not a NOM-drop language, and to show how Case assignment and Case transmission differ and interact, especially with respect to SCL's. More specifically, the absence of NOM-drop has figured in the explanations of (A) why French must always have a full subject or an SCL or both in a tensed sentence, (B) why INFL must move to the postverbal position where its NOM Case feature can be assigned (and why languages that do not have SCL's do not have INFL movement into VP), (C) why the SCL must appear to the right of V when INFL right-adjoins to V (the answer to (74d)) and (D) why Stylistic Inversion must be an adjunction to S and not to VP. With this fairly precise view of what "not a NOM-drop language" entails, we can now examine the issue of whether these properties appear independently of free inversion in a language otherwise very much like French.

6.2.3. Trentino SCL's.

It is now possible to show that the generalization in (39) is counterexemplified in Trentino, a northern Italian language.[34] As its geographical position might lead one to suppose, Trentino has some characteristics very similar to French, and others that are much more like Italian. With respect to the issues at hand, Trentino is almost exactly like French in that it is not a NOM-drop language, but it is like Italian in that it permits free inversion.

Let us begin by comparing a schematic Trentino paradigm with that of the hypothetical language Z discussed in 6.2.0 repeated below.

94a) Joe *(SCL) Vs	44a) Joe Vs
b) (*SCL) Vs Joe	b) (SCL) Vs Joe
c) *Vs	c) *Vs
d) SCL Vs	d) SCL Vs

While the Trentino paradigm differs from the idealized counter-example Z represented in (44), these differences, I will argue below, are due to auxiliary factors that do not affect the central issue. What the paradigm in (94) clearly shows, however, is that a tensed sentence must have either an overt preverbal subject, or an overt postverbal one, and, moreover, that the postverbal NP can be definite, as we would expect in a free inversion language. The remainder of this section aims merely at clarifying these claims by extending the analysis of French in 6.2.1 to Trentino.

The chart below lists the SCL's with the corresponding

present tense conjugation of the verb meaning "to come" (evidence that the elements that I am calling "SCL's" are indeed SCL's is presented in the next section).

95)

	SCL	Verb		SCL	Verb
Is		vegno	IIIsM	el	ven
Ip		vegnim	IIIpM	i	ven
IIs	te	vegni	IIIsF	la	ven
IIp		vegní	IIIpF	le	ven

Although the absence of first person and second person singular SCL's is of some significance, let us set these gaps in the paradigm aside for the moment and assume that, generally speaking, SCL's are available for all of the relevant combinations of person, number and gender. The paradigm in (94) is presented in (96) with the third person masculine singular SCL and the present tense of the verb meaning "to eat."

96a) El Mario *(el) magna.

b) (*El) magna el Mario.

c) *Magna.

d) El magna.

(*El* is also a definite article commonly used before proper names, so I have underlined the SCL in the examples below to avoid confusion.) This paradigm differs from French in the following respects:

97a) The SCL must always appear after a full lexical subject in Trentino but never in French.

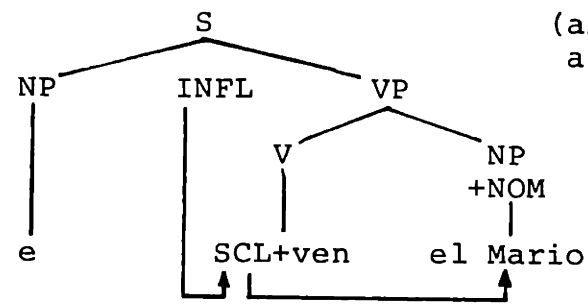
b) SCL's cannot (in general) precede the verb in NOM-NP-in-VP examples in Trentino, whereas they must appear in French.

c) The NOM-in-VP can be definite in Trentino but not in French.

These differences are of particular interest only insofar as they bear on the central issue here, namely, whether free inversion is independent from NOM-drop or not.

Let us consider the mechanism of free inversion more closely. As already noted, (97c) indicates that Trentino is a free inversion language. This means that in (98), Case is transmitted from INFL to the impersonal SCL, and from the impersonal SCL to the postverbal subject.

98)



(arrows indicate Case assignment)

INFL governs the SCL in (98), and the SCL in turn assigns Case within the domain governed by V, of which it is a part. Since there is direct Case assignment in (98), it follows that the impersonal SCL (iSCL) and the NOM-in-VP do not have to be coindexed. Thus they do not form a θ-chain, and the DE is defused.

A potentially attractive property of this analysis is that it seems to show that Case assignment is transmission of a feature. If the iSCL has assigned the feature it has received, then it is no longer 'complete,' and therefore not phonetically realizable. I shall not press this claim, however, since matters turn out differently in both Fiorentino (cf. Brandi and Cordin (1981)) and in Modenese (cf. 6.2.5) where the iSCL appears. Nonetheless, let us assume the 'passed

on feature' analysis for the time being, and assume further that this is only possible with the iSCL.[35] The free inversion parameter can now be stated as (99).

99) The iSCL assigns the Case feature it receives.

The existence of free inversion in Trentino predicts, of course, that *wh*-extraction of 'subjects' is possible in examples structurally equivalent to (12) in 6.1.1. Patrizia Cordin (personal communication) notes that Trentino, in fact, provides evidence for postverbal extraction of 'subjects.' As shown above, no third person SCL appears when free inversion has applied, but the personal SCL must surface when there is a full lexical preverbal subject. It follows that extraction must be from postverbal position in Trentino because in just those cases where the subject is questioned from a subordinate clause, the SCL cannot appear. The same fact also holds of relatives.

100) Chi e che (*el) magna?
who is that SCL-he eats

101) el putel che (*el) vegnere doman[36]
the boy that SCL-he will-come tomorrow
"the boy that will come tomorrow"

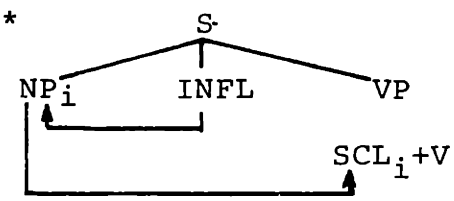
The absence of *that e* effects from *wh*-extraction, as Rizzi's hypothesis predicts, follows from the already motivated assumption that Trentino is a free inversion language.

Now let us turn to some of the differences between French and Trentino that are independent of free inversion. As stated in (97a), Trentino allows, and in fact requires, just

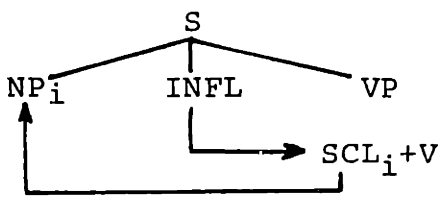
the situation that is barred in French: SCL's and full lexical preverbal subjects are not in complimentary distribution. Moreover, there must be a Nominative nominal in VP in Trentino, be it the inverted subject or the SCL.

Recall at the close of section 6.2.1 I stipulated that Case inheritance up is prohibited in French (73b). Trentino permits just the sort of example that (73b) is designed to rule out, however, and so let us simply assume that (73b) does not apply in Trentino (nor, as we shall see, in Modenese). Consider the diagrams in (102).

102a) *



b)



In the derivation where the SCL inherits Case, the SCL still cannot be completed by inheritance as in (102a). In (102b), the inheritance of NOM Case by the subject permits it to be well-formed at S-structure with respect to the Case Filter. The absence of (73b) in Trentino thus will allow the generation of "El Mario el ven" (96a) which is excluded in French.[37]

The other property of Trentino that differs from French is the requirement that NOM Case be phonologically realized in VP. This property follows from (103).

103) NOM Case can only be assigned in VP in Trentino,

The obligatory appearance of the SCL in (96a) is now accounted for. If NOM Case is always assigned to something in VP, then the +NOM feature must always be phonetically realized there, as required by the absence of NOM drop in Trentino. (Case inheritance will generate "El ven el Mario," but this derivation involves, by hypothesis, coindexing between the SCL and the postverbal subject, and is excluded for the same reason as similar French examples (cf. (71) in 6.2.1).

While (73b) and (103) are essentially ad hoc stipulations (and one can imagine others) that match distinctions between French and Trentino, it is important to note that they interact with explanatory parameters that are our central concern. The absence of NOM-drop requires the appearance of NOM Case where it is assigned. In derivations like (98), the absence of NOM-drop interacts with free inversion in such a way that NOM Case appears in a place other than where it is directly assigned by INFL, and without coindexing that would otherwise result in a Definiteness Effect.

The deviations of (96) from the paradigm in (44) are now accounted for, and it thus appears that Trentino is just the sort of counterexample to (39) that indicates that the FIP and the NDP are distinct parameters. In the next section I shall establish the clitic status of the elements that I have called SCL's without direct argument so far, and examine a rather complex set of interactions between three distinct constructions.

Rather than closing this section with a summary, how-

ever, I would like to present a different sort of argument from Trentino that NDP and FIP are distinct. A fact not entirely consistent with my analysis is the absence of SCL forms for first person and for second person plural. The basic fact about the chart in (95) is that SCL's are missing for some forms (not IIs) that have distinctive conjugations, while the nondistinctive conjugation for third person forms has separate SCL's for each combination of person, gender and number. In short, it seems as though richer verb conjugations allow missing subjects more easily, as Taraldsen's original observation suggests. But notice that the third person forms are precisely those that have no SCL or distinctive agreement in the free inversion cases. These facts are summed up in (104).[38]

104)

	SCL	AGR on V	SCL w/ FI	AGR w/ FI
I	-	+	-	+
II	+/- (pl)	+	+/-(pl)	+
III	+	-	-	-

This seems to show that the richness of inflection, while it may affect NOM-drop,[39] is irrelevant to the possibility of free inversion. Conceptually, this is not really surprising. Since the full NP is present in free inversion, rich inflection is unnecessary to specify information that is not 'lost.' From the point of view of Taraldsen's observation, it never made much sense to lump free inversion together with the missing subject phenomenon. Once again, this seems to be evidence that NDP and FIP are distinct and independent, since one may be sensitive to the richness of verbal inflection,

while the other is not.

6.2.4. SCL Inversion in Trentino.

As remarked above, I have presented no direct evidence so far that 'SCL's' in Trentino are indeed clitics parallel to those in French. One might suppose, for example, that these 'SCL's' are, in fact, just agreement markers that show up where inflection is weak. Obviously, the account presented above depends on the assumption that 'SCL's' require Casemarking. At first blush, it might appear that (103) could be eliminated if there is no assignment of Casemarking to these 'SCL's,' and then Trentino would appear to be more like Italian, i.e., with missing subjects. It is thus necessary to establish that the 'SCL's' in question are indeed clitics to show that Trentino is a true counterexample to (39).

It has already been argued that the 'SCL's' are distinct from full pronouns (cf. note 35, where it was shown that full pronouns appear with free inversion). In support of the claim that 'SCL's' are indeed clitics, Brandi and Cordin cite the following paradigm, showing that 'SCL's' cannot be separated from verbs (compare Kayne (1975), p. 84 for French examples).

105a) *La Maria <u>la</u> fazilmente vegnerá.
"Mary SCL easily will come"

b) La Maria fazilmente <u>la</u> vegnerá.

c) La Maria <u>la</u> vegnerá fazilmente.

Brandi and Cordin also note that 'SCL's' cannot be stressed, again paralleling French (cf. Kayne (1975), p. 85). The latter arguments, however, only show that 'SCL's' are closely associated with verbs, not that they are clitics.[40]

Another argument presented by Brandi and Cordin, on the other hand, does suggest that 'SCL's' are clitics, namely, that they cooccur, at least in the case of second person singular, with distinctive verbal inflection, and do so quite generally in Fiorentinto.[41]

From the view of the analysis presented here, further evidence that 'SCL's' are clitics may be based on the fact that they always appear to the far left in a row of clitics, as assignment of NOM Case by adjacency to a clitic would require.

106a) Mario el la mete.
Mario SCL-he OCL-she put-on
"Mario put it on"

b) *Mario la el mete.

The 'SCL',' moreover, appears to the right of the verb when SCL inversion applies, as the adjacency of Case assignment account above would suggest.

The latter remark brings us to the strongest evidence in favor of attributing clitic status to 'SCL's,' namely, that they undergo SCL inversion exactly as French SCL's do.[42]

107a) Magnelo?

b) Mange-t-il?
"Does he eat"

Just as in French, SCL inversion in Trentino is limited to matrix contexts.

108a) Ho domanda se (el Mario) el magna a casa.
"I wondered if Mario eats at home"

b) *Ho domanda se (el Mario) magnelo a casa.

c) *Je m'ai demandé si Mario mange-t-il chez lui.

Also as in French, the SCL appears on the highest verb when inverted, and inverts around an object clitic.

109a) Alo magna?

b) A-t-il mange?
"Has he eaten"

110a) La magnelo?

b) La mange-t-il?
"Does he eat it(fem)"

The inverted SCL never cooccurs with its preverbal form.

111a) El magnelo?

b) *Il mange-t-il?
"Does he eat"

(111a) is only grammatical if *el* is interpreted as the homophonous object clitic. Thus all of the distributional facts concerning these 'SCL's,' (A) that they occur only on the extreme left or right of the row of clitics and the verb, (B) that they appear only on the highest verb with the other clitics, and especially (C) that they show the same matrix/subordinate asymmetry in their postverbal distribution that French SCL's do, indicate conclusively that 'SCL's' in Trentino are indeed SCL's.

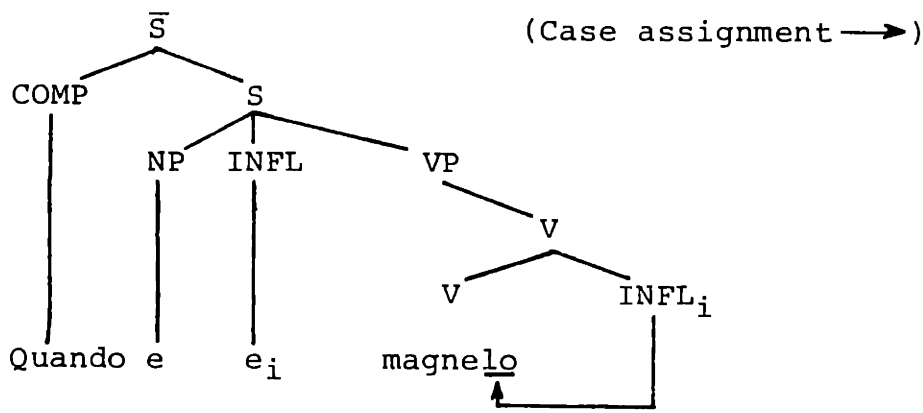
The now established fact that Trentino has SCL's exactly parallel to those in French in the relevant respects nails down, of course, our conclusion that Trentino is not a NOM-drop language. In the remainder of this section, I turn my attention to the complex, but extremely interesting interaction between the various sorts of inversion constructions discussed in the last two sections: SCL inversion, Stylistic Inversion, and free inversion.

Let us begin by reviewing the structure of SCL inversion with a Trentino example.

112a) Quando magnelo?

"When does he eat"

b)



In (112a), as diagrammed in (112b), INFL has moved into VP where it is governed by V, while the trace of INFL remains ungoverned (EXE in subject position blocks government from lexically filled COMP). Thus HUP is satisfied. The moved INFL, bearing NOM Case, assigns it to the SCL, satisfying the non-NOM-drop property of Trentino. If a NOM Case feature were copied onto the INFL-trace in (112), the sentence would fail (unless a lexical subject were inserted), since that

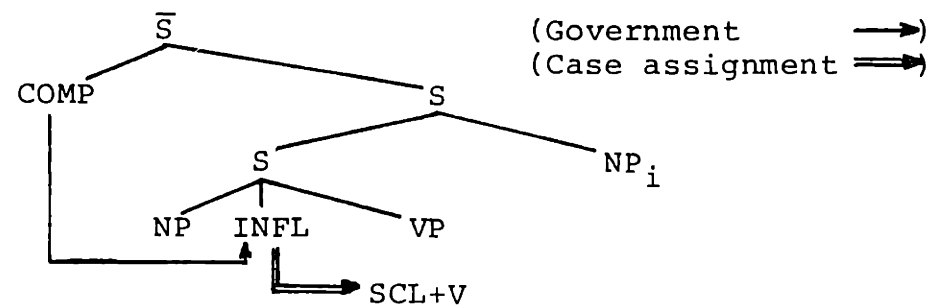
feature would have no nominal on which it could be realized. Examples like (111a), of course, are ruled out under the assumption that the SCL nominal feature is unique.

Now compare (112) with (113), an example of Stylistic Inversion in Trentino.

113a) Quando el magna el Mario?

"When does Mario eat"

b)



Quando e_i el_i magna el $Mario_i$

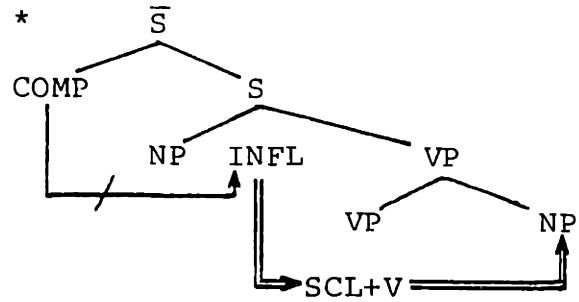
In (113), INFL assigns Case to the SCL, and the subject position gets Case by coindexation with the SCL. (The subject $\bar{A}$-bound by *el Mario* and is therefore a variable. If it is a variable it must be Casemarked. Therefore the subject position must be coindexed with the SCL.) Since the subject position is a trace, it is transparent to government from lexically filled COMP. Thus lexically filled COMP governs INFL and the HUP is satisfied.

Finally, compare (112) and (113) with (114), an instance of free inversion.

114a) ?*Quando magna el Mario?

"When does Mario eat"

114b) *



(government ⟶)
(Case ⟹)

Quando e el Mario

Since the SCL does not appear in (114a), we know that *el Mario* must be in VP where the SCL has passed the NOM Case feature it was assigned by INFL onto the postverbal subject. The subject position contains EXE (it must, or the 0-C is violated, as there would be two subject arguments, cf. 6.2.1) which, unlike trace, is not transparent to government from COMP. INFL is therefore ungoverned and the HUP is violated, even though the declarative "Magna el Mario" is grammatical (as with French we abstract away from declaratives in applying the HUP for the reasons discussed in note 24 on 6.2.2).

We are now nearly in a position to analyze the interaction of the different inversion rules, but first a factor unrelated to our general account must be abstracted away from. For whatever reason, it is either very awkward or impossible to have a full preverbal lexical subject in a question clause, be it a direct question or an indirect one.

115a) *Cosa el Mario magnelo?

"What does Mario eat"

b) *Cosa el Mario el magna?

c) ?Ho domanda cosa che el Mario el magna

115c) "I wondered what (that) Mario eats"

116a) Cosa magnelo el Mario? (right dislocation)

b) Cosa el magna el Mario?

c) Ho domando cosa che el magna el Mario.

The HUP would rule out (115b) because INFL is ungoverned (government from lexically filled COMP is blocked by the full lexical subject) but (115a) and (115c) (which is an instance of Stylistic Inversion) are well-formed with respect to the HUP. Given that this effect holds even for subordinate clauses, although the effect is weaker, this fact appears to be independent of the HUP. Moreover, the subject can remain in place in embedded yes/no questions, and with some clumsiness even in matrix yes/no questions with SCL inversion.

117a) Ho domanda se el Mario el magna a casa. (=(108a))

b) ?El Mario magnelo?

However this fact is explained[43] it will probably extend to account for all of the ungrammatical examples in (115), so let us simply isolate it with a descriptive statement.

118) *Wh*-question clauses tend not to permit lexical preverbal NP subjects.[44]

Now let us consider how these various inversion structures might interact. Since both free inversion and Stylistic Inversion move the subject to the right, it is hard to imagine how they could interact in a detectable fashion. One can imagine, however, that either free inversion or Stylistic Inversion could apply to a sentence where SCL inversion has already applied. The output of such an interaction would

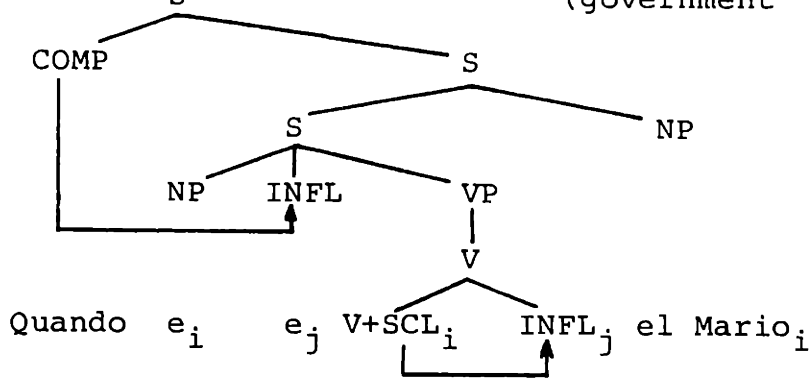
look like (116a) or (119a) below. (119a), however, is only grammatical as a right dislocation, much as the same sentence in French is only grammatical as a right dislocation.

119a) Quando magnelo *(,) el Mario?

b) Quand mange-t-il *(,) Mario?

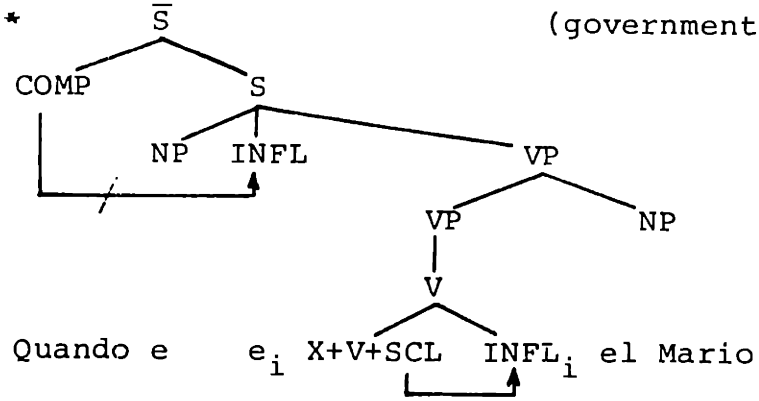
The ungrammaticality of the combination Stylistic Inversion/ SCL Inversion in French was attributed to the HUP. The Trentino version of this derivation is ungrammatical for the same reason as shown in (120).

120) * $\bar{S}$ (government ⟶)



While the SCL gets direct Case assignment from INFL, Case is inherited by the subject variable (bound by *el Mario*) via coindexation. The structure is ungrammatical because INFL is governed twice, violating the HUP. In Trentino, however, but not in French, (119a) has another derivation, namely, one where free inversion instead of Stylistic Inversion has applied, as in (121).

121) * (government ⟶)



With respect to the HUP, (121) is well-formed because the subject position now contains EXE which blocks government from lexically filled COMP. Thus the moved INFL is governed by V while the trace of INFL is ungoverned. Why then is (121) ungrammatical?

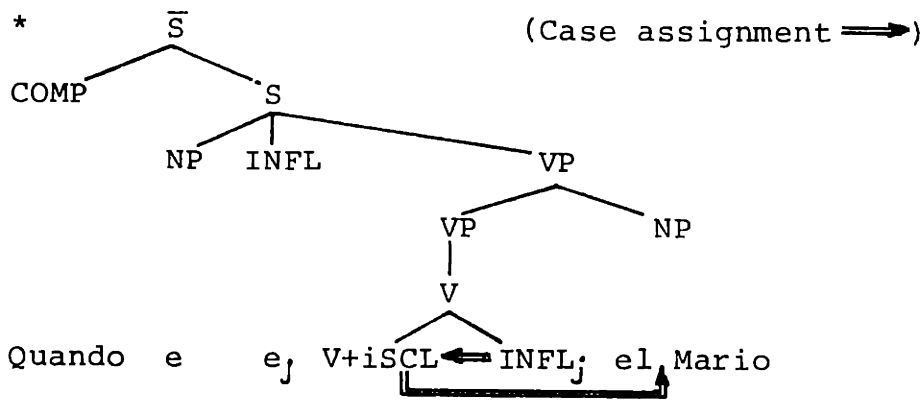
The answer depends on our analysis of how Case is assigned. The appearance of the postverbal SCL is explicable by the Case it receives from moved INFL, but how would *el Mario* get Case? If *el Mario* were to get Case by coindexation with the personal SCL, then the sentence would be ruled out for the same reason that definite NP's cannot appear in the French impersonal construction (the SCL would C-command, and therefore bind, *el Mario* under Chomsky's definition of C-command, cf. Chapter I). Moreover, the moved INFL does not C-command the postverbal subject in (121) (VP is not a projection of INFL, and INFL is a sister to V, op. cit.) and therefore cannot govern it or assign it Case. If the postverbal INFL is not a possible source for the Case that must be assigned to *el Mario* (but see below), one might tr[illegible] appeal to a NOM Case feature left behind on the trace of INFL, an option we permitted for French. There is no reason to rule

this possibility out, since it follows that if INFL trace had a NOM Case feature, it would have no place to assign it to; the SCL and its unique nominal feature must appear postverbally to absorb the Case of the moved INFL. Thus it appears that there is no possible derivation of (121) in which *el Mario* can be assigned Case, and the sentence is ungrammatical.

The latter analysis raises a different problem, however. Suppose that the SCL appearing postverbally were the iSCL. Then the moved INFL could assign it NOM Case, and the iSCL in turn could assign NOM Case to *el Mario* in a sentence (122a) diagrammed in (122b).

122a) *Quando magna el Mario?

b) *



In order to block derivations like (122), it is necessary to claim that the iSCL associated with free inversion cannot be syntactically instantiated postverbally (phonetically, of course, it can never be instantiated). The latter stipulation, while odd, is independently motived, since it predicts the impossibility of an indefinite NP appearing in the position of *el Mario*. This would otherwise be possible under a Case

inheritance and LF movement derivation exactly parallel to the one that derives the grammatical French example in (123).

123) Quand arrivera-t-il un nouveau chef?

"When will there arrive a new boss"

The properties I attribute to the iSCL in Trentino are listed in (124).

124a) The iSCL is not specified for definiteness/indefiniteness.

b) It has IIIs agreement.

c) It lacks morphology.

d) It has no postverbal instantiation.

e) It assigns NOM Case if it is itself assigned NOM case.

This completes my discussion of Trentino SCL's. As I have shown in this section, they are parallel in every relevant way to those we find in French, and constitute 'subjects' in the same sense that French SCL's do. I conclude from this that Trentino is not a NOM-drop language. Furthermore, Trentino acts, again in the relevant respects, like a free inversion language and, as expected, contrasts with French in this regard. The existence of Trentino, a language that lacks NOM-drop and permits free inversion, is therefore a counterexample to any theory that treats free inversion as a reflex of NOM-drop.

6.2.5. Modenese SCL's.

In the preceding analysis of Trentino, care was taken to present the SCL system with some thoroughness, but with a

view towards highlighting those aspects of Trentino that are most directly attributable to the absence of NOM-drop and the presence of free inversion. As a means of sorting out dialectal variation from the processes that are of central interest to us, it is instructive to consider another Northern Italian language, Modenese,[45] which is quite similar to Trentino in that it allows free inversion and does not permit NOM-drop. The distribution of SCL's in Modenese contrasts with the Trentino facts in a few respects, however, and some of these differences are of particular interest to us because they bear on the correct formulation of the Free Inversion Parameter.

As in Trentino, Modenese requires the presence of an SCL with a full lexical preverbal subject, although unlike Trentino, there are no 'missing' SCL's of this sort. The chart below includes the full SCL paradigm.

125)

	Strong Pronoun	SCL	Verb Conjugation
Is	me	a	magn
Ip	nueter	a	magnam
IIs	te	't	magn
IIp	vueter	a	magne
IIIsM	lo	al	magna
IIIsF	le	la	magna
IIIpM	lor	i	magnen
IIIpF	lor	al	magnen

Each horizontal line in the chart represents a grammatical sentence with the present tense of the verb meaning "to eat," where the presence of the strong pronoun is optional, but emphatic when present. For example, (126a) is grammatical with or without the strong pronoun (or a full lexical subject), but the SCL must never be omitted.

126a) (Lor) i magnen. c) (I to fio) i magnen.

b) *(Lor) magnen. d) *(I to fio) magnen.

"Your children eat"

These SCL's show the usual 'close association with the verb.'

127a) *I semper magnen.

"They always eat"

b) I magnen semper.

The main difference between Trentino and Modenese concerns the free inversion construction. Free inversion, which permits, of course, postverbal definite NP subjects, also requires the presence of the impersonal SCL *a* and the tensed verb must have IIIs agreement.[46]

128a) A magna i to fio

b) *Magna i to fio

c) *A magnen i to fio

Let us assume that the iSCL *a* is the 'active ingredient' in the free inversion construction, and that it therefore assigns NOM Case when it is assigned NOM Case. Unlike Trentino, however, the iSCL in Modenese keeps a copy of the NOM Case it assigns and thus appears phonetically. Notice that we now have a means of testing whether subject extractions are from preverbal or postverbal position. Consider the examples in (129).

129a) Che ragas di-t ch' *(a) chiama?

which boys say-you(SCL) that it(iSCL) calls

"Which boys did you say call"

b) *Che ragas di-t ch'i chiamen?

129b) which boys say-you(SCL) they(SCL) call

Technically speaking, (129) is not a *that e* violation (cf. 6.1.1) since a 'subject,' *a*, is present but clearly the presence of *a* and singular agreement rather than *i* and plural agreement, is required when the subject is extracted. This then, is evidence that *wh*-extraction of the subject is from postverbal position, and confirms our hypothesis that Modenese, like Trentino, is a free inversion language.[47]

The fact that Modenese SCL's undergo SCL inversion is further evidence that Modenese, like French and Trentino, is not a NOM-drop language. As the HUP leads us to expect, SCL inversion is limited to matrix clauses.

130a) (Quand) screvven-i?

"When did they arrive"

b) *A vrevv saver quand screvven-i.

"I want to know when they write"

c) A vrevv saver quand i screvven.

Preverbal SCL's do not cooccur with postverbal SCL's.

131) *I screvven-i?

The latter property follows, however, from the fact that inversion of the SCL is required in matrix questions.

132a) *Quand i riven?

b) Quand riven-i?

"When do they arrive"

In this respect, Modenese contrasts with Trentino, as the Trentino version of (133) is grammatical (cf. (113a)).[48]

133) *Quand i riven i to fio?

133) "When do your children arrive"

Just as in Trentino, however, *wh*-clauses tend not to permit a full lexical subject in preverbal position except in yes/no and 'why' questions.

134) ?Perche i to fio riven-i?

135) *Quand i to fio riven-i?

As in both French and Trentino, a full lexical NP subject cannot appear with SCL inversion unless it is a right dislocation.

136) Quand screvven-i *(,) i to fio?

"When do they write, your children"

Of particular interest to us in Modenese is the interaction of free inversion and SCL Inversion, or rather the lack of it. In the last section it was argued that the Trentino iSCL involved in free inversion lacks a postverbal instantiation. As it is possible to 'see' the iSCL *a* in Modenese, we predict correctly that (137) is ungrammatical whether the *a* appears postverbally, preverbally or not at all.

137) *Quand (a) screvv(-a) i to fio?

The iSCL cannot occur preverbally because of HUP. (If INFL is not moved, EXE in subject position blocks government from lexically filled COMP, and INFL is ungoverned. If INFL is moved and *a* appears preverbally, then the NOM Case feature of the moved INFL cannot be realized.) The inverted possibilities (*a* silent or pronounced) are well-formed with respect to HUP, but since the iSCL cannot appear postverbally, *i to fio* cannot get Case, and the NOM Case of the moved INFL cannot be realized. Moreover, Modenese contrasts with French in the

same way that Trentino does; a Case inheritance derivation parallel to (123a) in French ought to be possible in Modenese if *a*, phonologically silent or not, can be inserted postverbally, as in (137). Thus the assumption that the iSCL associated with free inversion has no postverbal instantiation appears to be very well motivated.

An important result to be culled from this data is that the iSCL appears to be directly involved with the possibility of free inversion, a fact not guaranteed by our analysis of Trentino. For Trentino, one might claim that third person agreement independently assigns Case to postverbal subjects (perhaps as a result of Chomsky's (1981a) rule R applying in syntax) or to an SCL, thus explaining the complementarity of overt SCL's and full postverbal NP subjects. The latter explanation cannot account for Modenese, however, because the third person verb conjugation distinguishes with respect to plurality, yet the iSCL, as the closest Nominative nominal, determines the verb conjugation and is not, moreover, in complementary distribution with the postverbal subject. If the iSCL itself were not directly involved in free inversion, there would be no reason to suppose that the iSCL could determine agreement. Indeed the role of the iSCL in free inversion is more visible in Modenese precisely because the iSCL bears its own distinctive agreement features.[49] In Italian, by contrast, the verb agrees with the freely inverted subject, perhaps because the iSCL lacks inherent agreement features. Thus the role of the iSCL is opaque in Italian, though we may

assume that it is no less determined by the presence of the iSCL.

I conclude this discussion of Modenese SCL's by returning to a point made at the end of 6.2.3. There it was remarked that richness of inflection appeared to be irrelevant to free inversion, though not, perhaps, to NOM-drop. Once again, in Modenese, we have seen that verb agreement is impoverished with respect to free inversion, the exact opposite of what we would expect if rich inflection were required for both NOM-drop and free inversion.

6.2.6. Summary of 6.2.

The goal of this section has been to show that missing subjects and free inversion result from separate parameters, and more specifically that the FIP is independent from the NDP. Given that Italian has both free inversion and missing subjects, the task has been to show that there exist languages that forbid missing subjects but allow free inversion just the same. In order to develop some independent criteria for the characterization of languages that (A) do not allow missing subjects and (B) have SCL's, a detailed analysis of SCL's in French, a non-missing subject, non-free inversion language, was presented. All of the central properties of SCL's in French were then shown to be properties of corresponding elements in Trentino and Modenese, thus indicating that the latter two languages are exactly parallel to French in not permitting missing subjects. Nonetheless, both Trentino and Modenese are

also free inversion languages complete with the absence of the DE and evidence of *wh*-extraction from postverbal position parallel to Italian. Thus there exist languages that permit free inversion but not missing subjects, as predicted by the assumption that FIP and NDP's are separate parameters.

Moreover, some argumentation was given for formulating the FIP as follows.

138) FIP: If the iSCL is assigned Case by INFL, then it can, in turn, assign Case.

The formulation of NOM-drop is assumed to be the negation of the NOM Case Realization Condition introduced in Chapter III.

139) NDP: NOM Case need not be phonetically realized.

This formulation will be examined more extensively in the next two sections, but this much is established: however the NDP and the FIP are formulated, free inversion is independent of NOM-drop. Although we have touched on the matter already, in the next section I shall show more directly that the converse is also true.

6.3.0. The Independence of NOM-drop from Free Inversion.

The hypothesis that missing subjects and free inversion result from completely independent parameters, the NDP and the FIP, respectively, predicts the existence of at least four types of languages. Thus far I have discussed only three types, namely, languages (A) with both missing subjects and free inversion (Italian), (B) with neither missing subjects nor free inversion (French) and (C) with free inversion and no missing subjects (Trentino and Modenese). The remaining

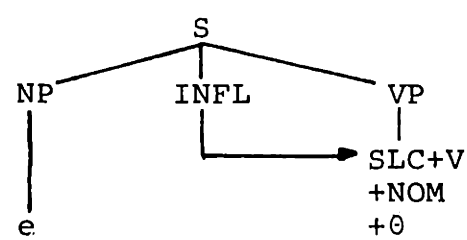
case would be a language that permits missing subjects but lacks free inversion. In the first part of this section I will examine a Romance language, Portuguese, which rather neatly fills out the paradigm. The next section extends the analysis of NOM-drop (without free inversion) to Germanic languages, which lack SCL's, and will thus contrast with languages like Portuguese in ways immediately predictable from the theory of empty categories presented in Chapter II.

A quick review of what is meant by a NOM-drop language will perhaps facilitate discussion. In English, for example, a non-NOM-drop language, expletive elements such as *there* and *it* were required to appear by the Case Realization Conditions (cf. Chapters III and V). In languages where the NOM Case Realization Condition is negated, it follows that NOM Case need not be realized. In Dutch A, for example, the appearance of the impersonal pronoun *er* was optional in Case inheritance contexts (but cf. 6.3.2), showing that it need not appear.

In a Romance language like Italian, NON-drop means that the subject is missing even when it represents a full argument in a sentence like "Mangia," because the subject θ-role is assigned to the phonetically unrealized Nominative SCL.

140) Mangia

"He eats"



As discussed in 6.1.2, the SCL position and the subject position form a 'discontinuous θ-position' or θ-set. Within this

θ-set, there can be only one argument or the θ-C is violated (as discussed in 6.1.2, example (34) and Chapter VII). Thus either the empty subject position contains an argument or the SCL is an argument, but not both or neither. It was argued that the subject position, since it is a governed empty category in sentences like (140), would count as governed PRO if it were in a θ-chain (by definition, if the subject position counts as a θ-position within the θ-set, then the subject position is in a θ-chain, cf. Chapter VII). If the subject position is not the θ-position in the θ-set, then it is EXE, since it is empty, governed, and outside a θ-chain. If, as a result the SCL position counts as the θ-position within the θ-set, then the SCL must be a full pronoun and count as an argument in order to satisfy the θ-C. In order to be capable of bearing a θ-role, the SCL must be completed (in the sense of the last section), as it will be only if it is assigned NOM Case by INFL. The only difference between (140) and a French sentence like "Il mange" is that the SCL is not realized in Italian, as Italian is a NOM-drop language.

The task of this section is to show that a Romance NOM-drop language can differ minimally from Italian in not allowing free inversion. If free inversion is not allowed, then at least two properties found in Italian should be missing. First, postverbal Nominative NP's should either be indefinite and appear typically with ergative verbs (as in French) and/or should be focussed as in presentational *there* type structures as is additionally possible in English.

Second, *that e* effects should be evidenced when the subject of a finite clause is extracted by *wh*-movement, since *wh*-extraction cannot take place from VP-adjoined position, and the subject position is presumably not properly governed.

6.3.1. Missing Subjects and the DE in Portuguese.

As pointed out by both Zubizarreta (1981) and Chao (1980), Portuguese is a missing subject language that lacks free inversion. I postpone my discussion of the issues surrounding the *that e* effect to the next subsection for reasons of exposition. Let us direct our attention first to the missing subject property and the DE.

That Portuguese is a missing subject language is easily illustrated (example from Zubizaretta).

141) Ø Disse que Ø tenha lido esse livro
says that has read that book
"She says that she has read that book"

I assume that the analysis of the empty subject is exactly as it is in (140), the structure for Italian. Hypothesizing a null SCL in Portuguese seems quite natural, since, as in Italian, Portuguese is a clitic language, and clitics exist for direct and indirect objects. Thus the null subject clitic simply completes the paradigm.

Now notice that since Portuguese is a NOM-drop language, there is no visible impersonal SCL parallel to *il* in French or *there* in English. Thus the only difference between Italian sentences with postverbal subjects and Portuguese sentences

with postverbal subjects should be that the DE holds for the Portuguese examples.

To see how the above prediction fares, consider the following examples (from Perlmutter (1976)) with postverbal subjects.

142a) Existem homens capazes de matar até as aves canoras

"There exist men capable of killing even song birds"

b) Não existe tal ilha.

"No such island exists"

c) Falta aqui uma peca desta máquina.

"One part of this machine is missing here"

d) Levantou-se uma controvérsia acerca dele.

"A controversy about him arose"

e) Originaram-se muitas ideias interessantes das investigações desse grupo.

"Many interesting ideas originated from the investigations of that group"

Thomas (1969), who is cited by Perlmutter in this regard, notes that many of the verbs permitting postverbal subjects concern ceasing to exist, affirmation or denial of existence, or coming into existence. Perlmutter observes that most of the class of verbs permitting postverbal subjects of this sort "can be expressed in English by means of sentences with existential *there*." It is clear, however, that these verbs are a limited class, and they have been characterized by Perlmutter (1978) and Burzio (1981) as being verbs whose surface subjects (preverbal or postverbal) are always derived from D-structures in which they are in direct object position (though Perlmutter

(1976) assumes just the opposite). Burzio (1981) has called these verbs "ergative," and in Chapter IV, it was pointed out that just this class of verbs permits the impersonal construction in French. It was also observed in Chapter IV that impersonal verbs of the latter class have the "tableau" reading, which I characterized using Perlmutter's descriptive statement about (143a) below (also from Perlmutter).

143a) Sempre surgem controvérsias como essas em Nova Iorque.

"There always arise controversies like that in New York"

b) Controvérsias como essas sempre surgem em Nova Iorque.

"Controversies like that always arise in New York"

> [(143a)] is a neutral description of a certain state of affairs. [(143b)], on the other hand, is a sentence in which *controvérsias como essas* is the theme or topic of the sentence--that is, a sentence about the subject *controvérsias como essas* [note omitted]. [(143a)], however, is in no sense a sentence about *controvérsias como essas*.

Judging from Perlmutter's discussion, then, Portuguese is very much like French with respect to the postverbal subjects it allows most naturally. Moreover, Perlmutter remarks that while in most cases, the postverbal subject that is possible is usually indefinite, indefiniteness "seems too gross a criterion. For example, in Portuguese, a definite NP that heralds the beginning of a list can [appear postverbally]."

144) Em março aconteceram estas coisas: o estadio foi destruido por um terramoto, os tres melhores jogadores ficaram doentes, e perdemos o campeonato.

"In March there happened these things: the stadium was destroyed by an earthquake, the three best players got sick, and we lost the championship"

While there are cases cited by Perlmutter where definite NP's appear postverbally without a list reading associated with an appropriate verb,[50] it appears that the DE is in effect for ergative impersonal sentences in Portuguese. Compare the contrast cited by Perlmutter below with examples (142a-b).

145a) Deus existe.

"God exists"

b) *Existe Deus.

Chao, Perlmutter and Zubizarreta all point out that beyond the class of verbs for which postverbal subjects are "natural," postverbal subjects are only possible with "contrastive stress" or "focus." Examples (146) and (147) are from Perlmutter and (148) is from Chao.

146a) As crianças correm ràpidamente.

"The children run fast"

b) *Correm as crianças ràpidamente.

147a) As criancas nao leem estes livros

"The children don't read these books"

b) *Nao leem as crianças estes livros.

148a) (Eles) sairam.

"They left"

b) *Sairam eles.

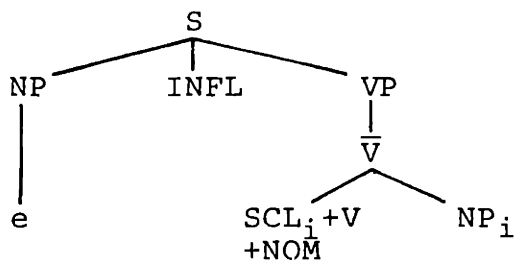
Chao adds that the Spanish equivalent of (148b) is grammatical, as we would expect under the assumption that Spanish is exactly like Italian with respect to both NOM-drop and free inversion, as is generally supposed.

149) Salieron ellos.

149) "They left"

Interpreting these results so far, the structure assumed for the typical ergative cases is diagrammed in (150).

150)

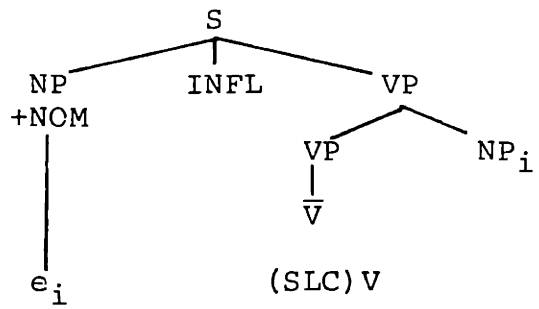


(150) is exactly the structure of a French impersonal sentence. Since Portuguese is not a free inversion language, the impersonal SCL cannot assign Case. Therefore the NP in VP must inherit Case by coindexing from an A-position that binds it in a 0-chain. Thus the DE is predicted, just as it is in French.

It should be stressed in this context that the existence of the DE in Portuguese in the absence of an overt impersonal element is further evidence that the DE should not be attributed to the presence of overt impersonal formatives, but rather to a pattern of indexing. A similar point was made with respect to German and Dutch A in Chapter IV.

Now the case of contrastive stress or focus on a postverbal subject is reminiscent of what we find in English presentational *there* sentences (also German presentationals, cf. 4.3). I assume that the structure of these "focus" inversions is quite similar.

151)



Like English presentationals, such sentences in Portuguese are are very marginal if not totally ungrammatical with transitive verbs, yet such inversion is possible with nonergative verbs like *run*. I shall assume for these focus-inversion sentences in Portuguese, as I did for English presentationals, that the postverbal subject gets its Case by coindexation, but that the DE is weakened for the VP-adjoined cases due to some property of focus which is not yet understood, and is not present in the same sense in Italian or Spanish (or any free inversion language). The existence of this focus inversion structure, to which I shall return directly, is the only way in which the possbilities for postverbal subjects in Portuguese differ significantly from possibilities in French (but cf. note 50 on verb-fronting).

I conclude that the first property expected in a non-free inversion language, the DE, holds in the relevant structures in Portuguese.

6.3.2. *That e* Effects in Portuguese.

Now I turn to the second prediction made by the absence of free inversion in Portuguese, namely, the presence of *that e* effects.

Given Rizzi's (1980) inversion-extraction analysis, it might be supposed that the focus-inversion construction discussed above could provide a postverbal extraction site for *wh*-movement of the subject out of a tensed complement clause. Zubizarreta (1981), however, points out that focus is generally incompatible with *wh*-interpretation. She notes that examples like (152), where the underlined NP is contrastively stressed, only have echo interpretations, and not the interpretation of multiple interrogations, which is otherwise possible.

152) She wonders who saw <u>which woman</u>.

The multiple interrogation interpretation of (152) is a situation where 'she' is wondering about a certain pair, the x that saw y, while the echo intepretation is a request for information, specifically a request for an identification of *which woman*. Moreover, if the inversion-focus construction is parallel to the presentational *there* construction in English, then it comes as no surprise that the same restriction holds in English with respect to both overt and LF *wh*-movement.

153a) *When did there walk into the room how many men?

b) *How many men did there walk into the room?

If the focus-inversion construction, unlike free inversion, does not permit postverbal extraction, then *wh*-extraction of subjects should be expected to cause *that e* violations in Portuguese, unless proper government for the subject position can be provided by some other mechanism. In the analysis of Zubizarreta (1981), which I shall sketch briefly in

this section, it is argued that *that e* effects appear in Portuguese as expected, but the complements of one class of verbs fail to evidence *that e* effects because proper government is provided by properties of the complementizer.[51]

The complements in which a subject/object asymmetry appears with respect to *wh*-extraction are the complements of factive verbs, as noted by Rouveret (1980).

154a) ?Que loja e que tu lamentas os meninos terem roubado?

"Which house do you regret the children have broken into"

b) *Que meninos e que tu lamentas terem roubado aquela loja?

"Which children do you regret have broken into that house"

The same sorts of verbs permit extraction of subject in Spanish and Italian. Zubizarreta cites the following examples from Spanish.

155a) ?Quien lamentas que no haya llamado?

"Who do you regret that have not called"

b) ?A quien lamentas que Juan haya llamado?

"Who do you regeret that John has called"

The presence of *that e* effects is exactly what we expect under the assumption that Portuguese lacks free inversion.

There is, however, a large class of cases, the complements of nonfactive verbs, where *wh*-extraction is possible from subject position as well as object position.

156) Que rapazes acreditas que tenham gasto esse dinheiro?

"Which children do you believe that have spent that money"

The possibility of subject extraction in these cases must reflect the availability of some other means of properly governing the subject position. Rouveret then notes that French (and English) shows a similar contrast between *wh*-extraction between extraction of subjects of factive and non-factive verbs.

157a) Qui crois-tu qui a fait ce bruit?
"Who do you believe made this noise"

b) *Qui regrettes-tu qui chatie les enfants?
"Who do you regret punished the children"

The possibility of converting the *que* complementizer to *qui* is crucial in (157a), since (157a) and (157b) are both ungrammatical with *que*. In Pesetsky (1978) it is argued that the *que/qui* alternation permits *wh*-extractions from subject position because a COMP containing [e_i que] can rewrite as [qui_i], thus avoiding the doubly filled COMP filter (cf. Chomsky and Lasnik (1977)) without deleting the index on the EC which is required to bind the subject position from COMP.[52] Thus proper government from COMP when *qui* is present permits the missing subject in (157a). This does not save *wh*-extraction from factive complements as shown by (157b). Zubizarreta then points out that *que* in Portuguese is homophonous with the nominal counterpart parallel to *qui* in French. Thus subject extraction from Portuguese nonfactive complements is possible because of a *que/qui*-type phenomenon with homophonous complementizers. Nonetheless, the *that e* effects still surface in Portuguese where the *que/qui* strategy is not

available, as in factive complements. Why it is that factives differ from nonfactives in not permitting the *que/qui* strategy does not concern us here (cf. Rouveret (1980) and Zubizarreta (1981) for details). All that is important for the analysis of this section is that Portuguese lacks both of the properties of free inversion, although the presence of *that e* effects is masked in a number of contexts by a *que/qui*-type phenomenon.

6.3.3. Summary of 6.3.

In this section it has been established that Portuguese is a missing subject language that lacks free inversion. Thus all four types of possible languages predicted by the assumption that the NDP and the FIP are separate exist in Roamnce as summarized in the chart below.

158)

	NDP	FIP
Italian	+	+
French	-	-
Trentino	-	+
Modenese	-	+
Portuguese	+	-

Moreover, the distribution of the DE, as expected, is predictable in Portuguese, given the analysis in Chapter V, and the absence of the FIP.

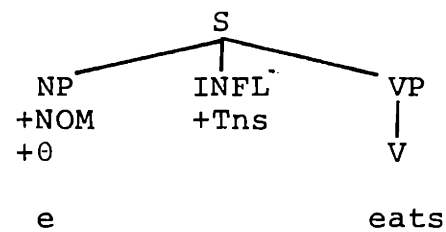
6.4.0. NOM-drop in Germanic.

Germanic languages differ from Romance languages quite generally in that the latter have systematic pronominal clitic paradigms parasitic on verbs, and the former do not.[53] In this section it will be established that this minimal distinc-

tion modulates the effects of NOM-drop in Germanic in completely predictable ways, given the theory of indexing and empty categories in Chapter II.

Let us begin by constructing a hypothetical case. Imagine a NOM-drop language exactly like Portuguese, but without subject clitics. How would such a language, call it "L," differ from Portuguese with respect to the distribution of empty categories? Are there sentences like *Eats* in L? Consider the structure for *Eats* in L.

159)

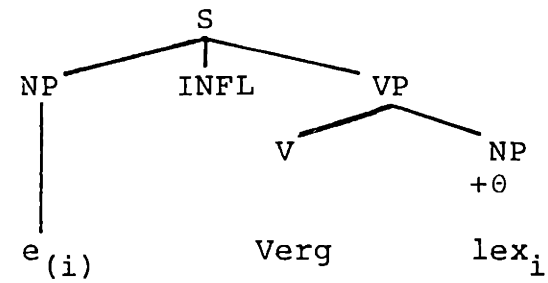


The subject position in (159) must be a θ-position, as no other θ-position is available. It follows that the empty subject is in a θ-chain, and is therefore an anaphor, since it is not a variable. The subject EC is also pronominal because it is free. Thus the subject is PRO and satisfies the θ-C. The PRO subject is governed, however, in a tensed sentence like *Eats*, and so PRO, and sentences like *Eats* in L, will be sytematically excluded by the BC's. It turns out that a language like L will never have a missing subject when the subject is a θ-position, even though NOM Case need not be realized. Thus a full lexical subject will always appear in a tensed sentence in L when the subject position is a θ-position.

Now consider what happens in L when the subject is a non-θ-position. In the diagram in (160), the subject is a

non-θ-position and the verb is "ergative" ("Verg") in Burzio's (1981) sense, i.e., its D-structure argument is internal.

160)



In (160) the subject position may or may not be coindexed with the postverbal NP. Let us consider both cases.

If the subject EC is not coindexed with the postverbal NP in (160), then it is not in a θ-chain, and it therefore must be expleitve, or the θ-C is violated. If the subject is EXE, then it is exempted from the ECP, which only applies to θ-chains, and it is also well-formed with respect to the BC's, since it is only pronominal. The subject is assigned Nominative Case by INFL, but need not appear, since L is a NOM-drop language. The sentence *Verg NPlex* will be well-formed, then, just in case NPlex is well-formed with respect to the BC's and the Case Filter.

If the subject EC is coindexed with NPlex in (160), then the EC is in a θ-chain. As was argued extensively in Chapter IV, just this sort of indexing is necessary when a postverbal subject must get Case by inheritance. If the EC is in a θ-chain, then it must be anaphoric (since it is not a variable) and as it is free, it must also be pronominal as well, i.e., the EC is PRO. Since there is already one argu-

ment in the θ-chain, namely, NPlex, the EC must be expletive PRO (EPRO). If the subject is PRO and governed, then it should be excluded as soon as the BC's apply to it. Recall, however, that the EPRO can be saved at S-structure just in case the θ-chain is exempted from the BC's by the formal property of indefinites introduced in Chapters IV and V. Thus EPRO can only survive at S-structure in an indefinite θ-chain, while at LF-structure, the EC will be a variable as a result of QR (cf. Chapter V for details). To summarize, if the EC in (160) is in an unbalanced θ-chain, then it is grammatical with respect to the BC's, the θ-C, and the Case Filter just in case the NPlex is indefinite. Whether or not an impersonal formative is inserted in the position of the EC at S-structure depends solely on whether or not L is a NOM-drop language.

Under the assumption that L has NOM-drop, then, the sentence *Verg NPlex* is a well-formed sentence of L if the EC and the NPlex are otherwise well-formed with respect to the Case Filter, the BC's the ECP and the θ-C. To put the matter quite simply, it is predicted that in a NOM-drop language without SCL's, missing subjects are possible only if the subject is expletive.

In the remainder of this section it will be established that German is a NOM-drop language without SCL's in which expletive subjects and only expletive subjects can be missing in tensed sentences. First, it will be shown how the analysis is instantiated for impersonals in subordinate clauses. Next,

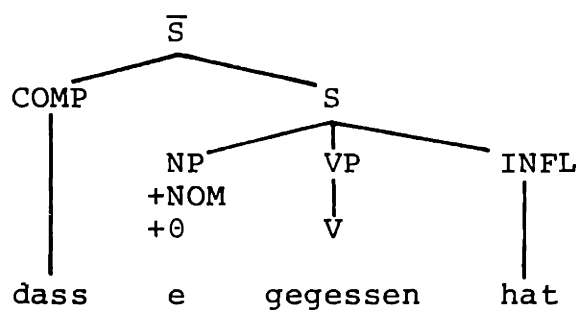
cases where *es* cannot be missing will be shown to fall under other generalizations (6.4.2) which extend, in part, to the analysis of Dutch, which is not NOM-drop (6.4.3).

6.4.1. Impersonals in Subordinate Clauses.

In 4.3.1., my basic analytic assumptions about German and Dutch were presented. Reviewing briefly, in subordinate clauses, I assume the structures in (161), where tensed INFL counts as a governor, but not a proper governor, for the subject position, to which, in the normal situation, INFL also assigns NOM Case. I assume that German is SOV, and tha object and the verb form a VP. The NOM-drop equivalents of (159) and (160) (where subject and object are coindexed) as they would be in German are diagrammed in (161a) and (161b), respectively.

161a) *... dass gegessen hat

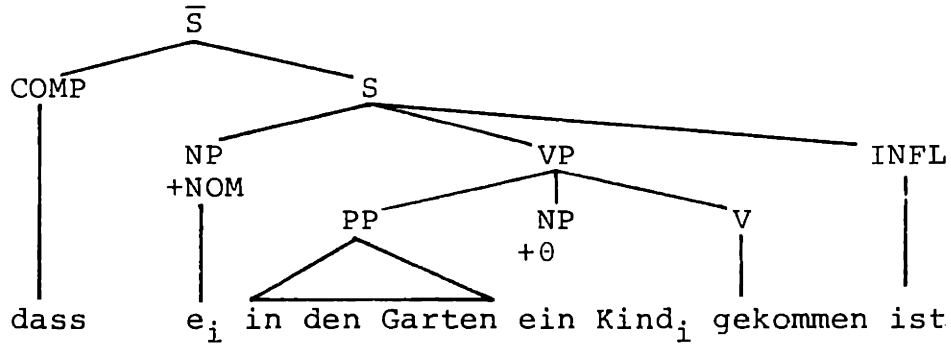
"that ate has"



b) ...dass in den Garten ein Kind gekommen ist

"that in the garden a child come has"

161b)

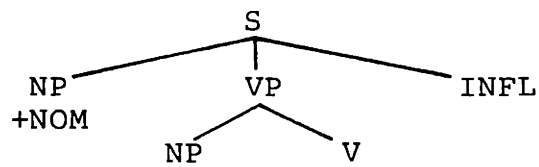


As expected, (161a) is ungrammatical. The subject EC is in a a θ-position, and will be defined by the contextual definitions as argument PRO (otherwise the θ-C is violated). Since PRO is excluded by the BC's in governed positions, expletive or not, and there is no indefinite θ-chain, (161a) cannot be saved. In (161b), the subject position is in a θ-chain with the direct object, thus permitting the direct object to inherit Case. Since the subject EC is in a θ-chain, it is both pronominal and anaphoric, i.e., PRO. Since the direct object is an argument, the subject PRO must be EPRO or the θ-C is violated. EPRO, as is the case for all empty expletives (cf. Chapter II), must be governed. As argued in Chapter V and recapitulated in 6.4.0, EPRO can only appear in indefinite θ-chains, or else it is ill-formed when the BC's apply to it at S-structure. Thus (161b) is grammatical, since the argument in the θ-chain, *ein Kind*, is indefinite, permitting the EC that is EPRO to be exempted from the BC's at S-structure and to be a variable at LF-structure (by virtue of QR). Thus the EC in (161b) passes well-formedness conditions at every level, and the sentence is well-formed, as expected, with NOM Case remaining unrealized.

Now let us consider a case wherein the subject EC is not in a θ-chain.

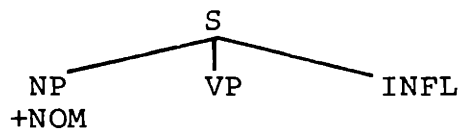
162a) ... dass dem Kind geholfen wurde

"that the-DAT child helped was"



EXE dem Kind geholfen wurde

b) ... dass getanzt wurde



EXE getanzt wurde

In both cases in (162), the EC is not in a θ-chain, is governed, pronominal and expletive, i.e., it is a well-formed EXE. The EXE is assigned NOM Case by INFL, but since German is a NOM-drop language, the subject can be missing, as predicted.

Note incidentally, that there is additional evidence from German that expletive empty elements must be governed. None of the following examples, grammatical with missing subjects in tensed sentences, are permitted in tenseless sentences.

163a) *Es ist möglich EPRO getanzt zu werden.

"It is possible danced to be"

b) *...EPRO dem Kind geholfen zu werden

"... the child helped to be"

c) *... $EPRO_i$ ein $Kind_i$ getötet zu werden

163c) "...a child killed to be"

Moreover, the Case Filter cannot be held responsible for the ill-formedness of (163a) and (163b), since there is no lexical NP that requires Case. The absence of the latter two examples is attributable only to the fact that expletive empty elements must be governed.

Thus it turns out that German is a NOM-drop language which behaves exactly like the hypothesized language described in 6.4.0. The subject can be missing in a tensed sentence just in case it can be expletive. This constitutes the core of my analysis of German NOM-drop. I shall return to the place of German in the paradigm of possible language types generated by the parameters I propose in 6.4.4, but first let us consider some contexts where the account developed so far must be supplemented.

6.4.2. V/2 and Extraposition *Es*.

So far I have only considered cases where NOM Case can be dropped, but the data is more complex than the analysis of the last section appears to indicate. There are certain contexts where the impersonal element *es* both can and must appear, and these cases bear scrutiny, as no expletive element need be realized to satisfy Case realization, if the analysis of the last section is correct. In this section I will show that *es* is required in some contexts due to independent factors.

In matrix clauses, the impersonal pronoun *es* can

appear in clause initial position. As has been suggested in the literature cited in 6.3.1, *es* only appears in matrix clauses (except in some cases to be discussed below) in order to satisfy the V/2 constraint (cf. Haiman (1974), Breckinridge (1975)). This rule can be stated as follows.

164) *Es* Insertion: Insert *es* in COMP (optional).

Presumably *es* cannot be inserted when COMP is already full, due to whatever principle(s) does not permit doubly filled COMP's. In subordinate clauses, COMP is always full, either with the complementizer *dass* or some *wh*-word. In matrix clauses, COMP is empty if nothing is moved there, and *es* can be inserted in these contexts. Moreover, *es* must be inserted into an empty matrix COMP or else whatever principle predicts the V/2 constraint is violated (cf. Safir (1981b)).

It may also be necessary to state that *es* must be related to an argument position, as it cannot generally be inserted in COMP when all argument positions are full.

165) *Es hat einer Mann ein Buch gelesen.
there has a man a book read
"A man has read a book"

Although there are questions of analysis with respect to this generalization,[54] it appears to be true in general; let us suppose so, and revise (164) as (166).

166) *Es* Insertion: Insert *es* in COMP if COMP binds an A-position.

In subordinate sentences, there are at least two kinds of contexts where *es* must appear in German.

Es must always appear as the subject of a weather predicate.

167) Er sagte, dass *(es) regnet.
he said that it rains

For these cases in English, Chomsky (1981a) has proposed that the *it* of weather predicates be taken as a 'quasi-argument' specially selected by weather predicates. Suppose this is so. It then follows that weather-*es* counts as a special argument and must appear, i.e., it is not inserted by a rule, but rather it is inserted just like any other lexical item, and must be present at every level in order for weather predicates to satisfy the θ-C. Thus nothing special need be said about these cases that is not said for English.

The other contexts where *es* must appear is in certain cases of extraposition. Consider the following matrix/subordinate contrasts.

168a) Es ist klar, dass ...
"It is clear that ..."

b) Es wurde mir erklärt, dass ...
"It was explained to me that ..."

c) Es scheint mir dass ...
"It seemed to me that ..."

d) *Es hat unsere Theorie bewiesen dass ...
"It proved our theory that ..."

169a) Er glaubte, dass (es)* klar ist, dass ...
"He believed that it is clear that ..."

b) Er glaubte, dass (es??) mir erklärt wurde, dass ..."

169b) "He believed that it was explained to me that ..."

c) Er glaubte, das (es??) mir scheint dass ...

"He believed that it seems to me that ..."

d) ?Er glaubte, dass es unsere Theorie bewiesen hat, dass ...

"He believed that it proved our theory that ..."

Now recall that in Chapter III it was argued that *it* and $\overline{S}$ never form a θ-chain because $\overline{S}$ can never be in a Cased θ-chain. In addition to the reason for the distribution of *es* in these sentences, the analysis of Chapter III raises two additional questions for the analysis of German. Is the relation (es,$\overline{S}$) a θ-chain? If so, is this relation different from ([e],$\overline{S}$)?

I begin with an assumption from which the pattern of data in (168),(169) and the answers to the questions above follow almost completely.

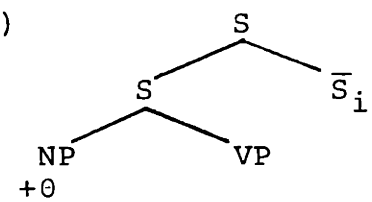
170) In German, an extraposed $\overline{S}$ is adjoined to S.

If (170) is true, then it follows that the position of an extraposed $\overline{S}$ is not an A-position or a θ-position in German, as it is not a position that is a sister to VP. In this respect then, German differs from English. In effect, an extraposed clause in German is a local $\overline{A}$-binder for the A-position it is associated with at S-structure (let us assume a movement analysis, though very little turns on this). This means that an extraposed $\overline{S}$ is not in a θ-chain, and can therefore (indeed must be) coindexed with a θ-chain in order to be interpreted. Moreover, the position bound by the extraposed $\overline{S}$ counts as a

variable by definition.

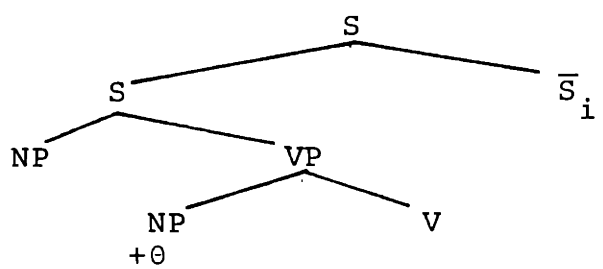
Let us begin with the subordinate clauses in (168). Extraposition from *klar*, for example, requires the presence of *es*, but not the passive of *erklaren*. This contrast is not, in fact, at all surprising if the ECP effects a subject/object asymmetry in German.[55] The argument of the passive *erklärt* is a direct object governed by the passive verb, while *klar* takes an external argument in subject position. Compare the (simplified) diagrams in (171).

171a)



e_i klar ist

b)



$e_{(i)}$ e_i erklärt wurde

In (171b), the θ-position of the passive verb is a properly governed direct object position. In (171a), however, the subject position is not properly governed. Since German is a NOM-drop language, the NOM Case assigned to the subject positions of these sentences need not be phonetically realized, but if *es* does not appear in (171a), then an ECP violation ensues, since the subject in (171a) cannot be EXE (or the θ-C is violated) and therefore the subject EC must be susceptible

to ECP. If a lexical item is not inserted in (171a) to replace the empty subject, the sentence fails. Thus *es* is inserted in (171a). In (171b), the direct object position is a θ-position, and can therefore be a variable locally bound by the $\overline{S}$ (not by the subject position). Since the direct object position is properly governed, however, no lexical element need be inserted to avoid an ECP violation. Unsurprisingly, other predicates with an internal argument, such as *scheinen*, fall under the same generalization.[56]

Finally, consider (169d). In (169d), *es* must appear or the arguments are understood in reverse, e.g., "Our theory proves that ...." This is, of course, expected, given the analysis above, since only the internal argument leaves a properly governed trace. The second *es* insertion rule is stated informally in (172).

172) *Es* Insertion II: Insert *es* in a θ-position if absolutely necessary.

Thus the predictions of the theory are born out almost perfectly for (168) and (169)[57] assuming that $\overline{S}$'s extraposed in German are adjoined to S (170). Remaining unexplained, however, is why *es must* be dropped in the contexts above where it need not appear. It is tempting to claim that *es* is only inserted when absolutely necessary due to Chomsky's (1981a) Avoid Pronoun Principle--if there is a choice, don't use an overt pronoun. While this is attractive, and I shall assume it in general, inserting *er*, the equivalent of *es* in Dutch A, is optional, and therefore problematic for Avoid Pronoun. I

leave this issue to future research.[58]

The point of this subsection, however, is merely to show that some cases where *es* must appear are not counter-examples to the claim that German is a NOM-drop language. I shall assume the point has been made successfully.

6.4.3. Comparison with Dutch.

Dutch contrasts minimally with German, in that *er*, the Dutch impersonal element more or less parallel to *es* must appear in all of the contexts where a null expletive subject can be missing in German.

173a) ... dat *(er) mij verteld was, dat de aarde rond was

that it me told was that the earth round was

b) ... dat *(het) schijnt, dat ...[59]

that it seemed that ...

c) ... dat *(er) wordt gedanst ...

that there is danced

d) ... dat *(er) door de deur een kind kwam

that there through the door a child came

The easiest way to account for this contrast between Dutch and German is to simply assume that Dutch, unlike German, is not a NOM-drop language.[60]

If Dutch is not a NOM-drop language, then there should be no tensed sentences with missing subjects. Counter to expectation, however, there is at least one context where *er* can be dropped.[61] If a PP is fronted in a sentence with an argumentless passive, *er* can be missing.

174) Jan zei dat in dit huis wordt gedanst.
Jan said that in this house was danced
(Example from Reuland (1981b))

A natural hypothesis (suggested to me by Hans Bennis (p.c.)) would be to suppose that the subject position is somehow controlled or occupied by the PP *in dit huis*, even though this possibility must be ruled out in other contexts where *er* must appear. The exceptionality of this case suggests that it will be handled by a special device. If the analysis presented here is correct, then this device, whatever it is, must allow the NOM Case Realization Condition to be satisfied.

Thus while some complications arise, it is reasonable to treat Dutch as a non-NOM-drop language, just as it is treated in the literature cited. In this respect, Dutch contrasts minimally with German.

6.4.4. Summary of 6.4.

The thesis of this section is that NOM-drop applies in German just as it does in Portuguese and Italian, but that given the inventory of EC's in Chapter II, only expletive elements can drop in a language without silent SCL's. While the notion "silent SCL" requires some clarification (cf. 6.6.2 and 6.6.4), it seems that this prediction has been confirmed. The paradigm of parameters predicted is thus filled out, each possibility being instantiated.

175)

	NDP	FIP	SCL's
French	-	-	+
Portuguese	+	-	+
Trentino/ Modenese	-	+	+
Italian	+	+	+
German	+	0	-
Dutch	-	0	-

This prediction is of particular significance, as it presents strong evidence in favor of the inventory of empty categories which does not include a full argument pure pronominal empty category in NP positions. The only full argument pure pronominal empty category permitted is a silent clitic, and these elements are limited to languages that have clitic paradigms in general. I shall return to this issue in the sections of this chapter cited immediately above.

6.5.0. Residual Issues in Italian.

In the brief sketch of my analysis of Italian in 6.1.2, a minimal amount of data was considered in order to facilitate a simple presentation of the basic mechanisms and parameters involved. In this section, I shall discuss some further issues that arise under the assumption that postverbal subjects in Italian can receive Case by direct assignment. In particular, some arguments presented by Burzio (1981) purported to support the necessity of Case inheritance for postverbal subjects will be shown to be unproblematic for the assumption that Case inheritance is not inovlved in these contexts.[62]

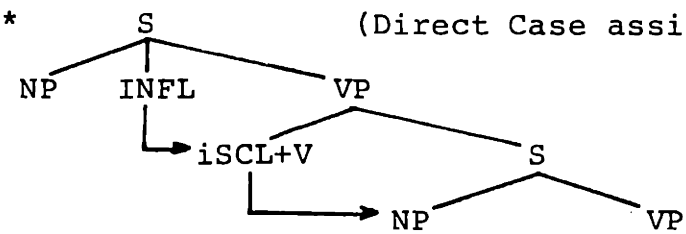
6.5.1. Raising.

One potential problem that could arise for the account presented here concerns sentences like the following.

176) *Sembrano i genitori intervenire.
seem the parents to intervene
"*There seem the parents to intervene"

As discussed in 6.2.2, sentences like the English translation of (176) are ruled out by the clausemate condition on Case inheritance[63] for lexical NP's. Since *the parents* does not inherit Case from a clausemate, the sentence is excluded. A Case inheritance derivation for the Italian example in (176) is ruled out for the same reason. The Italian example, however, appears to have an additional analysis where *i genitori* is assigned Case directly by the hypothesized silent clitic on the verb *sembrano*, since *sembrano* governs the subject position of *intervenire*, assuming that raising predicates allow $\overline{S}$-deletion. The latter derivation is as indicated in (177).

177) * (Direct Case assignment ⟶)



EXE sembrano i genitori intervenire

Since (176) is an ungrammatical sentence, the derivation in (177) must be excluded.

It seems at first as if something special must be said in these cases in order to preserve the distinction between

directly assigned Case and Case inheritance which is crucial to predicting the DE. The following stipulation has the desired effect.

178) The iSCL does not assign Case across clause boundaries.

Notice, however, that (178) has a familiar ring. It is exactly the same property that holds in general in Italian (but not, for example, in English, which has exceptional Casemarking). Thus (178) falls under a general statement about Italian.

179) There is no direct assignment of Case across clause boundaries in Italian.[64]

If direct Case assignment is no longer possible in (177), then the subordinate subject must receive Case by inheritance, a derivation that is already excluded by the clausemate condition on Case inheritance discussed above.

A further problem seems to arise, however, with this accounted of raising in Italian. Consider sentences like the following.

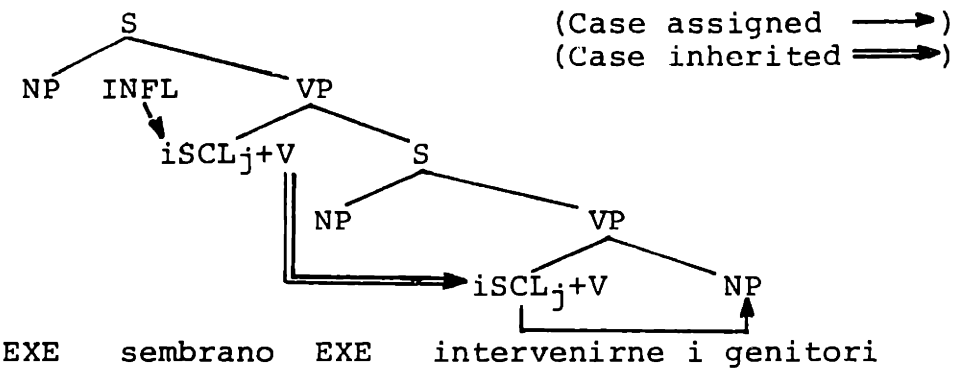
180) Sembrano intervenirne solo i genitori.
seem to intervene-of-them only the parents

The presence of *ne*-cliticization is a sure sign that the definite NP *i genitori* is in the direct object position of *intervenirne* (cf. Perlmutter (1978), Belletti and Rizzi (198), Burzio (1981)). Since the NP is definite, it cannot have received Case by inheritance, or else it would be in an unbalanced θ-chain excluded at S-structure by the BC's. Thus the postverbal subject in (180) must be able to get Case by direct

assignment.

Here a slight elaboration is necessary. Throughout the analyses of French, Trentino, Modenese, and Portuguese I assumed that a SCL cannot be completed by Case inheritance. If a SCL is not completed, it cannot be counted as an argument, nor can it be phonetically realized. My proposal is simply to allow an iSCL which inherits Case to assign Case, even though the SCL itself does not count as "completed." Consider the diagram in (181), which is the structure of (180).

181)



The analysis above is compatible with the theory developed in the earlier sections, and allows direct Case assignment to operate so as to generate (180) without difficulty. (Naturally, a Case inheritance derivation of (180) would also be possible if the postverbal NP were indefinite, but this possibility is of no interest to us here.)

If SCL's can be coindexed across clause boundaries, however, one may ask what is to prevent such coindexation from occurring in contexts where the verb does not permit raising, as in (182) (adapted from Burzio (1981), p. 141).

182) *EXE $iSCL_j$+sperava $[_{\bar{S}}[_S$ di PRO intervenire $[_{NP}$ Giovanni$_j$]]]

182) "Giovanni hoped to intervene"

The same kinds of sentences must be ruled out in a similar way in the Case inheritance accounts of Burzio (1981), Chomsky (1981a) and Rizzi (1980) as well, although in these theories the inheritance is between the postverbal NP *Giovanni* and the INFL of the subject empty category of the higher clause. Burzio claims that this sort of relation between a matrix subject and an embedded object (in his account) is blocked by opacity. It is not obvious that opacity is relevant to this problem, however, since the BC's ought to exclude any sentence where a name is A-bound, regardless of whether the name and its binder are in the same clause or not. Thus opacity is relevant to this problem only by special stipulation. Within the framework developed here, however, the ungrammaticality of (182) follows from the absence of expletive empty elements in ungoverned positions, by now a very highly motivated principle (cf. Chapter II in particular). If the direct object is present in sentences like (182), then there is already an argument available for *intervenire*, which only takes one argument. If the subject position cannot be expletive, it follows that the subject EC of *intervenire* must be argument PRO, and argument PRO violates the θ-C whether it is related to *Giovanni* in a θ-chain or not. The other Case inheritance theories mentioned above can achieve the same result only if they exclude the existence of expletive PRO. (This is further evidence against the theory of Chomsky (1981a), which permits the existence of expletive PRO.) In any event, the ungrammati-

cality of sentences like (182) is expected for independent reasons, and so the account of (180) which relies on Case inheritance between clitics is not jeopardized, nor is the distinction between Case inheritance and direct Case assignment that is responsible for predicting the DE.

The final issue that arises with respect to raising sentences in Italian concerns what insures that the upstairs verb in (180) will agree with the postverbal subject *i genitori* of the lower clause. Recall that I have been assuming throughout that subject/verb agreement is with the nearest Nominative nominal, be it an SCL or an NP. In the case of (180), and quite generally in Italian, the verb agrees with the postverbal NP. This is not the case in Modenese, where the *a* SCL determines unmarked third person agreement (as in Trentino). The adjustment of the "Nearest Nominative" rule for Italian (but not, for example, Trentino) is as in (183).

183) INFL agrees with the closest *phonetically realized* NOM nominal to the verb *in Italian.*[65]

The italicized portions are the ways in which Italian differs from Trentino in this respect. The rule for Italian predicts that the upstairs verb *sembrano* agrees with *i genitori*, the closest overt Nominative nominal. Thus long range agreement presents no problem for the analysis, and no appeal must be made to any sort of coindexing to effect long range agreement.

6.5.2. Auxiliary Selection.

The last set of issues concerning whether or not a pre-

verbal position must be coindexed in a given context involves auxiliary selection. Burzio (1981) notes that verbs which permit *ne*-cliticization (ergatives), passivized verbs, and *si*-impersonal sentences all take *essere* auxiliaries in the composite tenses, while all other verbs take *avere*. Burzio claims further that there is a coindexing relation between the subject and the VP in all of these cases, and that this is the means of predicting all *essere* insertion.

184a) $Maria_i$ $[_{VP}$ e arrivata $e_i]$ (essere)
"Maria has arrived"

b) e_i $[_{VP}$ e arrivata $Maria_i]$ (essere)

This claim is qualified immediately to limit *essere* assignment to situations where the subject is coindexed with an element within VP, but not adjoined to VP. For example, the external argument in "Maria ha telefonato" ("Maria has telephoned") is not coindexed with anything in VP, and the sentence takes *avere*, but in "Ha telefonato Maria," which also takes *avere*, the coindexation still doesn't count because *Maria* is adjoined to VP, not within it. Thus coindexing due, in Burzio's account, to the necessity of Case assignment by inheritance, does not suffice to predict *essere* insertion. It seems to be possible to go further and claim that *essere* insertion requires no statement about coindexing whatsoever. Rather the distinction may be stated as in (185).

185) If a verb lacks an external θ-position, then it takes *essere*.

This alternative is suggested by Zubizarreta (1982) and

extended to the *si*-impersonal construction as well. Further processes related to *essere* selection and discussed by Burzio, such as past participle agreement, appear to be treatable along similar lines without crucial appeal to Case inheritance or coindexing.[66]

This short account of these matters suppresses an enormous amount of interesting detail that exceeds the scope of this thesis, but this sort of analysis is extended to some of this domain in the reference cited, and I shall assume that this approach to auxiliary selection will turn out to be essentially correct. With respect to the matters that concern us here, it appears that there is no convincing evidence that postverbal subjects in Italian must get Case by coindexation. Rather there is evidence that Italian postverbal subjects can be assigned Case directly, precisely because these postverbal subjects can be definite.

6.6.0. Comparisons and Conclusions.

At this point it is possible to stop and take stock of some of the claims made in this chapter in the context of competing theories. To do this with relative clarity, I have organized each subsection of this section around one of the claims developed in this chapter and the arguments for each claim are highlighted. As some of these claims overlap, the reader is asked to tolerate a certain amount of redundancy.

6.6.1. SCL vs. Pronominal INFL.

As discussed in section 6.1, Rizzi (1980) has argued

that the ability of INFL to be pronominal is what permits missing subjects. Recall that if Case is left on the pronominal INFL node in Rizzi's system, then it can count as a proper governor for the subject position. I have argued instead that subject clitics are distinct from the INFL node, and that subject clitics are slots on verbs that receive their Case from INFL in all of the Romance languages.

First, evidence that these entities are distinct comes from the fact that Modenese and Trentino, just like French, undergo what has been called "SCL Inversion" both here and in the literature. Verbal conjugations in both French and the Northern Italian languages are unaffected by this process, which displaces an SCL to the right in exactly the same sorts of contexts in all of the languages studied here. This is especially strong evidence that SCL's are distinct from verbal inflection, and that SCL's in Trentino and Modenese are parallel to those in French. The difficulty of dropping these SCL's in the Northern Italian languages studied may then be attributed to the same principle that requires their presence in French, i.e., the absence of NOM-drop.

An even simpler argument can be made on the basis of changes in tense. The conjugation of verbal inflection is distinct for each tense for the most part, but the SCL's are unaffected by changes in tense. Thus SCL's vary independently from tense in both French and in the Northern Italian languages.

A further argument in favor of the approach suggested here is based on parallelism. Only French and the Northern

Italian languages among Romance languages have SCL's, yet all Romance languages have object and indirect object clitics. Suppose we make the following claim.

186) If a language L has any argument clitics (subject, object, indirect object) associated with clitic slots on a verb, then, in the unmarked case, L has the full clitic paradigm.

I shall return to this hypothesis in 6.6.4, but assuming it that it is so, it is possible to hold the following factor constant.

187) Romance languages have clitic paradigms.

If (187) is correct, then we expect Romance languages to have highly similar structure modulated by other minimally stated parameters.

To get a better idea of the force of assuming (185) and (186), consider how a theory like that of Rizzi (1980) would have to analyze French as compared to Italian. If SCL's in French are not parallel to pronominal INFL in Italian, then three distinctions between French and Italian must be made. First, Italian allows pronominal INFL and French does not. Second, Italian has inverted definite subjects and French does not (except in Stylistic Inversion, cf. 6.2.2 and Appendix I). Finally, French has SCL's while Italian does not (presumably because of Avoid Pronoun in both theories). The appearance of SCL's in French is a surprise in a theory like Rizzi's, whereas the appearance of an SCL in French, Trentino and Modenese is expected in the theory developed here, assuming (187).

The above argument may be supplemented by the relationship between "rich inflection" and the appearance of SCL's. In French, as has been pointed out by Bouchard (1982),[67] the first person plural conjugation, for example, is distinguishable from other verbal conjugations, yet there is no normal tensed sentence "*Mangeons," meaning "we eat;" the clitic *nous* must appear. If distinctive inflection is not enough to permit the SCL to be missing, then some other principle must require its presence, i.e., the distribution of subject clitics is dependent on some property besides (though perhaps in addition to) verbal inflection. In the theory developed here, that property is NOM-drop, or the lack of it. Exactly the same argument extends to Trentino and Modenese, and with particular force in the latter case, since verbal inflection is distinctive for almost every member of the present tense conjugation presented in 6.2.5. To emphasize the point, the appearance of SCL's in these languages is a surprise requiring special comment if there is no silent clitic in missing subject languages like Portuguese and Italian.

Thus I conclude that subject clitics and INFL are distinct entities, and that all Romance languages have SCL's, though they are only realized in non-NOM-drop languages.

6.6.2. The Identity of the Missing Subject.

I shall consider here several hypotheses about the nature of the missing subject position, rejecting definitively only one possibility on strong empirical grounds, namely, the

possibility that it is PRO, as proposed by Jaeggli (1980b) and Chomsky (1981a).

The first argument is due to Rizzi (1980), who notes that missing subjects are interpreted as definite pronouns, and never as "arbitrary X" (e.g., as in "PRO to win would be thrilling"), though arbitrary interpretation does exist for PRO in infinitival contexts in Italian. In fact, Rizzi notes that missing subjects are interpreted as unstressed pronouns parallel to clitics. In any case, missing subjects are interpreted differently from arbitrary PRO, which ought to be possible, barring further stipulation, under the PRO hypothesis of missing subjects.

Another argument against the hypothesis that missing subjects are PRO is due to Torrego (1981). She points out that verbs front in peninsular Spanish when a *wh*-word is fronted, and this fronting leaves the tensed verb in a position where it governs the missing subject (it precedes a full subject, if one is present). Indeed it is possible to extract the subject directly from S-daughter in these cases, she argues, from which it follows that verb fronting must allow for proper government of the subject position. Thus a missing subject is governed whenever a verb fronts due to *wh*-movement, so if the missing subject were PRO, it would be excluded by the BC's (cf. Torrego (1981) for details and examples).

A third argument against treating missing subjects as PRO is that if this were true, then expletive PRO would have to be allowed in subject position in free inversion cases.

In the latter instance, the subject could not be argument PRO, or the θ-C would exclude the sentence (i.e, there would be too many arguments). We have seen, however, that expletive EC's are systematically excluded in ungoverned contexts (as argued explicitly for German, French, English and Italian). Thus the hypothesis that the missing subject is ungoverned suggests that free inversion should be impossible in Italian, since the subject could neither be EPRO (because expletive EC's must be governed) or argument PRO (because the θ-C would then be violated).

The hypothesis that pronominal INFL properly governs the subject, as in Rizzi's account, requires the assumption that the empty subject is a variable, given the typology of empty categories suggested in Chomsky (1981a) and partially adopted here. Since the subject is bound by a nonargument position, the EC subject must be a variable (recall that subject/verb agreement in the system developed here is with 'closest Nominative,' and does not rely crucially on coindexing). But if the subject is a variable when it is a missing subject, we would expect it to be disjoint from a higher A-binder, which it clearly is not.

188) Disse que aveva camminato a lungo.

"He_i said that $he_{(i)}$ had walked a long time"

This problem is avoided if we assume with Chomsky (1981a) that a variable may be A-bound outside the scope of the operator that binds it. If being an operator is related to quantification, then being $\bar{A}$-bound by an unstressed pronominal category

seems a highly unlikely candidate for quantification. I have no evidence hopelessly inconsistent with the claim that missing subjects are properly governed, however.

Now I turn to some theories that are very similar. The system of Burzio (1981) assumes the existence of a "designated element," which fills NP positions but is assumed to be clitic-like. It is not clear how this element would be defined with respect to a theory of contextually defined empty categories, nor is it clear what status this element has with respect to the ECP. Burzio treats pro as an element that can be either base generated or else inserted by a special rule in free inversion cases. It must be Casemarked, and therefore is excluded in Caseless contexts.

In that Burzio treats pro as a clitic, my theory is even more similar to his than it is to Rizzi's. Burzio's theory is inexplicit, however, as to the nature of an empty category controlled by a subject clitic. As Burzio points out, his theory differs from Rizzi's in that he assumes that pro moves through NP positions like any other NP until such point as it cliticizes, while in Rizzi's approach, it is assumed that the pronominal INFL is base generated and properly governs the result of movement in the appropriate contexts. Burzio (pp. 156-59) discusses some slight differences between his theory and Rizzi's on this account, none of which make crucial empirical predictions.

Chomsky (1982) suggests, along the lines of Rizzi's account that a pronominal feature of INFL in tensed sentences

agrees with the subject EC to both properly govern (when Casemarked) and identify the missing subject as a pronominal empty category, also called "pro." The feature of INFL that permits this identification is the crucial part of the missing subject parameter.

The treatment developed here is closest to a non-movement version of Burzio's account, in that what I have been calling a silent clitic is the only pure pronominal empty category that counts as an argument. The various definitions I have proposed have been designed, in part, to have the following effect.

189) Argument pro is always a clitic.

To have argument pro is to have an SCL in a NOM-drop language. Thus there is no parameter that states "L has argument pro," but rather "L has NOM-drop and L has clitics" which are two independently detectable properties.

Now recall that it is independently necessary to assume the existence of EXE, or expletive pro. EXE is assumed to be contextually defined pure pronominal expletive empty NP. No particular kind of governor is required for EXE to occur, though all expletive EC's must be governed (as has been independently motivated to rule out the occurrence of EPRO). The contextual definitions (particularly the definition of anaphor, which is independently motivated to define anaphoric trace) as they are developed in Chapter II simply do not permit the existence of argument pro in a regular EC position, but a completed (directly Case assigned) phonetically unrealized SCL can count

as a pure pronominal. The difference between this theory and that of Burzio (1981) is that in this theory, as opposed to Burzio's, it is assumed that the subject is EXE when an SCL is present (realized or unrealized). This silent SCL (= argument pro) is distinct from INFL (unlike the theories of Chomsky (1981a,1982) and Rizzi (1980)), and differs explicitly from Chomsky (1982) in that argument pro is always a clitic.

The arguments for the presence of silent clitics in the last section speak for the theory presented here over one in which the crucial ingredient of the missing subject property is a property of INFL instead of a clitic. The strength of this approach otherwise depends on the following prediction.

190) Full missing subject languages have clitic paradigms and NOM-drop.

If a language lacks SCL's then the following prediction is made.

191) If L has NOM-drop and no SCL's, then only expletive subjects can be missing.

I shall return to these predictions, as well as some others, in section 6.6.4, but it suffices to point out here that languages like German, which distinguish between missing argument subjects and missing expletive subjects are only expected in a theory that limits argument pro to languages that have clitics, as does the theory presented here.

6.6.3. The NDP and the FIP are Independent.

As mentioned in 6.1, Rizzi was the first to link the

possibility of free inversion to the possibility of missing subjects, in that free inversion with a missing subject is only systematically possible in NOM-drop languages. Nothing in Rizzi's system prevented the existence of languages with overt expletive preverbal subjects and definite NP's in VP where Case inheritance and the 'dependence relation' hold. Indeed he admits that the definiteness effects are "not predicted by our approach, within which we could expect to find only a loose (if any) cross-linguistic correlation between the null subject property and the character more or less constrained of subject inversion" (note 20). The same may be said of Burzio's account, in that Burzio treats free inversion in Italian as a Case inheritance relation, and the DE, or the absence of it, is incidental.

While neither Chomsky (1981a) nor Jaeggli directly address the definiteness issue, both of them attempt to relate the possibility of free inversion to an intrinsic property of PRO-drop, though both Jaeggli and Chomsky still rely on a 0-chain relation holding between the preverbal and postverbal positions. In demonstrating the independence of NOM-drop from free inversion, I have attempted to undermine the generalization on which the latter two accounts are based.

First of all, it is quite clear from the Portuguese case, as stressed by Chao (1980), that Portuguese does not have free inversion. Rather, to update Perlmutter (1976) somewhat, the DE holds for "natural" postverbal subjects, e.g., those of passive and ergative verbs, and other postverbal sub-

jects have a contrastive focus type of reading. Since the DE holds for Portuguese, a missing subject language, then it is also clear, once again, that the DE is not predictable on the basis of the distribution of overt impersonal formatives, a fact already established in Chapter IV for German and Dutch A. The theory of Chomsky (1981a) that attributes missing subjects to the affix hopping rule applying in syntax cannot distinguish a language like Portuguese from one like Italian. Though Chomsky's theory allows Case assignment, in part, by government of INFL hopped onto the verb, the same operation is responsible for simple missing subject sentences. Therefore, since missing subjects and free inversion are inseparable in Chomsky's theory, an extra stipulation is required to distinguish DE languages like Portuguese from free inversion languages like Italian. Thus in any of the current theories, predicting the DE in Portuguese requires a property in addition to that which accounts for missing subjects.

Second, I have shown that there are non-NOM-drop languages, such as Trentino and Modenese, that permit a definite NOM in VP and postverbal extraction. This conclusion depends on the clitichood of the elements that undergo SCL inversion in these languages, but if it is correct to conclude that these languages allow free inversion and lack missing subjects, then it has been firmly established that the FIP and the NDP are independent.

In the theory developed here, the separation of the NDP and the FIP permits systematic predictions to be made about

the distribution of the DE based on the independently motivated analysis in Chapters IV and V. No other theory can achieve this result without adding on some version of the FIP that permits direct Case assignment of the postverbal subject in free inversion languages.

6.6.4. Silent Clitics and Possible Languages.

Some of the predictions made by the set of parameters discussed and the hypothesized existence of 'silent clitics' deserve further consideration. The central prediction developed thus far is (192).

192) If L has NOM-drop and

a) SCL's, then it has full missing subjects;
b) no SCL's, then it has only expletive missing subjects.

The possible languages generated by the interaction of the FIP, the NDP and the Clitic Paradigm Parameter (CPP) are plotted in the diagram below along with languages that illustrate each possibility.

193)

	NDP	FIP	CPP
Portuguese	+	-	+
French	-	-	+
Italian	+	+	+
Trentino/ Modenese	-	+	+
Dutch	-	0	-
German	+	0	-

The interaction of CPP, NDP, and FIP further predict that some languages are not expected.

194) No language with missing argument subjects fails to have missing expletive subjects.

I.e., a language, otherwise like Portuguese with respect to

missing subjects, which requires the overt presence of expletive clitics (and only expletive clitics) is unexpected. As indicated by the chart above, (195) is a further prediction.

195) No language without SCL's has free inversion.

That is to say, a language like German or English, which lacks SCL's, but which permits systematic free inversion of definite subjects and postverbal subject extraction is also predicted not to be possible.

One may well ask, at this point, whether or not 'silent clitics' are simply analytic conveniences, or whether they are independently detectable elements for which there are clear tests. With respect to the Romance languages, it is possible to infer the full clitic paradigm on the basis of the fact that some argument clitics, such as object clitics, are overt (assuming (180)). But since silent clitics are possible, what about a language in which none of the Case Realization Conditions hold, and, therefore, in which no clitic has to be phonetically realized?[68]

In a language like the one just described would be a generalized version of (192a), that is to say, the only evidence that a full clitic paradigm is present would be the possibility in this language, let us call it "Z," that any argument could be missing and have the interpretation of an unstressed pronoun. Thus in the hypothetical language Z, a full sentence could consist merely of a verb without any overt arguments. Suppose that *runkle* is a transitive verb in Z. Then a sentence like "Runkles" could mean "He_i runkles

him_j," but not "arbitrary $person_i$ runkles arbitrary $person_j$." The second interpretation would only be possible if the missing argument were PRO instead of a silent clitic.

As expected, a language that appears to have the properties of Z does exist, as pointed out to me by Noam Chomsky and Ken Hale (personal communication). They note that Japanese appears to require pronominal interpretation of missing arguments. The following examples are from Mamoru Saito (personal communication).

196a) Ø moo gakkoo-ni ikikasita.
already school-to went
"He/she/they went to school already"

b) Watasi-wa kyonen Ø yomimasita.
I-topic last year read
"I read it/them last year"

c) Ø Ø moo yonda yoodesu.
already read seem
"It seems that he/she/they read it/them already"

In (196a), the subject is dropped, in (196b), the object, and in (196c), both arguments are dropped. In fact, in the latter case, it might even be argued that the expletive subject of *seem* is missing as well (in accordance with (194)). The interpretation of these missing arguments is almost always pronominal rather than "arbitrary person."[69] Though Japanese lacks infinitives, in *irrealis* contexts (which correspond in most cases to contexts where a gerund or an infinitive would appear in English), arbitrary interpretation of the missing

subject is possible, even though objects in the same context are still interpreted as pronominal if missing. This suggests that the exception to pronominal interpretation of missing arguments proves the rule, and that *irrealis* subjects are somehow like PRO (for complications that arise under this view, and further examples and details, cf. Saito (1982)). Thus it appears that systematic presence of silent clitics (in accordance with the Clitic Paradigm Parameter) and the negation of the Case Realization Conditions make a clear and correct prediction that any theory of missing arguments ought to make.

Given the presentation so far, it is always possible to tell whether or not a language has silent clitics on the basis of whether or not a full argument can be missing, but suppose there exists a language "Y," otherwise like English, which has silent clitics and no NOM-drop (as in English). It might seem that the following sort of sentence ought to be possible in Y.

197) There SCL telephoned

The SCL is silent and counts as an argument if completed by Case assignment. (197) would mean "He/she/it telephoned." *There* is inserted to satisfy the NOM Case Realization Condition (non-NOM-drop). Recall, however, that SCL's are only completed by direct Case assignment, not Case inheritance. If Y has SCL's, then they will have to be overt when they are assigned Case directly, since NOM Case must be realized where it is assigned in non-NOM-drop languages. (For this reason, SCL's must appear in Trentino and Modenese, since direct Case

assignment by INFL, it was claimed, is always to VP.) If Case is not directly assigned to the SCL in (197), but rather to the subject position, then the subject position must be an argument if it is to satisfy the θ-C with respect to the predicate *telephoned*, which requires an external argument. As *there* is not an argument, no language with sentences like (197) is expected.

Returning now to prediction (195), it is not expected that languages like German or, for that matter, English, could have free inversion of definite subjects, as these languages do not have clitic paradigms (no verbally parasitic clitics appear, and there are no full missing arguments that are pronominally interpreted). This prediction seems correct.

Notice that none of the other theories discussed here predict that there will be any typological difference between languages which have full missing subjects and languages that have only expletive missing subjects. If silent clitics exist, but not in every language, then the prediction that languages like German exist can be made without constructing any special rule for languages that permit only missing expletive subjects. The three independently motivated parameters in (193) suffice to make this prediction. Moreover, the prediction that languages like Japanese must exist also follows from this treatment of silent clitics.

6.6.5. The UIH and the DE.

It is important to keep in mind that the central goal

of this chapter has been to show that languages which allow free inversion of definite subjects such as Italian do not constitute counterexamples to the claim that the DE predictably results from the formation of unbalanced θ-chains.

All of the other accounts of free inversion discussed required the use of some form of coindexing to effect the transfer of Case and θ-role to the NOM-in-VP. The question of how an external θ-role is assigned to postverbal position has been answered by appealing to the configurationally defined "θ-set," an independently motivated notion that I shall examine critically in the next chapter. The assignment of Case to the NOM-in-VP was effected by the Free Inversion Parameter, which permits an impersonal clitic to assign the Case it receives from INFL to a subject governed by the verb. This clitic is silent in Italian, but appears in Modenese, where NOM Case cannot be unrealized. The FIP, then, is the crucial factor permitting direct Case assignment that neutralizes the Definiteness Effect in languages which freely permit definite postverbal subjects.

Thus free inversion languages are further evidence for the claim that unbalanced θ-chains are obviated by direct Case assignment, as was argued at length in Chapter IV. Moreover, the case of Portuguese, a NOM-drop language where the DE holds, further illustrates the fact that the DE is not predictable from the distribution of overt impersonal elements. I conclude that free inversion languages (like Italian) and minimally contrasting languages without free inversion (like Portuguese)

provide further evidence that the distribution of unbalanced θ-chains is a necessary and sufficient condition for predicting the distribution of the DE.

The latter conclusion is particularly attractive in that it permits the Unity of Indexing Hypothesis to be maintained. Binding with respect to θ-chains need not be opposed to binding with respect to the BC's by introducing indexing only relevant to one or the other system. Thus every case of indexing that forms a θ-chain is also an instance of binding relevant to the BC's. This result is not achieved by any of the other theories discussed here, whereas it follows from the UIH, the distribution of θ-chains, and the analysis of unbalanced θ-chains (and the DE) in Chapter V.

FOOTNOTES: Chapter VI

1. In some unpublished work in progress, Carmen Picallo points out that Rizzi's wide scope of *nessuno* subject/object asymmetry does not hold in indicatives--wide scope interpretation of negation, she claims, is possible in a higher clause from both preverbal and postverbal surface positions. As this work is not available to me at this writing, I shall not comment on it. Note, however, that the *nessuno* facts are not the only motivation for Rizzi's inversion-extraction analysis. Other arguments supporting Rizzi's view will be presented below.

2. The chronology of these developments is a little obscured, as Chomsky (personal communication) attributes (22) originally to Rizzi. Indeed (22) seems to be the generalization in the background of Rizzi's (1980) discussion, and it is true that free inversion, in his account, can only leave an empty preverbal subject position if the PRO-drop parameter is in effect (i.e., INFL absorbs the Case feature and counts as pronominal). Yet the absence of the DE, that property of free inversion that permits Italian, but not French, to have definite postverbal subjects freely, is, to reiterate, not treated as directly related to the PRO-drop parameter at all.

3. The idea that clitics are features on heads has been discussed in the literature on clitics. For a recent treatment with references see especially Borer (1981) whose principal examples concern N heads.

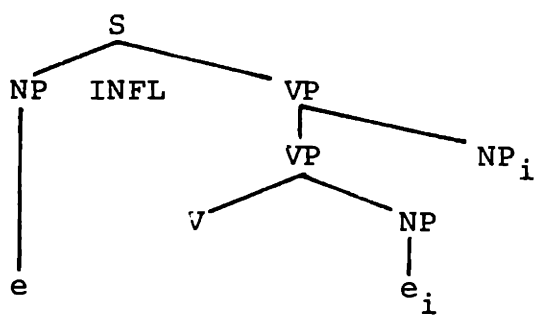
4. The assumption that syntactic movement of INFL leaves a trace (the null hypothesis, given that NP's leave traces) plays a major role in the analyses of Safir (1981b) and Safir and Pesetsky (1981) to which I will return in 6.2.2.

5. The idea that NOM Case is assigned to postverbal subjects in Italian without coindexation with the preverbal position has also been suggested by Longobardi in some work in progress.

6. See Appendix I for some consequences, although the matter is also discussed in 6.2.2.

7. Of course when a predicate has no external θ-position, but only an internal one (a θ-position inside the maximal projection of the θ-assigning predicate) as is the case with the 'ergative' verbs discussed (with respect to *ne*) earlier in this chapter, an NP adjoined to VP at S-structure is only in an A-position. Therefore the VP-adjoined NP must be coindexed with a θ-position, as in the schematic example below.

i.



Even though VP-adjoined NP is coindexed with another position, it is not itself bound, and so no DE is predicted because the θ-chain that is formed is not unbalanced. This, then, is an alternative derivation for *Arriva Gianni*, discussed in the text

as (38).

8. While the SCL does not fall under the 'sister of VP' configurational analysis of the external θ-set, it may be said that the SCL is ungoverned by the verb, since the verb is not a distinct node from the SCL, and it is generally assumed that government is not reflexive (or else empty heads would govern themselves).

9. The only other independent motivation for superscripts concerns the "Accessible Subject" analysis of Chomsky (1981a). This analysis does not directly concern the unified interpretation of binding for θ-chains and the BC's, but rather it determines which clause is the relevant governing category for a given element. Although the matter is relevant to my discussion (with respect to the correct relationship between *it* and $\overline{S}$ in English), I have nothing to say about these issues here. Cf. Manzini (1981) for some further development of this use of superscripting.

10. Again recall that the analysis of Rizzi relates inversion with a 'missing' preverbal subject position to 'missing subjects' without inversion, but the process of inversion itself is treated as quite general, existing even in languages like English and French where inversion is followed by insertion of an impersonal formative and an attendent definiteness restriction. Cf. Rizzi (1980), note 20.

11. This analysis is first proposed and sketched in Safir and

Pesetsky (1981).

12. As mentioned in Chapter I and the references cited there,' adjacency is generally assumed to play a role in Case assignment, although some slight modulations of what counts as 'adjacent' will be developed in the course of discussion.

13. Jaeggli (1980b), note 7, pp. 207-208, points out some exceptions to this generalization, cf. also Morin (1979). I have nothing to say about the matter.

14. Kayne (1982a) has recently come up with a rather different analysis of Complex Inversion, but in his account as well, *ce* is excluded from Complex Inversion contexts as a θ-violation.

15. Kayne (1972), note 56, observes that the verb can agree with the postverbal subject in *ce* sentences.

i. C'est tous des salauds.

ii. Ce sont tous des salauds.

"They are all bastards"

If *ce* is a clitic and inherently singular, then only i. should be possible by theorem (63). Jaeggli's treatment of this fact, like Kayne's requires a special stipulation to account for one of the two possibilities. I leave the matter open.

16. The fact that two Nominative-marked elements need not agree in number, as in (64b), should not obscure the fact that such elements usually agree in number, as in (63a). The relation between Nominative-marked clausemates with respect to number

must simply be treated as less than absolute, however this is expressed, even though the INFL still agrees with the closest Nominative nominal.

17. Cf. Pesetsky (1982) for arguments that agreement is relevant in LF. Cf. also Elliott (1981).

18. I am assuming here that if a θ-chain contains any definite member, then it counts as definite. Notice that if *there* in English counted as definite, then the account of the DE in English, as it was developed in the last two chapters, would have to be seriously recast.

19. Burzio (1981), p. 238, points out idiosyncracies in dialects of English with respect to agreement in these contexts. As does Burzio, I treat this fact as diagnostic of nothing important but cf. Pollock (1981) for a different view.

20. Presumably a theory of Case-checking can accommodate this distinction as well as a theory of Case-assignment. I shall not attempt to construct the mechanics for such an alternative.

21. Presumably this does not apply to $\bar{A}$-binding if it is assumed that *wh*-words get Case by coindexation, rather than being inserted with Case and having their Case checked at S-structure. As *wh*-words are not marked for Case in French, and *wh*-words in $\bar{A}$-positions do not fall under the Case Filter, extending (73b) to $\bar{A}$-binding would have no empirical effect.

22. Recall that the null hypothesis is that syntactic movement

leaves traces, since it is clear that NP's leave traces. Cf. note 4.

23. An ungoverned INFL-trace does not violate the ECP because, as argued in 2.5, the ECP only applies to 0-chains, and a matrix $\overline{S}$ is never a member of a 0-chain. The ECP might be used in this way to rule out INFL-trace in a subordinate clause, and thereby rule out SCL Inversion in subordinate clauses. A separate principle would be required, however, to force inversion in matrix clauses, which in the theory presented here, is forced by the Head Uniqueness Principle.

24. Cf. Safir (1981b) for an extensive discussion of the Illocution Rule as it applies to declarative sentences, effectively exempting them from the HUP.

25. I assume that the relationship between tensed INFL and the verb is a relationship between nodes, while the relationship between INFL and the SCL is one between a node and a slot on a verb. Thus by "strict adjacency," I simply mean that the elements in relation have to be adjacent. Since the SCL is a subpart of a V or the node V, adjacency to the whole node V is not sufficient to insure adjacency to a subpart of the node V.

26. Recall the discussion in 3.2.3 where it was suggested that assignment of ACC Case is optional in French, but not assignment of NOM Case. Assignment of NOM Case, if obligatory, must therefore be phonetically realized, since French is not a NOM-

drop language.

27. A number of interesting facts are pointed out by Morin (1979), who argues that there is no SCL Inversion in French at all, rather the postverbal clitics are simply morphologically regulated markers generated directly on verbs. While the assumption that postverbal SCL's are base generated is not inconsistent with my own view, this should not be taken to mean that the contexts where these postverbal SCL's appear cannot be predicted to a large extent by syntactic factors (although morphological properties surely modulate the syntactic factors).

Morin's central argument is that *viola* is a finite verb that for some exceptional reason cannot have an overt subject. If this is so, he argues, then any explanation of postverbal *t-il* or *t-elle* which relies on a syntactic relation with a subject position must be rejected, since in sentences like i. and ii., postverbal *t-il* and *t-elle* appear (examples from Morin, pp. 12,18).

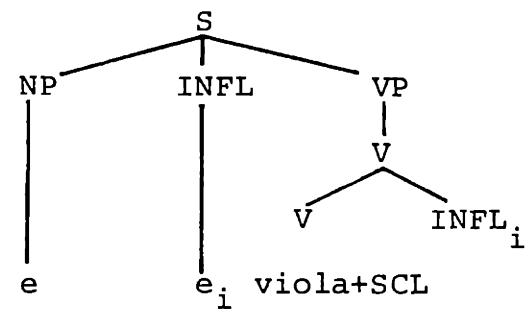
i. De qui voila-t-il le bout de la queue?
"The tip of whose tail is that there"

ii. Ne voila-t-elle pas prisonniere de ses mensonges?
"Isn't shė now a victim of her own lies"

Even accepting Morin's assumptions that *voila* does not have preverbal overt subjects even though it is a finite verb (for whatever exceptional reason), this does not rule out the possibility that the postverbal instantiations of these clitics,

the distribution of which is exactly predicted by HUP, is not an instance of NOM Case realized once assigned by post-verbal INFL (resulting from an instance of Move α). The structure of *voila-t-il* is as in iii., assuming INFL-movement.

iii.



Neither treatment explains why there is no preverbal SCL possible for *voila*, nor preverbal realization of NOM Case, but the null hypothesis, given the stipulated exceptional behavior of *viola*, is that it is otherwise like other finite verbs. On this assumption, the distribution of contexts where *voila*+SCL is possible is completely predictable by syntactic factors; it should have the same distribution as any other instance of SCL Inversion (which as we have seen, might better be called "INFL Inversion"). Moreover, Morin's observation that *ti* can appear with *voila* (*voila-ti pas*) in the dialects with *ti* fcllows immediately on the assumption that *ti* is an SCL completed by NOM Case, and that *voila* is a finite verb like any other, once what is exceptional about it, the fact that it allows no preverbal overt subject, is stated. (We might assign *voila* a null preverbal quasi-argument, for example, in order to make the appropriate stipulation, but this matter may be settled a number of ways.)

Morin does cite the existence of SCL Inversion examples where a regular SCL and *ti* cooccur, as reported in some isolated dialects.

iv. En voulez-vous-ti? "Do you want some"

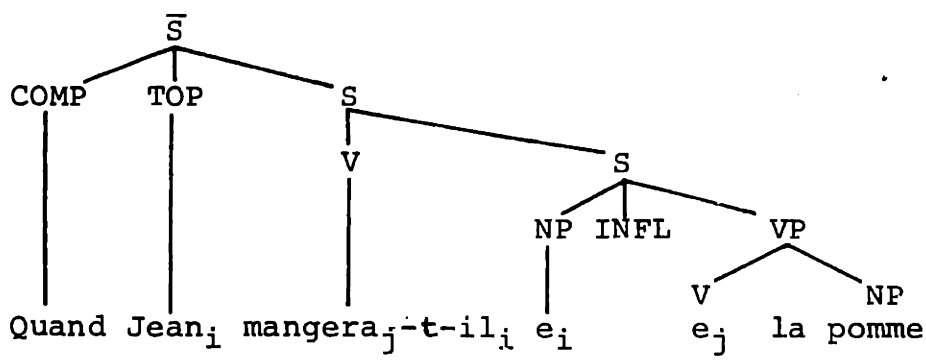
In these cases, it might simply be assumed that *ti* is an affix on postverbal clitics, but the fact seems otherwise unrevealing. Rather it seems that the prediction that *ti* and a regular postverbal SCL cannot cooccur (unless they always do, as in the dialect above) holds in general. The latter point, predicted by the claim that *ti* normally must be assigned Case in order to appear, is not available, as pointed out in the text, in a theory that assumes that *ti* need not be assigned Case such as that of Kayne (1982a). (For further comments on Morin (1979), cf. my note 29.)

28. In a very recent paper, Kayne (1982a) has analyzed Complex Inversion as base generation of a topic position containing a full lexical 'subject' and leftward V-movement with subsequent attachment of the SCL (generated in subject position) to the leftward fronted verb.

i. Quand Jean mangera-t-il la pomme?

"When will Jean eat the apple"

ii.



The idea behind this analysis is to relate leftward movement of the verb in French to leftward movement of the verb in V/2 languages like German, and presumably to SAI in English. Notice, however, that this motivation is extremely weak, since the base generation of the subject *Jean* to the right of COMP puts the verb in 'third position,' rather than 'second position,' clearly predicting the wrong result in V/2 languages. Moreover, Kayne offers no account of the matrix/subordinate asymmetry in the distribution of SCL Inversion and V/2 which is predicted by the HUP. I leave further discussion of Kayne's (1982a) account aside.

29. Notice that the same prediction is made for constructions with *ti*, which have exactly the same structure as (89). The following examples are cited by Morin (1979), note 22.

i. *Qui est-ti venu? "Who came"

ii. *Quelle voiture coute-ti le plus cher?
"Which car is the most expensive"

(He notes, however, that there do exist speakers who permit similar sentences with regular postverbal SCL's, i.e., examples parallel to (88b).) The existence of examples like i. and ii. lends further support to the view that the appearance of *ti* is predictable by the same principles that predict other instances of SCL Inversion, in particular, the HUP.

30. The literature on Stylistic Inversion is extensive. Some of it will be discussed in Appendix I. Cf. Kayne and Pollock (1978), Kayne (1979a), Jaeggli (1980b), Safir (1981b) and Pol-

lock (1981) for some recent accounts with references.

31. Since Stylistic Inversion does not double the INFL node, it is predicted by HUP that Stylistic Inversion is possible in subordinate clauses (where the appropriate independent factors hold) but SCL inversion is not. This prediction is discussed in Safir (1981b).

32. Compare (94d) to the questioned impersonal construction in i.

i. Quand arrivera-t-il une femme fidèle?
"When will there arrive a faithful woman"

The structure in i., given the analysis of the text, is exactly like (95), except that the postverbal subject, *une femme fidèle*, is in direct object position rather than S-adjoined. Thus the preverbal subject position is not a trace, but EXE. Thus i. is grammatical for the same reason that (96b) is--EXE blocks government of INFL-trace by COMP.

33. Notice that EXE is invisible in phonology, however, as contraction is possible across it. (For the structure of examples like i., see 2.5.)

i. It oughtta appear that John is unwilling.

34. All of the data presented in 6.2.3 and 6.2.4, unless otherwise cited, is due to a single informant, Patrizia Cordin, whose assistance in discussing these issues has also been very helpful, although she does not necessarily agree with my conclusions. As only one informant was available to

me, however, only relatively clear judgments have been considered.

35. In the IIs paradigm below, it might be argued that the personal SCL both assigns Case and is realized as well.

i.a. Ti te vegni c. *Ti vegni e. *Vegni ti
b. Te vegni ti d. Te vegni

Ti is the strong IIs pronoun that acts like any full lexical NP, while *te*, as in (95), is a SCL. It seems that *ti* can appear to the left or right just in case *te* appears. Compare i. to ii. with the strong IIIsM pronoun *lu*.

ii.a. Lu el ven c. *Lu ven e. Ven lu
b. El ven lu c. El ven

The b. examples appear to be right dislocations. The contrast between the e. examples may have to do with the incompatibility of the iSCL with the strong IIs pronoun with respect to agreement among Nominative nominals (cf. note 16 in 6.2.1). The same may be said of Is, Ip and IIp SCL's and strong pronouns on the assumption that if these SCL's were overt they would pattern like i., permitting only the right dislocation structure. Alternatively we might take *te* to be an exceptional Case assigning SCL which retains a copy of the Case it assigns, much as the Modenese iSCL *a* appears to do. Cf. note 46 below, where it is suggested on the basis of Modenese facts that the b. examples are indeed right dislocations.

36. Notice that the clitic must be absent even in the case of short extraction. This is not predicted by ECP if elements in COMP coindexed with the subject position count as proper gov-

ernors, as is generally assumed. Rizzi (1980) has also suggested that short extraction may also be excluded in Italian. In any case, this does not diminish the force of the argument that extraction of subjects in Trentino is from postverbal position.

37. Brandi and Cordin's approach to these issues is to treat the SCL as an instance of agreement, thus treating Trentino (and also Fiorentino) as essentially like Italian, except that the agreement marker is overt in clitic form. They also assumed that SCL's in these languages are INFL-daughters. Some evidence for their view, which I shall argue against explicitly in 6.2.4, is presented in note 40. They suggest two analyses, one parallel to Chomsky (1981a) and one to Rizzi (1980). It is not clear in their treatment, however, why SCL's should appear in Trentino at all--their proposal only concerns what properties these elements must have if Trentino is to be parallel to Italian. See their paper for interesting discussion. Cf. also Napoli (1981) who suggests that the subject clitics of some dialects of Italian such as Fiorentino may be parallel to French SCL's.

38. In the last column of (104), it is marked that agreement with the postverbal subject is evident because the verb is conjugated, but this is clear under the assumption that examples like i.-iii. are not treated as right dislocations (cf. notes 35 and 46).

i. Vegno mi "I come"

ii. Te vegni ti "You(sing) come"

iii. El ven lu "He comes"

39. Even the relation to NOM-drop is less than straightforward. Brandi and Cordin point out that Fiorentino requires SCL's with every verb conjugation, even though verbal conjugation suffices to distinguish almost every case. (Cf. note 41 for the full Fiorentino paradigm.)

40. As evidence for their view that Trentino SCL's are more like agreement markers than clitics, Brandi and Cordin point out that Trentino SCL's cannot be dropped when VP's of tensed sentences are conjoined, whereas this is possible in French.

i. Elle danse et chante. "She dances and sings"

ii. La canta e *(la) balla

They suggest that in French SCL's are true subjects, while this is not the case in Trentino. This is the only strong argument for their view, and unless this property is related to some other property of conjoined structures in Trentino as opposed to French, I have no account of it.

Brandi and Cordin also point out that the Trentino and Fiorentino SCL's are unlike cases of object clitic doubling in Spanish, where various animacy requirements hold when clitics are doubled. There is no restriction on animacy in Trentino or Fiorentino when a full lexical subject cooccurs with a SCL. In fact, this seems to be evidence in the other direction, since the same is true of French SCL's in the contexts where they are doubled. Brandi and Cordin do not consider the exist-

ence of SCL inversion in Trentino, which parallels subject clitic doubling in French in the Complex Inversion construction.

41. The Fiorentino paradigm of clitics and agreement is presented below (from Brandi and Cordin) with the verb *venire*, "to come."

	SCL	Conjugation		SCL	Conjugation
Is	e'	vengo	IIIsM	e'	viene
Ip	si	viene	IIIpM	e'	vengano
IIs	tu	vieni	IIIsF	la	vene
IIp	vu'	venite	IIIpF	le	vengano

Notice that the first and second person conjugations are all distinctive, even though they all must appear with clitics even if the subject is present as in i.

i. Noi *(si) viene. "We come"
we-emphatic SCL come

42. The postverbal morphology of the third person SCL's is presented below with the present tense of the verb *venire*.

IIIsM	vegnelo	IIIpM	vegnei
IIIsF	vegnela	IIIpF	vegnele

Compare these forms with their preverbal instantiations in (95).

43. These facts are reminiscent of a phenomenon first discussed by Kayne (1972) and again in Kayne (1980). Kayne notes that Stylistic Inversion, which is normally possible in French with any preposed *wh*-word, is less acceptable with *si* ("whether/if") and *pourquoi* ("why"), as in examples like i.

i. Je ne sais pas quand/*si/??pourquoi est parti Jean.
"I don't know when/whether/why Jean left"

In effect, this restriction in French is unlike the Trentino restriction (which also shows up in similar form in Modenese) in that inversion can only be avoided with *perche*, while it is only ruled out with *pourquoi*. Kayne's (1980) account of this matter (in French) is discussed in Appendix I, but I do not, as yet, see any way to extend his treatment to Modenese and Trentino.

44. It is tempting to relate this fact to the apparent absence of extraction form preverbal subject position in these Italian languages.

45. All of the data in this section is from a single informant, Rita Manzini, who also provided helpful suggestions about where to look. She is not to be held responsible for the analysis in the text, however. As with Trentino, questionable judgments are avoided.

46. With the first and second persons, the personal SCL is preferred to *a* and third person agreement when the strong pronoun is inverted.

i.a. A magnam nueter.
b. *?A magna nueter.
ii.a. Ti magn te.
b. *?A magna te.

This may have to do with the emphatic character of the strong

pronoun, which seems to require a right-dislocated reading (whatever that is). M.-R. Manzini has suggested to me that this may be related to the apparent lexicalization of "we others" (French: "nous autres") into a single morpheme. Supporting her view, it seems to be the case that i.b. improves if a nonpronominal inverted subject appears, as in iii.

iii. ?A magna Mario e me.

With third person strong pronouns both possibilities obtain, but with full lexical subjects, *a* is much preferred over the personal clitic.

iv.a. A magna lor/i to fio.

b. I magnem lor/*?i to fio.

Compare these remarks with those in note 35.

47. The examples in (129) are chosen to avoid instances of short extraction. For reasons I do not understand, in sentences with short *wh*-extraction such as questions, the clitic *a* disappears in both matrix and subordinate contexts.

48. It seems that Modenese lacks Stylistic Inversion in this context, although (133) is grammatical as a right dislocation. Perhaps this is related to the peculiar properties of short extraction from subject position discussed in note 47.

49. The same appears to hold for Fiorentino, as remarked by Brandi and Cordin (1981). They also note that whether or not the verb agrees with the postverbal subject varies independently from the free inversion property.

50. Most of the cases of postverbal definite subjects seem to be instances of what Chao (1980) suggests is subject-verb inversion. She points out the following examples.

i. No entanto, complicarum outros fatores a hipótese.

however complicated (pl) other factors the hypothesis

ii. Apesar da briga, deu o João muitos presentes a sua amada.

in spite of the fight, gave João many presents to his lover

Notice that both of these examples from Brazilian Portuguese, as well as the list example in (143a), all begin with adverbial phrases, suggesting, perhaps, the operation of a more easily triggered version of a Subject-AUX inversion rule similar to the one found in English (e.g., "Rarely do I give presents to aliens"). In any case, many apparent exceptions to the DE seem to fall into this sort of class.

51. Cf. Rouveret (1980) for a very similar analysis. Zubizarreta's analysis complements the theory presented here most closely, and so I shall adopt her account of these matters. Cf. also Chao (1980) who rejects Rizzi's inversion-extraction analysis, but does not explain the subject/object asymmetries pointed out and discussed by Rouveret.

52. Pesetsky was assuming the Nominative Island Condition, but the same reasoning applies with respect to ECP.

53. The implications of 'pronominal clitic paradigms' are explored and made more precise in 6.6.

54. There do seem to be cases of presentational type *es* impersonals, such as the following two examples cited by Breckinridge (1975).

i. Es steuerte sie eine böse Hexe bei
   it contributed them a wicked witch

ii. Es stiess ihn ein Soldate von der Brücke
   it pushed him a soldier off the bridge

It is not clear what structural position the subjects *eine böse Hexe* and *ein Soldat* fill, but it is plausible that they are rightward adjoined somewhere, perhaps to VP. In any case, it appears that they have vacated subject position, which may then be controlled by *es*.

55. Long extraction is awkward in many dialects of German, especially from clauses without verb-fronting (cf. Thiersch (1978)) and so it is not obvious that the ECP affects a subject/object asymmetry in German. There is, however, a subject/object asymmetry in *was für* split as discussed in 4.3.3, which may very well be an indication of an ECP effect. If the *was für* split phenomena are, in fact, regulated by some other principle, P, then P is perhaps an alternative that may be used to explain the subject/object asymmetry discussed in this section.

56. Recall that it is predicted that psych verbs should take internal arguments, given the analysis of 4.3.3, and so clausal complements for the appropriate argument should also be internal parallel to (169b).

i. Er glaubte dass (es)* mir gefallen hat dass ...
he believed that it me-DAT pleased had that ...

It is predicted, contrary to fact, that *es* should not be required in i. I do not know why this prediction is false.

57. It is not obvious why (168d) should be excluded. This is a matter for further research.

58. Notice that unstressed subject pronouns would be expected in Italian optionally if Avoid Pronoun is not appealed to, as is the case for all of the theories considered here. Zubizarreta (1981) notes that subject pronouns are optional in Portuguese and may be unstressed (in contrast to Spanish and Italian), in which case, however, they cannot be coreferent with a subject in a higher clause. She suggests that the Avoid Pronoun Principle is what makes the unstressed form obviative. If she is right, then the operation of Avoid Pronoun is rather complex. I shall not examine these thorny issues here.

It is suggested in Napoli (1981) that what I have been calling NOM-drop is merely a rule that deletes Nominative SCL's in Italian, but her account relies on added stipulations about syntactic lowering of Topics into subject position after cliticization (and drop) of the subject. She does not discuss the nature of the empty category left by Nominative Clitic deletion, and is not concerned with θ-violations in her theory. She also suggests that all pronoun deletion rules are obligatory, a matter which requires some further elabora-

tion given the uncertain status of Avoid Pronoun. Nonetheless, her view is similar to mine in that she also relates the 'missing subject' property to a Nominative SCL in Italian.

59. It is not clear to me why (173b) should require *het* instead of *er*. It seems that *het* normally appears when the extraposed clausal argument is external (as suggested to me by Eric Reuland (personal communication)). Perhaps the expletive subject of *seem* in some languages is a quasi-argument.

60. Cf. Perlmutter and Zaenen (1978) and Maling and Zaenen (1978) where a version of this conclusion is reached for the dialect in question (called "Standard Dutch" and "Dutch B," respectively).

61. Of course, *er* disappears in the NOM/DAT inversion cases discussed in 3.3.3, but in that construction, NOM Case is assigned to direct object position by Otherwise Nominative assignment, and the subject position is filled with a Dative NP, as argued by den Besten. Thus these are not missing subject sentences.

62. I have ignored discussion of the *ci* locational construction in Italian which Burzio (1981) treats as parallel to *there* structures in English. Although there are details of analysis where the *ci* construction differs from free inversion, essentially I see no reason to treat it as significantly different from an overt version of an iSCL, since it also appears,

just like the non-overt SCL, with postverbal definite NP's, as in the example below from Burzio.

i. Ci sono io in cima.
there is (am) I at the top

Cf. Burzio's discussion in his sections 3.1.2 and 3.1.3.

63. Cf. discussion in section 2.3.1 of Burzio (1981).

64. This implies that verbs of perception in Italian take control complements rather than assigning Case across clause boundaries, as has been argued by Burzio (1981), section 5.6.

65. This is not abundantly clear in sentences were no phonetically realized element appears, as in sentences like "Mangia." This is easily remedied by the addition of i.

i. ... elsewhere with the nearest NOM nominal

66. Cf. Elliott (1981) for an attempt to extend Burzio's analysis to object agreement in French.

i. La lettre que j'ai écrite
the-fem letter that I wrote-fem

I have nothing to say about this construction.

67. Bouchard (1982) is being written concurrently with the writing of this thesis, and so I shall not discuss it here, although his work also addresses the issue of what sort of languages permit missing arguments.

68. R. Kayne (personal communication) has suggested to me that there may be a hierarchy such that any language that drops ACC

Case also drops NOM Case, but not vice-versa. I have no evidence inconsistent with such a view.

69. The interpretation of the pronoun is quite free with respect to person and number, but the pragmatic properties of the examples cited tends to limit the interpretation to third person. This is why the examples in (196) are not uniform.

Chapter VII

7.0. Conclusion.

The research program developed in the first two chapters has lead to the investigation of a wide range of constructions and analyses wherein the existence or nonexistence of syntactic chains plays an explanatory role. Now it is time to take stock of some of the theoretical implications and results of this research for various subtheories of grammar, and for the theory of grammar in general.

7.1. Binding Theory.

There are essentially two important results emerging from this study with respect to Binding Theory.

First there is evidence from the analysis of quantifier lowering as well as from the analysis of the Definiteness Effect that the Binding Conditions apply at LF-structure as well as at S-structure.[1] This result is consistent with the general notion that some constraints hold at many levels. The Projection Principle, for example, requires that the θ-C hold at every syntactic level. Moreover, the scope of negation, once adjusted by rules of interpretation, is relevant at LF-structure as well as at S-structure. Finally, as discussed in Chapter 2, the assumption that the BCs apply to idiomatic possessive pronouns at D-structure, as an extension of the Projection Principle, explained the absence of passive forms for verbs taking such idiomatic anaphors, even though plausible antecedents would otherwise

be available at S-structure. Thus it seems that there is a certain symmetry with respect to how some of the central principles of grammar, among them the BCs, are applied to representations at various syntactic levels.

The other result relevant to the BCs is that Principle C receives further support. In the 'dependence' account of Rizzi (1980) and the superscripting account of Chomsky (1981a), special devices were required to avoid the application of Principle C to post-verbal elements bound by expletive elements. By assuming that Principle C applies in these cases, the generality of this principle is reaffirmed. Moreover, the necessary formal distinction between definite and indefinite NPs is made possible as a statement about the Binding Conditions in general, including Principle C.

The latter point deserves some emphasis, as Principle C has recently come under attack in Chomsky (1982). As mentioned in 5.1.2, it may very well be the case that Principle C does not apply to variables, as these may fall under Principles B and A when they are A-bound. The argument for Principle C based on the treatment of the DE proposed here, however, does not rely crucially on which of the Binding Conditions treat variables, but rather on which principle 'names' are analyzed by. If one wanted to push the claim that Principle C should be eliminated, however, one might try to claim that there is no longer a binding violation in unbalanced θ-chains, since Principle C does not apply; thus nothing need be said, in this view, about how Principle C must be avoided. Yet even if one were to

accept such a line of argument (thereby scrapping the explanation of the DE proposed here), the same argument would also have to be made for Principle B, as was pointed out in another context in Chapter 5.

(1) *Il est arrivé lui.

'There arrived him'

(2) *There is he/him sick.

Thus there is no advantage in abandoning the application of Principle C to unbalanced θ-chains -- rather there is much to be lost.

7.2. Case Theory.

A number of results have special relevance to Case theory.

The linchpin of Case theory, the Case Filter, has been revised to be a condition on lexical NPs in A-positions, rather than a condition on θ-chains reducible to the θ-criterion (as in Chomsky (1981a)). This revision, along with some other principles, makes it possible to predict the distribution of lexical expletive elements outside of θ-chains, such as *it*, *es*, and *er* in English, German and Dutch, respectively (cf. 3.2, 5.1.2, and 6.4.2-3). In particular, the Revised Case Filter excludes lexical expletives from Caseless contexts, such as the subject position of infinitives or the object of passive.

The other major factor predicting the distribution of lexical expletive NPs are the Case Realization Conditions (CRCs). If a given Case must be phonetically realized

where assigned, then it is possible to predict the presence of a lexical expletive in contexts where EXE would otherwise be possible. The NOM Case Realization Condition in its negated form was identified in Chapter 6 as the NOM-drop, or 'missing subject' property. The effects of NOM-drop were then shown to vary depending on other parameterized properties, such as whether a language has clitics or not.

Another Case-related property, also introduced in Chapter 3, is the fact that $\bar{S}$s cannot participate in Casemarked θ-chains at all. This assumption explained, to a large extent, the distribution of clausal arguments, since they cannot appear in Casemarked positions, nor coindexed with any Casemarked position, unless they are $\bar{A}$-binders (the latter possibility is realized in German, cf. 6.4.2). The fact that $\bar{S}$s must avoid not just Casemarked positions, but Casemarked θ-chains as well, was confirmed by the distribution of reanalysis (the *count on it* cases) in English.

Finally, a property regulated by the Case Filter, Case inheritance, was shown to play a significant role in predicting the contexts where the DE may be expected to hold. Though I shall return to this matter below, it is clear that whenever the Case Filter forces Case inheritance down to a lexical NP to be in effect, the DE can be expected.

These properties thus provide further evidence that Case plays an important role in a variety of contexts, and

supports in general the claim that having or not having Case is more significant than which particular Casemarking an element has (except with respect to the CRCs). Moreover, the manner in which Case is assigned has been shown to be significant, as direct assignment of Case has been distinguished form Case inheritance, particularly with respect to the 'completion' of clitics, and, indirectly, with respect to the distribution of the DE.

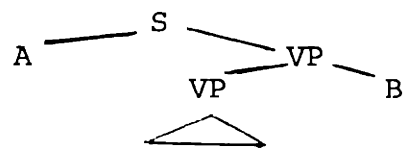
7.3. θ-theory.

Several important results concern θ-theory, in that the existence of θ-chains is confirmed, and the manner in which θ-roles are assigned to external arguments has been revised.

The existence of θ-chains as distinct entities is supported by the fact, illustrated in Chapters 2, 4, 5, and 6 that Case inheritance is a property of θ-chains, and not a relation between NPs with separate θ-roles. Moreover, as argued in Chapter 2, the ECP only applies to members of θ-chains, a proposal that correctly exempted adverbial PP traces and EXE, among other elements, from the ECP. Finally, the Indefinite NP Property (INPP) was shown in Chapter 5 to be a property not just of NPs, but of θ-chains, a conclusion required in order to account for missing expletive subjects in θ-chains in German and Dutch A which would otherwise have been excluded by the BCs. Thus the ECP, Case inheritance, and the INPP are all properties of the same entity, the θ-chain.

Another important entity emerging from this research is the external θ-set. By means of this device, the external θ-role (of a predicate that has one) can be assigned to any single member of a set of positions that meet the criterion of being a sister of VP, as in the diagram below (abstracting away from subject clitics, cf. 6.1.2).

(3)



The external θ-set in diagram (3) consists of (A,B). In contexts where other principles exclude the possibility that A and B could be coindexed, B can optionally be assigned the external θ-role directly, in lieu of assigning the external θ-role to position A. This device was employed to explain how an extraposed external clausal argument can get a θ-role in the position of B, since an $\bar{S}$ cannot be in a θ-chain (i.e., it cannot be coindexed with position A in the relevant cases) as discussed in Chapter 3. Similarly, a post-verbal NP argument in Italian, such as *Gianni* in *Mangia Gianni* ('Gianni eats') cannot be in an unbalanced θ-chain (i.e., A cannot be coindexed with B) because *Gianni* is definite. Thus *Gianni* receives Case by the Free Inversion Parameter, and is assigned its external θ-role directly in post-verbal position under the VP-sister definition of the external argument position in the external θ-set (as in 6.1.2).

Evidence that the external θ-set is a significant entity was drawn from two observations. It was observed in 5.2.3 that the rule inserting the impersonal formatives in English had to make reference to two θ-sets.

(4) Insert an impersonal formative in the position of [e] if [e] is not a complete θ-set.

This was required to account most elegantly for the insertion of *there* in presentational *there*-sentences, since *there* is normally excluded in θ-positions, although (4) is also the correct environment for the insertion of *it* when the external clausal argument is extraposed. (Cf. 5.1.3, where the distinction between *it* and *there* is keyed to θ-chain membership.) So far as I am aware, (4) is the only unified treatment of impersonal insertion in English (compare, for example, Burzio (1981)).

A second observation supporting the existence of the external θ-set is that the hypothesized θ-set retains its integrity with respect to the number of arguments it can contain.

(5) There is only one argument per θ-set.

This assumption ruled out the derivation in (6).

(6)a $\bar{S}$ [proves the theory]$_{VP}$ D-structure

b *The theory$_i$ $_{VP}$[$_{VP}$[proves e_i] $\bar{S}$] S-structure

In (6), the $\bar{S}$ has moved to post-verbal VP-adjoined position where it receives a θ-role directly. The former direct object has moved to the vacated subject position. The assumption in (5) excludes this possibility, thus providing further theory-internal evidence for the existence of θ-sets

(a similar case arises in Italian, cf. 6.1.2).

Now let us consider how (5) may be made to follow from the θ-C. Notice first that (5) does not follow from the θ-C as matters stand, as the θ-C refers to θ-chains.

(7) The θ-criterion
a) Every argument must be in a θ-chain.
b) Every θ-chain must contain one and only one argument.

(8) θ-chain
A θ-chain is the maximal portion of an S-chain containing one and only one θ-position.

Now if the subject position is the external θ-position in (6b), in addition to being a member of an external θ-set (i.e., the position in the external θ-set is A and not B), then (6b) is excluded immediately as $\bar{S}$ is not in a θ-chain and *the theory* is associated with two θ-positions. But if B is chosen as the θ-position of the external θ-set in (6b), then (*the theory*, [e]) is a well-formed θ-chain containing only one θ-position (direct object position) and position B gets its external θ-role directly. Thus only (5) excludes (6b). To incorporate the notion 'θ-set' into an explanation relying only on the θ-C, the definition of θ-chain may be minimally amended.

(9) θ-chain
A θ-chain is the maximal portion of an S-chain containing a θ-position and members of one and only one θ-set.

Under the definition of θ-chain in (9) the S-chain (*the theory*, [e]) in (6b) is not a θ-chain, as the subject position is in the external θ-set, and the direct object position is in the (single position) internal θ-set. Thus

the theory is in a non-θ-position, is outside of a θ-chain, and is therefore excluded by (7a) of the θ-C.[2] Thus, given the definition of θ-chain that refers to θ-sets in (9), the principle in (5) is reduced to the θ-C.

In short, two crucial entities of θ-theory have been defined and motivated in this study, the θ-chain and the external θ-set.

7.4. Empty Categories.

A considerable amount of discussion has been concerned with the status of empty elements in A-positions. The particular innovations of this research include the postulation of a pure pronominal NP empty category that always must be governed and expletive (EXE) and the postulation of silent clitics, pure pronominal elements found in some clitic languages, which may or may not be arguments, depending, in most cases, on contexts. The inventory of emty elements proposed here is summarized below.

(10)

	anaphoric	pronominal	argument
PRO	+	+	+/-
NP-trace	+	-	-
variable	-	-	+/-
EXE	-	+	-
silent clitic	-	+	+/-

The possibilities in the chart are limited by the following well-motivated principle.

(11) An expletive empty element must be governed at S-structure.

(11) ensures that expletive PRO will always be excluded when the BCs apply to it because PRO is a pronominal anaphor and cannot survive the BCs in governed contexts. Thus ungoverned PRO must always be an argument. Evidence that this prediction is correct was presented in 2.4.2, 5.1.3, and 6.4.1: in every context where ungoverned expletive PRO would have been expected, the sentence was ungrammatical.

An important implication of the inventory of empty categories in (10) is that there is no empty category that is both a full NP pure pronominal and an argument, i.e., "pro" in the theory of Chomsky (1982). In Chapter 2, the definition of anaphor requires that every non-variable empty category in a θ-chain be anaphoric. It follows that a non-variable in a θ-chain is excluded by the θ-C if it is an argument. Thus the only full NP empty category outside a θ-chain is EXE.

The existence of EXE contrasts with the existence of pure pronominal 'silent clitics', which, I have been tacitly assuming, are not regulated by the functional definitions of empty categories. These elements, just like their overt forms, can be arguments or not, depending on whether or not they are assigned Case directly (completed) and participate in a θ-chain with no other argument.

The contrast between EXE and silent clitics was illustrated by the constrasting effects of NOM-drop in languages with clitics, as opposed to languages without them. Since German is a NOM-drop language without clitics,

a governed (but not properly governed) empty element in the position of the subject in a tensed sentence must always be EXE. If EXE is in a θ-position, or there is no other argument in the θ-chain, then the θ-C is violated). Exactly as predicted, only expletive subjects drop in German. In clitic languages like Portuguese and Italian, however, NOM-drop permits subject clitics to be non-overt, and yet count as arguments. Thus full argument missing subjects, as well as missing expletive subjects, are permitted in Italian and Portuguese, but not in German.

Further gaps and quirks of the inventory of empty categories in (10) have been attributed to general principles, e.g., a variable can be expletive if its $\bar{A}$-binder counts as expletive, NP-traces cannot be arguments or else they would be bound in a θ-chain by a non-argument (which does not match in features), etc. Doubtless theoretical advances are likely to rearrange the inventory of empty elements over and over again, but some of the results achieved by this particular inventory, specifically the EPRO/EXE contrast and the EXE/silent clitic contrast, both introduced for the first time in this study, will certainly be preserved in any explanatory account in one form or another.

7.5. The Autonomy of Syntax.

An important implication of the explanation of the Definiteness Effect in Chapter 5 is that the distribution of the DE is clearly keyed to a formal syntactic configuration,

the unbalanced θ-chain, as it interacts with the formal property of a semantically identifiable class.

The hopelessness of any account keyed to specially designated impersonal formatives was demonstrated in Chapters 4, 5, and 6. It was shown, for example, that the presence of an impersonal formative did not require the DE (in French, German and Dutch), nor did the absence of such a formative preclude the presence of the DE (in Portuguese, Dutch A, or German). Thus there is no choice but to relate the DE to the formal mechanism that predicts its distribution, the formation of unbalanced θ-chains.

The latter fact is of particular significance with respect to the relationship between syntactic and 'semantic' explanations for linguistic phenomena. As argued in Chapter 5, while it may be possible to distinguish definite from indefinite NPs on semantic grounds, such as the property of being 'more' or 'less referential', it is the formal syntactic expression of this distinction that provides the only accurate account of the distribution of the DE. Thus the account of the DE presented here constitutes strong evidence that no purely semantic treatment of the Definiteness Effect can be satisfactory. Put another way, the fact that independently motivated syntactic factors play a role in this explanation establishes the autonomy of the syntactic component.

7.6. The Unity of Indexing Hypothesis.

The central role of the UIH in this research has been to force a complete correlation between the notion of binding relevant to θ-chains and the notion of binding relevant to the Binding Condition?

This research program seemed to be confronted immediately by intimidating problems and dilemmas with respect to a wide range of constructions. The role of clausal arguments in θ-theory had to be reassessed in order to determine whether *it* and $\bar{S}$ could form a θ-chain, and it was argued that they could not. The role of Case inheritance in *there*-sentences and impersonal constructions had to be reanalyzed, and it was argued that unbalanced θ-chains must exist. The explanation for the existence of such θ-chains led to the explanation of the distribution of the Definiteness Effect, which became a new diagnostic for the presence of unbalanced θ-chains. This new diagnostic was then used to reanalyze free inversion in Italian as a construction in which no unbalanced θ-chain need be formed, and this analysis led, in part, to a new treatment of the 'missing subject' property. Thus the UIH has been the driving wheel of the research program of this study.

Nonetheless, my treatment of the UIH is limited to its consequences with respect to syntactic chains. I have avoided, for reasons of space, addressing any issue involving further extensions of indexing that might be relevant to syntactic processes not directly concerned with

the formation of syntactic chains. These are matters for future research.

Within the domain of syntactic chains, however, the hypothesis that the coindexing relation is limited to a single style of indexing, and hence to a single notion of 'binding' across the various subtheories of grammar, has unified the force of many principles in terms of their diagnostic effects. In so far as the distribution of these diagnostic effects has been examined, it appears that the Unity of Indexing Hypothesis has been confirmed.

FOOTNOTES: Chapter VII.

1. As noted earlier, this idea is originally due to Joseph Aoun. I do not know if my treatment of his idea is compatible with his development of it in Aoun (1982).

2. Naturally, positions that are in no θ-set, such as the subject position of a passive sentence, can be in θ-chains that contain members of only one θ-set.

Appendix I: Stylistic Inversion in French and English

The empirical burden of the hypothesis that only one form of indexing is relevant to the formation of θ-chains has led me to examine a wide range of constructions where the properties of θ-chains, as well as the analytic issue of whether a θ-chain is present or not, come crucially into question. Much of my discussion has focussed particularly on constructions where a subject appears post-verbally in SVO languages. In this short appendix, I extend this program of research to another set of constructions where post-verbal subjects appear, and where the same sorts of issues arise, namely, Stylistic Inversion (SI) in French and PP preposing/ inversion in English. More specifically, I shall show that these two constructions, as the title of the appendix suggests, are syntactically parallel (as first suggested by Emonds (1976), discussed below). Then I shall exploit this parallelism to argue against an analysis of the English constructions inconsistent with the Unity of Indexing Hypothesis. I shall also formulate some intriguing questions about the interpretations of these structures, and then leave them unanswered.

I direct my attention first to the English construction. Consider the following examples.

(1)a Into the room walked an old man/John.

b There walked into the room an old man/*?John.

c *Walked into the room an old man/John.

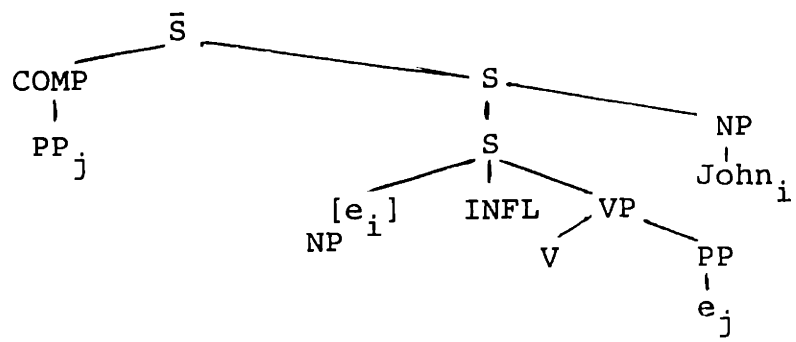
The ungrammaticality of (1c) does not appear to be surprising, as English is not a NOM-drop language. For precisely this reason, if *an old man/John* is in VP, *there* must be inserted to avoid violating the NOM Case Realization Condition (NCRC), which, as discussed in Chapters 3, 5 and 6, requires that NOM Case be phonetically realized in the position where it is assigned. If this is so, however, then why is it that (1a) is grammatical?

Recall that NOM Case counts as phonetically realized if the position to which it is assigned is a variable (cf. Chapter 3). Thus in (2), the empty subject is a variable satisfying the NCRC even though *who* can be deleted.

(2) a man (who) Mary says e committed a crime

Let us assume that in (1a), as opposed to (1b), the post-verbal subject is in fact adjoined to S instead of VP. Since the S-adjoined position is an $\bar{A}$-position (as is the result of QR, for example), it follows that the preverbal subject position in (1a) satisfies the NCRC as in the diagram below (irrelevant details deleted).

(3)



Notice also, however, that the S-adjoined NP, *John*, cannot

count as a proper governor for the empty subject position, since it is not a lexical head, even though it is coindexed with the subject position.[1]

A number of questions immediately arise if (3) is the structure for (1a). In particular, why must *there* be inserted in (1b) to avoid the ungrammaticality of (1c)? First of all, note that the definiteness effect,though milder in presentational *there* constructions, is still strong enough to exclude a proper name, as in (1b) (as discussed in 4.4). We may assume that this is due to the general explanation of the DE in Chapter 5, however that that analysis is loosened up to allow presentational *there* structures. While (1c) is excluded by the NCRC if it is a VP-adjunction, the S-adjunction possibility remains unexplained. It seems clear, however, that the S-adjunction of the post-verbal subject is somehow parasitic on the preposed PP constituent.

Setting the English construction aside for a moment, notice that (1a) and the structure proposed for it in (3) are highly reminiscent of the French Stylistic Inversion construction in (4).

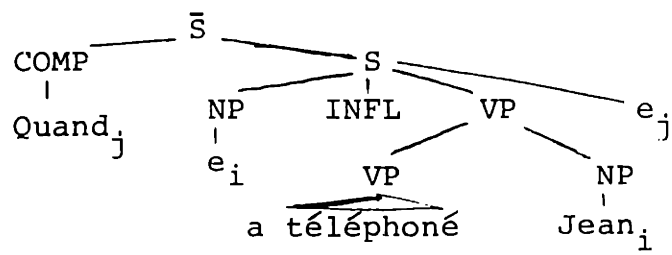
(4)a Quand a téléphoné Jean?
'When did Jean telephone?'

b * e_i a téléphoné $Jean_i$?
'Did Jean telephone?'

Under Kayne's (1980) analysis, (4) has almost the same structure as (3), except that Kayne assumed the post-verbal subject to be in VP. Though my analysis will differ from Kayne's on the latter point, it is worthwile to follow his

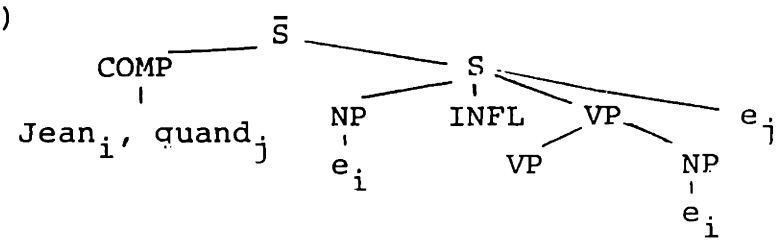
reasoning, since I will ultimately adopt some central features of his account. Kayne assigns (4a) the structure in (5).

(5)



If the post-verbal subject is in VP, the ec in subject position is an ECP violation.[2] If the post-verbal NP is in VP and the subject position is an ECP violation, then some strategy must save the structure from ECP. Kayne suggests that *Jean* must be fronted in LF to COMP. The output of NP-to-COMP is (6).

(6)



The subject trace is now properly governed by *Jean* in COMP under some assumptions introduced directly below.

Besides removing the ECP violation, the structure in (6) also permits two elements in COMP. Kayne suggests that these two elements undergo the rule of quantifier absorbtion discussed by Higginbotham & May (1981) in the same way that multiple interrogations do. Kayne notes, for example, the parallel between sentences like in (7) with their multiple interrogation counterparts in (8).

(7)a Quand a téléphoné Jean?

'When did Jean telephone?'

b ?Pourquoi a téléphoné Jean?

'Why did Jean telephone?'

c *A téléphoné Jean?

'Did Jean telephone?'

d *Je ne sais pas si a téléphoné Jean.

'I don't know if Jean telephoned.'

(8)a Quand Jean a-t-il tué qui?

'When did Jean kill who?'

b ?Pourquoi Jean a-t-il tué qui?

'Why did Jean kill who?'

c *A-t-il tué qui?

'Did he kill who?'

d *Je ne sais pas si Jean a tué qui.

'I don't know if Jean killed who.'

Kayne argues that examples like (7) and (8) are parallel because in both cases, absorbtion applies, and absorbtion (in COMP) is subject to a "uniform interpretation requirement." This is essentially the idea that

> a non-wh-NP in COMP is licit only if expanded by For x,... Let us now say that the NP in COMP can be so expanded, only if it can be interpreted "uniformly" with another phrase in its COMP ... we conclude that the "uniform interpretation requirement" must be given by universal grammar as a requirement on the insertion into COMP of any quantifier or quantifierlike expression (For x= ,) other than one that simply stands for a wh-phrase in that COMP. (Kayne (1980); p.93).

The claim is that *whether* (*si*) and *why* (*pourquoi*) or even

in what sense are not quantifiers of the same type as *what, where, who, when* and *how* (and their French counterparts) because the former do not control variables in the same way as the latter, if indeed the former control variables at all. Henceforth I shall assume with Kayne that the parallel between (7) and (8) is due to the fact that they are both interpreted by the uniform interpretation requirement, and I shall furthermore give the interpretation of SI under this analysis a name, "wh+focus."

The exact meaning of wh+focus remains somewhat obscure, but following the general idea of Higginbotham & May's paper, wh+focus would have to mean something like the following for (7a).

(9) For which pair, x and y, where x is a time and y is Jean, y telephoned at x.

The parallel multiple interrogation interpretation of (8a) is given in (10).

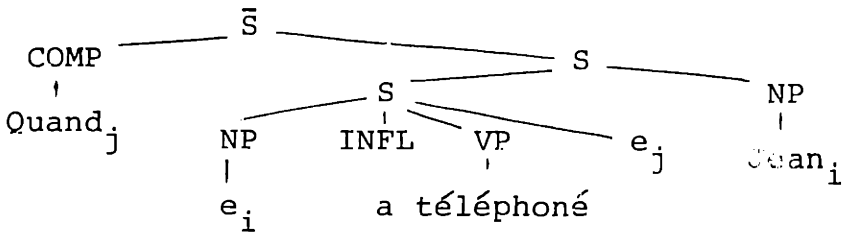
(10) For which pair, x and y, where x is a time and y is a person, Jean killed x at y.

Let us suppose that these interpretations are adequate in syntax.

Now notice that the VP-adjunction hypothesis for the post-verbal subject is, as noted above, inconsistent with the NCRC, since the empty subject position does not count as a variable at S-structure. Moreover, the DE ought to hold of post-verbal subjects of SI, since a definite NP bound by the subject position would be excluded by the BCs at S-structure (particularly since post-verbal definite NPs in the impersonal construction are even less acceptable in

French than they are in English presentationals). These seem very strong reasons to abandon the VP-adjunction analysis. Finally, there is no principle that rules out the S-adjunction analysis, and so instead of seeking to resuscitate the VP analysis and exclude the S-adjunction analysis with an ad hoc stipulation, I shall henceforth assume that the S-adjunction analysis is correct, as it is diagrammed in (11).[3]

(11)



This analysis thus treats French SI as structurally identical to the English PP preposing/inversion construction diagrammed in (3).

Returning now to the English structure in (3), the most natural move is to extend my modification of Kayne's analysis of SI to English. I assume that, exactly as in French, the post-verbal S-adjoined subject is fronted to COMP in LF, overcoming the ECP violation. This means that COMP now contains the PP and the LF-fronted subject, and the NP moved to COMP must somehow be uniformly interpreted with the PP in accordance with Kayne's constraint. If uniform interpretation, however it applies in these cases, is possible, then notice that the reason that the empty subject is parasitic, in (1a), on the fronted PP, is that the fronted PP in COMP somehow permits uniform interpretation to operate on the non-wh-NP fronted to COMP. Since the post-verbal subject in (1c) has no element to pair with in COMP

after LF-movement, (11) is thus excluded when the post-verbal subject is S-adjoined, as well as when it is VP-adjoined. Extending the analysis of French SI to these English constructions thus provides the key to explaining the paradigm in (1).

The question now arises as to what sort of interpretation should be given to the output of this sort of LF-movement and absorbtion in English. Presumably the absorbed interpretation is something like (12).

(12) For which pair, Px and y, where Px is *into the room*, y walked Px.

The notation "Px" is intended to mean that x is the object of some preposition. Something special must be said about Px, namely, that it must be locative or directional, although this may ultimately follow from the presentational contexts in which such sentences are well-formed (cf. Guéron (1980)). I shall call interpretations such as (12) "Directional/ Locative + focus (D/L+focus)."

An important motivation for extending the SI analysis to English is that D/L+focus is also a property of French, a fact unnoticed in Kayne & Pollock's (1978) article which limited SI to sentences with wh-fronting and certain subjunctive contexts. The following examples are all from Atkinson (1973) where hundreds of other examples from a literary corpus are noted.[4]

(13)a Dans le ciel flottait un nuage. (p.13)

'In the sky floated a cloud.'

b Sur son front perlait en petites gouttes la sueur des voyous. (p.25)

'On his forehead beaded in little drops the sweat of rascals.'

c De là partaient deux routes. (p.27)

'From there left two roads.'

d De tous les côtés fumait un parfum de terre écrasée. (p.41)

'From every side reeked the fragrance of crushed earth.'

e Devant lui, autour d'une allée, debout, le regardaient deux figures féminines. (p.90)

'Before him, around an alley, standing, regarded him two female faces.'

In fact, Herschenson (1980) cites the following example from Atkinson (p.27) to show that SI requires number agreement between the tensed verb and the PVS, but she does not comment on the fact that (14) would be excluded by Kayne & Pollock's filter.

(14) Au-delà de la fenêtre tournent les triangles obscurs des toits.

'Beyond the window turn the darkened triangles of the roofs.'

The minimal assumption about the English counterpart of (14) and examples like (1a), then, is that they are both instances of the much more general process in French which we know as Stylistic Inversion.[5]

If the structure of presentational PP preposing is the same as that of SI in French, then it is also predicted that the subject trace in both structures acts exactly like a

wh-trace does. For example, it must agree with the verb in a tensed sentence, just like any wh-trace in subject position.

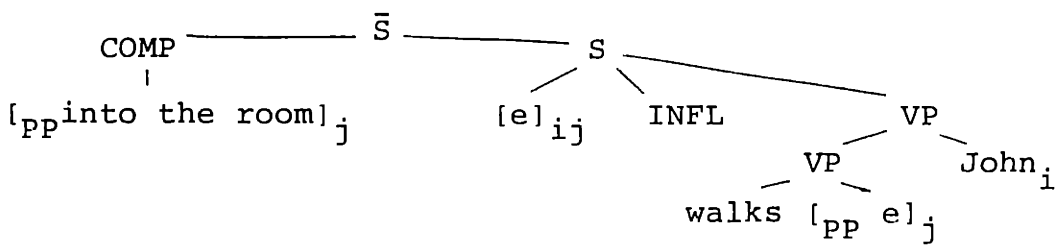
(15)a Which two recruits did he say were/*was guilty?

b Into the room were/*was shoved the two new recruits.

As noted by Stowell (1981), and exemplified in (15)b, number agreement does hold between the post-verbal subject and the verb, and, as we have seen, Atkinson has made the same observation for French. Thus the prediction holds.

Predicting the properties of number agreement without any special device represents an improvement over Stowell's (1981) analysis of the same construction. Stowell proposes that the preposed PP moves to COMP after first passing through the subject position. Stowell's motivation for this analysis is that the PP will bind the subject position, avoiding an ECP violation.

(16)



The subject position now has two indices, constituting a θ-C violation. To avoid this problem, one of the indices must be removed. If j is removed, then the ECP violation reappears, but if i is removed, then number agreement fails to follow, and Case is not transmitted to *John*. Stowell proposed that Case and number agreement are, in fact, treated by co-superscripting between the empty subject and the PVS, and

a special rule deletes the i subscript on the subject. No special rule deleting a subscript and no crucial use of superscripting is required to account for these properties in the approach defended here.

Moreover, Stowell's analysis cannot be generalized to the wh- cases of SI in French. For example, (17) would have to be derived by movement of *qui* through both subject positions after passing through COMP in between.

(17) Qui $[e_i$ a dit $Marie_j$ $[\bar{S}$ e_i qu' $[S$ e_i a tué e_i $Jean_k$]]]

'Who did Mary say that Jean had killed?'

Notice, however, that the subordinate subject position is A-bound by the matrix subject position, although the subordinate subject trace must be a variable (because it is locally $\bar{A}$-bound by the trace in COMP). Thus the subordinate subject will be excluded by the BCs (at whatever level they apply). Any attempt to remove the offending index on the matrix subject will run afoul of the ECP. Thus Stowell's account is both more mechanically problematic and less general in principle than the SI approach developed here.[6]

It is important to keep in mind that Stowell's account of PP preposing/inversion is another instance of an analysis where crucial appeal is made to superscripts to dissociate referential binding, on the one hand, from θ-role and Case inheritance on the other. Any such dissociation is inconsistent with the Unity of Indexing Hypothesis, and so Stowell's analysis is to be rejected on these grounds alone. As just demonstrated, however, there are independent reasons to reject

Stowell's analysis, and so the success of the single index approach indirectly, though significantly, supports the UIH.

As mentioned earlier, the first scholar to relate PP-preposing and inversion to SI in French was Emonds (1976). Emonds argued, however, that the part of SI that moves an NP rightward was structure preserving in both languages. Kayne (1979) has argued against this view of French SI presenting the following sorts of counterexamples.

(18) Je ne sais pas [qui$_i$ [e$_j$ [a vu Jean$_{j,i}$]$_{VP}$]$_S$]$_{\bar{S}}$

In (18), *Jean* has moved into the position of an object that has received its θ-role from the verb. Now the erstwhile subject *Jean* gets both the internal and external θ-roles, and the θ-C is violated (Kayne refers to Freidin's (1978) "functional uniqueness" principle, a direct ancestor of Chomsky's θ-C). Thus a structure preserving derivation for the grammatical (18) is not available. Moreover, SI may occur even with a transitive verb with a lexical object in some cases discussed by Dubuisson (1979) (but see note 5).

(19) Quand rencontre les journalistes René Lévesque, premier ministre de Québec?

'When will René Lévesque, Premier of Québec, meet the journalists?'

*Quand rencontre les journalistes René?

The restriction on SI seems to be a matter of heaviness rather than structure preservingness. Moreover, Kayne's point about the θ-C violation would also hold for cases where SI moves righward past a verb with an object clitic

and leaves the subject in the object slot. Such examples are grammatical also for D/L+focus cases like (13e). Kayne's argument cannot be made for English SI, however, since English has no object clitics and no SI with fronted objects, but under the natural assumption that English is maximally similar to French, we would expect the same to hold for English SI in this respect.

Nonetheless there remains a parallel between English SI and French SI with respect to the particular heaviness restriction involved. Thus Emonds was correct to draw the parallel even if his principle of structure preservingness does not appropriately characterize the restriction on SI.

Also due to Emonds is the claim that the preposed PP is in COMP.

(20)a They are planning to destroy the old church under which are buried six martyrs.

b They are planning to destroy the church in whose basement is buried the town's founder.

(both from Emond's (1976); p.38)

The SI possible in these cases is not possible when the PP is inappropriate, as in the case of temporal PPs.

(21)a I'll never forget the stadium in which was celebrated our greatest victory.

b *I'll never forget the time at which was celebrated our greatest victory.

Thus I draw from Emonds the fact that PP preposing inversion[7] in English and French SI are the same rule, and the fact that the preposed element is in COMP. Along with Kayne (1979), I reject the claim that rightward movement

in SI is structure-preserving, and moreover, our methodological commitment is to derive the effects of the Structure Preserving Hypothesis from independent principles (see note 5).

Up to now, I have been assuming that SI in English and French (except for the examples discussed by Kayne & Pollock (1978)) is limited to preposing of locative or directional PPs, though clearly there are numerous instances in both languages where different preposed elements permit what appears to be SI. I have singled out the D/L+focus interpretation because a plausible account based on Kayne's "uniform interpretation requirement" is easily constructible.

There are, however, a number of other constructions that bear further study along these lines. The constructions in (22) and (23) are discussed in Emonds (1976).

(22) Preposing around Be (from Emonds, p.35)
  a More important has been the establishment of legal services.

  b Equally difficult would be a solution to Russell's paradox.

(23) Participle Preposing (from Emonds, p.36)
  a Speaking at today's lunch will be our local congressman.

  b Taking tickets at the door was a person I had previously roomed with.

Very likely, an interpretation more general than D/L+focus, let us call it "X+focus", may extend to the above cases, and a number of cases cited by Atkinson (1973).

(24) Tandis que la Princesse causait avec moi, faisaient précisément leur entrée, le duc et la duchesse de Guermantes! (p.82)

'While the Princess talked to me, the duke and duchess of Guermantes made their entrance at the same moment.'

Et déjà montait dans ses yeux la même lueur de lucidité surhumaine... (p.85)

'And already there had risen in his eyes the same glow of surhuman lucidity.'

Un à un, s'éteignent les minces rais blêmes des fenêtres. (p.81)

'One by one, the thin pale rays of the windows went out.'

and some cases in English where PPs that are neither locative nor directional permit preposing (from Emonds, p.38).

(25) These are the causes to which are attributed most of the financial catastrophes of the decade.

I met the social director to whom fell that terrible task.

Any extension of wh+focus and D/L+focus to a more general X+focus interpretation, however, would have the following cluster of properties.

(26)a The relevant notion of 'focus' is a 'righward adjoined element Ā-binding subject position.'

b The reading pairs a focus with X and presents X+focus as related in a sense to be made more precise (but not in this study).

c The focus can be moved to COMP in LF.

d X+focus must satisfy Kayne's uniform interpretation requirement.

The movement of focus to COMP in SI structures is required to avoid the ECP violation engendered by rightward movement. The class of elements that may be preposed, on the one hand, and 'uniformly interpreted', on the other, awaits a principled analysis that also permits distinctions between the wide range of SI in French, as compared to its more limited distribution in English (which lacks, for example,

the wh+focus interpretation possible in French). Moreover, there are subtle differences in the permissible contexts for various subcases of SI in English (apparent root vs. non-root distinctions are discussed by Emonds with respect to participial preposing that are not observed with respect to PP preposing) that remain unexplained in any current account. The interaction of discourse constraints with the appropriate extension of the 'X+focus interpretation' of these sentences may ultimately provide us with a more precise characterization of some of the permissible contexts for these structures, but this enterprise is well beyond the scope of this study. If the latter approach is feasible, however, then SI and the X+focus interpretation provide an appropriate Move α and LF analysis that explains most of the non-discourse properties of these constructions.

The most important result of this appendix relevant to the central issues of this thesis, however, is that SI in both English and French can, and should, be analyzed in a manner consistent with the Unity of Indexing Hypothesis, although many interesting questions of analysis and interpretation remain for future research.

FOOTNOTES: Appendix I

1. The definition of government does not allow maximal categories to count as governors, but as government from COMP is quite generally assumed to be, we may suppose that there is some special property of COMP which enables maximal projections contained in it to count as governors or heads in some sense. Cf. Aoun, Hornstein and Sportiche (1981) and Stowell (1981) for ideas along these lines, as well as Safir (1981b) where it is argued that COMP is not a head.

2. Kayne (1980) is assuming the Nominative Island Condition, but similar reasoning holds with respect to ECP. Notice, however, that if the post-verbal subject hangs from S to bind subject position, then the NIC would be satisfied (no Nominative anaphor is free within $\bar{S}$, where variables count as anaphors, as in Chomsky (1980)), but the ECP is not (cf. note 1).

3. Recall that Obenauer (1981) argues explicitely against this view as discussed in a note to section 2.5.

4. Many of Atkinson's examples don't meet the D/L+focus criteria. More on this matter below.

5. Dubuisson (1979) notes that i. also fails the Kayne & Pollock (1978) filter.

i. Parmi les manifestants survint un agitateur.
'An agitator showed up among the demonstrators.'

She attempts to distinguish cases like i. from Stylistic Inversion with a preposed wh-word claiming that the latter is not structure preserving. Example (13e) in the text seems to show that the PP-preposed cases are also not structure preserving, in which case there is no distinction to be made. Some of the literature surrounding the dispute over whether or not Stylistic Inversion is structure preserving is summarized in Langendoen (1979).

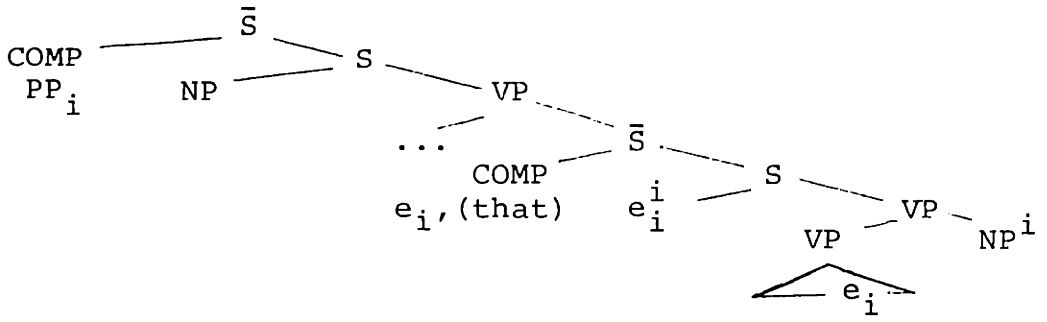
I am not assuming the Structure Preserving Hypothesis, incidentally, as it relies crucially on elaborate base rules, which were rejected without argument in Chapter 1. Thus the dispute over whether or not Stylistic Inversion is structure preserving loses its point of focus. For explicit argumentation against the Structure Preserving Hypothesis as an explanatory principle, see Stowell (1981) and Safir (1981b).

6. These facts notwithstanding, Stowell does explain (in fact his account is designed to explain) the fact, pointed out by Bresnan (1977), that a *that e* effect is evidenced in the following sort of context.

i. In which villages did John say (*that) are found the finest examples of Nepalese cuisine.

Stowell analyzes examples like i. as in ii., irrelevant details omitted.

ii.



The presence of *that* blocks proper government from e_i in COMP, which is otherwise possible, accounting for the *that e* effect. Notice that this analysis does not generalize to the French construction, as pointed out in the text. Thus either the two structures are not correlated (cf. Note 5), or some English specific fact must intervene. Although I do not assume that the PP passes through the subordinate subject position as Stowell does, I assume with him that the preposed PP in examples like i. passes through the subordinate COMP. Perhaps the presence of *that* blocks the necessary absorbtion between the trace in COMP and the rightward S-adjoined post-verbal subject (in my account). Notice also, however, that *que* in French would then have to be treated differently to permit examples like (17) to be grammatical.

7. Emonds (1976) distinguishes directional "adverbs" triggering the inversion from the PP preposing cases, noting that the former do not permit auxiliaries and seem limited to matrix contexts.

i. Away ran John.
*Away had run John.
*Away is running John.

I think that these adverbs are intransitive prepositions, and as such they fall together with directional PPs, which show the same behavior.

ii. Southward flew the birds.
*have flown

iii. To the south flew the birds.
*have flown
*?are flying

It may be best to group all of these cases with the D/L+focus reading and the analysis in the text, and then look for an independent way to limit the output of LF syntax, perhaps by appealing to some principles, as yet undiscovered, of the discourse component.

8. For some recent discussions of presentational focus, see Guéron (1980) and Rochemont (1978).

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