

PARAMETERS AND EFFECTS OF WORD ORDER VARIATION

by

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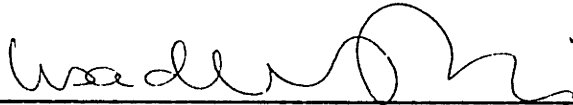
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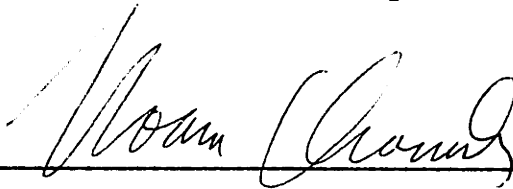
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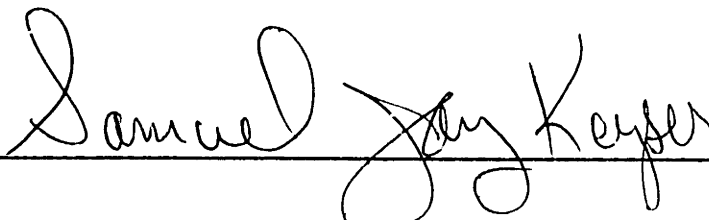
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ABSTRACT

This thesis investigates different issues raised by the problems of language specific word orders. The aim of Chapter 2 is to replace Phrase Structure Rules which stipulate the order of constituents. The Domain Adjacency Condition (DAC) predicts the order of non-head constituents in relation to one another, while the parameters of the direction of case assignment and θ -role assignment, together with the head-initial/head-final parameter, establish the order of non-head constituents in relation to the head. The parameter of direction of predication accounts for the position of a subject in relation to its predicate. Word order typology is now more detailed because the S-V-O type of description is expanded to include the INFL node, subcategorized PPs (PPIs) and non-subcategorized PPs (PP2s), and it is more restrictive because languages must fit into such a parametric description.

Chapter 3 presents an account of Germanic word order which relies heavily on the INFL node in both the synchronic and diachronic characterization. The Head Movement Constraint is introduced to account for the movement of V into INFL, and INFL into COMP. In some historical speculating, it is shown that contradictory demands on INFL create tension in grammatical systems and promote reanalysis of d-structures.

Chapter 4 extends the notion of proper government to include the proper government of a subject NP by an adjacent VP. This account relies on the DAC and a functional definition of proper government. It is shown that this type of proper government, complement government, explains not only es-insertion in Germanic languages, but also extraction facts in Italian and Chamorro, and pro-drop facts in Italian and Irish. It is further noted that while the ECP requires the notion of complement government, the CED still requires the more restricted notion of proper government, lexical government.

Chapter 5 presents several problems related to pleonastics including the interaction of pleonastics with verb agreement, case assignment, and chain formation. It is claimed that there are two types of pleonastics, the I-type and the T-type, and that these represent a hierarchy of features which divide pleonastic constructions in predictable ways.

Thesis Supervisor: Noam Chomsky
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Chapter 1

Introduction

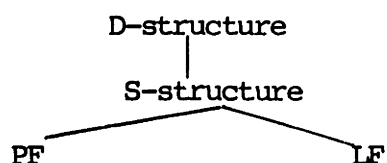
This chapter is intended to introduce the reader to the content of the thesis and to review several concepts and definitions of the Government Binding Theory (GB) of Chomsky (1981). It is, however, not a sufficient introduction to the theory. For further details I refer the reader to Lectures on Government and Binding (1981) (LGB) and references cited therein.

1.1 Introduction to GB Theory

1.1.1 The Grammatical Model

The grammatical model presented in LGB is given in (1). The grammar is divided into several components in the following configuration. In the discussion below, we will see how these components fit into the research of this thesis.

(1)



1.1.1.1 D-structure

D-structure is generated by base rules (see Jackendoff 1977). The format of these base rules is restricted by X'-theory and the subcategorization frames of the lexical items.

X'-theory will insure that every category has a head which carries the same categorial features as the maximal projection. The basic rule template is:

$$(2) \quad X^n \longrightarrow \dots X^{n-1} \dots$$

This template captures the generalization that an NP has an N as its head, and a VP has a V as its head, etc.

Superimposed on this template are the subcategorization frames of the heads. For instance, a base rule for a verb phrase might be represented as shown below, meaning that a verb phrase consists of a verb and an optional NP.

$$(3) \quad VP \longrightarrow V (NP)$$

However, since the verb smile does not subcategorize for an internal argument, if the V in the rule above is smile, the VP internal NP may not be realized. Similarly, the verb donate requires an internal argument, therefore the expansion of the rule above which does not include an NP is not possible.

The theta-criterion will insure that donate has the argument it requires, and the Principle of Full Interpretation will insure that smile

will not be generated with a VP internal NP.

Verbs assign theta-roles (θ -roles), or thematic roles (see Gruber 1965) to their arguments. Since subcategorization is the syntactic realization of these arguments, by requiring that all the θ -roles of a verb be realized, we are requiring that all subcategorized elements be realized. The Theta-Criterion is given below.

(4) Theta-Criterion (LGB, p.36)

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

- (5) a. *Irving donated.
b. Irving donated his time.

The reason that (5a) is ungrammatical is that donate has an internal O-role to assign, but no argument to assign it to. In (5b), this O-role may be assigned to the VP-internal NP his time.

The Theta-criterion requires that all θ -roles be assigned, and that all arguments be assigned O-roles. The latter part of this requirement also appears in the Principle of Full Interpretation which basically insures that every constituent has a function in the sentence.

(6) Principle of Full Interpretation:

At PF and LF, every element must be licensed by some appropriate interpretation where interpretation can be achieved through

- (i) subcategorization
(ii) predication

If an element is generated at D-structure without being subcategorized, it must then be predicated of some other element.

- (7) a. *Sara smiled Lew.
b. Sara smiled.

In (7a) above, the structure is ruled out because Lew is not licensed by subcategorization or predication (we will see more on predication below).

D-structure is assumed to be a "direct representation of GF-O" (LGB, p.43) meaning that Θ -roles are assigned to grammatical functions ((GFs), such as subject, object), and that these GFs (GF- Θ s) must be filled at D-structure. GFs which are not assigned Θ -roles (such as pleonastic subjects, see Chapter 5) are not filled at D-structure since they are not required to be so by the Θ -criterion or the Projection Principle (see below).

Since this thesis is concerned with word order and typology, much of the discussion will center on the d-structure level of the grammar. In Chapter 2, I examine the restrictions on the base rules in more detail and will address not only the issue of what elements are included, but also in which order they appear. In Chapter 3, I argue for a d-structure word order for Germanic languages that differs from other accounts and I speculate on the historical changes that produce this word order. My view of historical change assumes a large role for d-structure and the constraints put on possible d-structures.

1.1.1.2 S-structure

S-structure is created from D-structure by a general Move-a (or

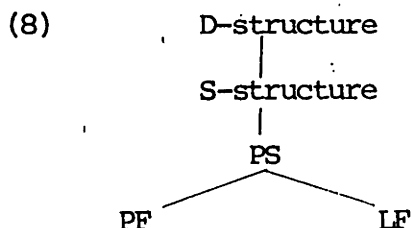
Affect-a (see Lasnik & Saito 1984)) rule which says move any category anywhere. Movement will be restricted by other systems of the grammar such as subjacency, binding, etc (see LGB for discussion of these restrictions).

The level of s-structure is important to this thesis in the way that it obscures d-structure. In the discussion of typology (Chapter 2), we will see that some apparent word order variations posited by Steele (1978) are due to movement rules. This places the level at which these variations appear at s-structure, then, not at d-structure.

The movement rules of S-structure are also important to the view of word order presented in this thesis since I claim that the restrictions on movement (such as the Empty Category Principle discussed below) are affected by word order variations. This is the central concern of Chapter 4.

1.1.1.3 Predication

Williams (1980) argues for a level of predication structure (PS) onto which s-structure is mapped. Since predication is important for the Principle of Full Interpretation (see above) as a licensing mechanism, and since elements must be licensed at both PF and LF, I will assume that PS fits into the grammar as shown below.



Williams' Rule of Predication and his C-command Condition on Predication are given below:

- (9) Rule of Predication (Williams 1980, p.206)

Coindex NP and X.

- (10) The C-command Condition on Predication (Williams 1980, p.206)

If NP and X are coindexed, NP must c-command X or a variable of X.

Rothstein tightens the c-command condition adding that the predicate must also c-command the subject, where Williams requires the looser notion of c-subjacency. (In footnote 1, however, Williams also mentions the possibility of needing mutual c-command for predication.) Her rule of Predicate Linking is given below:

- (11) Rule of Predicate Linking (for English)
(Rothstein 1983, p.27)

- a. Every non-theta-marked XP must be linked at s-structure to an argument which it immediately c-commands and which immediately c-commands it.
- b. Linking is from right to left (i.e. a subject precedes its predicate¹.)

Examples of predication are found in the following examples.

- (12) a. [Jonathan]ⁱ [did the puzzle]ⁱ
 b. Janet ate [the carrots]ⁱ [raw]ⁱ

1. This will be subsumed in the parameter of predication in Chapter 2.

- c. Miriam hammered [the nail]ⁱ [flat]ⁱ
- d. Bruce considers [Karen]ⁱ [brilliant]ⁱ

Both Williams and Rothstein show that any category may be a predicate (examples are taken from Williams 1980, p.206).

AP: John made Bill **sick**.
 NP: John made Bill **a doctor**.
 PP: John kept it **near him**.
 VP: John **died**.

Predication is important in the thesis, both as a directional parameter for word order (Chapter 2), and as it contrasts with complementation (Chapter 4).

1.1.1.4 PF

PF is the phonological component of the grammar. PF interacts with word order through stylistic rules (see Rochemont 1978). Because of the position of these rules in the PF component of the grammar, they must follow all syntactic rules and must not affect LF interpretation. These rules are important to my view of historical word order change as discussed in Chapter 3.

1.1.1.5 LF

LF is the level of the grammar which represents a type of logical form. For instance, questions would have the s-structure and LF

representation given below².

- (13) a. What telephone_i did Gideon buy t_i
 b. for which x: x a telephone, did Gideon buy x?

Rules that map s-structure onto the level of LF are Quantifier Raising (May 1978), Focus Interpretation, and, in some languages, wh-movement (Huang 1982). These rules do not affect the word order of a language since, by the model given here, they occur independently of the phonetic representation. However, LF is important to this thesis since, like the movement rules of s-structure, the movement rules of LF are subject to restrictions that may be affected by word order (see Chapter 4).

1.1.2 Projection Principle

- (14) Projection Principle (LGB, p.29)

Representations at each syntactic level (i.e., LF, and D- and S-structure) are projected from the lexicon, in that they observe the subcategorization properties of lexical items.

2. I leave out a detailed bracketing of structures until later chapters.

(LGB, p.38)

Given

[_g ... a ... b ...]

[_g ... b ... a ...]

- (i) if **b** is an immediate constituent of **g** at L_i ,
and **g** = **a'**, then **a** θ -marks **b** in **g**
- (ii) if **a** selects **b** in **g** as a lexical property, then
a selects **b** in **g** at L_i
- (iii) if **a** selects **b** in **g** at L_i , then **a** selects
b in **g** at L_j .
(where L_i and L_j range over syntactic levels)

I use the Projection Principle and the Theta-criterion as a form of proper government in that they serve to identify gaps. If a constituent has a θ -role to assign, by the Theta-criterion there must be an argument to receive this θ -role. At d-structure, the argument will bear the GF which is assigned the θ -role. However, s-structure, through movement, may obscure this relationship. The Projection Principle insures that the θ -role is assigned at every level, meaning that the position must be there, even if its contents have moved. In this way, the gap is required, and therefore identified.

The Extended Projection Principle simply adds to the Projection Principle the stipulation that all sentences require subjects. We have seen above that Rothstein subsumes this requirement in her Rule of Predicate Linking.

1.1.3 Government

Government is a structural notion. Chomsky's definition is given below.

- (15) Chomsky (1981)
[a governs g in]

[_b ... g ... a ... g ...], where

(i) $a = X^0$

(ii) where b is a maximal projection, if b dominates g, then b dominates a

(iii) a c-commands g (p. 165)

Since this definition depends on the definition of c-command, below we look at three different definitions of c-command.

1.1.3.1 C-command

The following three definitions of c-command make very different predictions concerning c-command relations.

- (16) Reinhart (1976)

Node A c-commands node B if neither A nor B dominates the other and the first branching node dominating A dominates B.

- (17) Aoun and Sportiche (1981)

A c-commands B if A and B are X", $A \neq B$, and every maximal projection dominating A dominates B.

(18) Chomsky (1981) (p.166)
 a c-commands b if and only if

(i) a does not contain b

(ii) suppose that g_1, \dots, g_n is the maximal sequence such that

(a) $g_n = a$

(b) $g_i = a^j$

(c) g_i immediately dominate g_{i+1}

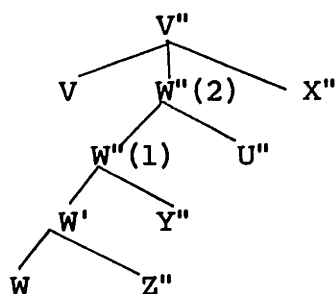
Then if d dominates a , then either

(I) d dominates b , or

(II) $d = g_i$ and g_1 dominates b

In the structure given below, we can see the difference in the predictions. Reinhart's definition depends crucially on branching, A&S's definition depends on maximal projections, and Chomsky's definition depends on the projection of like categories.

(19)



For Reinhart, W c-commands only Z'' . This is because W' is the first branching node that dominates W and the only other constituent that W' dominates is Z'' . Z'' will also c-command W .

A&S differ from Reinhart in that W will c-command not only Z'' but also Y'' . Since W' is not a maximal projection, the c-command domain is defined by the node above it, $W''(1)$, which is a maximal projection. Z''

and Y'' will also both c-command W .

Chomsky's definition of c-command allows W a greater domain of c-command than either of the other definitions, but allows Z'' a narrower domain than in A&S and the same domain as in Reinhart. The difference between W and Z'' is that W is a head. In Chomsky's definition, heads c-command every constituent in the domain of the highest projection in a chain of projections that share categorial features. W , W' , $W''(1)$, and $W''(2)$ are a chain of projections which are all of the category W .

Reinhart's domain of c-command for both W and Z'' is that of W' since W' is the first branching node for both constituents. For A&S, the c-command domain of both W and Z'' is the domain of $W''(1)$ since $W''(1)$ is the first maximal projection. For Chomsky, the c-command of W is the domain of $W''(2)$ while the c-command domain of Z'' is W' .

The distinction between these definitions is discussed in Saito (1983). This will also be reviewed in Chapter 2 where we see that, by changing the notion of branching, the definitions come very close to collapsing into one definition.

1.1.3.2 Proper Government and the ECP

Proper government in Chomsky (1981) is a subset of government which depends on the governor.

- (20) Proper government: (from Aoun & Sportiche 1981)
 A governs B if and only if A governs B and
 (i) A is lexical, or
 (ii) A is coindexed with B

Proper government is used in the Empty Category Principle (ECP) which states:

- (21) Empty Category Principle:
 [e] must be properly governed

Proper government and the ECP account for the following contrast.

- (22) *Who did Cindy say that t had a cat?
 (23) What did Cindy say that Ken had t?
 (24) Who t had a cat?

Since the empty category in (22) is governed only by INFL which is not lexical, it is not properly governed and is thus ruled out by the ECP. In (23), the empty category is governed by the V, a lexical category. Finally, in (24), the empty category is governed by an element in COMP which is coindexed with it. The definition of proper government will be discussed, and revised, in Chapter 4.

1.1.4 Government and PRO

In LGB, government is used to account for the distribution of PRO. The argument is that, since PRO is both an anaphor and a pronoun, and since an anaphor must be bound in its governing category and a pronoun must be free in its governing category, that PRO may not have a governing category. In this thesis, however, I will be assuming the framework of Bouchard (1982), in that I will be assuming that control PRO is an anaphor which must be bound in its governing category, and arbitrary PRO is a pronoun which must be free in its governing category. Control verbs, like raising verbs and ECM verbs, trigger S' deletion, accounting for the similarity of binding in the structures given below.

- (25) a. Tim_i seemed [S t_i to be tired]
 b. Tim_i expected [S himself_i to win]
 c. Tim_i tried [S PRO_i to win]

Rather than using government to account for the distribution of PRO, Bouchard uses case marking. Since the subject NP in the embedded sentence of (25c) is not assigned case, it is not lexicalized and it surfaces as PRO (see Bouchard for details). The important consequence of this is that PRO may be governed. In fact, this is what I assume in languages where subject NPs appear adjacent to the VP (see Chapter 4).

1.1.5 Case Theory

Case is assigned to an NP by a lexical category which governs it. I will be assuming that INFL[+tense], V, and P are case assigners.

1.1.5.1 Case Filter

The Case Filter states that every NP must be assigned case. The definition from Chomsky (1980, p.49) is given below.

- (26) Case Filter:
 *NP if NP has phonetic content and has no Case.

The assignment of case and the case filter are crucial for the view of word order presented in this thesis. In Chapter 2, I claim that a verb in a head-final VP may assign case to the right, causing the object to move to the right of the verb at s-structure. The assignment of case is also important to my view of pleonastics presented in Chapter 5. It will be used to account for the distribution of empty pleonastics and to

account for the agreement of the verb with VP internal arguments.

1.2 Introduction to the thesis

1.2.1 Chapter 2

Chapter 2 deals with the problem of Phrase Structure Rules. More specifically, it raises questions as to whether PS Rules are needed to determine the order of constituents within a maximal projection. To account for the order of non-head constituents as they relate to one another, I propose the Domain Adjacency Condition which insures that a domain, such as a case domain or a θ -domain, will not be interrupted. To account for the order of non-head constituents in relation to the head, I argue, using data from Chinese, that the parameters of direction of θ -role assignment, case-assignment, and predication must be added to the head-initial/head-final parameter.

Since an articulated version of branching has been used to account for ordering of domains (Jackendoff 1977), and for the word order of Chinese (Huang 1982), I investigate the need for intermediate projections between X^0 and X^{\max} . The conclusion I reach is that no notion of constituency is needed other than maximal projections and lexical items, and that a more restrictive theory of grammar results from a restriction of branching to these two levels.

Finally I view word order typology as parametric variation, using

Steele (1978) as a starting point. Certain languages from Steele's language sample appear problematic, but I show that these problems disappear through reanalysis of the data.

1.2.2 Chapter 3

Chapter 3 presents a view of Germanic word order which is different from current analyses. Evidence from Yiddish suggests that Yiddish is S-I-VP (Subject-INFL-VP). Since similar data are found in German, I suggest that German is also S-I-VP rather than S-VP-I. By having INFL sentence internally, not only are these data accounted for, but differences between German and "real" verb final languages can be explained. The INFL node, the movement of V into INFL, and the movement of INFL into COMP play crucial roles in my account of Germanic word order. For the movement, I propose the Head Movement Constraint which states that an X^0 may only move into the Y^0 which properly governs it.

In the final part of Chapter 3, I offer some speculations on historical change in Germanic languages. Again, the INFL node plays an important role. I claim that the demands on INFL are many and no structure meets all of them. Because of this, movement of INFL, or movement of another constituent dependent on INFL, often results in a reanalysis of the d-structure.

1.2.3 Chapter 4

Chapter 4 presents an investigation of some consequences of word

order differences. My claim is that, given the Domain Adjacency Condition, if a subject is adjacent to its θ -role assigner, the VP (i.e., a phonetically realized INFL does not intervene), then it is in the complement domain of the VP. Further, I argue for a functional definition of proper government similar to Jaeggli (1980) or Stowell (1981). Given these two results, I argue that subject NPs that are adjacent to the VP are properly governed.

This extended notion of proper government, complement government, will account for LF extraction facts in Chinese (which is S-VP-I), and s-structure extraction facts in Chamorro (which is I-S-VP). The proper government of post-verbal subjects in Italian and Spanish is also accounted for, even without assuming movement of the subject into the VP. In the inverted structures, the order would be I-VP-S, a structure which, in this account, has a properly governed subject position. I also claim that pro-drop facts are accounted for. If we assume that pro, like other empty categories, needs to be properly governed, the fact that subject inversion and pro-drop seem to co-occur in S-I-VP languages is not surprising. In I-VP-S structures, but not in S-I-VP structures, the subject position is properly governed. This will also explain why Irish, an I-S-VP language, has pro-drop but no subject inversion.

In the last part of Chapter 4, I discuss the need to distinguish complement government from lexical government. Huang's (1982) Condition on Extraction Domains (CED) is sensitive to lexical government rather than complement government, since while subjects themselves may be extracted, they are not possible domains of extraction. The conclusion is that the

ECP requires complement government of an empty category while the CED requires lexical government of an extraction domain.

1.2.4 Chapter 5

Chapter 5 is a discussion of pleonastics, prompted by the investigation of German pleonastics in Chapter 4. I assume that languages have two types of pleonastics; the I-type (like it in English), and the T-type (like there in English). The I-type of pleonastic in German is es, and the T-type is O, or the empty pleonastic pro. I discuss a hierarchy of constructions that take pleonastics, what types of pleonastics a variety of languages use, and which pleonastics they use for which constructions.

I claim that the distribution of empty subjects is due to the features of INFL which allows a four-way distinction in the "richness" of INFL. Italian INFL, the richest, allows all pronominal subjects (whether referential or pleonastic) to be empty, Yiddish INFL allows all pleonastics (both I-type and T-type) to be empty, German INFL allows only T-type pleonastics to be empty, and English has no empty subjects. Since not only must empty categories be properly governed, but their content must be identified, I assume that the ability of INFL to identify a properly governed subject depends on the features that it carries.

I, then, discuss the problem of T-type pleonastics and how they interact with case assignment and agreement on the verb. I reach the conclusion that T-type pleonastics are simply a spell-out of case

assignment independently of whether they form a chain with a VP internal argument or not. Agreement with an element other than the pleonastic occurs only when a chain is formed between this pleonastic and a VP-internal argument.

I-type pleonastics present a different sort of problem. The use of this type of pleonastic differs in the languages studied, as do the extraction facts. Dutch and German may use T-type pleonastics with V(passive)-S' constructions where English must use an I-type pleonastic. Further, whenever an I-type pleonastic is used in Dutch, extraction out of the S' is not possible. This is not true in English I-type constructions. I tie the difference in pleonastic distribution to the possibility of having impersonal passives in Dutch and German. I, then, account for the extraction facts by claiming that word order differences between German and Dutch on one hand and English on the other force extraposed S's to join at different levels of the tree. A revised version of Huang's CED will then account for the extraction asymmetries.

1.2.5 Chapter 6

Chapter 6, while reviewing points made throughout the thesis, also highlights some overall conclusions. These have to do with the importance of the INFL node, the adjacency of domains, and the importance of word order at all levels of the grammar.

Chapter 2

WORD ORDER PARAMETERS AND TYPOLOGY

In this chapter I investigate problems of the base component and specifically the problem of accounting for language specific word orders. The goal is to avoid having to use stipulative means, such as the phrase structure (or rewrite) rule below, to generate appropriate d-structures.

- (1) a. $V'' \rightarrow V' - (\text{have-en}) - (\text{be-ing}) - (\text{AdvP}) - V' - \left(\begin{matrix} \text{PP} \\ \text{AdvP} \end{matrix} \right) - (S)$
- b. $V' \rightarrow V - (\text{NP}) - (\text{Prt}) - \left(\begin{matrix} \text{NP} \\ \text{AP} \end{matrix} \right) - \left(\begin{matrix} \text{AdvP} \\ \text{QP} \end{matrix} \right) - (\text{PP}) - (\text{PP}) - (S')$

Such a rule serves many purposes. It specifies (i) which elements are obligatory, (i.e., the heads) (ii) which elements are optional, (i.e., the non-heads) (iii) what order the optional elements must have in relation to one another, and (iv) what order they must have in relation to the head. In the current GB literature, these tasks are factored out into different sub-systems of the grammar.

The proposals in X'-theory (implicit in Harris (1946, 1951), explicit in Chomsky (1970) and developed in Jackendoff (1977)) account for the fact that NP expands into an obligatory N and other optional elements while VP expands into an obligatory V and other optional elements. This is captured within the basic phrase structure rule of (2).

$$(2) \quad X^n \longrightarrow \dots X^{n-1} \dots$$

Assuming that N, V, P, A, COMP, and INFL all enter into such a rule, we have the basic template for all the phrase structure rules. I assume that S' is equivalent to COMP' and that S is equivalent to INFL'.

What may appear in the ellipses of (2) above falls under the Principle of Full Interpretation (Chomsky fall lectures, 1983) which, as we have seen in Chapter 1, itself divides into two parts.¹

(3) Full Interpretation:

At PF and LF, every element must be licensed by some appropriate interpretation, where interpretation can be achieved through

- (i) subcategorization
- (ii) predication

The lexicon is responsible for indicating which elements are subcategorized, and predication theory (Williams 1980) accounts for those elements licensed through predication. Looking first at subcategorization, we can see that by having the lexicon as a sub-system in the base (Chomsky 1965), we can derive further information concerning phrase structure rules. Though some categories select complements independently of how they themselves are lexically filled (COMP always selects INFL', and INFL always selects V'), other categories select a different complement structure depending on the lexical item. This is

1. In this thesis I will have little to say about specifiers; that is, lexical non-heads. Basically, I will be dealing with what Emonds (1976) calls recursive constituents. I assume that the ideas presented here could be extended in some natural way to include non-recursive categories.

most obvious in the VP. Persuade requires an NP and an S', believe can take just an S', put requires an NP and a PP, hit requires an NP, and smile normally takes no complements at all. We, then, have the following configurations.

- (4) V NP S' [persuade Joan that Mary would come]
- (5) V S' [believe that Mary would come]
- (6) V NP PP [put the book on the table]
- (7) V NP [hit the ball]
- (8) V [smile]

We can see that by overlaying the subcategorization frames of the lexicon on the X' rule template, we can fill in the complement structure of the phrase structure rule.

Through X' theory and subcategorization, two redundancies have been avoided. X' theory captures the generalization that every non-lexical projection must have a head (i.e., an element with the same categorial features). Subcategorization places the complement structure of a lexical item in the lexicon rather than in the phrase structure rules². Since the complement structure differs with the lexical item, we would expect such idiosyncratic information to appear in the lexicon. The NP in the VP is not optional in the case of every verb as the phrase structure $VP \rightarrow V(NP)$ suggests. Since information about complement structure must be carried by the lexical item, there is no need to restate this in the phrase structure

2. We still have to account for the fact the $COMP^O$ always takes I' and I^O always takes V' .

rules.

Those elements that are part of a rewrite rule, and which are not heads and not complements, must, by the Principle of Full Interpretation, be licensed through predication. We have seen examples in Chapter 1, some of which are repeated below.

- (9) Janet ate the carrots raw.
- (10) Miriam hammered the nail flat.
- (11) Bruce considers Karen brilliant.

In any sentence, the subject position will be licensed through predication. A subject is never a complement as it is never in the subcategorization frame of a lexical item. Further examples of elements licensed by predication given above are raw, flat, and Karen. In each case, the element licensed by predication is in a predication relation with an element which is licensed by complementation. In (9) and (10), the element licensed by complementation is the subject of the predication relation (carrot, nail). In (11), however, the complement is the predicate (brilliant). In (9) and (10), then, the element licensed by predication is the predicate (raw, flat) and in (11), the subject (Karen).

Theories of the lexicon, X', and predication determine what elements may appear within the maximal projection, but there remains the question of the order of these elements. Since much of the information of Phrase Structure rules follows from other components of the grammar, we do not want to resort to these rules to stipulate the order of the elements.

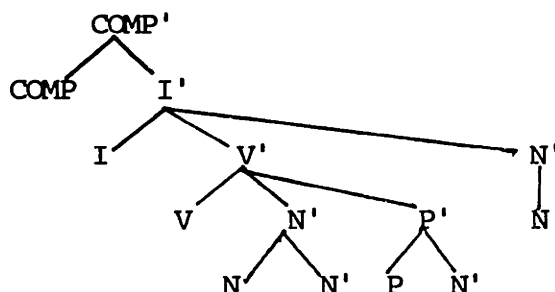
The problem of word order can be divided into two sub-problems. (1)

What order the maximal projections (i.e., non-heads) must have in relation to the head, and (2) what order they must have in relation to one another.

The first problem is most easily solved in pure head-initial and head-final languages. Greenberg's study of word order (1963) shows that V-O languages tend to be prepositional (P-NP), while O-V languages tend to be postpositional (NP-P). By categorizing languages as head-initial (V-O) or head-final (O-V), we capture these tendencies.

Using Malagasy as an example of a head-initial language and Japanese as one of a head-final language, we can exemplify this word order distinction³.

- (12) Malagasy: V-O-S
 COMP' → COMP ...
 INFL' → INFL ...
 V' → V ...
 N' → N ...
 etc.



... fa manome ny bokin' ny mpianatra ho an'ny ankizy Noro
 that PRES+give the bookLN the student to the children Noro
 'that Noro gives the student's book to the children'

[_{COMP'} Comp [_{I'} I [_{V'} V [_{N'} N [_{N'} N]] [_{P'} P N']] [_{N'} N]]]

3. For the time being, I am assuming that X' is X^{\max} . The reasoning behind this will be discussed in section 2.3

(13) Japanese: S-O-V

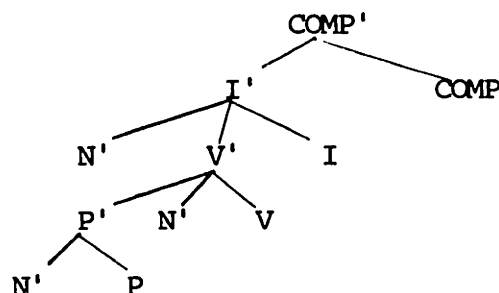
COMP' → ... COMP

INFL' → ... INFL

V' → ... V

N' → ... N

etc.



Izumi-ga Hiroko-kara tegami-o morat-te (koto)
 Izumi-NOM Hiroko-from letter-ACC receive-PAST (the fact that)
 '(the fact that) Izumi received a letter from Hiroko.'⁴

[_{COMP'} [_{I'} N' [_{V'} N' V] I] COMP]

Two further advances in the derivation of word order have been made by Stowell (1981) and Pesetsky (1982). Both use the relation of case assignment to predict the position of elements. Stowell uses this relation to predict the order of maximal projections in relation to one another, while Pesetsky uses it to predict the order of the subject NP in relation to the head, I^0 .

Stowell proposes the Parameter of Case Adjacency and the Principle of Case Resistance. Case Adjacency simply states that adjacency of some sort is a condition on case assignment. In other words, if an NP is not adjacent to a case assigner, then case may not be assigned, the NP will receive no case, and the Case Filter will be violated. The value of this parameter may be set differently for different languages. In Warlpiri, no

4. koto, 'the fact that', has been added to abstract away from the effects of discourse and topic.

adjacency is involved in the assignment of case, as in (14) below ⁵. I will be assuming that in languages with completely free word order, NPs are inserted into a W* structure (see Hale 1980) with case already assigned to them.

- (14) Warlpiri: a. Ngarrka-ngku ka wawirri pant-i-rni
 man-ERG PRES kangaroo spear-NPST
 'The man is spearing the kangaroo.'
- b. Wawirri ka pant-i-rni ngarrka-ngku.
- c. Pant-i-rni ka ngarrka-ngku wawirri
- (from Warlpiri Lexicon Project)

A rule of interpretation at LF will insure that every NP is licensed either by being an argument of the verb, or by predication through coindexation to another element (see Hale 1982).

Languages that require adjacency for case assignment may require strict adjacency, as in English, or argument adjacency, as in French.

- (15) I like books very much.
 *I like very much books.
- (16) J'aime beaucoup les livres.
 I like very much the books
 'I like books very much.'
- *J'ai mis sur la table le livre.
 I have put on the table the book
 'I put the book on the table.'

In (15) we see that in English, nothing can intervene between the case assigner and the case assignee. In French, however, an adverb may

5. Adjacency may be involved if we consider the case endings on the noun to be the case assigners rather than the verb.

intervene, but not another argument. It is strict adjacency, then, that is important for English, and only argument adjacency that is important for French.

When these adjacency requirements appear to be violated, it is because of a rule of Heavy NP shift (or what Stowell argues is Focus NP shift) which has moved the object NP to the end of the VP. The trace of the movement is still assigned case under the conditions of adjacency.

(17) I like t very much those books that you told me to read.

(18) J'ai mis t sur la table tous les livres que tu m'as donnés.

The Case Resistance Principle explains, among other things, the positioning of S's sentence peripherally. Stowell claims that S's (or any category that contains a case-assigning feature) cannot be assigned case. Although I take issue with this proposal later (see Chapter 5), let us now assume that S' is sentence peripheral and not in an argument position.⁶

(19) a. I told Joan softly that you were there.

b. *I told Joan that you were there softly.

c. I told Joan a story softly.

d. *I told Joan softly a story.

(20) a. That she is a writer convinced me to see her.

b. *Did that she is a writer convince you to see her?

c. Her writing ability convinced me to see her.

d. Did her writing ability convince you to see her?

In (19) we see that the embedded sentence appears after the matrix adverb while the NP object must appear adjacent to the verb in order to be assigned case. In (20) we see that a sentential subject cannot undergo

6. Stowell argues against this movement as being a case of Heavy NP or Focus NP shift. The German examples below argue further against this analysis.

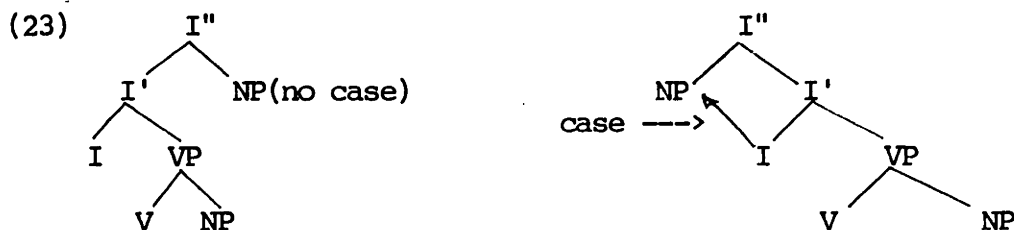
Subject-Aux Inversion, while a subject NP may.

In German, the displacement of the S' is even more obvious.

- (21) Ich habe es gesagt.
 I have it said
 'I have said it.'
- (22) Ich habe gesagt, daß sie gekommen will.
 I have said that she come want
 'I have said that she wants to come.'

In order to avoid being assigned case and thereby violating the Case Resistance Principle, the S' has moved to an A' position to the right of the verb.

Pesetsky (1982) takes Stowell's Case Adjacency Parameter and extends it to account for the position of the subject NP in English. Notice that if English is truly head-initial as its VP and PP suggest, it should be V-O-S like Malagasy. We need to explain, then, the S-V-O order of English. Pesetsky suggests that since case adjacency is relevant in English, and since the subject is assigned case by INFL, the subject must be adjacent, and therefore to the left of INFL. He assumes a structure given below.



Presumably, languages such as Malagasy would not have adjacency as a condition on case assignment otherwise we would expect them, too, to be S-V-O. In fact, it may be true that Malagasy has no adjacency condition

on case assignment, as shown in the following example.

- (24) Ividianan-dRakoto ny vary ny ankizy
 buy IN Rakoto the rice the children
 'The children were bought the rice by Rakoto.'

The verb ividianana is able to assign case to the object ny vary in spite of the intervening NP, Rakoto.⁷ Lack of an adjacency condition allows sentence initial INFL to assign case to the sentence final subject.

X' theory and headedness, lexically specified subcategorization frames, and conditions on case assignment go a long way towards the accurate description of word order. In this chapter, however, we will look at some languages that do not conform completely to these parameters.

In section 1, I will use evidence from word order changes in Chinese to argue for the existence of two additional parameters: the direction of case assignment and the direction of θ -role assignment (Travis 1983. See also Koopman 1983a, 1983b for a slightly different proposal). In this section I will be principally concerned with the constituents of the VP.

In section 2, I compare my analysis of word order in Chinese to Huang's (1982) analysis. Since the analysis he proposes is dependent on

7. I will suggest below that it is direction of predication, not case adjacency, which accounts for the placement of the subject NP in English. If this is true, then we are not forced to say that Malagasy does not have an adjacency condition on case assignment. This seems more accurate since in Malagasy, like in English and in French, PPs may not intervene between Vs and their direct objects.

binary branching, I investigate, in section 3, different notions of branching. My conclusion is that there is not need for any level of constituency between maximal projections and lexical items.

In section 4, I examine the constituents of I' in light of the parameters of section 1. I claim that case assignment and O-role assignment within I' do not mirror exactly the same relations within the VP, and I argue for another parameter, the direction of predication.

An assumption that runs through these sections is that diachronic study offers insights into parameters in the same manner in which synchronic study does. Two grammars, whether divided by time or space, may be differentiated by setting the parametric values differently.

I examine in sections 1 and 4, and in more detail in section 5, the characterization or classification of languages by word orders such as S-V-O, S-O-V, etc. In section 1, I show that a word order controversy dissolves when one allows O-V versus V-O order to be further detailed by adding other constituents to the word order specification, such as subcategorized PPs (PP1) and non-subcategorized PPs (PP2). In section 4 I show that the addition of INFL to the S constituents greatly eases the strain of accounting for the word order at the level of I'. In section 5, I directly confront the problem of typology using Steele (1978) as a springboard. The word order parameters of sections 1 and 2 provide a more restricted view of typology of d-structures. Restrictions on Move-a constrain the possible word order variations within a language. Taking languages within Steele's language sample, I look at some apparent

counterexamples and show how they, in fact, conform to the system I propose, and thereby not only confirm that system, but also provide a more enlightening analysis of the language in question.

2.1 Constituents of the Verb Phrase

In this section I use evidence from Archaic Chinese (AC) and two stages of Modern Mandarin (MM1 and MM2) to argue for two word order parameters: the direction of case assignment and the direction of θ -role assignment (see Koopman 1983a,b for a similar analysis).

Evidence comes from Archaic Chinese and Modern Mandarin as described by Li and Thompson (1973a, 1973b, 1974, 1975) and Light (1979). A controversy arises concerning the word order of Modern Mandarin: Li and Thompson (L&T) believe that Mandarin is "almost" SOV while Light believes that it is strictly SVO. Since there is disagreement as to what this final word order is after the change from AC has taken place, there is disagreement as to what change it is that has to be characterized. I first discuss the facts of Archaic Chinese and Modern Mandarin word order. I then discuss the word order of Modern Mandarin, paying particular attention to the placement of objects. L&T, in saying that Modern Mandarin is "almost SOV", are commenting on a change they see taking place. I take this as a further change beyond that described by Light. There are two changes, then, that I characterize: (i) Archaic Chinese to Modern Mandarin (AC to MM1), and (ii) Modern Mandarin to a

projected stage of Mandarin (MM1 to MM2).

2.1.1 Facts

2.1.1.1 Archaic Chinese

(from 11th century B.C. to 4th century B.C.)

VP. In Archaic Chinese (AC), objects and prepositional phrases always appear after the verb as shown in (25).

- (25) qu yue yu ci (Light, 162)
 play music prep here
 [V O PP]

There is one construction that L&T mention, however, which they claim is a relic of an earlier SOV order. This construction appears when the object is pronominal. In this instance, the object appears before the verb.

- (26) min xian you shi fu yu yi (L&T, 1973a, 208)
 people sage have ten persons I assist
 'Ten of the wisemen among the people assisted me.'
 [S O V]

Yu, 'I', appears to the left of the verb yi, 'assist', even though other objects appear to the right of the verb as shown in (25) above.

NP. NPs are all head-final in AC. According to L&T, this is another relic of an earlier SOV stage. This is typified by the fact that relative clauses, modifiers, and genitive NPs all precede the head noun.

PP. PPs are head-initial as shown in (25) and in the example below.

- (27) chu yu you gu (L&T, 1973a, 200)
 emerge from dark valley

[V [P NP]]

The generalization, then, is that Archaic Chinese has head-initial VPs and PPs (although pronominal objects appear pre-verbally), and head-final NPs.

2.1.1.2 Modern Mandarin

VP. It is in the VPs of Modern Mandarin (MM) that one can see the greatest change in word order. Most notably, most PPs now appear preverbally where in AC they appeared post-verbally.

- (28) zai zher yanzou yinyue (Light, 162)
 prep here play music
 'played music here'

- (29) cong you gu chulai (L&T, 1973a, 200)
 from dark valley emerge
 'emerge from dark valley'

[PP V]

NP. There seems to be little change, however, in the order of the constituents within NPs. Light indicates that they are still head final, i.e., the head noun is preceded by its modifiers.

PP. L&T claim that PPs now can be postpositional, a claim that I reject below. Their evidence comes from constructions such as the one given in (30).

- (30) wo zai chuang-shang shuijiao (L&T, 1973a, 204)
 I at bed on sleep
 'I sleep on the bed.'

Concerning these PPs, L&T write:

Post-positions in Modern Chinese are derived from nominals in Archaic Chinese. Like aspect markers, they carry neutral tones in speech, denoting their suffixal status. (L&T, 1973a, 204)

The difference between these postpositions and the prepositions already seen is obvious. The postpositions are nominal in nature while the prepositions are true adpositions. I discuss the importance of this distinction below.

Objects. Objects in MM deserve a special comment since they are the main cause of the controversy between Light and L&T. The controversy centers around a construction which allows the object of a verb to be placed preverbally if it is preceded by what L&T call an object marker, ba. Examples are given in (31) and (32) below.

- (31) haizi ba fan chi-diao le (L&T, 1975, 179)
 child ba food eat-down ASP
 'The child ate the food.'

- (32) haizi ba shu mai le
 child ba book buy ASP
 'The child bought the book.'

To summarize the non-controversial points of MM, PPs now appear before the verb whereas in AC they always appeared after the verb, and NPs are still head-final. The controversial points concern (i) whether the object appears before or after the verb (Ba objects appear before the verb, bare objects after the verb); and (ii) whether the PPs are prepositional or postpositional (many PPs are still prepositional, yet it

appears that there has been an influx of postpositions).

2.1.2 The Controversy

Light sums up the controversial issues as follows::

There is no question that between Old Chinese and Modern Mandarin there was a shift from standard order of SV(O)PP to SPPV(O). Nor is there any question that preposing of objects, especially between subject and verb, was less common in Old Chinese than now. The analytical questions are: how did this change come about, and what does it mean? (Light, 163)

Li and Thompson. L&T claim that MM is very close to being an SOV language. Although the change has taken two millenia to happen, they suggest that the process is now nearly complete. Their argument is as follows. If Chinese is moving from SVO to SOV, preverbal objects should become more common. Also, any distinction that held between preverbal and postverbal objects should now be encoded by something other than the object's position relative to the verb since soon only the preverbal position will be possible. Finally, since the move is to a head-final VP, we would expect head-final reflexes elsewhere in the grammar, such as placement of PPs. Evidence that L&T give for exactly these changes is that 1) the ba construction is becoming more and more common, 2) a definite versus indefinite distinction that used to hold of preverbal versus postverbal objects is being lost and replaced by the development of indefinite and definite determiners, 3) a semantic distinction between the preverbal and postverbal PPs is being lost and all PPs are appearing preverbally, and 4) postpositions begin to appear in the language.

Light. Light disagrees with L&T's suggestion and instead claims that

MM is strictly SVO. His main reason for saying this is that, though there is a strategy for preposing objects, this is not the unmarked order of constituents. He further proposes a principle to account for the fact that NPs are head-final. (I will not discuss his account here since it is not relevant to my proposal. For details, see Light, 1979.)

In the sections below, I show that the controversy is easily resolved simply by assuming a finer distinction of VP constituents than the traditional V-O, O-V. Also, L&T and Light are describing slightly different dialects or stages of Chinese that are easily distinguished through the setting of parametric values.

2.1.3 Parameters in Chinese

2.1.3.1 Archaic Chinese

In terms of parameters, AC can be described using the parameters already proposed. Speaking only of the VP (the constituents of I' will be dealt with in section 2.4), AC is head initial and has strict adjacency conditions on case assignment. There are, however, two possible problems.

NPs and VPs. As was mentioned earlier, L&T claim that there are certain facts of AC that indicate an earlier SOV order in the language. One of these relics is the head final order of the NPs. In terms of parameters, we would have to allow VPs and NPs to be able to specify separately whether they are head-initial or head-final. Perhaps [+N]

projections will have different specifications from [-N] projections.

Pronominal objects. As shown in (26), pronominal NPs appear before the verb, suggesting an OV order. Assuming, however, that these pronouns are, in fact, clitics, we would expect them to cliticize to their governor just as they do in Romance languages. In the Romance languages, clitics appear to the left of the verb even though objects appear to the right of the verb.⁸ Whatever the correct analysis for clitic placement in these languages is, we assume that such an analysis would extend to Archaic Chinese. Let us assume, then, that VPs in AC are head initial.

2.1.3.2 Modern Mandarin

It is with Modern Mandarin (MM) that our problems begin. First, let us take the stage as L&T and Light first describe it (MM1), and not the stage that L&T see the language drifting to (MM2). At this point we basically have S-PP-V-O. Looking more closely, however, we see that some PPs appear after the verb. In this section, I look at these PPs to determine first, which type of PPs appear post-verbally (PP1) as opposed to those that appear preverbally (PP2), and second, to find some historical indication as to why this might be the case. Finally, I propose a parametrical characterization of this distinction.

There are two prepositions that appear postverbally as well as preverbally: gei 'to/for' and zai 'at'. What is interesting in their

8. Semitic clitics, however, appear to the right of the verb (Borer 1981).

distribution is that with some verbs, the meaning of the preposition changes depending on whether the PP is pre-verbal or post-verbal.

- (33) ta gei wo mai le chezi le (L&T, 1975, 180)
 he for me sell asp car ASP
 'He sold a car for me.'

- (34) ta mai gei wo chezi le
 he sell to me car ASP
 'He sold a car to me.'

Generally, gei NP before a verb is benefactive while gei NP after the verb is dative.

With zai there are two distinctions. First, depending on where the PP is placed, a different question might be answered. Both (35b) and (36b) can be translated as 'Zhang-san is sleeping on the floor' but (35b) answers (35a) while (36b) answers (36a).

- (35) a. What is Zhangsan doing on the floor? (L&T, 1975, 181-182)
 b. Zhang-san zai di-shang shui
 Z. at floor-on sleep
- (36) a. Where is Zhangsan sleeping?
 b. Zhang-san shui zai di-shang
 Z. sleep at floor-on

The second distinction is with motion verbs where postverbal zai is directional while preverbal zai is locational.

- (37) Zhang-san tiao zai zhuozi-shang (L&T, 1975, 182)
 Z. jump at table-on
 'Zhang-san jumped onto the table.'
- (38) Zhang-san zai zhuozi-shang tiao
 Z. at table-on jump
 'Zhang-san is jumping (up and down) on the table.'

- (39) wo ba ta tui-dao zai shafa-shang
 I BA 3sg push-fall at sofa-on
 'I pushed him/her onto the sofa.'
- (40) wo zai shafa-shang ba ta tui-dao le
 I at sofa-on BA 3sg push-fall ASP
 'On the sofa, I pushed him/her down.'

Chao's (1968) account is a bit different from L&T's. Chao analyzes verbs with double objects as being either V-V NP NP or V NP V NP, and analyzes post-verbal PPs as V-V NP. The relevant examples are given below⁹.

- (41) a. song-geei ta i-fell lii V-V NP NP (pp. 316-317)
 send-to him a gift ASP
- b. song i-fell lii geei ta V NP V NP
 sent a gift ASP give him
- (42) a. shuey.tzay chwang.shanq V-V NP (p. 353)
 sleep-at bed-on
 'sleep in bed'
- b. tzay chwang.shanq shuey V NP V
 at bed-on sleep
 'sleep on the bed'

In (41a) and (42a), geei and tzay (gei and zai) are cliticized to the verb and in (41b) and (42b), they appear as independent verbs.

I will assume L&T's analysis in which the shift from co-verb to preposition is complete (see below for details), and that gei and zai are prepositions. This would explain their apparent ambiguous character between clitic and verb. When adjacent to a verb, they may reanalyze as in English (Weinberg and Hornstein 1981) while still being able to appear

9. The orthography used in Chao differs slightly from that used by Light and L&T.

free of the verb in other constructions.

We have seen three distinctions between pre-verbal and post-verbal PPs.

1) Preverbal PPs with gei are benefactive while the same PPs are dative when post-verbal, 2) preverbal PPs are not suitable answers to questions while post-verbal PPs are, and 3) preverbal PPs are locational while postverbal PPs are directional.

What these distinctions have in common is that part of the meaning of postverbal prepositions is derived from the verb, whereas the meaning of the preverbal prepositions is independent of the verb. Benefactives may be added to any verb, while datives can only be part of the argument structure of certain verbs.

The distinction of locative PP versus directional PP is the same. Locational PPs may be found with any verb while directional PPs require motion verbs. In German, as in other languages such as Russian and Latin, this difference is expressed in the prepositions which can take either accusative (if the PP is directional) or dative (if the PP is locational).

(43) Sie geht ins Geschäft.
 she goes in-the(acc.) store
 'She goes into the store.'

(44) Sie arbeitet im Geschäft
 she works in-the(dat.) store
 'She works in the store.'

The conclusion, then, is that directional PPs are subcategorized by the V while locational PPs, generally, are not.

The distinction between (35) and (36) is more difficult to characterize. Basically, what I claim for the examples already discussed is that pre-verbal PPs are not subcategorized for while post-verbal PPs are. In the case of (35) and (36), I make the same claim. In English, if a verb subcategorizes for a PP, it is not possible to pronominalize¹⁰ the V in the form of do something leaving behind the PP. If the PP is not part of the complement structure, it may occur with the pro-form.

- (45) Bob is talking about Chris.
 *Bob is doing something about Chris.
 *What is Bob doing about Chris?
- (46) Bob is lounging about the house.
 Bob is doing something about the house.
 What is Bob doing about the house?
- (47) Bob is jumping onto the table.
 *Bob is doing something onto the table.
 *What is Bob doing onto the table?
- (48) Bob is jumping on the table.
 Bob is doing something on the table.
 What is Bob doing on the table?

I have said above that locational PPs are not subcategorized. More correctly, they are not subcategorized for by motion verbs. With stative verbs, however, they may be part of the argument structure. This is obvious in the facts below.

- (49) Into the city drove three carriages.
- (50) *In the city drove three carriages.
- (51) In the city stood three large towers.

The claim is that only PP arguments of the verb can appear in the

10. I will use the term 'pronominalize' in spite of the fact that the pro-form is of the category [+V].

inversion structure above. Chinese has a similar inverted construction, and again, locational PPs may appear preverbally with stative verbs.

- (52) *chuangshang tangzhe bingren*
 bed on lie patient
 'On the bed lies the patient.'

The positioning of the PPs in (35) and (36) may have to do with the position where new information, or focused elements are found¹¹. But this distinction can only be achieved in cases where the PP may be ambiguous between being a complement or not, as is the case with locative PPs.

Basically, I propose that, in all of these cases, post-verbal PPs in Chinese add to the verb's meaning, i.e., are part of the verb's argument structure and get their O-role from the verb.

Li (1981) writes:

In conclusion, we observe that the locative phrase may occur in either the preverbal position or the postverbal position. In the preverbal position, it has a general locational meaning and is essentially unconstrained with respect to the verbs with which it can occur: accordingly, the preverbal locative phrase is called zhuangyu 'adverbial' by Chinese grammarians.

Post verbal locative phrases, on the other hand, are restricted to certain types of verbs, just as direct objects are, and are designated by the term buyu, 'complement', which is also used for object, in traditional Chinese grammar. This distinction between these two grammatical terms captures the difference between the relatively free preverbal locative phrase and the more tightly restricted postverbal locative phrase in terms of semantic "intimacy". (p. 409)

It is interesting to note that AC had an all-purpose postverbal

11. This was suggested to me by Luigi Rizzi.

preposition yu which was used to indicate location, goal, dative, source, object, instrument, agentive, and comparative (see Huang 1978, Lin 1981). It has subsequently been replaced by different preverbal prepositions, each with its own function. This suggests that the postverbal preposition was used as a dummy case-marker since the verb did not assign case and the NP was given its θ -role by the verb. Now, however, in the case of the preverbal prepositional object NPs, θ -roles are assigned by the prepositions themselves.

The change from verb to co-verb to preposition has received a lot of attention (L&T, 1973b, 1974; Huang, 1978). Generally, serial verbs in constructions such as in (53) have been reanalyzed as prepositions as in constructions like (54).

(53) S V1 O V2 O

(54) S P NP V2 O

For example, the preposition zai 'at' derives from the verb meaning 'to be at'. The VP given in (28) would then have been translated as 'was here and played music' or 'was here to play music' whereas now the translation is 'played music here'. Whether or not the second verb was co-ordinate or sub-ordinate to the first verb is controversial (see L&T, 1973b). L&T give an example where the meaning is still ambiguous between that of a verb and a preposition.

- (55) ta na chanzi tiao le yige wu (L&T, 1974, 269)
 she take/with fan dance asp a dance
 (i) She did a dance with a fan. (prep)
 (ii) She took a fan and did a dance. (co-verb)

The original (co-verb) structure can be analyzed as either (56) or (57). (56) represents a control structure where the second verb is subordinate to the first verb. (57) illustrates a coordinate structure.

(56) S_i V1 O1 [PRO_i V2 O2] (subordinate)

(57) S [[V1 O1] [V2 O2]] (co-ordinate)

The final structure after the historical reanalysis is prepositional, as in (58).

(58) S PP V2 O2

Looking at these structures, it is easy to see why the θ -role of the NP within the PP is independent of the second verb. To say that the θ -role is dependent on this verb would be suggesting that in AC, V2 assigned a θ -role to O1. In the structures represented in (56) and (57), this is clearly impossible since V2 is not in a position to govern O1. In either of these analyses of the structure, O1 is assigned its θ -role by V1 not by V2. It is not unreasonable, then, to assume that when this structure is reanalyzed as PP V, the NP within the PP is assigned its θ -role by the P and not by the following V. As for the post-verbal PPs, we know for both historical and structural evidence that it is possible for the verb to be the θ -role assigner.

Let us say, then, that the difference between postverbal and preverbal PPs is that the preverbal PPs are thematically independent of the verb, i.e., do not get θ -marking by the V. The NP within the PP is assigned its θ -role by the preposition. As shown above, the post-verbal PPs are not independent of the V. They are arguments of the verb and get

their Θ -marking, at least in part, from the verb. What does this mean in terms of word order change and parameters? We have said that AC was head-initial. Is this still true of MM?

We will call PPs that are dependent on the V for Θ -marking PPls, and those PPs that are independent of the V, i.e., those where the P itself assigns the Θ -role, PP2s. Assuming that PPls get Θ -marking from the verb, while PP2s get Θ -marking independently of the verb (from the preposition itself), a change from S-V-O-PPl-PP2 to S-PP2-V-O-PPl means that the PP that is not dependent on the verb is now to the verb's left. Suppose we say that MM is head final, thus accounting for the fact that those constituents that are not dependent on V are found preverbally. First we want independent evidence and motivation for this change from head-initial to head-final, and then we must account for the constituents that do appear post-verbally.

Independent evidence for supposing that MM is head-final can be found in the position of aspect if we assume that aspect is realized on the INFL node. Aspect appears to the right of the verb ((33), (34), (55)) which would be expected if MM is head-final. (There are still questions to be answered concerning exactly where aspect is placed after the verb, but this requires more study.)

Motivation for our claim can be found in the structure of NPs. We suggest that since NPs are already head final in AC, the grammar will be simpler if VPs are also head final.

Now, what of the post-verbal constituents? We propose that the

direction of θ -role assignment is another parameter which determines word order in languages. We can then claim that while MML is head final, it assigns θ -roles to the right. If we look at the two categories that assign θ -roles, prepositions and verbs, we see that both of them appear to the left of the NPs to which they assign θ -roles. We will assume that within NPs, θ -roles are assigned by the preposition and not by the head N.

It may, at first, look odd that the ba NP phrase appears to the left of the verb. We have seen above that only non-arguments of the verb appear to the verb's left. Yet in the case of the ba construction, the NP argument which appears to the right of the V without ba, now appears to the left of the verb with ba.

A look at passive constructions in Chinese, however, gives us a clue as to what is happening in these cases. Chinese has no verbal passive morphology. Passive is created, instead, by having the d-structure subject in a bei NP ('by NP') construction.

- (59) ta ba neizhi ma qi de hen lei
 he BA that horse ride till very tired
 'He rode that horse till it got very tired.'
- (60) Neizhi ma bei ta qi de hen lei
 that horse by him ride till very tired
 'That horse was ridden by him till it got very tired.'

Again we have a case where it appears that an argument of the verb appears to its left. I propose, however, that prepositions like ba and

12. There is evidence that perhaps passive formation in general consists of the absorption of the external θ -role rather than the absorption of case. See Chapter 5.

bei serve to absorb a θ -role of the verb¹²; bei absorbs the agent θ -role, and ba absorbs the patient θ -role. Thus these prepositions now assign the θ -role independently of the verb, and the PP appears to the left of the verb.

It is interesting that absorption of θ -roles only happens to agents and patients. It appears to be restricted to those arguments that do not rely on the compositional θ -role assignment of a verb and a preposition. This process, then, can only subsume the θ -assigning properties of the V, and not the joint θ -role assigning properties of a verb and a preposition.

In summary, we have described a case where the word order of a language may be determined by setting the direction of θ -marking independently of the head-initial/head-final parameter. This entails viewing the head-initial/final parameter as a default specification of direction; i.e., if there is a constituent which does not fall within the domain of an already specified parameter, its placement is determined by the headedness parameter. Kiparsky's Elsewhere Condition (1973) will insure that the direction of θ -marking will affect the d-structure before the head-initial/final parameter since the former acts on a subset of the latter. Complements of the verb, then, will appear to the right of the verb in order to be assigned θ -roles. All of the constituents that may be assigned θ -roles in another way, as far as the verb is concerned, appear according to the default condition of head-final. Objects have a choice of either being assigned a θ -role directly by the verb, in which case they appear to its right, or by the object marker ba in a pre-verbal position.

2.1.4 Li & Thompson's Speculations

The evidence that L&T use to claim that MM is becoming an S-O-V language is actually an indication of a further parametric change.

2.1.4.1 Preposed Objects

Let us first look at the preposing of objects. Given what was said above about θ -role assignment, we have to assume that preposed objects get their θ -role from the ba that appears to their left. Suppose now that the independent θ -role assignment properties of ba are lost, and that the verb, at least compositionally, also assigns the θ -role to the object of ba. This means that the θ -role is now being assigned to the left. If this is the case, then we also expect to find datives and other PP arguments to the left of the verb. This is exactly what L&T describe as an indication of the move to S-O-V. If this change is as L&T describe it, then datives should be found preverbally (as they are) and all semantic distinction of preverbal versus postverbal NPs should be lost (as they suggest is happening). Why, then, as Light claims, is the unmarked order still S-V-O, and why is the preverbal object always in a ba construction?

2.1.4.2 Case Parameter

I propose here another parameter which accounts for this synchronic description. This parameter is used to describe a language which has every element of the verb phrase preverbally, except for the "bare"

object, which appears post-verbally. Also, any time the object appears preverbally, it appears after an object marker. Obviously the verb can assign θ -roles leftward since θ -marked PPs can appear on the left. Let us say, then, that MM2 is head-final but assigns case rightward. This accounts for the fact that all the complements of the verb appear to its left except for the element which requires case, i.e., the object. (Other examples of case assignment will be discussed below.) The only way of not having the object on the right of the verb is to put the dummy case marker ba in front of it.

An interesting bit of confirmation for this conclusion is found in dative constructions. Li's grammar gives three different classes of verbs which take dative NPs. Some verbs may take either the NP gei NP or the NP NP construction, some must take the NP gei NP construction, and some must take the NP NP construction. Examples, taken from Li (pp.374-379), are given below.

(61) gei obligatory:

- a. ta dai-le yi bao tang gei Zhangsan
he bring-ASP one bag candy to Zhangsan
'S/he brought a bag of candy to Zhangsan.'
- b. ta dai gei Zhangsan yi bao tang
- c. *ta dai-le Zhangsan yi bao tang

(62) gei optional:

- a. wo song-le yi ping jiu gei ta
I give-ASP one bottle wine to 3sg
'I gave a bottle of wine to him/her.'
- b. wo song gei ta yi ping jiu
- c. wo song-le ta yi ping jiu

(63) gei forbidden:

- a. *wo wen-le ji-ge wenti gei ta
 I ask-ASP several-CL problem to 3sg
 'I asked him/her several questions.'
- b. *wo wen gei ta ji-ge wenti
- c. wo wen-le ta ji-ge wenti

If the shift of datives to preverbal position can be accounted for through this change of parameters, we would expect the NP NP constructions to remain, but the gei NP phrases to be found preverbally. Li writes:

the indirect object marked by gei has begun to appear in the preverbal position ... the appearance of the indirect object in the preverbal position, however, is confined to only a few verbs .. that is, to those groups for which gei is either obligatory or optional. (pp. 386-387)

This is just the result that we would expect. Those NPs which are assigned case independently of the verb, i.e., by a preposition, may appear preverbally, while in the double object constructions, NP NP, both must appear postverbally in order to be assigned case.

What of other categories? NPs are still head final as one would expect since N's do not assign case¹³. Since prepositions are case assigners, PPs remain head-initial.

The "postpositions" that L&T discuss crucially do not assign case. In fact, they are derived from NPs and therefore are expected to be head final.

13. But see cases of case-assigning adjectives discussed in section 2.2.1.1.

- (63) wo zai chuang-shang shuijiao (L&T, 1973a, 204)
 I at bed on sleep
 'I sleep on the bed.'
- (64) Zhang-san tiao zai zhuozi-shang (L&T, 1975, 182)
 Z. jump at table-on
 'Zhang-san jumped onto the table.'
- (65) Zhang-san zai zhuozi-shang tiao
 Z. at table-on jump
 'Zhang-san is jumping (up and down) on the table.'

In the examples given in (63), (64) and (65), we can see that the postposition shang acts as a noun compound which is assigned case by a true case assigner, the preposition zai. Basically, -shang simply makes a place noun out of a common noun¹⁴.

2.1.5 Conclusion

We can see that confusion can arise when languages are characterized simply as either SVO or SOV. If, however, we talk of languages as being S-V-O-PP1-PP2 or S-PP2-V-O-PP1 or S-PP2-PP1-V-O or S-PP2-PP1-O-V, such problems might be avoided. Light writes:

...as a careful reading of Greenberg's famous essay on word order universals (1963) will indicate, except for pure or nearly pure types, word order differences are not discrete but continuous. On the line between SOV and SVO languages, there are many points at which one will find a great many - or most - of the languages of the world. If one looks only at the ordering of subject, verb, and object and universal word order correlates, the discovery of a word order continuum will not be very illuminating. But if one takes into account markedness, relative meaningfulness of word orders, topic prominence versus subject prominence, as well as the complex role of affixation, it is likely that this continuum will be multivariable and quite illuminating in pointing to

14. Thanks to Wayne O'Neil for pointing this out to me.

differences and similarities among the world's languages. Or, in short, the statement that a language is SOV or SVO or OSV is by itself a nearly meaningless statement. (Light,175)

I propose that one should define languages as being XP head-initial/final, YP head-initial/final (where X and Y are variables that range over all categories), leftward/rightward θ -marking, leftward/rightward casemarking. This way the order of all the VP internal constituents can be characterized. On a feature system, PP1, PP2, and O would be as in (66).

(66)	PP1	PP2	O	??
O-marking	+	-	+	-
Case-marking	-	-	+	+

This means, for example, that PP1s are θ -marked but not case-marked by the verb¹⁵. The divisions follow from other principles. That PPs are never case-marked by the verb, and objects are always case-marked by the verb follows from case theory. That objects are always θ -marked by the verb follows from the θ -criterion and the Projection Principle. The hole in this diagram is [- θ -marking, +case-marking]. This is not surprising since this feature grouping appears only in the very marked configuration of Exceptional Case Marking and never between a verb and a member of the same S.

We conclude, then, that the change that Light describes involves a

15. Object NPs of unaccusative and passive verbs will also fall into this category, since they are assigned a θ -role by the verb, but are not assigned case. These, however, will pattern differently from PP1s since, as NPs, they need to be case-marked. Different ways of getting case-marking will be discussed below: for Chinese, section 2.5.2.2, for German, English, French, Irish, Chapter 5.

shifting of more than just objects. It includes the movement of PP1s and PP2s. The shifting of these elements is best described by the resetting of the parameters mentioned above. With these parameters, changes are better described and restricted. L&T seem puzzled that the shift from S-V-O to S-O-V is taking so long (two millenia) especially since, in their view, the language has been in an unstable S-O-V/S-V-O condition the whole time. This view also implies that there exist goals in language change that may take generations of grammars to achieve. It is impossible to incorporate such a view of language into current theory since no grammar has access to another grammar. In terms of parameters, however, there is nothing unstable. Chinese is not between stages, but rather at a specific stable point.

2.1.6 Postscript

Languages from the Niger-Congo offer possible evidence for a mirror image of the changes described above. There is disagreement as to what the word order of Proto-Niger-Congo was (Givon 1975, Heine 1980, Hyman 1975), but the variation in the present day languages is still best described using the parameters of θ -role assignment and case. Givon describes languages such as Kpelle. He writes that this language has retained some S-O-V characteristics (he believes that Proto-Niger-Congo was S-O-V) since objects are preverbal. However, he says that S-V-O orders are also evident since locative, instrumental, manner, benefactive, and dative phrases follow the verb. It seems strange to say that the language, therefore, is both S-O-V and S-V-O, since the object never

appears after the verb. Only PPs appear after the verb. In my terms, this is not a variation of S-O-V versus S-V-O, but a case of a language which assigns case to the left but has a default head-initial parameter. Where MM2 is PP2-PP1-V-O, Kpelle is O-V-PP1-PP2. (See Koopman 1983b for a similar and more detailed analysis of Mahou, a Northern Mande language.)

Hyman adds to this description of Kpelle the fact that "there is good evidence that datives once preceded the verb" (Hyman, 1975, 128). This suggests that at one point the order of the constituents of the VP in Kpelle used to be PP1-O-V-PP2. At this stage, then, we would characterize the language as still having the head final parameter, but with leftward O-role assignment. Where MM1 is PP2-V-O-PP1, this earlier form of Kpelle was PP1-O-V-PP2. Finally, Ijò, a language in the same family, is strictly S-O-V, i.e., strictly head-final.

The important thing to understand is that a language like Kpelle is no less "pure" (though perhaps more marked) in its word order, than is Ijò. Its "variation" between S-V-O and S-O-V is simply a result of diverse parameters.

2.2 Huang's Analysis

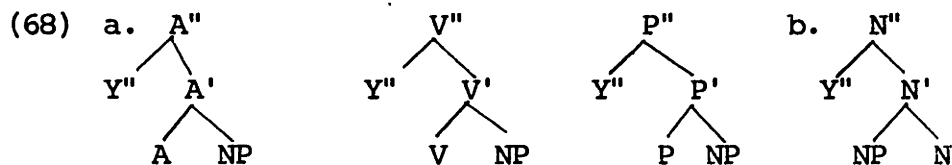
The type of Chinese that Huang (1982) describes most closely resembles MM2. His discussion, however, is much more detailed. I would like to argue here against his proposed analysis, or more correctly, take his analysis and redo it in terms of the proposed parameters. He, in

fact, suggests just such a possibility (fn. 10, p. 93). First I will discuss his solution to the word order problem. Then I will look at his data in terms of the parameter of direction of case assignment, bringing up problems and suggesting solutions.

Huang proposes a PF filter which states:

- (67) a. $[_X^n \ X^{n-1} \ YP^*]$ iff $n=1$ and $X\#N$ (p.41)
 b. $[_X^n \ YP^* \ X^{n-1}]$ otherwise

Simply put, (67) states that Chinese is a head final language except for the lowest levels of A'' , V'' , and P'' s, yielding representation like the following.



2.2.1 Problems for the Case Analysis

2.2.1.1 Adjectives

We have already discussed the instances of VPs and PPs, and we have shown that the question of word order in these examples reduces to the direction of case. However, this solution does not obviously extend to APs. We know that in English, adjectives do not assign case. This is clear in the following examples.

- (69) a. *proud John
 a'. proud of John
 b. appreciate John

- b'.*appreciative John
 b". appreciative of John

The dummy preposition of must be inserted before an adjectival complement, otherwise the NP will not be assigned case and the Case Filter will be violated. In the (b) examples we can see that the verb assigns case, but the adjectival form of the verb does not and of must be inserted to save the construction. (See Emonds (to appear) for a different analysis of these facts.)

If this is the same for Chinese, our analysis for the word order will not work. There would be no reason for adjectival complements to be post-head if they do not require case from the adjective. As it turns out, though, adjectives do assign case in Chinese.

- (70) ta hen gaoxing zhejian shi
 he very happy this matter
 'He is very happy about this matter.' (p. 27)

- (71) ta dui zhejian shi hen gaoxing
 he towards this matter very happy
 'He is very happy about this matter.'

In (70), the complement of the adjective appears after the adjective and requires no preposition, while in (71) we can see that if the complement appears before the adjective, a preposition is required. These examples not only show us that adjectives can assign case in Chinese; they also confirm our earlier proposal for VPs and PPs, i.e., that case can only be assigned to the right.

2.2.1.2 PF Adjacency

Huang's X' template acts as a filter of PF. He gives many good arguments why this must be the case; that is, why it must apply after movement rules. In cases where the object moves from the original post-verbal position of Huang's analysis (as in "ba transformations" (72a), passives (72b), topicalization (72c), and object preposing (72d)) or does not appear (as in intransitives), another constituent may be found post-verbally. These other constituents may be subjects¹⁶ (73a), extent phrases (73b), double objects (73c), result phrases (73d), and predicative phrases (73e).

- (72) a. ta ba Lisi pian-le
 he BA L. cheated
 'He cheated Lisi.'
- b. Neizhi ma bei ta qi de hen lei
 that horse by he ride DE very tired
 'That horse was ridden by him till it got very tired.'
- c. Neizhi ma, ta qi de hen lei
 that horse he rode DE very tired
 'That horse, he rode it until he got very tired.'
- d. Ta neizhi ma qi de hen lei¹⁷
 he that horse rode DE very tired
 'He rode that horse until he got very tired.'

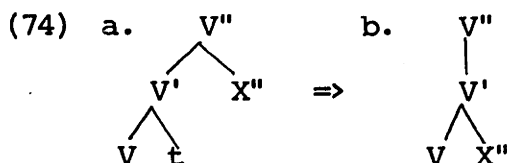
16. This will occur in intransitives. We will discuss this in detail below.

17. Object preposing must be a scrambling rule such as those described in Saito (1983a). Since the object is in an A' position, it need not be assigned case.

- (73) a. xia-guo le yu le (p. 46)
 fall-ASP ASP rain ASP
 'It has rained.'
- b. ta ba neizhi ma qi de hen lei (p. 53)
 he BA that horse ride DE very tired
 'He rode that horse until it got very tired.'
- c. ta ba wuge pingguo chidiao-le liangge (p. 42)
 he BA five apple eat-ASP two
 'Of the five apples, he ate two.'
- d. ta ba zhimen ti-le yige dong (p. 42)
 he BA paper-door kick-ASP one hole
 'He kicked a hole in the paper-door.'
- e. women ba ta dang shagua
 we BA he treat-as fool
 'We regard him as a fool.'

This raises questions for our analysis. First, why can extent phrases appear post-verbally at all? One would not suppose that they need case. Secondly, why can they only appear if no object is present post-verbally at s-structure?

Huang accounts for this by having a restructuring rule which allows a structure like (a) at s-structure to be reanalyzed as (b) at PF.



Our analysis will not allow us this solution since X'' may only appear to the right if it is assigned case by the verb. Unless we can show that

extent phrases are assigned case by the V, we cannot account for their post-verbal position. In fact, there is evidence from English that extent phrases may get case from the verb (thanks to Beth Levin for this point). The relevant examples are given below.

- (75) a. I read a book before going to bed.
 b. I read an hour before going to bed.
 c. *I read $\left\{ \begin{array}{l} \text{an hour a book} \\ \text{a book an hour} \end{array} \right\}$ before going to bed.
 d. I read a book for an hour before going to bed.

It seems in these cases that read assigns case to an hour. If the verb also takes a direct object, then the case is assigned to the direct object and the extent phrase must be assigned case by a preposition.

In Chinese, not only can the verb assign case to the extent phrase, it seems that it must assign case to the extent phrase, unlike the English example given where the preposition for may be used to assign case to the extent phrase. The direct object, then, must get case by some other means. There are three ways that this may happen. (1) It may move to subject position where it will be assigned nominative case (there is no passive verbal morphology in Chinese) as in (72b). (2) It may be assigned case by ba, as in (73b). (3) The verb may be reduplicated with one verb assigning case to the direct object, and the second verb assigning case to the extent phrase, as shown below.

- (76) wo qi ma qi de hen lei (Huang, 1982 p. 47)
 I ride horse ride till very tired
 'I rode the horse until I got very tired.'

Notice that we are assuming that objects are base generated

pre-verbally. Only the element which is case marked by the verb, which in these instances is the extent phrase, appears post-verbally.

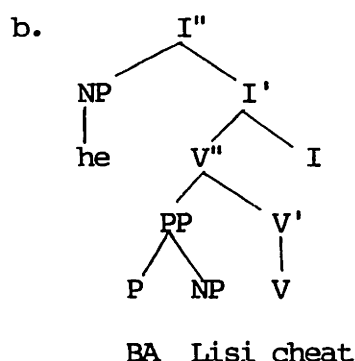
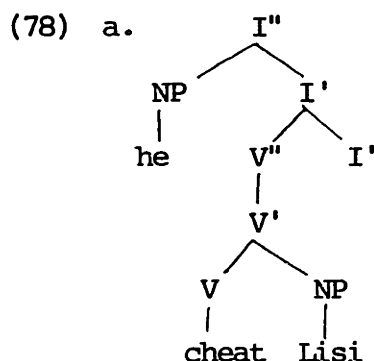
2.2.2 Problems for Huang's Analysis

What are the differences between the two proposals, then, or are they only notational variants? The question reduces to whether or not branching exactly mirrors case assignment. We already see one reason why they are not exactly the same. NPs, in not assigning case, are head final. While Huang needs to stipulate the split between N's and the other categories, we need only state that As, Vs, and Ps assign case.

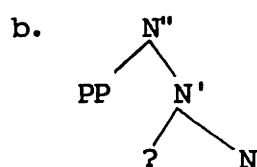
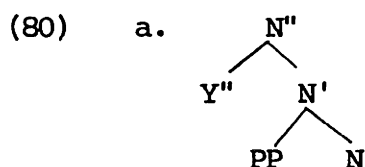
Another distinction is that Huang is forced to have different branching properties for NP and PP complements of a verb or adjective. There are, then, two different levels for subcategorized constituents. If the constituent is an NP, it is a daughter of V' and sister of V. If the constituent is a PP, it is a daughter of V'', and sister to V'. I see two problems with this.

The first is that parallelism is lost both within a category and cross-categorically. Within a category, the post-head complement would be sister to V while the same complement, but in a pre-head position, would be sister of V'.

- | | | | | |
|------|----|--|----|--|
| (77) | a. | ta pian-le Lisi
he cheat-ASP L.
'He cheated Lisi.' | b. | ta ba Lisi pian-le
he BA L. cheat-ASP
'He cheated Lisi.' |
|------|----|--|----|--|

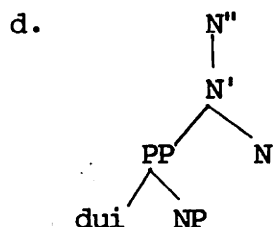
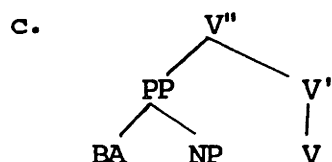
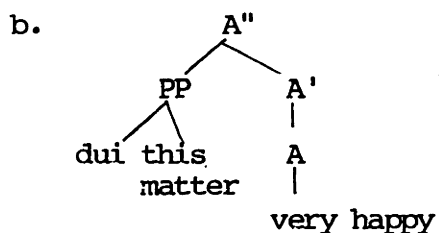
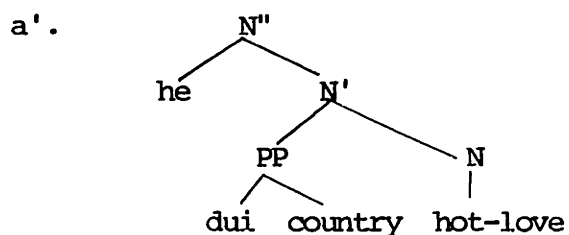


Cross-categorially, the generalization again would be lost. The pre-head complements of nouns will always be prepositional phrases (or S's) since the noun cannot assign case. This prepositional phrase can either be a sister to N ((79a), or a sister to N' ((80b).



I will assume that these PPs will be sister of N (as in (a)), even though they are prepositional phrases since this at least captures the generalization that they are complements of the head. Also if these PPs are not sisters to N, it is hard to imagine what constituents would ever appear as sister to the head. If, however, we assume that dui PPs in NPs (illustrated below) are sisters of N^0 , dui type PPs would be on one level in VPs and APs, and another level in NPs, even though, in both cases, they are subcategorized complements.

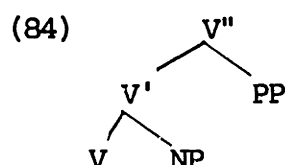
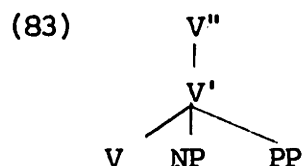
- (81) a. ta dui guojia de re-ai
 he towards country DE hot-love
 'his enthusiastic love of country'



There is another problem that could arise when NPs and PPs are generated on different levels. We want direct object NPs to c-command the PP complements of a verb in order to get the binding facts given below.

- (82) a. *I told John_i about him_i.
 b. I told John_i about himself_i.
 c. *I sold the slave_i to him_i.
 d. I sold the slave_i to himself_i.

Assuming Reinhart's (1976) definition of c-command, or Chomsky (1981), we must represent the relationship between the direct object and the PP as in (83) below, rather than as in (84).



Huang relies crucially on binary branching for his account. Assuming Reinhart's or Chomsky's notion of c-command, however, it appears that binary branching is not correct since direct objects, then, will not c-command complement PPs.

This raises the complicated issue of what notion of branching we need, which raises the further question of what definition of c-command we need. I propose in the following section that, not only is binary branching an unnecessary and even undesirable proliferation of nodes, but that only two levels, X^{\max} and X^O , are required.

2.3 Branching

In this section we investigate the consequences of maximally articulated types of branching systems versus minimally articulated types

of branching systems. I will claim that with the development of case theory and θ -theory, many facts that have been explained through branching may now be explained through these theories. Once these facts have been factored out of the structural representation of strings, branching may be simplified to represent only those constituents which are necessary for operations which apply to phrase structures, i.e. movement, pronominalization, and co-ordination.

Jackendoff proposes a triple bar level for every category - an X' level which contains X^0 and its functional arguments, an X'' category that contains X' , X' specifiers, and restrictive modifiers, and an X''' category with X'' , X'' specifiers, and non-restrictive modifiers. Huang (and Kayne 1981 for different reasons) proposes binary branching so that each additional constituent within a maximal projection will add a different level of branching (See also Hoji 1982 for Japanese). We have argued above against binary branching, but what of Jackendoff's proposal?

Let us first look at what generalization may be captured by this specification of branching¹⁸. Jackendoff shows that ordering of non-heads can follow if we assume that complements appear within the X' level and adjuncts within the X'' level. We would, then, not expect adjuncts to appear between the head of a category and that head's complements.

The second reflex we would expect is that constituents, whether they

18. As in the first part of this chapter, I leave specifiers aside. Perhaps this obscures the major clue to the problem, but for the time being I assume that this is not the case.

are X'' or X' could be treated as discrete units for purposes of Affect-a, such as movement, deletion, pronominalization, and co-ordination.

2.3.1 Ordering

As far as ordering is concerned, Jackendoff's predictions are borne out. Adjuncts do not appear between a head and its complements.

(85) a. Mary decided on it in her early teens.

b. *Mary decided in her early teens on it.

(86) a. the king of France from England

b. *the king from England of France

In fact, ordering in many languages is even stricter than the two different levels within the VP (V' and V'') would imply. The generalization is that, within the VP, the order is object first, then other complements, and finally the adjuncts, as illustrated below.

(87) Verb Object PP-Complements Adjuncts

We have argued that, unlike Huang's binary branching analysis, all complements must be at the same level of branching. This means, then, that the ordering of the object versus the PP-complements must follow from something other than branching. The answer to this problem is obvious. Since the object is dependent on the verb for case, it must appear adjacent to the verb. PP adjuncts, on the other hand, have no such case requirement, and therefore no such adjacency requirement. Evidence is found in VPs whose internal arguments are all contained within PPs. Here,

since none of the arguments is dependent on the verb for case, order is free.¹⁹

- (88) a. I talked to Michael about the book.
 b. I talked about the book to Michael.
- (89) a. Who did you talk to t about the book?
 b. Who did you talk about the book to t?
- (90) a. What did you talk to Michael about t?
 b. What did you talk about t to Michael?

The discussion above has shown that a relationship between a head and a maximal projection may predict the ordering of the maximal projection relative to others that do not enter into a similar relationship with the head. In this instance, the ordering follows not from a branching configuration but from this relationship. The example above uses the relationship of case assignment, and it opens up the question of whether there are other relationships that can predict the relative ordering of constituents. I propose that the assignment of θ -roles is also conditioned by adjacency. Obviously two arguments cannot be adjacent to a verb. I suggest instead that there exist certain domains and that these domains cannot be interrupted by elements from outside of them. There is a case domain and a θ -role or complement domain.

- (91) a. Deborah [bought a book] yesterday. CASE DOMAIN
 b. *Deborah bought yesterday a book.
- (92) a. Deborah [put a book on the table] yesterday. COMPLEMENT DOMAIN
 *Deborah put a book yesterday on the table.

19. I am assuming in these examples that movement of a VP constituent to a VP-peripheral position is always possible for the purpose of focusing, but that extraction, then, is not possible. The fact that extraction is possible in the examples given indicates that all of the constituents are in possible d-structure positions and have not undergone movement.

- (93) a. Deborah [put a book under the table] quickly.
 b. Deborah put a book quickly under the table.
 c. What did Deborah put the book under quickly?
 d. *What did Deborah put the book quickly under?

(91b) is worse than (92b) because it violates both case adjacency and complement adjacency. In (93), we see that the position of the VP adverb quickly is fairly free; however, the extraction facts of (93b) and (93c) indicate a difference in the PP depending on whether or not it is in the complement domain. Extraction is possible only if it is within the complement domain of the verb, suggesting that in (93b) the PP has been moved and adjoined to the VP.

Let us tentatively define this as a condition on domain adjacency as below.

(94) Domain Adjacency Condition (DAC) (tentative):

If a node X is in a direct relation R with a node W, where R involves sisterhood, if there is another node Y such that X does not enter into R with Y, then

*[... X ... Y ... W ...]

Direct relations are θ -role assignment (complementation) and case assignment.

The following example raises a problem for the DAC.

- (95) Joy considers Dean silly.

Considers takes the predicate silly as its complement which I have claimed is a direct relation. However, Dean is not a complement of consider. I will argue in Chapter 4 that a subject NP adjacent to its predicate is a complement of that predicate. This means that Dean is a complement of silly. If we revise the definition of the Domain Adjacency

Condition given above, we will correctly predict the grammaticality of (95).

(96) Domain Adjacency Condition (DAC) (revised):

Given a direct relation R between a node W and a node X, where R involves sisterhood, if there is another node Y that does not enter into R with either W or X, then

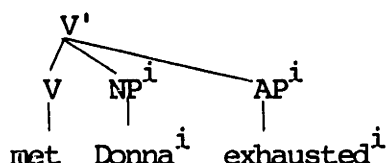
*[... X ... Y ... W ...]

Direct relations are θ -role assignment (complementation) and case assignment.

Since the relation of complementation holds between consider and silly, and it also holds between Dean and silly, Dean may appear between consider and silly.

If ordering can be predicted with this notion of domains, adjuncts may now be at the same branching level as complements. This conclusion has advantages within Rothstein's notion of predication, which specifies that predication is a relation between mutually c-commanding constituents. Given Reinhart's (and Chomsky 1981) definition of c-command, only sisters are in a mutual c-command relationship. If we assume, as discussed in Chapter 1, that adjuncts are predicated of complements, then they must be sisters to these complements and therefore on the same branching level, as illustrated below.

(97) Teresa met Donna exhausted.



2.3.2 Constituency

If all the recursive members of a maximal projection are sisters, i.e. every maximal projection is only an X^1 , how does our proposed structure hold up under other arguments for a more hierarchical branching system? I now discuss the cases of Move-a, pronominalize-a, and conjoin-a, where a is a constituent other than X^{\max} or X^0 .

2.3.2.1 Move-a

Rouveret & Vergnaud (1980) have argued for a case of Move-a where a is not V^{\max} or V^0 , but V' . This movement rule is used to account for the array of facts evidenced in French causative constructions. Their rule is given in (98) below.

(98) VP Preposing: (p.130)

Chomsky-adjoin $*V$ to S, where $*V$ is some projection of category V.

A footnote explains that the A-over-A condition "does not apply when the analyzed element in the string corresponds to a category in the structural description of the rule that is specified for a variable number of bars" (p. 130). Below are examples from R&V where different bar-levels have been moved.

(99) V: On a fait sortir Jeanne du bureau.
 one has made go-out Jeanne from-the office
 'We make Jeanne go out of the office.'

d-structure: On a fait [Jeanne sortir du bureau]

s-structure: On a fait [_V sortir]_i [Jeanne t_i du bureau]

- (100) V': Anne fera lire ce livre à Claire.
 Anne will-make read this book to Claire
 'Anne will make Claire read this book.'

d-structure: Anne fera [Claire lire ce livre]
 s-structure: Anne fera [_V lire ce livre]_i [à Claire t_i]²⁰

If this analysis is correct and V' is subject to Move-a, this is an argument for a structural node that is neither X^{max} nor X^O. However, it is not so clear that this is the correct analysis of the construction. First, as R&V point out, V^O can move only subject to certain constraints. An example of a structure which is ruled out is given below.

- (101) *Anne fera lire (a) Claire ce livre.

If the verb is transitive, the direct object must move with the verb. This follows from R&V's filter (83) given below in (102).

- (102) *NP, unless (a) NP is governed by Tense
 (b) NP is governed by -WH or +WH
 (c) NP is governed by A non-distinct from [-N]

Focusing our attention on (a) and (b), this filter basically recapitulates the case filter. The way it is being used in the examples of the French causatives, however, is to prevent the case assigner from moving away from the element which is assigned case. The conclusion, then, is that V^O can move only when it does not strand its case-marked object. This, however, does not explain the ungrammaticality of the following example.

20. à-insertion applies presumably to assign case to Claire. See Manzini (1982) for an analysis of this fact.

- (103) *Evelyne fera mettre le livre à Jean sur la table.
 Evelynne will-make put the book to Jean on the table
 'Evelyne will make Jean put the book on the table.'

It also will not explain the lack of ambiguity in (104).

- (104) Marie fera écrire une lettre à Evelynne à Jean-Loup
 = Marie will make Jean-Loup write a letter to Evelynne.
 * Marie will make Evelynne write a letter to Jean-Loup.

A more accurate generalization is that all complements must move with the verb. This does not immediately argue against the movement of V'. We may extend the idea of the filter in (102) and say that both case and θ -roles must be assigned under government at s-structure. This would have the effect of keeping a θ -role assigner in a government relation with its arguments or with the traces of those arguments.

There is an alternative analysis for these facts, however. In Manzini (1983), it is assumed that these structures are base-generated, and not created by movement. Assuming base-generation and a notion of domain adjacency, we would expect case-marked and θ -marked items to be adjacent to the head, in this case, the verb. Those constituents which are not dependent on the verb, i.e., adjuncts, will appear sentence finally.

In the absence of clear evidence to the contrary, I conclude that there are no rules which move elements which are neither maximal projections nor lexical items. The absence of such rules would be surprising in a system where a in Move-a was free to pick any constituent, and constituents proliferated through increasingly detailed branching

structures.

2.3.2.2 Pronominalization

Another argument for a level of branching that is neither maximal nor minimal is pronominalization. In the sentences below, we see first a case of an N^0 pronoun, (105), then a case of an N' pronoun (106).

(105) I saw a picture of Debbie in the living room and one of Konrad in the dining room.

(106) I saw a picture of Cindy in the living room and one in the dining room.

Assuming that of NP is the complement phrase of picture, in (105) one replaces just the lexical category leaving behind the complement. In (106), though, both the N^0 and the complement phrase are replaced suggesting that one replaces N' .

Let us assume, as Jackendoff (1977) does, that do so can be used to distinguish subcategorized elements from non-subcategorized elements in the VP. His examples (p. 65) are given below.

- (107) a. John talked to Bill about Harry.
 b. *John talked to Bill about Harry, but he didn't do so about Fred.
 c. *John talked about Harry to Bill, but he didn't do so to Fred.
 d. John talked to Bill about Harry on Sunday, but he didn't do so on Thursday.

From this we might conclude that do so is a verbal pro-form for V' or V^{max} , but not for V^0 . I extend this use of do so to do something based on the similar pattern that these two constructions have, as shown in the following examples.

- (108) a. John did something.
 b. *John did something about Harry.
 c. *John did something to Bill.
 d. John did something on Sunday.

Whatever the analysis is which accounts for the differences between these pro-forms, it seems clear that they can pronominalize V' and V^{\max} , but not V^0 .

The nominal pro-form one seems to pronominalize N^0 and N' , and the verbal pro-form do so(mething) seems to pronominalize V' and V^{\max} . Both, then, support the claim that there is a branching node that is not a maximal projection.

I propose a different view of these pro-forms. One question that one might raise concerning these is why the verbal pro-form differs from the nominal pro-form. One may be followed by complements while do so may not be. The other instance where we have seen complements that may not be left behind was in the case of French causatives. There we said that the complements or their traces had to be governed by their θ -role assigner, the verb. We might also say this in the case of verbal pro-forms, but then we would have to explain why the complements of nouns do not fall under the same restriction.

What we would be claiming in the case of the verbal pro-form is that it is the V^0 that is pronominalized. It is not for reasons of structure, then, that the complements do not appear, but for reasons of θ -role assignment.

In order to be consistent, we have to assume that arguments of nouns

can get their θ -roles independent of the noun. This is not a new idea (Rappaport 1983, Higginbotham 1983). The arguments that are used to support this claim are:

1) Arguments of nouns (as opposed to arguments of verbs) are optional.

- (i) the order (to the men) (to leave town)
- (ii) Robin ordered *(the men) *(to leave town).

2) The θ -roles assigned and prepositions used have a one-to-one mapping.

- (i) Susan ordered Andy to behave.
- (ii) Susan saw Andy.
- (iii) the order { *of } Andy
 { to }
- (iv) the sight { of } Andy
 { *to }

3) Only NPs thematically related to the head noun may appear in the argument structure.

- (i) Beth appears to be happy.
- (ii) *Beth's appearance to be happy
- (iii) I believe Beth to be happy.
- (iv) *the belief of Beth to be happy

Let us assume, then, with Rappaport and Higginbotham, that arguments of an NP are assigned θ -roles by the prepositions themselves. This will explain why pronominalization of N^0 does not hinder the appearance of the complements of that noun. A near minimal pair is given below.

- (109) a. *We drove to Montreal and they did so to New York.
- b. The drive to Montreal was prettier than the one to New York.

Jackendoff claims that of complements may not be left behind in pronominalization and gives the example of *the king of France and the one of England as evidence. The picture cases given above, however, seem to argue otherwise.

There seem to be two types of of NP phrases. Hornstein and Lightfoot (1980) differentiate a student with long hair and a student of physics by stating that the former denotes two properties (being a student and having long hair) while the second denotes one property (being a student of physics). The type of PPs that can occur with the pronoun one are of the first type, i.e., separate predicates. Below we can see that the facts of of NP phrases pattern the same way.

- (110) the picture of Julia and the one of Suzanne
- (111) This picture is of Julia.
- (112) *the student of physics and the one of chemistry
- (113) *This student is of physics.

The generalization appears to be that if the preposition can assign a θ -role independently of the head N, then it may remain when the N is pronominalized. While making Rappaport's and Higginbotham's analyses less clear, these data do support our analysis. Thus the claim is that some of NP PPs within an NP may be dependent on the head N for their θ -roles (vs. Rappaport's claim) and that these PPs crucially may not appear with the pronominal one.

My conclusion, then, is that in both cases, it is X^0 which is being pronominalized. In the case of the verbal pro-form, the complements may not appear because they will not be assigned θ -roles. In the case of the nominal pro-form, complements may appear since they are assigned θ -roles

independently of the head noun.

2.3.2.3 Co-ordination

Co-ordination is traditionally used as a test for constituency. In the examples below, we see that there appear to be bar levels between V^{\max} and V^0 .

- (114) Mark wrote and directed the play in 1984. V
- (115) Mark wrote the play and directed the movie in 1984. V'
- (116) Mark wrote the play in 1983 and directed the movie in 1984. V''
- (117) Dianne placed and arranged the flowers on the table.
- (118) Dianne placed the daisies in the vase and arranged the tulips on the table.
- (119) *Dianne placed the daisies and arranged the tulips on the table.

(114), (115), and (116) are examples of conjoined Vs, V's, and V''s respectively. (117)-(119) suggest that non-constituents cannot be conjoined. The argument is not clear, however. Put the flowers may act as a constituent as shown below.

- (120) The children put the flowers and placed the presents on the table.

If it must therefore be a constituent, then arranged the tulips would be the same sort of constituent since both consist of V-NP(obj). (119) is not ruled out, then, because the conjoints are not like constituents. Rather it seems that the example is ruled out because the constituent on the table has a different relation to the first conjoint than it has to the second conjoint. It is a complement of put and an adjunct to see.

Another reason why it is not clear that co-ordination is a test for constituent structure is given in the following examples.

(121) Claire ate the carrots raw and the peas cooked.

(122) Lytle sent a letter to Harriet and a book to Bill.

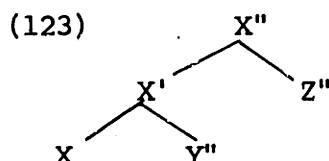
If co-ordination is an argument for constituent structure, then the carrots raw and the peas cooked are constituents in (121) and a letter to Harriet and a book to Bill are constituents in (122).

Rather than claim that these are constituents, one might look for another account of co-ordination (see Goodall 1984 for discussion).

2.3.3 Summary

The above section is intended to raise the question of what notion of branching is needed. By restricting branching possibilities we may also restrict other parts of the grammar. For instance, by not allowing the existence of nodes other than X^{\max} and X^0 , we also do not allow any rules that crucially refer to any intermediate projections.

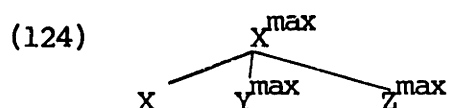
Any restriction on the levels of branching will also have an effect on notions of c-command. The main distinction between Aoun & Sportiche's definition of c-command, and Reinhart's definition is that A&S allow c-command up to the first maximal projection.



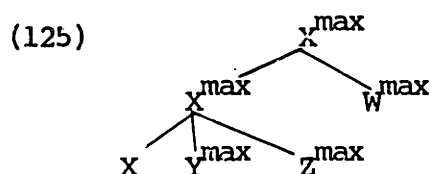
For A&S, then, but not for Reinhart, X c-commands Z''. Chomsky (1981) adopts Reinhart except that heads extend their c-command domain to the highest node in a chain of nodes which share the same features. For

Chomsky, then, X would c-command Z'' . However, A&S differ from Chomsky in that for A&S, Y'' c-commands Z'' while for Chomsky, it does not.

In the view of branching presented in this thesis, most of these definitions fall together since the structure in (123) would now be as below.



The first branching node will always be a maximal projection. The only difference now will be between Chomsky on one hand and A&S and Reinhart on the other, since Chomsky's definition of c-command will allow a head to govern out of a maximal projection in a Chomsky-adjoined structure.



In (125), for Chomsky, but not for Reinhart or A&S, X will c-command W^{\max} . We will argue in Chapter 4 against just such a notion of c-command, and therefore will assume a combined A&S and Reinhart definition, together with the notion of branching presented here.

This issue of branching and c-command is a fertile area for discussion (see, among others, Saito 1983b), and a direction for future research.

2.4 Constituents of INFL'

Now let us look at the level above VP, i.e., the constituents of S. The S-V-O type of typology suggests that the relevant constituents are the subject and the predicate (NP, VP). This means that the VP either follows the subject or precedes the subject. However, we can quickly see that the distinctions are not so clearcut. Examples are given below of German and Welsh constructions.

- (126) Ich bin ins Kino gegangen
 I am in-the cinema gone
 'I have gone to the cinema.'

- (127) Y mae Sion yn mynd adref (Sproat, 1983)
 PVP is John YN go(VN) home
 'John is going home.'

In (126), the verb appears to be split between bin and gegangen and in (127) between mae and mynd. German presents a further problem in that the V is unambiguously final in embedded clauses,

- (128) daB ich ins Kino gegangen bin
 that I in-the cinema gone am
 'that I went to the cinema'

suggesting a simple S-O-V underlying order. Nevertheless, even if one accepts this analysis (see Bach 1962, Bierwisch 1963, Koster 1975, Thiersch 1978), a rigid S-O-V/S-V-O typology does not facilitate the expression of the verb movement rule that would be necessary for German root clauses, nor does it account for the Welsh facts. The problem in German is that only the tensed portion of the verb moves. Thiersch's rule

is given below:

- (129) R1: ..., V[+tense] → V, ... (Thiersch, p.38)
 R2: ..., X"[-verb] → X", ...

Similarly in Welsh, it is the sentence-initial part of the verb which is marked for tense. If we assume that INFL is the element which expresses tense, we can account for this apparent split of the verbal constituent with the INFL node (see Safir for German, Koopman for Dutch, Sproat for Welsh). Accepting this argument, then, we add INFL to the S-V-O type system. The relevant constituents are now S, V, O, and INFL (I), and the relevant members of I' (or S) are S, I, and VP.

Benefiting from the previous section where we discovered that the order of constituents of the verb phrase depend upon the relations they bear to one another, let us start this investigation by looking at what relations might exist between the S constituents. There are three pairings: NP and INFL, INFL and VP, and NP and VP.

2.4.1 NP and INFL

INFL assigns nominative case to the subject NP. If case is assigned by INFL in the same manner in which case is assigned by P and V, we would expect certain properties to hold. For instance, we would expect INFL to govern the subject NP. Also, if the language has an adjacency requirement on case assignment or a specified direction of case assignment, as we have seen for Chinese, we would expect these conditions also to hold for INFL and the subject NP.

I will suggest here, however, that case assignment by INFL is different from case assignment by P or V. First, we can see that the adjacency condition does not hold in the same way for INFL and the subject NP as it does for V and the object NP.

(130) *I like very much books.

(131) I certainly like books.

Adverbs may intervene between INFL and the subject though they cannot intervene between the V and the object.

Also, we can see in Chinese, where the direction of case assignment must be specified, that INFL assigns case in a direction different from the direction specified for the P and the V.

(132) ta gei wo mai le chezi le (L&T, 1975, 180)
 he for me sell asp car INFL
 'He sold a car for me.'

(133) ta mai gei wo chezi le
 he sell to me car INFL
 'He sold a car to me.'

I will assume here, and discuss in more detail in Chapter 5, that INFL must be coindexed with the subject NP, and that it may be via this coindexation that nominative case is assigned. There may be no conditions on this coindexation beyond the stipulation that the INFL and the subject NP must be sisters. We will see below that this sister relationship will follow from the requirements on INFL and VP, and VP and the subject NP.

2.4.2 INFL and VP

INFL is the head of the INFL' projection and it takes VP as its

complement. This means that I and VP are in a head/complement relation. This is the relation which we have seen in our discussion of the constituents of VP, i.e., that between a V and its internal arguments. The relative ordering of these two constituents may be accounted for through the head-initial/final parameter. As we saw in Chinese, this parameter may vary for different categories. In Archaic Chinese, NPs were head-final while VPs were head-initial.

Another observation concerning this relationship is that we do not expect the complementation domain to be broken. That is, we expect the I and the VP to appear adjacent to one another. This tendency will be discussed further in Chapter 3.5.

2.4.3 NP and VP

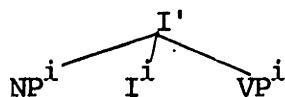
We know that the VP assigns a θ -role to the subject NP, though it does not assign it case. Again the question is whether this θ -role assignment is the same as the θ -role assignment of a V or a P. Above, we determined that the case assignment properties of INFL differed from the case assignment properties of V and P. Here we will be assuming that the θ -role assigning properties of VP are different from the θ -role assigning properties of V and P.

The asymmetry between subject θ -role assignment and object θ -role assignment follows from Williams' (1981) distinction of internal versus external θ -role assignment. External θ -roles must be realized on constituents that are external to a maximal projection, in this case

external to the VP. Within the VP, the V, as head of the projection, takes certain constituents (NP and PP) as complements and assigns these complements θ -roles. An object NP, then, receives its internal θ -role from the head of which it is a complement. The subject NP receives its θ -role compositionally (see Marantz 1981 for details on this) from the maximal projection of VP. The subject is neither subcategorized for by the VP, nor is it a complement of the VP, since by definition subcategorization and complementation are properties of heads not phrasal categories. (In Chapter 4 we will suggest, however, that an NP subject may be the complement of a VP, contrary to the present definition of complements.)

If the external θ -role is not assigned through complementation, then, how is it assigned? Again, following Williams (1981), I will assume that this external θ -role is assigned through predication. It is from this relation of predication that the tri-partite division of I' will follow. INFL and VP must be sisters since VP is the complement of the head of I' which is INFL. VP and NP must be sisters because of their predication relation. Therefore, the structure of I' is as shown below.

(134)



This confirms our conclusions concerning branchingness. Once again we are forced to collapse all projections between lexical categories and maximal projections.

Since the θ -marking relation between the VP and the subject NP is

different from the one between the V and its arguments, we would expect other differences to appear. For instance, the direction of predication may be different from the direction of direct Θ -marking; i.e., internal arguments may appear to the right of the V while external arguments appear to the left of the VP. Again, in Chinese, we see that this is the case. Even in M1, where Θ -marking has to be specified as being to the right, the O-role assigned by predication is to the left.

- (135) [ta]ⁱ [mai gei wo chezi]ⁱ le
 he sell to me car INFL
 'He sold a car to me.'

English also presents a clear example. The V assigns a Θ -role to the right, but at the level of predication, the Θ -role is assigned to the left. In terms of the parameters so far discussed, I would say that English is head-initial, but predicates occur on the right of the subject²¹.

2.5 Word Order and Typology

The purpose of this section is to describe a restrictive means for developing a word order typology using the parameters that have been proposed above. This method will be contrasted with the restrictions of Steele (1978) which were also proposed to account for the range of possible variations that a language can evidence. I will discuss Steele's

21. A clearer picture of the forces at work at the level of I' is given in section 3.5.

constraints and their use within a typological theory. Then I will compare the two methods, first on a theoretical level, and then on an empirical level. In this last part I will give data from Steele which at first look problematic for the GB account, but I will show how these data, under a different analysis, pose no problem. In fact, the new accounts provide not only more illuminating analyses of the individual languages, but also confirmation for the restrictions that the parameters impose on possible grammars.

2.5.1 Steele

Steele (1978) looks at the basic word order and word order variations in sixty-three languages with the purpose of determining what constraints play a role in restricting the range of variations. She proposes three constraints which in turn enter into her definition for rigid, mixed, and free word order languages. The survey is basically statistical. For each base word order, she lists its possible variations as being very common, common, not common, uncommon, and non-existent depending on the relative number of languages within that group that evidence that alternate word order. Her table is given below.

(136)	<u>VOS</u>	<u>VSO</u>	<u>SOV</u>	<u>SVO</u>
Very Common	VSO SVO	VOS	OSV	
Common		SVO	SVO	
Not Uncommon				ViS
Uncommon		OVS OSV SOV SVi	OVS VOS VSO ViS	VOS VSO SOV OSV OVS
Nonexistent	SOV OSV OSV (sic OVS?)			

(No examples are given of OSV or OVS)
(Vi = intransitive verb)

The three constraints that Steele proposes to explain the clustering of common and uncommon variations are as follows:

A: A variation on the basic word order in which the verb occurs in other than its position in the basic word order is to be avoided. (p. 602) (e.g. SVO languages will not be expected to have a VOS variation)

A': A variation on the basic word order in which the verb occurs either initial or final to the clause is to be avoided, if the verb was neither initial nor final respectively in the basic order. (p. 602) (e.g. VSO languages will not be expected to have SOV variations)

B: A variation on the basic word order in which the object precedes and the subject follows the verb is to be avoided. (p. 604) (e.g. no language is expected to have an OVS variation)

Her claim is that V-peripheral languages (VSO, VOS, SOV) tend to obey

constraints A' and B, while verb medial languages (she only gives examples of SVO) tend to obey A and B. By looking at which languages violate which constraints, Steele claims that the languages can be put into three groups: rigid word order languages violate neither of the constraints relevant to them, mixed word order languages violate only one relevant constraint, and free word order languages violate both constraints.

The account of typology presented in this thesis differs from that presented in Steele in three respects.

1) No language will have a catalogue list of possible variations. All variations must follow from a choice of parameters that must be supported by independent evidence.

2) Principles and parameters make strong predictions that cannot be violated. A violation will not mean that the language is a mixed word order language as it does for Steele. Rather it means that the system of parameters must be revised so that the recalcitrant language can be described.

3) Free word order languages are not languages that break the most constraints. Rather they are languages that set the parameters differently. For instance, case may be assigned in the lexicon so that adjacency is never necessary for case assignment.

2.5.2 Possible counterexamples and the solution

To make the difference between the two kinds of typology clearer, let

us look at some of Steele's data. There are three languages that she labels "mixed word order" because they each violate a single constraint. Initially, these languages appear problematic for the GB account.

2.5.2.1 Diola-Fogny

Diola-Fogny is a Congo-Kordofanian language, listed as having a base word order of S-V-O with an S-O-V variation. This violates Steele's constraint A since the medial verb now appears last. However, for Steele, since her account is descriptive rather than predictive, this is not problematic. It simply indicates that the language is of a particular type, that is, a mixed word order language.

This does, however, present a possible counterexample for the approach to typology presented here. There is no movement rule which will allow a post-verbal object NP to appear in a sentence internal pre-verbal position.

This statement includes many assumptions which, while still unexplained, are fairly standard. 1) Only COMPs on the left are possible landing sites for movement. 2) Arguments of the V may move to the right, subject to the Right Roof Constraint. 3) NPs may not move within the VP to the left if the VP is specified as being head-initial. The variation from a basic S-V-O to S-O-V would involve either movement of the object to the left of the verb violating (3), or movement of the V to sentence final position. Although V-fronting is possible because of COMP, V-backing is not because of assumption (1) and (2).

If the idea of parameters is right, there is also no way that two separate d-structures can be generated without saying that the verb sometimes assigns case to the left and sometimes to the right. If the verb only assigns case to the right, an object to the left of the verb will violate the Case Filter. Since Diola-Fogny is not a free word order language, we know that Case is not assigned in the lexicon but must receive it from a case-assigner in the syntax.

A review of the grammar of Diola-Fogny which Steele cites (Sapir 1965) reveals that the SOV order is very restricted. It is only possible, in fact, if the object is a concord pronoun and the subject is what Sapir calls a "disjunct subject". An example is given below.

- (137) injɛ mɔ̃ nikakat (Sapir p. 101)
 I this left
 'This I left (won't have anything to do with).'

The form of the first person pronoun is the independent form, and presumably in subject position. We may, then, assume that mɔ̃, the concord pronoun, acts like a clitic on the verb as in the French example given below.

- (138) Subj pron-V ec (ec=empty category)
 Marie la voit.
 Mary it(FEM) sees
 'Mary sees it.'

What is crucial is that for the object to appear between the subject and the verb, it must be pronominal and, therefore, can be analyzed as a clitic.

There is another means for fronting full NP objects for the purpose

of focusing the NP.

- (139) ebe nijukɛ (Sapir p. 36)
 cow 1s-saw
 'I saw a cow.'

However, if this structure co-occurs with a disjunctive subject pronoun, the object precedes the pronoun suggesting that the object is in the COMP position.

- (140) ebe injɛ ijukɛ (Sapir p. 36)
 cow I saw
 'I saw a cow.'

Diola-Fogny, then, under this new analysis, does not violate Steele's constraint any more than French does. The verb is not final in these structures since it is followed by an empty category. Under Steele's classification, Diola-Fogny is no longer a mixed word order language. In terms of this thesis, Diola-Fogny is no longer a counter-example to the parameter of direction of case-assignment. Lexical NP objects can only be assigned case in the post-verbal position.²²

Chinese and Chorti are different kinds of counterexamples for the parametric account. Steele considers them both mixed word order languages solely because they appear to have pre-verbal subjects when the verb is transitive, and post-verbal subjects when the verb is intransitive. This, again, is a violation of constraint A since the verb will be sentence initial in an SVO language.

22. For accounts of how clitics might be generated, see Jaeggli 1980, Aoun 1981, Borer 1981, and the references cited therein.

In terms of parameters this variation would mean that the direction of θ -role assignment of the VP would have to be sensitive to features of the verb. I claim that neither Chinese nor Chortli needs to resort to this sort of sensitivity to account for the variation of word order.

2.5.2.2 Chinese

In Chinese there are three important facts to notice. The first involves the set of verbs that allow post-verbal subjects, the second is that inverted subjects are indefinite, and the third is the fact that Chinese has no pleonastic element (Huang 1982).

Unaccusative verbs. In Chinese, not all intransitive verbs allow what Chao (1968) calls "inverted subjects" (i.e., subjects in post-verbal position). The list of verbs that he gives which allow this inversion is a subset of his list of intransitive verbs. The verbs that allow inverted subjects are verbs of coming and appearance, going and disappearance. This semantic class correlates with Perlmutter's (1978) semantic characterization of unaccusative verbs.

Once we have established that post-verbal subjects only occur in the cases of unaccusative verbs, we can use Perlmutter's analysis for Dutch, and Burzio's analysis (Burzio 1981) for Italian and assume that the single arguments of these verbs are d-structure objects of the verb.

(141) $ec [_{vp} V NP]$
 ec arrived a man

The verb assigns the NP its θ -role in object position. How the NP is

assigned case is controversial. Unaccusative verbs are, by definition, verbs that do not assign accusative case to their logical direct objects. I assume, however, several analyses that do allow these verbs to optionally assign case to an argument which they govern (see Levin 1983, Rothstein 1983, among others, for details) and will leave further discussion of this issue till Chapter 5. We will assume, then, that the NP following the verb gets case by direct assignment from the verb. This is necessary because of our earlier account of Chinese. Only elements that are assigned case by the verb can appear post-verbally.

Indefinite subjects. Li & Thompson (1975) note that post-verbal subjects are preferably indefinite. This further confirms the above analysis since certain definiteness effects are often found in these unaccusative constructions. This is obvious in the English cases given below. The first is an example of a grammatical structure with an unaccusative verb and an indefinite NP. The second is out because of the definite NP, and the third because the verb is not unaccusative.²³

(142) There came into the house an enormous brown dog.

(143) *There came into the house the enormous brown dog.

(144) *There cried into the handkerchief a tired old man.

Pro-drop. The obvious difference between the English examples above and the Chinese examples leads us to the third important fact, Chinese has no pleonastic elements. This is important because if the subject position

23. For more details on these effects, see Safir 1981 and the works cited therein.

always had to be filled, it would be difficult to argue that, when Chinese appears to have a V-NP sequence with an intransitive verb, there still is a pre-verbal subject position. Knowing that Chinese is pro-drop, we may assume that what Steele has described as an SVO ~ ViS alternation is actually a pro V NP instantiation of SVO. Stated this way, the problem disappears. The alternation simply consists of a difference in whether or not the single argument of the verb is base-generated internally or externally to the VP.

2.5.2.3 Chorti.

Chorti appears to fall under a different analysis although more data are needed to be sure of these results. The important fact about Chorti is that it has an ergative system for marking agreement with the verbal arguments. Transitive subjects are marked on the verb by a set of prefixes, while objects and intransitive subjects are marked by a set of suffixes (-en 'I', -et 'you', -# 'he', -on 'we', -ox 'you' pl., -op 'they' (Oakley 1966 p.244)).

(145) uy-ahq'u-en Oakley, p. 245
 he-give-me

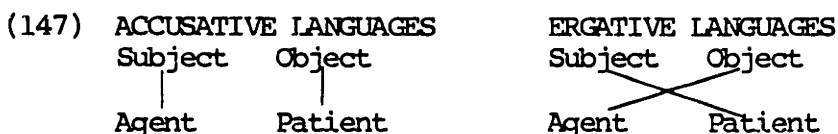
(146) /lo?k/vi/en Fought, p. 68
 left-I

Fought (1973) writes:

Chorti ... is fundamentally ergative even in its superficial structure. The subjects of transitive expressions are concordially and syntactically distinct from the subjects of intransitive expressions, while these latter are equivalent to the object of transitives.

(Fought, p. 66)

This suggests that the assignment of syntactic realizations of arguments to thematic roles goes according to the Ergative Hypothesis proposed by Marantz(1981) (see also Levin 1983). Marantz suggests that some languages choose to map patients of transitive verbs onto the syntactic subject position and agents to the syntactic object position.



If this were the case for Chorti, as is suggested by the case-marking system, it would be an OVS language rather than an SVO language, and the fact that the intransitive subject is found post-verbally would be no surprise.

For both Chinese and Chorti, now, there is no anomaly in the positioning of the subjects of intransitive verbs, although each language accounts for this by different means. In the table below we see, in column I, why Steele's characterization of both the Chinese type of language and the Chorti type of language look as if they are counter-examples to the predictions made by the word order parameters. Yet when we offer a different analysis of the languages, as shown in column II of the table, the facts corroborate the prediction.

(148)	I Steele's Chinese & Chorti		II a. Chinese b. Chorti	
	S	V	O	O
	Vi	S	pro	Vi

In Chinese, VPs assign Θ -roles to the left, and in Chorti, VPs assign Θ -roles to the right, whether the verb is transitive or intransitive.

The claim of this section is that the more restrictive view of typology offered by advancements within the grammatical theory of GB, pushes the researcher towards profitable reanalyses of languages that appear problematic rather than allowing problems to be hidden under a mixed word order heading.

2.6 Discussion

2.6.1 Summary

The purpose of this chapter was to set up an account of word order which factored another task of Phrase Structure Rules into other components of the grammar. By assuming the the direction of predication, Θ -role assignment, case assignment, and headedness may be set through language specific parametric values, one may predict certain word orders.

In Archaic Chinese, VPs appear to be head-initial. All non-head elements in the VP appear after the V, including the subcategorized and non-subcategorized PPs.

The first form of Modern Mandarin described (MM1) has reanalyzed certain verbs as prepositions with the result that non-subcategorized PPs (PP2s) appear preverbally. Now only complements of the verb appear after the verb indicating that the verb assigns Θ -roles to the right, and the

default parameter is head final.

The second form of Mandarin (MM2) has only bare object NPs following the verb while all PPs, subcategorized and non-subcategorized, appear before the verb. We can now say that the verb assigns case to the right. The default parameter is still head-final.

(149)	word order	headedness	O-roles	case
AC:	V O PP1 PP2	initial	---	---
MM1:	PP2 V O PP1	final	right	---
MM2:	PP2 PP1 V O	final	---	right

2.6.2 Questions

Questions arise concerning this sort of system. Two that I shall discuss are (i) what sort of parametric configurations should we expect, and (ii) where do the parameters take effect?

Notice in the table above, we never specify more than two parameters although conceivably there could be a language with the VP word order of PP2-O-V-PP1. Presumably the V in this language would assign O-roles to the right, case to the left, and the VP would be head-final. Given the small number of languages involved in this study, I hesitate to deny the existence of such a language. However, in the interest of being as restrictive as possible, I will propose that only one parameter may be set outside of the default case. This means that if the direction of case assignment must be specified, then the direction of θ -assignment may not

be specified, and vice versa.

This can be taken one step further, in fact. Let us say, without reference to the default parameter, that only one word order parameter may be stipulated for any projection. How then can we account for MM1 and MM2, where a value for the headedness parameter and one other parameter must be indicated? Let us assume that we have a language that, like MM1, assigns θ -roles to the right, but, unlike MM1, is head-initial. Instead of being PP2-V-O-PP1, it would be V-O-PP1-PP2. This, however, is indistinguishable from a simple head-initial word order. The same applies to the direction of case-marking. If case-marking were to the right and the VP were head-initial, the outcome still would be V-O-PP1-PP2. Let us assume, then, that if the direction of θ -marking, or case-marking is set, then the default parameter works in such a way that all those elements which do not fall under the already specified parameter (PP2 in the case of θ -marking, PP1 and PP2 in the case of case-marking) will be on the opposite side of the head. With this assumption we can say that only one parameter need be specified.

The second question concerns the effects of such a view of parameters. Where do these parameters take effect? The answer divides between d-structure and s-structure if we assume that d-structure is the "pure representation of GF- θ ". If this is the case, then the direction of θ -marking should have an effect at d-structure, but not the direction of case-marking. I propose the following d-structures for the VPs of Archaic Chinese, MM1, and MM2.

- (150) a. Archaic Chinese:
 [V NP PP1 PP2]
- b. MM1:
 [PP2 V NP PP1]
- c. MM2:
 [PP2 PP1 NP V]

Notice that the direction of θ -marking follows the head-initial/final parameter unless otherwise specified. In a head-initial VP (148), all the complements (as well as non-complements) follow the verb. In a head-final VP (150), all the complements (as well as non-complements) precede the verb. In (149) we can see that, though the VP is head-final, the complements follow the verb because the direction of θ -role assignment is explicitly set.

In English we see an example where only head-initial/final need be specified and the direction of θ -role assignment will follow. The VP is head-initial so complements follow the verb (151). X^O s, however, are head-final, so complements must precede the verb.

(150) keep books

(151) bookkeeping, bookkeeper

We can also see in the proposed d-structures for PC, MM1, and MM2 that the direction of case-assignment has no effect on the d-structure. The effects of the direction of case assignment are seen only at s-structure (just as the effect of passive verbs and unaccusative verbs appears at s-structure). I am assuming, then, that the following sentence in MM2 is derived as shown below.

- (152) d-structure: ta Lisi pian-le
 s-structure: ta t_i pian-le Lisi_i

Ta pian-le Lisi.
 'He cheated Lisi.'

Since headedness is not the specified parameter, the object may move to the right of the verb.

Though both direction of case-marking and direction of O-marking can be seen as deriving word order, they do so because of different effects at different levels of the grammar.

The rarity of languages which set parameters other than head-initial/final suggests that the default parameter is the least marked. In the next chapter we will look at the word order of a specific language family and speculate on the historical derivation of word orders, and on the problem of markedness.

Chapter 3

WORD ORDER IN GERMANIC LANGUAGES

In this chapter I investigate certain issues of word order in Germanic languages. These languages present special problems to any account of word order because of the variations evidenced within one language. In the first section I give an account of the problem using German and Dutch as the languages of investigation. Here I describe what is generally assumed to be the correct analysis of these variations (Bach 1962, Bierwisch 1963, den Besten 1977, Thiersch 1978, Safir 1982, Koopman 1983). Dutch and German word order are presumed to be underlyingly S O V. Fronting of INFL and some maximal projection in root clauses will give the well-known verb-second (V2) effects.

$$(1) [X''_i I_j \dots t_i \dots t_j]^1$$

In the second section I compare Yiddish word order with German word order and show how the accepted analysis for German is not adequate for an account of Yiddish. First, it is clear that the VP in Yiddish is head-initial (V-O) while in German it is head-final (O-V). Secondly, I

1. There is disagreement as to where, exactly, these elements front to. For this reason I leave out any details of bracketing until later in the discussion.

give two arguments that preverbal subjects must be distinguished from pre-verbal non-subjects in Yiddish, and that therefore Yiddish must be S-I-VP rather than I-S-VP.

In section 3 I argue that there is empirical evidence that supports an analysis of German and Dutch which more closely resembles the analysis of Yiddish. I claim that German and Dutch, like Yiddish, are S-I-VP, but German VPs are head-final, while Yiddish VPs are head-initial.

In section 4 I motivate the movement rules that I have proposed in the previous sections. This involves a discussion of the movement of heads since I^O is fronted, not I^{max} . This also involves an investigation of the structure of COMP. I will claim that the head of a root COMP must be filled by the movement of INFL, while the heads of other COMPs exist either through subcategorization and feature specification or by the lexical spell-out of the features of the head.

In section 5, I speculate on the development of Germanic word order and propose 1) that word order change can develop out of a contradiction in the demands on the position of INFL, and 2) that rules in syntax, as in phonology, tend to move from surface levels (PF) toward the lexicon (d-structure).

Finally, in section 6, I speculate on an overview of word order facts with the intent of explaining why certain orders appear to be rarer than others. I also discuss the importance of a separate INFL node and a tripartite structure of I' . This section is included with an eye to future research.

3.1 German and Dutch: the accepted analysis

In German, though word order is fairly rigid (as opposed to languages such as Warlpiri), there is a variation which is immediately noticeable between root sentences where the inflected verb is always second (in the literature this is called the V2 effects) (2) and embedded sentences which are always inflected verb-final (3).

- (2) a. Die Frau hat das Buch gelesen
 the woman has the book read
 'The woman has read the book.'
- b. Das Buch hat die Frau gelesen
 the book has the woman read
 'The woman has read the book.'
- (3) Ich glaube, daß die Frau das Buch gelesen hat.
 I believe that the woman the book read has
 'I believe that the woman has read the book.'

In (2) we can see that the inflected verb is in second position whether the subject NP, (2a), or the object NP, (2b), is S-initial. In (3) the inflected verb is clause-final in the embedded clause.

The generally accepted analysis is that German and Dutch are underlyingly verb-final (see Bach and Bierwisch for the earliest motivations)². This will account for the fact that even in root clauses where the inflected verb is in second position, the uninflected verb (4) or the separable prefix (or particle) (5) is still sentence-final.

- (4) Sie hat das Buch gelesen
 she has the book read
 'She has read the book.'

- (5) Sie macht das Fenster zu (zumachen = to close)
 she close the window
 'She closes the window.'

Assuming that the verb is sentence final, we can say that the D-structure word order of German, without INFL, would be S-O-V (i.e., S-VP with a head final VP). Now the question is where INFL is base-generated, and how the variations in its placement are accounted for.

I will be assuming that the s-structure position of INFL can be determined by the position of the inflected verb. In some languages, this inflected verb may be a pleonastic verb such as do in English. In German, the inflection appears on a main verb. How INFL and V come to be together will be discussed in detail below.

There are three choices, then. (1) Inflection may move at

2. I will be using both German and Dutch examples in this section. This carries with it the assumption that the two languages have the same word order in the relevant constructions which may not be the case. In this thesis, however, I will be making this assumption. Also, the analysis that I present here is a synthesis of several analyses (den Besten, Thiersch, Safir, Koopman). Since I end up arguing against something which is basic to all of these accounts, I will continue to group them into one.

s-structure to a position adjacent to the verb. This sort of movement will leave a trace and therefore fall under the binding conditions and ECP. (2) The verb may move to INFL, and again must conform to restrictions on movement. (3) If INFL is left stranded, it must be lexicalized by some dummy inflectional element such as 'do' in English.

I will assume with den Besten (1977) that INFL is in COMP when it is fronted (see Safir 1982 for a different analysis). Den Besten's argument is that subject clitics can appear either to the right of COMP in embedded S's and to the right of INFL (the inflected verb) in root S's.

- (6) Heeft gisteren Piet/*ie die film nog kunnen zien?
has yesterday Peter/*IE the film still be able to see
'Was Peter still able to see the film yesterday?'

- (7) dat gisteren Piet/*ie die film nog heeft kunnen zien
that yesterday Peter/*IE the film still has be able to see
'that Peter was still able to see the movie yesterday'

- (8) Heeft ie gisteren die film nog kunnen zien
has IE yesterday the film still be able to see
'Was he still able to see the film yesterday?'

- (9) Gisteren heeft ie die film nog kunnen zien
yesterday has IE the film still be able to see
'Yesterday he was still able to see the film.'

- (10) dat ie gisteren die film nog heeft kunnen zien
that IE yesterday the film still has be able to see
'that he was able to see to see the film yesterday.'

In (7) and (8), we can see that if something intervenes between the subject and either INFL or COMP, the weak form of the pronoun is not possible. However, if the subject appears next to INFL or COMP, as shown by (9) and (10), the nominative pronoun cliticizes. The rule of

cliticization would be much neater if the inflected verb were actually in COMP. It could then be stated that nominative pronouns cliticize to an adjacent COMP but to no other adjacent category.

(11) [COMP-cl_j [e_j O V I]] dat ie

(12) [X" I_i-cl_j [e_j O V t_i]] heeft ie

We might then say that in German and in Dutch, INFL is generated finally, making them head-final languages. The V2 effects are created by movement of INFL to sentence initial position followed by the movement of some maximal projection. Thiersch achieves this in a rule oriented framework by two ordered fronting rules. Let us assume for the moment that there is some means by which a V will move into INFL thereby creating a V[+tense]. The movement of INFL, then, will be the same as the movement of V[+tense].

(13) R1: ..., V[+tense] → V, ... (Thiersch, p.38)
 R2: ..., X"[-verb] → X", ...

If we assume that Thiersch's fronting rules actually move elements into COMP, they will be blocked in embedded sentences because COMP is already filled and cannot be doubly filled. This analysis avoids the problem of a rule of Subject Aux Inversion. Since the inflected verb will always move to the front of a root sentence, if the subject is not the constituent which topicalizes, then the subject will always follow the inflected verb. In other words, a subject, in its d-structure position, will always follow the inflected verb.

In a GB framework, where movements must be motivated and restricted by principles of grammar, Safir and Koopman propose motivations for

fronting movements (see Safir 1982 and Koopman 1983 for details). At this point, however, I am concerned only with the descriptive levels of the analysis. The theoretical issues will be discussed in section 3.4.

3.2 Yiddish

In this section I first compare the word order of Yiddish to that of German. It is quickly obvious that a Thiersch-type of analysis is not possible for Yiddish in spite of the fact that Yiddish also has V2 effects. The second part of this section will be concerned with finding an adequate analysis. The conclusion I reach is that Yiddish must be S-I-VP and it must have a Subject-Aux-Inversion rule which is triggered in some way by topicalization.

3.2.1 Yiddish is not INFL-final

The first obvious difference in Yiddish is that the verb phrase is head-initial (see Hall 1979, however, for another dialect).

- (14) ikh hob gekoyft dos bukh in krom
 I have bought the book in store
 'I bought the book in the store.'

- (15) Ikh heyb on mayn heymarbet. (onheyb = start)
 I start my homework
 'I start my homework.'

In comparing these to the German examples where two part verbs move only the inflected part of the verb to sentence-second position, while the

other, uninflected part remains sentence finally, we can quickly see that there is no reason to posit head-final verb phrases. Therefore, let us conclude that Yiddish is S-V-O (as opposed to German S-O-V). Now, again, the question is where INFL is base-generated. German INFL appears in two places, in second position and sentence finally. Yiddish INFL, however, only appears in one place, in second position. As we see below, both root and embedded clauses show V2 effects.

- (16) Die froy hot gekoyft dos bukh in der krom
 the woman has bought the book in the store
 'The woman bought the book in the store.'
- (17) In der krom hot die froy gekoyft dos bukh
 In the store has the woman bought the book
 'In the store, the woman bought the book.'
- (18) Ikh meyn az di froy hot gekoyft dos bukh i. krom.
 I think that
 'I think that the woman bought the book in store.'
- (19) Ikh meyn az in krom hot di froy gekoyt dos bukh.

Besides the fact that German INFL can surface sentence finally, we are led to suspect this position for INFL since the VP is head-final. If INFL were base-generated sentence finally, then both V^{\max} and I^{\max} would be head-final. However, for Yiddish, neither the surface position of INFL nor the word order of the VP suggest sentence final position for INFL. This, then, leaves us with two choices: INFL is sentence initial (I-S-VP), or INFL is sentence second (S-I-VP).

3.2.2 Yiddish is not INFL-initial

Let us assume that Yiddish is underlyingly I-S-VP. This is attractive since it makes Yiddish similar to German³. German, after the application of INFL fronting, is also I-S-VP. All that is needed to account for the V2 effects is the fronting of a maximal category such as Thiersch's Rule 2. Just as in the analysis for German, with this account for Yiddish there is no need for a rule of Subject Aux Inversion, and V2 can be reduced to the fact that COMP cannot be doubly filled. Below we see some possible derivations. I have placed the inflected verb, hob, in the position of INFL to show the movement more clearly.

(20) D-structure:

- a. [_S, [_S hob ikh [_{VP}gekoyft dos bukh in krom]]]
 have I bought the book in store

S-structure:

- b. [_S, ikh [_S hob t [_{VP}gekoyft dos bukh in krom]]]
 c. [_S, dos bukh [_S hob ikh [_{VP}gekoyft t in krom]]]
 d. [_S, in krom [_S hob ikh [_{VP}gekoyft dos bukh t]]]

All of these possible derivations yield grammatical Yiddish sentences and the analysis appears to be the correct one.

There is one way, however, that an analysis of this sort might prove to be unsatisfactory. Note that preverbal subjects and preverbal objects cannot be distinguished structurally since, in both cases, they are in COMP. If, for some reason, we wanted to distinguish them, it would not be

3. As explained in Chapter 2, I am assuming that I^{\max} is a maximal projection which includes I, its complement VP, and the subject NP which is licensed by a predication relationship with the VP.

possible under this analysis. Below I give two reasons why we do want to distinguish preverbal subjects from preverbal nonsubjects in Yiddish. One argument involves pronouns, the other involves extraction from embedded S's.

3.2.2.1 Pronouns

There are certain pronouns that cannot appear preverbally. Personal pronouns are possible only with heavy stress, and es, 'it', which cannot take stress, is impossible.⁴

- (21) a. Di kinder hobn im gezen.
 the children have him seen
 'The children saw him.'

b. *Im hobn di kinder gezen. (without stress)

- (22) a. Di froy hot es geleyent.
 the woman has it read
 'The woman read it.'

b. *Es hot di froy geleyent.

We might want to say that these pronouns are clitics and therefore cannot topicalize. However, we know that all subject pronouns may appear preverbally.

- (23) Es hot gegesn dos broyt.
 it has eaten the bread
 'It ate the bread.'

In order to save the I-S-VP account, we would have to say that only subject pronouns can move to COMP perhaps because of the phonological

4. Clitics from the VP appear to the left of the main verb.

distinctions of nominative versus accusative case. This is hard to argue especially since subject es and object es are homophonous. There must be some distinction, then, between pre-verbal subjects and pre-verbal non-subjects.

3.2.2.2 Extraction

A second reason why we want to distinguish preverbal subjects from preverbal nonsubjects concerns extraction out of embedded clauses. Lowenstamm (1977) provides evidence that extraction can only occur out of an embedded clause if the subject is preverbal. If any other maximal category is preverbal, then extraction is blocked (the examples below are based on examples in Lowenstamm).

- (24) a. der yid velkhn zey hobn geharget in vilne ...
 the Jew which they have killed in Vilna
 'the Jew which they killed in Vilna'
- b. *der yid velkhn in vilne zey hobn geharget ...
- c. *der yid in vilne velkhn zey hobn geharget ...⁵
- d. *der yid velkhn in vilne hobn zey geharget ...
- (25) a. Ikh veys nit vemen zi hot gezen zuntik
 I know not whom she has seen Sunday
 'I don't know who she saw Sunday.'
- b. *Ikh veys nit vemen zuntik zi hot gezen
- c. *Ikh veys nit zuntik vemen zi hot gezen
- d. *Ikh veys nit vemen zuntik hot sie gezen

5. This structure is grammatical only if der yid in vilne 'the Jew in Vilna' is taken as one constituent. Otherwise, it is out.

The examples above show that extraction may occur out of clauses when it is the subject which is pre-verbal (see (24a) and (25a)), however, if any other maximal category is preverbal (see (24b-d) and (25b-d)) then extraction is blocked no matter what the order of COMP and Topic (examples (b) and (c)) or whether SAI has applied (examples (d)). Constructions with pre-verbal subjects, then, are not the same as constructions with other preverbal elements.

3.2.3 Yiddish is S-I-VP

Let us suppose, then, that Yiddish is S-I-VP. If this is the case, subjects can surface preverbally in their d-structure position. All non-subjects, however, must move to COMP in order to appear preverbally. Now we can make the following descriptive generalization found.

(26) Restriction on Topicalization:

Unstressed pronouns may not topicalize.

Since es can never bear stress, it can never topicalize. Other pronouns can only move to COMP if they are heavily stressed.

The extraction facts may also be captured in an S-I-VP analysis. First, it is important to notice that it is not only wh-elements created by extraction that cannot co-occur with topics. A better generalization is that topicalization cannot co-occur with a +wh COMP though it may co-occur with a -wh COMP.

- (27) a. Ikh veys nit tsi er hot im gezen in Paris
 I know not whether he has him seen in Paris
 'I don't know whether he saw him in Paris.'

b. *Ikh veyz nit tsi in Paris hot er im gezen

(28) a. Zi hot gezogt az zi hot im gezen in Paris
 she has said that she has him seen in Paris
 'She said that she saw him in Paris.'

b. Zi hot gezogt az in Paris hot zi im gezen.

These examples show that extraction is not blocked by a previous extraction but rather by a COMP which is already filled by a +wh element. This element may have been created by extraction as in (24b-d) and (25b-d), or it may be base generated as in (27). Let us simply say for the time being that both +wh and topicalization involve the same position in COMP, and therefore, these two cannot co-occur. Below I will discuss the nature of COMP in more detail, but at this point of the discussion it is sufficient to recognize that preverbal subjects are not in COMP.

I have argued above that Yiddish is underlyingly S-I-VP. This leaves us with a problem that the I-S-VP account avoided, and that is the problem of SAI. I leave the solution of this to a later section and now turn back to German.

3.3 German revisited

Having looked at Yiddish, we have raised questions that may be applicable to German as well. In this section we will look at similar questions in German and argue for a S-I-VP structure similar to the one we have argued for in Yiddish. We will then test this analysis against some

old arguments for an S-VP-I structure.

In the traditional account for German, as in the case of the suggested I-S-VP structure for Yiddish, there is no way to distinguish between pre-verbal subjects and pre-verbal non-subjects. Again, the question is whether we need this distinction. Of the two arguments used for Yiddish, only one is relevant to German. Since there are no V2 effects in embedded sentences in German⁶, we cannot use extraction as a diagnostic for a subject/non-subject asymmetry. However, it is the case that pronouns differ in their distribution depending on whether they are subject or non-subject pronouns. Below we see that es-subject may appear preverbally, but es-object may not. Also, all personal pronouns may appear preverbally, but if they are non-subjects, they must be heavily stressed.

- (29) a. Er hat das Brot gegessen
 he has the bread eaten
 'He has eaten the bread.'
- b. *Es hat er gegessen.
 it has he eaten
 'He has eaten it.'
- c. Ich habe ihn gesehen.
 I have him seen
 'I have seen him.'
- d. *Ihn habe ich gesehen (with ihn unstressed)

This suggests that German also has the restriction given in (26) and

6. There are embedded sentences which do not contain a COMP and which do show V2 effects. Because extraction from these structures triggers SAI, however, the facts that we find in Yiddish are obscured (see Thiersch 1978).

that we do want to distinguish subjects from non-subjects.

These facts also argue for the existence of NP movement. Thiersch, in his thesis, argues against NP movement in German. He claims that the d-structure object of a passive verb remains in object position and is assigned nominative case by a special case-assignment mechanism (see Thiersch 1978 for details).

- (30) a. Heute wurde der Vater gesehen
 Today was the father seen
 'The father was seen today.'
- b. [_S Heute wurde [_S e [_{VP} der Vater gesehen]]

This would mean that a preverbal nominative NP is fronted from the object position in a passive construction but from subject position in an active construction.

- (31) a. Der Vater wurde gesehen
 the father was seen
 'The father was seen.'
- a'. [_S Der Vater_i wurde [_S e [_{VP} t_i gesehen]]
- b. Der Vater hat das Buch gesehen
 the father has the book seen
 'The father has seen the book.'
- b'. [_S Der Vater_i hat [_S t_i [_{VP} das Buch gesehen]]

In terms of the present analysis where German is underlyingly S-I-VP, we would expect nominative NPs in passive constructions to behave like accusative NPs in active constructions. This would mean that like the accusative NPs of active verbs, we would expect the nominative NPs of passive verbs not to topicalize if they are unstressed pronominals (see (26)). However, we can see below that this is not the case. Nominative

unstressed pronouns may appear preverbally whether they are in an active or a passive construction.

- (32) Es hat das Brot gegessen
 it has the bread eaten
 'It has eaten the bread.'
- (33) Es wurde gegessen
 it was eaten
 'It was eaten.' (it = referential)
- (34) *Es hat sie gegessen.
 it has she eaten
 'She has eaten it.'

If, however, we assume that German has NP movement and that nominative NPs in passive constructions are assigned case in the subject position, the above configuration of judgements is predicted. In (32) and (33), es is in its d-structure position, while in (34), es has moved from the VP to COMP violating (26).

If we posit a d-structure order for German of S-I-VP, we can, again, say that pronouns that cannot bear stress cannot topicalize. Like Yiddish, to account for SAI we must say that topicalization of a non-subject constituent triggers movement of INFL to COMP.

This d-structure word order will also account for the lack of ambiguity in the following example.

- (35) a. Die Tochter hat die Mutter geküßt.
 the daughter has the mother kissed
- b. = 'The daughter has kissed the mother.'
- c. ≠ 'The mother has kissed the daughter.'

Since the feminine article, die, is the same whether it is nominative or accusative, (35) should be ambiguous between the reading where the

daughter has kissed the mother and the mother has kissed the daughter. However, only the former reading is available. Given an S-I-VP d-structure for German, we can assume that in any possibly ambiguous structure, the d-structure word order is assumed. If a reading is desired where the direct object has been topicalized and the mother is kissing the daughter, the first NP may be stressed to indicate its topic position⁷.

Now, what of den Besten's argument for supposing that INFL is in COMP? Basically he states that since subject clitics attach to INFL in root S's and to COMP in embedded S's, by saying that INFL is in COMP in root S's, the generalization is that subject clitics attach to COMP. There is only one root construction in our analysis that does not have the INFL in COMP. This is the construction where subject is sentence initial. Our analysis of this construction is given in (a) below, and the traditional analysis in (b).

- (36) a. [_S NP I VP]
 b. [_{?NP_i} I_j [_S t_i VP t_j]]⁸

Notice that in exactly these constructions, the subject is not in the correct position to cliticize in either analysis. The data, then, are consistent with both analyses and thereby argue for neither one nor the

7. It has been pointed out to me by Luigi Rizzi that in a Thiersch-type analysis, the unambiguous sentence in (35) still reflects d-structure word order even though the subject will have moved from its d-structure position.

8. I leave the ? category unlabeled because of differences in the theories. As will be discussed, Koopman believes that it is S" and that INFL alone occupies the COMP position.

other.

Another argument given by Koopman (1983b) for this sort of analysis might prove problematic for my analysis. Koopman argues, following Koster, that (37) below is derived from (38) by an optional D-word deletion in COMP.

(37) Jan heeft hem ontmoet
John has him met
'John has met him.'

(38) Jan die heeft hem ontmoet
John D has him met
'John has met him.'

Koopman uses examples such as these to argue that subjects in Dutch main clauses such as in (37) occur in a Topic position outside of S'.

(39) [_S NP_i [_S [_S [_S pro_i I_k] [_S e_i VP e_k]]]

If it can be shown that subjects must be in this sort of Topic position, my analysis cannot be correct. However, the data below show that not all elements that appear sentence initially can appear in Topic position.

I first question the nature of the rule which optionally deletes D-words in COMP. Then I point out that the inventory of elements that may appear preverbally are not the same as the elements that may appear in D-word constructions.

The argument that D-words may delete optionally in COMP comes from examples of the following type.

- (40) (Dat) geloof ik niet (from Koopman, p. 221)
 That believe I not
 'I don't believe that.'
- (41) Ik geloof *(dat) niet
 I believe that not
 'I don't believe that.'

Several comments should be made about these constructions. First, the dat that is deleting is the topicalized object itself. Presumably, then, as the topicalized object, it too should be outside of the S' just as Marie is in the example below.

- (42) Marie (die) ken ik niet (from Koopman, p. 221)
 Mary that-one know I not
 'Mary I don't know.'

Secondly, examples such as (40) are marked without the D-word and must be set into a specific discourse context, whereas the NP-D-word-S' sentences are less marked without the D-word. This makes it doubtful that the same phenomenon which relates the two options of (40) (with and without the D-word) also relates the two choices of (42).

Beyond problems with the effects of the the D-word deletion rule, there is clear evidence that the constructions without the D-word allow for different sentence initial NPs than do the constructions with the D-words. Notice that if I argue for two different constructions for pre-verbal topics, one with D-words, one without, I am arguing for three different preverbal NP positions. The constructions are given below.

(43) [_S NP I VP]

Jan heeft het gegeten
John has it eaten
'John has eaten it.'

(44) [_S NP_i I_j [_S NP e_j [_{VP} ... t_i ...]]]

Dat broodje heeft Jan gegeten
that sandwich has John eaten
'John has eaten that sandwich.'

(45) [_S NP_i [_S D-word_i I_j [_S NP e_j [_{VP} ... t_i ...]]]]]

Dat broodje dat heeft Jan gegeten
that sandwich D has John eaten
'That sandwich, John has eaten.'

I will show that all three positions are justified. In structures such as (43), all NPs may appear (i.e., unstressed pronouns as well as other NPs). In structures such as (44), stressed, but not unstressed pronouns may appear, as can reflexives, and finally in constructions such as (45), no pronouns may appear at all.

(46) Preverbal Subject (= (43))

a. Jan heeft dat broodje gegeten
John has that sandwich eaten
'John has eaten that sandwich.'

b. Het heeft dat broodje gegeten
It has that sandwich eaten
'It has eaten that sandwich.'

(47) Preverbal Non-subjects (= (45))

a. Dat broodje heb ik gegeten
that sandwich have I eaten
'I have eaten that sandwich.'

b. Mezelf heb ik nooit verloochend
myself have I never compromised
'I have never compromised myself.'

- c. *Het heb ik gegeten
 it have I eaten
 'I have eaten it.'

(48) Pre-D-word (= (47))

- a. Dat broodje dat heb ik gegeten
 that sandwich D have I eaten
 'That sandwich, I have eaten.'
- b. *Mezelf die ik heb nooit verloochend
- c. *Het dat heeft dat broodje gegeten
 It D has that sandwich eaten
 'It, it has eaten that sandwich.'
- d. *Het dat heb ik gegeten
 It D have I eaten
 'It, I have eaten.'

My claim is that there is no optional rule of D-word deletion in COMP except for the discourse oriented rule exemplified above. In structures such as (45), however, the D-word is required for coindexation with the extra-sentential NP. This indexation makes this construction look very much like a relative clause, and, interestingly, D-words are not optionally deleted in relative clauses.

- (49) de jongen *(die) het gegeten heeft
 the boy D it eaten has
 'the boy who ate it'

The main difference between the main clause D-word construction and the relative clause construction is that INFL does not move to COMP in the latter. It is this movement, presumably, which identifies the structure as a main clause.

My conclusion is that neither the argument that INFL must be in COMP, nor the argument that sentence-initial NPs must be outside of S' provide strong evidence against the S-I-VP structure which I have proposed for

German. First, although I agree that INFL may appear in COMP, it is not required by the evidence to be in COMP when subjects are sentence initial. Secondly, I do not believe that all sentence initial NPs are outside of S', but rather, only if a D-word appears is there an argument for this structure. There is, however, nothing in my analysis that says that subjects may not topicalize or coindex with a presentential NP. I claim only that they are not required to do so.

3.4 Theoretical Motivations

I have argued that both Yiddish and German are S-I-VP languages differing only in the headedness of their VPs. Yiddish VP is head-initial, German VP is head-final. This entails that both languages have SAI in the event of topicalization (or a Yes/No question). In this section I address this issue of INFL movement directly and examine the structure of COMP.

I will claim that heads (X^0 s) can only move into the category that governs them. This appears to be true of noun incorporation (see Baker 1983), of V^0 movement, and I^0 movement. This sort of movement will explain why I^0 may move into COMP. The reason I^0 must move into COMP, I claim, is that root S's may have no COMP. If there is COMP, however, then, by X'-theory, this COMP must have a legitimate head since all maximal projections must have heads. If the head of a category is empty, then it falls under the ECP and must be properly governed (or identified

in terms of Chapter 4).

In the case of COMP, we will argue that the head may be licensed in a number of ways. (1) It may be properly governed (identified) by the verb which subcategorizes for its maximal projection. (2) It may be lexical as in the case of that, or because in English, or (3) it may be filled by movement of I^0 . It is this type of movement which is discussed in the next section.

3.4.1 Movement of Heads

In my analysis of German, I am forced to allow INFL to appear in three positions: (i) in COMP (50), (ii) between the subject NP and the VP (51), and (iii) sentence finally (52).

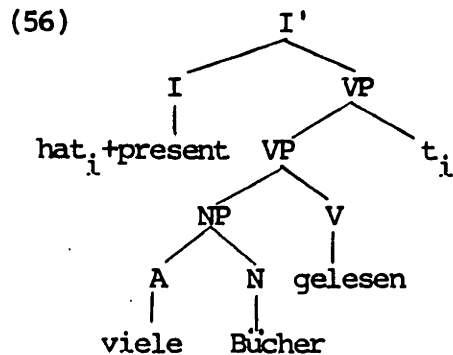
(50) [_S X_i INFL_j [_S NP t_j [_{VP} ... t_i ...]]]

(51) [_S NP INFL VP]

(52) [_S daB -wh [_S NP t_i [_{VP} NP V+INFL_i]]]

This, at first, appears very messy. The traditional analysis needs only two positions for INFL: sentence final which is base generated, and V2 which occurs through INFL fronting to COMP. My analysis needs not only a fronting rule but a movement to the right. This means two rules instead of one, and movement to the right which is an uncommon type of rule⁹. In order to motivate these two movements, I first discuss movement of heads, and secondly discuss the relationship of INFL and V^0 .

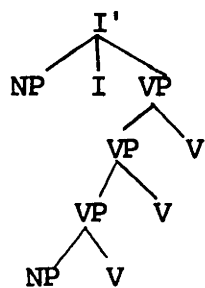
9. Wh- movement is universally to the left. Only Focus NP shift and PP and S' extraposition move to the right.



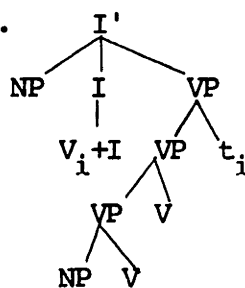
The question of which verb in a series of German verbs is inflected is easily solved if we assume that the verb has to move to INFL. If we assume the structure of (55), the only verb that INFL governs is the 'top' verb. Therefore it is only the 'top' verb that can move to INFL.

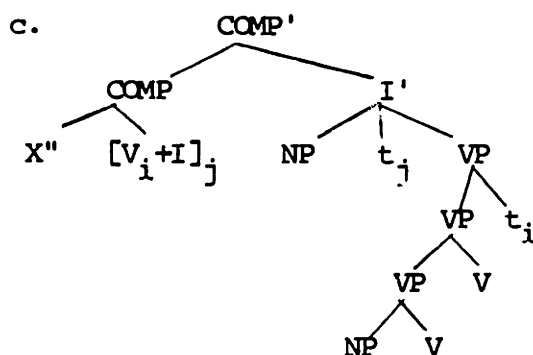
We can now see that we account for the appearance of the inflected verb in sentence second position by two movements of heads into their governors. First V^0 moves into $INFL^0$, then $INFL^0$, which now contains $I^0 + V^0$, moves into $COMP^0$.

(57) a.



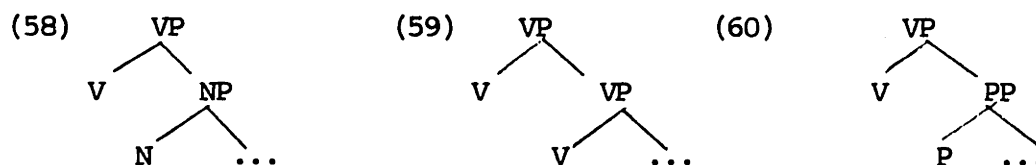
b.





I am assuming that any movement of INFL or the V will leave an empty category that must be properly governed. In these cases where X^O moves into its governing category, I will assume that the trace is antecedent governed.

Baker has pointed out to me (p.c.), there are other incorporation phenomena that are parallel to Noun Incorporation. The ones he mentions are given below.



(58) is exemplified by the case of Noun Incorporation that we have seen above. (59) is exemplified by Japanese causatives and (60) by applied verbs in Bahasa Indonesian. Examples, taken from Marantz (1981) are given below.

- (61) Japanese causative: (p. 310)
 Taroo ga Hanako ni okasi o tabe-sase-ta
 Taro NOM Hanako DAT cake ACC eat-CAUSE-PAST
 'Taro let/made Hanako eat the cake.'

(62) Bahasa Indonesia: (p. 274)

a. Saja mem-bawa surat itu kepada Ali.
 I TRANS-bring letter the to Ali
 'I brought the letter to Ali.'

b. Saja mem-bawa-kan Ali surat itu.
 I TRANS-bring-APPL Ali letter the
 'I brought Ali the letter.'

Baker makes the important observation (see also Marantz 1981) that this sort of movement is constrained by the morphological rules of a given language and the interaction of these rules with the syntactic component. Noun Incorporation can occur only in languages that have not only the proper compounding rules but also the proper interaction between these compounding rules and the syntax. English has V movement into INFL but does not have N movement into V, V movement into V, nor P movement into V.

I assume that this type of movement is a case of Emonds (1976) Local Transformation. His definition is given below (p.4).

Local Transformation: A transformation or a transformational operation that affects only an input sequence of a single nonphrase node C and of one adjacent constituent C' that is specified without a variable, such that the operation is not subject to any condition exterior to C and C', is called a "local transformation" (or a local transformational operation).

He has proposed a recent revision (Emonds, to appear) of this definition which now includes the head of C'. The possible structural description, then, would be:

(63) a $\begin{array}{c} Y' \\ | \\ Y \end{array}$

If *a* is a head category, then this configuration translates into the one we have been discussing above, the relation between a lexical category (*Y*) and the head (*a*) which governs its maximal projection (*Y'*).

3.4.2 INFL movement

3.4.2.1 INFL movement: Left

We might say that the *V* must move to INFL because the material in INFL must appear on a verbal element. This does not explain, however, why INFL moves to COMP. I will assume two things. First, following X'-theory, COMP must have a head and INFL, by being able to move to COMP⁰, can appear as the head of COMP¹⁰. Second I assume that operators appear in COMP, but not in the head position. The consequence of these two assumptions is that COMP must be headed in order to be able to contain an operator. If the head of COMP is empty, it must be properly governed. In a root clause, where COMP is not properly governed, the head must be filled¹¹.

Different operators may appear in COMP as shown below.

10. See Jaspers (1984) for a different analysis of INFL movement into COMP. He assumes that INFL movement is needed in order to extend the extraction domain.

11. Speas (1984) accounts for this by stating that operators must be governed. Within the analysis presented here, being governed is the same as stating that every category must have a head. The difference in the two analyses is that, for Speas, embedded operators are governed by the matrix verb. For my analysis, the head of the embedded COMP is identified by the matrix verb, and this head, in turn, governs the embedded operator.

1) COMP = XP and INFL: If COMP consists of a maximal projection and INFL, the reading is one where the XP is focused and binds a variable within the I'. "It is for x: x = ..., ... x"

- (64) [Den Vater hat [das Kind t geküßt]]
 the father has the child t kissed
 'The child has kissed the father.'
 it is for x: x the father, the child kissed x

2) COMP = *wh* and INFL: If COMP consists of a *wh*-word and INFL, the reading is one where the *wh*-word is a question operator binding a variable within the I'. "For which x: x = ..., x ..."

- (65) [Wen hat [das Kind t geküßt]]
 who has the child t kissed
 'Who has the child kissed?'
 for which x: x a person, the child kissed x

3) COMP = e and INFL(indicative): If the first position of COMP is empty, we can still assume the existence of some empty operator depending on the mood of INFL as the head of COMP. If INFL is indicative, then the empty operator is a Yes/No question operator.

- (66) [e hat [das Kind den Vater geküßt]]
 has the child the father kissed
 'Has the child kissed the father?'

4) COMP = e and INFL(subjunctive): If the empty position in COMP coexists with a verb in the subjunctive, the operator is a conditional.

- (67) [e hätte [das Kind den Vater geküßt]]
 had the child the father kissed
 'Had the child kissed the father, ...'

The distinction between the indicative and the subjunctive INFL in COMP is clear. Taking English examples, we can see that there is another option for the conditional clause which is to spell out the head of COMP

as if.

(68) If I were a bit younger, I would ...

When the head is explicitly conditional, the verb may be either in the subjunctive or the indicative.

(69) If I was a bit younger, I would ...

That option, however, is not available for the inverted version.

(70) *Was I a bit younger, I would ...

5) COMP = 0: If there is no COMP, there is no operator and we assume the default illocutionary force of a declarative.

(71) Das Kind hat den Vater geküßt.
 the child has the father kissed
 'The child has kissed the father.'

There are two ways that COMP may be lexically filled. One we have seen above, where INFL moves into COMP. The second way that COMP may be filled is by the lexical insertion at d-structure of subordinating conjunctions such as when, as, because, etc. This seems not to be a possible option for a root S. Let us draw another conclusion from this which is that +Tense must be the head of E (Expression, as in Banfield 1973). In a normal declarative with no COMP, +Tense will be in INFL and therefore be the head of I' and therefore of E. If E was an S' (COMP'), then the head of COMP' must have a +Tense element. This would insure that the head of COMP would be filled by INFL and not by a spell-out of some sort.

This would also explain various already noted facts. First, matrix

verbs cannot be infinitivals since INFL, as the head of I', will not contain [+Tense].

For some reason, exclamations do not need [+tense] in their heads:

- (72) How crazy she is!
 *How crazy is she!
 What an enormous cat she has!
 *What an enormous cat has she!

This would explain why strings such as Quoi faire! ('What to do') can only be used as exclamations and never as questions.

- (73) *PRO to go to school.

Secondly, the matrix COMP cannot contain a -wh complementizer. E will now be COMP', but -wh COMP does not trigger inversion and the head of COMP' will not contain +Tense.

- (74) That June will go to England.

Also, this will explain the fact noted above concerning the difference between D-word matrix constructions and relative clauses in Dutch.

- (75) D-word construction:
 Dat broodje [dat heb [ik gegeten]]
 that sandwich [that have [I eaten]]
 'That sandwich, I have eaten.'
- (76) Relative Clause:
 dat broodje [dat [ik gegeten heb]]
 that sandwich [that [I eaten have]]
 'the sandwich I have eaten'

In (75), the head of E is the matrix COMP which contains dat and heb. This, then, qualifies as an E since the head contains a +Tense element. (76), however, cannot be an E since the head of COMP' contains

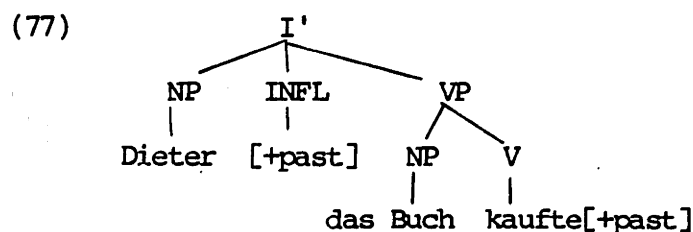
only dat and no element that is marked for +Tense. (76), then, can serve only as an argument.

3.4.2.2 INFL movement: Right

Movement of INFL to the right is more problematic. I will propose, using ideas from Fabb (1984) and Roberts (forthcoming), that it is not so much that INFL moves, but that INFL, under certain conditions, is allowed to remain empty, and that inflectional morphology may be generated directly on the verb.

The idea that I will use from Fabb and Roberts is that inflectional affixes are randomly generated but must be checked by some means. For instance, in German, a noun will be generated with accusative case, but if it is not governed by a verb which can assign accusative case, the structure is ruled out.

In the same way, a verb form may be generated with a [+past] affix, but if it is not governed by an INFL bearing the [+past] feature, the structure will be ruled out. At d-structure, then, we may have:



The effect is that INFL may be generated with only features. As we have said before, heads must be identified. In the structure given above, INFL may be licensed either by movement of the V, or by being governed by

a specified COMP¹².

INFL may also be generated with an inflectional affix. This will be sufficient to identify the head. However, since the affix must appear on a verbal element, either the V must move into INFL, or, as in the case of do-support in English, the affix appears on a pleonastic type of INFL.

Something different must be said about certain constructions in English. We know that main verbs do not raise into the INFL node (78), though auxiliaries (79) and modals (80) are generated there (see Lightfoot 1979, Roberts 1983 for a historical view of this). This is easy to see in cases where INFL has moved into COMP.

(78) *What bought Peter?

(79) What is Peter buying?

(80) What could Peter buy?

The generalization is that inflectional affixes may appear unaffixed when they appear adjacent to the verb. This is not unreasonable. Let us say that the attachment of inflection to a verb happens at PF and must be a local rule. That is, inflection can only attach to an adjacent verb. This may be part of a more general phenomenon which is that, if a node must be realized morphologically on another constituent, the node and the constituent must be adjacent at PF, and therefore, at s-structure.

We can see below that as soon as string adjacency is disturbed, INFL must be spelled out with a verbal pleonastic.

12. See Webelhuth 1983 for a similar analysis which posits an I-NP-VP word order for German. He also uses proper government to predict the position of the inflected verb.

- (81) a. Peter bought a book.
 b. [_S Peter [+past] [_{VP} bought_[+past] a book]]
- (82) a. Peter did not buy a book.
 b. [_S Peter [do+past] not [_{VP} buy a book]]
- (83) a. Did Peter buy a book?
 b. [_S_i [do+past]_i [_S Peter t_i [_{VP} buy a book]]

Traces do not seem to interfere with this adjacency. When INFL and the verb are separated by traces, INFL may still remain empty. Evidence for this comes from matrix wh-questions. It has often been noted that INFL does not move to COMP when the wh-word is subject.

- (84) What did she see?
 *What saw she?
 *What she saw?

- (85) *Who did see it?
 Who saw it?

Various explanations have been given for this (Koopman, Jaspers, etc), and to these I add another which assumes, however, that INFL does move to COMP. Below we see the structures for (84) and (85).

- (86) [_S_i what_i INFL_j [_S she t_j see t_i]]
- (87) [_S_i who_i INFL_j [_S t_i t_j see it]]

In (86), INFL is not adjacent to the verb at PF since she intervenes. Therefore INFL must be spelled out with do-support. In (87), however, INFL is separated from the verb only by traces which will not be visible at PF¹³. INFL may, in this case, appear directly on the verb accounting for the lack of do-support.

13. I am assuming Bouchard's account for wanna contraction.

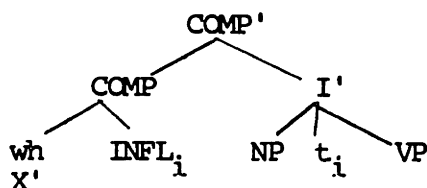
There are three ways that inflectional affixes may attach to the verb. If the affix has been generated in INFL, either (i) the verb must be adjacent to INFL at PF and therefore at s-structure, or (ii) the verb must move into INFL. When the inflectional affix is generated directly on the verb, adjacency is achieved at d-structure. In this case, since the head of INFL' bears no phonetic features, it must either be properly governed, or the verb must move into it. In Chapter 4, we will assume a notion of proper government in which COMP properly governs I' and INFL properly governs VP.

Below we can see how the possible positions for INFL in German will follow from the fact that empty heads must be identified. In (88), four possible COMPs are given, and in (89), four possible INFLs.

(88) COMPs

a. no COMP (root sentence)

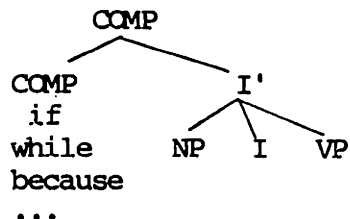
b.



Filled:

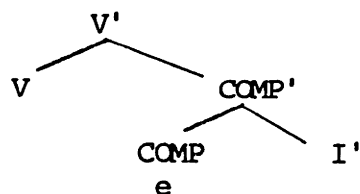
w/head of complement

c.



lexical spell-out

d.

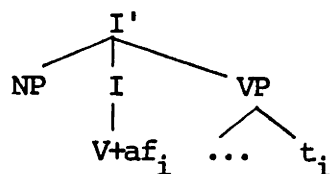


Empty:

lexically governed

(89) INFL:

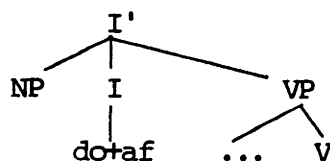
a.



Filled:

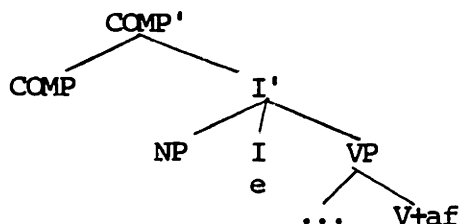
w/head of complement

b.



w/pleonastic

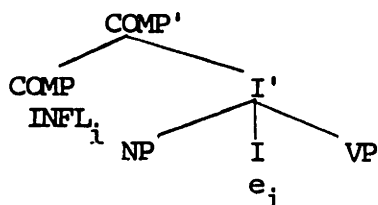
c.



Empty:

lexically governed

d.



antecedent governed

In German, when the inflected verb appears in front of the subject, it is in COMP as shown in (88b) and (89d). When it appears between the subject and the VP, it is in its base generated position as in (89a) and when it appears sentence finally, it is as in construction (89c).

The above explains when INFL may be empty in certain configurations. Now we want an explanation of why INFL must be empty, i.e., why the V cannot move into INFL in an embedded clause. This same question arises in the movement of INFL into COMP. We know why INFL need not move into COMP in embedded sentences, but we need an explanation as to why INFL may not move into COMP. Though alternatives are available, such as saying that features in properly governed heads count as having filled the head preventing further movement, I prefer using the Last Resort Principle (Chomsky, fall lectures 1983) and say that verbs will move into INFL and INFL will move into COMP only when required.

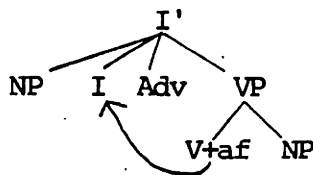
An effect more subtle than that of German is found in Scandinavian languages. Swedish is like Yiddish in that it is SVO and has V2 effects in root and embedded clauses. Because of this I will assume that it is S-I-VP. There is an interesting alternation, however, in embedded clauses, given in Platzack (1983). Sentence adverbials (here I use Platzack's examples with the negative particle) appear to the right of the inflected verb in root clauses and to the left of the inflected verb in embedded clauses.

- (90) a. Jonas gillade inte honom NP V+I Adv NP
 Jonas liked not him
 'Jonas didn't like him.'
- b. att Jonas inte gillade honom NP Adv V+I NP
 that Jonas not liked him
 'that Jonas didn't like him'

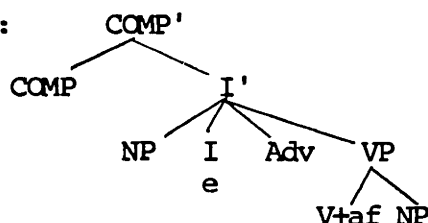
As in the German accounts, Platzack explains this variation through INFL movement and topicalization. I claim, however, that the difference

in order arises from the fact that the embedded INFL is properly governed and therefore may remain empty.

(91) ROOT: NP V+af Adv [t NP]



EMBEDDED: NP e Adv [V+af NP]



3.4.3 Summary

1. German and Yiddish are S-I-VP
2. Heads can move only if they move into the category by which they are governed.
3. Inflectional affixes are randomly generated and restricted by checking mechanisms.
4. Heads may remain empty only if they are properly governed.
5. Affixes may appear unattached at s-structure if they are adjacent to the form to which they will be affixed.

An advantage of viewing German as being S-I-VP rather than S-VP-I, is that it is no longer puzzling why German does not behave more like other verb-final languages, such as Japanese or Turkish. This is purely at the

level of speculation, but will be discussed more in Chapters 4 and 5.

3.5 Historical speculations

We have just seen ample proof of a separate INFL node. Without this node, word order facts in Germanic languages would be very difficult to capture. In this section I offer speculation as to how different Germanic languages came to have different word orders. In the discussion I will touch on different subjects such as the contradictory demands made on INFL, the purpose of the root complementizer, and how these effect language change. I will also speculate why subjects and INFL seem drawn to sentence initial position.

3.5.1 Assumptions

In order to account for variations and changes in the order of S constituents, I start by making certain assumptions. These may be controversial but I conclude that they take us a way towards accounting for certain reported phenomena.

First, I assume that there is a scale of markedness for certain configurations that depend on adjacency for case assignment, direction of government, etc. In particular, I am assuming that there are three unmarked constructions.

3.5.1.1 INFL and V adjacency:

An unmarked configuration would be one with INFL adjacent to the VP and on the side of the VP that the V is on (e.g. English: S-I-V-O). This configuration would be unmarked since it means that I' and V' are either both head-final or head-initial and that the subject does not intervene between I⁰ and its complement VP. Also, as we have seen in English, since INFL is often morphologically dependent on the V, if these two are generated in adjacent positions, affixation may occur without resorting to movement.

3.5.1.2 Case Adjacency:

This is not a new notion and it is given a detailed account in Stowell (1981). I am assuming that the unmarked condition on case assignment is adjacency. Given that INFL assigns case to the subject, we would expect these two constituents to be adjacent, even though, as I have claimed, INFL assigns case by way of coindexation. Stowell presents this in detail for the instances of a verb and its object (Adjacency Condition on Case Assignment, pg. 110), and Pesetsky (1982) extends this in an interesting way for INFL and subject (pg. 252-254) (see Chapter 2 of this thesis).

3.5.1.3 Unity of case assignment direction:

Greenberg notices that V-O languages tend to be PREpositional while

O-V languages tend to be POSTpositional. This tendency can be seen as a tendency to assign case in the same direction. We can now extend that to INFL so the V-O/P-NP languages, will also be INFL-S, and O-V/NP-P languages will tend to be S-INFL. Koopman proposes that this tendency is a requirement at least at s-structure. Languages, such as Dutch, can be shown to conform to the requirement when given a different analysis. I do not take such a strong stand. In my analysis of Yiddish (and English), I assume that in the S-I-V-O structure, the verb assigns case to the right, and the INFL node assigns case to the left.

3.5.1.4 Inconsistency

The important thing to notice about these three tendencies is that they cannot all occur at once. If INFL and V are adjacent to one another, they cannot both be adjacent to the NPs that they casemark, and assign case in the same direction (S-I-V-O), if they are adjacent to one another and assign case in the same direction, they cannot be adjacent to the NPs which they casemark (S-O-V-I), and if INFL and V assign case in the same direction to adjacent NPs, they cannot be adjacent to one another (I-S-V-O, S-I-O-V). I will contend that it is just this tension that causes languages to change. Since there is no endpoint, there is no attainable ideal.

3.5.2 Germanic languages

With these assumptions in mind, I now look at word order changes that have occurred in Germanic languages. Many of the ideas expressed here are

speculative but provide a point of departure for further study.

Stage I

The preferred word order for Latin was V+INFL final preceded by S-O (i.e. S-O-V+INFL); however, a common literary style placed the verb (inflected verb) first. Lehman (1974) writes:

The three sentence-initial verbs in these [examples given] lines of exhilaration illustrate the marked word order which we find in the Veda, in Homer, and in much else of the earliest surviving material. (p.21)

As explanation for this marked order, he later writes:

Elements in sentences can be emphasized by marking; the chief device for such emphasis is initial position. Arrangement in this position is brought about by stylistic rules, applied after structures have been generated by P-rules [phrase structure rules] and transformational rules. (p.219)

Again the examples he gives are verb initial. There seems, then, to be a stylistic rule of verb preposing. This is not uncommon. Haiman (1974) mentions such a rule for Icelandic which is used for "lively narration" (p.95).

Marked stylistic rules often seem to affect the very beginning of the sentence. English becomes pro-drop, and German and Dutch, topic-drop.

(92) (I) came in late last night, then went straight to bed.

(93) (Das) habe ich nicht gelesen.
That have I not read
'I haven't read that.'

(94) (Dat) heb ik niet gezegd
(that) have I not said
'I haven't said that.'

Stage II

One way a grammar of this sort might change is by having this stylistic rule which was part of the PF component move into the syntactic component as a rule of syntax. Because it is a fronting rule, it may easily be reinterpreted as a movement to COMP. Like the V movement into COMP discussed above, this would entail the movement of V into INFL and the movement of INFL into the head of COMP. Presumably this movement would be due to a focus operator in COMP and would have an illocutionary effect (Gueron 1981).

Let us say, then, that Stage II has INFL movement at S-structure because of a focus operator in COMP. Stage I would have been S-O-V+INFL with a stylistic rule I-S-O-V. Stage II would be COMP S-O-V+INFL with a syntactic rule [e INFL [S O V]]. At this point in the research, this stage is purely hypothetical, offering a gentle transition between two other stages.

Stage III

I am imagining now that children of Stage II speakers are faced with INFL first sentences and posit this as a deep structure order. Perhaps the effects of the focus operator in COMP are lost, the form becomes more and more common, to the point where it is considered to be unmarked. Whatever the means, we know that the result was achieved. Gothic and Old Icelandic both appear verb-initial according to Haiman (p.92-93) which I take to mean inflected verb initial. Lockwood (1969) states that the word order variations for Old High German (OHG) were finite verb first, second

or final although he only gives examples of one word verbs. A sign that this change has taken place is that now the INFL final order in main clauses is more marked. Lockwood mentions that in OHG, such word order was found mainly in poetry - a tradition that extends into the present, (Lockwood, p.260). The finite verb remains clause final, however, in embedded sentences (though still not as rigidly as in Modern German, see Lockwood). This variation between root and embedded clauses can be accounted for by the differences between root and embedded COMPs mentioned in earlier sections of this chapter.

Topicalization is very common, however, we know that it is not obligatory. Most of the finite verb initial cases given by Lockwood and Haiman are cases where there either is no nominative NP, (95a) and (95b), or cases where the verb can be interpreted as unaccusative, (96a) and (96b).

- (95) a. *Limphit mir*
'It behooves me.' OHG: Haiman, p.104
- b. *Tunchet mir reht*
'It seems right to me.'
- (96) a. *Was liuto filu in flize*
was people many in urgency OHG: Lockwood, p.256
'Many people were troubled.'
- b. *See, quimit der brutigomo*
'Behold, the bridegroom comes.'

In both of these cases, an argument can be made that there is an empty subject position and that, like Italian, since there is no pleonastic element, the preverbal topic position can remain empty, perhaps filled by *pro*. Later, when pleonastic elements are introduced, according

to some analyses (Safir, Thiersch, Haiman), it is to fill this position. There is an example given by Haiman, however, that shows that topicalization is not obligatory.

- (97) Wanther do ar arme wuntane bouga. Haiman, p.101
 wound-he from the arm wound rings
 'From his arm he unwound the coiled rings.'

Here there is a subject, the verb is transitive (therefore not unaccusative) and further the subject is pronominal, lessening further the chances that there has been an inversion of the subject and the verb phrase. There would be no argument, then, that an empty pleonastic element was in topic position.

In summary, the first three stages are:

Stage I: The word order is basically S-O-V-INFL though scrambling is fairly free. There are no adjacency requirements for case assignment suggesting that NPs are inserted with case. V+INFL are both head-final.

Stage II: The structure is now more defined with the creation of a COMP node (i.e. [[S-O-V-INFL]]). We can now see movement of INFL into COMP. What was a stylistic rule in PF has become a syntactic rule of movement to COMP.

Stage III: The word order has now changed to I-S-O-V which is less marked since INFL is adjacent to the Subject, and V to Object. Movement rules such as topicalization now become common. Perhaps this is because a structure has been set up that will allow positions to be governed. Free word order languages do not seem to have movement rules.

A stylistic rule has become a syntactic rule which has been interpreted as D-structure word order.

Stage IVa

Since Stage III is marked according to our assumptions (V and INFL are not adjacent, and though they assign case to adjacent NPS, they do not assign case in the same direction) we might expect a change to occur. One way to resolve the problem would be to have the verb phrase become head initial (V-O: I-S-V-O). This is the structure that Sproat (1983a,b) argues for in Welsh. Something that Lockwood mentions suggests a way that such a change could come about. When writing of the position of the finite verb in subordinate clauses, he mentions that there are times when constituents are found after the finite verb in embedded clauses. Basically he states that the finite verb was most commonly followed by prepositional phrases but could be followed by objects and other complements especially if these complements were long, followed by complements of their own, or by relative clauses. I interpret this as saying that the VP of OHG was not strictly final or initial but that it assigned case and theta role to the left. The rule that put the PPs postverbally was a scrambling rule, and the one that put the complements post verbally was a syntactic rule of Focus NP shift (see Stowell 1981). It is easy to see how this might become the unmarked order.

Stage IVb

Another way to resolve the instability of ISOV is to reanalyze the topicalized NP as the subject. In terms of acquisition, one might imagine

that a child hearing only simple sentences and predominantly ones with subject topics, would analyze this as a D-structure string rather than transformationally derived string. Later when encountering the Stage III object-topic strings, he would account for these with two transformations - Topicalization and movement of INFL into COMP. This means that a child hearing (98) will analyze it as (99).

(98) [_S Subject_i I_j [_S t_i Object V t_j]]

(99) [_S Subject INFL Object V]

I claim that this is the point where es insertion is introduced, and where the V2 constraint can first be observed (this will be discussed in more detail in Chapter 5).

I have provided a lengthy argument that Germanic languages are underlyingly INFL second. My conclusion, then, is that Stage IVb is NP-INFL-VP. German differs from Yiddish in that German's VP is head-final, while Yiddish's VP is head-initial (similar to Welsh). Although the V and INFL are not contiguous in German, they each assign case leftward to adjacent (see Stowell for different definitions of "adjacent") NPs. Yiddish forfeits unity of direction of case assignment, but gains adjacency of INFL and V.

Stage V

English has a configuration similar to Yiddish; NP-INFL-V-NP. There is one remarkable difference, however. Yiddish shows V/2 effects while English, generally, does not. Descriptively, this simply means that English has lost the rule which moves INFL into COMP in these cases.

- (99) That kind of book, Faith likes.
- (99) *That kind of book likes Faith.
- (99) Yesterday, Faith wrote me a letter.

One would like to rephrase this in terms of a reanalysis of structure (see Rapoport 1984b for a similar change in Hebrew), but this is the subject of work in progress.

3.6 Conclusion and Typological Speculations

The spirit of this section is that changes in language should be restricted along the same lines that grammars are restricted. With the theoretical shift from grammars of rules to grammars of principles and parameters, there is also a shift in the way that historical syntax should be viewed. Changes in grammars can no longer be described in terms of rule loss or rule reordering, but rather in changes of parameters. Just as rules used to be uncovered by examining different grammars (be they different stages of the same language or different languages), so can parameters be teased out by examining how languages can differ.

Possibilities of word order change can also give us insight into the relative distribution of certain word orders. This is dangerous water since, as Pullum (1982) points out, language distribution may have political explanations as well as markedness explanations. I, nevertheless, offer speculations as to why, for instance, OSV languages are so rare (Pullum (1981) lists Apurina, Nadib, Urubu, and Xavante, all languages of Brazil). If we consider the mirror image of OSV, that is,

VSO, we find these languages to be more abundant. This follows from the historical explanation given above.

Assuming that V-S-O languages are actually I-S-V-O, the marked element in these languages is that I and V are no longer contiguous. If the development of German languages given above is correct, the way that such an order may occur is through the movement of I^0 into COMP. If it is also true, as we have suggested above, that only sentence initial COMP is free for movement, this split of INFL and V will only come about through an INFL fronting rule, creating ..I..V.. but not ..V..I... This offers a syntactic explanation for a noticeable imbalance of word order.

There is a markedness argument for another noted imbalance, i.e. the disparity in the number of S-V-O languages versus OVS languages. I suggest that there is a tendency for predicates to appear on the right. Some Malayo-Polynesian languages have undergone the change from V-O-S to S-V-O. This could also occur through a fronting rule which is then reanalyzed as a d-structure predication relation.

(103) $[_S, [_S I V O S]] \longrightarrow [_S, S [_S I V O t]]$
 reanalyzed as $[S I V O]$

Because of the markedness condition described above, we would not expect an object fronting rule to be susceptible to the same reanalysis since the resulting structure would be O-I-V-S which would preclude the possibility of having a VP.

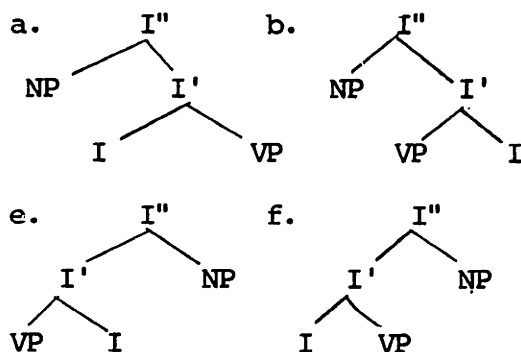
Historical change also argues for two theoretical claims, one is the existence of a separate INFL node and the other for a tripartite structure

of I'.

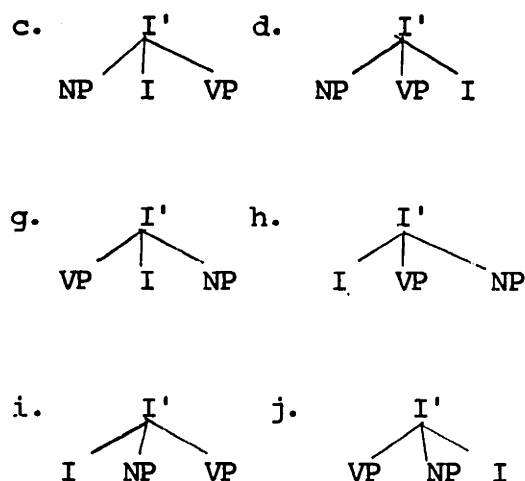
As we have seen in the suggested historical stages above, it is the ability of INFL to act as the head of COMP which triggers reanalysis, and it is the inconsistency of the demands on INFL which allows the reanalysis. Without the separate INFL node, not only would synchronic accounts of certain grammars (German, Irish) be more complex, but also diachronic accounts would be more puzzling.

By having a tripartite structure for I', independently motivated by our discussion of branching in Chapter 2, INFL is allowed to appear in more configurations. Below we compare I'' structures with I' structures.

(104) I'' structures:



I' structures:



The tripartite structure allows the subject node to intervene between the INFL node and the VP. This is the structure I propose for VSO languages. Without this possibility, reanalysis of the INFL fronting rule of Stage II into the d-structure of Stage III would not be possible. It is true that the other structure allowed by the tripartite analysis is not

evidenced by any language (VP-NP-I), however, as I have explained above, I feel that there is a historical explanation for this gap.

The above discussion is a sketch of how word order parameters and conditions on d-structure might lead once again to a more enlightened view of language typology, both synchronically and diachronically.

Chapter 4

VP GOVERNMENT

In this chapter I argue for a new form of proper government, that of VP government. It has been noted that the Empty Category Principle, in effect, is a recoverability condition on traces (see Bouchard 1982 and references cited therein). Let us say that every empty category must be identified and that this identification has two parts. First the gap itself must be identified, i.e., the fact that there is a gap. This can be done either by proper government by an X^0 or by the presence of a local antecedent. Secondly the content of the gap must be identified, which is done by the transmission of features through coindexation.

I am primarily concerned with the identification of a gap, and specifically those gaps with no local antecedents¹. I will be assuming that INFL is capable of transmitting features but not capable of identifying a gap, i.e., it neither properly governs nor counts as local antecedent for the subject position. Therefore, I will be concerned with two types of gaps; those left by extraction out of the local domain, and those that are coindexed with INFL for transmission of features (pro for

1. For the identification of content I will use the framework described in Bouchard(1982)(see Chapter 1).

Italian and Irish, pleonastic pro for German and Malagasy).

In the first section I motivate an account of German and Yiddish es-insertion different from that proposed by Safir (1982). My claim is that the pleonastic element, es, is not in COMP but in subject position, following the analysis of Chapter 3, and that its distribution can be explained through the presence or lack of proper government. This, however, would require a different notion of government from the one assumed in current frameworks (LGB, Aoun & Sportiche) since I am suggesting that subject position can be properly governed by the VP.

The second section investigates more closely this notion of VP government. I propose that the relevant notion is not a structural one but one of complementation, like that of Jaeggli (1980), Stowell (1981), Huang (1982). If an NP is in a complement position which can be assigned a θ -role directly, it is in a position of proper government. I further claim that this includes not only complements of a V within the VP, a traditional domain of proper government, but also a subject NP position which is adjacent to the VP. Since this involves a change in the definition of what a complement is, I discuss complementation and propose a new definition.

In the third section of the chapter, I introduce evidence from other languages to support the notion of VP government. I first claim that post-verbal subjects in Italian are properly governed not because they are in the VP but because they are in a complement position to the VP and thereby properly governed by the VP. This accounts for the lack of that-t

effects in Italian. Chamorro (Chung 1983), a V-S-O language, and Malagasy, a V-O-S language, also have no that-t effects. I assume an analysis for Chamorro along the lines of Emonds (1980) and Sproat (1983a,b) which derives a V-S-O structure by V-fronting. I suggest that the underlying word order of both languages is I-NP-VP and that the subject position is properly governed by the VP. Finally I suggest that pro-drop entails proper government of the subject position. The reason that pro-drop characteristics in Romance languages appear to coincide with subject-inversion is because subject position is properly governed in an I-VP-NP order (subject-inversion) but not in an NP-I-VP order. This explains why Irish is pro-drop without having subject inversion since even without subject inversion, the subject position in Irish, an I-S-VP language, is properly governed by the VP.

In the last section, I discuss the distinction that must still be made between properly governed positions within the VP and properly governed positions outside of the VP. Huang's Condition on Extraction Domains (CED) states that properly governed constituents are possible domains of extraction. However, constituents that are properly governed by XPs do not allow extraction while constituents that are properly governed by X^0 s do. I then propose a new formulation of the CED to account for this distinction.

4.1 Es Insertion

4.1.1 Facts

German has two pleonastics which will be discussed in detail in Chapter 5. It is sufficient, at this point, simply to distinguish the two by their superficial properties. A confusion arises because under certain circumstances, both appear as es.

- (1) a. Es regnet
it rains
'It is raining.'
- b. Es ist klar, daß die Frau das Buch gekauft hat.
it is clear that the woman the book bought has
'It is clear that the woman has bought the book.'
- (2) a. Es sind drei Kinder gekommen
it are three children come
'There have come three children.'
- b. Es wird getanzt
it becomes danced
*'There was danced.'

However, under other conditions shown below, the difference is obvious. One form of es which I will call ES is able to appear in these environments. The other form of es which I will label ES/O is not able to appear except in its O form.

- (3) ES
 - a. Heute regnet es.
Today
 - b. Heute ist es klar, daß die Frau das Buch gekauft hat.

- (4) ES/O
- a. *Heute sind es drei Kinder gekommen.
Heute sind O drei Kinder gekommen.
 - b. *Heute wird es getanzt.
Heute wird O getanzt.

In this chapter I discuss only ES/O, holding off the discussion of ES and the distinction between the two until Chapter 5. The question I address now is where does ES/O appear as es and where as O, and why.

The facts concerning the distribution of ES/O in German and Yiddish are given below. Basically the pleonastic surfaces as es only in clauses that (1) show V2 effects, and (2) have no topicalized constituent.

4.1.1.1 German

We have seen that, in German, V2 effects occur only in clauses where there is no +/-WH complementizer.

- (5) a. Die Frau **hat** das Buch gelesen.
the woman has the book read
'The woman has read the book.'
- b. Das Buch **hat** die Frau gelesen.
the book has the woman read
'The woman has read the book.'
- (6) Ich glaube, daß die Frau das Buch gelesen **hat**.
I believe that the woman the book read has
'I believe that the woman has read the book.'

In (5) we can see that the inflected verb is in second position whether the subject NP or the object NP is S-initial. In (6), the embedded clause with a -WH complementizer has the inflected verb clause final, i.e., there are no V2 effects.

If the descriptive analysis of the appearance of es is correct, i.e., es only occurs in V2 clauses with no topicalized constituent, we expect to find es only in the type of clause shown in (5), with the additional restriction that no element has been topicalized.

(7) es wurde heute getanzt.
 become today danced
 'There was dancing today.'

(8) Heute wurde (*es) getanzt

(9) Ich glaube, daß (*es) heute getanzt wurde

(7) exemplifies a case where es appears. The clause is V2 and there is no topic. (8) exemplifies the fact that es cannot co-occur with a topic, and (9) exemplifies the fact that es cannot occur in a clause which does not show V2 effects.

4.1.1.2 Yiddish

In Yiddish, where we find V2 effects in clauses with, as well as without, complementizers, we expect to find es in both environments. As we see below, this is the case.

- (10) a. Es kumt a kind in krom.
 comes a child in store
 'A child comes into the store.'
- b. Ikh meyn az es kumt a kind in der krom.
 I think that
 'I think that a child comes in the store.'

And, like German, Yiddish does not have es co-occurring with a topic.

- (11) a. In krom kumt (*es) a kind.
'Into the store comes a child.'
- b. Ikh meyn az in der krom kumt (*es) a kind.

The generalization may be stated, then, that es appears (i) sentence-initially in a (ii) V2 type clause that (iii) does not contain a topic.

4.1.2 Safir's analysis

Safir (1982) is able to capture this generalization by claiming that es is in COMP. This neatly explains why es will never occur with either a topicalized phrase or a complementizer.²

In Safir's analysis, like Thiersch's analysis presented in Chapter 3, the D-structure of German is SOVI. In V2 clauses, according to Safir's analysis, it is obligatory that 1) INFL move, and that 2) COMP be filled.

- (12) a. D-structure: $[_S, [_S \text{ heute getanz't wurde}]]$
- b. INFL movement: $[_S, [_S \text{ wurde}_i [_S \text{ heute getanz't } t_i]]]$
- c. X" movement: $[_S, \text{heute}_j [_S \text{ wurde } [_S t_j \text{ getanz't } t_i]]]$
- c'. es Insertion: $[_S, \text{es } [_S \text{ wurde}_i [_S \text{ heute}_j \text{ getanz't } t_i]]]$

In (12b) above we see a case where INFL has moved, in (12c) COMP is filled by the constituent heute 'today', and in (12c') we see a case where COMP is filled by es. The facts of es-insertion as explained in Safir's analysis are given below.

2. Note that the Yiddish complementizer does not "count" for V2. I will assume here that Yiddish is [COMP [TOPIC [S]]]. In Safir's analysis extended to Yiddish, es would be in TOPIC position allowing it to co-occur with a complementizer but not a fronted X".

- (13) a. [_S es [_S I_i [_S VP t_i]]]
 b. [_S X" [_S I_i [_S *es VP t_i]]]
 c. [_S daB [*es VP I]]]

If es is used only to fill an otherwise empty COMP, we can see why (13a) above is grammatical while the es in (13b) and (13c) are ruled out. In both (13b) and (13c), the es is in a position within S and not in COMP.

4.1.3 VP Government

Arguments are given in Chapter 3 as to why German and Yiddish are both S-I-VP, rather than S-VP-I, and neither INFL fronting nor Topicalization are obligatory.

This, per se, does not create problems for Safir's analysis. One could still say that if a subject position were empty, then INFL would have to front into COMP (perhaps to properly govern the empty subject position) and then the pre-INFL position must be filled in order to prevent the string from being interpreted as a question. Es, in this analysis, works like a pleonastic COMP and it is crucially in COMP position.

One of the arguments for the S-I-VP order of Yiddish, however, provides evidence against this analysis. The extraction facts presented by Lowenstamm (1977) give us a way of distinguishing between elements in COMP and elements in subject position. Basically, a +WH complement cannot co-occur with an element in COMP but it can co-occur with a pre-INFL

subject. The crucial examples are given below.

- (14) a. Es zaynen gekumen dray kinder
 are come three children
 'There came three children.'
- b. Haynt zaynen gekumen dray kinder
 Today are come three children
 'Today three children came.'
- (15) a. ikh veys nit far vos es zaynen gekumen drei kinder
 I know not why are come three children
 'I don't know why three children came.'
- b. *ikh veys nit far vos haynt zaynen gekumen drei kinder
 I know not why today are come three children
 'I don't know why three children came today.'
- (16) a. es iz mir kalt in tsimer.
 it is to-me cold in room
 'I am cold in the room.'
- b. In tsimer iz mir kalt.
 'In the room I am cold.'
- (17) a. Ikh veys nit far vos es iz mir kalt in tsimer.
 I know not for what it is to-me cold in room
 'I don't know why I am cold in the room.'
- b. *Ikh veyz nit far vos in tsimer iz mir kalt.
 I know not for what in room iz to-me cold

As we can see in (16a), the es which appears pre-INFL is in subject position otherwise the extraction that we see in (17a) would not be allowed. In (16b) where topicalization has occurred in the embedded S, no further extraction is possible as shown in (17b).³

This shows that es is in subject position in Yiddish. We can use no such argument for German. Embedded clauses in German do not show V2

3. There are some cases where es seems to co-occur with syntactic subjects. This will be discussed in section 4.3.1 when we compare German "subject inversion" with Italian subject inversion.

effect unless there is no COMP position.

- (18) Er sagte, daB sie das Buch gelesen hat.
 he said that she the book read has
 'He said that she read the book.'
- (19) Er sagte, sie hätte das Buch gelesen.
- (20) *Er sagte, daB sie hat das Buch gelesen.

Since extraction will always create a COMP, this cannot be used as a test for preverbal constituency as in Yiddish.

There is, however, another argument that the German pleonastic es is in subject position rather than COMP. We have seen in Chapter 3 that the referential pronoun es can appear preverbally only if it is subject.

- (21) Es hat das Brot gegessen
 it has the bread eaten
 'It has eaten the bread.'
- (22) Der Hund hat es gegessen
 the dog has it eaten
 'The dog has eaten it.'
- (23) *Es hat der Hund gegessen
 it has the dog eaten
 'The dog has eaten it.'

In (21), es is the preverbal subject, while in (23) the preverbal es is the object of the verb and therefore the sentence is ungrammatical (see Chapter 3 for details). On the assumption that the referential es cannot be in COMP, we will also say that the pleonastic es cannot appear in COMP. This is especially clear if we give semantic content to this restriction. If only elements that are semantically salient enough to be focused can appear in topic position, it is clear why es, both referential and pleonastic, may not be topicalized.

If, as we have argued, es is in subject position in both German and Yiddish, we are left with problems that Safir's analysis accounts for. Below we see once again the es distribution facts, now rebracketed in terms of the analysis presented in Chapter 3 (compare with (21)).

(24) [_S es I VP]

(25) [_S, X_j I_i [*es e_i [_{VP} ... t_j ...]]]

(26) [daB [*es e [_{VP} ... V+I]]

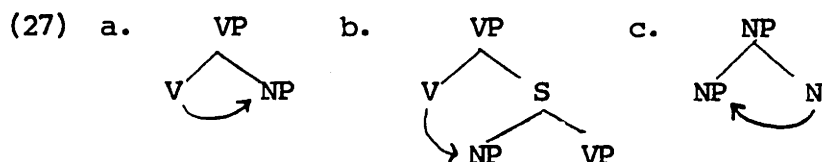
The distribution of es is no longer clear. Es is in the same position in each structure, only the realization of INFL differs. I claim, however, that it is this change in INFL that accounts for the distribution of es. In (25) INFL moves into COMP and in (26) it is empty, but in each case it leaves no phonetic material between the subject position and the verb phrase. I propose that the adjacency of the VP and the subject NP, where a phonetically realized INFL no longer intervenes, sets up a special relationship that allows the subject NP to remain empty. In the following sections I discuss this relation claiming that it is one of proper government.

4.2 Government

In this section I motivate the notion of VP government first by explaining what it might mean conceptually, and then by giving evidence from various languages to support my claim.

4.2.1 Identification

It is not clear what VP government means. Government recently has been defined in structural terms (LGB). It is not only a relationship that holds of a lexical category and its complements, but the relationship that holds of a lexical category and any other category which it c-commands within the same maximal projection (Aoun & Sportiche). This would include not only (a) below but also (b) and (c) if we do not consider S a maximal projection.

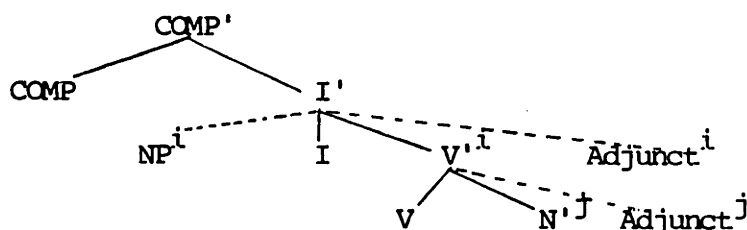


(27a) represents a verb and its complement, (27b) a raising or ECM structure, and (27c) a noun phrase. As in Jaeggli (1980), Stowell (1981) and Lasnik & Saito (1984), I restrict proper government only to (27a) claiming that the other structures may be accounted for as suggested in work such as Bouchard (1982), Lasnik & Saito (1984). If proper government is (27a) and not (27b) or (27c), the notion is no longer purely structural, nor can it correlate with case assignment. It is not structural since (a) and (c) have the same structural configuration. It does not correlate with case assignment since in (a) and (b) case is assigned to the NP, but only in (a) is the NP properly governed.

In Chapter 1, the notion of Full Interpretation was introduced. It specifies that all elements must be licensed and that this licensing can

be attained either by complementation or predication. Looking again at the structure of English, we can see the distinction between the two methods of licensing. Elements licensed by complementation are connected to the tree by full lines, and those licensed by predication are connected by dotted lines.

(28)



Taking the core examples used to explicate the notion of proper government below, we see that the main asymmetry is between subjects and objects.

- (29) a. Who won't you say that Mary saw t?
 b. *Who won't you say that t saw Mary?

With the range of data extended a bit, we can see that there is an asymmetry even within the verb phrase between adjuncts and complements.

- (30) a. To whom won't you say that Mary gave the book t?
 b. *How slowly won't you say Mary gave the book to Joan?

I have chosen to negate the matrix verb for the following reason. As Lasnik & Saito (1984) note, the following example is grammatical.

- (31) How slowly did Sean say that Matthew gave Jared the book?

I am assuming, however, that this is not a core case since, as soon as the matrix verb is given more content, the construction worsens.

- (32) *How slowly should Sean have said that Matthew gave Jared the book t?
 (33) *How slowly might Sean believe that Matthew gave Jared the book t?
 (34) *How slowly does Sean regret that Matthew gave Jared the book t?

Compare these with

- (35) What should Sean have said that Matthew gave Jared t?
- (36) What might Sean believe that Matthew gave Jared t?
- (37) What does Sean regret that Matthew gave Jared t?

The explanation for these may lie in the content of COMP. If it can be argued that the ungrammatical cases above are similar to wh-island effects,

- (38) *How slowly does Sean wonder what Matthew gave Jared?

and that negation, modals, and factive verbs affect the embedded COMP in a way similar to a wh-phrase in COMP, Lasnik & Saito's proper government will suffice. At this point, I simply point out the difference between adjuncts and complements. This distinction may also be accounted for in a different way as suggested by Cinque (forthcoming)⁴.

I will follow the proposal of Huang (1982) and assume that complements are properly governed while adjuncts are not. Within the terms of Full Interpretation, this translates into the claim that those elements licensed by predication are not properly governed while those elements licensed by complementation are.

What is the intuition behind proper government? Let us say that (i) every gap must be identified and (ii) that the content of every gap must be recoverable. How are gaps identified and how are contents recoverable?

4. This was pointed out to me by Luigi Rizzi.

Here the [e] is antecedent governed by the [OBJ- θ] in the θ -grid of the verb, in the same way the [e] is antecedent governed by who below.

(42) I wonder [_S, [who]_i [[e]_i read Roger's book]]

I keep these two types of identification separate, as do Lasnik & Saito, for conceptual reasons. Though both a local antecedent and a lexical governor in some way identify the presence of a gap, the method of identification is not the same. The identification of a gap by way of lexical government follows from the Projection Principle and the θ -criterion. If a lexical item requires an argument and no argument appears, there must be an empty category. Antecedent government follows from the impossibility of vacuous quantification. If there is a wh-operator in COMP, there must be a variable within its domain. Sometimes that variable will be in a position which is already identified by the Projection Principle (i.e., lexically governed). If not, however, the operator may itself identify an adjunct gap.

4.2.1.2 Recoverability of features

The problem of recoverability is inextricably tied to the problems of chains, whether A'-chains or A-chains. The content of a gap will be recoverable in the cases where it is coindexed with an element with the proper features. This element, in most cases, will be the head of the chain. Variables will recover relevant features from the A'-binder, and NP-traces will recover relevant features from A-binders. In other cases, where empty categories are base-generated in θ -marked positions, the features may be transmitted by another element. In the case of anaphoric

PRO, this will be the antecedent of the anaphor. Arbitrary PRO, according to Bouchard, is assigned the R-index **arbitrary**. In the case of pro, this will be INFL. This coindexation with INFL will be discussed in more detail in later sections of this chapter, and in Chapter 5.

4.2.2 VP Government

If gaps may be identified through complementation, we can explain why a gap in the complement position of a V may be identified, but what of a subject? If the subject position is always licensed through predication and not complementation, it can never be lexically governed. I propose that there are two ways that a subject NP is distinguished from a complement NP within the VP. One stems from the fact that a VP, unlike a V, when it assigns a θ -role to a subject, may assign it in two different ways, as we will see below. The other stems from the fact that the VP, unlike a V, is a phrasal category rather than a lexical category.

Under certain conditions, we can say the θ -role is transmitted from the VP to its external argument by coindexation of predication. In this way we expect subjects to behave like adjuncts (Huang, 1982) since adjuncts, too, are licensed by predication (Chomsky, fall lectures 1983). I propose that there is another way in which a θ -role may be assigned to an external argument. This second way is direct θ -marking, the same way that a V assigns θ -roles to its complements. My proposal, then, will be that subjects may be complements of VPs and when they are, they are properly governed by the VP.

Obviously we do not want all subjects to be complements otherwise we would expect no subject/object asymmetries. We must, then, determine what conditions must be put on this sort of complementation.

We saw in Chapter 2 that the Domain Adjacency Condition will not allow the domain of complementation to be interrupted. We would expect the same sort of conditions to hold for a VP and its complement NP. In the VP, if a complement was not within the complement domain of the verb, it could not be assigned its θ -role and the structure was ruled out. At the level of I', however, there is an alternative since the VP can assign the subject NP its θ -role via predication. For the moment I will say that the relevant element for the disturbance of adjacency of the VP and the subject NP is the head of the projection, i.e., INFL^O. The proposal is that if VP and NP are generated adjacent to one another, or if INFL is empty, then the NP can be considered to be the complement of the VP.

Taking the structures relevant to ES/O once again, we can see that in every case where es is not possible, the VP is adjacent to the subject position, and therefore the subject is in a complement position. Notice that empty categories are not visible for this notion of adjacency.

(43) es I VP

(44) X" I *es e VP

(45) daB *es e VP

Since ES/O can surface as either es or O, we have a choice of whether we take es or O as the underlying form of the pronoun. In order to distinguish this pleonastic from the ES of example (1), I will assume that

it is O. Within the theory of GB, empty pronominals of this type that may appear in governed positions are considered to be pro. For the rest of this thesis, then, I will be referring to the ES/O pleonastic as pro. Unlike previous accounts of pro-drop languages (Jaeggli 1980, Rizzi 1982), I will be assuming that pro has to be properly governed. Like any other empty category, pro must be identified, and since it has no local antecedent, identification of the gap will entail proper government. In this section I will discuss the requirement of proper government and leave the details of feature recoverability to Chapter 5.

The structures we are now concerned with are given below.

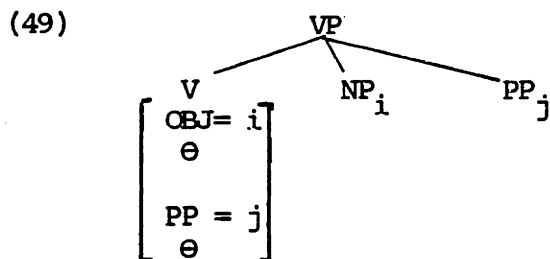
- (46) *pro I VP
- (47) X" I pro e VP
- (48) daB pro e VP

The ungrammatical string (46) is the one in which the gap is not identified because it is not properly governed nor does it have a local antecedent. In these cases, the least marked pronoun es must be inserted to act as identification. I will assume that es is not only not required in (47) and (48), but impossible because of the Last Resort Principle (Chomsky 1983) which states that Move-a occurs only when required. I extend this to Affect-a which will include es-insertion. In pro-drop languages, pronouns are only inserted to focus them. This makes no sense in the case of a pleonastic element (pointed out by Mamoru Saito). In (47) and (48), the empty category pro is identified by being in a complement position to the VP.

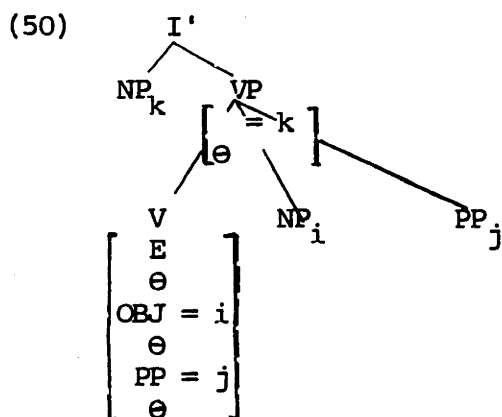
We do not want to say in these constructions that the VP actually assigns a θ -role to the subject position, since es is a pleonastic element that cannot receive a θ -role. This brings us to the second distinction between the relationship of a V and its complements and the relationship of a VP and its external argument. Since V is a lexical category, the relationship between the V and its complements can depend on the lexical characteristics of the V, i.e., whether or not the V assigns case or assigns θ -roles, etc. The relationship between a VP and its syntactically external argument cannot be sensitive to such characteristics. This means that the θ -role assigning properties of the V are not visible at the level of the VP. Whether or not the VP contains a V with an external thematic role to assign, the NP may be in a complement relationship with the VP. It is this relationship that allows proper government of the subject NP position. Because of this distinction between a V and a VP, let us keep separate the notions of lexical government and complement government. Both will insure proper government for the ECP, and lexical government will be a type of complement government. We will see in section 4.4 the need for this distinction.

4.2.2.1 Formal Definition

Using a formalism similar to Stowell's, we can see the notion of VP government more clearly. Below we see a case where θ -roles are assigned to the internal arguments of the verb.



Let us assume that every VP also has a θ -grid. The way which this θ -grid will differ from that of the V is that its θ -role must be determined by its head. In other words, the external θ -role must percolate up from the X^0 level to the X^{\max} level. We might imagine, then, a structure as below.



The external θ -role (E), if there is one, will percolate to the VP and be assigned to the NP which is syntactically external to the VP.

Now we can say that the subject NP is to the VP what the object NP is to the V. In each case, an index has been registered in the θ -grid of a sister node. This leaves two questions: (i) what happens in a predication relation and (ii) what happens with a pleonastic.

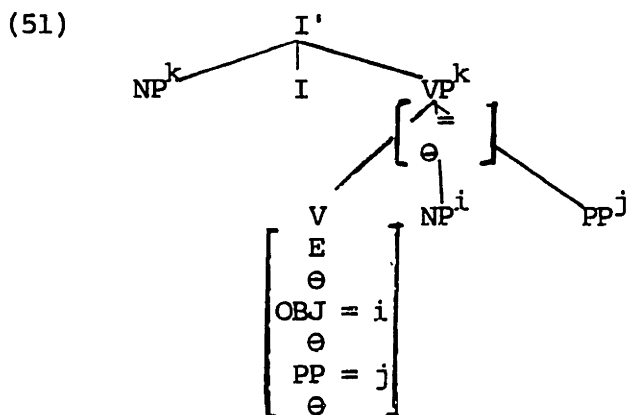
Rothstein (1983) defines a predicate as

an open one-place syntactic function requiring saturation, or closure by an argument. The syntactic unit which may be a predicate is a maximal projection (XP). All maximal projections are one-place functions which require closure, but an XP is a predicate only when it is closed by an external argument, i.e., an argument which is not c-commanded by the head of the XP.

In both Rothstein's and Williams' work, all maximal projections are capable of being predicates. An NP or an S' must have an open argument, however, to function as a predicate (see Williams, 1980).

VPs which assign Θ -roles externally obviously satisfy this definition of predicate since they have an open argument. My claim is simply that there are two ways to saturate this open argument. Above we have seen how a complement subject may saturate the open position. This, presumably, is only possible under the conditions of adjacency which we mentioned above.

Predication, I assume, creates a different structure denoting a different relationship. This is given below.



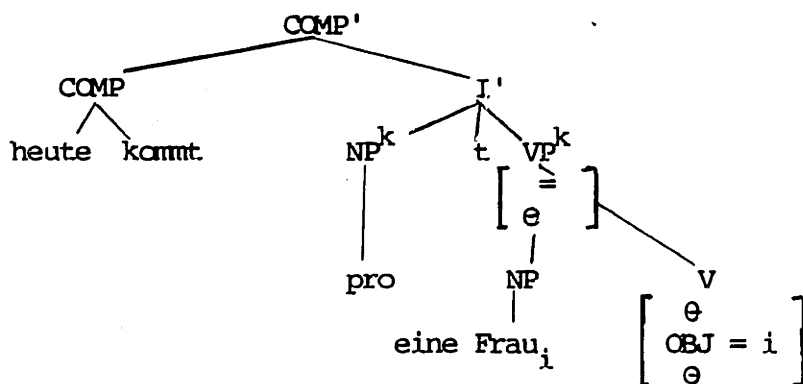
When the external Θ -role percolates to the VP, the VP will still have an open argument which will only be saturated at the level of predication. It is only where a constituent is incorporated into the

Θ -grid of a node that it is complement governed.

Pleonastics present a different problem. I have suggested above that empty pleonastics must be complement governed. This appears inconsistent with what we have said above that complements enter into Θ -grids. It is hard to see how an element that does not receive a Θ -role can enter into a Θ -grid.

We have assumed above that VPs are generated with empty Θ -grids. Half of the grid is filled by the percolation of the external argument from the V, and the other half is either filled by the index of an adjacent NP, or it is left open and the VP enters into a predication relation. In the case of a pleonastic, the verb has no external Θ -role to pass onto its maximal projection. The question is: does this mean that the VP has no Θ -grid at all? Rothstein writes that all XPs are one-place predicates that must be saturated. This would mean that all XPs are generated with [=] Θ -grids, independent of the lexical specification of their heads (see Higginbotham 1984 for a discussion of saturation of NPs). The German pleonastic construction below would have the given Θ -grid on the VP.

(52)



Although kommt has only one θ -role to assign, and it assigns it internally, the pleonastic is still allowed to saturate the O-grid of the VP by direct indexation. Because of this relation of direct indexation, I claim that the subject position is properly governed by the VP even when it is not assigned a θ -role.

In summary, a VP may assign a θ -role to a subject in two ways. The first involves predication coindexation. There are no adjacency conditions in this instance as shown in the case of adjuncts.

(53) [John]ⁱ will [_{VP} buy a book]ⁱ NPⁱ I VPⁱ

(54) [John]ⁱ will [_{VP} play the game]ⁱ tomorrow [barefoot]ⁱ
 NPⁱ I VPⁱ Adverb Adjunctⁱ

(54) is a case of an adjunct which is licensed by being coindexed with John, and John in turn is licensed by being coindexed with the VP, as shown in (53).

The second way a VP may assign a θ -role is by direct indexation with the θ -grid which does require adjacency. There is no semantic difference obvious between the two types of θ -role assignment. In other words, in the German sentences below, we expect the semantic content of the subject θ -role to be the same whether it is assigned through predication as in (55) or through complementation as in (56).

(55) Predication: NPⁱ I VPⁱ
 [_S Die Frau hat das Buch gelesen.]

(56) Complementation: I NP e VP
 [_S ,Das Buch_j hat_i [_S die Frau t_i t_j gelesen]]

We can see a case in English as well. In (57), the result gets its

θ -role directly from the verb, whereas in (58), the θ -role is assigned via predication.

(57) We did not expect this result.

(58) This result was unexpected.

When an NP is in a position which allows direct indexation with the θ -grid, i.e., a complement position, it is in a position of proper government. It is this notion of proper government which can explain the facts of es distribution in German and Yiddish. The gap of the empty pleonastic is only properly identified when it is in a complement position of the VP. However, when the intervention of INFL makes this relationship impossible, the pleonastic must be identified by the insertion of es.

One more restriction must be put on complement government. Only predicates which are themselves licensed by complementation may, in turn, license a subject through complementation. A relevant example is given below.

(59) Clifford, tired of painting, left the studio early.

Tired of painting is predicated of, and adjacent to the NP, Clifford. This adjacency of a predicate, however, is not sufficient to properly govern the subject position, since the predicate itself is not licensed through complementation. In an I-S-VP structure, the predicate VP is the complement of INFL. It then may take the subject as its complement and properly govern it. Complement government will be defined as below:

(60) Complement Government:

If an XP is in the complement domain of a Θ -assigner, and the Θ -assigner itself is complement governed, then XP is complement governed⁵.

4.2.2.2 Identification vs. Features

To provide support for the claim that proper identification involves two subparts, identification of the gap and identification of the features of a gap, we will see below examples of the four possibilities set up by this system. In Yiddish we find all four possibilities since INFL carries features for identification of all pleonastic elements⁶ but not for referential elements. Let us say for the time being that the "richness" of INFL has to do with what features it is able to carry (see Chapter 5). Yiddish also has a subject position adjacent to the VP which is properly identified and a subject position which is licensed by predication and, therefore, will not be identified. We would expect, then, the following distribution.

(61) Yiddish identification:

	Features	Gap	
a.	+	+	pleonastic in I-S-VP
b.	+	-	pleonastic in S-I-VP
c.	-	+	referential in I-S-VP
d.	-	-	referential in S-I-VP

We predict from this table that we will find gaps in subject position

5. I assume that I' is the complement of COMP and VP is the complement of INFL, though it is not clear what it means for COMP to assign a Θ -role to I', or INFL to VP.

6. Whereas German INFL only identifies ES/O and not ES.

in Yiddish only when the subject is a pleonastic and when the subject is in a complement position, i.e., adjacent to the VP. In any of the other three possibilities, we would expect to have to fill the subject position. This, we can see below, is the case.

- (61) a'. Haynt iz mir kalt.
 today is to-me cold
 'I am cold today.'
- b'. Es iz mir kalt haynt.
- c'. Zi iz gekumen haynt.
 she is come today
 'She came today.'
- d'. Haynt iz zi gekumen.

A clearer example is found when one compares direct versus indirect questions. For Yiddish (and Italian, but for a different analysis see Calabresi, forthcoming), unlike English, I' is a barrier for identification of a gap by a local antecedent. This is clear in the case of an indirect question.

- (62) Ikh veys nit ver *(es) hot gekoyft dos bukh.
 I know not who it has bought the book
 'I don't know who bought the book.'
- (63) Ikh veys nit vos zi hot gekoyft t.
 I know not what she has bought
 'I don't know what she bought.'

In (63) we can see that when a position is properly identified by complementation, a gap is possible. However, in (62) since the embedded S is an NP-I-VP structure, the subject position is not licensed by complementation. In this case, then, the position must be identified by a

pronoun in-situ.⁷ What is interesting is the choice of pronoun. Es is the pronoun least marked for features. If it were a resumptive pronoun, we would expect it to bear the relevant features of number, gender, etc. In fact, Yiddish has such resumptive pronouns as shown below (see Lowenstamm 1977 for more examples).

- (64) di froyen vos mir veysn nit vos zey tuen
 the women which we know not what they do
 'the women that we don't know what they do'

What we can say, however, in the case of (63) is that the function of the pronoun es is simply to identify the position, not to supply the features. These features will be supplied through coindexation to the element in COMP. Here we have a case of (61b). Direct questions are examples of (61a) since in these cases, due to movement of INFL into COMP, the position of the gap will be identified via complementation. Features will be supplied in direct questions, as in indirect questions, by coindexation with the wh-word in COMP.

- (65) Vos hot zi gekoyft t?
 What has she bought t
 'What did she buy?'
- (66) Ver hot (*es) gekoyft dos bukh?
 Who has it bought the book
 'Who bought the book?'

In (65) we can see that in direct questions, unlike indirect questions, INFL must move into COMP. In (66) we can see that this

7. I am assuming that es in this instance is not the same as the es in 'Es kumt a froy', i.e., it does not indicate that the logical subject is in the VP. My reason for this is that inversion is very restricted in Yiddish (more so than in Italian or German). I assume, then, that logical subjects can never appear within the VP in Yiddish.

movement obviates the necessity for identifying the position of the gap via pronoun insertion since now the gap will be identified by being in a complement relation with the VP.

In the chapters that follow, we will see further cases which separate identification of a position and recoverability of features. Malagasy identifies all of its subject positions but only has features to recover pleonastics (see Chapter 5), the Toscan dialect of Italian has post-verbal subject position which is identified, but it must add features to INFL in order to have pro-drop. The normal representation of INFL is too impoverished. In Irish, though there is pro-drop indicating that the subject position is properly identified, not every INFL in the paradigm has enough features to recover the material in the position of subject (Chapter 5).

4.2.3 Structural Government

The main difference between the notion of government proposed in this work and that proposed by Chomsky (1981) is that government by complementation is defined functionally. This is even true at the level of the VP where the argument which saturates the VP by direct indexation into the θ -grid of the VP is properly governed. The notion presented by Chomsky is structural. In this section I will offer arguments against the notion of structural government, and conclude, as have Jaeggli (1980), Stowell (1981) and Lasnik and Saito (1984) that proper government must be defined functionally. This section will examine both government, and proper government as a subset of government.

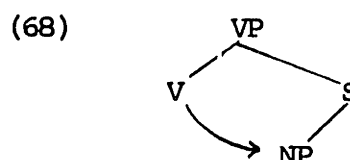
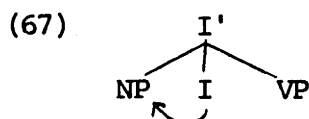
Chomsky does not ignore the functional flavor of government.

As is often true, the "core notion" of government has clear thematic content, but the operative notion involves structural configurations generalizing the core notion. (p. 163)

Note that government is closely related to subcategorization. We might (almost) say that the subcategorization features of V are actually governors and that the category V inherits government from these features. (p.164)

A natural, if tentative conclusion, then, is that a properly governs b only if b is in the complement of a. (p. 274)

While Chomsky recognizes the functional definition of the core cases, he claims that there are purely structural extensions of the notion. For instance, for the purposes of case-marking which, according to Chomsky, can only happen under the conditions of government, INFL must govern the subject NP (67) and an ECM verb must govern the subject position inside an embedded S (68). For the explanation of raising facts, the account in LGB also assumes that a raising verb must govern into the embedded S (68).



Chomsky writes that

the notion of government must meet several kinds of conditions:

- (i) conditions on choice of governor
- (ii) conditions on governed terms
- (iii) structural conditions on the relation of government.

These conditions are clarified in the LGB definition of government given below:

(69) [a governs g in]

- [_p ... g ... a ... g ...], where
- (i) $a = X^0$
 - (ii) where b is a maximal projection,
if b dominates g, then b dominates a
 - (iii) a c-commands g (p. 165)

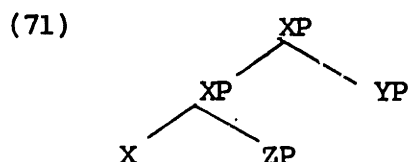
The governor must be a lexical category, and the conditions on the terms that are governed and the structure of the relation depend crucially on the notions of maximal projection and c-command. A lexical category governs any element which it c-commands as long as the governed element is not contained in a maximal projection which does not also contain the governing element. Direct mention is made of governing into a maximal projection which is ruled out by (ii). Government out of a maximal projection will be restricted by the definition of c-command.

Government depends on c-command, and, in Chapter 2, we have seen how the notion of branchingness that is proposed in this thesis affects the notion of c-command. We need, then, to look at the notion of c-command used in Chomsky's definition of government. This is given below.

- (70) a c-commands b if and only if
- (i) a does not contain b
 - (ii) suppose that g_1, \dots, g_n is the maximal sequence such that
 - (a) $g_n = a_j$
 - (b) $g_i = a^j$
 - (c) g_i immediately dominates g_{i+1}
 Then if d dominates a, then either
 - (I) d dominates b, or
 - (II) $d = g_i$ and g_1 dominates b (p.166)

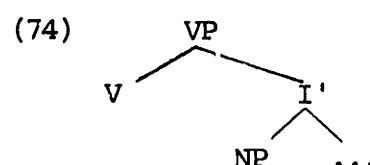
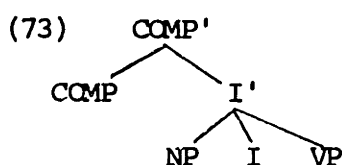
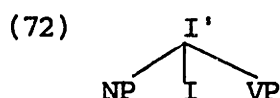
The way this definition of c-command differs from Aoun and Sportiche's is that there is no mention of maximal projection. The basic idea is that a sequence of dominating nodes can be considered one projection if they match in features. Given an adjoined construction as

the one shown below, X could c-command and therefore govern YP in Chomsky's definition, even though there is an intervening maximal projection. In Chapter 2 we have argued against this notion to c-command.



The question is whether or not we need this notion of c-command for the issue of government. Before we discuss this, we must investigate the notion of proper government as a subset of government.

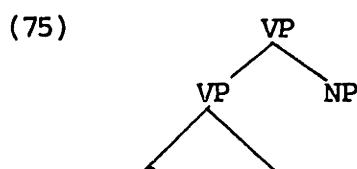
The structural notion of proper government hinges on what X^0 is in the governing relation. According to the structural definition of government, X^0 can be anything. Given the structures below, we should find at least all the government relations indicated since we find case assignment in every example.



We do not, however, want all of these governed elements to be also properly governed. Presumably, they are governed because they can be case-marked, but not all of these positions allow extraction. Therefore, not all of these positions are properly governed. In order to distinguish proper government from government, conditions must be put on X^0 . Basically, X^0 cannot equal INFL. Although INFL assigns case to the

subject NP, it does not properly govern it. What we are doing with this distinction is separating case assigners from proper governors.

The most obvious case where the definition of c-command presented in LGB (i.e., where a head can c-command every element within an adjoined structure as shown in (71)) is in the Italian or Spanish subject inversion sentences that we will discuss in the next section. As we have briefly explained in Chapter 1, traces must be properly governed. Since extraction from a post-verbal subject position in Italian shows no that-t effects, it has been assumed (Chomsky 1981, Rizzi 1982) that the post-verbal subject is within the VP as shown below.



If, as the account presented in Rizzi (1982) suggests, the V is able to properly govern (and therefore govern) the post-verbal subject, the extraction facts can be explained.

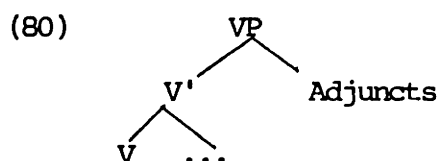
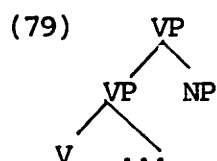
This proper government by the V, however, creates other problems. If government is purely structural, and if the V is able to govern the post-verbal subject, then the V should be able to govern all of the constituents within the VP. And further, if V is a proper governor, which it must be for post-verbal subjects as well as for objects, the V must properly govern all of the constituents within the VP.

However, we know that adjuncts in Italian and Spanish are not properly governed. Below we can see the same asymmetry between

complements of the verb and adjuncts that we have in English.

- (76) Ha tomado el alimento frío
has(3s) taken the food cold
'S/he has taken the food cold.'
- (77) *Cómo te preguntas si ha tomado el alimento
how you wonder whether has(3s) taken the food
'How do you wonder whether s/he has taken the food?'
- (78) Qué alimento te preguntas si ha tomado frío
what food you wonder whether has(3s) taken cold
'What food do you wonder whether s/he has taken cold?'

Given the structure below, it is hard to see how any structural definition of the facts will predict this outcome, even if we assume an articulated VP.



In fact, if we had to predict any asymmetry, we would expect V to govern the adjunct and not the post-verbal subject.

Some questions that need to be answered are:

- 1) When, if ever, can a head (properly) govern into a maximal projection?
- 2) When, if ever, can a head (properly) govern out of its maximal projection?
- 3) Within the same maximal projection of the head, what can be governed?

4) What elements properly govern?

(1) As far as government into a maximal projection is concerned, we want to have the head of the projection governed if and only if the maximal projection itself is governed. Belletti & Rizzi (1983) argue that the head of a maximal projection is properly governed if the maximal projection is properly governed. This notion is needed independent of their data for my account of Germanic word order. I have claimed that INFL (or COMP) may be empty only if I' (or COMP') are properly governed.

Therefore, in one way, a maximal projection does not block government. However, a maximal projection will block government when the element to be governed is not a head. This basically means that a maximal projection will be a barrier to government. The fact that the head is governed should follow from a notion of head and the percolation of features.

This creates problems for ECM and raising if I' is a maximal projection. For these cases, I assume Bouchard's analysis (also adopted by Lasnik and Saito 1984) which reduces both raising and Exceptional Case-marking to instances of antecedent government.

(2) As far as government outside of a maximal projection is concerned, let us say that no such government is possible and leave the problem of Italian post-verbal subjects for the moment. As we see below, there is a different solution for this problem.

(3) Within the maximal projection of the head, we do not want

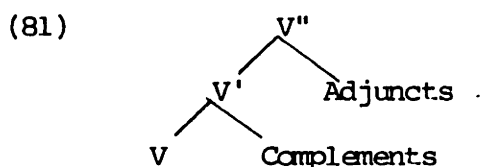
adjuncts to be properly governed, but we do want to have complements governed. This could be done structurally on an articulated branching structure, but we have argued against such a structure in Chapter 2. Given the branching structure proposed in Chapter 2, we must functionally define (by creating domains) the constituents that are to be governed.

The structural definition of government is both too strong and too weak. Using the definition of c-command of Aoun and Sportiche, adjuncts will be properly governed since they are in the same maximal projection as V, a proper governor. Post-verbal NPs in Italian, however, will not be properly governed since they are not in the same maximal projection as a proper governor. The problem of adjuncts may be solved by restricting the notion of c-command so that only complements are c-commanded by the verb. This does not, however, solve the problem of post-verbal subjects. The problem of post-verbal subjects may be solved by extending the notion of c-command to chain c-command so that the verb will now c-command the post-verbal subject. This, however, will not solve the problem of the adjuncts. Either problem may be solved by either restricting or loosening the notion of government, but it is not obvious how a change in the structural definition of government can account for both problems at once.

(4) A final question remains: can only heads be governors? This is a hold over from the structural definition of government. The question is, then, whether phrasal nodes can have complements. Obviously, we assume that phrasal nodes can have complements since we claim that VP can take an [NP, S] complement.

To summarize the arguments for a functional definition rather than a structural definition of proper government:

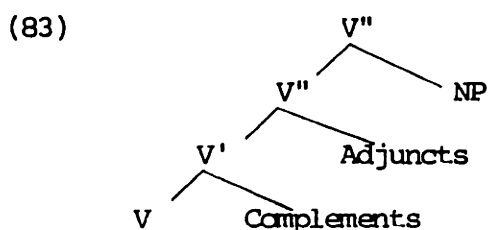
Within the VP, if we want to define proper government structurally, we must have (i) an articulated branching system differentiating between complements and adjuncts, and (ii) Reinhart's definition of c-command so that the V will only c-command its complements.⁸



This raises problems if we assume that (i) adjuncts must be sisters of the constituents they are predicated of and (ii) if we want a c-command relationship for anaphors in sentences such as

(82) I comforted Jeri proud of herself for having done so well.

Also, it is hard to see how such a structural definition could extend to include post-verbal subjects in Italian without including adjuncts.



Finally, if structurally defined, all heads will govern all maximal projections which they c-command but a distinction must be made between

8. A version of Reinhart's definition of c-command must be adopted where an intransitive verb, though it has no complements, would not c-command an adjunct.

government and proper government. The contrast is given below.

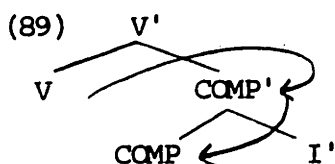
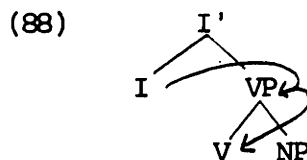
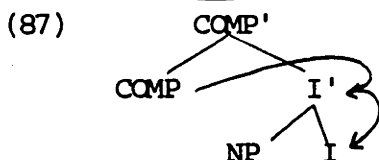
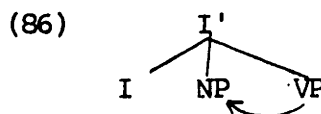
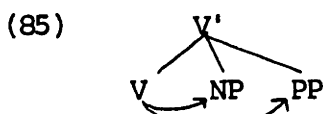
(84) proper government vs. government



We must, then, stipulate that some items are proper governors (V), some are just governors (INFL[+tense]).

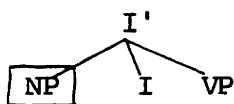
I contend that the true split is between INFL and V because the subject NP is not a complement of INFL while the object NP is the complement of V. The distinction between INFL[+tense] and INFL[-tense] has nothing to do with government, rather it has to do with case (see Bouchard).

Although I agree with Chomsky as far as the core cases of proper government are concerned, I claim that the extension goes along functional lines, not structural lines. The object NP is the complement of the \bar{V} and thereby is properly governed. The cases of proper government that I want to account for are below.

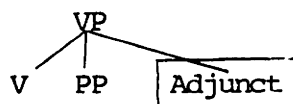


vs.

(90)



(91)



In all cases, the governed elements are complements of the governors, or are the heads of the complements.

4.3 Empirical Consequences

If VP government has some conceptual content, we would expect to find effects in languages where subjects are found adjacent to VPs. In this section I investigate some other languages, in particular Italian, Chamorro, and Irish.

4.3.1 Italian

In Italian, subjects may appear either before or after the verb phrase.

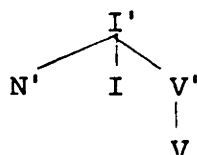
(92) Anna parlerà
 Anna will talk
 'Anna will talk

(93) Parlerà Anna.

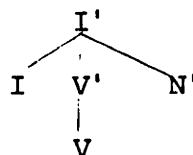
These two positions, however, show different syntactic effects. Rizzi(1982) has noted that extraction of subject without ECP violations is possible only from the pre-VP position. This suggests that the post-VP position is properly governed.

Given a notion of VP government, this is exactly what we would expect. Let us assume that the structure for (92) and (93) are (94) and (95) respectively.

(94)



(95)

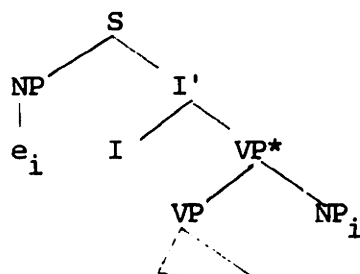


In (94), the subject NP is in a predication relation to the VP, while in (95), the subject NP is in a complement relation to the VP. It is the structure in (95) that we would expect to show no that-t effects, as is the case⁹.

The important addition to the theory that allows us this analysis is that languages which allow subject NPs to directly index into the O-grid of the VP, also allow proper government of this O-position. The Italian extraction facts follow directly since the post-VP subject position is properly governed by the VP while the pre-VP subject position is not.

An alternative analysis (Chomsky 1981, Rizzi 1982) is that post-VP NPs are actually in the VP as shown below.

(96)



9. Constituents may appear between the VP and the post-verbal subject, however, like within the VP in French, these do not disturb the adjacency relation. Only INFL as the head of S' will prevent direct indexation.

The subject NP is lowered and adjoined to the VP leaving an empty category in the pre-VP subject position.¹⁰ Then government is defined structurally. Using Chomsky's definition of government and c-command, V will c-command the post-verbal subject and, therefore, will properly govern it. This analysis brings with it the problems discussed above. If a V can govern outside its maximal projection, then it certainly will govern everything within its maximal projection. We do not want this result because of adjuncts which we do not want to say are properly governed.

There is a further curiosity concerning this structure. A striking difference between the structure I posit for post-verbal subject constructions, and the one that Rizzi posits is that I have no pre-verbal subject position while Rizzi does. It is hard to test this in a language where pleonastics are empty. What is remarkable is that subject inversion occurs only in languages with empty pleonastics.

It has been suggested (Jaspers forthcoming) that German is a case of a language which has subject inversion with overt pleonastics. We have seen examples of this sort of structure, and more are given below.

- (97) Es wurde eine Frau gesehen
 was a woman seen
 'A woman was seen.'

- (98) Es stiess ihn ein Soldat von der Brücke
 pushed him a soldier from the bridge
 'A soldier pushed him from the bridge.'

10. I use the I" and I' structure in these examples as Chomsky and Rizzi do, though it is not crucial to show the difference between the two analyses.

Though this pleonastic is underlyingly empty, when it is not in a position of proper government, it is filled with es, indicating that a separate subject position exists. I contend, however, that there is a difference between the German construction and the Italian construction.

Both constructions have certain restrictions on them, but these restrictions are different. The German constructions appear to be similar to English there-constructions and the restrictions are similar. Although definite subjects are allowed (see (97) and (98)), they are not preferred, and the constructions worsen with proper names (99) and are completely out with pronouns (100).

(98) *Es sind die Kinder gekommen
 are the children come
 'The children came.'

(99) *Es ist Hans gekommen

(100) *Es ist er gekommen.

I will maintain, here, that the German construction and the Italian construction are not the same. In the case of German, the logical subject is in the VP and the syntactic subject position is empty. In Italian, the inverted subject is still [NP,S] and there is no pre-verbal subject position.

4.3.2 INFL+V Peripheral languages: Chamorro

There seems to be a generalization about INFL+V peripheral languages which is that subject positions appear to be properly governed (see Aoun

1983 for a different analysis for Chinese). This has been pointed out for verb final languages such as Chinese (Huang 1982) and Japanese (Saito 1984). In these languages, where there is no overt movement, the facts are not as striking as in INFL+V initial languages where there is wh-fronting. Below I discuss Chamorro, a V-S-O language, and Malagasy, a V-O-S language.

Chung (1983) describes a problem presented by Chamorro, a VSO language. For some phenomena in Chamorro, it appears that we should posit a flat structure, and for others, a hierarchical structure. A flat structure is preferable when one considers word order, extraction facts, and the ECP. Since Chamorro is V-S-O, it is not easy to see how one could argue for a VP since it would have to be discontinuous. One might assume, then, that Chamorro has a flat structure as shown below (see Barss 1983 for a different analysis).



Also, since Chamorro does not show that-t effects, we may have another reason to assume a flat structure.

- (102) Hayi na palao'an ma'a'nao-mu [na u-kahat
 who? L woman INFL(WH)+afraid-your [COMP INFL(3s)-lift
 t esti na dangkulu-n kahun
 t this L big-L box
 *'Which girl are you afraid that t will pick up this big box?'

If the subject NP and the object NP were both in the same relation to the V, we would not expect them to behave asymmetrically in relation to extraction. Both would be properly governed by the V.

A problem arises, however, when one looks at other government facts such as case assignment or binding. In both instances, subject and object behave differently from one another. Subject is assigned nominative case, object accusative case. PRO appears only in subject position suggesting that this position is ungoverned. Raising only occurs from subject position showing that a matrix verb can govern only the subject position of an embedded sentence, not the object position.

(103) PRO

- a. Na'maguf [ma'udai PRO gi bisikleta]
fun INF-(s)-ride PRO Loc bicycle
'It's fun PRO to ride on bicycles.'
- b. *Ma'a'nao si Rita [um-insutta (i mediku) PRO]
INFL(s)-afraid Umm Rita INF-insult (the doctor) PRO
'*Rita is afraid (for the doctor) to insult PRO.'

(104) Raising

- a. Ha-tutuhun si Jose [fu-um-a'maolik i karet nigap]
INFL(3s)-begin Umm Jose INF-repair the car yesterday
'Jose began t to repair the car yesterday.'

Chung argues, then, that for government as it is relevant for case and binding, we need a hierarchical structure with a VP.

One result of Chung's analysis is that Chamorro has two coexisting structures, one (the flat structure) that she suggests is language specific, and the other (the hierarchical structure) that she suggests is universal. Another result is that though there is only one definition of government, it is used in two different domains, two domains which coincide with the two coexisting structures. Government as it concerns traces of extraction applies to the language specific flat structure, and government as it concerns the non-government of PRO and the government needed for case-assignment, applies to the universal hierarchical

structure.

I claim that there is only one structure for Chamorro. For this analysis I rely on a variation of Emonds's (1980) and Sproat's (1983a,b) analysis of V-S-O languages, Bouchard's (1982) analysis for PRO and raising, and the notion of VP government.

Emonds (1980) accounts for VSO languages by positing a V-fronting rule from an SVO structure. Sproat (1983) develops this analysis by assuming that this V-movement is actually a movement of INFL into COMP. Both of these analyses, then, will have VPs at every level of representation (see (106)). Unlike either of these accounts, I will assume that the INFL is sentence initial at d-structure. In a framework which includes a tripartite I' (see section 3.6), an I-NP-VP word order is possible. As I have claimed in my analysis of German, INFL must be filled when it is not properly governed¹¹.

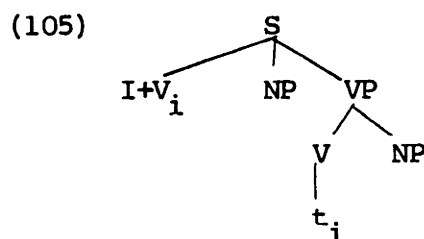
In Irish we can see cases where an analytic verb splits over two positions (V1-S-V2-O). In Chamorro, however, since the verb is non-analytic, the whole form moves to sentence initial position. This accounts for the VSO appearance.

Given Bouchard's framework as described in Chapter 1, the

11. I assume that the proper government of COMP' and I' differs from language to language. We can see that in Yiddish, INFL must move into COMP even in embedded clauses. This suggests that the head of COMP is not properly governed by the matrix verb as it is in German. Presumably, V moves into INFL even in clauses with an overt COMP in VSO languages. This is an avenue for further research.

distribution of PRO in Chamorro does not concern us. Whether or not it is governed is irrelevant. However, the binding of this PRO by an element in the matrix S is of concern, just as the binding of the subject position by an element in the matrix S in the raising cases is a concern. If Chamorro has a flat structure, why can only the subject bear this relation to the matrix S?

What I propose is that we adopt the suggested variation of Emonds's and Sproat's VP structure thereby avoiding the problems of binding and case assignment mentioned above. Now only the problem of proper government of the gap in subject position remains. We can see in the structure below, however, that VP government will insure that subject position will always be properly governed.



The subject NP is adjacent to the VP and a gap in this position will be properly identified. Thus with Sproat's structure, Bouchard's binding, and VP government, we no longer have to posit two co-existing structures for Chamorro, nor two crucially different uses of government.

We may want to say that it is the movement of the verb that allows extraction from the subject position. The proposal would be that the V in COMP would properly govern the subject position under a structural definition of government. This solution is not available to us because

the subject is not a complement of the V, therefore cannot be properly governed by the V. A way of distinguishing between the two analyses would be with a language which had no verb movement, yet still showed no that-t effects.

Malagasy, a V-O-S language, supports the claim that VP government can account for apparent ECP violations. Malagasy is a rigid word order, non-pro drop V-O-S language, which, like Chamorro, allows extraction of subjects out of embedded clauses.

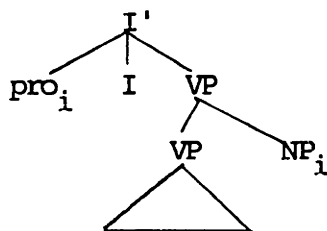
- (106) heverin-dRabe fa efa nanasa ny lamba Rakoto
 believed-by R. that already wash-past the clothes R.
 'It is believed by Rabe that Rakoto has already washed the clothes.'
- (107) Iza no heverin-dRabe fa efa nanasa ny lamba
 who LINK believed-by R. that already wash-past the clothes
 *'Who is it believed by Rabe that t has already washed the clothes.'

Malagasy presents no problems concerning d-structure word order. We may assume that it is I-V-O-S and that the existence of a verb phrase will account for PRO and raising from subject position just as in Chamorro. And once again we can appeal to VP government to account for the lack of that-t effects. The fact that Malagasy, a VOS language, works in a way similar to Chamorro indicates that it is not the movement of the verb which accounts for the proper government of the subject position since in Malagasy we have no reason to assume any V-movement.

Evidence from Malagasy also weakens another way of accounting for the extraction facts in Italian. A newer proposal (see Saito 1983b who credits Jaeggli per personal communication) is that the empty pre-verbal subject position antecedent governs post-verbal gap accounting for the

extraction facts.

(108)



This, however, does not account for Malagasy which certainly has the underlying word order of V-O-S. Because of the similarity of word order in post-verbal subject constructions in Italian and regular Malagasy constructions, one might suspect that a similarity in extraction facts falls out from this similarity in word order. In fact, I take this one step further. Languages that are the mirror image of this word order, i.e. S-O-V-I should also show the same effect, as they do. The fact that word order facts and extraction facts fall into such a generalization, then, is no accident.

4.3.3 Irish and Null Subject Languages

It has, in the past, been claimed (Jaeggli 1980, Chomsky 1981, but see Rizzi 1982, Safir 1982) that subject inversion and pro-drop are part of one phenomenon. Irish is an interesting counter-example to this claim. Irish is an I-S-VP language which does not have a productive use of subject inversion, yet it appears to be pro-drop (McCloskey & Hale, to appear).

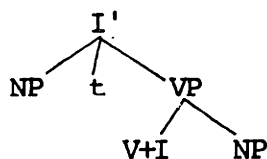
- (109) Da gcuirfeá isteach ar an phost sin gheobhfa e
 if put(CONDIT S2) in on that job get(CONDIT S2) it
 'If you applied for that job, you would get it.'

I claim that the only reason that pro-drop seems to co-occur with subject-inversion is that most pro-drop languages being studied are S-I-V-O languages and S-I-V-O languages without subject-inversion do not have a properly governed subject position. Without such a position, pro-drop would leave an unidentified gap. If an S-I-V-O language has an I-V-O-S variant, however, there is the possibility of having an identified gap in subject position and features can be supplied to the gap by INFL.

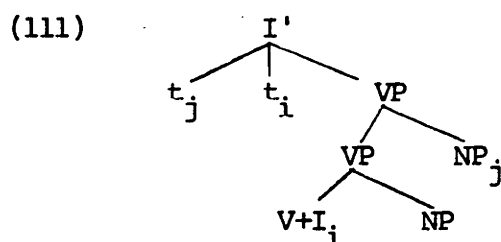
Irish, being I-S-O-V, need not undergo subject inversion in order to have an identified gap. Subject position is adjacent to the VP and in a position of direct Θ -assignment.

It has been assumed that pro need not be properly governed. In fact, originally it was assumed that the empty category in pro-drop languages was PRO (see Chomsky 1981) and therefore not governed at all. This involved a proposal that Rule R, a rule which lowered INFL onto the verb, applied in the syntax in pro-drop languages. This created the structure below which accounted for why PRO was allowed to appear in subject position since this position was no longer governed by INFL.

(110)



This analysis also accounted for the postposing of subjects since these subjects were assumed to be in VP. If INFL lowers, it now can assign case to an NP in the VP.



Following the direction of Bouchard, I claim that all empty categories have to be identified, which for my analysis, means properly governed if there is no local antecedent. The exception is arbitrary PRO which is pronominal and therefore free (see Bouchard 1982 for details). The empty subject in a pro-drop language, then, must be properly governed, i.e. in a complement position.

This is a change from what is currently assumed. I am proposing that the empty subject is actually in the postverbal position in Italian, whereas Rizzi assumes that pro is in the preverbal position. His argument is based on evidence from the Toscan dialect of Italian. If the subject is preverbal, there is agreement on the verb. However, if the subject is postverbal, there is no agreement.

(112) Lui gl'ha parlato
'He spoke.'

La l'ha parlato
'She spoke.'

Loro l'hanno parlato
'They spoke.'

(113) Gl'ha parlato $\left\{ \begin{array}{l} \text{lui} \\ \text{la} \\ \text{loro} \end{array} \right\}$

If the subject pronoun is dropped, the agreement has to appear on the verb suggesting that the empty subject is pre-verbal.

- (114) Gl'ha parlato. (= 'He spoke.')
 L'ha parlato.
 L'hanno parlato.

Assuming, however, that both the position of the gap and the contents of the gap must be identified, we can say that the empty position is post-verbal but that agreement must appear in order to identify the contents of the gap. This, then, is not necessarily an argument that the empty subject position has to be pre-verbal.

4.4 Revision of the CED

We have seen arguments above from Italian, Chamorro, and Irish that the [NP,S] position may be properly governed. In this section, I argue that proper government of the subject position, however, does not mirror exactly the proper government of the object position¹². Though subject position appears to be properly governed for the ECP, for the CED the subject position does not appear to be properly governed. For this reason we need a distinction between complement government, which may be government by an XP or an X^0 , and lexical government, which is government only by an X^0 .

In this section we will see that in Spanish, Chinese, and Welsh,

12. This first came to my attention through Rapoport (1984a). Rapoport argues that extraposition is possible out of properly governed positions within the VP, but not properly governed subject positions. For this reason, she distinguishes between proper government (complement government in this thesis) and T-government (lexical government in this thesis).

either the lack of that-t effects or the existence of pro-drop argue that the subject position is properly governed. The fact that the subject is not a possible extraction domain in terms of Huang's CED, however, argues that this position is not properly governed.

4.4.1 Spanish

We can see in the Spanish example below that constituents in subject position act as islands to extraction in the same way that adjuncts do.

- (115) Juan escribió tres libros sobre la literatura hispano-americana
 John writes three books about the literature hispano-american
 'John writes three books about hispano-american literature.'
- (116) Sobre que escribió Juan tres libros t?
 About what writes John three books t
 'About what does John write three books?'
- (117) Tres libros sobre la literatura hispano-americana
 three books about the literature hispano-american
 provocaron muchas discusiones
 provoked much discussion
 'Three books about hispano-american literature provoked much discussion.'
- (118) *Sobre que provocaron tres libros muchas discusiones?
 *'About what did three books provoke much discussion?'
- (119) Provocaron muchas discusiones tres libros sobre la literatura
 hispano-americana.
- (120) *Sobre que provocaron muchas discusiones tres libros t?
 *'About what did three book t provoke much discussion?'

In (116) above we see a case where extraction is possible out of an NP in object position. In (118), where extraction occurs out of the preverbal subject, the string is ungrammatical. This is not surprising since pre-verbal subjects are not properly governed and this construction

should be ruled out by the CED. Where extraction occurs out of a post-verbal subject as in (119), however, we might expect different results. This is the position which is argued in the literature as being properly governed. The CED would then predict this as a possible extraction site. Yet we can see in (120) above that this is not the case.

4.4.2 Chinese

We will see now that the same distinction which held for Spanish also holds for Chinese. The subject position appears to be properly governed, yet elements cannot be extracted out of a constituent in the subject position at s-structure.

I have argued in Chapter 2 that Chinese is an S-VP-I language. Given this word order and the notion of VP government, we would predict that Chinese would have no that-t effects. Huang (1982) argues, in fact, that this is the case. His examples are given below (p.479, ex.(61)).

- (121) zhejian shi [_S gen [_S shei lai]] zui you guanxi
 this matter with who come most have relation
 'Who is the person x such that this matter has most relation
 to do with x's coming?'

As Huang points out, the trace of the LF movement of shei 'who' appears to be properly governed since the structure is not ruled out. He accounts for the lack of a subject/object asymmetry in Chinese by claiming that INFL may be a proper governor of the subject position. This solution is not available for the analysis presented in this thesis since proper

government holds only of constituents and their complements. The complement of I is VP not the subject NP. More importantly, we do not need this solution since the adjacency of the VP to the subject NP position predicts that the subject will be properly governed independently.

The problem arises, however, when the subject position is tested as an extraction domain. Huang's CED would predict that extraction from a subject constituent should be possible since this position is properly governed. The example below argues otherwise.

- (122) ??Neige ren_i, Lisi da-le t_i shi wo hen bugaoxing
 that man_i Lisi hit-asp make I very unhappy
 *'that man, [that Lisi hit t] made me very unhappy '

Like Spanish, Chinese has a subject position which appears properly governed for ECP but not for CED.

4.4.3 Welsh

Finally, in Welsh, Sproat (1983b) gives evidence that subjects are not possible extraction domains. His examples are of parasitic gaps. Assuming that the subject/object asymmetry in parasitic gaps is due to the ECP (Kayne 1983), Sproat's examples argue that the subject position is not properly governed.

- (123) a. ?Dyma'r llyfrau_i [S_i O_i [S_i a brynasant hwy e_i [S heb wybod
 here-the books PRT they-bought they_i without know
 [S_i os byddai rhaid idynt_i [S PRO_j ddarllen e_i]]]]
 if would-be necessity to-them_i read
 ?'Here are the books_i which they bought e_i without knowing whether
 they had to read e_i.

- b. *Dyma'r llyfrau_i [_S O_i [_S a brynasant hwy e_i [_S heb wybod
 [_S os byddai [_S PRO darllen e_i] yn syniad da]]]]
 PRT idea good
 *'Here are the books_i which they bought e_i without knowing whether
 reading e_i would be a good idea.'

Since Welsh is, in my account an I-S-VP language like Irish, we would expect the subject position to be properly governed. Further, since Welsh has similar pro-drop effects, this expectation is realized (exx. from McCloskey & Hale to appear).

- (124) a. gwelais ef
 see(PAST S1) him
 'I saw him.'
- b. gwelais i ef
 see(PAST S1) I him
 'I saw him.'

4.4.4 CED-revised

It appears, then, that Huang's CED must be revised. The generalization is not that properly governed constituents are possible extraction sites. We have seen above that in Spanish, Chinese, and Welsh, where subjects are properly governed, nothing may be extracted from within the subject position. The CED must be restricted to constituents which are lexically governed, i.e. properly governed by a X^0 category as opposed to an XP category¹³.

13. This revision of the CED will be changed again slightly in Chapter 5.

(125) Condition on Extraction Domain (revised):

A phrase A may be extracted out of a domain B only if B is lexically governed.

4.5 Conclusion

In this chapter I have argued that two aspects of missing linguistic material must be identified; position and content. The position of the gap will always be clear if it is in some **direct** requirement relation to another element. I have argued that there are two ways requirement can occur: (i) a verb can require an internal argument and (ii) a VP can require a syntactically external argument for purposes of saturation as claimed in Rothstein (1983). If these needs are satisfied within a certain direct O-marking domain, the gaps will be clearly indicated. This is always the case with internal arguments. With external arguments, the requirement of an external argument may be (in some languages like Italian) or must be (in some languages like English) satisfied indirectly by coindexation. It also may be (in cases like Italian), or must be (in cases like Chamorro) directly satisfied. In the case of direct subcategorization, the gap will be properly identified, or properly governed. This relation explains different phenomena in different languages such as the distribution of empty pleonastics in German and Yiddish, the extraction facts in Italian, absence of that-t effects in Chamorro and Malagasy, and the existence of pro-drop without free subject inversion in Irish. Without a notion of VP government, this range of

phenomena remain as separate problems with idiosyncratic solutions.

Chapter 5

Pleonastics

This chapter examines constructions which use pleonastic elements. I begin by claiming that there is a certain hierarchy of constructions which require pleonastic elements and then I show which pleonastics appear in which constructions in a number of different languages. The clustering of pleonastics chosen by these various languages offer further confirmation for the hierarchy itself.

Further investigation of the inventory of pleonastics offers us different contrasts. One involves the split between lexical pleonastics and empty pleonastics. I propose an account of this split which involves a feature specification of INFL. This gives a clearer account of the intuitive notion of the "richness" of inflection which can extend to the explanation of the pro-drop phenomenon.

A second split which occurs among the languages studied is exemplified in English by the use of it versus there. As we have seen in Chapter 3, German has a similar split between ES and ES/O. I will propose that these two types of pleonastics, the it-type (I-type) and the there-type (T-type), also differ in their features. I-type pleonastics are a spell-out of the features [+#],[+case], while T-type pleonastics are

simply a spell-out of [+case].

Finally I will review some previous analyses of the use of pleonastic elements.. Though these are sufficient for the languages for which they were proposed, I will argue that a new analysis should be sought which can be used cross-linguistically. This represents work in progress. A solution is sketched for the split between I-type and T-type pleonastics in German and Dutch versus English, and problems are raised for future research.

5.1 The hierarchy

Below is the hierarchy which I propose for constructions containing pleonastic elements. I will discuss each of the splits separately and give reasons for the ranking using evidence from the languages being studied and from stages of language change. Much of this discussion will be at the level of speculation but will be supported later by the clustering of cross-linguistic facts.

- (1) I. Referential: It will eat anything in sight.
 II. Weather V: It rained all day.
 Weather Adj: It is too windy to sail.
 III. V-Adj-S': It is clear that she will do it.
 IV. V(passive)-S': It is believed that she will do it.
 V(raising)-S': It seems that she will do it.
 V. V(passive)-NP: There was found under the tree a great treasure.
 V(unaccusative)-NP: There appeared out of the shadows a large dog.
- VI. V(passive)...: Heute wurde O getanzt. (German)
 Today was danced
 'It was danced today.'
- V(unaccusative)...: Chuaigh O de sholas an lae (Irish)
 went of light the day
 'Daylight faded.'

5.1.1 Justification for the hierarchy

Referential vs. the rest (I). This split between referential NPs and non-referential NPs is almost too obvious to mention. It will, however, distinguish Italian from Yiddish, and further distinguish Italian and Yiddish from German. Italian allows referential pronouns to drop (2), while Yiddish does not (3). However, Yiddish will require all types of pleonastics to drop (4), while German allows only T-type pleonastic to drop (5). In other words, we already see languages dividing into three groups.

- (2) Arriva.
 arrive (he/she/it)
 'He/she/it arrives.'
- (3) Haynt hot *(es) alts gegesn.
 Today has it all eaten
 'It has eaten everything else.'
- (4) Haynt geyt (*es) a regn.
 Today goes rain
 'It's raining today.'

- (5) a. Heute regnet *(es).
 Today rains
 'It's raining today.'
- b. Heute sind (*es) zwei Kinder gekommen
 today are two children come
 'Today there came two children.'

Italian, then, allows a O referential, Yiddish does not allow a O referential, but does allow a O T-type and I-type pleonastic, while German only allows a O T-type pleonastic.

Weather Predicates (II)

(1) **Weather V vs. weather Adj.** The reason for including the break between weather V constructions and weather Adj constructions within category II comes from historical evidence. No language in our sample makes a division between these two constructions, but I include both to allow for further specification. Haiman (1974 p.102-103) writes that there was a stage of German where weather verbs required overt pleonastics while weather adjectives did not.

Even in OHG, impersonal VERBAL predicates required impersonal subjects... This continues to be the case today ... This was not true of impersonal adjectival and nominal predicates.

- (6) Ube tag ist, licht ist
 when day is light is
 'When it is day, it is light.'

(2) **Weather predicates vs. rest.** The split between the pleonastics which appear with weather predicates and those that appear in other constructions has been considered the split between quasi-arguments and non-arguments (LGB, p.325). Evidence for such a split has come from

control constructions which seem possible in the case of quasi-arguments, but not in the case of non-arguments. These examples are given below.

- (7) It rained without PRO snowing for days and days.
- (8) *It was clear that she could do it without PRO being obvious.

The analysis of these facts is not so clear, however, since the following example seems better than (8).

- (9) It was clear without PRO being obvious that she could do it.

This may be a split between III and IV of the hierarchy¹.

- (i) *It is obvious without seeming that S'.
- (ii) *It was believed without being expected that S'.

Be-Adj vs. rest (III). Evidence for the split between copula-adjective constructions and the constructions below it on the hierarchy comes from Dutch which uses het for the be-Adj construction and all the constructions higher in the hierarchy while using er (at least optionally) for all the constructions lower in the hierarchy. An example is given below.

- (10) *Er is duidelijk dat Eric zijn huiswerk niet heeft gemaakt
 there is clear that Eric his homework not has done
 'It is clear that Eric has not done his homework.'
- (11) Er wordt beweerd dat Eric zijn huiswerk niet heeft gemaakt
 There was claimed that Eric his homework not has done
 'It was claimed that Eric has not done his homework.'

The most obvious difference that can be suggested is that those constructions above this division on the hierarchy all have a O-role

1. This was pointed out to me by Noam Chomsky and credited to Luigi Burzio.

assigned to the subject position (see Safir to appear). For this sort of analysis we have to assume a quasi-type of Θ -role for weather predicates.

V(passive/raising)-S' (IV)

(1) V(passive)-S' vs. V(raising)-S'. The postulation of the split between passive verbs and raising verbs is speculative, and it is not clear that any language splits its inventory of pleonastics at this point.

One reason that one might place these two constructions in this order has to do with the similarity of NP is Adj and NP is V(passive) in English. Not only do they have the same superficial structure, but there is evidence for an adjectival passive as well as a verbal passive (Wasow 1977, 1978), the former having the form is Adj, the latter is V(passive) (is Adj: is surprised, is discovered; is V(passive): is promised).

In a language with adjectival passives, we would expect V(passive)-S' to pattern like V-Adj-S' assigning a Θ -role to the subject position. In a language with only verbal passives, V(passive)-S' should pattern with V(raising)-S'.

I am assuming that raising verbs assign an internal, but not an external Θ -role. Verbal passives are the same, assigning an internal, but not an external Θ -role (see Williams 1981). Adjectival passives, however, assign an external Θ -role. In Williams' (1981) characterization of lexical rules, addition of morphological material may affect the argument structure of a lexical item. Passive morphology which is added by a

lexical rule, then, may externalize an argument.

- (12) The cake was eaten. (adjectival)
The cake was uneaten.
- (13) The boys were given t the book. (verbal)
*The boys were ungiven the book.

The adjectival prefix un- (meaning 'not') may affix to an adjectival but not a verbal passive. This distinction would account for a possible difference between V(passive)-S' and V(raising)-S' since raising verbs will always assign an internal θ -role while passives, if adjectival and therefore derived by a lexical rule, may assign an external θ -role (see Fabb, 1984, however, for a different analysis).

(2) V(passive/raising)-S' vs. V(passive/unaccusative)NP. This split is a major one and is a point where languages do make a division between two types of pleonastic elements. This is exemplified in English with the division between it and there.

- (14) $\left\{ \begin{array}{l} \text{It} \\ * \text{There} \end{array} \right\}$ seems that she can do it.
- (15) $\left\{ \begin{array}{l} * \text{It} \\ \text{There} \end{array} \right\}$ was found under the tree a great treasure.

The true pleonastics (i.e., non-arguments) above this point in the hierarchy are in chains with S's, if anything at all. The pleonastics below this point are in chains with NPs, if anything at all.

V(passive/unaccusative)-NP (V)

(1) V(passive)-NP vs. V(unaccusative)-NP. The distinction between passive verbs and unaccusative verbs may simply mirror the distinction

given above between V(passive)-S' and V(raising)-S', the former being morphologically derived, the latter being lexical. V(passive)-NP, being morphologically derived, may have its argument structure affected. This split, however, also lacks confirmation and again, I simply assume that the is V(passive) construction is closer to the is Adj construction.

This assumption causes a different problem from the V(passive)-S' cases, however. If the passive is lexically (rather than syntactically) derived, then the θ -role is assigned externally to the subject position. The NP must be generated in the subject position thus making the structure similar to any NP V Adj construction. However, since, S's but not NPs freely extrapose, we would expect a split between the V(passive)NP structures, and the V(passive)S' structures.

- (16) a. A great many doors were opened.
 b. A great many doors were open.
 c. There were opened a great many doors.
 d. *There were open a great many doors.
- (17) a. That Sara would finish her degree was expected.
 b. That Sara would finish her degree was clear.
 c. It was expected that Sara would finish her degree.
 d. It was clear that Sara would finish her degree.

Subjects may be extraposed only if they are sentential. Logical NP subjects that are found post-verbally are actually base-generated within the VP as objects either to passive verbs or unaccusative verbs.

The result of the above discussion is that we predict that languages which have only lexically derived passives will not have the pleonastic-V(passive)NP constructions unless it can be independently argued that d-structure subjects may appear in the VP. The reasoning

behind this is that V(passive) in such a language will assign a O-role to the subject position, therefore the subject position must be filled at d-structure. In this way, such V(passive)-type verbs will be indistinguishable from other verbs which assign Θ -roles to the subject position.

Malagasy, in fact, supports this prediction. Travis and Williams (1983) argue that Malayo-Polynesian languages use lexical rules which externalize arguments of the verb. In these languages, then, we would expect a passive-type construction to assign the patient Θ -role directly to the subject.

- (18) Mividy vary Rina.
 AT-buy rice Rina
 'Rina buys rice.'
- (19) Vidin-dRakoto ny vary.
 PT-buy-by-Rakoto the rice
 'The rice is bought by Rakoto.'

In (19), ny vary 'the rice' gets assigned its Θ -role by the VP. We predict that Malagasy will not have a V(passive)NP construction.

The actual analysis is not obvious. First, Malagasy does not have overt pleonastics. Second, since it is VOS, it is difficult to say, in a V-NP structure, whether the NP is in the VP or in subject position. However, in Malagasy, NPs within the VP are allowed to be indefinite, while NP subjects are not.

- (20) Mividy vary ny lehilahy.
 AT-buy rice the men/man
 'The men/man buy/s rice.'

- (21) *Mividy vary lehilahy.
 AT-buy rice men/man
 'Men/a man buy/s rice.'

We may take the fact that the NP in a passive construction may not be indefinite as an indication that it may not be within the VP.

- (22) *Vidin-dRakoto vary
 PT-buy-by Rakoto rice
 'Rice was bought by Rakoto.'

(2) V(passive/unaccusative)NP vs. V(passive/unaccusative).... This split does not exist in many languages since impersonal passives do not occur in many of the languages studied. However, the difference in these two constructions is clear. One construction concerns a possible chain between the subject position and an NP, and the other, no chain at all since the sentence does not contain another NP.

V(passive)... vs. V(unaccusative).. (VI)

In our language sample, only Irish contains this last form. Again, the former form is morphologically derived and has adjectival tendencies while the latter is not derived and is not adjectival. Here, however, it is even harder to argue for the existence of an adjectival form where there is no NP in subject position at any level. The prediction is that languages of this type, such as Irish, must have syntactic passives.

Much of the above discussion is speculative and descriptive. It is meant simply as a heuristic for a closer investigation of cross-linguistic pleonastic inventories.

5.2 Pleonastics: Language specific

In this section we look more closely at the hierarchy we have proposed as it relates to a certain number of languages to be studied. Below is a chart of such pleonastic elements. The O's indicate that in these constructions, the pleonastic element is pro. — indicates that the language does not have such a construction.

(23)	T-type	I-type
English:	there	it
Yiddish:	O	O
Irish:	O	se
Dutch:	er	het
German:	O	es
French:	il	il
Malagasy:	O	O
Italian:	O	O

		Fr	Eng	Ir	Du	Ger	Mal	Yid	Ital
I.	referential	il	it	se	het	es	izy	es	O
II.	weather-V	il	it	se	het	es	—	O	O
	weather-Adj	il	it	se	het	es	—	O	O
III.	V-Adj-S'	il	it	se	het	es	O	O	O
IV.	V(passive)-S'	il	it	(se)	er/het	O	O	O	O
	V(raising)-S'	il	it	(se)	er	O	O	O	O
V.	V(passive)NP	il	there	O	er	O	—	O	O
	V(unaccusative)NP	il	there	O	er	O	—	O	O
VI.	V(passive)...	—	—	O	er	O	—	O	—
	V(unaccusative)...	—	—	O	—	—	—	—	—

I have included referential pronouns in the above table because they are often homophonous with the I-type pleonastic and are important for the pro-drop facts.

There are several points that can be studied from this data. One issue involves empty versus lexical NPs, and another issue involves the split between two types of pleonastics, the T-type and the I-type. German and Dutch, for instance fall together on the second question since they both split between the two types of pleonastics at the same point. However, German differs from Dutch on the first question since German allows empty pleonastics while Dutch generally does not.

There are several questions, then, which are raised.

1. Why are some pleonastics empty?
2. Why are some pleonastics optional?
3. Why do some languages have two pleonastics, and what is the difference between the two?

These questions will be addressed in the sections below.

5.2.1 Empty subjects

There are five languages in our sample that allow empty subjects but these fall into three groups. Italian allows referential as well as non-referential empty subjects. Malagasy and Yiddish have empty non-referential subjects, and Irish and German allow only T-type pleonastics to be empty. As Taraldsen (1978) implies, INFL can be "rich" to different extents. I propose that if INFL is very rich, referential pronouns may drop, if INFL is quite rich, all pleonastics drop, and if

INFL is only slightly rich, only T-type pleonastics can drop.

There are several points that should be made here. Some of them will be answered in further sections of this chapter, some will be left for future research.

1) Why does the appearance of the empty subject follow the hierarchy? In other words, why are there no cases where T-type pleonastics are lexical while I-type pleonastics are empty? The answer is suggested above in the discussion of the richness of INFL and will be fleshed out bit by bit in the following paragraphs. The solution, I feel, is in what features are necessary in referential and pleonastic elements. This will give us an idea of which features INFL must carry in order to properly identify different types of empty subjects.

2) There appears to be a gap in the paradigm as shown below.

(24)	Referential	I-type	T-type	
	0	0	0	Italian
	1	0	0	Malagasy, Yiddish
	1	1	0	German, Irish, Dutch
	1	1	2	English
	1	1	1	French

A language will not use the same pleonastic for both the I-type and the T-type unless 1) it also uses that item for the referential pronoun, or 2) the pleonastic is 0. This may be a false generalization due to the languages chosen but I assume that this is not the case. Another way of stating this is that the I-type pleonastic must be the same as the least marked referential pronoun, unless the I-type (and therefore the T-type)

pleonastic can be properly identified by INFL. This question I leave unanswered.

3) Unlike referential pro-drop, pleonastic pro-drop appear to be obligatory. As mentioned earlier (suggested by Mamoru Saito) I assume that in both cases, pro-drop is optional. Referential pronouns may be used for emphasis. Since this is senseless in the case of pleonastics, they will never appear.

5.2.1.1 INFL features

In Chapter 4, we have argued that pro-drop must be sensitive to proper government of the subject position. This means that in Italian, the empty subject, pro, is in the post-verbal subject position. The second part of identification of gaps had to do with feature specification. In the case of gaps left by movement, a correctly formed chain recovers the features of the gap from the head of the chain. The types of gaps that we are discussing in this chapter, however, are not created by movement so it is less obvious what will supply the necessary features.

I suggest that there are certain features that INFL carries that identify the content of a properly identified gap. As we have seen above, these features must distinguish four types of INFL, Italian type, Yiddish type, German type, and English type. In Italian, INFL must be rich enough to identify referential NPs as well as both I- and T-type pleonastics. In Malagasy and Yiddish, INFL must identify both I- and T-type pleonastics.

In German and Irish, INFL identifies only T-type pleonastics, and in English, INFL identifies no NPs at all.

Let us begin by assuming that the relevant feature for Italian INFL is [+person]². This means that when INFL is coindexed with the subject position, INFL may supply the feature [+person] to the chain that is created. Let us further assume that θ -roles must be assigned to chains that have the feature [+person]. In German, even though subject position can be properly governed in SAI and embedded constructions (see Chapter 4), it is not a pro-drop language since INFL does not carry the feature [+person]. The existence of a feature in INFL is in no way obvious from the appearance of INFL itself. Inflection in German certainly appears rich enough to designate the person of the subject. Features of INFL must be considered a more abstract entity that can only be teased out through other phenomena in the language.

The feature [+person] describes the division between Italian and the rest of the languages surveyed here. I suggest further that the feature which divides Malagasy and Yiddish from German, Irish, English and French is that of [+ $\#$] and the feature that separates German and Irish from English and French is [+c] where NP[+c] is an NP which may bear case without being phonetically realized. Reasons for choosing these features will become clearer below. These features form their own hierarchy. If INFL has person, then it must have $\#$ and c. If it has $\#$, it must have c.

2. The choice of [+person] is arbitrary. Rizzi (fall lectures, 1983) uses [+argument] though in a slightly different way.

(25) INFL feature hierarchy:

[+person] --> [+#] --> [+c]

5.2.2 Optional pleonastics

Another question which we have raised is why some pleonastics appear to be optionally deleted in certain constructions. Below we see cases in Irish where a pleonastic may or may not be expressed.

(26) Irish:

Ehi (se) creidte ariamh againn go dtiocfadh an slánuitheoir ar ais
 was it believed ever at-us COMP come(CONDIT) the Saviour back
 'We had always believed that the Saviour would come again.'

In a way, this is an important confirmation for the above hierarchy. The point in the hierarchy where the pleonastic is "optional" is also the point where the split between the two pleonastics comes. Similar constructions in Dutch give us a clue as to the reason for this optionality.

(27) Dutch:

{ Het } is gebleken dat Eric zijn huiswerk niet heeft gemaakt.
 { Er }
 is shown that Eric his homework not has done
 'It is shown that Eric has done his homework.'

As we see above, it is not that the pleonastic is optional, but rather that the choice of which pleonastic is used is variable. What is crucial is that languages that have "optional" pleonastics, have a 0 pleonastic in their inventory. Therefore, when the pleonastic appears to be optionally expressed, actually it is a choice between the lexical pleonastic and the 0 pleonastic.

There is a more complicated case in Dutch where the T-type of pleonastic also appears to be optional (from D. Jaspers)

- (28) *(Er) wordt beweerd dat Eric zijn huiswerk niet heeft gemaakt
 was claimed that Eric his homework not has done
 'It was claimed that Eric had not done his homework.'
- (29) Dany heeft me verteld dat (er) beweerd wordt dat Jan
 Denny has me told that claimed was that John
 'Denny has told me that it was claimed that John ...'

Here is a case where a language without a 0 pleonastic does have an "optional" element. My analysis is that the dialect of Dutch which does allow this has a variant of INFL which is [+c] like the German INFL. This means that the T-type of pleonastic is empty when INFL [+c] is chosen and filled when INFL[-c] is chosen. Crucially, the T-type pleonastic can only be 0 when it is in a position of proper government as defined in Chapter 4. Although these ambiguities make it very difficult to arrive at a restrictive analysis with clear predictions, the analysis presented here will nevertheless predict that Dutch will never drop a het that does not have an er alternant. This is borne out below.

- (30) Is *(het) betreurd dat hij het boek heeft gekocht?
 is regretted that he the book has bought
 'Is it regretted that he has bought the book?'

Basically, languages that have a [+c] INFL may have a variant where INFL is also [+#] (German), or a language with an INFL with no [+c] features may have a variant with a [+c] INFL.

5.2.3 I-type vs. T-type

The issue we have been skirting is why there are two pleonastics at all. And why all languages do not split the hierarchy in the same way. This is a knotty problem and is difficult to unwind in an organized fashion. My first step towards a solution will be through Irish. At first, any coherent description of pleonastic distribution in Irish looks impossible. I claim, however, that by allowing verbs to specify O-marking and case-marking properties in the lexicon, something which is needed independently, one can at least group the facts systematically. This grouping also suggests a way of partitioning the hierarchy.

On top of this preliminary partitioning, I will posit another division that can be made following Reuland (1983). This second division depends on the sort of chain that is created, i.e., whether the pleonastic is coindexed with an S' or an NP. Although I eventually disagree with Reuland's analysis, it offers an important starting point.

Having divided the hierarchy into subparts, I then investigate the lower portion, mainly T-type constructions which involve post-verbal NPs or no VP internal argument at all. I argue against any theory which relies crucially on chains (Pollock (1982), Safir (1982), and Reuland (1982)) and offer a different explanation for the presence of a pleonastic. My analysis is based on the interaction of case assignment to the postverbal NP, and agreement of the verb with the NP.

Finally I return to the problem of the split between T-type and I-type pleonastics presenting a direction of investigation suggested by some facts in Dutch, and questions for further research.

5.2.3.1 Irish

The data from Irish³, at first glance, seem very confusing and haphazard. Predicates appear arbitrarily to take no pleonastic, an obligatory pleonastic, or an optional pleonastic. On closer investigation, however, we can see that some of the predicates fall into clusters.

V-NP. Anytime the "logical subject" is an NP, whether it is marked accusative (31), or it is in a PP (32), there can be no pleonastic.

- (31) Mairbhádh (*se) ar an bhothar éire e
kill(IMPER PAST) on the road last night him(acc)
'He was killed on the road last night.'

- (32) Chlaíochlaigh (*se) ar a neart
deteriorate on his strength
'His strength waned.'

Also, if there is no logical subject at all, the pleonastic must be absent.

- (33) Tostadh (*se) seal
be-quiet(PAST IMPER) a-time
'There was a silence.'

V-S'. Where the construction contains an S', there are three possibilities. In some cases, the se is required, in some it is optional, and in some it is not possible. One regularity holds, however. Whenever the verb is passive, the se is optional. This makes Irish look like Dutch

3. Information on Irish pleonastics comes from J. McCloskey.

where the pleonastic is either het or er. As we have discussed earlier, then, in Irish it is not so much that the pleonastic can be dropped optionally, but rather that either one or the other pleonastic may be used, i.e., either se or 0.

- (34) Tà se beartaithe againn a dhul go Meiricea
 0
 is it determined at-us go(-FIN) to America
 'We have determined to go to America.'

1) Se/O (either I-type or T-type)

Let us assume that these verbs, being passive, assign a Θ -role but no case to the object position. We can say, then, that all predicates which take S's and either se or 0, all assign O-roles but no case to the object position.

2) Se (I-type)

Many of the copula-Adjective-S' constructions take an obligatory se. Again this looks very much like the German facts. We will assume in these cases that a Θ -role is assigned to the subject position.

- (35) Tà se fíor gur dhúirt mé sin
 is it true COMP said I that
 'It's true that I said that.'

Let's suppose that this can be extended to all the predicates that take an obligatory se.

3) 0 (T-type)

Finally, let us assume that those predicates which cannot take se are like the V-PP or V-NP(acc) counterparts in that they assign both Θ -role

and case (either directly or through a PP) to the internal argument.

Now we can characterize the Irish facts. Se is required of predicates which assign a θ -role to the subject position. It is optional with predicates which assign θ -role to the object position but no case, and it is obligatorily absent with predicates which assign θ -role and case to the object position.

- (36) a. $*(se) \quad \theta \leftarrow VP \quad (V \text{ Adj}) \quad (\text{assuming Irish is SVO})$
 b. $(se) \quad V \rightarrow \theta \quad (V \text{ passive})$
 c. $(*se) \quad V \rightarrow \left\{ \begin{array}{l} \theta \\ \text{(case)} \end{array} \right\}$

This analysis is not as stipulatory as it may first appear. We know that passives can assign θ -roles to objects without assigning case. And we know that passives with S's take an optional se. This implies that it may have to do with θ -role and case assignment. An impossible case would be a language like Irish, but where impersonal passives also had an optional pleonastic. Since there is no internal argument in an impersonal passive, we would not say that the verb assigned an internal θ -role. Then, even with the idiosyncracies of the lexicon, we could not generalize the class of verbs that took an optional pleonastic. The point is, that though the lexicon can specify many idiosyncratic properties, it restricts certain possibilities.

What we have gained from this investigation of Irish is that the θ -role and case marking abilities of the verb are important to the distribution of pleonastics. We will see this idea developed below.

5.3 T-type pleonastics

In this section I review some analyses of T-type pleonastics, and how the presence or lack of agreement may interact with the type of pleonastic that a construction employs. My reviews are brief and I suggest reading the originals for further detail.

5.3.1 Reviews

Reuland (1982). The basic conclusion of Reuland's paper that we will discuss is that chains which act as external arguments must contain one and only one NP. In a chain $a \dots S'$, since S' is not an NP, a must be. In a chain $a \dots NP$, a may not be an NP. Reuland further concludes that it, het, and es are all NPs, while there, er and \emptyset are not, in English, Dutch, and German respectively.

I am assuming, on the contrary, that all pleonastics are NPs, including the T-type mentioned above which Reuland assumes are not NPs. An argument for this comes from Case theory. The distribution of there is

4. This may not be the correct generalization since, as pointed out to me by Noam Chomsky, PPs show the same distributional facts.

- (i) On the grass is a nice place to sit.
- (ii) *I hoped on the grass to be a nice place to sit.
- (iii) I expected on the grass to be a nice place to sit.

predictable if we assume that it is an NP and, like other NPs, needs case⁴.

- (37) There were three women in the group.
- (38) *I hoped there to be three women in the group.
- (39) I hoped for there to be three women in the group.
- (40) I expected there to be three women in the group.

Pollock(1982). Pollock discusses only the cases which contain post-verbal NPs. He argues that AGR must be coindexed with an NP which is [+/-number], [+nominative]⁵. This is meant to account for some differences between English and French that have to do with choice of pleonastics and agreement on the verb. The relevant data are given below.

- (41) There $\left\{ \begin{smallmatrix} ??is \\ are \end{smallmatrix} \right\}$ three people in the room
- (42) There $\left\{ \begin{smallmatrix} *are \\ is \end{smallmatrix} \right\}$ a cat in the room.
- (43) ... then there $\left\{ \begin{smallmatrix} comes \\ *come \end{smallmatrix} \right\}$ into the room an enormous dog
- (44) ... then there $\left\{ \begin{smallmatrix} *comes \\ come \end{smallmatrix} \right\}$ into the room three enormous dogs
- (45) Il y $\left\{ \begin{smallmatrix} *ont \\ a \end{smallmatrix} \right\}$ trois personnes dans la chambre
- (46) Il y $\left\{ \begin{smallmatrix} a \\ *ont \end{smallmatrix} \right\}$ un chat dans la chambre.
- (47) Il $\left\{ \begin{smallmatrix} est \\ *sont \end{smallmatrix} \right\}$ arrivé trois femmes

5. Pollock's [+/-number] represents [plural(+number)/singular(-number)]. I have used [+#] in a very different way meaning that an NP which is [+#] is either singular or plural but at least carries a feature for number.

- (48) Il $\left\{ \begin{array}{l} \text{est} \\ * \text{sont} \end{array} \right\}$ arrivé une femme.

Pollock's analysis makes several assumptions:

1. Certain pleonastics must be coindexed with AGR because of an intrinsic characteristic of 'cohesion forte' (strong cohesion), for instance, il and ce.
2. Those elements which are governed by and coindexed with AGR are assigned nominative case.
3. Certain pleonastics are inherently [+/-number]. These are il, and ce.
4. A chain may only have one NP with [+/-number].
5. A chain may be assigned case only once.
6. French unaccusatives assign case to the NPs which they govern in the VP.
7. English copulas assign case to the NP within the VP.
8. AGR must be coindexed with an NP which is [+nominative] and [+/-number].

Now let's look at the following examples.

- (49) .. then there came into the room three women.
- (50) Il est arrivé trois hommes.
- (51) Il y $\left\{ \begin{array}{l} \text{a} \\ * \text{ont} \end{array} \right\}$ trois personnes dans la chambre.

In (49), three women does not get case from the verb since English unaccusatives do not assign case. The NP therefore must be coindexed with the subject position to get case. Since three women has [+/-number] but no case, and there has case but does not have [+/-number], the chain is well-formed and AGR may be coindexed with the chain. This accounts for the agreement of the verb with the post-verbal NP.

In (50) and (51), est arrive and a assign case to trois hommes and trois personnes respectively. Since AGR is coindexed with il by 'cohesion forte', and since il has [+/-number] and will be assigned nominative case by coindexation with AGR, the sentence is well-formed.

The example below works a bit differently from those already discussed.

- (52) a.??There's three people in the room
 b. There are three people in the room.

Since English copula assigns nominative case to the NP which it governs (per assumption 7), three people will get case directly from the verb. There are two possible indexations then in Pollock's account.

- (53)
- | | | | | |
|----|-------|-----|----|--------------------------|
| | there | AGR | be | three people in the room |
| a. | i | i | j | |
| b. | i | j | j | |

In (53a) (which produces (52a)) AGR is coindexed with there. Pollock must now say that an NP, when governed by AGR, may be assigned the feature [-number] (i.e., singular). The string will be grammatical since AGR will be coindexed with an NP (there) which is [+nominative] and [+/-number].

In (53b) (which produces (52b)) AGR is coindexed with the nominative NP in the VP. This satisfies assumption (8). But now Pollock must allow there to be generated with case ('un argument muni d'un Cas inherent')⁶.

5.3.2 T-type pleonastics are Case

Without going into more detail on either of these analyses, I suggest that any analysis which depends on chains is misguided. Both Reuland and Pollock conclude that INFL (AGR) must be linked with something stronger than just a T-type pleonastic. If the pleonastic is in a chain with an S' (Reuland) or with nothing else at all (Pollock), the pleonastic must be sufficiently "strong" to bear the index of AGR. For Reuland, this means choosing it or het rather than there or er. For Pollock it means choosing il (rather than ce which does not have [+/-number]). For Reuland, being 'strong enough' means being an NP. For Pollock, it means having [+/-number] and nominative case. Assuming that the strong pleonastic is the I-type, and the weak pleonastic is the T-type, we would always expect the I-type pleonastic whenever there was no chain formed. This certainly is the case in French as shown above.

This is not the case, however, in other languages. One counterexample comes from German impersonal passives. Below we see that the pleonastic is 0 which is the German T-type pleonastic.

6. We have, however, already seen examples which argue that there must be assigned case (see examples (37)-(40)).

- (54) Heute wurde 0 getänzt.
 today was danced
 *'It was danced today.'

There is no obvious NP to coindex the 0 pleonastic with yet we still have the weak form, the T-type, of pleonastic. Reuland suggests that impersonal passives have empty NP objects that suffice for coindexation. Although Pollock does not include German in his study, in his terms, these NPs would presumably also have to have [+/-number]. This raises the question of why this empty NP would always have to be singular. The example below is ungrammatical.

- (55) *Heute wurden 0 getänzt.
 today were danced

Beyond this, however, there are further problems. In Irish there are cases which are harder to argue against. In the examples where the only internal argument is assigned case by a preposition, the existence of a chain is less tenable.

- (56) Ləguigh ar an stoim
 weaken on the storm
 'The storm weakened.'

There is no agreement, first of all, and secondly, the chain would be assigned case twice; once by the preposition and once by coindexation with AGR. The conclusion, then, is that there is no chain, AGR is coindexed only with the pleonastic. However, the pleonastic is the T-type, the weak form, suggesting that the restrictions that Reuland and Pollock have posited for coindexation with AGR are incorrect.

Perhaps the clearest characteristic of the T-type pleonastic is that

it is assigned case by INFL. It does not need to transfer this case or to form a chain. We have seen counterexamples to both of these claims in German and Irish. Let us say, then, that T-type pleonastics are simply a manifestation of case assignment. They cannot be assigned O-roles because they do not have the feature [+person]. They therefore must be in non-O but casemarked positions. Non-O positions will always be subject positions (according to the Extended Projection Principle) so we expect T-type pleonastics to appear in the same structural position as subject NPs. The near complementary distribution of lexical NPs and T-type pleonastic NPs will be determined by the θ -assigning abilities of the VP. We will see below that Move-a will account for the fact that the complementary distribution is not complete.

(57) The woman bought the book.

(58) *There bought the book.

(59) *The woman was discovered under the tree a great treasure.

(60) There was discovered under the tree a great treasure.

(61) A great treasure was discovered under the tree.

(58) is out by the θ -criterion since the T-type pleonastic cannot bear the θ -role assigned by the VP. (59) is also out by the θ -criterion since there are two NPs for one θ -role, the θ -role assigned by discover to its object position. In (60), however, a great treasure gets the O-role assigned to the object position of discover, and there is in a non-O position which is assigned case. The complementary distribution of T-type pleonastics and referential NPs is disturbed only by Move-a as shown in (61) where a great treasure moves into the non- θ casemarked position. The

T-type pleonastic, then, may be a late spell-out rule of the feature [+case].

We have already seen that case does not necessarily come from INFL. T-type pleonastics are also found in ECM constructions.

(62) She believed there to be buried under the tree a great treasure.

The fact that we want to capture is that, in some languages which have a 0 T-type pleonastic, a [+tense] INFL does not require a lexical subject. The way I have chosen to represent this is by allowing INFL to assign a feature [+c] to the empty subject position so that the subject is now able to receive case without being lexicalized.

We have said above that the feature [+c] which has been assigned to the subject position by INFL in the case of German allows the subject to bear case without being phonetically realized. One question might be whether this is true only of nominative case, or whether it is true of all cases. There is evidence from Arabic that an empty NP[+c] can only bear nominative case. Aoun (1980) argues that there is an element [-referential][-phonetic] which "is to expletive elements (it,...) what PRO is to referential pronouns (he, she, ...)"(p.1). (Within the framework being assumed for this thesis, PRO is pro in this context.) What is interesting about this empty element in Arabic is that it surfaces when it is in a position which is assigned accusative case. The relevant examples are given below.

(63) minal wə:diʒi ʔanna
 prep-the clear that ...
 'it is clear that ...'

- (64) ?inna lwalada ya19abu
 (acc)
 'Indeed the boy(acc) he is playing.'
- (65) ?innahu minal wa:dihi ?anna ...
 indeed-it prep-the clear that
 'Indeed it is clear that ...'

In (63) we see a construction with a missing pleonastic. In (64) we can see that the complementizer ?inna, which acts as a corroborative in the matrix S, assigns accusative case to the adjacent NP. In (65), we see that when this adjacent NP is an empty pleonastic, it must surface phonetically as -hu.

Although the examples above use an I-type pleonastic, the argument we are making still goes through. Arabic is a pro-drop language, allowing referential NPs to be empty. According to our analysis, then, INFL contains the feature [+person], and by our feature hierarchy given in (25), INFL must also contain [+ $\#$] and [+c]. This means that it may be assigned a O-role and nominative case without being phonetically realized. Although we have not yet discussed the feature [+ $\#$], let us for now assume that an NP with this feature may form a chain with an S'. Arabic INFL bears the feature [+ $\#$]. Therefore, the chain of ([NP, S], INFL) may be coindexed with an extraposed S' as in example (63). There is no feature, however, that allows an empty subject position to bear accusative case. This is the result we want. In Arabic, when the empty subject is assigned accusative case, it must be lexicalized.

Aoun's article raises the question of pleonastic PRO. Do pleonastics appear in positions where PRO can appear? This amounts to asking whether

PRO can appear in non-O positions. Obviously the environment we are looking for is one of arbitrary PRO rather than control PRO. Since controllers are at least quasi-arguments, we will not find T-type pleonastics in these constructions.

In positions of arbitrary PRO, it also appears that T-type pleonastic elements cannot appear.

- (66)
- a. It is difficult PRO to make *baclava*.
 - b. It is difficult for us to make *baclava*.
 - c. *It is difficult PRO to be lots of people in the house.
 - d. It is difficult for there to be lots of people in the house.

In the examples above, it appears that PRO cannot be a T-type pleonastic. There are two reasons why this might be. The first reason is that if the subject position is not assigned case, then the NP lots of people cannot get case through the coindexation with the subject position. (66c) is ruled out, then, by the Case Filter.

A second reason why (66c) is ungrammatical might be that PRO has a restricted interpretation. In the examples below, it appears that PRO has to be human.⁷

7. This restriction of PRO seems to be relevant only in infinitivals. Gerunds allow a wider range of PRO interpretations including I-type pleonastics.

- (i) The rocks rolled down the hill without PRO hitting anyone.
- (ii) It rained all night without PRO snowing.
- (iii) It is possible, without PRO being obvious, that Jeremy will arrive tonight.

But even this is not clear.

- (iv) *(There) having been too many people, we left early.

- (67) They rolled down the hill.
 a. they = rocks
 b. they = children
- (68) It is difficult PRO to roll down the hill.
 a. *PRO = rocks
 b. PRO = children

This is also what we would expect assuming the characterization of arbitrary PRO which is that it is a variable ranging over individuals in domain D. Since it must pick out an individual in this domain, it must be referential.

German examples indicate that both case theory and the restriction on the semantic distribution of PRO rule out (65). Below we see an example where there is no NP which relies on the subject position for case assignment. I assume in this example that this is out because of the [+human] restriction on PRO (see Safir (to appear) for a different analysis.)

- (69) *Es ist schwer getanzt zu werden.
 is difficult danced to become
 *'It is difficult to be danced.'

5.3.3 Analysis

Let us say that a parameter is set within a language as to whether unaccusative and passive verbs may assign case of some sort to their internal arguments (see the discussion on Belletti (forthcoming) below). Also, we will assume that AGR is always coindexed with [NP,S]. If the internal argument is assigned case, then there is no need for it to form a chain with the subject position. In fact, it is not possible for it to

form a chain with the subject position since the chain would be assigned case twice.

If case is assigned, there is no chain and AGR is coindexed only with the [NP,S] position. The consequence of this is that the verb will not agree with the [NP,VP]. Lack of agreement, then, is crucially linked with the fact that the NP can get case independent of the subject position.

This analysis is easiest to accept where it is obvious that the [NP,VP] is assigned case by some element other than INFL. This may be either because the NP appears with accusative case marking on it or within a PP. It is more difficult to accept this analysis when, as in French, there is no overt sign that case has been assigned to the NPs that do not appear within PPs.

(70) Il est arrivé trois femmes.

Est is singular and does not agree with the [NP,VP]. According to our analysis we have to assume that there is no chain and that case is assigned to the post-verbal NP by the V. This is true in English as well. In examples from colloquial English such as those given below, there is no agreement between the verb and the [NP,VP].

(71) There's a lot of books in the room.

(72) There seems t to be a lot of books in the room.

What this means in terms of our analysis is that there is no chain between the subject NP and the [NP,VP]. The NP, then, must get case from the V in order not to violate the Case Filter. Notice that these facts are only true of copulas in English (as already pointed out in Pollock's

analysis above).

(73) *... then there comes a lot of people into the room.

(74) *There seems to have arrived a lot of people from Montreal.

It is not immediately clear which case is assigned. We have seen two different types of case that the NP can get; (i) accusative, (ii) oblique (within PP). Another problem is also raised with our analysis. Səfir (1982) assumes crucially that post-verbal NPs in French are coindexed with the subject position to account for the fact that the NP must be indefinite. As in English there constructions, in the French constructions the [NP, VP] must be indefinite.

(75) Il est arrivé { *l' } homme
 { un }

(76) There arrived { *the } man
 { a }

Səfir points out an interesting fact in French (p. 177) first noticed by Kayne (1975).

(77) Jean a tiré sur le bateau
 John has shot on/at the boat
 'John shot on/at the boat.'

(78) Il a été tiré sur le bateau/un bateau
 has been shot at the boat/ a boat
 'There was shot at the boat/a boat.'

(77) is ambiguous between two readings. Sur le bateau can be the locative phrase 'on the boat' or tirer sur can be the idiomatic verb meaning 'to shoot at'. With the passive construction, only the idiomatic reading is possible since passivization in French is sensitive to the argument structure of the verb. Only verbs with internal arguments may be

passivized (as in Irish).

What is important in these constructions, however, is that the NP may be definite. Safir uses this as evidence that there is no chain only in the construction where the argument NP is contained within a PP. It is crucial for Safir that French unaccusative and passive Vs do not assign case. If they did, we would expect no chain and, therefore, no definiteness effects.

Belletti (forthcoming) offers an alternative to this analysis. She suggests that verbs may assign partitive case to adjacent NPs. Since partitive case will convey the meaning 'some', it is necessary that the NP be indefinite. The only NPs, then, that will not have to be indefinite are those that are assigned accusative case (as in Irish) or those in PPs.

The conclusion we draw is that if the verb agrees only with the NP in subject position (i.e., the pleonastic), it is because INFL is coindexed only with this position, and that the pleonastic, in turn, within that S' is coindexed only with INFL. This means that (i) there is no other NP as in Germanic impersonal passives, or (ii) if there is an NP which appears to be the logical subject, it is assigned case by some element within the VP. This may be either the V itself, or a preposition. The T-type of pleonastic appears in constructions both with and without agreement with this logical subject. In our analysis, this means that a T-type pleonastic may or may not be in a chain. Its purpose is simply to spell-out case.

The analysis presented here differs from Pollock's in the following ways. Firstly, there is no need for 'cohesion forte'. I assume that INFL (AGR) is always coindexed with the [NP,S] position. This, in turn, means that there will always be coindexed with AGR and will always be assigned case in a tensed clause through this coindexation. We therefore do not need to say that there can have inherent case. Since AGR must be coindexed with [NP,S], we cannot generate the following coindexed structure which is crucial to Pollock's analysis.

- (79) there AGR is three people in the room
 i j j

We will, however, produce the two structures below.

- (80) there AGR be three people in the room
 a. i i j
 b. i i i

Pollock rules out (80b) since three people will be assigned nominative case by be, and there will be assigned case by coindexation with AGR. The chain will be ruled out by the existence of two case assigned NPs.

This problem may be solved by assuming that be does not necessarily assign case to an NP which it governs. In fact, in the unmarked form, (80b), be does not assign case to the [NP,VP]. In a marked construction, however, be does assign case, and we find the verb in the singular whether or not the [NP,VP] is singular.

Notice that, unlike Pollock who assumes that il is essentially different from there, I am assuming that il can play the role of both the

T-type pleonastic and the I-type pleonastic. In other words, I assume that il is, like there, a spell-out of case, but that it also has the feature [+#]. The generalization may be that languages with subject clitics will use these clitics for the T-type pleonastic. This is not unreasonable in light of the characterization of clitics as the spell-out of case features (Borer 1981).

5.4 I-type pleonastics

We have argued above that T-type pleonastics are the spell-out of the feature [+case], and we have hinted that I-type pleonastics are the spell-out of [+#]. The choice of the feature is fairly arbitrary as it is in the case of [+person]. The intuition I want to capture is that the I-type pleonastic is in some way stronger than the T-type pleonastic. In this section, we will review some of the data concerning I-type pleonastics and set up a problem for future research.

First, let us separate quasi-arguments from non-arguments. I will be assuming that quasi-arguments, those arguments used with weather predicates, must be [+#] because of their quasi- status.

The other sort of I-type pleonastic is the one which is coindexed with an S'. Below we will look first at an analysis proposed by Safir (1984) and examine why this analysis will not account for the data we have presented. Then we will discuss an interesting arrangement of data in Dutch.

The problem then remains that German, Irish, and Dutch all use the T-type pleonastic in construction where English uses only the I-type.

5.4.1 ES vs. ES/O: German

Safir (to appear). Safir (to appear) offers a solution to the ES/O vs. ES dilemma. He basically proposes that ES appears where there is a trace left that is not properly governed. His account cannot be used within the framework presented here as will be shown below.

Safir makes the generalization that ES is used in contexts where a O-role is assigned to the subject position. This includes mainly extraposition type clauses. He contrasts the following sentences.

- (81) a. Er sagte, daß (?*es) ihm erklärt wurde, daß Hans den Hund getötet hat.
 he said that him explained was that Hans the dog killed had
 'He said that it was explained to him that Hans killed the dog.'
- b. Gestern wurde (?*es) erklärt, daß ...
 yesterday was explained that
 'Yesterday it was explained that ...'
- (82) a. Er sagte, daß ?*(es) klar ist, daß...⁸
 he said that clear is that ...
 'He said that it is clear that ...'
- b. Nun ist ?*(es) klar, daß ...
 now is clear that ...
 'Now it is clear that ...'

8. The pleonastic is omitted, however, if a dative NP is included ('... daß mir klar ist daß ...'). I will assume under certain circumstances that these dative NPs may appear in the subject position.

His generalization is "we might say that predicates that do not assign external theta-roles permit S-ES to drop, but those predicates that do assign external theta-roles do not permit S-ES to drop." (p. 27).

Since subject position is assigned a θ -role, it will follow from the Projection Principle and the θ -criterion that the subject position will be filled at d-structure. At s-structure, then, the position will contain the trace of movement. Safir claims that this trace will not be properly governed and therefore must be filled with ES. This will account for the fact that ES will appear only in θ -marked positions.

In Chapter 3 we have seen Safir's account for the distribution of ES/O. Unlike our account, he does not use proper government to explain the es-insertion facts. Since we do use proper government to explain the ES~O distribution of the ES/O pleonastic, we cannot use proper government to explain the ES vs. ES/O distribution.

In Chapters 3 and 4, I have argued that a position which is adjacent to a VP is properly governed. In the context of German pleonastics, this accounts for the facts of ES/O.

(83) $\left\{ \begin{array}{l} \text{Es} \\ *O \end{array} \right\}$ wurde [_{VP} getanzt]

(84) Heute wurde $\left\{ \begin{array}{l} *es \\ O \end{array} \right\}$ [_{VP} getanzt]

In (84) the O pleonastic is properly governed and is identified by features on INFL. Therefore it is allowed to surface in its O form. In (83), the position is not properly governed and must be filled by es. What we want to explain now is why the ES pleonastic (I-type) appears in

(82). According to our analysis, the I-type pleonastic appears even in the position of proper government. This is what distinguishes it from the T-type pleonastic.

It now is clear why we cannot use Səfir's ECP account to explain these facts. He must assume that subject position is never properly governed in German. This appears not to be the case as shown by the lack of that-t effects in the dialects of German which allow extraction out of daB clauses.

Independent of our analysis of German, however, Səfir's analysis does not seem to be the right one. In Irish, the subject position is always properly governed (it has no that-t effects, see Chapter 4). Yet the facts are the same. Se is obligatory when the subject position is assigned case, otherwise it uses the O T-type pleonastic. This offers further encouragement to search for another solution.

5.4.2 HET vs. ER: Dutch

There are some interesting data from Dutch that provide us with some clues as to the solution of the het/er constructions. As we have shown above, some Dutch examples can use either het or er.

- (85) Het/Er wordt betreurd dat hij het boek gekocht heeft.
 become regretted that he the book bought has
 'It was regretted that he bought the book.'

This is a V(passive)S' construction which allows either the I-type or the T-type pleonastic. As we see by the English translation, in English only the I-type is allowed.

As in English, when the verb is active, the S' can be right dislocated leaving a copy it.

- (86) ik betreur dat hij het boek gekocht heeft
I regret that he the book bought has
'I regret that he has bought the book.'
- (87) ik betreur het dat hij het boek gekocht heeft
I regret it that he the book bought has
'I regret it that he has bought the book.'

Also, as in English, extraction is possible only out of the S' which is not right dislocated.

- (88) Wat betreur je dat hij gekocht heeft?
what regret I that he bought has
'What do I regret that he has bought?'
- (89) *Wat betreur je het dat hij gekocht heeft?
what regret I it that he bought has
*'What do I regret it that he has bought?'

This raises a question of whether the passive is the passive of the right dislocated structure or of the active structure without het. By using the extraction facts as a diagnostic, we can see that the het form of the passive appears to be a right dislocated construction while the er passive appear to be the true passivized form of the V-S' construction.

- (90) Wat wordt er betreurd dat hij gekocht heeft
what become regret that he bought has
'What is it regretted that he bought?'
- (91) *Wat wordt het betreurd dat hij gekocht heeft
what become it regretted that he bought has
'What is it regretted that he bought?'
- (92) Het wordt geloofd dat hij het boek gekocht heeft
become believed that he the book bought has
'It was believed that he has bought the book.'

- (93) *Wat wordt het geloofd dat hij gekocht heeft?
 what become believed that he bought has
 'What was it believed that he has bought?'

The preliminary conclusion to draw, then, is that the het form of the V(passive)S' construction is always a right dislocated form accounting for the impossibility of extraction from the S's⁹.

This analysis would involve assuming that all V-Adj-S' constructions are also forms of right dislocation. As we see below, extraction is not possible in these constructions either.

- (94) *Wat is het duidelijk dat hij gekocht heeft?
 What is it clear that he bought has
 'What is it clear that he bought?'

Below is an analysis which relies on the fact that S' extraposition from subject creates a structural ambiguity between the extraposed and the right dislocated structure.

5.4.3 Analysis

The problem we want to solve is why English uses I-type pleonastics

9. The use of het is easier with factives which is not surprising since this is also the case in direct object position in English as well as Dutch. The use appears to improve with non-factives in certain constructions.

- (i) Ward regretted it that he didn't get to Poland.
- (ii) ??Janet believed it that Dan cooked for Sarah.
- (iii) Janet couldn't believe it that Dan cooked for Sarah.

in V(passive)-S' constructions, while German and Dutch uses T-type pleonastics¹⁰. There are two important subparts to this problem. One concerns the passive and one concerns the role of argument S's. The solution involves tying the fact that English differs from German and Dutch in this question to the fact that English does not have impersonal passives while German and Dutch do.

In the first part of the argument, we will discuss quickly the constraints on passive in the languages being investigated. Then we will examine the position of argument S's. We will relate these two observations to a possible solution. Finally we will propose an explanation for the extraction facts mentioned in the previous section.

5.4.3.1 Passive

Generally, it is assumed within GB theory that passive movement is triggered by the fact that passive morphology absorbs the accusative case assigning abilities of the verb. The object, unable to be assigned case in the object position, must move to the subject position where it is assigned nominative case. The subject position will be empty since passive verbs do not assign external θ -roles. What has been focused on in this account, is the fact that passive verbs do not assign case.

Let us instead assume that the central fact is that passive verbs no

10. I thank Dery Jaspers in particular for help in this problem.

longer assign external θ -roles (see Rothstein 1983 for a similar analysis)¹¹. As we have seen in languages such as German, Dutch, and Irish, not all passivization involves verbs which, in their active forms, assign case. By saying that passivization is the absorption of an external θ -role¹² we can also capture the fact that though German and Dutch can passivize intransitives (95), they cannot passivize unaccusative verbs (96).

- (95) Es wurde getanzt.
 there was danced
 *'There was danced.'

- (96) *Es wurde gegangen.
 there was gone
 *'There was gone.'

Since unaccusative verbs do not assign external θ -roles, it is not surprising that they do not undergo passivization.

Other restrictions must be placed on the application of passivization, however. Languages differ in interesting ways. German and Dutch appear to have the freest form of passive since any verb with an external θ -role may passivize. English appears very restricted. Not only must the verb also assign an internal θ -role, it must assign this θ -role directly (i.e., no preposition). I will express this generalization by stating that passivization in English requires that the V govern an internal NP or S' argument.

11. I have benefited greatly from discussion with Mark Baker and Adriana Belletti on this question.

12. See Roberts (forthcoming) for an interesting account of this effect.

French, while not as free as German, is also not as restricted as English. French may not passivize verbs with no internal arguments. It may, however, passivize verbs which take prepositional arguments. Some relevant examples are given below.

(97) no internal arguments:

German:

Es wurde getanzt.

there was danced

*'There was danced.'

French:

*Il a été dansé.

there was danced

*'There was danced.'

English:

*There was danced.

(98) prepositional internal arguments

German:

Es wurde über diese Fragen diskutiert.

there was over these questions discussed

*'There was discussed about these questions.'

French:

Il a été tiré sur le bateau.

there was shot the boat

*'There was shot the boat.'

English:

*There was talked about the question.

(99) direct internal arguments

German:

Das Buch wurde gekauft.

the book was bought

'The book was bought.'

French:

Le livre a été acheté.

the book was bought

'The book was bought.'

English:

The book was bought.

The result of this is that German/Dutch differ from English in that they can passivize verbs which have no arguments while English can passivize only verbs which take direct internal arguments. This leads us to the question of what status S's have in V(passive)-S' constructions, and what status they have in general.

5.4.3.2 Argument S's

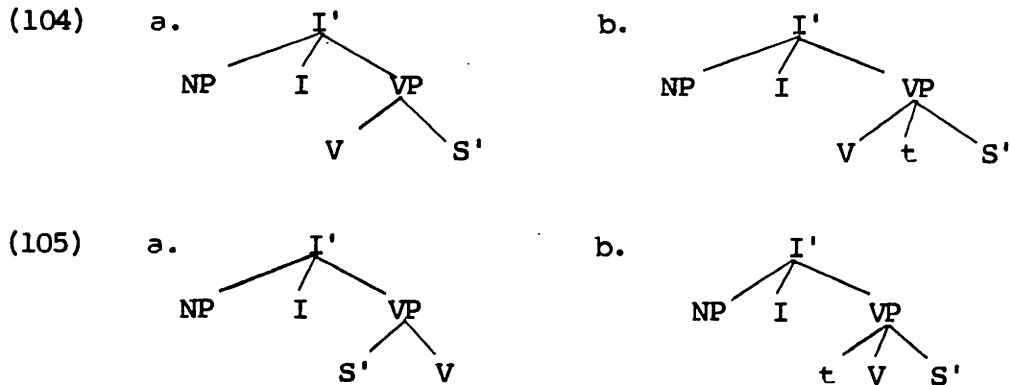
Stowell (1981) claims in his Case Resistance Principle that S's must move out of case-marked positions. Although this is, at first, very appealing, there are instances where case assignment cannot account for all the facts. In German, S's do move out of the direct object position. But, as we can see below, they move even in passivized structures which presumably do not assign case.

- (100) Ich glaube, daß Paula gekommen ist.
 I believe that Paula come is
 'I believe that Paula has come.'
- (101) Es wurde geglaubt, daß Paula gekommen ist.
 there was believed that Paula come is
 *'There was believed that Paula has come.'

Let us say instead, that (for some reason) S's cannot remain in argument positions. This would mean that at d-structure, the configuration would be as in (102) and at s-structure, as in (103).

- (102) German/Dutch [_{VP} S' V]
 English [_{VP} V S']
- (103) German/Dutch [_{VP} t V S']
 English [_{VP} V t S']

The structures for English would be as in (104) and for Dutch and German, (105).



I am assuming that though the S' moves out of the argument position, it is still in the complement domain of the verb and is lexically governed by the verb. This will be important for our account of the extraction facts below. I am also assuming that the internal argument position which is crucial in the characterization of the passive is the position adjacent to the verb. It is this position where case will be assigned and this position in which direct internal arguments are generated at d-structure.

The restriction we have posited for passives in English is that the V must govern a direct internal argument which would mean that only (104a) would be able to undergo passivization. In (104b), the direct internal argument position is empty.

Now let us say that passivization has the effect of forcing movement out of this direct internal argument position. Focus NPs may move to a focused NP position.

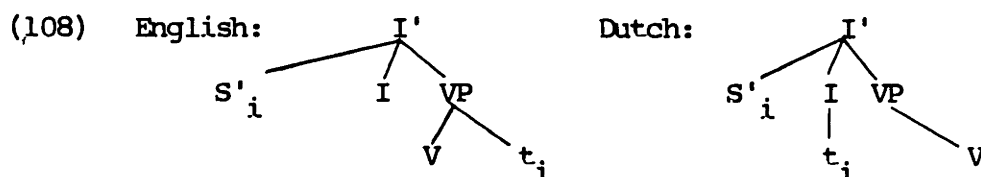
- (106) There was discovered e_i under the tree [a great treasure] $_i$

Since this position is not available for S's, they move to subject position.

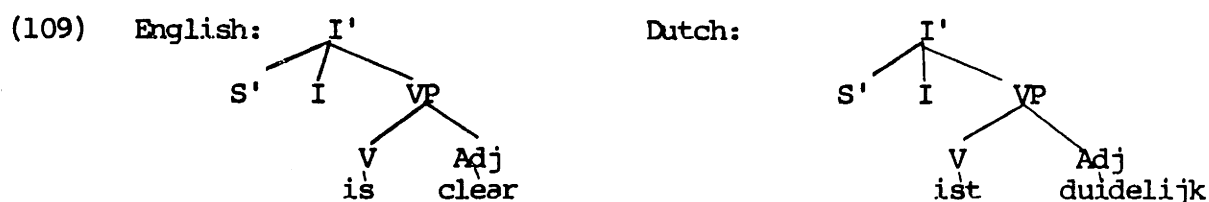
- (107) That Gideon would sail the boat was expected.

Dutch, then, has the choice of either moving the S' out of the argument position creating a possible structure for an impersonal passive using er, or, like in English, the S' moves to the subject position.

When the S's move to the subject position, the structures are as given below.

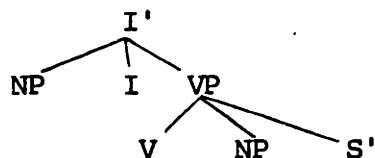


Now they look like their V-Adj counterparts at d-structure.

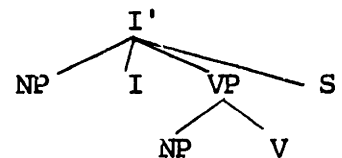


We need two more assumptions to also account for the extraction facts. Let us say that when an S' extraposes from subject position, it must go to the periphery of that S'. Where it attaches depends on the government (or in terms of this thesis, the headedness) of the language. I propose that the S' will attach to the lowest node which is allowed by government. We see below what this means.

(110) English:



Dutch:



The arrows show the direction of government of each constituent. In Dutch, since only I is head-initial, the S' must attach to I'. In English, however, since VP is also head-initial, S' may attach to the VP¹³.

Further, let us assume that an S' must be lexically governed by the V in order to be an extraction domain. This revises our view of lexical government in Chapter 4. Let us look at three types of constituents within the VP: S's that are internal arguments to the V (111), S's that are extraposed external arguments of the VP (112), and adjuncts that are licensed by predication (113).

(111) Sara said that Lew put Max in the car.

(112) It is clear that Lew put Max in the car.

(113) Donna ate the fish stewed in curry sauce.

The first two, but not the last, are possible extraction domains.

(111') In what car did Sara say that Lew put Max?

(112') In what car is it clear that Lew put Max?

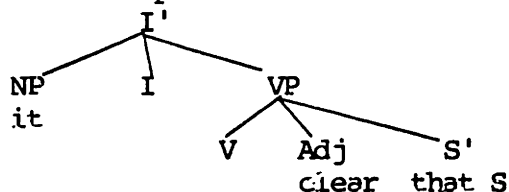
(113') *In what sauce did Donna eat the fish stewed?

All of the constituents are structurally governed by the V, and only the S' in (111) is both complement governed and lexically governed by the V. Neither complement government nor a structural notion of lexical

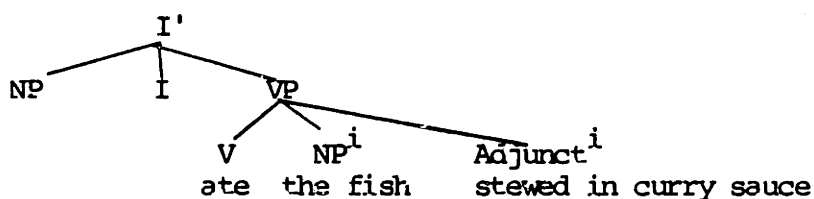
13. Reinhart (1976) argues that extraposed S's attach to the VP.

government makes the correct prediction. We want (112) to pattern with (111) rather than with (113). The difference between (112) and (113) is that the S' in (112) is assigned a θ -role by the members of the VP while the adjunct in (113) is a predicate licensed by predication coindexation with a complement. This is shown in (114) below.

(114) a. Extraposed S':



b. Adjunct



As we see in (114a) above, the S' is governed both by the constituent which has the θ -role to assign and by a lexical category. Unlike the case of an internal argument S, these two functions are not carried by the same element.

As we have said in Chapter 4, for ECP effects, the empty category must be complement governed, while for CED effects, the domain must be both complement governed and lexically governed. The refinement we have made here is that in the case where an element is both lexically governed and complement governed, it is not necessarily the same constituent which is responsible for both.

The above sketch of an analysis seeks to answer two questions.

(1) Why does Dutch allow T-type pleonastics, while English must use I-type pleonastics, with constructions where the S' is base-generated VP internally? These constructions are the V(passive)-S' and the V(raising)-S' constructions.

(2) Why does Dutch not allow extraction from any construction using an I-type pleonastic, while English does?

(1) In the analysis, I have related the presence of the T-type pleonastic in German and Dutch to the fact that these languages allow impersonal passives. If the S' is not in the argument position, English verbs may not be passivized since they must have internal arguments to passivize. German and Dutch verbs may passivize, however, and since no argument will be in a chain with the subject position, the T-type pleonastic is used.

If the S' is in argument position (as it must be in English and may be in German or Dutch), then the S' will move to subject position in the passivization process. Now the passive structure will be like the Adj structures since both will involve extraposition from the subject position.

(2) In the extraposed structures (those that use the I-type pleonastic), because of the differences in headedness, German and Dutch S's will attach to I' while English S's will attach to the V'. This will account for the difference in the extraction possibilities. Assuming that right dislocated S's attach to I', the fact that the extraction possibilities of extraposed S's in German reflect the extraction

possibilities of right dislocated structures comes as no surprise.

Many questions are left unanswered in this chapter. Why do English raising verbs take I-type pleonastics? How does Irish fit into this typology? What are the facts of German concerning the use of I-type pleonastics and extraction? How do case assignment, passivization, S' movement, and pleonastic choice interact? These I leave for further study rather than wilder speculation.

Chapter 6

CONCLUSION

In this chapter, while I review several issues raised in earlier chapters of this thesis, I also give an overview of some ideas that appear scattered throughout.

6.1 Domains

In Chapter 2, the Domain Adjacency Condition (DAC) was introduced to account for certain generalizations about word order at d-structure. We also saw in Chapter 4, however, that the DAC reappears in the issue of proper government at both s-structure and LF. Domains, then, play an important role at all levels of syntax.

At d-structure, by positing the DAC and using the notion of domains, we find we no longer need to account for word order through phrase structure rules. If a constituent is dependent on another constituent for case or θ -role, then a domain is set up and the DAC comes into effect. We have also seen that directional parameters involve domains. In fact, they may be reworded using only the definition of domain and the

head-final/head-initial parameter. 'Case assignment to the left' may be rephrased as 'case domain head-final'. Domains, then, are established at d-structure by lexical specifications of heads, or, as we have seen in the case of VPs, by the Θ -grid of a maximal projection.

These domains are also crucial at s-structure, as the Projection Principle would predict. As lexical properties, they must be satisfied at every level of the grammar. The domain relations, then, must be transparent at s-structure as well. If a case-marked or Θ -marked constituent is moved, it must be coindexed with a trace in the necessary domain. This coindexation is necessary for two reasons. The constituent itself must be able to retrieve the case and/or Θ -role that was assigned to it, and the empty category that is left, though properly governed by virtue of being in the domain, must be able to retrieve the features of its content.

In Chapter 4 we have seen how domains are important for the notion of proper government. An empty category within a complement domain is properly governed. The distinction of being within a domain or not is clearest with subjects which may receive their Θ -role by coindexation with a predicate, or by being in the complement domain of the VP. Only in the latter case is that subject position properly governed.

The same ECP effects appear at LF, as shown in Chinese. Since subjects in Chinese are within the complement domain of the VP, they may be extracted at LF without violating the ECP.

Domains are most clearly outlined in VPs and NPs. At the level of I'

(S), crossing dependencies are established, creating a tension which affects word order and government properties. In Chapter 2, we discussed the different relationships among the three members of I' : I^O , NP, and VP. Unlike the head of the VP, the head of I' does not both assign case and θ -role. I^O assigns case to the NP, while the VP assigns the θ -role to the NP. The complement of the head, I^O , is the VP, not the NP. Obviously not all of these relationships can require adjacency, and, in fact, there are alternatives. INFL may assign case through the obligatory coindexation of INFL with the subject NP, and the VP may assign its θ -role through the coindexation of predication. Since neither of these relations requires adjacency, all of the requirements may be met. In Chapter 3, however, we show that it is exactly these crossing dependencies that encourage reanalysis of s-structures as d-structures. It is also the difference in relations at the level of I' that create the distinction between properly governed subject positions (those in the complement domain of the VP), and not properly governed subject positions (those which receive their θ -role through coindexation with the VP).

6.2 Importance of INFL

We have just discussed the role of INFL in the historical development of languages. Since so many demands are placed on INFL, s-structure variations are easily reanalyzed as d-structure word orders. This reanalysis, however, must be triggered by an s-structure variation and INFL plays an important role here as well. By the Head Movement

Constraint of Chapter 3, INFL^0 may front into COMP^0 . If the structure created by this fronting rule is able to satisfy some of the demands on INFL , it may then be reanalyzed as a δ -structure.

INFL also plays an important role in word order typology. With only S, O, and V, German and Japanese have the same word order (S-O-V) and English and Irish have the same word order (S-V-O). With the addition of INFL to the inventory of constituents, obvious distinctions in these languages may be accounted for. German is S-I-O-V, while Japanese is S-O-V-I. English is S-I-V-O while Irish is I-S-V-O.

This leads to other questions. There appear to be similarities between verb-final (Japanese, Turkish) and verb-initial (Chamorro, Malagasy) languages. They all tend to be pro-drop languages, without pleonastics, and with no that-t effects. With the addition of INFL to the list of relevant categories, one question is: does V-peripheral (V-final/V-initial) or INFL -peripheral more accurately describe this class of languages? The second question is: why does this generalization exist?

We can answer the first question by looking at the four languages we have just discussed: German, Japanese, English and Irish. Japanese and German are V-peripheral (in an S, O, V typology) while Japanese and Irish are INFL -peripheral (in an S, O, V, I typology). It is the latter class that has the characteristics of being pro-drop, having no pleonastics, and no that-t effects. German conforms only in its I-S-O-V s-structure variant, which is also INFL -peripheral. The correct characterization,

then, depends on the position of INFL, not of V.

In answer to the second question, the importance of the position of INFL follows from the notion of VP government presented in Chapter 4. If INFL is on the periphery of I', then the subject position is adjacent to the VP. In this position, the subject position is properly governed (by complement government), and the characteristics will follow. Proper government will allow the appearance of pro, and the trace of movement. While head-initial languages have wh-movement at s-structure (Chamorro, Malagasy, Irish), and head-final languages have wh-movement at LF (Japanese, Chinese), since the ECP is a condition of both s-structure and LF, INFL-peripheral effects will appear in both groups.

6.3 Word Order Effects

A final observation is that word order, independently of whether it is base generated or created by movement, or whether it is semantically marked or not, will have an effect in other components of the grammar. We have seen that some languages such as Irish and Chamorro base generate subjects within the complement domain of the VP. Such a word order is unmarked in these languages, both structurally and semantically. In Italian, post-verbal subjects are base generated within the complement domain of the VP, but the configuration is semantically marked since it is used to focus the subject NP. In German, the subject NP may appear within the complement domain of the verb at s-structure either because INFL has

moved to COMP, or because INFL is not phonetically realized. What is important, though, is not how or why the word order came about, but rather that, at s-structure, the subject NP is within the complement domain of the VP, and is, thereby, properly governed.

Syntax is the study of how elements are ordered, where "order" means both sequence (precedence) and organization (dominance). This thesis discussed how language specific word orders might be acquired, and how grammars might change. This involved positing a system of directional parameters and universal constraints on word orders that restricted possible d-structures. The thesis also discussed the effect of word order on other components of the grammar such as Move-a and the ECP. The conclusion is that word order is not a stipulated surface filter with no effect outside of PF, nor is it simply a catalogue of d-structure phrase structure rules. The claim is that directional parameters which create d-structure word orders, and movement rules which create s-structure word orders both have effects that go far beyond a simple linearization of elements for the production of speech.

ABBREVIATIONS

Glosses:

- 3M - 3rd person marker
- 3S - 3rd person, singular
- ACC - accusative
- aor - aorist
- APPL - applied verb
- ASP - aspect
- AT - Actor Topic (Malagasy)
- BA - Chinese, object marker
- CAUSE - causative verb
- CL - classifier (Chinese)
- CONDIT - conditional
- D (D-word) - Dutch complementizer
- DAT - dative
- DE - Chinese, complementizer
- FIN - infinitival (Irish)
- ERG - ergative (Warlpiri)
- IE - Dutch, subject clitic 'he'
- IMPER PAST - impersonal past
- INF - infinitival
- L - linker (Chamorro)
- LN - linker (Malagasy)
- Loc - Locative
- NOM - nominative
- NPAST - non-past (Warlpiri)

PAST IMPER - impersonal past

pre- - prefix

PRES - present

PRT - particle

PT - Patient topic (Malagasy)

PVP - pre-verbal-particle (Welsh)

S1 - 1st person, singular

S2 - 2nd person, singular

-suf - suffix

TRANS - transitive

VN - verbal noun (Welsh)

YN - Welsh, progressive particle

Theory:

[+c] - an NP in a chain with [+c] may be case-marked without being lexicalized (see Chapter 5)

[+#] - an NP in a chain with [+#] may license an S' argument through coindexation (see Chapter 5)

[+number/-number] - plural/singular, from Pollock (1982) (see Chapter 5)

[+person] - an NP in a chain with [+person] may receive a O-role

A position - argument position

A' position - non-argument position

A&S - Aoun and Sportiche

AC - Archaic Chinese

af - affix

CED - Condition on Extraction Domains (Huang 1982)

Cl - clitic

COMP' - is the same as S' in LGB

DAC - Domain Adjacency Condition

E - external argument

e, ec - empty category

ECM - Exceptional Case Marking

ECP - Empty Category Principle (Chomsky 1981)

LF - "Logical Form"

LGB - Lectures on Government and Binding, Chomsky 1981.

GB - Government and Binding (Theory)

GF - grammatical function

GF- θ - GF-theta, the grammatical function which bears a θ -role

I' - is the same as S in LGB (except in a system with a two-bar level - then I'' is the same as S)

I-type - I-type pleonastic (like English 'it')

L&T - Li and Thompson

MM - Modern Mandarin (what is common between MM1 and MM2)

MM1 - 1st stage of MM, described by Light, and L&T

MM2 - 2nd stage of MM, described by L&T and Huang

O - Object (as in S-O-V, Subject-Verb-Object)

θ - 'theta', as in θ -role, θ -marking

O - null, as in ' a O T-type pleonastic, i.e., pro.

OHG - Old High German

PF - phonological component

R&V - Rouveret and Vergnaud

S - subject (as in S-O-V, Subject-Verb-Object)

S - sentence (as in [NP,S])

SAI - Subject Aux Inversion

subscripting - used to indicate the trace of movement or coreference

superscripting - used for predication, coindexation of INFL with [NP,S],
and coindexation of a VP internal argument with the subject position.

t - trace of movement

T-type - T-type pleonastic (like 'there' in English)

V2 - verb-second effect, such as in German

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