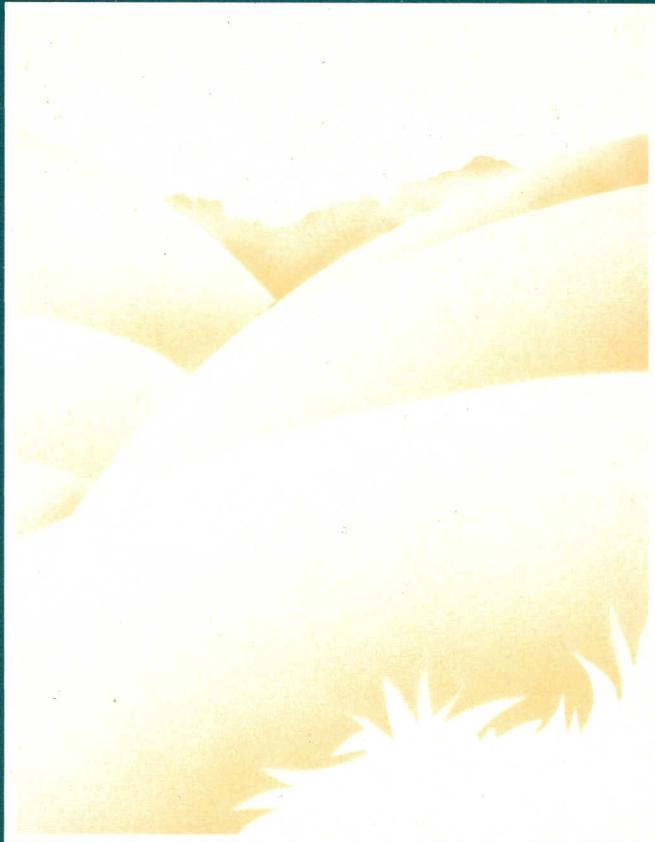


Hans Broekhuis

Chain-government Issues in Dutch syntax



HOLLAND INSTITUTE OF GENERATIVE LINGUISTICS

Chain-government: Issues in Dutch syntax

Academisch Proefschrift

**ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam,
op gezag van de Rector Magnificus**

prof.dr. P. W. M. de Meijer

**in het openbaar te verdedigen in de Aula der Universiteit
(Oude Lutherse Kerk, ingang Singel 411, hoek Spui),
op maandag 23 november 1992, te 13.00 uur**

door

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CIP-GEGEVENS KONINKLIJKE BIBLIOTHEEK, DEN HAAG

Broekhuis, Hendrikus Johannes Wilhelmus Maria

Chain-government: issues in Dutch syntax / Hendrikus
Johannes Wilhelmus Maria Broekhuis. - [S.l. ; s.i.]. -

Hil dissertationen ; 2)

Proefschrift Universiteit van Amsterdam. - Met lit. opg. -

Met samenvatting in het Nederlands

ISBN 90-74537-01-4

Trefw.: Nederlandse taal ; syntaxis.

ISBN 90-74537-01-4

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Printed in The Netherlands

for Pip

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Acknowledgments

Writing a thesis is an enterprise one cannot undertake alone. It is with great pleasure that I thank everyone who helped me finishing it.

First, I like to thank my promotor Wim Klooster for his guidance during the last four years and his reading of numerous versions of the present thesis.

My co-promotor Hans den Besten has been my tutor ever since I started studying generative linguistics. As will be clear from the present study, he has had a great influence on my linguistic work and thinking. I thank him for the time and effort he invested in me.

Some ideas presented in this study were developed during discussions with Kees Hoekstra en Jean Rutten. I recall these conversations with joy.

Special thanks go to Marcel den Dikken. This study has profited from his elaborate comments and suggestions in various places.

Various other people must be thanked for reading and commenting on (parts of) the present work: Peter Coopmans, Kees van Dijk, Frank Drijkoningen, Eric Hoekstra, Teun Hoekstra, Aafke Hulk, Laura Joosten, Ans van Kemenade, Geertje Leemans, Karin Robbers, Tonjes Veenstra, Els Verheugd and Maaike Verrips.

Parts of chapters 6–9 have previously been published in Broekhuis (1991). I thank ICG Publications b.v. (formerly Foris Publications) for its kind permission to reprint these here.

Finally, I thank Willem Koopman and Marcel den Dikken for correcting my English, and René Mulder for helping me preparing the manuscript for printing.

Others that must be mentioned for various reasons are: Leonie Cornips, Arnold Evers, Herman Hendriks, Jack Hoeksema, Jarich Hoekstra, Helen de Hoop, Kyle Johnson, Jan Koster, Paul Law, Klara Lindhout-Lengyel, László Marácz, Pieter Muysken, Alma Næss, Frans van der Putten, Henk van Riemsdijk, Tanja Reinhart, Eddy Ruys, Judith Schooneboom, Henriëtte de Swart, Joop Veld, Gert Webelhuth and Joost Zwarts.

Goal and Organization of this Study

The concept of government has entered extensively into the study of the various modules of grammar. Hence slight modifications in formulation have wide-ranging empirical consequences.

—Chomsky and Lasnik (to appear:50)

In this study I will extensively discuss the notion of chain-government that has been introduced in Den Besten (1985) to account for the fact that in languages such as Dutch and German the subject of the clause may be preceded by the object (if present) in passives and other ergative constructions. Compare for instance the following Dutch example:

- (1) dat mijn broer_{IO} de boeken_{SUBJ} aangeboden werden
 that my brother the books offered were
 'that the books were presented to my brother.'

According to Den Besten, the subject *de boeken* receives nominative Case in its base-position, i.e. need not undergo NP-movement. Of course, it cannot be assigned Case by the nominative assigning head (I or <+Tense>) directly, since the latter does not govern it, the verb *aanbieden* 'to offer' being an intervening governor. Therefore, Den Besten assumes that the verb *aanbieden* enters into a chain with the nominative assigning head, and that nominative Case can be assigned by this chain compositionally.

Until now, the notion of chain-government has only been applied in the domain of Case theory. However, given the fact that government is one of the central notions of the theory, we expect chain-government to play a role in other subsystems as well. If not, we should abandon this notion as *ad hoc*. The main goal of this study is to show that chain-government indeed plays a role in other subsystems.

This study is organized as follows. In part 1 the assumptions underlying this study will be discussed. Of course, special attention will be paid to Government theory. In part 2 Den Besten's proposal will be discussed extensively and revised in several respects. In part 3, finally, I will show that the notion of chain-government plays an important role in Binding theory and what we may provisionally call Tense theory.

Part 1

Theoretical Background

Introduction

In this part, an outline will be given of the theoretical assumptions underlying parts 2 and 3. Our point of departure is the framework of generative grammar as developed in the last decade, more specifically in Chomsky (1981, 1982, 1986a), Rizzi (1990a) and Lasnik and Saito (1992). However, I do not follow these authors slavishly in all respects. Therefore, the main goal of this part is to show where I diverge from their proposals. Further, the discussion of the theoretical assumptions adopted in this study will enable me to discuss various characteristic properties of the grammar of Dutch.

First, a brief sketch of the overall framework will be given. Following Chomsky (1981), I will assume that Universal Grammar consists of various interacting subsystems. In chapter 1 the various subsystems that must be distinguished are briefly discussed.

In chapters 2 and 3 I will go more deeply into some of the subsystems of principles. Because the definition of government (of course) plays an important role in this study, it will be the main topic of discussion in chapter 2. While discussing Government theory (especially the ECP), two other subsystems of principles will be dealt with: Tense and Control theory.

Adopting Rizzi's (1990a) reformulation of the ECP, I will argue that we are able to eliminate the notion of antecedent-government from Government theory, and replace it by a notion of chain-formation (which is presumably part of Bounding theory). In chapter 2 it will be shown that in this way we are able to void Rizzi's (1990a) Relativized Minimality in so far as it expresses that intervening head-governors do not interfere with antecedent-trace relations. In chapter 3, it will be shown that the remaining part of Relativized Minimality can be derived from Chomsky's (1986a) Chain Condition.

1.0. Introduction

In this chapter, a brief sketch of the overall framework is given, i.e. it is shown which interacting subsystems are distinguished. These subsystems can be divided into two groups; on the one hand there are the subcomponents of the rule system which create syntactic structures (or representations), and on the other there are the subsystems of principles which pose conditions on structures (e.g. θ -theory), processes (e.g. Bounding theory) or relations (e.g. Binding theory). The subcomponents of the rule system are briefly discussed in section 1.1. With the exception of θ - and Case theory which are briefly addressed in 1.1 as well, the subsystems of principles are not discussed in this chapter. But after being enumerated in section 1.2, some of them are dealt with in chapters 2 and 3.

1.1. Levels of representation

Especially since Chomsky (1981), it is generally assumed that Universal Grammar consists of various interacting subsystems. To begin with, several subcomponents of the rule system of grammar must be distinguished. They are given in (1).

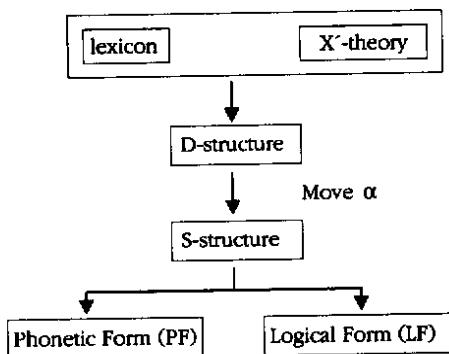
- (1)
 - a. lexicon
 - b. syntax
 - (i) categorial component
 - (ii) transformational component
 - c. PF-component
 - d. LF-component

During the seventies both the categorial and the transformational component are reduced considerably. The formulation of the θ -criterion and the introduction of Case theory made it possible to reduce the categorial

component to the general schemata given by X'-theory, and the transformational component was minimized to the general rule 'Move α ', the application of this rule being restricted by several general principles (which include θ - and Case theory mentioned above) to be discussed later.

The subcomponents in (1) are organized as in (2).

(2)



In (2) several levels of representation are distinguished: D-structure, S-structure, PF and LF. I briefly discuss these below.

1.1.1. D-structure

The lexicon and the categorial component (X'-theory) constitute the base of the grammar; D-structures are projected from the lexicon and meet the requirements imposed by the θ -criterion and X'-theory. The lexicon specifies the features of each lexical item, among which its argument structure. For example, the lexical entry of the verb *hit* is as given in (3).

(3)	hit (V)	[_ NP]
		↑ ↑
		θ _i θ _j

θ_i is the internal θ -role 'theme' that the verb *hit* assigns to its sister, and θ_j is the external θ -role 'agent' that is given to the subject of the construction.

The projection of a lexical item is constrained by the θ -criterion, which can be stated as in (4):

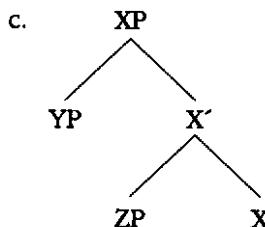
- (4) **θ -criterion:** Each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument.

Chomsky (1981:36)

The θ -criterion ensures that the θ -roles of the verb *bit* will be assigned to its arguments.

The X'-theory requires a category to project as in (5a,b), order parametrized. In (5c) the X'-schema is given in a phrase structure diagram.

- (5) a. $XP = YP\ X'$
 b. $X' = ZP^* X$



In (5) ZP^* stands for the complements of X ; they receive the internal θ -roles of X . YP is the specifier position of XP (henceforth: Spec XP) which will be assigned the external θ -role of X , if present. The order of X and its complements is determined by the direction of assignment of the θ -roles and/or Case; the assignment may be either to the left or to right which results in a head-final or head-initial language, respectively.

The X'-schemata in (5a,b) allow for multiple branching. However, it has been assumed by Kayne (1984) that phrase structures are strictly binary branching. We may attain this either by restricting the number of complements to one or less or by defining (5b) in a recursive manner, i.e. by replacing (5b) by (5b').

- (5) b'. $X' = ZP \left\{ \begin{array}{l} X \\ X' \end{array} \right\}$

As will become clear in chapter 4, I opt for the latter possibility in this study.

According to the θ -criterion and X'-theory, the verb *bit* can only be projected as in (6). If we assume that internal θ -roles can only be assigned under sisterhood, NP_2 receives the internal θ -role 'theme' and NP_1 will receive the external θ -role 'agent'.

- (6) $[_{VP} NP_1 [_{V'} hit NP_2]]$

Note that the structure in (6) differs from the one given in Chomsky (1986a). Chomsky assumes the phrase structure rules of the clause to be as in (7) in which *NP* is the D-structure position of the external argument of the verb (if it has one).

- (7) a. IP = [NP [_{I'} [_{VP} V ...]]]
 b. CP = [... [_{C'} C IP]]]

IP and CP are the projections of the functional categories inflection (I) and complementizer (C) and correspond to S and S' of the earlier framework. The proposal in (7) is appealing, since now the functional categories fit into the general X'-schemata nicely. A less attractive side of this proposal, however, is that the VP does not have a specifier, i.e. it is not projected according to X'-theory. This can be amended by assuming that the external argument is generated as a specifier of VP and that it is moved to SpecIP at a later stage (cf. 1.1.2).¹ This would imply that the phrase structure rules are as given in (8a-c).

- (8) a. VP = [NP [_{V'} ... V]]
 b. IP = [... [_{I'} I VP]]]
 c. CP = [... [_{C'} C IP]]]

Consequently, the full projection of the verb *hit* embedded in sentence structure is as indicated in (9).

- (9) [_{CP} ... [_{C'} C [_{IP} ... [_{I'} I [_{VP} NP₁ [_V hit NP₂]]]]]]]]]

According to Pollock (1989), IP has to be divided into two separate functional projections, AGRP and TP, and possibly even other functional projections are present (cf. for instance Chomsky 1991 and Ruttent 1991). Since nothing in the present study crucially depends on the number of these functional categories, I will just confine myself to the phrase structure rules in (8).

An important question that arises in connection with (8) is how the notion of A-position should be defined. In Chomsky (1981:47), an A-position was defined as 'a potential θ-position'. If the external argument is generated VP-internally in all languages, SpecIP will never be an A-position according to this definition. Since SpecIP seems to be a typical A-position (at least in English; cf. chapter 6 for further discussion), this conclusion is undesirable.

Consequently, if we want to make the notion of A-position compatible with the VP-internal subject hypothesis, we must revise its definition. Let us

¹ Cf. Koopman and Sportiche (1988) among others. Note, however, that they do not assume that the external argument occupies SpecVP; they assume the external argument to be adjoined to VP. Probably, this assumption has been motivated by Koopman's (1984) theory on Case-assignment according to which an object can only be assigned structural Case by moving to the SpecVP-position. Since I reject this proposal, I prefer the position in the main text since I believe it is more in the spirit underlying X'-theory.

therefore assume that an A-position has to be licensed in some way, for instance by θ- or Case-marking (cf. Hoekstra and Mulder 1990:37). This can be made explicit by means of the definition in (10).

- (10) If a position is θ- or Case-marked it is an *A-position*; it is an *A'-position* otherwise.

According to this definition, SpecIP is always an A-position in English, since nominative Case is assigned to it (cf. (12b) in 1.1.2). However, if no nominative Case is assigned to SpecIP, it will be an A'-position. This definition of A-position will play an important role in chapter 6.

1.1.2. S-structure

D-structure is mapped onto S-structure by the transformational rule 'Move α'. Movement of an element leaves a trace and consequently S-structures can be seen as D-structures enriched with traces. The assumption that movement leaves a trace can be derived from the Projection Principle in (11).

- (11) *Projection Principle:* The θ-criterion holds at D-structure, S-structure, and LF.

In the previous subsection, we have established the D-structure that is projected from the lexical entry of the verb *bit* (cf. (9)). According to Case theory, the NPs in (9) must receive Case. Let us assume for the moment that nominative and accusative Case are assigned as in (12) (cf. chapter 6 for a more detailed discussion of Case assignment).

- (12) a. Accusative Case is assigned under government by V.
 b. Nominative Case is assigned under SPEC-Head agreement with I.

Since NP₂ in (9) is governed (this notion will be defined in section 2.1) by the verb *bit*, it receives accusative Case as required. Since SPEC-Head agreement only holds between a head and an element occupying the specifier position of its maximal projection, NP₁ can only receive nominative Case if it moves to SpecIP. Consequently, the D-structure in (9) has to be mapped onto the S-structure in (13) in which *e* indicates the position from which NP₁ has been moved.

- (13) [CP ... [C C [IP NP₁ [I' I [VP e [V hit NP₂]]]]]]]

If the external role of *bit* can only be assigned to SpecVP, this position has to be filled, since otherwise the θ-criterion will be violated at S-structure. Therefore, it is assumed that *e* is in fact an NP-trace coindexed with NP₁. Now, the external θ-role can be assigned to the trace (or, in fact, the chain consisting of the trace and its antecedent), thus satisfying the Projection Principle.

Since S-structure can be seen as a D-structure enriched with traces, it has been argued that D-structure as an independently existing level of representation can be disposed of (Koster 1978, 1987 and other work). This proposal of Koster's is generally considered a notational variant of the model in (1). In section 2.3, however, I will show that there is some empirical evidence which favours the model in (1) over a one-level model.

1.1.3. Phonetic Form and Logical Form

Phonetic Form (PF) and Logical Form (LF) are derived from S-structure. In this study, we will have little to do with PF, and therefore I do not discuss its mapping. It must be noted, however, that the rules deriving PF may comprise more than phonology proper; there may be all kinds of deletion and minor movement rules, and perhaps some filters (among which the Case filter hinted at in 1.1.2) may apply at this level.

LF is derived from S-structure by several LF-rules. The most famous of these rules is Quantifier Raising, but several others may be distinguished. As far as the movement rules are concerned, an interesting proposal has been put forth by Chomsky (1991). He assumes that movement rules may be parametrized with respect to the level at which they apply. A familiar example is Wh-movement (Cf. Lasnik and Saito 1984); Wh-movement must apply, because the wh-element must be assigned scope, but in some languages, e.g. Dutch, it takes place overtly (i.e. applies before S-structure), whereas in other languages, e.g. Chinese, it cannot apply overtly (i.e. applies after S-structure, at LF). In section 2.2, we will come across another movement rule which may be parametrized in this way.

1.2. The subsystem of principles

After discussing the overall framework, we need to pay some attention to the subsystem of principles. This will be done in chapters 2 and 3. At least the subsystems in (14a-f) must be distinguished (Chomsky 1981:5), but we probably have to add the subsystem in (14g) which has been claimed to

play an important role with respect to movement of verbs and verbal projections (cf. for example Enç 1987, Bennis and Hoekstra 1989a,b and Hornstein 1990).

- (14) a. Government theory
b. Bounding theory
c. θ-theory
d. Case theory
e. Binding theory
f. Control theory
g. Tense theory

A brief discussion of θ-theory has already been given above. Case theory has already been discussed briefly as well. Since Case theory, especially the assignment of nominative Case, is the main topic of chapter 6, I postpone further discussion till then. Binding theory will be discussed in chapter 7. Since it plays no role in the following discussion, I do not go into it in this part of my study either.

Therefore we start our discussion of the subsystem of principles with Government theory. Since there are several definitions of government available, we must pay some attention to the definition that will be used in this study. This is done in section 2.1 where we focus on head-government. Since head-government plays a role in virtually every subsystem of the grammar, we cannot discuss its definition without taking the other subsystems of principles into consideration. Therefore, Tense and Control theory are discussed in 2.2 and 2.3, respectively.

The main focus in the following chapters, though, will be on the ECP and Bounding theory, which constrain the application of the transformational rule 'Move α'. Since the formulation of the Subjacency Condition in Chomsky (1973), several proposals have been put forward to account for the boundedness of the movement rules. Following Rizzi (1990a), I assume that this boundedness can be accounted for by assuming that every trace must be formally licensed by being properly head-governed, and identified by entering into a proper relation with its antecedent. The Formal Licensing requirement on traces (the ECP) plays an important role in determining the proper definition of head-government in section 2.1. The discussion of the Identification requirement on traces, however, is postponed to chapter 3 for reasons that will become clear in section 2.1.

2.0. Introduction

In this chapter I discuss the definition of head-government. The specific definition of this notion that is adopted in section 2.1 is mainly motivated by considerations concerning the Empty Category Principle (ECP).

However, since government plays a role in virtually every subsystem of the grammar, we must consider the question whether its specific definition we adopt here is also applicable in other domains of the grammar. Therefore, after we have settled this definition, I briefly discuss the question whether it has the desired results with respect to Tense and Control theory in section 2.2 and 2.3. These two subsystems of principles are more extensively discussed in chapter 8 and section 9.2, respectively.

2.1. The conditions on government

Generally, the definition of government consists of a set of conditions. Following Rizzi (1990a), we may distinguish the conditions in (1).

- (1) Conditions on government:
 - (a) the substantive condition
 - (b) the configurational condition
 - (c) the subjacency condition
 - (d) the minimality condition

The *substantive* condition indicates which elements may qualify as governors. Usually, it is assumed that an element Y may be governed by X, if X is a (designated) head or an element coindexed with Y, i.e. a distinction is made between head- and antecedent-government.

The *configurational* condition specifies the tree geometry in which the relation can hold. More specifically, it states that a governor X must c- or m-command its governee Y.

Rizzi subsumes (c) and (d) under one *locality* condition, since both conditions specify the domain in which the government relation can hold. The *subjacency* condition is concerned with the distance between the governor and its governee: the governor cannot be too far away from its governee. This is made more precise by assuming that only a limited number of barriers may intervene between a governee and its governor: the first must be 'subjacent' to the latter, where subjacency is generally construed as 0- or 1-subjacency.

The *minimality* condition reduces ambiguity in government relations by blocking government of a governor α into the governing domain of a governor δ . So, if γ is the governing domain of δ , α does not govern β in the following structure, since government by α is blocked by the intervening governor δ : ... α ... [γ ... δ ... β ...].

In Chomsky (1986a) it is assumed that the blocking capacity of head-governors is not selective, i.e. it can block both head- and antecedent-government, whereas antecedent-governors have no blocking capacity. Rizzi (1990a) calls this approach to minimality Rigid Minimality. He himself defends an approach which he calls Relativized Minimality. According to this approach, governors of a certain type can only block government of another governor of the same type, e.g. the blocking capacity of a head-governor is restricted to other head-governors, in other words: a head-governor cannot block antecedent-government.

As is clear from this preliminary discussion of the conditions on government, several options are open: (i) a governor must c- or m-command its governee; (ii) a governee must be 0- or 1-subjacent to its governor; (iii) government is restricted by Rigid or by Relativized Minimality. In the following subsections, I will try to make a principled choice between these options.

2.1.1. The minimality condition on government

In this subsection I discuss the minimality condition on government. Minimality has played an important role in explaining the *that*-trace phenomenon. In Chomsky (1981) the *that*-trace filter was subsumed under the ECP. According to this principle, a trace must be properly governed. In Chomsky (1981) it is assumed that α properly governs β iff α lexically (head-)governs or antecedent-governs β . This definition presupposes that the substantive condition on government is stated in such a way that both heads and antecedents count as governors. Since the initial definition of proper government, various other definitions have been proposed. Here, I first discuss the influential formulation of Stowell (1981) which was adopted by Chomsky (1986a).

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

For the moment, it suffices to assume that an element β is θ-governed if it is assigned a θ-role by its sister α (Chomsky 1986a:15), and that it is antecedent-governed if it has a c-commanding antecedent and there is no intervening barrier.

If we assume Chomsky's (1986a) definition of a barrier (to be revised in section 2.1.4), CP is always a barrier for an element within IP, and the definition of proper government in (2) correctly accounts for the fact that complements but not subjects or adjuncts can be extracted from a *wb*-island, since none of the traces is antecedent-governed and only the trace of the complement is θ-governed. The weak ungrammaticality of (3a) is attributed to a violation of the Subjacency Condition.

- (3) a. ??which problems do you wonder [_{CP} how [_{IP} John solved t t]]
 b. *which student do you wonder [_{CP} how [_{IP} t could solve the problem t]]
 c. *how do you wonder [_{CP} which problem [_{IP} John could solve t t]]

According to Chomsky (1986a:42), additional barriers may arise under minimality. These 'minimality' barriers are defined as in (4).

- (4) γ is a barrier for β if γ is the immediate projection of δ , a zero-level category distinct from β .

As has already been mentioned in 2.1, minimality is defined in an asymmetric manner: antecedent-governors cannot evoke a minimality barrier because they do not project and are therefore not an appropriate choice for δ in (4).

The definitions in (2) and (4) yield the desired distinction between (5a) and (5b). In (5a) the object trace is θ-governed and consequently the ECP is satisfied. The subject trace in (5b), however, is not θ-governed. Therefore, the ECP can only be satisfied if the subject trace is antecedent-governed by the intermediate trace t' , but according to (4) this is blocked by the intervening complementizer *that* since its immediate projection C' is a barrier for the subject trace t , and hence a barrier intervenes between the trace and its antecedent.

- (5) a. who do you think [t' [_{C'} that [Bill saw t]]]
 b. *who do you think [t' [_{C'} that [t left]]]

According to Chomsky (1986a:47), the definitions in (2) and (4) also account for the distinction between (6a) and (6b) if we assume that the empty complementizer *e* in (6b) is featureless and therefore does not serve

as an appropriate choice for δ in (4). As a result, the subject trace is antecedent-governed in (6b) but not in (6a).

- (6) a. *who did you believe [$t' |_{C'} \text{ that } [t \text{ would win}]$]
 b. who did you believe [$t' |_{C'} e [t \text{ would win}]$]

In Rizzi (1990a), this account of the examples in (5) and (6) is criticized. Since we cannot assume that an adjunct is θ -governed, it can only be *wh*-moved if its trace is antecedent-governed. Consequently, (4) predicts that an overt complementizer blocks *Wh*-movement of an adjunct. As can be seen in (7), this is not correct.

- (7) how do you think [$t' |_{C'} \text{ that } [\text{Bill solved the problem } t]$]

Although the problem example (7) poses for (4) is not insurmountable,¹ Rizzi argues that the fact that the subject-adjunct parallelism breaks down here casts some *prima facie* doubts on the idea that the presence of an intervening complementizer (or more generally: a head-governor) may block an antecedent-government relation, i.e. on Rigid Minimality. On the other hand, however, it provides direct support for his assumption that the notion of minimality must be relativized such that a governor of a certain type can only block government of a governor of the same type, i.e. for Relativized Minimality.

Let us therefore follow Rizzi in rejecting the Rigid Minimality approach to government in favour of his Relativized Minimality approach. Relativized Minimality is defined in (8), in which α -government refers either to head- or to antecedent-government.

- (8) *Relativized Minimality:*
 $X \alpha\text{-governs } Y$ only if there is no Z such that:
 (i) Z is a typical potential α -governor for Y ,
 (ii) Z c-commands Y and does not c-command X .

In fact, Rizzi's system is more fine-grained since he distinguishes three types of antecedent-governors, namely those that head an A-, an A'- or an X^0 -chain. His definitions of the notion 'typical potential α -governor' are given

¹ If we assume that the complementizer *that* is deleted at LF, and that C' is thus voided of barrierhood (cf. Chomsky 1986a:47), the difference in grammaticality between (6a) and (7) follows from Lasnik and Saito's (1984, 1992) theory of γ -marking; according to their proposal traces of arguments must satisfy the ECP at S-structure, whereas traces of adjuncts are checked at LF, i.e. after the deletion of the complementizer *that*.

in (9) and (10). According to Rizzi, the requirement in (10a,b) that A- and A'-antecedents must occupy a specifier position follows from a theory of (generalized) binding.²

- (9) Z is a typical potential head governor for Y ↔ Z is a head m-commanding Y.
- (10)
 - a. Z is a typical potential antecedent governor for Y, Y in an A-chain ↔ Z is an A specifier c-commanding Y.
 - b. Z is a typical potential antecedent governor for Y, Y in an A'-chain ↔ Z is an A' specifier c-commanding Y.
 - c. Z is a typical potential antecedent governor for Y, Y in an X⁰-chain ↔ Z is a head c-commanding Y.

As has been noted by Rizzi, there is frequently a tension between the Barriers theory and Relativized minimality in the sense that both account for the ungrammaticality of certain examples. When this is the case in this study, I will generally give the Barriers account.

If the conclusion that head-government cannot block antecedent-government is correct, we must conclude that in all the examples in (5–7) the traces are antecedent-governed. As a result, the formulation of the ECP must be revised in order to derive the desired distinctions. For the moment, I adopt Rizzi's conjunctive formulation in (11).

- (11) *Empty Category Principle* (to be revised):
 - A nonpronominal empty category must be
 - (i) properly head-governed (Formal Licensing)
 - (ii) antecedent-governed or θ-governed (Identification).

Antecedent- and θ-government are defined as before, but the assumption that an intervening head can evoke a minimality barrier for antecedent-government has been dropped. The definition of 'proper head-government' must still be made precise (this will be done in the following subsections). Let us assume for the moment that complements and manner adverbials such as *how* are properly head-governed by the verb, but that subjects are not properly head-governed unless special provisos are made. How can we

² Rizzi attempts to unify (9) and (10) by drawing a parallel between binding and government (cf. his appendix 2 in chapter 1). Further, it must be noted that although Rizzi uses the notion of c-command in the definition of Relativized Minimality in (8), he suggests (p.112, fn.4) that a mixed definition might be in order; for functional categories the definition in (8) is required, and for lexical categories the notion 'c-command' must be replaced by m-command. We return to this problem in 2.1.3.

account for the examples discussed in this subsection?

First consider the examples in (3). In (3a) the object trace is both properly head-governed and θ-governed, thus satisfying the ECP. As before, the weak ungrammaticality of this example is due to the Subjacency Condition. Example (3b) is ungrammatical since the subject trace is neither properly head-governed nor antecedent- or θ-governed, thus violating the ECP twice. (3c) is ungrammatical since the adjunct trace is neither θ- nor antecedent-governed, thus violating the second clause of the ECP in (11).³

In (5a) and (7) the object and adjunct traces are both antecedent- and properly head-governed. As a result, the grammaticality of these examples follows immediately. Further, the ungrammaticality of (5b) and (6a) is accounted for since we have assumed that the subject trace is not properly head-governed.

The grammaticality of (6b) can be accounted for by assuming that the non-overt complementizer is coindexed with the *ub*-trace and that this turns the complementizer into a proper head-governor for the subject trace. As a result the subject trace is both antecedent- and properly head-governed, thus satisfying the ECP. (Cf. Rizzi 1990a, section 1.5, for details; in fn.12 below, a different account of the grammaticality of this example will be discussed).

In the last chapter of Rizzi (1990a), the formulation of the ECP is further refined. The formulation of the ECP in (11) predicts that extraction of the subject from a *ub*-island is blocked in all languages, including those that allow extraction of subjects in declarative clauses. This prediction is not confirmed.

As can be seen in (12), subjects can be extracted from declaratives in Italian. This can be accounted for by assuming that the subject is extracted from a position in which it is properly head-governed (if we adopt Rizzi's analysis: the VP-final position). Since the *ub*-phrase is moved through the intermediate SpecCP, the initial trace *t* is antecedent-governed by the intermediate trace *t'*. Thus the ECP in (11) is satisfied.

- (12) che studente credi [*t'* che [potrà risolvere il problema *t*]]
 which student do you think that could solve the problem

Since we assumed that θ-government is only possible under sisterhood, the subject is not θ-governed. Hence we expect an ECP violation to arise if the

³ The examples in (3) can be used to illustrate the redundancy that arises by introducing Rizzi's Relativized Minimality into the theory. Antecedent-government of the relevant traces in (3) is blocked: (i) because a barrier intervenes between the trace and the actual antecedent and (ii) because there is a closer potential antecedent-governor available in SpecCP.

subject is extracted from a *wb*-island, since in that case antecedent-government will be blocked by the intermediate CP which is a barrier, or by the intervening antecedent-governor. As can be seen in (13a), this prediction is not fulfilled. Hence a surprising contrast arises with (13c) in which an adjunct has been extracted from a *wb*-island.

- (13) a. ?che studente non sai [come [potrà risolvere il problema *t t*]]
which student don't you know how could solve the problem
- b. ?che problema non sai [come [potremo risolvere *t t*]]
which problem don't you know how we could solve
- c. *come non sai [che problema [potremo risolvere *t t*]]
how don't you know which problem we could solve

We could explain this by assuming that the VP-final trace is θ-governed, but of course we may also conclude that there is something wrong with the formulation of the ECP in (11), and in fact this is what has been argued for by Rizzi.

First, he argues that there are two conceptual arguments against this formulation of the ECP: (i) both the requirement of proper head-government in (11,i) and the requirement of θ-government in (11,ii) presuppose some kind of head-government, thus introducing a redundancy in the system; (ii) the disjunctive formulation of (11,ii) indicates that the nature of the generalization is not well understood (cf. Rizzi 1990a for details).

Secondly, Rizzi shows that the idea that θ-government is sufficient to satisfy the Identification requirement leads to the wrong predictions if we assume that all selected elements are θ-marked by the verb. This is illustrated by the examples in (14) and (15). The verb *weigh* may either select a direct object (14a) or a measure phrase (14b). Since (15a) is ambiguous between the two readings, we may conclude that both elements can be questioned. However, if *Wb*-movement applies from a *wb*-island as in (15b), only the reading that corresponds to (14a) is available. Consequently, we must assume that the measure phrase cannot be extracted from a *wb*-island even though it is selected, i.e. θ-marked.

- (14) a. John weighed apples
- b. John weighed 200 lbs
- (15) a. what did John weigh *t*
- b. what did John wonder [how to weigh *t t*]

The solution to this problem Rizzi proposes amounts to the following. Following the distinction between arguments and quasi-arguments in Chomsky (1981), he assumes that only arguments (i.e. subject and objects,

but not measure phrases as in (14b)) can be assigned a referential θ-role. Further, he assumes that only elements that are assigned a referential θ-role can have a referential index. Since binding is defined in terms of the notion 'referential index', binding can only refer to elements that have been assigned a referential θ-role. According to Rizzi, this restriction on binding subsumes the identification clause of (11). How does this work?

First note that binding is an unbounded dependency, whereas (antecedent-)government is inherently local. Now, assume further that the Identification requirement on traces is stated as in (16).

(16) *Identification Requirement on Traces:*

A nonpronominal empty category must be connected to its antecedent.

If the connection can be established under antecedent-government or under binding, the desired result follows immediately: subject and direct object traces may be connected to their operator both by antecedent-government and by binding, since they have a referential index. Since binding is an unbounded dependency, these arguments can be extracted from *wb*-islands (if the Formal Licensing requirement is met).⁴ Adjuncts and quasi-arguments have no referential index (the latter are not assigned a referential θ-role and the first are not assigned a θ-role at all) and consequently they can only be connected to their operator by antecedent-government. Since antecedent-government is a local dependency, these elements cannot be extracted from a *wb*-island. If this proposal is on the right track, the ECP can be simplified as in (17) (cf. Rizzi 1990:87).

(17) *Empty Category Principle* (to be revised):

A nonpronominal empty category must be properly head-governed.

2.1.2. The substantive condition on government

In the previous subsection, we discussed the ECP. As we have seen, the original formulation of the ECP presupposed the substantive condition on government being stated such that both heads and antecedents are included in the set of potential governors. But since the ECP has been reduced to

⁴ Cinque (1990) has shown that only a subset of phrases that are assigned a referential θ-role can be long *wb*-moved, namely those that are used strictly referentially, i.e. that refer to specific members of a pre-established set (cf. Cinque 1990:ch.1 for further discussion).

proper head-government, it is no longer immediately clear what we need the notion of *antecedent-government* for. Therefore, it might be interesting to investigate the consequences of taking the radical step of excluding this notion from the theory of grammar. If we do this, what results would arise?

Consider again Rizzi's theory of Relativized Minimality in (8–10), repeated here for convenience as (18–20).

(18) *Relativized Minimality:*

$X \alpha$ -governs Y only if there is no Z such that:

- (i) Z is a typical potential α -governor for Y ,
- (ii) Z c-commands Y and does not c-command X .

(19) Z is a typical potential head governor for $Y \leftrightarrow Z$ is a head m-commanding Y .

- (20) a. Z is a typical potential antecedent governor for Y , Y in an A-chain $\leftrightarrow Z$ is an A specifier c-commanding Y .
- b. Z is a typical potential antecedent governor for Y , Y in an A'-chain $\leftrightarrow Z$ is an A' specifier c-commanding Y .
- c. Z is a typical potential antecedent governor for Y , Y in an X^0 -chain $\leftrightarrow Z$ is a head c-commanding Y .

If we drop the notion of antecedent-government, parts of Rizzi's theory become superfluous, especially the distinction between (19) and (20). Since we only recognize head-government, (18) and (19) can be replaced by (21), and as a result it will follow immediately that head-government and antecedent-trace relations do not interfere with each other.

(21) α governs β only if:

- (i) α is a head,
- (ii) α meets the configuration condition (yet to be stated),
- (iii) α meets the subjacency condition (yet to be stated), and
- (iv) there is no γ such that:
 - (a) γ is a head, and
 - (b) γ c- (or m-)commands β and does not c-command α .

So, what remains of Rizzi's theory of Relativized Minimality if we eliminate the notion of antecedent-government is (20). But, of course, (20) can no longer be stated in terms of antecedent-government. All we have to say is that a trace must be construed as identical to its closest potential antecedent in a base-generated position. The notion of potential antecedent can be defined as in (20) if we replace 'potential antecedent-governor' by 'potential antecedent'. (This idea will be elaborated in section 3.2).

Henceforth, I assume that the substantive condition on government must be stated as in (21,i).⁵ Further discussion of the Identification requirement on traces in (16) is deferred until we have completed our discussion of (head-)government.

2.1.3. The configurational condition on government

In (21) the substantive and minimality conditions on government were specified. In this subsection, I discuss the configurational condition on government. Generally, it is assumed that government must be defined in terms of m-command.⁶ This is mainly motivated by considerations of Case-assignment; it is assumed, for example, that in NPs the head noun must govern its specifier for Case-assignment (cf. Aoun and Sportiche 1983:221).

Of course, this motivation for the m-command definition of government is only valid if there are no other means by which Case can be assigned to a specifier. In Chomsky (1991) and Bennis and Hoekstra (1989b) among others, however, it was assumed that specifiers (of functional heads) can be assigned Case under SPEC-Head Agreement (cf. also Hoekstra and Mulder 1990, where this mechanism was put to work in an analysis of the locative inversion construction). I believe that it is reasonable to assume that the SPEC-Head mechanism is also operative in the case of genitive Case-assignment, and hence that Case-assignment provides no evidence in favour of the m-command definition on government.

Note that Aoun and Sportiche's assumption that genitive Case is assigned to the specifier of NP under government by N is incompatible with Abney's (1987) DP-hypothesis; according to this hypothesis the genitive NP is not within the maximal projection of the noun. This can be seen in the following structure: [_{DP} NP_{gen.} D [_{NP} ... N ...]]. Therefore, genitive Case cannot be assigned by N, but must be assigned by the determiner D. But since D is a functional head, we may assume that it is comparable to I in being able

⁵ Note that according to (21) all heads are included in the set of governors. Generally, however, it is assumed that the set of governors is constituted by a subset of the set of all heads. Rizzi (1990a) for example assumes the substantive condition on government in (i):

(i) $X \in \{A, N, P, V, Agr, T\}$

Within his framework, (i) is needed to account for the distribution of PRO and the *that*-trace phenomenon. As will become clear from the discussion of these matters later in this chapter, we do not need this condition on government.

⁶ Cf. for instance Aoun and Sportiche (1983), Chomsky (1986a), Rizzi (1990a). But also compare Bennis and Hoekstra (1989b) and Chomsky and Lasnik (1992) in which a c-command condition is assumed.

to assign Case under SPEC-Head Agreement. Consequently, if we adopt this mechanism, we may assume a c-command definition of government as far as Case theory is concerned. This renders one of the most convincing arguments in favour of the m-command condition on government invalid.

In the remainder of this subsection, I will argue that the c-command condition on government is preferable to the m-command condition. From Rizzi (1990a) it is clear that, if we adopt the m-command condition on government, various auxiliary assumptions are needed to block unwanted or to permit desired government relations. As will become clear below, the results of these auxiliary assumptions follow immediately if we adopt the c-command condition on government.

A case for which a government relation must be blocked by means of an auxiliary assumption is *Proper head-government*. Rizzi argues that I must be a proper head-governor since it can license a trace of a VP that has been extracted from a *wh*-island, as has been illustrated in (22).

- (22) ... and [win the race] I wonder whether he did *t*

In view of the *that-t*-phenomenon, however, a subject trace in SpecIP cannot be licensed under government by I. Consequently, it must be assumed that even though I is a proper head-governor, it cannot properly head-govern its specifier. From this, Rizzi concludes that proper head-government only holds if the governed element is within the immediate projection of the proper head-governor, i.e. if it is c-commanded by it. Of course, this follows immediately if we assume the c-command condition on government.

If the proper head-government requirement on traces can only be satisfied under c-command, we must permit proper government from outside the maximal projection in cases where an element has been extracted from a specifier position; an intermediate trace in SpecCP for instance must be governed by the matrix verb.⁷ Since external government of a specifier position is blocked under minimality if we assume the m-command definition of government, we must again assume an auxiliary assumption that permits it.

To solve this problem, Rizzi (1990a:112, fn.4) suggests that perhaps only

⁷ Rizzi assumes that the ECP is checked at S-structure (and LF), whereas the Identification requirement is only checked at LF. This implies that the intermediate trace of an adjunct is present when the ECP is checked, irrespective of the question as to whether we allow for the deletion of intermediate traces. Hence external government of SpecCP must at least be allowed to license these intermediate traces. (Of course, the same result would arise within Lasnik and Saito's 1984 framework). Note, however, that it will be shown in section 3.4 that Rizzi's assumption that the ECP is checked at S-structure is not well-founded.

the specifier positions of lexical heads are inaccessible to external government. This could also solve the problem that ECM-constructions pose for the m-command condition on government. Compare the following example.

- (23) I believe [_{IP} him to be a nice guy]

In (23) the subject of the infinitival complement is assigned Case by the matrix verb within IP (the structure in (23) being the result of base-generating IP or deletion of CP). If the minimality condition on government were defined in terms of m-command, the head of IP would be a minimal governor for the NP *bim*, and consequently Case-assignment by the matrix verb would be blocked under minimality. However, if only lexical heads protect their specifier position from external government, Case-assignment to the specifier of IP by the matrix verb *believe* is of course permitted.

Unfortunately, ECM is also possible in the case of the *verba sentiendi* like *bear* in (24).

- (24) I heard [_α him sing a song]

Recently, it is claimed that α in (24) is VP (cf. for instance Den Besten et al. 1988 and Bennis and Hoekstra 1989b). If this is indeed the case, we must conclude that Rizzi's distinction between the governing properties of lexical and functional heads is unmotivated; neither lexical nor functional heads can protect their specifier position from external government. Again, this follows immediately if we assume the c-command condition on government.⁸

Summarizing, we may conclude that we do not need the m-command condition on government, since Case-assignment to specifiers may take place under SPEC-Head Agreement. Since this condition forces us to adopt auxiliary assumptions that are not necessary if we assume the c-command condition, the latter seems to be preferable. (Cf. section 2.3 for additional evidence in favour of the c-command condition on government provided by

⁸ Note that if a lexical head were able to protect its specifier from external government, the m-command condition on government would exclude the VP-internal subject hypothesis as interpreted in chapter 1, since the trace that is left after NP-movement will not be properly governed; V does not govern it since SpecVP is not within its immediate projection V', and I does not govern it since external government of SpecVP is blocked under minimality. Note however that the original proposal of Koopman and Sportiche (1988) according to which the external argument is adjoined to VP can solve this problem for the m-command condition on government (although the same problem may reoccur with respect to the object if one accepts Koopman's 1984 theory of Case-assignment, cf. chapter 1, fn.1) as well as the problem in the main text.

Control theory.) Let us therefore assume the definition of government in (25).

- (25) α governs β only if:
- (i) α is a head,
 - (ii) α c-commands β ,
 - (iii) α meets the subjacency condition (yet to be stated), and
 - (iv) there is no γ such that:
 - (a) γ is a head, and
 - (b) γ c-commands β and does not c-command α .

If we assume the c-command condition on government, some other problems will arise. According to the ECP, we must assume that manner adjuncts as *how* are properly head-governed, since otherwise we would expect them not to be able to be *wh*-moved. The most natural assumption seems to be that this adjunct is contained within the projection of the verb it modifies. Let us therefore assume that manner adverbs are base-generated as adjuncts of a V'-projection. The S-structure of (26) is as indicated in (27) then. (Note that the structure in (27) deviates from the one that is assumed in Rizzi 1990a:50. This will be discussed at the end of this subsection.)

- (26) John fixed the car in this way

- (27) John [V' [V fixed the car] in this way]

Now, we must assume a definition of c-command according to which an adverbial adjunct adjoined to V' is c-commanded by the verb, but not SpecVP. The definition of c-command in (28) which comes very close to the original definition of Reinhart (1983:23) has the desired result.

- (28) α c-commands β if α does not dominate β and the first node that includes α does not exclude β .

The definition of 'exclusion' in (29) has been taken from Chomsky (1986a) and the definition of 'inclusion' in (30) has been adapted from Bennis and Hoekstra (1989b).

- (29) α excludes β if no segment of α dominates β .

- (30) α includes β if all segments of α dominate β .

According to (28), the verb *fixed* c-commands the adverbial phrase *in this way* in (27), since the first node that includes V (= V') does not exclude the

adverbial phrase. Of course, SpecVP is not c-commanded by the verb as desired, since this position is excluded by V'.⁹

As has already been noted above, the structure in (27) deviates from the one that is assumed by Rizzi (1990a:50). In the remainder of this section, I will show that the structure he assumes is not consistent with other parts of his theory. According to Rizzi, the manner adverbs are adjoined to VP. Since this position is accessible to external government by I, he accounts for the fact that these adjuncts can be *wb*-moved.

However, as has been pointed out to me by Aafke Hulk (p.c.), the assumption that manner adverbs are adjoined to VP is not compatible with his account of (31) (= Rizzi's (32b) in chapter 1).

- (31) *comment a-t-il beaucoup résolu [*t de problèmes*] *t*
how has he many solve of problems

According to Rizzi the QP *beaucoup* has been moved to the A'-specifier of VP. Hence, if manner adverbs are adjoined to VP, the structure of example (31) is as given in (32).

- (32) comment a-t-il [_{VP} [_{V_P} _{V_P} beaucoup résolu [*t de problèmes*]] *t*]]

⁹ Possibly, one may object to the adjunction of the adverbial phrase to the intermediate V'-projection in (27). However, there are independent reasons to accept this as a possible option. Let us assume that predication over an object by an unselected AP must meet a locality condition. Rizzi (1990a:49ff.) assumes that the object and the AP must mutually m-command each other; the example in (i) must have the VP-structure in (ii):

- (i) John ate the meat raw
(ii) [_{VP} [_{V_P} ate the meat] raw]

Since the adjunct AP is not within the intermediate projection of the verb, Rizzi may account for the fact that the adjunct cannot be *wb*-moved as is evident from '*How raw did he eat the meat*'. In Dutch, however, the translation of this example is fully acceptable, as shown in (iii). Further, the adjunct can be topicalized as in (iv) which is generally assumed to be a case of *Wb*-movement.

- (iii) hoe rauw eet je je vlees altijd?
how raw eat you your meat always
(iv) rauw eet hij zijn vlees het liefst
raw eat he his meat the dearest
'Raw, he likes his meat most.'

To account for these facts, we must assume that the adjunct AP is properly governed, and within Rizzi's framework this would imply that it is within the intermediate projection of the verb, i.e. adjoined to V'. Consequently, we must accept adjunction of adjuncts to intermediate projections even if we do adopt the m-command condition on government.

According to Rizzi, the ungrammaticality of (31) is due to the fact that the QP *beaucoup* acts as a potential antecedent governor for the trace of the adverb *comment*. According to his definition of Relativized Minimality in (18), this would imply that *beaucoup* c-commands the trace of *comment*. This, however, is not the case according to the definition of c-command he adopts. His definition is as follows: *X c-commands Y iff neither X dominates Y nor vice versa, and the first projection dominating X dominates Y as well* (p.111, fn.3), in which the notion 'domination' must be defined as in Chomsky (1986a:7):¹⁰

- (33) α is *dominated* by β only if it is dominated by every segment of β .

However, according to the definition in (33), the QP *beaucoup* does not c-command the trace of *comment* since the latter is not dominated by every segment of VP, and hence *beaucoup* cannot act as a potential antecedent governor for it either. To maintain his minimality account for the ungrammaticality of (31), Rizzi would therefore be forced to assume that the manner adverb *comment* is base-generated VP-internally, i.e. a structure similar to (27). (Alternatively, one may of course adopt the c-command — and corresponding m-command — definition in (28) to solve this problem, but this would have the undesired result that we predict that *Wh*-movement of manner adverbs is never possible; cf. fn.10.)

2.1.4. The subjacency condition on government

The subjacency condition is concerned with the distance between the governor and its governee: the first cannot be too far away from the latter. This is made more precise by limiting the number of barriers that may intervene to one or zero, i.e. a governee must be 0- or 1-subjacent to its governor. With respect to head-government, it is always assumed that it requires 0-subjacency, 1-subjacency being a restriction on antecedent-government. Since I have assumed that we do not need antecedent-government, we may safely assume that the subjacency condition on government requires 0-subjacency. Therefore, we can now state the complete definition of government as in (34).

¹⁰ This is clear from the fact that Rizzi accounted for the possibility of *wh*-movement of manner adverbs by assuming that the VP-adjoined position is accessible to external government. Given the fact that he defines m-command in a similar fashion as c-command, replacing the notion 'projection' by 'maximal projection', this presupposes the definition of domination in (33), since otherwise external government of the adjunct trace would be blocked under minimality.

- (34) α governs β only if:
- (i) α is a head,
 - (ii) α c-commands β ,
 - (iii) β is 0-subjacent to α , and
 - (iv) there is no γ such that:
 - (a) γ is a head, and
 - (b) γ c-commands β and does not c-command α .

As a point of departure, I will assume the definition of n-subjacency in (35), taken from Chomsky (1986a). The notion of exclusion is defined as in (30) above.

- (35) β is *n*-subjacent to α iff there are fewer than $n + 1$ barriers for β that exclude α .

Further, I will adopt the definition of a barrier in (36), taken from Lasnik and Saito (1992:87). We will see in a moment that their definition will enable us to simplify the definition of n-subjacency in (35).

- (36) α is a *barrier* for β iff:
- (i) α is a maximal projection;
 - (ii) α is not L-marked;
 - (iii) α dominates β .
- (37) α *L-marks* β iff α is a lexical category that θ -governs β .
- (38) α θ -governs β iff α θ -marks β and α, β mutually c-command each other (i.e. α, β are sisters).

The definition of a barrier in (36) differs from the one given by Chomsky (1986a:26) in that it states that any maximal projection that is not L-marked is a barrier. This implies that IP is not defective in this respect, and will be a barrier if it is not L-marked. (Note that it is not immediately clear what *lexical* in (37) refers to. My interpretation of this notion will be discussed in section 2.2.)

In addition to their definition of a barrier, Lasnik and Saito (1992:87) make the following assumption:

- (39) Adjunction creates a separate projection.

In conjunction with (39), the definition in (36) states that a barrier γ can never be crossed by first adjoining the moved constituent to γ .

According to Chomsky's proposal this way of voiding a barrier is a

possible option. Chomsky assumes that a structure in which an element has been moved is only fully grammatical if the trace is 0-subjacent to the moved constituent. This implies that a constituent may not be moved across a node γ , γ being a barrier, i.e. a non-L-marked maximal projection. But now, consider the structure in (40), in which an element has been adjoined to γ , γ a barrier.

$$(40) \quad \dots [\gamma_1 \alpha \gamma_2 \dots \beta \dots]]$$

In (40) γ_1 and γ_2 are segments of the same node. According to the definitions of n-subjacency in (35), β is 0-subjacent to α if there is no barrier γ for β , such that γ excludes α . Since there is a segment of γ that dominates α , γ does not exclude α , and therefore β is 0-subjacent to α . Consequently, the structure in (40) is licit.

In (40) γ_1 is not a barrier for α either. A prerequisite for α to be a barrier for a category β , is that α dominates β . Given the definition of domination from Chomsky (1986a), repeated here as (41), this condition is not fulfilled.

$$(41) \quad \alpha \text{ is } \textit{dominated} \text{ by } \beta \text{ only if it is dominated by every segment of } \beta.$$

In conclusion, according to Chomsky (1986a) movement of a constituent from the position of β across a barrier γ is made possible by first adjoining it to γ , followed by movement to the target position. In this way, no barrier is crossed.

According to (39), however, this way of voiding a barrier is not possible. Instead of being segments of the same node, γ_1 and γ_2 are taken to be two separate maximal projections. Therefore, if γ is a barrier, both γ_1 and γ_2 in (40) will be barriers. If γ is not a barrier, adjunction to γ will in fact *create* a barrier (γ_2), because γ_2 is not L-marked. And this is precisely what Lasnik and Saito have shown in their study — adjunction to a maximal projection adds a barrier (and is therefore island creating).

If we accept (39) and the definition of a barrier in (36), we have to revise the definition in (35) a little. Given (39), the notion of exclusion is irrelevant for the theory of barriers and, consequently, (35) can be simplified as in (42). 'Domination' is now construed in its traditional sense. Note that these definitions make the stipulation in (39) superfluous; hence it can be dropped.

$$(42) \quad \beta \text{ is } n\text{-subjacent} \text{ to } \alpha \text{ iff there are fewer than } n+1 \text{ barriers for } \beta \text{ that do not dominate } \alpha.$$

$$(43) \quad \alpha \text{ dominates } \beta \text{ iff } \beta \text{ is contained within } \alpha, \alpha \text{ (a segment of) a node.}$$

In this subsection I did no more than *defining* the 0-subjacency requirement on government. In the following section, in which Tense theory will be discussed, it will be *shown* how this definition can be put to work.

2.1.5. Summary

In this section I discussed the definition of government in relation to aspects of proper government (the ECP). Finally, we have arrived at the formulation in (34), repeated for convenience as (44).

- (44) α governs β only if:
- (i) α is a head,
 - (ii) α c-commands β ,
 - (iii) β is 0-subjacent to α , and
 - (iv) there is no γ such that:
 - (a) γ is a head, and
 - (b) γ c-commands β and does not c-command α .

In section 2.1.2 I argued that we may restrict the set of governors to heads (44,i); we have been able to exclude antecedents from this set by the formulation of the ECP in (17) proposed by Rizzi (1990a). Taking into account that all governors are head-governors, we may revise this formulation of the ECP as in (45).

- (45) *Empty Category Principle* (final version):
A nonpronominal empty category must be properly governed.

(45) must be construed as a Formal Licensing requirement on traces. The Identification requirement on traces will be discussed in chapter 3.

In section 2.1.3 I argued in favour of a c-command condition on government (44,ii). C-command has been defined as in (28), repeated here as (46).

- (46) α c-commands β if α does not dominate β and the first node that includes α does not exclude β .
- (47) α excludes β if no segment of α dominates β .
- (48) α includes β if all segments of α dominate β .

The motivation for this definition was the need for an adjunct trace to be properly governed.

In section 2.1.4, finally, I adopted the 0-subjacency constraint on government, but I diverged from the standard assumption by not adopting Chomsky's definition of a barrier, but Lasnik and Saito's. Since they assume that adjunction to a maximal projection adds an additional maximal projection, the definition of n-subjacency can be stated as in (49).

- (49) β is *n*-subjacent to α iff there are fewer than $n + 1$ barriers for β that do not dominate α .

- (50) α dominates β iff β is contained within α , α (a segment of) a node.

The definition of a barrier is given in (36), repeated here as (51).

- (51) α is a *barrier* for β iff:
 (i) α is a maximal projection;
 (ii) α is not L-marked;
 (iii) α dominates β .

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

- (53) α θ - governs β iff α L-marks β and α, β mutually c-command each other.

As far as Relativized Minimality was developed to account for the fact that a head can never block the relation between an antecedent and a trace, and that an antecedent can never block a head-government relation, it has been made superfluous by our definition of government; since head-government relations and antecedent-trace relations are not treated on a par as 'government', the fact that these relations do not interfere with each other follows immediately.

2.2. Government and Tense theory

Now that we have established the full definition of government, we can discuss its application in some of the other subsystems of principles. In this section I will discuss Tense theory, and in the following section Control theory will be discussed. In this section, it will be shown that the definition of government in (44) can account for the fact that V-to-I is compulsory in Dutch, whereas Verb Raising (V-to-V) is optional in certain circumstances.

Tense theory has been claimed to play an important role with respect to movement of verbs and sentential complements (cf. for example Evers 1982

and Bennis and Hoekstra 1989a,b). Here, I will confine the discussion to movements of verbs, especially V-to-I and Verb Raising (V-to-V). Consider the following examples.

- (54) dat Peter dat boek niet wou lezen
 that Peter that book not wanted read
 'that Peter didn't want to read the book.'

Following Den Besten et al. (1988) and Bennis and Hoekstra (1989b), I assume that in bare infinitivals the matrix verb subcategorizes for a VP. Further, I assume that (due to a directionality constraint on θ-role assignment) sentential arguments of the verb are generated in the same position as the nominal argument. Since Dutch is an OV-language, this implies that the bare infinitival appears in preverbal position at D-structure. Consequently, the D-structure of (54), with the omission of irrelevant details, is as indicated in (55).

- (55) dat Peter [_{VP} [_{VP} het boek niet lezen] wou]

The linear order in (54) can be derived by moving the embedded verb out of its clause and adjoining it to the higher verb as in (56). This movement is known as Verb Raising.

- (56) dat Peter [_{VP} [_{VP} het boek niet _{t_j}] wou lezen_i]

Another sort of verb movement is V-to-I. In embedded finite sentences as in (56), it cannot be seen whether a verb has moved to I or not. This is due to the fact that in Dutch both VP and IP are head-final and that it is not possible to place lexical material between V and I. In main clauses, though, the verb obligatorily moves to the C-position. By the Head Movement Constraint (cf. Travis 1984, Chomsky 1986a and Baker 1988) this implies that in main clauses the verb has moved through I.¹¹

In *te*-infinitivals, on the other hand, it can be seen that the verb has moved to I. Consider the example in (57a).

- (57) a. Jan probeerde dat boek te lezen/*lezen te
 Jan tried that book to read
 'Jan tried to read that book.'

¹¹ The Head Movement Constraint postulates that a Head X can only move to a head Y if it is successively moved through all intermediate head positions. Ultimately, this constraint can probably be derived from the ECP or from the Relativized Minimality Clause in (20c).

- (57) b. *Jan probeerde [_{CP} om [_{IP} PRO [_{VP} dat boek lezen] te]]
 c. Jan probeerde [_{CP} om [_{IP} PRO [_{VP} dat boek _i] te lezen_j]]

It is generally assumed that *te* is the phonological spell-out of infinitival I. Since the VP in Dutch is generated to the left of I, the D-structure order of the complement is as in (57b). As this order results in an ungrammatical S-structure, we have to conclude that movement of V must obligatorily apply as in (57c).

Because V-to-I is obligatory both in main clauses and in *te*-infinitivals, we can safely conclude that V-to-I is obligatory in all clauses, even though we are not able to prove this for embedded finite clauses.

- (58) In Dutch, V-to-I is obligatory.

If (58) holds, the S-structure of (54) must be more complex than the one in (56). More precisely, we must assume that the verbal complex has been moved to I. Therefore the S-structure of (54) must be as indicated in (59).

- (59) dat [_{IP} Peter [_{VP} [_{VP} het boek niet _i] _i] [wou lezen_j]]]

Of course, (58) is a language-specific statement and cannot be generalized to all other languages. With respect to English, for instance, it is clear that main verbs cannot move to I at S-structure (cf. for example Pollock 1988, Chomsky 1991).

Bennis and Hoekstra (1989a,b) relate the statement in (58) to a theory of Tense. Their theory demands that every verb be identified by Tense. The notion of Tense refers to both finite and infinitival Tense.

- (60) *T-linking*
 A verb must be identified by Tense.

T-linkings are established by means of a T-chain. According to Bennis and Hoekstra, such T-chains may be formed in two ways: either by moving the verb to I or by percolation of the Tense-features to V. They assume that languages are parametrized to the way they establish T-chains. In Dutch, the option of movement of the verb is chosen, and this is the reason why (58) holds. In English, on the other hand, the option of percolation is chosen, and therefore V-to-I is not possible in English.

If in Dutch T-chains can only be established by movement of the verb, it is predicted that not only V-to-I is obligatory, but that the same holds for Verb Raising. In Den Besten and Broekhuis (1989), however, it was claimed that this prediction is not confirmed by the facts. In examples such as (54),

Verb Raising need not apply, as shown in (61). Since we assumed that (58) holds, the S-structure of (61) must be as indicated in (62).

- (61) dat Peter dat boek niet lezen wou

- (62) dat [_{I_{IP}} Peter [_{VP} [_{VP} het boek niet lezen] _{t_{wou}}] wou]

To account for these examples, we slightly modified Bennis and Hoekstra's assumptions. Instead of assuming that in Dutch T-chains can only be formed by verb movement, we assumed that T-chains may be formed by percolation as well, and that percolation of Tense is in fact coindexing of I and its lower verb(s). We may derive the statement in (58) now by constraining coindexing as in (63), and by adopting the (standard) assumption in (64):

- (63) A head β may be *coindexed* with a head α iff α governs β .

- (64) I^0 is not lexical.

The result of (63) and (64) is that in (57b) no T-chain may be formed by coindexing. Since I^0 is not lexical, it does not L-mark VP. Hence, according to (51), VP is a barrier for the verb *lezen*. Consequently, I^0 does not govern this verb (cf. (44)), and coindexing of I^0 and the verb is impossible. The only way to meet (60) is by moving the verb to I, as in (57c). Thus we derive the statement in (58).

Chomsky (1986a) assumes that V-to-I lexicalizes I. In fact, we have to assume the same. If VP is a barrier after V-to-I, government of the trace of V would be blocked and the structure should be ruled out by the ECP. Since this is not the case, VP cannot be a barrier, i.e. must be L-marked. Consequently, the amalgam I+V has to be lexical.

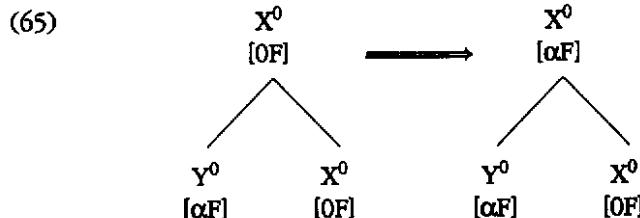
If I governs the verbal trace after V-to-I, we need not assume that in (57c) the T-Linking is established by the movement of the verb. Since I governs the position of the verbal trace, the condition on coindexing in (63) is fulfilled at S-structure, and consequently the T-chain can be established by coindexing. The verb *lezen* will be Tense-identified by virtue of the antecedent-trace relation.

This will also account for the grammaticality of (61); in (62) V-to-I lexicalizes I, and therefore the upper VP will not be a barrier and I governs the verbal trace. Since the lower VP is L-marked by (the trace of) the matrix verb, it will not be a barrier either and the verbal trace will govern the lower verb. Consequently, the T-chain [_I, V (_{*t_{wou}*}), V (*lezen*)] can be established since all links can be coindexed under (63). In this way all Dutch examples in this section can be accounted for. (Cf. chapter 8 for a more extensive discussion of Tense theory.)

Before we proceed, maybe a brief digression on the notions 'lexical' and 'lexicalization' is in order. The notion 'lexical category' is somewhat misleading, since it suggests that a category is lexical as soon as it contains phonological material. Given this interpretation of 'lexical', I in (57) would be lexical, since it contains the word *te*.

When I use the notion 'lexical category', however, I refer to a category specified for the features $\{\pm N, \pm V\}$, i.e. to a category of the type N, V, A or P. The non-lexical (functional) categories are not specified with respect to these features. As a result, I and C are non-lexical categories, even though they may have phonological content such as *te/to*, *dai/that* and *om*.

The assumption that movement of a lexical category to a non-lexical category, e.g. V-to-I, lexicalizes the latter can be accounted for by assuming that in the structure in (65) the feature F of the incorporated head Y^0 may percolate up to the higher X^0 node as long as X^0 is not specified for F (cf. for example Roeper 1987 and Di Sciullo and Williams 1987).



If X^0 is I and Y^0 is V, the higher X^0 will become a lexical category of the type $\{-N, +V\}$. This accounts for Chomsky's assumption that V-to-I lexicalizes I.¹²

¹² If this approach to lexicalization of functional categories is correct, we can no longer assume that subject-extraction in the French and English examples in (i) can be accounted for by means of agreement in CP (cf. Rizzi 1990a and references cited there). According to this approach the complementizer *qui* agrees with the intermediate trace in SpecCP, which turns the complementizer into a proper governor for the subject trace in SpecIP. Similarly, it is assumed that the empty complementizer in (ib) is an agreeing complementizer.

- (i) a. qui_i crois-tu [CP t_i qui [IP t_i est arrivé]]
who think you that has left
b. who_i do you think [CP t_i Ø [IP t_i left]]

However, if a functional category can only be lexicalized by incorporation of a lexical category, this account of the examples in (i) cannot be maintained. In (i) the complementizers have not been lexicalized, and hence IP remains a barrier for (proper) government. Of course, we could solve this problem by stipulating that *qui* has nominal features and hence is able to L-mark IP.

Recently, a more interesting account has been proposed by Law (1991a,b) which is more in accordance with the present framework. According to his proposal the French complement-

(continued...)

As has been mentioned before, Dutch and English differ with respect to the application of V-to-I in the syntax. Bennis and Hoekstra (1989a,b) accounted for this by assuming that in Dutch T-Linkings can only be established by verb movement, whereas in English T-Linkings must be established by percolation. If we adopt the revision of the theory discussed above, this account cannot be maintained, but there are several other ways to account for this difference. For instance, it can be stated that (64) does not hold in English, i.e. I^0 is lexical in English (cf. Lasnik and Saito 1992:85). In that case, VP is never a barrier and the condition on coindexing will always be met in English.

Of course, the assumption that I^0 is lexical in English is not in accordance with the assumption that lexical categories are defined by being specified for the features [$\pm N$, $\pm V$]. Therefore, I will opt here for another solution, namely that languages are parametrized in the following way:

- (66) T-linking must be met:
 a. at S-structure, or:
 b. at LF.

Dutch chooses the option in (66a), English the one in (66b).¹³ If T-linkings can only be established by coindexing, we must assume that in English V-to-I applies at LF, since otherwise the formation of the T-chain will be blocked by the condition on coindexing in (63). (Cf. Chomsky 1991 for a different motivation for V-to-I movement at LF in English.) This hypothesis has some interesting consequences.

If it is true that in Dutch the amalgam is formed at S-structure and in English at LF, this would imply (67):

¹² (...continued)

izer *qui* (but not *que*) is inherently specified for the Φ -feature [+OPERATOR]. This feature must be licensed by LF-movement of the inflected verb *est* (which carries the same feature under agreement with the *ub*-element *qui*) to C. Thus C will be lexicalized and the subject trace will satisfy the ECP at LF. With respect to (1b), he assumes that the embedded clause is not a CP but an IP. Since IP is L-marked by the matrix verb, it is not a barrier. Hence the trace is properly governed by the matrix verb. Given the complexity of the proposal, I refer to Law (1991a,b) for further details. It must be noted, however, that I do not adopt his account of subject extraction in Dutch. My analysis will be given in section 6.2.

¹³ If my suggestions are on the right track here, we have to assume that Affix Hopping and *do*-support in non-interrogative clauses are phonological rules that save the sentence from the Stray Affix Filter (Baker 1988:140).

- (67) a. In Dutch, I is lexicalized at S-structure, and hence VP is only a barrier at D-structure.
 b. In English, I is lexicalized at LF, and hence VP is a barrier at D- and S-structure, but not at LF.

Consequently, the VP in Dutch and English should behave similarly with respect to barrierhood in so far as it concerns conditions that apply at LF (like the ECP), but differently in so far as it concerns conditions that apply at S-structure. In section 6, I will show that this might indeed be the case.

2.3. Government and Control theory

Within the current framework of generative grammar, there are two competing approaches to Control theory. Within the first approach advocated in Chomsky (1981) and subsequent work, PRO is a pronominal anaphor. From this assumption, it follows as a theorem of Binding theory that PRO may not occur in a governed position. Within the second approach advocated by Koster (1987), Bennis and Hoekstra (1989a,b), Broekhuis and Hoekstra (1990, to appear), K.Hoekstra (in prep.) and others, PRO is or may be an anaphor. Hence it does not follow that PRO must be ungoverned.

In this section, we will focus on the configurational condition on government as formulated in 2.1.3. It will be shown that Control theory provides additional support for the c-command condition on government. More specifically, it will be shown that the c-command condition is preferable to the m-command condition, irrespective of the approach one would like to adopt.

Within the first approach, the m-command condition forces us to assume that non-finite I is not a governor (i.e. to complicate the substantive condition on government), since otherwise I would govern PRO which occupies its specifier-position. Of course this assumption is not necessary if we assume the c-command condition, since in that case government of SpecIP by I is blocked by definition. Hence PRO will be ungoverned.

With respect to the second approach (which will be actually adopted in this study), it will be shown that the c-command condition leads to better predictions than the m-command condition.

2.3.1. PRO as a pronominal anaphor

In Chomsky (1981) PRO is a pronominal anaphor. Since a pronominal anaphor must fulfil the contradictory requirement of being both bound and free within its governing category (if it has one), its occurrence is restricted

to ungoverned positions (but cf. Kayne 1991). Now, consider the following structure.

- (68) Jan ging naar huis [_{CP} om [_{IP} PRO zijn auto te repareren]]
 Jan went to home COMP his car to repair

If we adopt the m-command condition on government and assume that PRO occupies SpecIP, we expect that in (68) PRO is governed by I (cf. Borer 1989); I m-commands SpecIP, and since no barrier intervenes, I governs SpecIP. Adopting the PRO-theorem, this would imply that the sentence should be ungrammatical.

This problem has led Chomsky (1981) to assume that infinitival I is not a governor.¹⁴ Within the LGB-framework, this stipulation is of course a sensible step to take, since INFL is a sister of the subject in the phrase structures that are assumed there. Within the Barriers framework, however, this stipulation is not necessary, since the problem can be circumvented if we adopt the c-command condition on government; PRO will only be governed by I under the m-command condition.

I believe that the assumption that non-finite I is not a governor is undesirable, since as a result the substantive condition on government will be complicated. In (44) this condition was stated in such a way that all heads are potential governors. However, if we assume that non-finite I is not a governor, this condition must be restated in such a way that it refers only to a subset of all heads (cf. fn.5).

Further, the assumption that V-to-I lexicalizes I casts serious doubts on the assumption that infinitival I is not a governor. As we have discussed in section 2.2, it seems to be a reasonable assumption that lexicalization of I means that I receives the categorial features of the incorporated verb, and thus becomes a verb, i.e. a (lexical) governor. In fact, this proposal has been developed to achieve this result (cf. Chomsky 1986a). Now, as we have seen in 2.2 as well, V-to-I must apply in Dutch infinitival clauses. Consequently, the S-structure of (68) must be as indicated in (69).

- (69) Jan ging naar huis [_{CP} om [_{IP} PRO [_{VP} zijn auto _i] te repareren,]]]

In (69) the amalgam I+V *te repareren* will receive the categorial features of the verb *repareren* and thus will be able to govern PRO under the m-

¹⁴ In Rizzi (1990a) a more sophisticated variant of this proposal has been assumed. Adopting Pollock's (1988) split-INFL hypothesis (as reformulated by Chomsky 1991), he assumes that PRO occupies SpecAGR. Further, he assumes that AGR is only a governor if it has features. Consequently, AGR is not a governor in non-finite clauses, and hence PRO will be ungoverned.

command condition on government.¹⁵

If we assume the c-command condition, the PRO-theorem can be maintained without further stipulations. In (69) PRO is not governed by I (*te*), since I does not c-command SpecIP. Further, PRO is not governed by C either. Since C is a non-lexical (i.e. functional) category, it does not L-mark IP, which will be a barrier for PRO according to (51). Hence government of PRO by C is blocked by IP.

Summarizing, we may conclude that the PRO-theorem cannot be maintained without complicating the substantive condition on government if we assume the m-command condition on government (i.e. we must assume that infinitival I is not a governor even if a verb has been moved into it). On the other hand, if we adopt the c-command condition, this complication of the substantive condition is not needed.

2.3.2. PRO as an anaphor

In the previous subsection, I discussed a problem that arises with respect to the PRO-theorem if we adopt the m-command condition on government. As has been mentioned in the introduction to this section, there is another approach to Control theory which rejects this theorem. Within this approach it is assumed that PRO is or may be an anaphor and hence that nothing excludes government of PRO. Within this approach, we seem to have no immediate reason to prefer the c-command condition on government.

In this subsection, taking an adaptation of the Control theory in Koster (1987) as our point of departure, I will show however that the c- and m-command conditions on government make different predictions with respect to the binding properties of PRO in several constructions. The predictions that follow from the c-command condition are correct.

According to Koster (1987), governed PRO is an anaphor that must be bound by an element in the matrix clause, whereas ungoverned PRO may

¹⁵ One might be tempted to elaborate a suggestion in Chomsky (1991) to solve this problem for the m-command condition. Chomsky assumes that in English infinitival I may be lowered to V and that the trace that is left by the lowering operation can be deleted, since it does not play a role at LF, i.e. is in some way 'an unnecessary element'. If this is indeed possible, PRO will not be governed by a lexical category. The suggestion that infinitival I does not play an LF-role, however, is doubtful. In Bennis and Hoekstra (1989a), for instance, it has been assumed that infinitival I Tense-identifies its dependent verb(s). If this is really the case, infinitival I does play a role at LF, or, at least, is not an unnecessary element. The fact that Bennis and Hoekstra attribute such a syntactic role to infinitival I shows that it is hard to determine whether an element is necessary or not. Further, Chomsky's proposal cannot be applied to languages such as Dutch and French in which V-to-I overtly applies in infinitival clauses.

be arbitrarily construed. In Broekhuis and K.Hoekstra (1990, to appear) and K.Hoekstra (in prep.), the essence of this hypothesis has been adopted, revising its specific formulation as in (70).¹⁶

- (70) PRO is an anaphor if it is governed *at any level of representation*.

The part in italics (which is of course reminiscent of Belletti and Rizzi's 1988 assumption that binding condition A is a kind of 'anywhere' principle) does not make sense within Koster's framework, since he does not assume distinct levels of representation. As will become clear below, however, our proposal crucially makes use of the levels of representation distinguished within the T-model.

Let us first consider the predictions that follow from (70) if we assume the m-command condition on government. If governed PRO is an anaphor and if infinitival I is a governor, as argued in the previous subsection, the m-command condition on government predicts that PRO is an anaphor in all infinitival clauses. This is an interesting prediction, since it has been claimed by Bennis and T.Hoekstra (1989a,b) among others, that PRO is intrinsically an anaphor. I believe, however, that this claim is false.

Bennis and Hoekstra's claim is based on the assumption that an anaphor must be bound by a syntactically realized argument or by an implicit argument in the matrix clause. In passive clauses, this implicit argument is the agentive argument that can be realized in the *door*-PP (cf. (71)); in examples like (72) and (73), this implicit argument can be realized in a 'designated' PP. In (71–73) the binder of PRO can be either syntactically realized or be left implicit.

- (71) er werd (door mij,) geprobeerd [(om) PRO_i de deur
there was by me tried COMP the door
te openen]
to open

- (72) het is leuk (voor mij,) [om PRO_i een boek te lezen]
it is nice for me COMP a book to read

- (73) het is stom (van Jan,) [om PRO_i dat boek te verkopen]
it is stupid of Jan COMP that book to sell

¹⁶ The assumption in Kayne (1991) that "all controlled PROs are governed at some level of representation" resembles (70). However, Kayne's approach differs from ours, since he maintains that PRO is a pronominal anaphor, whereas we consider governed PRO to be a pure anaphor.

One of the predictions of Bennis and Hoekstra's assumption is that passivization of the matrix clause does not influence the acceptability of the sentence, since PRO may be controlled either by the subject of the active sentence or by the implicit argument of the passive sentence. This prediction, however, is not fulfilled. Consider the following examples.

- (74) a. Jan_i weigerde [(om) PRO_i Piet te opereren]
 Jan refused COMP Piet to operate
 'Jan refused to perform surgery on Piet'
 b. er werd (door Jan_i) geweigerd [(om) PRO_i Piet te opereren]
 there was by Jan refused COMP Piet to operate
- (75) a. Jan_i weigerde [(om) PRO_i geopereerd te worden]
 Jan refused COMP operated to be
 'Jan refused to have an operation'
 b. *Er werd (door Jan_i) geweigerd [(om) PRO_i geopereerd
 There was by Jan refused COMP operated
 te worden]
 to be

As (74) shows, this prediction is fulfilled if the infinitival clause is in the active voice, but if it is in the passive voice as in (75), passivization of the matrix clause yields a degraded result (cf. (75b)). This is generally the case in subject control structures, although there are some exceptions, e.g. if the infinitival complement contains a so-called 'root' modal as in (76). An account of the grammaticality of (76) will be given later in this section.

- (76) er is veel gedaan [om PRO gekozen te kunnen
 there has been much done COMP elected to be able
 worden]
 be
 'Much has been done to be able to be elected.'

Passivization of the matrix clause will also lead to ungrammaticality in case of the so-called Remnant Extrapolation (or Third) construction, unless there is a syntactically realised object that controls PRO as in (78b). A characteristic of the Remnant Extrapolation construction is that an argument of the infinitival complement has been moved to a position within the matrix clause (cf. Den Besten and Rutten 1989, Rutten 1991 and references cited there for further discussion). Compare the following examples. (The unacceptability of examples like (77b) was first noted by Koster 1987.)

- (77) a. dat Jan dat boek_i geprobeerd heeft [PRO *t_i* te lezen]
 that Jan that book tried has to read
 'that Jan has tried to read that book.'
 b. *dat (er) dat boek_i geprobeerd werd [PRO *t_i* te lezen]
 that there that book tried was to read
- (78) a. dat Jan hem dat boek_i verboden heeft [PRO *t_i* te lezen]
 that Jan him that book forbidden has to read
 'that Jan has forbidden him to read that book.'
 b. dat hem dat boek_i verboden werd [PRO *t_i* te lezen]
 that him that book forbidden was to read
 'that he has been forbidden to read that book.'

The differences in grammaticality between (75b) and (77b) on the one hand and (74b) and (78b) on the other are unexpected, if we assume that the implicit agentive argument is able to bind PRO.

Perhaps a brief digression on (77b) is in order here. According to Teun Hoekstra (p.c.), the acceptability of (77b) increases if we replace the NP *dat boek* by the indefinite NP *een boek*, as illustrated in (79).

- (79) ?dat er een boek_i geprobeerd werd [PRO *t_i* te lezen]

From this he concludes that (77b) only exhibits an indefiniteness effect. There are two reasons to reject this conclusion. First, this leaves unexplained why (77b) is also unacceptable if we drop the expletive *er*. Secondly, the acceptability of (79) decreases dramatically if we replace *een boek* 'a book' by the plural indefinite NP *boeken* 'books', as in (80).

- (80) *dat er boeken_i geprobeerd werd [PRO *t_i* te lezen]

The unacceptability of (80) indicates that (79) cannot be an instance of Remnant Extrapolation. Probably, (79) is a case of the so-called 'long passive'. If this is so, the acceptability of (80) must increase if the NP *boeken* agrees with the verb in number. This prediction is fulfilled, even though the resulting sentence is not very felicitous.

- (81) ?dat er boeken_i geprobeerd werden [PRO *t_i* te lezen]

Since the judgments on the examples in (79) and (81) vary among speakers from 'reasonably good' to 'completely out', it is not possible to draw any firm conclusions from these examples.

Another prediction that follows from Bennis and Hoekstra's claim is that a construction in which there is no implicit argument available to bind PRO

is ungrammatical. Again, this prediction is not correct. Compare the construction in (82). In (82) there is neither a syntactically realised argument nor an implicit argument available to control PRO, but nevertheless the sentence is grammatical (cf. Van Haaften 1991: section 3.5 for more examples of this kind).

- (82) het is schadelijk voor het milieu [om PRO vuilnis
 it is harmful to the environment COMP waste
 te storten]
 to dump
 'It is harmful to the environment to dump waste.'

Since example (82) shows that PRO may have an arbitrary reference that is not determined by an implicit argument, Broekhuis and Hoekstra (to appear) conclude that Bennis and Hoekstra's claim that PRO is always an anaphor cannot be maintained. Consequently, the idea that PRO is always an anaphor, since it is always governed by infinitival I, has to be rejected as well. Therefore, if (70) is correct, the m-command condition on government must be dropped.

Let us now address the question whether the facts can be adequately accounted for by (70) in conjunction with the c-command condition on government. Since some of the examples given above will be discussed more extensively in section 9.2, I will only indicate how the correct predictions can be derived without discussing them in full (cf. also K.Hoekstra in prep. for an extensive discussion of these examples.)

Of course, the fact that PRO does not always behave as an anaphor (i.e. can be arbitrarily construed) follows immediately, since PRO may occupy an ungoverned position, viz. SpecIP. But can we also explain that in some (but not all) circumstances PRO must be bound, even though it occupies (or better: may occur in) the SpecIP position in all cases?

To answer this question, let us consider the statement in (70) again. According to (70), PRO is an anaphor if it is governed at D- or S-structure (or at LF, but I will not discuss this level here; cf. section 9.2 for further discussion). In section 1.1, we adopted the VP-internal subject hypothesis, i.e. we assumed that the external argument (including PRO) is generated in SpecVP. If the external argument is PRO, is it governed at D-structure? If this is the case, we predict that PRO will always be an anaphor if it is the subject of an unergative verb. Since examples like (74b) and (82) are grammatical, this would be an undesirable result. Therefore, government must be blocked.

Under the c-command condition, I is the only potential governor of the external argument. Since V-to-I has not yet applied at D-structure, I is a non-

lexical category and hence it does not L-mark the VP. Consequently, according to (51), the VP is a barrier for the external argument which will thus not be governed at D-structure.

Is the external argument governed at S-structure? As we have discussed above, V-to-I has applied at S-structure and I is lexicalized as a result. Consequently, VP is L-marked at this level, and as a result it will no longer be a barrier to government for the external argument in its D-structure position. But, of course, the external argument may move to SpecIP, thus avoiding government by I.¹⁷

Since the external argument may be ungoverned both at D- and at S-structure, the PRO-subject of a unergative verb may be ungoverned at all levels. This correctly predicts that in examples such as (74b) and (82) PRO can be arbitrarily construed.

The ungrammaticality of (75b) can be easily accounted for. Since PRO is the internal argument of the verb *opereren*, it is governed at D-structure. Even though PRO can be moved to the ungoverned SpecIP position, PRO will be an anaphor according to (70). But since there is no antecedent available in the matrix clause, the binding conditions are violated and (75b) is ungrammatical as a result.

Given this account of (75b), why is (76) grammatical? Here, I only briefly indicate how it can be solved (cf. section 9.2 for a more extensive discussion). In Klooster (1986) it is argued that 'root' modals differ from the 'epistemic' modals in having an external argument of their own, i.e. the root modals are unergative verbs, whereas epistemic modals are raising verbs. Since the infinitival clause in (76) contains a root modal, we must assume that there is an additional PRO-subject, i.e. a more appropriate structure for the infinitival clause in (76) is as given in (83).

- (83) [om I_{IP} PRO₁ [VP PRO₂ gekozen] te kunnen worden]]

The external argument of the root modal *kunnen* 'to be able', i.e. PRO₁, is able to bind the PRO₂-subject of the embedded predicate *kiezen* 'elect', thus satisfying the binding conditions with respect to this element. PRO₁ need not be bound itself, since it is the external argument of an unergative verb;

¹⁷ That the trace of the external argument is governed by I, of course has no consequences for the anaphoric properties of PRO. In this respect PRO is similar to *wb*-trace which cannot be properly bound by virtue of its trace being properly bound. Compare for instance the example in (i).

(i) *who do you think that *t* has been killed *t*

In (i) the *wb*-trace *t* violates the ECP even though the NP-trace *t* is properly governed by the verb *killed*.

at D-structure, it is protected from government by I, since its dominating VP is not L-marked at this level, and it can be moved to SpecIP at S-structure. Consequently, PRO₁ can be ungoverned at all levels and need not be bound. As a result, (76) allows for an arbitrary interpretation.

We conclude this discussion with an account of the Remnant Extrapolation construction example in (77b). Because *lezen* in (77/78) is an unergative verb, the fact that PRO cannot be arbitrarily construed in (77b) comes as a surprise, since we would expect that PRO may be ungoverned at all levels of representation as has been the case in (74b/82). In what respect differs (77b) from these examples?

As has been indicated in (77) and (78), in the Remnant Extrapolation construction an argument has been moved across the boundary of its infinitival clause. Since this movement is blocked if the infinitival complement contains the complementizer *om*, it is assumed that a CP-boundary blocks this movement (cf. section 4.1 for further discussion). Therefore, the infinitival complements in (77) and (78) must be IPs (note that the assumption that infinitival complements may be either CP or IP is not a real innovation, since it has already been assumed in Chomsky 1986a).

If the infinitival complement is indeed an IP, there is no barrier to government of SpecIP; since the IP is an argument of the matrix verb, it is L-marked and its barrierhood will be voided. Consequently, SpecIP is accessible to government by the matrix verb. Now, both positions that can be occupied by the PRO-subject are governed at S-Structure (SpecVP by the amalgam I+V *te lezen* and SpecIP by the matrix verb), and PRO will be an anaphor by (70). This accounts for the ungrammaticality of (77b); since PRO is an anaphor, it must have an antecedent in the matrix clause which is not available in this example.¹⁸

With this (slightly simplified) account of (77b), we solved all problems that arose in connection with the m-command definition of government. This shows that the c-command condition is preferable in this respect. As has been said above, we will return to Control theory in chapter 9.¹⁹

¹⁸ Passivization of the matrix clause is also impossible if the matrix verb is a verb of 'saying' that requires Subject Control (cf. Van Haaften 1991: section 2.2, especially the discussion of his types VII–IX). Since the complements of these verbs never take the complementizer *om*, we may assume that they are IPs, and hence that passivization of the matrix clause is blocked for the same reason as in (77b).

¹⁹ Recently, structure-dependent approaches such as the one defended above have been criticized by Van Haaften (1991:chapter 4). Most of his criticism stems from not correctly distinguishing between optional (nonanaphoric) and obligatory (anaphoric) control (which is mainly due to the fact that he is rightly criticizing Bennis and Hoekstra 1989b,c claim that anaphors may be bound by an implicit agent; in chapter 5, on the other hand, he is making (continued...)

2.4. Summary

Section 2.3 concludes our discussion of the definition of government. In 2.1 we restricted the class of potential governors to the set of heads. We were able to do this since Rizzi reformulated the ECP in such a way that it only refers to head-government. In section 2.2 I have shown how the 0-subjacency requirement on government accounts for the fact that in Dutch V-to-I is compulsory, whereas Verb Raising (V-to-V) need not always apply. In section 2.3 we completed the discussion of government by giving some additional evidence taken from control theory in favour of the c-command condition on government.

¹⁹ (...continued)

the desired distinction). Therefore, it must be stressed that the proposal defended in this section only says something about anaphoric control, i.e. the relation that exhibits the following properties of basic dependency relations that are distinguished in Koster (1987): obligatoriness, uniqueness of the antecedent, c-command of the antecedent and locality. The control relations that do not exhibit all these properties cannot be accounted for by recourse to Binding theory, but must be accounted for by Control theory; a first outline of this subtheory can be found in Van Haaften (1991:chapter 5).

3

On the Identification of Traces; Chain-formation

3.0. Introduction

In 2.1 we assumed that a trace must be formally licensed by being properly governed, government being restricted to head-government (cf. the formulation of the ECP in 2.1, (45)). Further, we followed Rizzi (1990a) in assuming that a trace must be identified. This latter assumption was stated in (16) in section 2.1, repeated here as (1).

- (1) *Identification Requirement on Traces:*
A nonpronominal empty category must be connected to its antecedent.

According to Rizzi the required connection can be established by binding or by antecedent-government.

- (2) In [... α ... β ...], β is *connected* to α if:
(i) α antecedent-governs β , or:
(ii) α binds β .

If we further assume that only elements that are assigned a referential θ -role (i.e. subjects and objects) may enter into a binding-relation, we are able to account for the fact that an intervening potential antecedent-governor can never affect the identification of subject- or object-traces, whereas it can block the identification of the traces of adjuncts and other non-referential expressions. Since traces of non-referential expressions can only be identified by antecedent-government, and antecedent-government is an inherently local relation, these traces must have a local antecedent. But since the traces of subjects and objects can also be identified through binding, and binding is an unbounded dependency, they can be bound across a longer distance.

In section 2.1.2, however, I argued that we need not necessarily state the more local antecedent-trace relation in terms of antecedent-government.

Alternatively, we may assume that instead of being antecedent-governed a trace must enter into a wellformed movement-chain. If we introduce the variable notion of α -chain, ranging over $A-$, A' - and X^0 -chains, we may reformulate (2) as in (3).

- (3) In [... α ... β ...], β is *connected* to α if:
- (i) α and β enter into a wellformed α -chain, or:
 - (ii) α binds β .

The main topic of this chapter is the proper formulation of the conditions on chain-formation. In section 3.1 I will show that we may easily reformulate Rizzi's Relativized Minimality in terms of chain-formation. I will discuss in section 3.2 the question whether chain-formation is actually sensitive to minimality effects. Although Rizzi seems to provide evidence for answering this question in the affirmative, I will argue that the factual evidence is rather meagre; various examples Rizzi put forth in favour of his claim do not actually prove his point, whereas in other cases several counterexamples to his claim can be constructed.

After discussing the conditions on chain-formation, some attention will be paid to binding in section 3.3. Finally, I discuss the question at which level the requirements on traces must be checked in section 3.4.

3.1. The conditions on movement-chains

If we want to preserve the predictive force of Rizzi's theory, several conditions on chain-formation are necessary. Generally, these conditions are formulated in such a way that they are applicable to the *links* that constitute the chain. Therefore, the conditions on chain-formation must have the following format (cf. for example Chomsky 1986a:30):

- (4) If $[\alpha, \beta]$ is a link of α -chain, then

What kind of conditions must be distinguished? First, there must be a restriction on the elements that may enter into a chain, call it the substantive condition on chain-formation. For the moment, I adopt without discussion Rizzi's (1990a:92) assumption that α and β must be non-distinct in some sense. The consequences of this condition which blocks the formation of "crazy" chains will be more extensively discussed later in this section.

Secondly, a configurational condition must be stated. With respect to this condition, we may safely assume that this condition must be stated so that α c-commands β .

Thirdly, we need a locality condition on chain-formation. In Chomsky

(1986a:30) it is assumed that in (4) β must be subjacent to α , subjacency being construed as 0-subjacency (cf. section 2.1 (49) for the definition of n-subjacency). As will become clear in a moment this option is not available to us, and therefore I adopt the locality condition from Lasnik and Saito (1992). (Of course, their locality condition is meant as a condition on antecedent-government, but I reinterpret it here as a condition on chain-formation, which can be done safely since they assume that antecedent-government is not a subcase of government, but is more similar to Subjacency (1992:chapter 1).)

If we assume Lasnik and Saito's definition of a barrier (cf. (51) in section 2.1), the locality condition cannot be stated as 0-subjacency, since otherwise we cannot account for the acceptability of (5).

- (5) I wondered [_{CP} how [_{IP} John fixed the car t]]

Since (5) is acceptable, we must assume that the chain [*how*, t] is well-formed, even though a barrier (IP) intervenes between the two links of the chain. Since (6) is ungrammatical, we must further assume that the chain cannot be established across both IP and CP.

- (6) *how did you wonder [_{CP} whether [_{IP} John fixed the car t]]

To account for (5) and (6), we may assume that chain-formation requires subjacency, this notion being defined as in (7). (Note that (7) is similar to the inheritance clause in the original definition of a barrier given in Chomsky 1986a:14.)

- (7) β is *subjacent* to α if for every γ , γ a barrier for β , the maximal projection immediately dominating γ dominates α .

Saito and Lasnik (1992:87)

In (5) the trace is subjacent to its antecedent; IP is a barrier for the trace and *how* is dominated by CP, CP being the maximal projection immediately dominating the barrier IP. In (6), on the other hand, the trace is not subjacent to its antecedent, since the latter is not dominated by CP.¹

The ungrammaticality of (6) can of course also be accounted for by assuming that chain-formation is blocked by a minimality condition on chain-formation (yet to be discussed), and hence that the locality condition

¹ Note that there might be a problem here with respect to the example in (5). In section 2.2 I argued that VP is a barrier in English at S-structure. As a result, the trace is not subjacent to its antecedent at this level. I disregard this potential problem for the moment and return to it in section 3.4.

on chain-formation must be stated as 1-subjacency (leaving aside the question whether the IP of the matrix-clause is a barrier or not). Nevertheless, it can be argued that we need the subjacency condition for independent reasons. Consider the following Dutch examples.

- (8) a. dat Jan dat boek, geprobeerd heeft [_{IP} PRO t_i te lezen]
 b. *dat Jan dat boek, geprobeerd heeft [_{CP} om [_{IP} PRO t_i te lezen]]
 that Jan that book tried has COMP to read
 'that Jan has tried to read that book.'

The example in (8a) has already been discussed in connection with control (cf. 2.3.3). This construction has been called Remnant extraposition, since the extraposed clause contains a trace of the NP *dat boek* that has been scrambled to a position in the matrix-clause. Since this example is fully acceptable to most speakers, we must assume that the trace and its antecedent may enter into a wellformed chain, i.e. that the subjacency condition on chain-formation is satisfied. If we assume that the extraposed IP is L-marked by the main verb of the matrix-clause, this follows immediately: the trace is 0-subjacent to its antecedent. (Recall that we also had to assume that IP is not a barrier to account for the control properties of this construction.)

Now, consider example (8b). This example (which is fully grammatical if Scrambling does not apply) differs from (5a) in only one respect; the addition of the CP-boundary. On the assumption that Scrambling cannot be applied via the intermediate SpecCP, the NP *dat boek* must have been scrambled across CP and IP in one step. Nevertheless, we must assume that it crosses only one barrier (IP), since the CP is L-marked by the matrix verb. Consequently, if the locality condition must be stated as 1-subjacency, we predict (8b) to be grammatical. However, if it must be stated as subjacency as defined in (7), the desired result arises; since the antecedent is not dominated by CP, CP being the maximal projection immediately dominating the barrier for the trace (IP), the trace is not subjacent to its antecedent, and as a result [*het boek*, t] is not a wellformed link of the chain. (Cf. section 4.1 for a more extensive discussion of the boundedness of Scrambling.)

Summarizing the discussion, we may say that we have so far established the following conditions on chain-formation (note that these conditions are similar to the conditions on antecedent-government that were proposed in Rizzi 1990a:92; cf. also Lasnik and Saito 1992:94):

- (9) If [α , β] is a link of α -chain, then:
 (a) α and β are non-distinct;
 (b) α c-commands β ;
 (c) β is subjacent to α , and;
 (d)

The dots in (9d) indicate that something might still be missing. Of course, this should be the relativized minimality condition which states that no typical potential α -antecedent may intervene between α and β . This condition will be discussed in the remainder of this section.

In 2.1.2, I argued that Rizzi's (1990a) reformulation of the ECP (cf. (17) and (45) in 2.1) makes it possible for the set of governors and the set of all heads to coincide, viz. by dropping the assumption that antecedents are included in the set of governor. An immediate result of this delimitation of the set of governors is that Rizzi's Relativized Minimality is voided in as far as it has been designed to block interference of head- and antecedent-government (cf. 2.1.2 for further discussion). What is left of Relativized Minimality is that it states that an antecedent of a certain type cannot interfere with an antecedent-trace relation of another type. In principle, this can be accounted for by adding the minimality condition in (10d) to the set of conditions in (9). This condition is of course a reformulation of Rizzi's definition of Relativized Minimality in section 2.1, (18).

(10) If $[\alpha, \beta]$ is a link of α -chain, then:

-
- (d) there is no γ such that:
 - (i) γ is a typical potential α -antecedent of β ,
 - (ii) γ c-commands β and does not c-command α .

The notion of typical potential α -antecedent can be defined as in (11) which is the reformulation of Rizzi's definition of 'typical potential α -governor' suggested in section 2.1.2.

- (11) a. γ is a typical potential antecedent for β , β in an A-chain \leftrightarrow γ is an A specifier c-commanding β .
- b. γ is a typical potential antecedent for β , β in an A'-chain \leftrightarrow γ is an A' specifier c-commanding β .
- c. γ is a typical potential antecedent for β , β in an X⁰-chain \leftrightarrow γ is a head c-commanding β .

Rizzi (1990a:24ff.) tried to unify the different subcases of the notion of typical potential α -governor by drawing a parallel between binding and government. Although it is feasible to adopt this position (especially since we are now exclusively dealing with antecedent-trace relations), I take another approach here. Since several conditions on chain-formation have been proposed in earlier work, I would like to investigate whether we may exploit them to derive the definitions in (11).

First, consider again the first condition on chain-formation in (9a) which states that $[\alpha, \beta]$ can only be a link of an α -chain if α and β are non-distinct.

This condition which has been adapted from Rizzi (1990a:92) is meant to exclude the formation of "crazy chains". Of course, it is not immediately clear what the notion of crazy chain is understood to mean, but it is obvious that a chain consisting of a maximal projection and a head is a "crazy chain" (leaving Chomsky's 1986a notion of extended chain aside). Let us adopt the following assumption.

- (12) If X is a head and Y is a maximal projection, then X and Y are not non-distinct.

If we now further assume that γ can only be a potential antecedent for β if γ and β are non-distinct, we immediately derive (11c); the fact that an A- or A'-specifier cannot interfere with X^0 -chains follows from the fact that A- and A'-specifiers are always maximal projections. (Obviously, the non-distinctness condition also excludes a head acting as a potential antecedent for an element in an A- or A'-chain.)

If we accept (12), Relativized Minimality comprises no more than the clauses in (11a,b), but probably these can also be derived from more general considerations. In Chomsky (1986a:63) the following Chain Condition was proposed:

- (13) A maximal A-chain ($\alpha_1, \dots, \alpha_n$) has exactly one Case-marked position (namely, α_1) and exactly one θ -marked position (namely, α_n).

The intuitive idea that seems to lie behind this condition is that an A-chain must satisfy both the Projection Principle (which was briefly discussed in section 1.1.2) and Case theory. The clauses in (11a,b) can be derived from this condition, if we assume that γ is only a typical potential α -antecedent if actual coindexing satisfies the condition in (13). Of course, coindexing of an NP-trace and an A'-specifier will violate this condition since as a result the A-chain (which only consists of the trace) is not Case-marked. In a similar way we may derive clause (11a); if we coindex a *wh*-trace and an A-specifier, we create an A-chain with two θ - and/or two Case-marked positions.

Summarizing, we may say that there is no problem with reinterpreting Rizzi's Relativized Minimality as a condition on chain-formation; all we need to do is add the condition in (10d) to the conditions in (9). Further, we have seen that the definition of typical potential α -antecedent in (11) can be derived from more general conditions on chain-formation, namely that γ can only be a typical potential antecedent for β , iff γ and β are non-distinct (cf. (9a), 'non-distinctness' being tentatively defined as in (12)), and actual coindexing of γ and β satisfies the Chain Condition in (13). We can make this

more precise by replacing the condition in (10d) and the definitions of 'typical potential antecedent' in (11) by the minimality condition in the definition in (14d).

- (14) If $[\alpha, \beta]$ is a link of a chain, then:
- (a) α and β are non-distinct;
 - (b) α c-commands β ;
 - (c) β is subjacent to α , and;
 - (d) there is no γ such that:
 - (i) γ is in a base-generated position;
 - (ii) γ and β are non-distinct, and actual coindexing of γ and β does not violate the Chain Condition, and;
 - (iii) γ c-commands β and does not c-command α .

Note that Rizzi's (1990a:27) assumption that γ must occupy a base-generated position has been admitted in the minimality condition in (14d). Of course, this is a feature that follows from (generalized) binding. I will not discuss the question whether we need this condition in the definition of minimality. Rather, I would like to discuss the question whether we need the minimality condition in (14d) at all.

3.2. Does chain-formation exhibit minimality effects?

In the previous subsection, I have shown that we can easily rephrase the notion of antecedent-government in terms of chain-formation. In fact, the definition in (14) seems to be fully equivalent to Rizzi's (1990a:92) definition of antecedent-government. (From now on I therefore replace Rizzi's notion 'antecedent-government' by the notion 'chain-formation' without further discussion, also when discussing Rizzi's proposal.) The fact that I admitted a minimality condition on chain-formation (cf. (14d)) does not imply that I am fully convinced of the need of this condition. In fact, I believe that the evidence in favour of this condition is rather scanty, and hence that it is completely open to debate whether we need it or not. In this subsection, I will try to substantiate this claim.

3.2.1. X^0 -chains

Let us begin with the most convincing evidence in favour of a minimality condition on chain-formation, the Head Movement Constraint (HMC). The descriptive generalization the HMC captures is that a moved head cannot skip an intervening head between its base position and its landing site.

Compare the following example in which a head has been moved to C.

- (15) a. could they *t* have left?
 b. *have they could *t* left?

Note that the trace in example (15b) is properly head-governed by the verb *could* (but see fn.1). Nevertheless, we may rule this example out by reference to the Identification requirement on traces; since there is an intervening head between the trace and its antecedent, chain-formation is blocked under minimality. The HMC therefore seems to provide genuine evidence in favour of Rizzi's approach.

3.2.2. A-chains

Let us now consider the case of Superraising. Consider the following examples:

- (16) a. *John seems that it is likely [*t* to win]
 b. *Bill seems that it was told *t* that ...

In (16b) the trace is governed by the verb, and hence the Formal Licensing requirement is fulfilled. Since in (16a) Raising is possible across a shorter distance (cf. *John is likely to win*), we may assume that the Formal Licensing requirement is fulfilled in this example as well. According to Rizzi we may exclude this example by assuming that the intervening A-specifier *tt* blocks chain-formation.

As was pointed out by Rizzi (1990a:93) himself, his system does not correctly account for the ungrammaticality of these examples; since the moved constituents have been assigned a referential θ-role, we expect that the Identification requirement can be satisfied by binding. Therefore he suggests that these examples are ruled out since there must be something wrong with the transmission of the θ-role. Alternatively, we may assume that Case can only be transmitted through a wellformed chain and not by binding (cf. Cinque 1990:19). As a result the examples in (16) are ruled out by the Case filter or the Chain Condition in (13).

Of course, this supports Rizzi's claim that chain-formation is blocked in (16). And, in fact, I am not denying this. The main point that should be made, though, is that it is not clear whether the impossibility of chain-formation is due to the presence of the intervening A-specifier (i.e. to (14d)) or to the fact that the trace is not subjacent to its antecedent (i.e. to (14c)). Consequently, the examples in (16) cannot be used to argue for a minimality condition on chain-formation.

3.2.3 A'-chains

3.2.3.1 Wh-islands

As was also pointed out by Rizzi himself, the same redundancy between the minimality and the subjacency condition on chain-formation that was detected in 3.2.2 arises in the case of *wh*-islands. Compare for instance the following examples (I leave out the subject case since it is not relevant for our present purpose):

- (17) a. ??which problem do you wonder [_{CP} how [_{IP} John could solve *t t*]]
 b. *how do you wonder [_{CP} which problem [_{IP} John could solve *t t*]]

In (17) chain-formation could be blocked both by the subjacency and by the minimality condition on chain-formation. Since Rizzi (1990a:112) admits that the subjacency condition is needed for independent reasons, these examples cannot be used to argue in favour of the minimality condition.

Let us conclude this subsection with a brief remark on Rizzi's account of the less degraded status of (17a). According to Rizzi, the Identification requirement can be fulfilled in this example by binding, and its degraded status is the result of a violation of the Subjacency Condition. However, as we have seen in 3.1, we also need a subjacency condition on chain-formation. Since chain-formation is clearly a part of Bounding theory, it seems plausible that the Subjacency Condition can now be replaced by this subjacency condition on chain-formation. This, however, would amount to saying that chain-formation and binding are not similar; whereas the Identification requirement can be fully satisfied by chain-formation, binding must be seen as some kind of last resort device that does not fully suffice to save the sentence. The relevance of this discussion will become clear in the following subsection. We will return to binding and the Identification requirement in section 3.3.

3.2.3.2. Inner Islands

Now that we have seen that neither NP-movement nor *Wh*-movement can be used to argue for a minimality condition on chain-formation since in these cases the subjacency condition on chain-formation is always involved as well, let us turn to the cases in which the latter condition cannot be relevant. Consider the following examples:

- (18) a. Bill is here, which they (don't) know
 b. Bill is here, as they (*don't) know

In (18) *Wh*-movement of the adverbial element *as* is blocked by the presence of negation, whereas movement of the argumental element *which* is not. Rizzi accounts for this by assuming that chain-formation is blocked by the intervening negation, the negative element occupying an A' specifier. Consequently, the Identification requirement cannot be fulfilled in (18b), whereas it can in (18a) since, *which* being an argument, only in the latter case can we have recourse to binding.

However, if the suggestion at the end of the previous subsection that binding is some sort of last resort device that can only marginally satisfy the Identification requirement is correct, it is surprising that (18a) with negation is fully acceptable; if chain-formation is blocked in (18a), we would then at least expect that (18a) has a degraded status. This problem may be solved by assuming that chain-formation is only blocked in (18b) because negation is a potential antecedent for the trace of the adverbial element *as* but not for the trace of the argument. In fact, this is what we would expect within our present framework if we adopt Rizzi's (1990a:92) suggestion that the non-distinctness of elements also depends on their indices; since the trace of the argument has a referential index and negation has not, these elements are not non-distinct and hence negation cannot be a potential antecedent for this trace.

On the other hand, we could also assume that negation can never be a potential antecedent, which would of course imply that the unacceptability of (18b) should be accounted for by other means. As has been pointed out to me by Hans den Besten (p.c.), the assumption that *as* is an adjunct is not unproblematic. Consider the following example.

- (19) Bill is here, which/as is widely known

If *as* is not an argument in (19), the example does not contain a subject which should lead to an ungrammatical result in English. Of course, even if we assume that *as* is an argument in (18), we may maintain Rizzi's account of the unacceptability (18b) by assuming that *as* is not strictly referential (cf. fn. 4 in chapter 2 and fn. 2 below).

Note, however, that constructions as in (18b) are not only excluded if the clause contains negation, but also if an adjective prefixed with *un-* is present as in (20). In fact, *as* is always impossible if some 'evaluating' predicate is present (cf. (21)).

- (20) Bill is here, which/*as is unknown

- (21) Bill is here, which/*as is boring

This suggests that the impossibility for *as* to occur in (18b) is not due to a violation of the Identification requirement, but must rather be accounted for by recourse to the semantics of the clause. I leave this to future research.

Additional evidence against the assumption that negation acts as a potential antecedent for an adjunct is provided by the following examples, taken from Rooryck (to appear; in this article various other examples are discussed that pose a problem for the minimality condition on chain-formation):

- (22) a. voilà la façon de laquelle je ne veux pas qu'il répare la voiture
'This is the way in which I don't want him to fix the car.'
- b. voilà les moments auxquels je ne veux pas qu'on me dérange
'These are the times during which I don't want anybody to bother me.'

As can be seen in (22), *wh*-extraction of an adjunct across matrix-negation is possible if the matrix verb is a volitional verb (the same observations can be made with respect to Dutch). Rizzi predicts that the linking of the intermediate trace and the *wh*-phrase in SpecCP of the matrix-clause is blocked under minimality, and hence that the Identification requirement cannot be fulfilled by chain-formation. Nevertheless, the examples are grammatical. Consequently, we must conclude that negation does not act as a potential antecedent in these examples.

In Dutch, various examples can be constructed in which inner island effects seem to occur. Consider, for instance the following examples.

- (23) a. ??hoe aardig vindt Jan hem niet?
how nice considers Jan him not
'How nice does Jan not consider him?'
- b. ??hoe reparerde Jan de auto niet?
how repaired Jan the car not
'How didn't Jan repair the car?'
- c. ??hoe kwaad ging Jan niet weg?
how angry went Jan not PRT
'How angry didn't Jan leave?'

All these cases involve an interrogative clause: in (23a) the *wh*-phrase is a selected predicate, in (23b) it is a manner adverb and in (23c) it is an adjunct AP. The unacceptability of these examples are of course expected if we assume that negation acts as a potential antecedent. But now compare the following examples in which the *wh*-phrase is replaced by a topicalized phrase.

- (24) a. aardig vindt Jan hem niet
 nice consider Jan him not
 'Jan doesn't consider him nice.'
- b. zorgvuldig reparerde Jan de auto niet
 careful repaired Jan the car not
 'Jan didn't repair the car carefully.'
- c. kwaad ging Jan niet weg
 angry went Jan not away
 'Jan didn't leave angrily.'

Since these examples are all fully acceptable, we must again conclude that negation does not act as a potential antecedent for the trace. And since they are structurally identical to the ones in (23), the assumption that we must account for the unacceptability of the latter examples by minimality loses its plausibility.²

3.2.3.3. Factive Islands

Additional support for assuming that the inner island effects must be accounted for in an alternative way can be provided by so-called factive verbs. According to Rizzi (1990a:112), adjuncts (and arguments) cannot be extracted out of the complement of these verbs (the following examples are cited from Rooryck to appear).

- (25) a. *how did he deeply regret that his son had fixed the car?
 b. ?which article did you regret that I selected?

Rizzi (following Kiparsky and Kiparsky) accounted for these facts by assuming that the complements of these verbs are immediately dominated by an NP-node. Alternatively, one may assume that SpecCP is (for whatever reason) not accessible as an intermediate landing-site for the *Wh*-phrase (cf. Rooryck to appear and references cited there). This would imply that *Wh*-movement must have been applied in one swoop. Consequently, chain-

² As can be seen in (i), *Wh*-movement of an object that is not used strictly referentially (see for this notion chapter 2:fn.4) is blocked by an intervening negation as well. Topicalization as in (ii) on the other hand is possible.

- (i) ?hoeveel melk drinkt Jan niet?
 how much milk drinks Jan not
 'How much milk doesn't Jan drink?'
- (ii) veel melk drinkt Jan niet
 a lot of milk drinks Jan not

formation is not possible since the subjacency condition in (14c) is not fulfilled. Since only the object trace can be identified by binding, the difference between (25a) and (25b) follows.

Some evidence against the former approach to these examples can be found in Dutch; in Dutch, NPs can never be extraposed, whereas sentential complements obligatorily undergo this movement. Therefore, if the complement were an NP, we expect it to precede the verb in clause-final position, whereas we expect it to follow it if it is just a regular sentential complement.

- (26) a. *dat Jan [dat hij komt] betreurt
 that Jan that he comes regret
 b. dat Jan betreurt [dat hij komt]

Since the complement obligatorily follows the verb, we must conclude that the complement is not an NP, and that we must adopt the alternative account for the unacceptability of the examples in (25).

As can be seen in (27), *wb*-extraction from the complement of a factive verb is not possible in Dutch either. At least, it is not possible if the complement is a finite clause; if the factive verb selects an infinitival clause, *wb*-extraction of the object gives rise to a perfect result, whereas extraction of an adjunct is still unacceptable (cf. (28)).³

- (27) a. ?welk artikel betreurde hij [CP dat [IP hij t uitgekozen had]]
 which article regretted he that he selected has
 b. *hoe betreurde hij [CP dat [IP hij t de auto gerepareerd had]]
 how regretted he that he the car repaired has

³ The judgements on the examples in (27) and (28) are my own. It must be noted that some of my informants accept both (27a) and (28a), whereas others find them both degraded. However, everyone agrees that (27a) is worse than (28a). Further, some informants find (28b) better than (27b) (but still worse than (28a)). This variation in judgements does not bear on the main point that is made here, viz. that there is an argument-adjunct asymmetry which cannot be accounted for by assuming that chain-formation is blocked by the presence of an intermediate potential antecedent.

I assume that the infinitival complement in (28) is an IP since it cannot take the complementizer *om*. Further, passivization of the matrix verb is excluded as can be seen in (I) which indicates that PRO is governed by the matrix verb (cf. section 2.3).

(I) *er werd betreurd [IP PRO dat artikel uitgekozen te hebben]
 it was regretted that article selected to have

- (28) a. welk artikel betreurde hij [_{IP} PRO *t* uitgekozen te hebben]
 which article regretted he selected to have
 b. *hoe betreurde hij [_{IP} PRO *t* de auto gerepareerd te hebben]
 how regretted he the car repaired to have

How can we account for the grammaticality of (28a)? In (28) the IP is L-marked by the matrix-verb. Consequently, it is not a barrier for the *wb*-trace which is therefore subjacent to its antecedent. So, nothing blocks chain-formation in (28a), and the Identification requirement can be satisfied (cf. the discussion of the examples in (8)).

Given this account of (28a), we also expect (28b) to be grammatical, especially since there is no intervening potential antecedent. What this example therefore shows is that 'inner island' effects are not only evoked by the presence of a negative element (or an 'affective' operator cf. the discussion in Rizzi 1990a), but also occur if it can be demonstrated that there are no intervening specifiers. From this we may conclude that minimality is not relevant here.

3.2.4. Conclusion

In this section, I discussed the question whether we need a minimality condition on chain-formation. I have argued that only the HMC provides direct support for this condition. Further, I have shown in section 3.2.3.2 that there are various counterexamples for this condition. Therefore, I believe that the question whether we need it is still open to debate.⁴

3.3. Binding and the Identification requirement

Consider again the following examples.

- (29) a. ??which problem do you wonder [_{CP} how [_{IP} John could solve *t* *t*]]
 b. *how do you wonder [_{CP} which problem [_{IP} John could solve *t* *t*]]

⁴ I did not discuss the pseudo-opacity effects, so these may still count as evidence for the minimality condition on chain-formation. However, since Rizzi (1990a:17ff.) has shown that these pseudo-opacity effects can also be evoked by negation, it seems to be plausible that pseudo-opacity and inner island effects are similar in a sense. Cf. Rooryck (to appear), Szabolcsi and Zwarts (1991) and De Swart (1991) for alternative approaches to the problems discussed in this section.

We have seen that in (29) chain-formation is blocked since the trace is not subjacent to its antecedent. According to Rizzi the trace in (29a) can be identified through binding, the deviance of this example being due to a violation of the Subjacency Condition. Recall that in section 3.2.3.1, I argued that the assumption of a separate Subjacency Condition leads to redundancy, since we also need a subjacency condition on chain-formation. Further, I suggested that this redundancy can be resolved by subsuming the Subjacency Condition under the subjacency condition on chain-formation. To account for the acceptability of (29a), I suggested that binding is some sort of last resort device that can only marginally identify the trace.

In Cinque (1990), however, the problem (29a) poses was tackled in a different way, namely by distinguishing two different types of barriers. Although his proposal is not immediately compatible with the definition of a barrier argued for in chapter 2, I will show that we can easily amend this. But first, something more must be said about binding.

Recall that according to Rizzi (1990a) the difference between (29a) and (29b) is due to the fact that chain-formation (in his terms: antecedent-government) is an inherently local dependency, whereas binding is an unbounded dependency. As a result, we would expect that identification of the traces of referential expressions can always be obtained by binding. Cinque (1990), however, has shown that this is not the case. Consider the following examples.⁵

- (30) a. *to whom did [speaking *t*] become difficult
- b. *to whom have you found someone who would speak *t*
- c. *to whom did you leave without speaking *t*
- d. ??to whom didn't they know when to give presents *t*

Subject Islands (30a), Complex NP Islands (30b) and Adjunct Islands (30c) never allow *wh*-extraction of an argument. *Wh*-Islands on the other hand do.

To account for the fact that binding is not always possible, Cinque assumes that binding is also a local dependency that requires some sort of 0-subjacency, be it that the barriers that block this dependency are not equal to the barriers that block chain-formation. Adapted a little for reasons that will become clear in fn.7, Cinque's definition of a barrier can be stated as in (31).

⁵ According to Cinque (1990), constructions with a direct object are not conclusive since they may involve a resumptive *pro*, so for our purposes we may only take constructions into consideration in which a PP has been extracted.

- (31) Every maximal projection that fails to be selected (in the canonical direction) by a category non-distinct from [+V] is a barrier.⁶

According to Cinque, the set of categories that are non-distinct from [+V] contains at least A, V, I and C. The full definition in (31) is the definition of a barrier for binding. Without the part within parentheses, (31) is the definition of a barrier for government.

According to (31), *Wh*-movement crosses at least one barrier for binding in (30a–c). In (30a) the subject occupies a position that is not selected in the canonical direction by the verb, SpecIP.⁷ Hence the subject constitutes a barrier for binding and we correctly predict that (30a) is ungrammatical. Relative clauses and adjuncts are of course barriers for binding since they are not selected at all, and we correctly predict that the examples in (30b–c) are excluded.

In (30d), on the other hand, no barrier for binding is crossed since, English being strictly right branching, all maximal projections that are crossed are canonically selected by a category non-distinct from [+V]. (Of course, this account of (30d) recalls Kayne 1984 and Koster 1987). One of the appealing features of this proposal is that it enables us to account for the fact that *wh*-island violations cannot occur in languages such as Dutch and German; in these languages, the canonical direction of government is to the left, but IP is selected to *the right side* of C and hence it constitutes a barrier for binding.

As noted above, Cinque's definition of a barrier in (31) is at odds with the conclusions we reached in chapter 2. According to (31), IP and VP can never be barriers for government since IP and VP are selected by categories non-distinct from [+V], C and I respectively. In chapter 2, however, it was

⁶ Cinque's (1990:42) own formulation is given in (i).

(i) a. Definition of barrier for binding:
Every maximal projection that fails to be (*directly or indirectly selected in the canonical direction*) by a category nondistinct from [+V] is a barrier for binding.
b. Barrier for binding/bounding:
Every maximal projection that fails to be *directly selected* by a category nondistinct from [+V] is a barrier for government.

⁷ If it is selected at all. In the original definition of a barrier for binding, selection is construed as direct or indirect selection. This would predict that Subject Island violations may occur in Dutch. That this prediction is spurious is evident from the fact the Dutch translation of (30a) in (i) is out. Another example is given in (ib).

(i) a. *tegen wie wordt [*t spreken*] moeilijk
b. *op wie is [*t wachten*] saai
for who is waiting boring

Dutch examples like these motivated the adaptation of Cinque's definition given in (31).

argued on the basis of Tense and Control theory that IP and VP can be barriers for government. As long as no alternative account for the data that motivated this claim is available, I think we must reject Cinque's definition of a barrier.

There is another problem with Cinque's definition of a barrier. Note that the definitions of barrier for binding and government differ in only one respect; the direction of selection is only relevant for the definition of a barrier for binding. This distinction is mainly motivated by German examples such as the ones in (32).⁸

- (32) a. *wen_i hast du [_{VP} gesagt [_{CP} er [_{C'} wird [_{IP} _{t_i} sehen]]]])
 who have you said he will see
 b. wen_i hast du [_{VP} gesagt [_{CP} _{t_i} [_{C'} wird [_{IP} er _{t_i} sehen]]]])

Cinque (1990:169, fn.38) accounts for the ungrammaticality of (32a) by the canonical direction requirement; the CP is not on the canonical side of the verb, and hence it is a barrier for binding. Since (32b) is grammatical, we must assume that successive cyclic movement is possible. Cinque (1990:42) accounts for this by assuming that the canonical direction requirement is not relevant for the definition of a barrier for government. Consequently, since the CP is selected by the verb *gesagt*, it is not a barrier for government and as a result the intermediate trace can be properly head-governed and antecedent-governed.

Although the argument seems sound at first sight, there may be a flaw in it. Cinque assumes that the extraposed clause is directly selected on the right-hand side of the verb. This implies that the extraposed clause is a sister of the verb *gesagt* as indicated in (32). However, it can be shown that an extraposed clause is *not* the sister of its governing verb at S-structure. Compare the following Dutch example.

- (33) wat denk je dat Jan gezegd heeft [_{CP} _t dat [_{IP} hij _t zou lezen]
 what think you that Jan said has that he would read

In (33) the extraposed clause is moved across the verb *heeft* which governs the VP headed by the verb *gezegd*. This of course implies that the extraposed clause has been taken out of this VP. As a result, the extraposed

⁸ Other evidence is taken from extraction from Subject Islands. Cinque (1990:31) argues that the canonical direction requirement is a weaker condition than the more fundamental condition of selection. However, since I have shown in fn.7 that barriers for binding cannot be voided by indirect selection (in the canonical direction) in Dutch, no firm conclusions can be drawn from these examples.

clause is not in the governing domain of the verb at S-structure, and the intermediate trace in SpecCP cannot be properly governed by the matrix verb at this level.

Probably, this example can be saved from the ECP by Reconstruction of the extraposed clause at LF *in the preverbal position*,⁹ and there is no need to relax the canonical direction requirement to allow for government into the sentential complement. This implies that it is no longer necessary to distinguish the two barrier-types by means of the direction of selection. But if we drop the part within parentheses in (31), the two barrier-types are no longer distinguishable from each other. To save Cinque's proposal, a new distinction must therefore be introduced.

One way to do this is by revising (31) as in (34) (which is in fact equivalent to one of Cinque's (1990:40) earlier definitions of a barrier).

(34) **Barrier:**

Every maximal projection that fails to be selected in the canonical direction by a (lexical) category non-distinct from [+V] is a barrier.

The full definition in (34) is now the definition of a barrier for government. Without the part within parentheses, (34) is the definition of a barrier for binding. Of course, (34) can easily be made compatible with the definition of a barrier we adopted in chapter 2, (51); the notion of barrier for binding can be defined by replacing the notion of L-marking in this definition by the notion of selection (in the canonical direction).

3.4. At which level do the requirements on traces apply?

Now that we have established both the Formal Licensing requirement (the ECP) and the Identification requirement on traces, we must discuss the question at which level they apply. According to Rizzi (1990a:40), the Identification requirement (in our terms: chain-formation) must be checked at LF, whereas the Formal Licensing requirement (the ECP) must be checked both at LF and at S-structure. As will become clear later in this section, there is a problem with respect to the latter assumption.

The assumption that the Identification requirement is only checked at LF accounts for the fact that constituents containing a trace can be preposed. By this movement, the required configuration for chain-formation will be

⁹ Cf. section 3.4 for further discussion. Note further that examples such as (33) cannot be saved by deletion of the intermediate trace since this would predict that adjuncts cannot be extracted from extraposed clauses. This prediction is wrong, as can be seen in example (37).

destroyed at S-structure. However, if the Identification requirement is only checked at LF, the required configuration can be restored by Reconstruction, and hence the construction passes this requirement (cf. for further discussion and relevant examples Rizzi 1990a:37ff.)

The assumption that chain-formation is only checked at LF also solves the problem noted in footnote 1. Consider again the example in (5), repeated here as (35) in a slightly adapted form.

- (35) I wondered [_{CP} how [_{IP} John I [_{VP} fixed the car *t*]]]

In 3.1, I argued that the adjunct-trace is subjacent to its antecedent, thus satisfying the locality condition on chain-formation. Of course, this account of the grammaticality of (35) only holds if IP is the only barrier within the embedded clause for the adjunct trace. In 2.2, however, we have seen that VP is a barrier at S-structure in English, since V-to-I does not apply in the syntax. Therefore, I is not lexical at S-structure and does not L-mark VP, and hence VP is a barrier at this level. As a result, if the Identification requirement were checked at S-structure, this example should be ruled out, since according to our assumptions this barrier cannot be voided by intermediate adjunction to it (cf. the discussion in 2.1.4). However, if the Identification requirement is only checked at LF, no problem arises, since at this level V-to-I has been applied and the barrierhood of VP will be voided, since it is L-marked by the amalgam I+V at this level.

Besides the assumption that the Identification requirement holds at LF, Rizzi assumes that the Formal Licensing requirement must be checked both at S-structure and at LF. Some of his evidence in favour of this assumption has been taken from German, but can also be reproduced from Dutch. As Rizzi notes there is an asymmetry in Dutch between control and subject raising complements. Whereas in the first case Extraposition of the complement is possible, it is blocked in the latter case. Compare the following examples:

- (36) a. omdat Jan *t_i* probeert [PRO aardig te zijn]_i
 because Jan tries nice to be
 b. *omdat Jan *t_i* schijnt [*t_i* aardig te zijn]_i
 because Jan seems nice to be

This difference between (36a) and (36b) can be accounted for by assuming that after Extraposition has taken place the subject trace is no longer governed by the verb. Since it is assumed that the Formal Licensing requirement must be checked at S-structure, (36b) induces an ECP violation.

However, the same language provides evidence *against* the assumption that the ECP must be checked at S-structure. Consider the following example:

- (37) hoe had hij gezegd [*t'* dat [hij *t* zou komen]]
 how had he said that he would come
 'By what means did he say he would come?'

Example (37) is a case of regular *wh*-extraction. Since the embedded clause is obligatorily extraposed (which can be seen from the fact that it follows the verb *gezegd*), we must assume that the verb *gezegd* does not govern the intermediate trace *t'* at S-structure since the extraposed clause has been taken out of the governing domain of the verb (cf. also the discussion of example (33) in which the moved constituent is an argument). Therefore, if the ECP is checked at S-structure, example (37) should induce an ECP-violation for the same reasons as the example in (36b). Nevertheless, the sentence is grammatical. This leads us to the conclusion that the ECP does not apply at S-structure, but only at LF since at this level the structure can be saved from the ECP by Reconstruction.

As far as I can see, there is no alternative explanation for the grammaticality of (37), and therefore I conclude that both the identification and the Formal Licensing requirement are only checked at LF. This of course leaves the ungrammaticality of (36b) unexplained. In section 9.1, however, I will give an alternative explanation for this example.

3.5. Conclusion

In this chapter, I discussed the Identification requirement on traces. It has been shown that Rizzi's conditions on antecedent-government can be easily rephrased as conditions on chain-formation. Further, it has been argued that the motivation for a minimality condition on chain-formation is not very strong. Therefore, I assumed that the definition of chain-formation can be stated as in (38). If in the future it should prove to be necessary to maintain the assumption of a minimality condition on chain-formation, it can be stated as in (38d).

- (38) If $[\alpha, \beta]$ is a link of a chain, then:
 (a) α and β are non-distinct;
 (b) α c-commands β ; and,
 (c) β is subjacent to α .

- (38) (d) there is no γ such that:
- (i) γ is in a base-generated position;
 - (ii) γ and β are non-distinct, and actual coindexing of γ and β does not violate the Chain Condition, and;
 - (iii) γ c-commands β and does not c-command α .

The notion ‘subjacency’ that was used in the locality condition in (14c) was defined as in (7), repeated here as (39).

- (39) β is *subjacent* to α if for every γ , γ a barrier for β , the maximal projection immediately dominating γ dominates α .

In 3.3, I discussed binding and proposed a revision of Cinque (1990) that is compatible with the present framework. Finally, I discussed the question at which level the Formal Licensing and Identification requirement on traces must apply, and concluded that both apply at LF only.

Part 2

Subject-Object Permutation and the Assignment of Nominative Case

Introduction

In Dutch (and German) the object may precede the subject of the clause in a limited set of constructions. It has been shown by Den Besten (1981, 1982, 1985) that this order can be freely used only if the predicate of the clause is ergative in the sense that it does not have an external argument, i.e. if the S-structure subject is an internal argument of the predicate. If the predicate is unergative, however, the object generally must follow the subject. This can be seen in (1) and (2). In (1) the ergative verb *bevallen* has been used and both orders are possible. In (2), on the other hand, the unergative verb *lezen* has been used and the object cannot precede the subject.

- (1) a. dat de boeken de jongen zijn bevallen
that de books the boy have pleased
'that the books pleased the boy.'
- b. dat de jongen de boeken zijn bevallen
- (2) a. dat de jongen de boeken heeft gelezen
that the boy the books has read
'that the boy read the books.'
- b. *dat de boeken de jongen heeft gelezen

Den Besten further argues that if the object precedes the subject as in (1b), the latter occupies its D-structure position, i.e. has not been moved to SpecIP. Under this analysis, Case-assignment to the subject becomes a problem, since it is not governed by a Case-assigning head; the ergative verb *bevallen* governs the subject *de boeken*, but is not able to assign Case to it, whereas the assigner of nominative Case (I or <+Tense>) does not govern it. To solve this, Den Besten introduces the notion of chain-government and assumes that the subject may receive Case under chain-government by the nominative assigning head.

- (3) α *chain-governs* β iff α governs γ_1 , γ_1 governs γ_2 , ..., γ_{n-1} governs γ_n , and γ_n governs β ($n \geq 1$).

- (4) If NP_i is governed by a category α which cannot or may not assign Case, NP_i will acquire its Case from the first Case-assigner up by which it is chain-governed.

If we assume that I governs the verb *bevallen* in (1b), I chain-governs the subject *de boeken* according to (3), and by (4) it may assign nominative Case to it.

This part in which Den Besten's proposal is summarized is organized as follows. In chapter 4 I will first give a general discussion of the 'free word order' or 'scrambling' phenomenon in Dutch. This is needed in order to delimit and clarify the problem at hand.

In chapter 5 I will discuss the predicate-types that freely allow for the object-subject order, and conclude that Den Besten's generalization that this order can only occur if the predicate is ergative can be upheld. This does not imply, however, that I follow Den Besten in all respects; his claims will be modified in certain respects.

In chapter 6 I will discuss the notion of chain-government in more detail. It is argued that the definition in (3) is too unrestrictive, and therefore it will be revised. Further, the consequences of Den Besten's proposal for NP-movement in Dutch are surveyed. Finally, some attention is paid to the question why chain-government is available in Dutch, but not in English.

4.0. Introduction

As discussed by Koster (1978) and Lenerz (1977) among others, in some constructions in Dutch and German, e.g. passives, the subject of the sentence can be preceded by the object in the 'unmarked' order. Compare for instance the examples in (1).

- (1) a. dat de boeken_{SUBJ} mijn broer_{IO} aangeboden werden
 that the books my brother offered were
 'that the books were presented to my brother.'
 b. dat mijn broer_{IO} de boeken_{SUBJ} aangeboden werden

In the following chapter, we will see that the object-subject order is generally possible in Dutch if the subject is an underlying object, i.e. if the predicate is ergative. However, if the verb is an unergative transitive verb, this order is usually excluded. This can be seen in (2b).

- (2) a. omdat de oude zwerver_{SUBJ} mijn broers_{DO} geschopt heeft
 because the old tramp my brothers kicked has
 'because the old tramp kicked my brothers.'
 b. *omdat mijn broers_{DO} de oude zwerver_{SUBJ} geschopt heeft

As can be seen in (3), German is more permissive in this respect than Dutch; in (3a) the agentive subject *ein alter Penner* can be preceded by the direct object *den Fritz*. The unacceptability of this order in Dutch is probably due (among other things) to the lack of overt Case-marking of full NPs in this language, since if the subject is preceded by an overtly Case-marked pronoun the result is significantly better. This can be seen in (4).

(3) German

- a. weil den Fritz_{acc} ein alter Penner_{nom} getreten hat
 because the Fritz an old tramp kicked has

(3) Dutch

- b. *omdat Frits een oude zwerver geschopt heeft
 because Frits an old tramp kicked has
 'because an old tramp kicked Frits.'

(4) Dutch

- (?) omdat hem een oude zwerver geschopt heeft
 because him an old tramp kicked has
 'because an old tramp kicked him.'

In unergative constructions such as (3) and (4) the object-subject order may only arise if some very severe restrictions are met; this order is only possible if the subject is an indefinite (or more generally: a focused) NP *and* if the object is a definite NP (German) or a pronoun (German and Dutch).

In (1) the object-subject order reflects the underlying order of the arguments. In (2-4), however, the object-subject order is a derived order. Usually, it is assumed that (2b) and (3-4) are derived by a scrambling rule.

Generally speaking, scrambling is invoked to account for the relatively free word order in languages such as Dutch and German. However, it is rather obscure what scrambling is supposed to be; usually, it is used as a kind of cover term. This is especially clear from the description of scrambling given in the announcement of the Tilburg University Workshop on Scrambling (October 18-20, 1990).

Scrambling refers to a set of phenomena in natural languages which have to do with the (relatively) free word order. While the delimitation of this set is not entirely obvious, we take the permutations of XPs (complements and adjuncts) in the inner areas of the sentence to be the core case of scrambling. This means that *wb*-movement (...), extraposition (...) and head movements such as Verb Second are not included. (...) This delimitation is undoubtedly arbitrary in many ways and should itself be considered part of the problem.

Examples of scrambling are given in (5) and (6). In (5) the order of the direct object *die jongens* with respect to the adverbial phrases is free. Generally, it is assumed that the orders in (5b,c) are derived by moving the direct object across the adverbial phrases. In (6) the same is shown for the prepositional object *aan dat probleem*.

- (5) a. dat Jan waarschijnlijk morgen die jongens zal bezoeken
 dat Jan probably tomorrow these boys will visit
 'that John will probably visit these boys tomorrow.'
 b. dat Jan waarschijnlijk die jongens, morgen t_i , zal bezoeken
 c. dat Jan die jongens, waarschijnlijk morgen t_i , zal bezoeken

- (6) a. dat Jan zonder twijfel langer aan dat probleem moet werken
 that Jan without doubt longer on that problem must work
 'that Jan must undoubtedly work on this problem longer.'
 b. dat Jan zonder twijfel aan dat probleem_i langer *t_i* moet werken
 c. dat Jan aan dat probleem_i zonder twijfel langer *t_i* moet werken

In this chapter, the scrambling phenomenon illustrated in (5) and (6) is briefly discussed in order to make a distinction between examples such as (1) on the one hand and examples such as (2-4) on the other.

4.1. Scrambling as a syntactic movement rule

In (5) and (6) it is assumed that the orders in the b- and c-examples are derived by moving the direct/prepositional object across the adverbial phrases. Alternatively, one may assume that the b- and c-examples are base-generated (cf. the discussion in Webelhuth 1984 and references cited there). In Webelhuth (1989:ch.6), however, it was shown that the scrambling rule (henceforth: Scrambling) exhibits all properties of Move α ; more specifically he has shown that all islands for *Wh*-movement are islands for Scrambling as well. If we assume that Scrambling leaves a trace that is subject to the same requirements as *wh*-traces (cf. also Koster 1986), this is immediately accounted for. Additional evidence for this assumption can be provided by the Remnant Extrapolation construction that was briefly treated in 2.3.2. This is discussed in this section. In addition, the consequences of the assumption that Scrambling is an instance of Move α for Chomsky's (1986a) restriction on adjunction are discussed as well.

Generally, it is assumed that Scrambling is a clause-bound process. In fact, it is the first of Grewendorf and Sternefeld's (1990a) generalizations about Scrambling. As can be seen in (7), this generalization is correct at least in so far as finite clauses are concerned.

- (7) "Jan heeft dat boek_i beweerd [CP dat [_{IP} hij *t_i* las]]]
 Jan has that book contended that he read
 'Jan has contended that he was reading that book.'

In Den Besten et al. (1988), Den Besten and Rutten (1989) and Rutten (1991), however, it was argued that Scrambling may sometimes cross the boundary of an infinitival clause.

Compare the example in (8). If we put the sentence in the perfect tense, the matrix verb may appear in two different forms. In (9b) it appears as a participle, whereas in (9a) it appears as an infinitive.

- (8) dat Jan dat boek probeert te lezen
 that Jan that book tries to read
 'That Jan is trying to read that book.'

(9) a. dat Jan dat boek heeft proberen te lezen
 that Jan that book has try to read
 b. dat Jan dat boek heeft geprobeerd te lezen
 that Jan that book has tried to read

From this fact, Den Besten and Rutten conclude that (8) may have two different structures that correspond to the structures of (9a) and (9b), respectively.

What are the structures of (9a) and (9b)? To answer this question, let us first have a look at an example in which the embedded clause has been extraposed. In this case, the matrix verb appears as a participle in the perfect tense. This can be seen in (10)

- (10) dat Jan heeft geprobeerd/*proberen dat boek te lezen
 that Jan has tried try that book to read

This fact led Den Besten and Rutten to the conclusion that the sentence in (9b) is derived from a structure in which Extraposition has been applied as in (10), whereas (9a) is a case of ordinary VR. Additional evidence in favour of the assumption that (9b) is not a case of VR is that both in (9b) and in the Extraposition Construction in (10) the participle may precede the auxiliary verb *beeft*, whereas in the case of VR the raised verb obligatorily follows it, i.e. in (9a) the infinitive may not precede the auxiliary: **dat Jan dat boek proberen beeft te lezen*.

Example (9b) can be derived from (10) by extracting the NP *dat boek* from the extraposed clause and by adjoining it to a projection of the matrix clause, i.e. by Scrambling it out of the embedded clause. Hence the structures of (9a) and (9b) are as given in (11a) and (11b), respectively. The resulting structure in (11b) has been called Remnant Extrapolation or the Third Construction, because it is neither VR nor plain Extrapolation.

This analysis of the examples in (9) receives additional support from examples such as (12) and (13). The fact that in (12) *in ontvangst* may not follow the infinitive *proberen* follows from the fact that it cannot be taken along under VR. Consequently, the fact that in (13) *in ontvangst* preferably

follows the participle *geprobeerd* is not expected if (13) is derived by VR, but receives a natural explanation if we adopt Den Besten and Rutten's analysis, since elements such as *in ontvangst* (which probably must be seen as a quasi-argument or the predicate of a Small Clause) generally resist Scrambling.

- (12) a. dat Jan dat boek in ontvangst heeft proberen te nemen
that Jan that book in acceptance has try to take
'that Jan tried to take delivery of the book.'
 - b. *dat Jan dat boek heeft proberen in ontvangst te nemen
- (13) a. ?dat Jan dat boek in ontvangst heeft geprobeerd te nemen
that Jan that book in acceptance has tried to take
 - b. dat Jan dat boek heeft geprobeerd in ontvangst te nemen

We may account for the fact that Scrambling cannot cross the sentential boundary in (7), but may cross the sentential boundary in (11b) and (13b) by invoking the Identification Requirement on traces. Since Identification of the trace cannot be obtained by binding in Dutch (cf. section 3.3), the trace must enter into a wellformed movement-chain with its antecedent. As we have seen in chapter 3, such a chain can only be established if the conditions in (14) are met.

- (14) If $[\alpha, \beta]$ is a link of a chain, then:
 - (a) α and β are non-distinct;
 - (b) α c-commands β ; and,
 - (c) β is subjacent to α .
- (15) β is *subjacent* to α if for every γ , γ a barrier for β , the maximal projection immediately dominating γ , dominates α .

Now consider example (7), repeated here as (16).

- (16) *Jan heeft dat boek_i beweerd [CP dat [IP hij t_i las]]

In (16) IP is not L-marked by C since we assumed that the complementizer *dat* is not lexical. Hence IP is a barrier for the trace and the trace is not subjacent to its antecedent, since the latter is not dominated by the maximal projection that immediately dominates IP. As a result, chain-formation is blocked by (14c) and (16) violates the Identification Requirement on traces.

Note that this analysis implies that SpecCP cannot be a link in a scrambling-chain.¹

A similar explanation can be given for the impossibility of long distance Scrambling from infinitival clauses that contain the complementizer *om*, as in (17); *om* is not lexical, and therefore IP is a barrier for the trace and chain-formation is blocked since the antecedent of the trace is not dominated by CP.

- (17) *dat Jan dat boek_i heeft geprobeerd [CP om [IP PRO *t_i* te lezen]_i]
 that Jan that book has tried COMP to read

One of the consequences of this explanation is that the infinitival complement in (11b), repeated here as (18), cannot be CP, but must be IP. Otherwise, the construction should be ungrammatical for the same reason as (17) is.

- (18) dat Jan dat boek_i heeft geprobeerd [IP PRO *t_i* te lezen]_i

The IP-complement in (18) is selected, hence L-marked, by the matrix verb *geprobeerd*. Consequently, it is not a barrier for the trace and the required chain can be established, since the trace is subjacent to its antecedent.

Note that we need not assume that an infinitival complement without a complementizer must always be IP. It must be IP only to allow for chain-formation if long distance Scrambling has been applied. If long distance Scrambling does not apply, there is no reason for it not to be CP (although the choice between IP and CP may be subject to the subcategorization properties of the selecting head; cf. section 6.2.1).

As we have seen in section 2.3, Den Besten et al. (1988) argued that infinitival complements without a complementizer may indeed be either IP or CP, since this explains the following paradigm.

¹ We may exclude SpecCP as an intermediate landing-site for Scrambling by assuming that this would be a case of improper movement, i.e. by assuming something like a COMP-to-COMP Condition as in Chomsky (1973) or the following principle proposed by Müller and Stemefeld (1992).

(i) Principle of Unambiguous Binding (PUB):
 A variable that is α -bound must be β -free in the domain of the head of its chain
 (where α and β refer to different types of positions.)

If there really exists something like the COMP-to-COMP Condition or the PUB, we exclude adjunction to VP as an intermediate step in a long *wb*-chain as well, but of course such intermediate adjunctions are not needed within our framework. An alternative way to block intermediate movement to SpecCP is by assuming that this position is only accessible to elements carrying a *wb*-feature.

- (19) a. dat (er) geprobeerd werd [_{CP} Ø [_{IP} PRO dat boek te lezen]
 that it tried was that book to read
 b. *dat (er) dat boek_i geprobeerd werd [_{IP} PRO _i te lezen]
- (20) a. dat hem verboden werd [_{CP} Ø [_{IP} PRO dat boek te lezen]
 that him forbidden was that book to read
 'that he was forbidden to read the book.'
 b. dat hem dat boek_i verboden werd [_{IP} PRO _i te lezen]

Let us briefly repeat the discussion of these examples. First consider (19). What explains the difference in grammaticality between (19a) and (19b)? In (19b) the infinitival complement must be an IP, since otherwise chain-formation would be blocked. Since IP is not a barrier for the trace, it cannot be a barrier for PRO either. Hence PRO is governed by the matrix verb. According to the assumption that governed PRO is an anaphor (cf. section 2.3), PRO is an anaphor in (19b) as a result. Since there is no antecedent to bind PRO in (19b), binding condition A is violated. Hence the sentence is ungrammatical. In (19a), on the other hand, long distance Scrambling does not apply. If we assume that the infinitival complement is CP, PRO is not governed, because IP is a barrier for PRO. Consequently, PRO is not an anaphor and need not be bound. As a result, the sentence is fine.

In (20) it does not matter whether PRO is governed or not, since there is an antecedent (the indirect object *hem*) that can bind or control it. Hence both (20a), in which PRO is not governed, and (20b), in which PRO is governed, are grammatical.

This indicates that infinitival complements without an overt complementizer may be either IP or CP. If long distance Scrambling has applied, it must be IP, because otherwise chain-formation would be blocked. In passives like (19a), though, it must be CP because otherwise binding condition A would be violated. (19b) is ungrammatical, since the complement may not be CP to make chain-formation possible, but must be CP to avoid a violation of the Binding theory. So, either choice results in ungrammaticality.

Now that we have seen that Scrambling leaves a trace that is subject to the Identification Requirement on traces, we may focus on the landing-site of Scrambling. Generally it is assumed that Scrambling adjoins the moved constituent to a higher projection (cf. section 4.4 for a discussion of the recent view that Scrambling is in fact A-movement to a specifier position). Let us assume that this is correct. Consider the examples in (21).

- (21) a. dat Jan waarschijnlijk de man het boek gegeven heeft
 that Jan probably the man the book given has
 'that Jan has probably given the man the book.'
 b. dat Jan de man waarschijnlijk het boek gegeven heeft
 c. dat Jan de man het boek waarschijnlijk gegeven heeft

Again, the word orders in (21b) and (21c) are derived from (21a) by scrambling the object(s) across the adverbial. In principle, two positions are available as an adjunction site for the objects, VP and I'; adjunction to IP can be excluded offhand, because this would imply that the object(s) should precede the subject. The two possible structures of (21c) are given in (22) (*heeft* occupies the I position; further irrelevant details are omitted).

- (22) a. dat [_{IP} Jan [_{VP} de man_i [_{VP} het boek_j [_{VP} waarschijnlijk
 [_{VP} _{t_i} _{t_j} gegeven]]]]] heeft
 b. dat [_{IP} Jan [_{I'} de man_i] [_{I'} het boek_j] [_{I'} waarschijnlijk
 [_{I'} [_{VP} _{t_i} _{t_j} gegeven] heeft]]]]]

The restriction on adjunction of XP from Chomsky (1986a:6) selects (22a) as the right structure, since it states that adjunction is only possible to a *maximal projection* that is a non-argument. However, since we argued that scrambling-traces are subject to the Identification Requirement on traces, (22a) cannot be the right structure according to the present framework. According to our definition of a barrier (section 2.1, (51)), all the lower VP-nodes in (22a) are barriers and therefore neither of the traces is subjacent to its antecedent, and consequently chain-formation will be blocked (cf. (14c)).

In structure (22b) adjunction has taken place not to a maximal, but to an intermediate projection. Because intermediate projections are never barriers by definition (cf. (51) in section 2.1), the traces in (22b) are subjacent to their antecedent, and consequently the locality condition on chain-formation is observed. Therefore, this structure must be the right one.² Our definition of a barrier thus forces us to drop Chomsky's restriction on adjunction of XPs.

² I will not go into the precise position of sentence adverbs such as *waarschijnlijk* in (22b). Generally it is assumed that sentence adverbials are not within the VP-domain (Verhagen 1986). Here it is assumed that they are generated as adjuncts of I'. Note that if it can be shown that sentence adverbials are not generated as adjuncts of I', but of VP, we must assume that segments that arise as a result of base-generated adjunction do not count as separate maximal projections. Otherwise, the presence of such adverbials will always create VP-islands. This is not true in Dutch. The consequence for (22a) will be that _{t_i} is antecedent-governed, but that _{t_j} is not.

4.2. Domains of application

In the previous section, we have seen that Scrambling is an instance of the general rule Move α . Further, it has been argued that if Scrambling is an adjunction operation, the adjunction-site must be an intermediate projection since otherwise Scrambling would be island creating. Now consider again the examples in (5), repeated here as (23).

- (23) a. dat Jan waarschijnlijk morgen die jongens zal bezoeken
that Jan probably tomorrow these boys will visit
'that John will probably visit these boys tomorrow.'
- b. dat Jan waarschijnlijk die jongens_i morgen t_i zal bezoeken
- c. dat Jan die jongens_i waarschijnlijk morgen t_i zal bezoeken

Since the order of the direct object and the adverbial phrases is free, we may conclude that the adjunction-site of Scrambling is different in (23b) and (23c). If we assume that sentence adverbs such as *waarschijnlijk* are generated VP-externally (cf. fn.2), we must conclude that in (23c) the scrambled NP is adjoined to a VP-external position, viz. I'. Whether the NP is adjoined to a VP-external position in (23b) or not cannot be decided beforehand. Below, it will be argued that it is not, and hence that we must distinguish at least two distinct domains of application for Scrambling, IP and VP. The argument is based on the VP-topicalization construction which also lends support to the assumption that sentential adverbs are generated in a VP-external position.

In VP-topicalization constructions (Den Besten and Webelhuth 1989) the initial position of the sentence is occupied by a verbal projection. Some examples of this construction are given in (24).

- (24) a. [dat boek gelezen] heeft Jan niet
that book read has Jan not
- b. [dat boek lezen] zal hij niet
that book read shall he not

There is some disagreement on the derivation of this construction. According to Den Besten and Webelhuth (1989, 1990), the initial phrase has been preposed. According to Haider (1990), however, it has been base-generated. For the discussion in this section the outcome of the debate is irrelevant. For our present purpose it suffices that the initial phrase has VP-like properties and that it can be interpreted as if it occupies a regular VP-position. For the moment, I adopt Webelhuth and Den Besten's assumption that the phrase is a full VP. This implies that in (25) the initial constituent contains a trace of the argument of the verb *lezen*, the NP *dat boek*.

- (25) a. [t_i gelezen] heeft Jan dat boek_i niet
 b. [t_i lezen] zal hij dat boek_i niet

If the initial constituent is indeed a VP, VP-external elements cannot be Pied Piped under VP-topicalization. So, if sentence adverbs are indeed generated VP-externally, we predict that they cannot be included in the preposed constituent. As can be seen in (26), this prediction is fulfilled.

- (26) a. *[waarschijnlijk dat boek lezen] zal hij niet
 probably that book read shall he not
 b. [dat boek lezen] zal hij waarschijnlijk niet
 that book read has he probably not

Adverbs of time on the other hand can occur within the initial constituent (cf. (27)), which indicates that they may be generated VP-internally.

- (27) [morgen dat boek lezen] zal hij waarschijnlijk niet
 tomorrow that book read shall he probably not

Now, if VP-internal Scrambling is indeed possible, we predict that Scrambling across the adverb of time is possible in the preposed VP-constituent. As we can see in (28), the VP-topicalized counterpart of (23b), this is indeed possible. (The NP *die jongen* is adjoined to the intermediate projection of the verb).

- (28) [_{VP} die jongen_i morgen t_i bezoeken] zal Jan waarschijnlijk niet

Therefore, we may conclude that Scrambling can be applied both VP-internally and VP-externally, i.e. that we must indeed distinguish two domains of application.

4.3. Scrambling and argument inversion

Above, we have seen that arguments may be moved across adjuncts by means of Scrambling. In this section, I focus on the permutation of arguments. In 4.3.1, I address the subject-complement permutation in the case of unergative predicates. Some examples of this permutation-type have already been given in (2–4). In 4.3.2, the permutation of complements is discussed.

4.3.1. Subject-complement permutation

In chapter 1, we adopted the VP-internal subject hypothesis and assumed that the subject is base-generated in SpecVP. If it is a non-specific indefinite NP, the subject cannot be moved to SpecIP in Dutch but must appear in an expletive construction as in (29).³ Since the subject *iemand* is not in SpecIP in (29), we may assume that it occupies its base-position, SpecVP.⁴

- (29) dat (er) waarschijnlijk iemand morgen die jongens
 that there probably someone tomorrow these boys
 zal bezoeken
 will visit
 'that someone will probably visit these boys tomorrow.'

As can be seen in (29), the sentence adverb *waarschijnlijk* precedes the non-specific subject which again confirms the assumption that it is generated VP-externally. The adverb of time *morgen* on the other hand follows the subject and precedes the object *die jongens* which indicates that it is adjoined to V'. If this is indeed correct, we are able to give the more accurate structure in (30).

- (30) dat (er) waarschijnlijk [_{VP} iemand [_{V'} morgen [_V die jongens _{t₁}]]]
 zal bezoeken,

If the movement in (23b) is indeed VP-internal Scrambling and if Scrambling is adjunction to an intermediate projection, we predict that the direct object may follow the non-specific indefinite subject and precede the adverb *morgen* after Scrambling. As can be seen in (31), this prediction is correct.

³ Note that in Dutch the expletive construction is not restricted to unaccusative verbs as the English *there*-construction is. In examples such as (29) and (31), the expletive *er* is preferably deleted. This is due to the presence of a definite object. In chapter 6, the expletive construction will be discussed in more detail.

⁴ If this is really the case, the unacceptability of the VP-topicalization constructions in (i) comes as a surprise.

- (i) a. *[iemand een boek gelezen] heeft er niet
 someone a book read has there not
 b. *[iemand een boek lezen] zal er niet
 someone a book read shall there not

In (i) the subject must be stranded, even though the subject is indefinite. According to most of my informants and myself there is a general ban on pied piping of the subject. In Haider (1990), however, German examples of this kind are reported as acceptable.

- (31) dat (er) waarschijnlijk iemand die jongens_i morgen *t_i* zal bezoeken

Of course, we also predict that the non-specific indefinite NP follows a constituent that has been scrambled to a VP-external position as in (23c). As can be seen in (32a), however, Scrambling of the direct object across the subject leads to an unacceptable result in Dutch. Nevertheless, if the scrambled constituent is a prepositional object as in (32b), the prediction is confirmed. Further, as can be seen in (33), if the scrambled NP is a Case-marked pronoun, the resulting structure is fine.

- (32) a. *dat die jongens_i waarschijnlijk iemand morgen *t_i* zal bezoeken
 b. dat aan dat probleem zonder twijfel iemand langer moet werken

- (33) (?)dat hem_i waarschijnlijk iemand morgen *t_i* zal bezoeken
 that him probably someone tomorrow will visit
 'Probably, someone will visit him tomorrow.'

This indicates that the unacceptability of (32a) is not due to the fact that Scrambling has applied across the subject but to the fact that full NPs are not morphologically Case-marked in Dutch. This would account for the fact that examples such as (32a) are fully acceptable in German (cf. for instance example (3a)).

Whereas in Dutch subject-object permutation is only possible if the subject is an indefinite NP, it can apply in German whenever the subject is focused. Consider the following German example, taken from Lenerz (1977:100).

- (34) daß der Playboy_{nom.} dem Filmsternchen_{dat.} eine Brosche geschenkt hat
 that the playboy the moviestar a brooch given has
 'that the playboy gave the moviestar a brooch.'

In (34) either the subject *der Playboy* or the object *dem Filmsternchen* may represent new information, i.e. (34) can be used as an answer either to the question in (35a) or to the question in (35b).

- (35) a. *wer_{nom.}* hat dem Filmstern_{dat.} eine Brosche geschenkt?
 'Who gave the moviestar a brooch?'
 b. *wem_{dat.}* hat der Playboy_{nom.} eine Brosche geschenkt?
 'To whom gave the playboy a brooch?'

If (34) is used as an answer to (35a), the subject receives focal (i.e. non-contrastive, rhematic) stress as in (36a), whereas if it is used as an answer to (35b), the object must be assigned focal stress as in (36b). Focal stress is indicated with capitals.

- (36) a. daß der PLAYboy dem Filmsternchen eine Brosche geschenkt hat
 b. daß der Playboy dem FILMsternchen eine Brosche geschenkt hat

If the object has been scrambled across the subject as in (37), focal stress can only be assigned to the subject; (37b) in which the object is stressed is unacceptable. Accordingly, (37) can only be used as an answer to (35a).

- (37) a. daß dem Filmsternchen der PLAYboy eine Brosche geschenkt hat
 b. *daß dem FILMsternchen der Playboy eine Brosche geschenkt hat

According to Lenerz, the difference between (36) and (37) follows from the fact that the order in (37) is marked with respect to the one in (36). Lenerz defines the notion '(un)marked' as follows:

Wenn zwei Satzglieder A und B sowohl in der Abfolge AB wie in der Abfolge BA auftreten können, und wenn BA nur unter bestimmten, testbaren Bedingungen auftreten kann, denen AB nicht unterliegt, dann ist AB die 'unmarkierte Abfolge' und BA die 'markierte Abfolge'.

Lenerz (1977:27)

When two phrases A and B may occur both in the order AB and in the order BA, the order AB is 'unmarked' and the order BA is 'marked', if BA can only occur when certain testable conditions are met to which AB is not subject.

(translation HB)

It is plausible to assume that the markedness of the order in (37) with respect to the one in (36) follows from the fact that (37) is derived by Scrambling. As has been noted frequently, the presupposition generally precedes the focus of a clause (cf. for instance Lenerz 1977 and Bennis 1986 and references cited there). This is stated in (38), taken from Bennis (1986:223).

- (38) Unmarked Pragmatic Order of Constituents (UPOC):
 Presupposition — Focus

If we assume that Scrambling of a constituent X across a constituent Y may only apply if the resulting structure is in accordance with the UPOC, i.e. that structures derived by Scrambling must observe the UPOC, the facts in (36) and (37) are accounted for. In (36) Scrambling does not apply and therefore both (36a) and (36b) are acceptable, even though (36a) does not observe the UPOC. The order in (37), on the other hand, is derived by Scrambling of the object across the subject. Since in (37a) the resulting structure is in accordance with the UPOC, this example is acceptable, but in (37b) Scrambling distorts the UPOC, and the resulting structure is unacceptable.

Possibly, we may even go further and assume that constituents that do not belong to the presupposition of the clause cannot be scrambled at all. This would account for the fact that non-specific indefinite NPs such as *iemand* which always belong to the focus of the clause cannot be scrambled across a sentential adverb; if an indefinite NP crosses such an adverb they always receive a specific or generic interpretation (cf. Verhagen 1986 and references cited there).

However, the assumption that constituents that do not belong to the presupposition of the clause cannot be scrambled at all cannot be maintained in full force. Consider the following example.

- (40) dat Jan waarschijnlijk iemand morgen t_1 zal bezoeken (\pm spec.)

In (40) the indefinite NP *temand* has been scrambled across the adverb *morgen* and nevertheless it may receive a non-specific interpretation. Since it follows the sentence adverb *waarschijnlijk*, we may conclude that it is scrambled VP-internally. To account for the difference between (39b) and (40), we may assume the following condition (cf. also Diesing 1988).

- (41) VP-external Scrambling may not apply to constituents that do not belong to the presupposition of the clause.

This concludes our discussion of subject-object permutation.

4.3.2. Complement permutation

Now, consider the examples in (42) and (43), again adapted from Lenerz (1977:43).

- (42) a. daß Ich dem KasSIErer_{dat.} das Geld_{acc.} gegeben habe
that I the cashier the money given have
'that I gave the money to the cashier.'
- b. daß Ich dem Kassierer das GELD gegeben habe
- (43) a. daß Ich das Geld dem KasSIErer gegeben habe
b. ?daß Ich das GELD dem Kassierer gegeben habe

In (42) focal stress may be assigned both to the indirect object *dem Kassierer* or to the direct object *das Geld*. In (43), however, only the indirect object may receive focal stress. Consequently, this implies that the order in (42) is unmarked with respect to (43). This conclusion is supported by the fact that the ACC-DAT order does not frequently occur in Dutch. Probably, this is due to the fact that Dutch speakers can avoid this construction by using the so-called periphrastic (or prepositional) indirect object which can be more easily preceded by a direct object. This does not imply, however, that examples such as (43a) are ungrammatical as is often believed (cf. Schermer-Vermeer 1991:chapter 8 for further discussion). For instance, if the particle *aan* is present as in example (44), the periphrastic indirect object gives rise to a degraded result, and in these cases the ACC-DAT order is accepted by most, if not all, Dutch speakers (cf. Den Besten 1985:fn.2 for other examples).

- (44) a. dat ik Jan de boeken aangeboden heb
that I Jan the books offered have
- b. dat ik de boeken Jan aangeboden heb

As in (42), in (44a) focal stress can be assigned both to the indirect object *Jan* and to the direct object *de boeken*, whereas in (44b) it must be assigned to the indirect object.

As in the case of the DAT-NOM order in (37), I assume that the ACC-DAT order in (43) and (44b) is marked since it is derived by Scrambling, i.e. that the D-structure of this example is as given in (45) in which NP₁ represents the subject, NP₂ the indirect object and NP₃ the direct object.⁵ This structure

⁵ Of course, I am aware of the recent proposals which assign a more articulated structure to the double object construction. It must be noted that proposals such as Larson's (1988) cannot be applied to Dutch since they wrongly predict that in Dutch the indirect object must be promoted to subject as in English. More promising is the proposal by Den Dikken (1990, 1992)

(continued...)

differs slightly from the one proposed in Den Besten (1985); he assumes that the indirect object is immediately dominated by VP, whereas I assume that it is immediately dominated by an intermediate projection of V.⁶

- (45) dat [_{VP} NP₁ [_{V'} NP₂ [_{V'} NP₃ V]]]

The unacceptability of (43b) can now be accounted for by recourse to the UPOC in (38); since Scrambling distorts the UPOC, the resulting structure is unacceptable. In passing, note that according to Lenerz (43b) is less degraded than (37b). Possibly, this follows from the fact that in (37b) the condition in (41) is violated as well, whereas this need not be so in (43b); in (43b) Scrambling may have been applied VP-internally.

⁵ (...continued)

and Den Dikken and Mulder (1991), although I am not fully convinced yet that it can be maintained in the long run. Given the complexity of this work and since it is not entirely clear to me whether it can be made compatible with the work at hand, I will not discuss it here.

⁶ Although this difference seems trivial, it is not. According to Den Besten, both objects are assigned Case under government; the direct object is assigned accusative Case by the verb, and the indirect object is assigned dative (oblique) Case by the —lowest— V'. Since we assumed in chapter 2, that only heads are governors (which implies that only heads can be Case-assigners), we cannot adopt this assumption. However, if we assume that both V'-boundaries are segments of the same node, we may adapt this proposal as follows. Since the two V'-boundaries are segments of the same node, both objects are c-commanded (cf. chapter 2 (46)) and governed by V. Consequently, if we assume that the verb can assign both accusative and dative Case, both objects can be assigned Case under government by the verb itself.

By assuming that both Cases are assigned by the verb itself, we may possibly account for the fact that the example in (1) allows for two types of passivization; the regular one in (ii) and the so-called *krijgen-* or semi-passive in (iii) (Geerts et al. 1984:1059; Drozdowski et al. 1984:183ff.).

- | | | | | | |
|-------|------|-----------|-----------|------------|---------|
| (i) | dat | ik | Jan | de boeken | aanbod |
| | that | I | Jan | the books | offered |
| (ii) | dat | de boeken | Jan | aangeboden | werden |
| | that | de books | Jan | offered | are |
| (iii) | dat | Jan | de boeken | aangeboden | kreeg |
| | that | Jan | the books | offered | got |

We may account for these examples by assuming that the passive morphology absorbs one (and only one) Case, the choice depending on the selected auxiliary. Note, however, that it is not clear whether we are dealing with a syntactic passive in (iii), since this construction is not fully productive in Dutch and its application seems to be restricted in several idiosyncratic ways.

4.4. Some remarks on Object Shift

Above, I assumed that Scrambling adjoins an XP to a higher projection. Recently, however, it has been argued that the free word order in Dutch may be partially accounted for by a Case-driven movement of the direct object to a unique Case-marked position, the specifier position of the AGR_OP (Vanden Wyngaerd 1989). In this section, I will argue that this proposal cannot be maintained (cf. also Vikner 1990a,b), but first let us discuss it in more detail.

Vanden Wyngaerd's (1989) argument in favour of the Object Shift rule is based on the observation that Scrambling may feed A-binding. First consider the German triadic construction in (46).

- (46) er hat dem Mädchen_{dat} einen Mann_{acc}. vorgestellt
 he has the girl a man introduced
 'He introduced a man to the girl.'

Like Vanden Wyngaerd, we assumed that the order in (46) reflects the base-generated order. Now, Compare the following German examples, taken from Webelhuth (1989).

- (47) *er hat den Gästen_i einander_i vorgestellt
 he has the guests (dat.) each other introduced
 'He introduced each other to the guests.'

- (48) er hat die Gäste_i einander_i *t_i* vorgestellt
 he has the guests (acc.) each other introduced
 'He introduced the guests to each other.'

In (47) the indirect object is not able to bind the direct object, even though the c-command requirement on binding is fulfilled. Given the binding theory this fact is unexpected. One way to solve this problem is to assume that, in addition to binding condition A, anaphor-binding is subject to a thematic hierarchy such as proposed by Kiss (1987:178).

In (48) the direct object has been moved across the indirect object; in this construction the direct object is able to bind the indirect object. If the word order in (48) is the result of Scrambling, the grammaticality of (48) is surprising, since Scrambling is assumed to be movement to an A'-position and, consequently, the anaphor should be able to be A'-bound. On the other hand, if the word order in (48) is the result of Object Shift, the grammaticality of (48) is as expected, since Object Shift is movement into an A-position.

As in German, movement across an indirect object may feed A-binding in Dutch. This can be seen in (49), the Dutch counterpart of (48), adapted from Daalder and Blom (1976).⁷

- (49) hij heeft die mensen_i elkaar *t_i* aanbevolen
 he has those people each other recommended
 'He recommended those people to each other.'

The same observation can be made if the direct object has been moved across a prepositional indirect object as in (50).

- (50) hij heeft die mensen_i aan elkaar *t_i* voorgesteld
 he has those people to each other introduced
 'He introduced those people to each other.'

An apparent problem for the Object Shift account of the grammaticality of the examples in (48–50), however, is that parasitic gaps can be licensed by Scrambling as well. This can be seen in the German example in (51).

- (51) er hat die Gäste_i [ohne *a_i* anzuschauen] dem Pfarrer {
 he has the guests without looking at the priest
 vorgestellt
 introduced
 'He introduced the guests to the priest without looking at them.'

Since parasitic gaps cannot be licensed by moved constituents in an A-position (cf. Chomsky 1982), we must assume that the direct object occupies an A'-position.

To account for both (47) and (48), Webelhuth (1989) assumes that a scrambled NP may serve both as an A- and as an A'-binder. In fact, it can be an A- and A'-binder simultaneously as can be seen in (52) and (53).

⁷ The claim that (49) is the Dutch counterpart of (48) is not uncontroversial since the objects are not morphologically Case-marked in Dutch. In Daalder and Blom (1976) it is assumed that the NP *die mensen* is the indirect object in (49). This analysis is based on the implicit assumption that the direct object cannot precede the indirect object in Dutch. As we have seen in the 4.3.2, this assumption is not correct.

- (52) er hat die Gäste_i [ohne e_i anzuschauen] einander_i t_i
 he has the guests without looking at each other
 vorgestellt
 introduced
 'He introduced the guests to each other without looking at them.'
- (53) hij heeft de gasten_i [zonder e_i te bekijken] aan elkaar_i t_i
 he has the guests without looking at to each other
 voorgesteld
 introduced
 'He introduced the guests to each other without looking at them.'

Vanden Wyngaerd is able to give a more principled account for the grammaticality of (52) and (53) (cf. also Mahajan 1990). Since we have seen in section 4.2 that we must distinguish two distinct domains of Scrambling, Vanden Wyngaerd may assume that the object has been moved in two steps. The first step is Object Shift to a position between the adverbial phrase and the indirect object. The second step is Scrambling to a position preceding the adverbial phrase. Consequently, the correct representation of (52) and (53) must be as in (54) in which t_i is the trace left by Object Shift and t'_i is a scrambling trace.

- (54) a. er hat die Gäste_i [ohne e_i anzuschauen] t'_i einander_i t_i vorgestellt
 b. hij heeft de gasten_i [zonder e_i te bekijken] t'_i aan elkaar_i t_i
 voorgesteld

Therefore, the binding facts in (54) seem to favour the assumption of Object Shift in Dutch.

Nevertheless, I believe that Vanden Wyngaerd's account of (52) and (53) is not tenable. Consider the following Dutch examples.

- (55) a. dat Jan dat boek_i waarschijnlijk [zonder e_i te lezen] t_i opbergt
 that Jan that book probably without to read files
 'that Jan will probably file that book without reading.'
 b. *dat Jan dat boek_i [zonder e_i te lezen] waarschijnlijk t_i opbergt

In (55) the adverbial clause containing the parasitic gap follows the sentential adverb. Since the sentential adverb demarcates the VP domain, this indicates that the adverbial clause is VP-internal.

This conclusion receives additional support if we take constructions with an indefinite subject or VP-topicalization into consideration; the adverbial

phrase follows the indefinite subject and is pied piped if the VP is topicalized.⁸

- (56) dat waarschijnlijk iemand dat boek_i [zonder e_i te lezen] t_i opbergt
- (57) a. [_{VP} zijn boeken_i [zonder e_i te lezen] t_i opgeborgen] heeft hij niet
 b. [_{VP} [zonder e_i te lezen] t_i opgeborgen] heeft hij zijn boeken_i niet
 c. ?[_{VP} t_i opgeborgen] heeft hij zijn boeken_i [zonder e_i te lezen] niet

The same facts hold with respect to the Dutch example in (53). The sentence adverb may precede or follow the scrambled object, but it cannot follow the adverbial clause (cf. (58)), the adverbial clause follows the indefinite subject *iemand* (cf. (59)), and the adverbial clause must be pied piped even if the object is stranded (cf. (60)).

- (58) hij heeft (waarschijnlijk) de gasten (waarschijnlijk) zonder te bekijken (?*waarschijnlijk) aan elkaar voorgesteld
- (59) gisteren heeft waarschijnlijk iemand de gasten zonder te bekijken aan elkaar voorgesteld
- (60) a. [_{VP} De gasten zonder te bekijken aan elkaar voorgesteld] heeft hij niet
 b. [_{VP} zonder te bekijken aan elkaar voorgesteld] heeft hij de gasten niet
 c. *[_{VP} aan elkaar voorgesteld] heeft hij de gasten zonder te bekijken niet

⁸ The example in (57b) is adapted from Den Besten (ATW-talk, february 6, 1987, Amsterdam). Of course, one might assume that the preposed constituent is not a VP, but an AGR_OP. Such an assumption will need further motivation, since other functional projections such as IP cannot be fronted. Compare the following examples.

- (i) a. Jan had [_{VP} naar Groningen t_i] willen gaan,
 Jan had to Groningen want go
 'Jan would have liked to go to Groningen.'
 b. [_{VP} naar Groningen gaan] heeft hij niet gewild
- (ii) a. Jan heeft [_{IP} een boek t_i] proberen te lezen,
 Jan has a book try to read
 'Jan has tried to read a book.'
 b. ?[_{IP} een boek te lezen] heeft Jan niet geprobeerd

Since the adverbial phrase is VP-internal, the intermediate trace t_1 in (54) must be VP-internal as well. This implies that it cannot be in the specifier-position of AGR_0P but that it occupies a derived A'-position. Consequently, we have to reject the idea that Object shift has applied in (54).

Another objection to Vanden Wyngaerd's proposal is that it does not account for the facts that have been discussed in 4.3.2. As we have seen there, the direct object may either precede or follow the indirect object. If Object Shift is indeed a Case-driven movement, this is unexpected. Further, it is surprising that if the direct object precedes the indirect object, the first cannot carry focal stress. This becomes clear if we compare the following English question-answer pair.

- (61) Q: who saw John?
A: BILL saw John

In (61) *BILL* carries focal stress even though it does not occupy its base-position, SpecVP. Therefore, if the direct object is moved to Spec AGR_0P for reasons of Case, we expect it to behave similarly to an NP-moved subject with respect to the assignment of focal stress. Nevertheless, this is not the case.

For these reasons, I will assume in this study that Object Shift does not apply in German and Dutch. Of course, the binding facts that motivated Vanden Wyngaerd's proposal must be accounted for. In 6.3.5, I return to this problem.

4.5. Conclusion

In this chapter, some properties of Scrambling have been discussed. The most important property for our present purpose is that Scrambling results in a marked order in Lenerz's sense. In the following chapter, it will be shown that in constructions such as (1) the object-subject order is unmarked, whereas we have seen in this chapter that this order is the marked one in constructions such as (3) and (4).

5.0. Introduction

In the previous chapter, we have seen that in the case of unergative verbs the object-subject order may only arise if some severe restrictions are met. This is particularly clear in Dutch where this order can only occur if the subject is indefinite *and* if the object is a pronoun; an example such as (1) is unacceptable even if the subject receives focal stress.

- (1) *omdat mijn broers_{DO} de oude zwerver_{SUBJ} geschopt heeft
 because my brothers the old tramp kicked has
 'because the old tramp has kicked my brothers.'

In some constructions in Dutch and German, however, the subject of the sentence can be preceded by the object in the unmarked order. Compare for instance the following examples.

- (2) a. dat de boeken_{SUBJ} mijn broer_{IO} aangeboden werden
 that the books my brother offered were
 'that the books were presented to my brother.'
 b. dat mijn broer_{IO} de boeken_{SUBJ} aangeboden werden

In this chapter, we will discuss examples such as (2) which more readily allow the object to precede the subject. To avoid confusion between the permutation such as in (2) and those discussed in the previous chapter, most examples in this chapter are taken from Dutch (a sample of German examples can be found in Den Besten 1985), and the use of pronominal objects is avoided.

Lenerz (1977:116) has shown that the order in (2b) is unmarked with respect to (2a). Recall that the notion '(un)marked' has been defined as follows:

When two phrases A and B may occur both in the order AB and in the order BA, the order AB is 'unmarked' and the order BA is 'marked', if BA can only occur when certain testable conditions are met to which AB is not subject.

That the subject-object order in (2a) is marked is clear, since it is not possible if the subject is a non-specific indefinite NP, whereas the object-subject order is not restricted in this way. The same can be shown by taking the following German examples from Lenerz into consideration.

- (3) a. daß dem KIND_{dat} das Fahrrad_{nom.} geschenkt worden ist
that the child the bicycle given been is
'that the bicycle has been given to the child.'
 - b. daß dem Kind das FAHRRad geschenkt worden ist
- (4) a. ?daß das FAHRRad dem Kind geschenkt worden ist
 - b. daß das Fahrrad dem KIND geschenkt worden ist

Whereas the subject-object order may only occur if the indirect object is assigned focal stress, the object-subject order is not restricted in this way. Hence the latter order is unmarked.

Koster (1978) tried to account for the object-subject order in (2b) by assuming a rule of Indirect Object Preposing, which places the indirect object in front of the subject. The application of this rule is assumed to be restricted by a locality principle which (informally) states that movement of an element α cannot be applied across an element β if (i) α and β are co-arguments and (ii) β is more prominent than α according to the following hierarchy: SU>IO>DO (where SU, IO and DO are functional labels comparable to what nowadays are called ' θ -roles'). This correctly predicts that Indirect Object Preposing is only possible if the subject has the label DO, i.e. that the order in (2b) gives rise to a grammatical result, whereas the order in (1) leads to ungrammaticality.

Koster extends this analysis to examples such as (5) and (6) which were already discussed by Lenerz (1977: 144ff.).

- (5) a. dat de ergste rampen het meisje overkwamen
that the most terrible disasters the girl happened
'that the most terrible disasters happened to the girl.'
 - b. dat het meisje de ergste rampen overkwamen
- (6) a. dat de boeken de jongen bevallen
that the books the boy please
'that the boy is pleased with the books.'
 - b. dat de jongen de boeken bevallen

Koster proposes what nowadays would be called an ergative analysis of these examples. Assuming that the NPs *het meisje* and *de jongen* are indirect objects (which can be confirmed by taking their German translations into consideration in which these NPs are assigned dative Case), and that the subjects of these clauses have the label DO, he is able to give a unified account of the examples in (2) and (5–6).

The ergative analysis of the examples in (5–6) has been confirmed by the more recent research on ergative predicates. For example, the examples in (5–6) pass all ergativity tests that have been developed in T.Hoekstra (1984). The hypothesis that the object-subject orders in (2b), (5b) and (6b) arise as a result of preposing of the indirect object, however, did not survive.

Work by Den Besten (1981, 1982, 1985) has made it clear that the order of the arguments in (2b), (5b) and (6b) is not derived by moving the indirect object, but reflects the underlying order. As the D-structure of these examples, we may assume the (simplified) structure in (7), in which NP₁ represents the indirect object and NP₂ the S-structure subject (cf. (45) in chapter 4):

$$(7) \quad \text{dat} [\text{VP} [\text{V} \text{NP}_1 [\text{V} \text{NP}_2 \text{V}]]]$$

One argument in favour of this claim is based on the assumption that the 'marked' order of a construction must be a derived by Scrambling. Taking the UPOC that has been discussed in 4.3.1 as a point of departure, we correctly predict the judgements on the examples in (3) and (4). In (3) focal stress can be assigned both to the subject and the object since movement does not apply. In (4), however, focal stress cannot be assigned to the subject since movement of this subject across the object would then distort the UPOC.

Another argument in favour of the claim that the structures in (2b), (3), (5b) and (6b) reflect the underlying order, is the so-called *Wat voor*-split. Consider the following examples, taken from Den Besten (1985).

- (8) a. *wat voor boeken zouden de jongen nou bevallen?*
what for books would the boy now please
'What kind of books would please the boy, I wonder?'
- b. *wat zouden de jongen nou voor boeken bevallen?*
- c. **wat zouden voor boeken de jongen nou bevallen?*

In (8) the subject of the examples in (6) is replaced by the interrogative phrase *wat voor boeken*. This *wh*-phrase can be preposed as a whole as in (8a), but can also be split if certain conditions are met. This can be seen in (8b). As can be seen in (8b,c), the split is only possible if the object precedes the remnant of the *wat voor*-phrase.

Den Besten accounts for the difference between (8b) and (8c) by assuming that *Wat voor*-split is only possible if the *wat voor*-phrase occupies its D-structure-position. If the object-subject order is the underlying order and the subject-object order is derived by movement of the subject to a higher position, the distinction between (8b) and (8c) follows immediately. (A more accurate discussion of Den Besten's proposal will be given in section 6.1, where we will also discuss the means by which the subject can be assigned nominative Case in its D-structure position.)

Summarizing the discussion above, we may say that the permutations of the subject and the object in (2–6) can be accounted for by assuming that the predicates in these examples are ergative. The order object-subject reflects the underlying order, whereas the subject-object order is derived by an optional movement of the subject. It appears to be the case that this account of (2) and (5–6) is generally accepted.

As was mentioned above, the examples in (5) and (6) pass the ergativity tests that have been proposed by Hoekstra (1984). In Den Besten (1985), however, various predicates are listed that allow for the subject-object permutation, but do not pass all ergativity test. If we want to maintain Den Besten's analysis for these cases as well, it must be shown that Hoekstra's ergativity tests single out only a subset of all ergative predicates, and hence that not passing these tests does not necessarily exclude a predicate from the class of ergatives. In section 5.1, I will indeed argue that passing Hoekstra's tests is a sufficient but not a necessary condition for being an ergative predicate.

In section 5.2, I finally discuss the class of 'causative psych-verbs' which has recently been the topic of much discussion. I will discuss the question whether they can be seen as ergative predicates, and whether the subject-object permutation they allow for can be accounted for in similar ways as the examples in (5–6).

5.1. Ergativity tests

In Hoekstra (1984), three properties of ergative predicates are distinguished. They are illustrated here by comparing the ergative predicate *arriveren* 'to arrive' with the unergative intransitive predicate *lachen* 'to laugh'.

Following Burzio (1986), the subject of the predicate *arriveren* must be an underlying object, i.e. an internal argument of the verb, whereas the subject of *lachen* is an external argument. Therefore, we must assume that although, superficially seen, these predicates seem to enter in the same syntactic configuration, their S-structures differ, an NP-trace must be present in the case of *arriveren* that does not occur in the case of *lachen*.

- (9) a. de man_i arriveerde *t_i* gisteren
 the man arrived yesterday
 b. de vrouw lachte
 the woman laughed

According to Hoekstra (1984), the two predicate-types exhibit three distinguishing properties in Dutch. The first distinguishing property (as was already noticed by Koster 1978) is concerned with *auxiliary selection*; ergative verbs select the perfect auxiliary *zijn* 'to be', whereas the unergative verbs select *hebben* 'to have'. In this respect, these Dutch verbs behave similar to their Italian counterparts.

- (10) a. de man is/*heeft gisteren gearriveerd
 the man is has yesterday arrived
 'The man has arrived yesterday.'
 b. de vrouw *is/heeft gelachen
 the woman is has laughed

The second distinguishing property is that participles of unergative verbs can be used attributively, whereas this is impossible with participles of unergative intransitive verbs.

- (11) a. de (gisteren) gearriveerde man
 the yesterday arrived man
 'the man that arrived (yesterday)'
 b. *de gelachen vrouw
 the laughed woman
 'the woman that laughed'

As can be seen in (12), a participle of transitive unergative verbs can be used in this way as well as long as the noun they modify corresponds to the direct object of the verb, cf.:

- (12) Jan heeft het boek gelezen
 Jan has the book read
 'Jan has read the book.'

- (13) het gelezen boek
 the read book
 'the book that has been read'

From these facts, Hoekstra (1984:181) derived the following generalization:

(14) *Participle-adjective conversion:*

Participles can be used as predicates over nouns which correspond to their initial direct objects.

The third distinguishing property is that an unergative intransitive verb allows for *impersonal passivization*, whereas impersonal passivization is blocked in the case of an ergative verb.

- (15) a. *er werd (door de man) gearriveerd
 there was by the man arrived
 b. er werd (door de vrouw) gelachen
 there was by the woman laughed

As has already been mentioned above, the predicates in examples (5) and (6) for which Koster (1978) assumes an ergative analysis exhibit the same distinguishing properties as the ergative verb *arriveren* (cf. also Hoekstra 1984:184ff.). In (16) it can be seen that the verbs *overkomen* en *bevallen* select the auxiliary *zijn* in the perfect tense. Passivization of (5) and (6) is impossible; both the impersonal passive in (17) and the personal passive in (18) are excluded. Finally, (19) shows that participle-adjective conversion is possible if the adjective predicates over the S-structure subject of the verb.

- (16) a. dat het meisje de ergste rampen zijn overkomen
 that the girl the most terrible disasters are happened
 'that the most terrible disasters have happened to the girl.'
 b. dat de jongen de boeken zijn bevallen
 that the boy the books are pleased
 'that the boy has been pleased with the books.'
- (17) a. *dat haar (door de ergste rampen) werd overkomen
 that her by the most terrible disasters was happened
 b. *dat hem (door de boeken) werd bevallen
 that him by the books was pleased
- (18) a. *dat zij (door de ergste rampen) werd overkomen
 that she by the most terrible disasters was happened
 b. *dat hij (door de boeken) werd bevallen
 that he by the books was pleased

- (19) a. de (haar) overkomen rampen
 the her happened disasters
 'the disasters that happened to her'
 b. de (hem) (goed) bevallen boeken
 the him good pleased books
 the books that pleased him (a lot)

Other examples that show the same behaviour as *overkomen* and *bevallen* are: *afgaan* (+adv), *bekomen* (+adv), *bijbliven*, *lukken*, *meevallen*, *ontgaan*, *ontschieten*, *ontvallen*, *opbreken*, *opvallen*, *overkomen*, *tegenlopen*, *tegenvalen*. These verbs constitute a subset of the Dutch DAT-NOM verbs that allow for subject-object permutation (cf. Den Besten 1985;fn.7).

We may summarize the discussion above as follows. Ergative predicates have three distinguishing properties:

- (20) a. Ergative verbs take the perfect auxiliary *zijn*;
 b. Participle-adjective conversion of ergative verbs is possible: the adjective modifies the noun that corresponds to the S-structure subject of the verb;
 c. (Impersonal) passivization of ergative verbs is excluded.

Further, we have seen that subject-object permutation is excluded in the case of transitive unergative verbs (cf. (1)), but possible with ergative verbs that take an indirect object.

- (20) d. Ergative verbs that take an indirect object allow for subject-object permutation.

In Den Besten (1985) several other predicates are listed that allow for the subject object permutation. However, they do not exhibit all properties listed in (20). Consider for instance the following example.

- (21) a. dat de boeken mijn broer niet aanstaan
 that the books my brother not please
 'that the books do not please my brother.'
 b. dat mijn broer de boeken niet aanstaan

Besides the subject-object permutation (20d), the verb *aanstaan* exhibits property (20c); the examples in (21) cannot be passivized.

- (22) *dat hij/hem niet (door de boeken) werd aangestaan
 that he him not by the books was pleased

But with respect to (20a,b), it patterns with the unergative verbs; it selects the perfect auxiliary *hebben*, and its participle form cannot be used attributively.

- (23) *dat de boeken mijn broer nooit hebben/*zijn aangestaan
that the books my brother never have are pleased
- (24) *de (mijn broer) aangestane boeken
the my brother pleased books

Other Dutch DAT-NOM verbs that behave in the same way as *aanstaan* are: *behagen*, *berouwen*, *betamen*, *bijstaan*, *duizelen*, *mishagen*, *misstaan*, *ontbreken*, *tegenstaan*, *voldoen*, *voorstaan* (cf. Den Besten 1985:fn.7).

Given the facts in (22–24), we must wonder whether the assumption that verbs like *aanstaan* are ergatives can be maintained. If so, this implies that exhibiting all properties in (20) is not a necessary condition for ergative status. In the following subsections, we consider these properties in more detail, and argue that only a subset of them can be seen as intrinsic properties of the ergative verbs.

5.1.1. Auxiliary selection

The assumption that all ergative verbs select *zijn* as a perfect auxiliary has been challenged in Mulder and Wehrmann (1989). Consider the following examples which contain a locational verb.

- (25) a. Jan legt het boek op tafel
Jan puts the book on table
'Jan is putting the book on the table.'
- b. het boek ligt op tafel
the book lies on table
'The book is lying on the table.'
- (26) a. Jan hangt de jas in de kast
Jan hangs the coat in the closet
'Jan is hanging the coat in the closet.'
- b. de jas hangt in de kast
the coat hangs in the closet
'The coat is hanging in the closet.'

Following T.Hoekstra et al. (1987), they assume that the complement of the verb in the a-examples is a Small Clause (henceforth: SC), i.e. the

structure of these examples is: NP V [_{SC} NP [P NP]]. This assumption accounts for the following two properties of these constructions (Hoekstra 1984). First, since the verb is subcategorized for the SC, the PP is obligatorily present (cf. (27)). Secondly, the PP cannot be extraposed (cf. (28)), which is possibly due to the ECP; if the SC is extraposed as a whole, it must contain a trace of the (scrambled) NP *het boek/de jas* and this trace is not canonically governed in the resulting structure (cf. chapter 9 for further discussion).

- (27) a. *Jan legt het boek
- b. *Jan hangt de jas

- (28) a. *dat Jan het boek legt op tafel
- b. *dat Jan de jas hangt in de kast

Following Baker's (1988) *Uniformity of Theta Assignment Hypothesis* (which states that identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure), Mulder and Wehrmann assume that if (25a) and (26a) contain a SC, the same must be the case in the examples (25b) and (26b), since the relation between the NP *het boek/de jas* and the PP *op tafel/in de kast* are identical in both cases. This assumption correctly predicts that the PPs in (25–26b) cannot be omitted or extraposed either.

- (29) a. ?het boek ligt
- b. ?de jas hangt

- (30) a. ?dat het boek ligt op tafel
- b. ?dat de jas hangt in de kast

The fact that the examples in (29) are not completely out is probably due to the possibility of these verbs to select an NP in stead of a SC. As Mulder and Wehrmann note, the examples in (29) are only possible if the NP can be assumed to "perform" the action denoted by the verb (the examples improve if the NP refers to an animate being; cf. also T. Hoekstra and Mulder 1990:13). If this interpretation is excluded, as in (31), omission or extraposition of the PP leads to full unacceptability:

- (31) dat het nieuws *(in de krant) staat
 that the news in the newspaper stands

- (32) *dat het nieuws staat in de krant

If we accept (29) and (30) as evidence for the SC-analysis of (25–26b), we must also accept an ergative analysis of these examples, and as a result we must reject the assumption that all ergative verbs select *zijn* as their perfect auxiliary, since the perfect tense of these examples is formed with auxiliary *hebben*. Instead, we must accept the more traditional assumption that ergative verbs may either select *hebben* or *zijn*, the choice being subject to their aspectual properties: if the ergative verb denotes a change of state, i.e. if it has a perfective (inchoative, mutative, terminative, resultative) aspect, *zijn* is selected, whereas *hebben* is selected otherwise (cf. Mulder and Wehrmann 1989 and Hoekstra and Mulder 1990 for further discussion). This can be made more precise by assuming the provisional statement in (33).¹

- (33) *Auxiliary selection:*
zijn is selected as a perfect auxiliary if the verb is ergative and has a perfective aspect; *hebben* is selected otherwise.

Since the locational verbs in (25–26b) do not have perfective aspect, (33) correctly predicts that *hebben* is selected.

Note that (33) implies that the class of ergatives can probably be extended, since besides the class of "perfective" ergatives which includes the well-known examples in (34) we must also distinguish a class of "imperfective" ergatives. The latter class will include the predicates in (35), which exhibit at least two ergative properties; they cannot be passivized and do not take an 'agentive' subject.

- (34) a small sample of "perfective" ergatives:
arriveren 'to arrive', *smelten* 'to melt', *sterven* 'to die', *vallen* 'to fall', *zinken* 'to sink'.
- (35) a small sample of "imperfective" ergatives:
bloeden 'to bleed', *branden* 'to burn', *drijven* 'to float', *rotten* 'to rot', *smeulen* 'to smoulder', *stinken* 'to stink'.

If we must indeed distinguish a class of "imperfective" ergatives, this class must include the verbs of the *aanstaan*-type that have been discussed in the introduction to this chapter, and for which we are assuming an ergative analysis.

¹ In some cases, speakers and languages differ with respect to auxiliary selection. For example, the Dutch verb *bevallen* 'to please' generally occurs with the perfect auxiliary *zijn* 'to be', but some speakers also allow for the auxiliary *hebben* 'to have'. The German counterpart of this verb, *gefallen*, always takes *haben* 'to have'. Apparently, more factors than the perfective-imperfective distinction are involved.

5.1.2. Participle-adjective conversion

If we accept Mulder and Wehrmann's analysis of the locative examples in (25b) and (26b), we must conclude that participle-adjective conversion can not be seen as a necessary condition for ergative status either. Compare the following examples.

- (36) a. *het (op tafel) gelegen boek
 the on table lain book
 b. de in the kast gehangen jas
 the in the closet hung coat

As can be seen in (36a), participle-adjective conversion is impossible in the case of (25b). At first sight, this conversion is possible in the case of (26b). But closer scrutiny shows that (36b) is related to (26a), since we may add the agentive *door*-phrase *door Jan* 'by Jan': *de door Jan in de kast gehangen jas* 'the coat that has been put in the closet by Jan' (cf. *het door Jan op tafel gelegde boek* 'the book that has been put down on the table by Jan').

We may account for the impossibility of participle-adjective conversion, if we assume that this conversion is only possible if the verb has a perfective aspect, i.e. Hoekstra's generalization in (14) must be supplemented as follows:

- (37) *Participle-adjective conversion*: participles can be used as predicates over nouns which correspond to their initial direct objects, if the verb has a perfective aspect.

According to (37), participle-adjective conversion is not a necessary, but only a sufficient condition for ergative status. The condition on participle-adjective conversion in (37) not only correctly predicts the ungrammaticality of (36a), but it also predicts that none of the "imperfective" ergatives in (35) (including the verbs of the *aanstaan*-type) allow for participle-adjective conversion.

5.1.3. Passivization

In the previous subsections, we followed Mulder and Wehrmann (1989) in assuming that selecting the perfect auxiliary *zijn* is a sufficient, but not a necessary condition for ergative status (cf. (33)). Further, we assumed the same with respect to participle-adjective conversion (cf. (37)). In this subsection, however, I assume that resistance to passivization is a necessary condition for ergative status.

This property can be readily derived, if we assume that passive must be characterized as the suppression or absorption of the external θ-role (cf. Roberts 1987 and references cited there); ergative predicates cannot be passivized, since they do not have an external argument to suppress/absorb.

Note, however, that even though resistance to passivization is a necessary condition for ergative status, it may not be a sufficient one. For example, it has been argued (Kirsner 1977) that passivization is only possible if the "suppressed argument" is human (or at least animate). This can be seen in the following examples.

- (38) er werd (door Jan/*de ketel) gefloten
 it was by Jan the kettle whistled

From (38), it is clear that the passive construction cannot be derived from the example in (39b), which has an inanimate subject, but must be derived from (39a).

- (39) a. Jan floot
 Jan whistled
 b. de ketel floot
 the kettle whistled

Since I have argued that we must distinguish a class of "imperfective" ergatives, it is not clear whether we need an "animateness" condition on passivization or not. If we assume that *fluiten* is an "imperfective" ergative in (39b), we would immediately account for the fact that passivization of this example is blocked since there is no external θ-role that can be suppressed/absorbed. Because the subject in (39a) is agentive, we are clearly dealing with an unergative intransitive verb in this case. So, we correctly predict that the passive construction in (38) can only be related to (39a).

In fact, there is some evidence for the assumption that the verb *fluiten* can be used both as an ergative and as an unergative. Often, unergative intransitive verbs can also be used as transitives. The example in (39a), for example, can be extended with a SC (cf. (40a)). If the verb in (39b) is an "imperfective" ergative, we predict that this extension leads to an ungrammatical result since the subject of the SC cannot be assigned Case. As we can see in (40b), the addition of a SC leads to an odd result, even though the expressed thought is completely intelligible (example (40b) could be used in a fairy tale, but in that case the subject must be construed as an animate being, i.e. the verb *fluiten* would be used as an unergative verb).

- (40) a. Jan floot de hond naar binnen
 Jan whistled the dog inside

- (40) b. **de ketel floot de kok naar de keuken*
 the kettle whistled the cook to the kitchen

I will not digress any further on the hypothesis that we are dealing with an ergative construction in (39b), since it leads me too far afield. For the moment, however, I assume that we may use the passivization test as a diagnostic for ergative status.² Of course, this assumption needs further investigation in the future.

5.1.4. Subject-object permutation

Now that we have seen that passing the passivization test (20c) is the only necessary condition for ergative status, we may conclude that in this respect it is well motivated to consider verbs of the *aanstaan*-type as ergatives. Nevertheless, as has been discussed in the previous subsection, it may be assumed that the resistance to passivization of these verbs does not reveal their ergative status, but is just an accidental property that is due to the fact that these verbs often take an inanimate subject, and hence that this property follows from the "animateness" restriction on passivization (cf. the discussion of (38)). As a result, we might assume that verbs of the *aanstaan* type are unergative, as has been claimed by Grewendorf (1989). Therefore, let us investigate the consequences of this assumption for the description of subject-object permutation.

If verbs of the *aanstaan*-type are unergatives, we must assume that an internal argument of the verb can be preposed across the external argument. In fact, it has been claimed by Grewendorf (1989) that this is generally possible in German. As evidence in favour of this claim, he refers to constructions such as given in (41a).

(41) German

- a. weil den Fritz_{acc} ein alter Penner_{nom} getreten hat
Dutch
- b. *omdat Frits een oude zwerver geschopt heeft
 because Frits an old tramp kicked has
 'because an old tramp has kicked Frits.'

² So far, I have avoided the notion 'unaccusative' on purpose. I do not use 'ergative' and 'unaccusative' as two equivalents as is general practice. I use the notion 'ergative' to refer to all verbs that do not assign an external θ-role, whereas the notion 'unaccusative' is only used to denote those ergative verbs that are not able to assign accusative Case. Consequently, I do not claim here that all verbs that resist passivization are unaccusatives. This distinction between ergatives and unaccusatives will become clearer in section 5.2.

However, as has been discussed in chapter 4, constructions such as (41a) may only arise if the subject is assigned focal stress. This restriction does not hold if the verb belongs to the *aanstaan*-type. Further, it leaves unexplained that subject-object permutation is not possible in the Dutch example (41b), whereas (21) shows that this permutation is fully acceptable in Dutch if the predicate belongs to the *aanstaan*-type.

Further, it must be noted that Grewendorf's assumption that verbs of the *aanstaan*-type are unergatives is not a very fruitful one. If *aanstaan* must be viewed as an unergative verb, an alternative explanation of the fact that it exhibits subject-object permutation must be given. But if this is possible, we no longer need recourse to the ergative status of verbs like *bevallen* en *overkomen* to explain their behaviour with respect to this permutation, and hence we would be back where we started.

Since the assumption that verbs such as *aanstaan* are unergatives leaves unexplained why the object-subject order is not or only markedly possible in the case of other unergatives and voids the account of the possibility of this order in the case of ergative verbs such as *bevallen* en *overkomen*, it seems reasonable to reject this assumption, and to assume that they are ergatives, i.e. to accept the possibility of subject-object permutation as a diagnostic for ergative status.

5.1.5. Conclusion

In this section we discussed Hoekstra's ergativity tests in (42).

- (42) a. Selection of the perfect auxiliary *zijn*;
- b. Participle-adjective conversion;
- c. Resistance to (impersonal) passivization;
- d. Subject-object permutation (if an object is present).

Following Mulder and Wehrmann (1989), I argued that (42a) cannot be seen as a necessary condition for ergative status, although it probably is a sufficient one; *zijn* is only selected as a perfect auxiliary if the verb is ergative *and* if it has perfective aspect. With respect to (42b) we assumed something similar: participles can only be used as predicates over nouns if the noun corresponds to the underlying direct object *and* if the verb has a perfective aspect. The conditions in (42c,d) on the other hand are assumed to be applicable to all ergative verbs.

5.2. Causative psych-verbs and nominative-accusative permutation

5.2.1. The underlying order

Although modern Dutch does not exhibit morphological Case-marking (with the exception of pronominals which can be said to be marked with objective Case), Den Besten (1985) has called the subject-object permutation verbs we discussed so far 'DAT-NOM verbs'. The main reason for this is that their German counterparts take a dative NP as their complement. Of course, this is what we expect if we adopt Burzio's (1986) Generalization which states that if a verb has no external θ-role, it is not able to assign structural (accusative) Case. This might have been brought up as an additional argument for the claim that these verbs are indeed ergatives, if it had not been for the fact that there may be some problems with this generalization.

The main problem has to do with the fact that Den Besten extends his ergative hypothesis to a class of verbs that allow for a similar permutation as the DAT-NOM verbs, but that differ from this verbal type by taking an accusative object. In (43) examples are given from Dutch and German; the accusative marking of the object is morphologically realised in the German example (43b). Henceforth, I call these ACC-NOM verbs causative psych-verbs (E.Hoekstra 1991), since these verbs always imply some causative relationship between the subject and the object; the examples in (43) can be paraphrased as 'the stories do not cause the man to be interested'.

(43) *Dutch*

- a. dat de man jouw verhalen niet interesseren

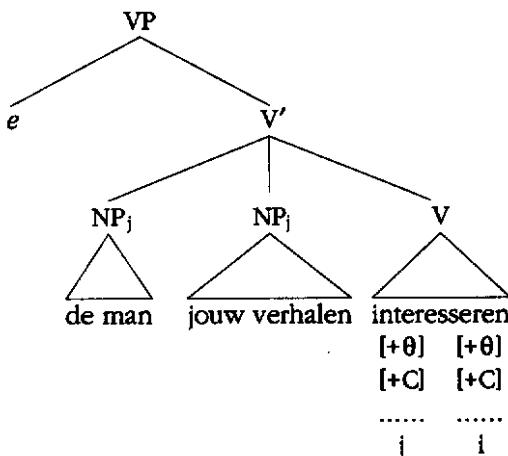
German

- b. daß den Mann_{acc.} deine Geschichten_{nom.} nicht interessieren
 that the man your stories not interest
 'that the man is not interested in your stories.'

Some other examples of the causative psych-verbs are: *amuseren* 'to amuse', *ergeren* 'to annoy', *irriteren* 'to irritate', *verbazen* 'to astonish', *vervelen* 'to bore', *verwonderen* 'to surprise'.

To be able to account for the ACC-NOM order in (43), Den Besten assumes a D-structure that is comparable to (44) (I have placed the empty subject-position under the VP-node, whereas Den Besten placed it under the S-node; the higher functional projections are omitted for the sake of simplicity). The lexical entry of the verb *interesseren* is indicated as well.

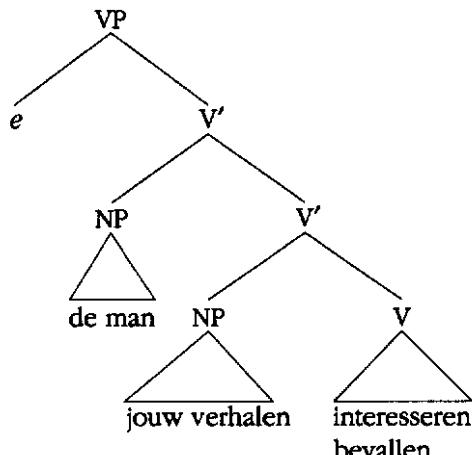
(44)



The lexical entry is meant to indicate that the verb assigns a θ-role to both NPs, but that only NP_j (*de man*) can be assigned structural Case. The problem with respect to Burzio's Generalization suggested above is that the NP_j *de man* can be assigned structural Case, in spite of the fact that no external θ-role is assigned.

Even if we accept that Burzio's Generalization must be modified to allow for the given lexical entry of *interesseren*, it is clear that something is wrong with the phrase structure tree in (44); it is not strictly binary branching (cf. Kayne 1984). If we want to build a phrase structure tree that is in accordance with the binary branching restriction, and if we want to allow for the ACC-NOM order, we must assume that the NP *de man* is generated higher in the tree than the NP *jouw verhalen*. Consequently, the binary branching restriction forces us to adopt Belletti and Rizzi's (1988) analysis of this construction. Consider the (simplified) structure in (45).

(45)



If we stick to the terminology we have been using above, we may say that Belletti and Rizzi assume that the DAT-NOM verbs and the causative psych-verbs have the same underlying order, the only difference between these verbs being the Case they assign to the experiencer NP *de man*; dative in the case of the DAT-NOM verbs, and accusative in the case of the causative psych-verbs. Note that Belletti and Rizzi assume that the Case assigned to the experiencer is not structural but lexical (i.e. inherent). In this way the problem that Den Besten's proposal posed for Burzio's Generalization is solved.

Despite the initial plausibility of Belletti and Rizzi's proposal there are some reasons to reject it. This will become clear if we investigate the behaviour of the causative psych-verbs with respect to the ergativity tests discussed in section 5.1.

The first problem has to do with the selection of the perfect auxiliary. The causative psych-verbs select the auxiliary *hebben*. Of course, this does not immediately rule out an ergative status of these verbs, since we have seen that not all ergative verbs select *zijn*; those that do not have perfective aspect select *hebben* (cf. (33)). Therefore, if we want to stick to the assumption that the causative psych-verbs are ergatives, we must assume that they have no perfective aspect, and hence that they do not allow for participle-adjective conversion either (cf. (37)). If we try to apply this test, a very interesting result arises:

- (46) a. *de geïnteresseerde verhalen
the interested stories
- b. de geïnteresseerde man
the interested man

As can be seen the adjective *geïnteresseerde* cannot predicate over the noun *verhalen*, but it can over the noun *man* (cf. Bennis 1986; E.Hoekstra 1991; the same is true when the adjective is used predicatively, cf. Den Besten 1985). Consequently, if T.Hoekstra's generalization that participles can only be used as predicates over the (underlying) direct object is correct, we are led to believe that the experiencer *de man* is the direct object of the verb *interesseren*. If this is correct, we must also assume that this NP cannot be assigned lexical accusative Case as has been claimed by Belletti and Rizzi, but must be assigned structural accusative Case. And, finally, we must accept that with respect to auxiliary selection causative psych-verbs pattern with the unergative transitive verbs in as far as the perfect auxiliary *hebben* reflects their ability to assign structural accusative Case.

The fact that "the causative psych-verbs pattern with the unergative transitive verbs in as far as (...)" does of course not amount to saying that they "are unergative transitive verb". In the previous section, I assumed that

the passivization test and the subject-object permutation test can be used as diagnostics for ergative status. Therefore, we must consider the question whether the causative psych-verbs pass these tests before we can make any firm conclusion.

It has been argued that causative psych verbs sometimes allow for passivization (Everaert 1982). Compare the following examples:

- (47) a. dat zijn gedrag mij ergert
that his behaviour me annoys
b. dat ik geërgerd word door zijn gedrag
that I annoyed am by his behaviour

There are, however, two problems with the assumption that (47b) is the passive counterpart of (47a). In the first place, it is not clear whether we are dealing with a regular passive *door*-phrase in (47b), since it may also occur in examples of the following type:

- (48) hij ergert mij door zijn gedrag
he irritates me by his behaviour

Further, it is not really clear whether we are dealing with a passive construction in (47b), since the auxiliary *worden* can be replaced by a verb like *lijken* 'to seem' or *raken* 'to get', which may be considered as copula verbs. Consequently, we may be dealing with an adjectival construction in (47b), i.e. this example is not a syntactic but a lexical passive. Hence there is not much evidence for the assumption that the causative psych-verb can be passivized. (Den Besten 1985; cf. Bennis 1986 for further discussion.)

Let us now consider the permutation test. As will be clear from the preceding discussion, the ACC-NOM order in (43) is reported to be fully acceptable. Nevertheless, some Dutch speakers object to this order, although it must be immediately added that they always admit that (43a) is much better than the example in (1), repeated here for convenience, in which the transitive unergative verb *schoppen* is used.

- (1) *omdat mijn broers_{DO} de oude zwerver_{SUBJ} geschopt heeft
because my brothers the old tramp kicked has
'because the old tramp has kicked my brothers.'

Of course, one may claim that this is due to the fact that in (1) both the subject and the direct object denote human beings, whereas in (43a) only the subject refers to a human being. But this will not do to account for the following example in which the direct object is inanimate.

- (49) *dat het boek mijn broer kocht
 dat the book my brother bought
 'that my brother bought this book.'

Of course, we may disregard the judgements of those speakers that object to (43a), since they do not totally reject this example, but I believe that their judgements reveal something very important, namely that the order in (43a) is not the unmarked order in Lenerz's sense. Compare the following examples.

- (50) a. ?dat (er) iets mijn broer ergert (non-specific)
 that there something my brother annoys
 b. dat (er) mijn broer iets ergert (non-specific)

(51) a. dat die verhalen iemand ergeren (non-specific)
 that those stories someone annoy
 b. dat iemand die verhalen ergeren (specific)

Although (50a) has a slightly degraded status, it appears to be the case that in (50) the indefinite subject *lets* can be used as a non-specific NP in both orders. The degraded status of example (50a) is due to the fact that in general definite objects precede indefinite objects (cf. the Presuppositional Hierarchy in Bennis 1986:223). Therefore, the order in (50b) is to be preferred. In (51) the indefinite object *emand* can only be used as a non-specific NP, if it is preceded by the subject.³

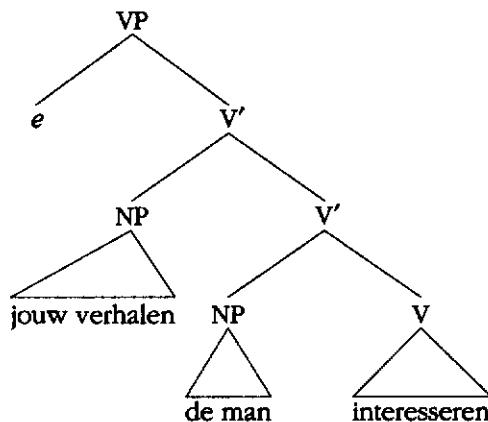
³ Note that the indefinite NP's in (50) and (51a) can also be construed as a specific NP, i.e. as referring to a known entity. This is generally possible with indefinite NPs. Further, it must be noted that according to Hans den Besten the indefinite NP in (51b) can be non-specific as well. Other informants however deny this possibility. Possibly, the indefinite NP may marginally be construed as non-specific. Recall from chapter 4, that if a focused direct object precedes a subject of an unergative verb, the result is more degraded than if it precedes an indirect object. It has been suggested that this is due to the fact that in the first case VP-external Scrambling must have applied, whereas this need not be so in the latter case. Now, compare the following examples.

- (i) *dat iemand_i waarschijnlijk die verhalen \ddagger_i ergeren (non-specific)
 that someone probably those stories annoy
 (ii) ?dat waarschijnlijk iemand die verhalen \ddagger_i ergeren (non-specific)
 (iii) dat waarschijnlijk die verhalen iemand ergeren (non-specific)

In (i) the indefinite NP has been moved across the sentence adverb to a VP-external position, and the non-specific reading is completely out. In (ii) the non-specific subject must have been scrambled VP-internally, and the result is slightly better. Still, (iii) is the preferred order. The contrast between (i) and (ii) on the one hand and (iii) on the other follows from the fact that

From this, we must conclude that the object-subject order is constrained by a specificity (definiteness) condition, and hence that the subject-object order is the unmarked one. Adopting the view that the unmarked order reflects the underlying order, we must reject (44) as a D-structure representation of these examples. Consequently, the structure of (43a) is rather something as indicated in (52).

(52)



It is interesting that this structure also reflects the conclusion that we arrived at earlier, namely that the NP *de man* is the direct object of the verb *interesseren*.

Perhaps we need a more articulated structure than the one given in (52). Note that the periphrastic causative construction in (53) exhibits the same behaviour as the constructions containing a causative psych-verb: it resists passivization (cf.(54)), it allows for subject-object permutation (cf.(55)), and, finally, the complex *boos gemaakt* can be used as a predicate over the noun *man* but not over the noun *opmerking* (cf. (56)).

- (53) dat die opmerkingen de man boos maken
 that those remarks the man angry make

- (54) ?dat de man boos gemaakt werd door die opmerkingen
 that the man angry made was by those remarks

³ (...continued)

in (i) and (ii) the movement distorts the UPOC. The more degraded status of (i) follows from the fact that in this example condition (41) in chapter 4 is violated as well.

- (55) dat de man die opmerkingen boos maken
 that the man those remarks angry make

- (56) a. de boos gemaakte man
 the angry made man
 b. *de boos gemaakte opmerkingen
 the angry made remarks

To account for these similarities, we may follow Pesetsky (1990) and E.Hoekstra (1991) by assuming that the constructions containing a causative psych-verb must be analyzed in the same way as the construction in (53). Since (53) contains a causative verb *maken* and a SC [*de man boos*], one may assume that a causative psych-verb such as *irriteren* 'irritate' is composed of an empty causative verb which has incorporated a (verbal or adjectival) stem *irriteer-*. Consequently, a clause such as *dat die verhalen de man interesseren* can be analyzed as in (57). The verb *irriteren* in (57) must be analyzed as the stem *irriteer-* affixed with a causative affix and inflection: *irriteer-CAUS-INFL*.

- (57) dat die verhalen [sc de man *t_i*] interesseren,
 that those remarks the man irritate

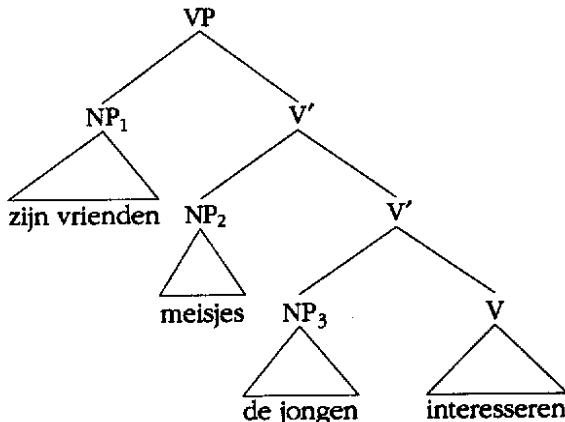
For reasons of simplicity, I will assume the structure in (52) even though the structure in (57) may be more correct.

Perhaps the discussion that led to the structure in (52) could have been omitted since a similar structure has already been proposed by Bennis (1986:section 2.9), albeit on different grounds. Consider the following examples.

- (58) a. dat zijn vrienden de jongen voor meisjes hebben
 that his friends the boy for girls have
 geïnteresseerd
 interested
 b. dat meisjes de jongen interesseren
 that girls the boy interest

In (58a) the verb *interesseren* is used as an unergative verb, which is clear from the fact that this example allows for passivization: *dat de jongen door zijn vrienden voor meisjes geïnteresseerd werd*. Bennis assumes the following D-structure for (58a).

(59)



Since there are three NPs and only two structural Cases (nominative and accusative) available, NP₂ does not receive structural Case. However, the structure can be saved from the Case filter by the insertion of a lexical preposition (*voor* in this case).

If the external argument is absent, the example in (58b) will be derived. Since in this case there are two structural Cases and two NPs, insertion of a preposition is not necessary; the NP *meisjes* can be assigned nominative Case.

To be complete, it must be noted that the causative psych-verbs have inherent reflexive alternates (cf. (60)). According to Bennis, this alternation can be accounted for by assuming that in these constructions the external argument is absent and that accusative Case has been absorbed by the reflexive *zich* (cf. also Everaert 1986). Consequently, nominative Case is assigned to NP₃, and the insertion of a lexical preposition will be necessary to save NP₂ from the Case filter.

- (60) dat hij zich voor meisjes interesseert
 that he refl. for girls interest

In (60) the same preposition is selected in the unergative and in the inherent reflexive construction. It must be noted, however, that this is coincidental; the verb *ergeren* 'annoy' for example selects the preposition *aan* in the inherent reflexive construction, whereas there is no unergative construction in which this preposition is used (in the latter construction the prepositions *door* must be used, cf. example (48)).

Note further that the causative construction discussed in (53–56) exhibits the same reflexive alternation as the causative psych-verbs:

- (61) Jan maakte de man boos (met/door zijn opmerkingen)
 Jan made the man angry with/by his remarks
- (62) de man maakte zich boos (over die opmerkingen)
 the man made refl. angry about those remark

If the given analysis of the examples in (43) and (58b) is on the right track, we must conclude that the problem these verbs pose for Burzio's Generalization cannot be solved, since we must assume that causative psych-verbs are ergatives in the sense that they do not (obligatorily) assign an external θ-role, whereas they are always able to assign accusative Case. Or to state it differently: although causative psych-verbs are not unaccusatives, they still are ergatives (cf. fn.2).⁴

Summarizing, we may say that causative psych-verbs are accusative ergative verbs that take two internal arguments, i.e. one of the internal arguments can be assigned accusative Case by the verb, whereas the other must be assigned nominative Case. Further, we have seen that the nomina-

⁴ There are other verbs for which we perhaps may assume an ergative analysis, in spite of the fact that they are able to assign accusative Case. First, recall the discussion of the so-called *krijgen*-passive in (i) discussed in fn.6 in chapter 4. We assumed there that the S-structure subject *Jan* is an underlying indirect object.

- (i) dat Jan de boeken aangeboden kreeg
 that Jan the books offered got

We accounted for this example by assuming that the passive morphology absorbs the (structural) dative Case, and that the underlying indirect object is assigned nominative Case. This amounts to saying that the predicate in (i) is ergative in the sense that it has no external θ-role, despite the fact that accusative Case is assigned to the direct object *de boeken*.

Possibly, this ergative analysis can be extended to the main verb *krijgen* by assuming that in an example such as *dat Jan de boeken kreeg* 'that Jan got the books' the nominative NP is an underlying indirect object. This assumption immediately accounts for the fact that passivization of this example is excluded; there is no external θ-role that can be suppressed/absorbed.

- (ii) dat [_{V_p} e [_{V_r} Jan [_{V_s} de boeken kreeg]]]
 that Jan the books got

If this structure is correct, we must conclude the verb *krijgen* is an ergative verb in the sense that it has no external argument, despite the fact that it may assign accusative Case to the direct object *de boeken*.

Note that the structure in (ii) is structurally identical to the one we have assumed for the causative psych-verbs. Therefore, if the analyses of (i) and (ii) are tenable, we expect that these constructions allow for the ACC NOM order. Unfortunately, this expectation is not borne out. Therefore, more research is necessary before we can say more about the constructions in (i) and (ii).

tive argument precedes the accusative object at D-structure. Therefore, the D-structures of the examples in (63) are as indicated in (64).

- (63) a. dat de boeken de man ergerden
 that the book the man annoyed
 b. dat de man de boeken ergerden

- (64) dat [_{vP} [_v de boeken [_{v'} de man ergerden]]]

Since the NOM-ACC order is the D-structure order of the construction, we must conclude that we cannot extend Den Besten's account of the NOM-DAT permutation to this construction. Therefore, the question we must answer now is: how can we derive the ACC-NOM order?

5.2.2. The derivation of the ACC-NOM order

Let us now discuss how we may derive the marked S-structure order in (63b), given its D-structure in (64). If we assume that the NP *het boek* can be assigned Case in its D-structure position (cf. the following chapter), and hence can remain in this position, we may assume that this order can be derived by scrambling of the NP *de man* to a position preceding the nominative NP, i.e. that the question how this order arises reduces to the question why objects can be permuted in a triadic construction as in (65).

- (65) a. dat ik Jan de boeken heb aangeboden
 that I Jan the books have offered
 b. dat ik de boeken Jan ^t heb aangeboden



By assuming that both (63b) and (65b) are derived by Scrambling of the accusative argument, we may account for the fact that both the ACC-NOM order in (63b) and the ACC-DAT order in (65b) are marked. That the ACC-NOM order is marked in the Case of a causative psych-verb has been shown above (cf. the discussion of (50–51)). That the same holds for the ACC-DAT order in the case of a triadic verb has already been shown in section 4.3.2. Here I repeat one piece of evidence; that the ACC-DAT order is marked is clear from the fact that it can only arise if the accusative NP is definite (cf. the unacceptability of (66b), whereas there is no definiteness restriction on the DAT-ACC order (cf. (66a)).

- (66) a. dat ik iemand het boek aangeboden heb (non-specific)
 that I someone the book offered have
 b. *dat ik iets Jan aangeboden heb (non-specific)
 that I something Jan offered have

In the following chapter, some additional evidence will be given for the assumption that the ACC-NOM order is derived by scrambling of the accusative NP.

5.3. Conclusion

In this chapter, I discussed several subject-object permutations. Since we have seen in chapter 4 that the object-subject order is excluded in the case of unergative verbs unless the subject is focused (German) or a non-specific indefinite NP (Dutch), we assumed that this permutation is only readily possible in the case of ergative verbs. With respect to the DAT-NOM verbs we accepted Den Besten's (1985) analysis according to which the DAT-NOM order arises by leaving the underlying direct object in its base-position.

Since some of the DAT-NOM verbs do not pass all ergativity tests that have been proposed by Hoekstra (1984), we investigated these in section 5.1 and arrived at the conclusion that these tests single out only a subset of all ergative verbs. We decided that only the resistance to passivization and the possibility of permutation of the arguments (if there is more than one present) are decisive for assuming ergative status.

In section 5.2, finally, I discussed Den Besten's class of ACC-NOM verbs (the causative psych-verbs). I argued that the permutation that these verbs allow for cannot be accounted for in the same way as the permutation that occurs in the case of the DAT-NOM verbs, since the ACC-NOM order is marked and does not reflect the underlying order of the arguments. Assuming that the nominative NP is an internal argument of the verb which can be assigned nominative Case in its base-position, I argued that the ACC-NOM permutation must be treated in the same way as the permutation of the objects of a triadic construction, i.e. by Scrambling.

6

Chain-government and the Assignment of Nominative Case

6.0. Introduction

In chapter 5 we discussed two verbal types that allow for subject-object permutation: DAT-NOM verbs and causative psych-verbs. Since the transitive unergative verbs do not allow for this permutation (except under some severe restrictions), I argued that this permutation can only occur if the verb is ergative in the sense that it does not have an external θ-role.

With respect to the DAT-NOM verbs, we adopted Den Besten's (1985) hypothesis that the object-subject order is due to the fact that the subject may remain in its base-position at S-structure, i.e. need not undergo NP-movement. If we disregard the position of the indirect object, the S-structure of (1) must therefore be as given in (1b).¹

- (1) a. dat mijn broer_{IO} die boeken_{SUBJ} bevallen
 that my brother those books please
 'that those books please my brother.'
 b. dat [IP [VP [_V mijn broer [_V die boeken bevallen]]] I]

If this analysis of (1) is tenable, Case-assignment to the subject *die boeken* becomes a problem, since this NP is not governed by a Case-assigning head. Of course, the subject is governed by the verb *bevallen*, but since this verb is an unaccusative, it is not able to assign it Case.² Further, the subject

¹ In Den Besten (1985) it is assumed that the indirect object moves to SpecIP. This assumption however has been withdrawn in Den Besten (1990). Note further that in Den Besten (1989) some remarks are included on some of his earlier articles, in which several other claims are readjusted. For example, in these remarks his previous idea that there is no I in Dutch and German and that therefore Tense is situated in C, has been rejected. In the following review of Den Besten (1985), these readjustments are adopted without further discussion.

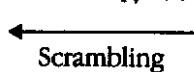
² Note that the proposal by Belletti (1988) that unaccusatives may assign partitive Case does not solve this problem, since according to this proposal assignment of partitive Case is restricted to indefinite NPs.

cannot be assigned nominative Case by I (or better: <+Tense>), since it is not governed by it.

The solution Den Besten (1985) offers for this problem runs as follows: I, the position of Tense (cf. fn.1), and its dependent V, *bevallen*, may constitute a chain [I, V(*bevallen*)]; this chain governs the position of the subject and may assign nominative Case to it compositionally. This way of assigning nominative Case by means of a chain has been named chain-government and is defined as in (2).

- (2) a. α *chain-governs* β iff α governs γ_1 , γ_1 governs γ_2 , ..., γ_{n-1} governs γ_n , and γ_n governs β ($n \geq 1$).
 b. If NP_i is governed by a category α which cannot or may not assign Case, NP_i will acquire its Case from the first Case-assigner up by which it is chain-governed.

A problem with respect to (2) is that it is not immediately clear whether it can also account for the object-subject order in the case of the causative psych-verbs. In section 5.2, I argued that the underlying order of the arguments of such verbs is NOM-ACC as in (3a). Instead of being an underlying order, I argued that the ACC-NOM order in (3b) is derived by Scrambling the accusative NP across the nominative argument as in (3c).

- (3) a. dat de boeken de man ergerden
 that the book the man annoyed
 b. dat de man de boeken ergerden
 c. dat [IP [VP [V' de boeken [V' de man ergerden]]] I]


In order to make this analysis work, we had to assume that the subject has not undergone NP-movement, but remains in its base-position. If we did not assume this, we would have to conclude that the NP *de man* has been scrambled to a position preceding SpecIP. But if this is possible, we would no longer be able to account for the fact that the object-subject order is not possible in the case of transitive unergative verbs.

According to this analysis, we must assume that the subject of a causative psych-verb can be assigned Case in its VP-internal base-position as well. If we like to account for the ACC-NOM order in (3b) with recourse to (2), we must at least make it plausible that the NP *de boeken* is governed by the verb, since otherwise it cannot be chain-governed by I either. This will be done in section 6.1.

In section 6.2, it will be shown that the definition of chain-government in (2a) must be revised. In this section, I also discuss the assignment of

nominative Case to the external argument of the verb.

If it is indeed the case that nominative Case can be assigned under chain-government in both (1) and (3), we must conclude that NP-movement is superfluous in the grammar of Dutch. After all, the need for an NP to receive Case has always been the motivation for the assumption of NP-movement. For this reason, I argued in Broekhuis (1988a) that we must reconsider the need for NP-movement in Dutch (cf. also Den Besten 1989, 1990).³ It is very hard, though, to prove that NP-movement is not involved in the grammar of Dutch, but in 6.3 I will give some evidence that may at least lend some support to this idea.

Adopting the idea that English does, but Dutch does not have NP-movement, I will try to explain in 6.4 why this should be so.

6.1. Government and the *Wat voor*-split

In this section, I provide some evidence for the assumption that the D-structure position of the subject of a causative psych-verb is governed by the verb, and hence that it can be assigned nominative Case in this position under chain-government. Evidence for this claim is supplied by the so-called *Wat voor*-split. For our present purpose, it suffices to confine our attention to the conditions under which the split may occur; an analysis of the construction will not be given here (cf. Corver 1990 and references cited there for relevant discussion).

Consider the examples in (4), in which we find the unaccusative verb *bevallen*. As discussed extensively, the order of the arguments in (4a) reflects the underlying order, whereas the order in (4b) is derived by movement of the subject across the indirect object, whence the trace following the indirect object.

³ 'NP-movement' must be construed here as movement of an NP to SpecIP *in order for the NP to receive nominative Case*. Contrary to what is suggested in Den Besten (1990), I have never argued that in Dutch movement to SpecIP is excluded in general. This does not necessarily imply that non-nominative constituents, such as the indirect object *mijn broer* in (1), may be moved to SpecIP (cf. fn.1 and see further fn.13 for some empirical evidence against this option). Such movements are probably blocked for the following reason. As is now generally assumed, the head of a functional category XP agrees with the specifier of XP (if present). As a result, the specifier position of XP is only accessible to an NP that agrees with the head of XP. Since I only agrees with the NP that is assigned nominative Case, only this NP can be moved to SpecIP. This solves the problem (if it is a problem at all) of multiple derivations discussed in Den Besten (1989, 1990).

- (4) a. dat mijn broer die boeken niet bevieelen
 that my brother those books not pleased
 'that those books didn't please my brother.'
 b. dat die boeken_i mijn broer _i niet bevieelen

As has been briefly mentioned in section 5.0, Den Besten (1985) argued that the *Wat voor*-split is a crucial test for determining the base-position of an argument; *Wat voor*-split can only be applied if the argument occupies its base-position. This generalization accounts for the fact that the subject of a DAT-NOM verb can only undergo this split if it is preceded by the indirect object. This can be seen in (5).

- (5) a. *wat* zouden mijn broer nou *voor boeken* bevallen?
 what would my brother now for books please
 'What sort of books would please my brother, I wonder.'
 b. **wat* zouden *voor boeken* mijn broer nou bevallen?

Although I accept this generalization, I did not discuss this test at length in chapter 5, since there are some problems with the way this test has been applied in Den Besten (1985). I discuss these in this section. Consider the following example.

- (6) gisteren heeft hij de leden het boek toegestuurd
 yesterday has he the members the book sent
 'yesterday, he sent the book to the members.'

In (6) each of the arguments can be questioned by means of a *wat voor*-NP. This NP is an interrogative phrase with the meaning 'what kind of'. The *wat voor*-NP can always be *wb*-moved as a whole, but in some cases it can also be split.

- (7) a. *wat voor boeken* heeft hij de leden toegestuurd?
 what sort of books has he the members sent
 'What kind of books has he sent to the members?'
 b. *wat* heeft hij de leden *voor boeken* toegestuurd?
- (8) a. *wat voor mensen* heeft hij het boek toegestuurd?
 what kind of people has he the book sent
 'To what kind of people has he sent the book?'
 b. ?**wat* heeft hij *voor mensen* het boek toegestuurd?

- (9) a. *wat voor mensen* hebben hem het boek toegestuurd?
 what kind of people have him the book sent
 'What kind of people have sent him the book?'
 b. **wat hebben voor mensen* hem het boek toegestuurd?

In (7–9) the split is only possible if the *wat voor*-NP is the direct object. The conclusion Den Besten draws from this is that *Wat voor*-split is only possible if the *wat voor*-NP is (strictly) governed by V. This is stated in (10).⁴

- (10) *Wat voor*-split is only possible if the *wat voor*-phrase occupies a position that is governed by V.

Within his set of assumptions this leads to the desired result, since he assumes that the verb only governs the direct object, the indirect object being governed by the intermediate projection of V (cf. the discussion in chapter 4, fn.6).

This account of the paradigm in (7–9) is not compatible with the definition of government advocated in chapter 2, since the substantive condition on government is stated in such a way that only heads are included in the set of governors. In section 4.3, we assumed that the (simplified) D-structure of a triadic construction is as given in (11).

- (11) dat [_{Vp} NP_{SUBJ} [_V NP_{IO} [_V NP_{DO} V]]]

⁴ The generalization in (10) predicts that subjects of Small Clauses may undergo *Wat voor*-split. This prediction is correct as can be seen in (i). However, there is an unexpected contrast between (iia) and (iib). In both examples the *wat voor*-phrase is the external argument of the Small Clause predicate, but nevertheless (iib) is unacceptable.

- (i) wat vind jij nou [_{sc} voor boeken leuk]
 what consider you PRT. for books funny
 'What kind of books do you consider funny.'
- (ii) a. wat zijn er vandaag [_{sc} voor mensen aanwezig]
 what are there today for people present
 'What kind of people are present today.'
 b. *wat zijn er [_{sc} voor mensen intelligent]
 what are there for people intelligent
 'What kind of people are intelligent.'

Diesing (1988) accounts for this distinction by the independently motivated assumption that predicates such as *intelligent* force the subject to move to a VP-external position, whereas predicates such as *aanwezig* do not. As a result, (10) makes the desired distinction.

Let us see what predictions we make if we accept this structure as a D-structure. We restrict our attention here to the direct and indirect object (the subject will be discussed in section 6.2.2). Since both the direct and indirect object can be *wb*-moved (cf. (8/9a)), we must assume that the traces of these arguments are properly governed. Of course, this is trivial in as far as the direct object is concerned; it is properly governed by the verb. But what about the indirect object?

Naturally, the verb is the most likely candidate for being the proper governor of the indirect object trace. Let us therefore assume that the verb indeed acts as the governor of the indirect object. This follows, if we assume that the two intermediate projections of V are segments of the same node; according to the definition of c-command (chapter 2.1, (46)), the verb c-commands, and hence governs, the indirect object as a result.

If we maintain that the verb is indeed the (proper) governor of the indirect object, it superficially seems to be the case that we can no longer maintain Den Besten's generalization in (10) which states that a *wat voor*-phrase can only be split if it is governed by the verb, since this would leave the degraded status of (8b) unexplained. Interestingly, however, Den Besten notes that examples such as (8b) are not completely unacceptable. And, in fact, I believe that we can even improve this example considerably by replacing the direct object in (8b) by the pronoun *het* 'it' and placing it in front of the indirect object, i.e. there is a clear contrast between (12a) (=8b)) and (12b).

- (12) a. **wat heeft hij voor mensen het boek toegestuurd?*
 b. *wat heeft hij het voor mensen toegestuurd?*

Perhaps (12b) is still slightly degraded, but it is certainly not ungrammatical. Consequently, we may conclude that the generalization in (10) can be maintained after all.

Note that it is relatively simple to account for the contrast between (12a) and (12b) with recourse to Bennis' (1986:223) Presuppositional Hierarchy. According to this hierarchy indefinite NPs must be (or better: are preferably) preceded by definite NPs and pronouns. Since interrogative NPs can be considered indefinite NPs (cf. 6.2.2 for further discussion), (12a) is not in accordance with this hierarchy, whereas (12b) is. If this account of the unacceptability of (12a) is on the right track, we predict that replacement of the definite NP *het boek* by the indefinite NP *een boek* gives a better result. This is indeed the case.

Let us now turn to the causative psych-verbs. Consider the D-structure of the examples in (3a,b), repeated here as (13).

- (13) dat [_{IP} [_{VP} [_V de boeken [_V de man ergerden]]]]

If we again assume that the two intermediate projections of the verb are segments of the same node, both arguments are governed by the verb. From (10), it therefore follows that *Wat voor-split* should be applicable to both NPs. Now consider the examples in (14) and (15).

- (14) a. *wat heeft het boek voor mannen geërgerd*
what has the book for men annoyed
- b. **wat heeft voor mannen het boek geërgerd*

- (15) a. ?*wat hebben (er) voor boeken de man geërgerd*
what have there for books the man annoyed
- b. *wat hebben (er) de man voor boeken geërgerd*

In (14) *Wat voor-split* has been applied to the accusative object. The fact that (14b) is completely unacceptable, confirms our assumption that (14a) reflects the underlying order of the construction, whereas in (14b) the accusative object has been moved to a position preceding the subject.

The fact that (15a) sounds a little bit odd even though the order of the arguments reflects the underlying structure can again be accounted for by recourse to Bennis' Presuppositional Hierarchy according to which indefinite NPs must be preceded by the definite NPs. The fact that (15b) is acceptable (and even improves if the object *de man* is replaced by a pronoun), is expected given our analysis of this construction; the object has been moved across the subject *which occupies its base-position*.

The examples in (15) confirm our assumption that the subject of a causative psych-verb is governed by the verb if it occupies its underlying position. Since this is what we had to establish before we could assume that the subject of a causative psych-verb can be assigned nominative Case under chain-government, we can now proceed to the discussion of this notion.

6.2. The assignment of nominative Case in Dutch

6.2.1. A reformulation of 'chain-government'

Now that we have established that the D-structure position of the subject of a causative psych-verb is governed by the verb, we may conclude that it can be assigned nominative Case under chain-government as well. Consider again Den Besten's proposal, repeated here for convenience as (16).

- (16) a. α chain-governs β iff α governs γ_1 , γ_1 governs γ_2 , ..., γ_{n-1} governs γ_n , and γ_n governs β ($n \geq 1$).
- b. If NP_1 is governed by a category α which cannot or may not assign Case, NP_1 will acquire its Case from the first Case-assigner up by which it is chain-governed.

Let me again illustrate how (16) works. First, consider the structure of (1a), repeated here for convenience as (17). In (17) I governs the head of VP, *bevallen*. Because the verb *bevallen* governs the NP *die boeken*, the latter is also chain-governed by I.⁵ Since the verb *bevallen* is an unaccusative verb, it cannot assign Case to the NP, but since I chain-governs the NP and is able to assign nominative Case, the NP will receive Case from I by (16b).

- (17) dat [I_{IP} [VP mijn broer [V die boeken bevallen]] I]]

Now, consider the structure of (3b) in (18). In (18) nominative Case is assigned in the same way as in (17). By (16a), I and its dependent verb may constitute a chain [I, V(*ergeren*)]. Because the NP *de boeken* is governed by the verb *ergeren*, it is also chain-governed by I. Since the verb *ergeren* cannot assign Case to this NP (the only available Case of this verb has already been assigned to the NP *de man*), it will be assigned nominative Case by I under (16b).

- (18) dat [I_{IP} [VP [V de boeken [V de man ergerden]]] I]


Let us now consider the definition of chain-government in (16a) in more detail. Note that this definition is stated very generally. It allows, for

⁵ As we have seen in section 2.2, the finite verb *bevallen* first has to move to I, in order for I to be able to govern into VP. Perhaps this may lead one to think that it is V-movement itself that establishes the chain. This cannot be true, however. If we put (17) in the perfect tense, the following result arises.

- (i) dat mijn broer de boeken bevallen zijn
 that my brother the books pleased are
 'that the books have pleased my brother.'

Since the subject *de boeken* follows the indirect object *mijn broer*, it must be assigned Case under chain-government. Consequently, the perfect participle *bevallen* must be a link in the governing chain, even though it has not moved. That it has not moved is clear from the fact that it precedes the auxiliary *zijn* (cf. Den Besten and Broekhuis 1989 and chapter 8 for further discussion).

instance, for the formation of each of the chains given in (19) as long as for each link γ_i, γ_j holds that γ_i governs γ_{i+1} .

- (19) a. [I, V, V] c. [I, V, N]
 b. [I, V, P] d. [I, V, A]

In this subsection, I would like to claim that the definition in (16a) is not restrictive enough, and that it should be revised. But before I will be able to make this claim, I first have to discuss some phenomena that at first sight have nothing to do with the topic under consideration.

Consider the English examples in (20) and their Dutch translations in (21). (For convenience, I assume here that the subject of the infinitival complements occupies SpecIP. The hypothesis that the subject of the clause is base-generated in SpecVP has some consequences for the kind of arguments given in this subsection. They will be discussed in chapter 9.)

- (20) a. *it is [_{AP} certain [_{α} PRO to win]]
 b. it is [_{AP} possible [_{α} PRO to win]]
 c. *it is [_{AP} probable [_{α} PRO to win]]
- (21) a. *het is [_{AP} zeker [_{α} PRO te winnen]]
 b. het is [_{AP} mogelijk [_{α} PRO te winnen]]
 c. *het is [_{AP} waarschijnlijk [_{α} PRO te winnen]]

Chomsky (1986a:78) explains the ungrammaticality of (20a,c) by assuming that the complement of *certain* and *probable* is an IP and, consequently, PRO is governed. The ungrammaticality of these sentences thus follows from the PRO-theorem. Since (20b) is grammatical, the complement of *possible* should be CP.

This conclusion is compatible with the findings of Den Besten et al. (1988) in so far as they have argued that *te*-infinitivals may differ with respect to their category; *te*-infinitivals may be either IP or CP (cf. section 4.1 for further discussion). If the infinitival is a CP, the complementizer may be *om* (*for* in English) or empty. This means that α in (20) and (21) may be either IP or CP, the choice being subject to the subcategorization properties of the selecting head.

As is well known, the infinitival complement of *possible* may contain the complementizer *for* as in *it is possible for John to win*. In the Dutch example in (21b) the complementizer *om* can be optionally added as in *Het is mogelijk om te winnen* (but it does not license a lexical NP as English *for* does). Let us therefore assume that *possible* and *mogelijk* also select a CP if their complement does not contain an overt complementizer. Further, I will assume for the time being that adjectives such as *certain/zeker* or *probable*/

waarschijnlijk always select an IP. This will of course immediately account for the fact that the infinitival complement of these adjectives never contains an overt complementizer. According to these assumptions, the structures in (20) and (21) can be made more precise as suggested by Chomsky, namely as in (20') and (21').⁶

- (20)' a. *it is [_{AP} certain [_{IP} PRO to win]]
 - b. it is [_{AP} possible [_{CP} Ø [_{IP} PRO to win]]]]
 - c. *it is [_{AP} probable [_{IP} PRO to win]]]
- (21)' a. *het is [_{AP} zeker [_{IP} PRO te winnen]]
 - b. het is [_{AP} mogelijk [_{CP} Ø [_{IP} PRO te winnen]]]]
 - c. *het is [_{AP} waarschijnlijk [_{IP} PRO te winnen]]]

It is not clear, however, whether the ungrammaticality of (20a,c) and (21a,c) has to be explained by recourse to the PRO-theorem, since it has been argued that PRO may be governed. If PRO is governed, it behaves as an anaphor (cf. Koster 1987). In section 2.3, we adopted the following statement:

- (22) PRO is an anaphor if it is governed at any level of representation.

Let us first consider the constructions in (20a,c) and (21a,c) in which α is IP. If we assume that the adjectives L-mark their complement, IP is not a barrier for the subject of the complement. Consequently, PRO is governed by the adjective and by (22) it is an anaphor. Because there is no antecedent

⁶ Evidence for the assumption that the choice between CP and IP may be subject to the subcategorization properties of the selecting head is provided by examples such as (i), taken from Van Haaften (1991). These examples can easily be explained by assuming that verbs of saying like *beweren* (and in fact all verbs that take a proposition as a complement; cf. Van Haaften 1991:chapter 5) never take an infinitival CP as a complement.

(i) a. Jan beweert [_a] *(om) PRO de wedstrijd te zullen winnen)
 Jan contends COMP the game to will win
 b. *er wordt (door Jan) beweerd [_a] (om) PRO de wedstrijd te zullen winnen)

The fact that the infinitival complement of *beweren* may not contain the complementizer *om* is a first indication that α in (ia) cannot be CP, but must be IP. Further, if the ungrammaticality of (ib) is due to the fact that PRO has no antecedent (binder), we must again conclude that α cannot be CP; as we have seen in section 4.1, if α is CP, PRO is not governed and need not be bound (cf. (22) below). Hence verbs like *beweren* are subcategorized for an infinitival IP, whereas verbs like *proberen* can take an infinitival IP or CP (cf. section 4.1 for further discussion).

for PRO in (20a,c) and (21a,c), PRO cannot be bound, thereby violating binding condition A.

Now, consider the constructions in (20b) and (21b) in which α is CP. Since IP is not L-marked by the empty complementizer, it is a barrier for the subject, and thus PRO is not governed. Therefore, PRO need not be bound and the sentences are wellformed.

Finally, consider the English examples in (23) in which the subject of the sentential complement has been raised to the subject position of the main clause.

- (23) a. John_i is [_{AP} certain [_{IP} t_i to win]]
- b. *John_i is [_{AP} possible [_{CP} Ø [_{IP} t_i to win]]]
- c. *John_i is [_{AP} probable [_{IP} t_i to win]]]

The ungrammaticality of (23b) can easily be explained. Since IP is a barrier in (23b), NP-movement across the CP violates the subjacency restriction on chain-formation given in chapter 3. The difference in grammaticality between (23a) and (23c), however, comes as a surprise. If both *certain* and *probable* select an IP, we would expect both to have the same status. Chomsky (1986a) assumes that the difference in grammaticality is due to some idiosyncratic property of these constructions. He assumes that the copula does not L-mark the AP, so that in the unmarked case the constructions should be ungrammatical. The sentence in (23a) is saved by a marked coindexing of the copula and the adjective *certain*.

As will become clear shortly, this option is not available to me, since I will assume that coindexing is only possible under government (this restriction is formalized in (27) below). Therefore, coindexing of the copula and *certain* implies that the AP is L-marked by the copula. If this is so in (23a), there is no reason not to assume the same in (23c).

Another way to explain the difference in grammaticality between (23a) and (23c) is to assume that adjectives like *probable* (and *waarschijnlijk*) can only select a finite complement. Of course, this immediately accounts for the ungrammaticality of (20c), (21c) and (23c).⁷

⁷ Another proposal to account for the ungrammaticality of (20c) and (21c) can be found in Bennis and Hoekstra (1989c). They assume (a) that PRO is always an anaphor and (b) that an anaphor can be bound either by a syntactically realized argument or by an implicit argument. This implicit argument is the agent of a passive sentence or can be realized as a *voor-PP* in Dutch. Since neither *certain* nor *probable* has an implicit argument, (20a) and (20c) are ungrammatical (cf. Van Haaften 1991:281 for a comparable approach to these examples). If this suggestion is on the right track, the difference between (23a) and (23c) can be explained by assuming that *certain* selects an IP and *probable* selects a CP.

(continued...)

Thus far, we have seen that adjectives may differ in their subcategorizing properties. They either may or may not select an infinitival complement, and if they do they may either select an IP or a CP. This explains the paradigm in (20), (21) and (23).

As can be seen in (24) and (25), Dutch has no grammatical equivalents of the English example in (23a). In (25) no NP-movement has been applied. *Het* in (25a) is an expletive just as *it* in (20). If the subject is indefinite, *er* is normally used as an expletive NP. This possibility is given in (25b). The ungrammaticality of (24), in which NP-movement has been applied, will be discussed in 6.3.2. Here, we restrict our attention to the examples in (25).

- (24) *Jan is zeker [_{IP} *t_i* te winnen]

- (25) a. *het is zeker [_{IP} Jan te winnen]
 b. *er is zeker [_{IP} iemand te winnen]

Since NP-movement has not applied in (25), nominative Case must be assigned to the subject of the *te*-infinitival by chain-government. According to (16a) the chain [I, V(is), A(zeker)] may be constructed. According to (16b), this chain may assign Case to the subject. Thus the definitions in (16) wrongly predict that the structures in (25) should be grammatical. One conclusion we may draw from this is that the definition of chain-government is not restrictive enough.⁸

One way to overcome this problem is by restricting chain-government to I and V. If we assume that at S-structure I and V both have the categorial features [-N, +V] (cf. section 2.2), we may define chain-government as in (26).

⁷ (...continued)

However, as we have seen in section 2.3, this proposal cannot be maintained; in (i) there is no implicit argument to bind PRO, and, consequently, Bennis and Hoekstra wrongly predict this example to be ungrammatical. For this reason, we rejected their proposal.

(i) het is schadelijk voor het milieu [om PRO vuilnis te storten]
 it is harmful to the environment waste to dump
 'It is harmful to the environment to dump waste.'

⁸ Since Extraposition of the sentential complement is compulsory, there may be another explanation for the ungrammaticality of the constructions. Recall from section 2.2 (67) that VP is a barrier at D-structure in Dutch. Hence nominative assignment under chain-government must be applied at S-structure. If we further assume that extraposition destroys the required structural configuration for chain-government, the ungrammaticality of (25) will be explained (cf. section 9.1 for further details). However, if it could be shown that the latter assumption is not tenable (cf. chapter 9, fn.3 for a potential counterexample for this assumption), the argument given in the main text should be conclusive.

(26) α *chain-governs* β iff α and the governor of β are coindexed.

(27) A head β may be *coindexed* with a head α iff:

- (i) both α and β are [-N, +V], and:
- (ii) α governs β .

Since the adjective *zeker* does not have the features [-N, +V], it may not be coindexed with the verb *is*. Consequently, the adjective and I are not coindexed either. As a result, chain-government of the subject of the *te*-infinitival in (25) by the matrix-I is blocked.

One problem arises concerning passive participles. As we have seen in chapter 5, the DAT-NOM order is also possible in the passive construction (cf. example (2b) in 5.0: *dat mijn broer de boeken aangeboden werden*). Hence the subject must be assigned Case in its underlying position, which implies that a passive participle can be a link in a government-chain. But since passive participles do not have Case-assigning properties, it has been assumed that they have lost their [-N] feature (cf. Den Besten 1981 and references cited there). I adopt this assumption here. Therefore, If we want to include passive participles, we must revise (27,i) accordingly.

To include passive participles, we could revise (27,i) by dropping the requirement that α and β are [-N]. The result of this move is that adjectives, being a [+V] category, are included as well. Since this is what we originally wanted to exclude, this option is not available. Another possibility is by demanding that α and β are not [+N] as in (28).

(28) A head β may be coindexed with a head α iff:

- (i) both α and β are not [+N], and:
- (ii) α governs β .

If we assume (28), we include the prepositions. If the preposition assigns objective Case itself, this has of course no undesirable consequences for nominative assignment under chain-government; nominative assignment to the complement of the preposition by chain-government always results in a Case-conflict, and is thereby blocked.

If the preposition is not a Case-assigner, we of course allow for Case-assignment under chain-government. Compare the following English particle constructions.

- (29) a. they looked the information up
 b. they looked up the information

In Den Dikken (1990), it is argued that the D-structure of the examples in (29) is as given in (30). According to this structure, the NP *the information* is the complement of the particle *up*.

- (30) they looked [_{SC} *e* [_{PP} up the information]]

Further, Den Dikken assumes that particles are unaccusative prepositions, i.e. prepositions that are not able to assign Case. Consequently, if nothing were to happen, the structure in (30) would be ruled out by the Case filter. The NP can be assigned Case by moving to the specifier position of the SC; in this position, it is in the configuration required for structural Case assignment by the verb.

Alternatively, Reanalysis of the verb and the particle may take place. Reanalysis enables the particle to transmit the verb's structural Case to its complement. Of course, we may reinterpret Den Dikken's Reanalysis as a case of chain-government; since both the verb and the particle are not [+N], the condition on coindexing in (28) is met in (30).⁹

Before we proceed, two problems must be noted. First, this treatment of Case-assignment in the particle construction implies that particles are head-final in Dutch, since they always follow the object. This assumption is well-motivated since in Dutch some transitive prepositions may occur in final position as well. Compare for instance the predicative PP in (31).

- (31) dat Jan [_{SC} de auto [_{PP} de garage in]] reed
 that Jan the car the garage into drove
 'that Jan drove the car into the garage.'

⁹ At least in Dutch. Perhaps, we must be more precise about Den Dikken's proposal here. According to Den Dikken, Reanalysis is a case of abstract Incorporation. According to Baker's Government Transparency Corollary, the verb governs the NP after incorporation of the particle and is therefore able to assign it structural Case.

However, as been noted by Den Dikken himself, if the particle is modified by an adverb only the NP-movement order is possible. Den Dikken assumes that the adverb blocks Reanalysis, and that (ib) violates the Case filter as a result.

- (i) a. they looked the information right up
 b. *they looked right up the information

This is unexpected if we assume that Reanalysis is abstract Incorporation or chain-government, and may indicate that this assumption must be dropped in as far as English is concerned. In our terms, this would imply that English has no chain-government at all (for which some evidence will be provided in chapter 7.2.3), and that a more traditional approach to this problem is to be preferred. In the main text, however, I will assume the most permissive option for the sake of argument.

Secondly, since in English the nominative argument always precedes the objective argument, Case-assignment under chain-government must be restricted to objective Case (if it is possible at all; cf. fn.9). The reason why nominative Case cannot be assigned under chain-government in English will be discussed in section 6.4.

Since the condition on coindexing in (28,i) enables us to give a natural account of (29) within our framework, I will henceforth assume the definition of coindexing in (28).¹⁰

The revision proposed in this section was first argued for on independent grounds in Broekhuis (1988a,b). In these papers, I argued that the formulation of coindexing in (28) enables us to use the notion of chain-government in an entirely different domain of syntax, namely Binding theory. The main findings of these papers will be summarized in chapter 7.

6.2.2. Nominative assignment to the external argument of V

After the discussion of chain-government, I want to address the problem of nominative assignment to the external argument of V. In chapter 1, we adopted the VP-internal subject hypothesis, i.e. the hypothesis that the external argument is generated in SpecVP. The question I want to discuss here is whether nominative Case may be assigned to that position in Dutch. In this section three arguments will be given for an affirmative answer to this question.

6.2.2.1. The order of sentence adverbs and the external argument

If nominative Case may be assigned under (chain-)government, one would *a priori* expect an affirmative answer to the question whether nominative Case can be assigned to SpecVP, simply because nothing prevents government of this position by I. As we discussed in section 2.2, in Dutch V moves to I at S-structure, thus lexicalizing I. This enables I to L-mark VP, and, as a result, VP is not a barrier for government at S-structure. Consequently, if nominative Case can be assigned under government, assignment of nominative Case to SpecVP is permitted.

Consider now the examples in (32).

¹⁰ Possibly, (28) may be revised in yet another way by assuming that the restriction in (28, i) only holds for β . This option may be preferable if one wants to make the claim that θ -roles can be assigned compositionally. I do not digress on this matter here.

- (32) a. dat de man waarschijnlijk het boek koopt
 that the man probably the book buys
 'that the man is probably buying the book.'
 b. dat de man het boek, waarschijnlijk t_i, koopt

Since in (32b) the NP *het boek* precedes the adverbial *waarschijnlijk*, we may assume that it has been moved across the adverbial to a VP-external position (cf. section 4.3). In (32a), on the other hand, the NP occupies its D-structure position (or, at least, occurs VP-internally). If the VP-internal hypothesis and the assumption that sentence adverbials are generated VP-externally are correct, the D-structure of (32) is as given in (33).

- (33) dat waarschijnlijk [VP de man het boek koopt]
 that probably the man the book buys
 'that the man is probably buying the book.'

If nominative Case can be assigned to SpecVP in Dutch, one would predict that (33) is a possible S-structure. This prediction is fulfilled, although most people prefer the order in which the NP *de man* precedes the adverbial. Probably, this preference has a pragmatic base (and has to be explained within a pragmatic theory on presupposition and focus, cf. Bennis 1986, Verhagen 1986, Broekhuis 1988a, 1990 and many others), since if the subject is not a definite NP but, for instance, a universally quantified expression, both orders are equally good.

- (34) a. dat waarschijnlijk iedereen het boek koopt
 b. dat iedereen waarschijnlijk het boek koopt

The acceptability of (33) and (34b) indicates that the external argument need not be moved to SpecIP, and hence may be assigned Case in its base-position.

6.2.2.2. *Wh*-extraction of external arguments

That the subject of an unergative verb may be assigned its nominative Case in SpecVP position, can be argued for in a different way. As can be seen in (35), the subject of an embedded clause may be extracted by *Wh*-movement in Dutch, even if a complementizer is present (which has of course been known for a long time, cf. for example Bennis 1986, Koopman 1984 and Koster 1986). An example of such an extraction is given in (35).

- (35) wie denk je dat *(er) lachte?
 who think you that there laughed
 'who do you think laughed?'

Nevertheless, in most varieties of Dutch, especially the standard language, (35) is out if the expletive *er* has been dropped (cf. Bennis 1986 and Koopman 1984 and references cited there).¹¹ This does not necessarily follow from the ECP, because the same holds in simplex clauses (but cf. Koopman 1984 who gives an ECP account of the example in (36)):

- (36) wie lachte *(er)?
 who laughed there
 'who laughed?'

Since we find the same phenomenon in both simplex and complex sentences, the ungrammaticality of (35) and (36) without *er* might only indicate that *wie* is an indefinite NP, since in Standard Dutch expletive *er* is obligatorily present if the subject is a non-specific indefinite NP. (Recall that the expletive construction is not restricted to unaccusative verbs in Dutch.)

- (37) dat *(er) iemand lachte
 that there someone laughed
 'that someone laughed.'

In fact, the distribution of expletive *er* is more complicated than this, since its occurrence does not only depend on the (in-)definiteness of the subject, but also on the (in-)definiteness of the object. If we only take these arguments into consideration, its distribution in Standard Dutch is restricted approximately in the following way:

- (38) Expletive *er* must occur if (a) the verb is intransitive and the subject is indefinite, or (b) the verb is transitive and both the subject and the object are indefinite; if the object is definite, *er* is preferably deleted.

If we assume that interrogative phrases such as *wie* are indefinite NPs, the descriptive generalization in (38) accounts for the following paradigm in Standard Dutch:

¹¹ The discussion of the distribution of expletive *er* below is simplified in various respects. Besides the variation among speakers, various often poorly understood factors may influence the judgements. For instance, for some speakers, the unacceptable examples improve if we add an auxiliary verb. The judgements given in the text are my own, but they coincide more or less with those given in Bennis (1986), be it that he generally gives a double question mark instead of an asterisk.

- (39) a. wie las (*er) het boek?
 who read the book
 b. wie las *(er) een boek?
 who read a book
- (40) a. wie denk je dat (*er) het boek las?
 who think you that the book read
 'Who do you think read the book?'
 b. wie denk je dat *(er) een boek las?
 who think you that a book read

Further, expletive *er* may generally be dropped if the clause contains a locative adverbial phrase. This explains the acceptability of the *wh*-questions in (41).

- (41) a. wie danst (er) op het plein?
 who dances on the square
 'Who is dancing in the square?'
 b. wie denk je dat (er) op het plein dans?
 who think you that on the square dances

Now, how can the absence of the *that*-trace effect be explained within the set of assumptions we have adopted in chapter 2? Since *wh*-extraction as in (35), (40) and (41) leads to a grammatical result, we must assume that the traces are formally licensed, i.e. that the ECP is satisfied. First, assume that the subject is extracted from SpecIP. This would lead to the wrong result, because, according to the definition of government in chapter 2, the *wh*-trace must be c-commanded by its governor. Therefore, the only potential governor of the trace is C. But since C is not lexical, it does not L-mark IP, which is consequently a barrier for the *wh*-trace. Thus the *wh*-trace is not governed and the structure will be ruled out by the ECP.

But now, assume that since the subject is a non-specific indefinite NP, it may be extracted from SpecVP. In that case, the structure of (35) would be as indicated in (42).

- (42) wie_i denk je [CP t_i dat [IP er [VP t_i t_j] lachte_j]]

In (42) the verb *lachte* has been moved to I, thus lexicalizing I. Since I is lexical, it L-marks VP, which, as a result, is no longer a barrier for the *wh*-trace. So the *wh*-trace is governed by I and the ECP is satisfied.

To conclude, we may state that *wh*-extraction of the subject must take place from SpecVP. Since the *wh*-trace must be Case-marked, this implies that SpecVP may be Case-marked under government.

6.2.2.3. *Wat voor*-split of external arguments

As can be seen in (42), SpecVP is governed by the verb after V to I. As we have seen in 6.1, *Wat voor*-split may apply in positions that are governed by V (cf. (10)). However, (10) is meant to refer to the V-position. But suppose that (10) is stated as in (43).

- (43) *Wat voor*-split is only possible if the *wat voor*-phrase occupies a position that is governed by a head containing V.

In this case, we would expect that *Wat voor*-split is also possible in SpecVP and in fact, contrary to what Den Besten claims, the subject can be split (cf. Reuland 1985; Diesing 1988). Consider the examples in (44).

- (44) a. **wat hebben voor mensen het je toegestuurd?*
 what have for people it you sent
 'What kind of people sent it to you?'
 b. **wat hebben voor mensen jou geholpen?*
 what have for people you helped
 'What kind of people helped you?'

The examples in (44) are indeed unacceptable. According to (43), the *wat voor*-phrase must occupy SpecVP. Hence the NPs *het* and *je* in (44a) and *jou* in (44b) are in their base positions, too. But this is not allowed in Dutch; pronominals like *het* and *je* are clitic-like elements in that they always have to be scrambled. Hence the sentences that must be considered are not those in (44), but the ones in (45), which are noticeably better than (44). The fact that the example in (45a) still sounds a little bit odd has to do with the fact that Scrambling of both a direct and an indirect object across an indefinite NP is marginal in all cases. This can be seen in (46).

- (45) a. ?*wat hebben het, je, voor mensen t_i, t_j toegestuurd?*
 b. *wat hebben jou, voor mensen t_i geholpen?*

- (46) ?dat het, hem, iemand t_i, t_j toegestuurd heeft
 that it him someone sent has
 'that someone has sent it to him.'

In examples in which Scrambling across the subject does not occur, *Wat voor*-split of the subject seems to give rise to a perfect result.

- (47) wat hebben er voor vogels je voedertafel bezocht?
 what have there for birds your bird-table visited
 'What kind of birds visited your bird-table?'

To account for the grammaticality of (45) and (47), we must assume again that an external argument of an unergative verb may remain in its base-position and, thus, is able to acquire its nominative Case under government by I.¹²

6.2.2.4. Conclusion

In this section I have given three arguments in favour of the assumption that in Dutch external arguments of unergative verbs may remain in their base positions and, consequently, that nominative assignment to them may take place under government by I.¹³

¹² This discussion of the *Wat voor*-split does not solve all problems. A natural assumption, as has been suggested by Den Besten (1985), is that the statement in (10)/(43) can be derived from the ECP. Since (47) is grammatical, we therefore expect that long extraction of *wat* from SpecVP is possible. However, as can be seen in (i), this gives rise to a degraded result (even though these extractions are not completely out as has been claimed by Koster 1987).

(i) ?wat denk je dat er voor vogels je voedertafel hebben bezocht?
 what think you that there for birds your bird-table have visited

Coopmans (1988) has shown that the *Wat voor*-split in object position meets similar problems; he correctly claims that *wh*-extraction from a *wh*-island gives rise to a noticeably worse result if the moved element is part of a *wat voor*-phrase than if the extracted element is a regular *wh*-constituent.

¹³ If this conclusion can be maintained, we are able to give empirical support to the claim that SpecIP is only accessible to the subject of the clause (cf. fn.3). If the subject can be assigned nominative in SpecVP, and if SpecIP is accessible to other constituents, we would predict that the subject of the clause can always be preceded by another constituent. This is not the case in Dutch as can be seen in (i) and (ii). Cf. Vikner (1990a, ch.2) for a more extensive discussion of the topicalization-to-SpecIP hypothesis.

(i) *dat dat boek Jan leest
 that that book Jan reads
 'that Jan is reading the book.'
 (ii) *dat op zijn vader Jan wacht
 that for his father Jan waits
 'that Jan is waiting for his father.'

6.3. Arguments against A-movement to SpecIP in Dutch

As I have argued in 6.2, nominative Case can be assigned to SpecVP under government. As a result, we need not assume NP-movement (A-movement to SpecIP) in Dutch, i.e. the assumption that nominative Case can be assigned to SpecVP under government renders NP-movement superfluous; nominative Case can always be assigned to this position, since an external argument not occupying SpecVP is always connected to this position by virtue of entering into a chain with its trace.

In this subsection, I give some arguments that suggest that NP-movement is not only superfluous in the grammar of Dutch, but in fact never applies in Dutch. This is not meant to imply that the subject in Dutch cannot be moved to SpecIP, but only that it will *never* move to this position *for reasons of acquiring nominative Case*.

We can state this in a different way. Given the definition of A-position in section 1.1.1, repeated here for convenience as (48), we can say that, since Case is always assigned under government and never under SPEC-Head Agreement, the SpecIP position is never assigned nominative Case and thus is always an A'-position in Dutch.

- (48) If a position is θ- or Case-marked it is an *A-position*; it is an *A'-position* otherwise.

Of course, the assumption that SpecIP cannot be assigned Case under SPEC-Head Agreement in Dutch is the reason why we construed NP-movement above (cf. also fn.3) in the limited sense of 'movement of an NP to SpecIP in order for the NP to receive nominative Case'; if a position is assigned Case under government, NP-movement in its broader sense (A-movement to a Case-marked position) will of course not be blocked.

In this section, four arguments are given that indicate that SpecIP is an A'-position in Dutch, contrary to what is the case in English. In addition, a potential counterargument is discussed; it will turn out that in the end it supports the assumption that I argue for in this subsection.

6.3.1. The marked NOM-DAT order

Consider again the examples in (1) and (6) of chapter 5, repeated here for convenience as (49) and (50).

- (49) a. dat de boeken_{SUBJ} mijn broer_{IO} aangeboden werden
 that the books my brother offered were
 'that the books were presented to my brother.'

- (49) b. dat mijn broer_{IO} de boeken_{SUBJ} aangeboden werden
- (50) a. dat de boeken_{SUBJ} de jongen_{IO} bevallen
 that the books the boy pleased
 'that the boy is pleased with the books.'
 b. dat de jongen_{IO} de boeken_{SUBJ} bevallen

As we have discussed in the previous chapter, the DAT-NOM order in the b-examples is the unmarked order, whereas the NOM-DAT order in the a-examples is marked. For instance, if the subject is a non-specific indefinite NP, the NOM-DAT order is degraded. On the other hand, if the indirect object is a non-specific indefinite NP, the DAT-NOM order gives rise to a perfect result.

Of course, if Dutch has something like A-movement to SpecIP of the underlying object, it is surprising that the NOM-DAT order in (49) and (50) is marked since in other languages (such as English) this movement applies in the unmarked case. Therefore, the markedness of the NOM-DAT orders in (49) and (50) indicates that in Dutch A-movement to SpecIP of the underlying object is not possible, i.e. that SpecIP is not an A-position.

6.3.2. Raising adjectives

The second argument can again be very briefly stated. In 6.2.2, we discussed the behaviour of raising adjectives in Dutch and English. The sole thing we have not yet explained is the difference in grammaticality between (23a) and (24), repeated here for convenience as (51).¹⁴

- (51) a. John_i is certain [IP t_i to win]
 b. *Jan_i is zeker [IP t_i te winnen]

The difference between the English and the Dutch example may be explained by assuming that SpecIP in English, but not in Dutch, may be assigned Case under SPEC-Head Agreement and that therefore *John* in (51a),

¹⁴ The sentence in (i) is fine, but differs from (51b). This can be shown by dropping the complement. In this case the sentence is still acceptable. Consequently, the subject of the main clause cannot have been extracted from the embedded clause. So, the subject of the embedded clause cannot be NP-trace, but must be PRO.

- (i) Jan is er zeker van te winnen
 (ii) Jan is er zeker van
 'John is certain about winning/it.'

but not *Jan* in (51b), may be assigned Case by movement to SpecIP.¹⁵

There is at least one objection to this account of the ungrammaticality of (51b). In Dutch, Extrapolation of the sentential complement of an adjective is compulsory as can be seen in (52). As a result, in (51b) the NP-trace is at the right-hand side of the verb after Extrapolation. This can be seen in (53).

- (52) a. dat het mogelijk is [PRO te winnen]
that it possible is to win
'that it is possible to win'
 - b. *dat het mogelijk [PRO te winnen] is
- (53) *dat Jan_i zeker is [_{IP} _{t_i} te winnen]

In Koster (1987) it was argued that this leads to an ECP violation, since the trace is not canonically governed in this structure (canonical government being to the left). In section 9.1, however, it will be argued that this account cannot be maintained within our approach, and that the impossibility of Subject Raising after Extrapolation has to be accounted for by having recourse to Case theory as well (cf. fn.8 for a brief preview of the proposal in section 9.1).

6.3.3. Indefinite subjects

The third argument is adapted from Reuland (1988). As is well known, in English indefinite NPs may appear in SpecIP. For example, both (54a) and (54b) are fine with the non-specific reading of the NP *a man*.

- (54) a. probably, there arrived a man yesterday
- b. probably, a man arrived yesterday

In Dutch on the other hand, the NPs in (55a) and (55b) cannot have the same reading; the NP *een man* in (55a) has a non-specific reading, but the NP *een man* in (55b) can only have a specific reading.

¹⁵ One may wonder why NP-movement to SpecVP cannot save (51b) from the Case filter. Obviously, we have to restrict NP-movement to the specifier positions of functional projections. To account for this restriction, we may assume that the presence of a SpecVP position is determined by the lexical properties of the verb, i.e. that SpecVP is only available to unergative verbs.

- (55) a. dat er waarschijnlijk gisteren een man is aangekomen
b. dat een man waarschijnlijk gisteren is aangekomen

In Reuland (1988), it is suggested that this difference between English and Dutch is related to the A/A'-status of SpecIP; a non-specific NP can only move to SpecIP if it is an A-position.

This assumption is based on the following consideration. According to Reuland (1988), non-specific NPs in Dutch may not be scrambled. If an indefinite NP has been scrambled, it always gets a specific (or generic) interpretation (cf. Kraak and Klooster 1968). Here I give some of Reuland's examples. The glosses are mine.

- (56) a. Rudy hoopt dat Onno morgen zes brieven verscheurt
 Rudy hopes that Onno tomorrow six letters tears up
 ‘Rudy hopes will tear up six letters tomorrow.’
 b. Rudy hoopt dat Onno zes brieven morgen verscheurt
 ‘Rudy hopes Onno will tear up six of the letters tomorrow.’

As will be clear from the glosses, in (56b) the NP *zes brieven* only has a partitive reading; it can only refer to (a part of) a previously established group of letters. In (56a) it may have the same reading as in (56b), but in addition it can also have a non-specific reading; it can also refer to just some letters not previously introduced into the discourse.

Since Scrambling is an adjunction rule, viz. movement to a derived A'-position, Reuland captures the facts in (56) with the following descriptive generalization:

- (57) Non-specific NPs can only be licensed in A-positions.

If this generalization is correct, the examples in (55b) show that SpecIP is not an A-position in Dutch. (Note that Reuland considers SpecIP as an A'-position for a different reason than I do.)

Unfortunately, there are some problems with Reuland's generalization in (57). As we have seen in section 4.3.1, an indefinite NP that has been Scrambled VP-internally can still be construed with a non-specific reading. Consider again the following examples.

- (58) a. dat Jan waarschijnlijk morgen iemand zal bezoeken
 that Jan probably tomorrow someone will visit
 'that Jan will probably visit someone tomorrow.'
 b. dat Jan waarschijnlijk iemand, morgen t_i, zal bezoeken (± spec.)
 c. ~~dat Jan iemand, waarschijnlijk morgen t_i, zal bezoeken (- spec.)~~

Although the non-specific indefinite object may be scrambled across the adverbial phrase *morgen* (58b), it cannot be scrambled across the sentence adverb *waarschijnlijk* (58c), i.e. although a non-specific indefinite NP can be scrambled within its VP-domain, it cannot be scrambled to a VP-external position. We accounted for the difference between (58b) and (58c) by assuming that non-specific NPs may only be scrambled within a restricted domain, namely VP, i.e. can only be adjoined to V' (cf. section 4.3 for more evidence for this claim.)

Now, we may revise Reuland's descriptive generalization as in (59):

- (59) VP-externally, Non-specific NPs can only be licensed in A'-positions.

If this generalization is correct, we may maintain Reuland's explanation for the difference between the English examples in (54) and the Dutch examples in (55), viz. by assuming that SpecIP is an A-position in English, but an A'-position in Dutch.

6.3.4. Parasitic gaps

Bennis and Hoekstra (1984) and Bennis (1986) have shown that Scrambling may license parasitic gaps.

- (60) a. Jan heeft [zonder ze/**e* te bekijken] die boeken
 John has without them to inspect those books
 weggelegd
 away put
 'John has put away those books without inspecting them.'
 b. Jan heeft die boeken [zonder ze/*e* te bekijken] *t* weggelegd

In (60b) the scrambled NP *die boeken* fulfills all the requirements for licensing a parasitic gap (cf. Chomsky 1982:66), especially that it occupies an A'-position. This requirement is necessary to explain the impossibility of (61), which is reported to be completely ungrammatical by Chomsky.

- (61) *this book can be sold *t* without reading *e*

In (61) all the requirements for licensing a parasitic gap are fulfilled, apart from one; the requirement that the antecedent does not occupy an A-position.

Consider (62). This example is the passive alternate of (60) without a parasitic gap. As is indicated, (62) is degraded which is due to the fact that

adjuncts that are preceded by the preposition *zonder* require obligatory control (cf. van Haaften 1991:section 3.8).

- (62) ?dat die boeken [zonder ze te bekijken] *t* werden weggelegd
 that those books without them to inspect were away put

Now, compare (62) and the examples in (63) in which a parasitic gap is present. The example in (63a) has roughly the same status as (62), whereas (63b) is completely unacceptable. (The acceptability of examples such as (63a) has also been noted by De Hoop and Kossmeijer 1991):

- (63) a. ?dat die boeken [zonder *e* te bekijken] *t* werden weggelegd
 b. *dat [zonder *e* te bekijken] die boeken werden weggelegd

The contrast between (63a) and (63b) is of course as expected since the parasitic gap lacks an antecedent in the latter case. However, if the movement in (63a) is A-movement to SpecIP, the acceptability of (63a) would come as a surprise, since the antecedent of the parasitic gap may not occupy an A-position (cf. the discussion of example (61)). Consequently, we must conclude that the NP *die boeken* in (63a) does not occupy an A-position and that therefore SpecIP in Dutch is an A'-position.¹⁶

6.3.5. Binding

Above we discussed some differences between English and Dutch that may be explained by assuming that SpecIP is an A-position in English, but not in Dutch, on account of the fact that in English, but not in Dutch, nominative Case is assigned to SpecIP by SPEC-Head Agreement. In this subsection, I will discuss a potential counterargument to the claim that SpecIP is not an A-position in Dutch. (A second potential counterargument is discussed in chapter 9, fn.6.) In the end, however, it will turn out that it provides important evidence for this claim. Consider (64).

¹⁶ The TLR-reviewer of Broekhuis (1991) noted that a parasitic gap can also be licensed by Scrambling of a non-specific derived subject, as in (i).

(i) ?dat er boeken [zonder *e* te bekijken] *t* werden weggelegd

Given the fact that non-specific indefinite objects may only be scrambled within their VP-domain, this is to be expected since we have seen in section 4.4 that the infinitival adjunct is generated VP-internally as well; it may follow a sentence adverb and can be taken along under VP-topicalization.

- (64) dat die jongens, elkaar t_i bevallen
 that those boys each other please
 'that those boys please each other.'

The verb *bevallen* is an unaccusative psych-verb, hence at D-structure the subject has been generated in a position that does not c-command the indirect object *elkaar*, at least if we construe c-command in its traditional sense. (The result that arises if we adopt the definition in section 2.1.3 will be discussed below). Nevertheless, at S-structure it is able to bind the indirect object and since the reciprocal pronoun must be A-bound, we are forced to conclude that the NP *die jongens* occupies an A-position. The result is that SpecIP must be an A-position.

There are several reasons to doubt this conclusion. First, consider the following raising constructions; In (65a) the raising verb *lijken* selects a sentential complement, and in (65b) it selects a Small Clause.

- (65) a. dat Jan hem ziek leek te zijn
 b. dat Jan hem ziek leek
 that Jan him sick seemed to be
 'that Jan seemed to him to be sick.'

In (65a,b) the NP *Jan* has been moved across the indirect object *hem* to SpecIP of the matrix clause. Therefore, the structure of the examples in (65) is as given in (66) (I give the main clause order here for ease of representation; irrelevant details are omitted).

- (66) a. Jan_i leek hem [IP t_i ziek te zijn]
 b. Jan_i leek hem [AP t_i ziek]

If the SpecIP position of the matrix clause is an A-position, we would expect the subject to be able to bind an anaphor in the position of the indirect object, just as in the English example in (67). This, however, is not the case as can be seen in (68).

- (67) they seem to each other to be sick

- (68) a. *dat die jongens_i zichzelf/elkaar_i ziek lijken te zijn
 b. *dat die jongens_i zichzelf/elkaar_i ziek lijken
 that those boys themselves/each other sick seem to be

Consequently, these examples give rise to the opposite conclusion, namely that SpecIP is not an A-position.

Secondly, it is not clear whether we may derive any conclusion about the

status of SpecIP from the binding fact in (64). In Webelhuth (1989) it was shown that in German a scrambled accusative object is able to A-bind the indirect object, although it is generally assumed that Scrambling is movement to an A'-position.

- (69) er hat die Gäste_i (acc.) einander *t_i* vorgestellt
 he has the guests each other introduced
 'He has introduced the guests to each other.'

The conclusion Webelhuth draws from this example is that a scrambled NP, i.e. an NP in a derived A'-position, cannot only act as an A'-binder, as we have seen in 6.3.4, but also as an A-binder. (Cf. also section 4.4 where Vanden Wyngaerd's 1989 solution to this problem was discussed.)

It is not clear whether we should adopt Webelhuth's conclusion. In Santorini and Lee (1990) it is claimed that (70a) is grammatical as well (and I believe that the same is true for its Dutch translation in (70b)), although they admit that most German (and Dutch) speakers consider it very marked and even tend to reject this example. For the sake of argument, however, let us assume that the judgement of Santorini and Lee is correct.

- (70) a. heute hat Maria einander_i die Gäste_i vorgestellt
 b. vandaag heeft Maria elkaar_i de gasten voorgesteld
 today has Maria each other the guests introduced
 'Today, Maria introduced the guests to each other.'

In section 4.3.2, I assumed that the D-structure of the triadic construction is as given in (71a). If this is correct, the structure of (70) is as given in (71b), irrelevant details omitted.

- (71) a. dat [VP NP_{SUBJ} [V NP_{IO} [V NP_{DO} V]]]
 b. heute hat [VP Maria [V einander [V die Gäste vorgestellt]]]

In (71b) the two intermediate projections are segments of the same node. Hence, according to the definition of c-command adopted in 2.1.3, the indirect object *einander* and the direct object *die Gäste* c-command each other at D-structure. This implies that in (70) *einander* is correctly bound by the direct object.

If we further adopt Belletti and Rizzi's (1988) assumption that binding condition A is an "anywhere" rule that can be satisfied at any level of representation, we correctly predict that the (69) is grammatical as well, since the anaphor is correctly bound at D-structure. Consequently, if this account of (69) is correct we no longer need Webelhuth's assumption that a scrambled phrase may act both as an A- and as an A'-binder.

Now, consider again the example in (64), repeated for convenience as (72a). The D-structure of this example is given in (72b). (The order in (72b) is marginally possible for me.)

- (72) a. dat die jongens_i elkaar t_i bevallen
 b. dat I_{VP} I_V elkaar I_V die jongens bevallen]]]

As in (71b), the objects c-command each other in (72b). Hence the indirect object *elkaar* in (72a) is correctly bound at D-structure and the example in (72a) is grammatical.

Finally, we must consider the question why the examples in (68) are ungrammatical. Consider their S-structure in (73). (Again, I give the main clause order for convenience).

- (73) a. *die jongens_i lijken zichzelf/elkaar_i [_{IP} t_i ziek te zijn]
 b. *die jongens_i lijken zichzelf/elkaar_i [_{AP} t_i ziek]

At D-structure, the subject *die jongens* occupies the specifier position of the IP/AP. The indirect object on the other hand occupies a position external to IP/AP. Hence the NP *die jongens* does not c-command the anaphor at D-structure, and binding condition A cannot be satisfied at this level. Since the NP does not occupy an A-position at S-structure the anaphor cannot be bound at this level either. As a result, the examples in (73) violate binding condition A.

In this subsection, I discussed some binding facts that at first sight constitute a problem for the claim that SpecIP is an A'-position in Dutch. I showed, however, that if we adopt Belletti and Rizzi's assumption that binding condition A can be satisfied at each level of representation, the problem can be solved easily within the present framework. In addition, I showed that we can also handle the facts in (68/73) that cannot be accounted for straightforwardly if we assume that SpecIP is an A-position. Consequently, we may conclude that the binding facts discussed in this subsection do not refute the assumption that SpecIP is a A'-position, but rather provide evidence for it.

6.4. Differences between Dutch and English

In 6.2 and 6.3, we have seen that in Dutch nominative Case is assigned only under (chain-)government, whereas it is only assigned under SPEC-Head Agreement in English. In Den Besten (1985) this is accounted for by assuming that languages are parametrized according to whether nominative Case can be assigned Case under chain-government or not. Here, I want to

suggest a more sophisticated answer to the question why this difference between Dutch and English should exist.

As we have seen in section 2.2, Dutch and English differ in another respect. In Dutch V-to-I applies in syntax, whereas V-to-I applies at LF in English. What I want to do is to connect these two differences. Let us assume that the following holds:

- (74) Nominative assignment under (chain-)government is only possible if V-to-I applies in the syntax.

Why should (74) hold? Generally, it is assumed that the requirement that an NP is Case-marked holds at S-structure. Therefore nominative Case must be assigned at D- or S-structure.

Now, suppose that V-to-I does not apply in the syntax. According to the assumption of section 2.2 that I is not lexical, VP is not L-marked and, consequently, a barrier for all VP-internal positions at S-structure. So I cannot govern into VP and thus it follows that nominative Case cannot be assigned under government.

If V-to-I applies in the syntax, I is lexical at S-structure. Now, VP can be L-marked by I, so it is not a barrier for the VP-internal positions. Hence I can govern into VP and nominative Case may be assigned under government. In this way (74) can be derived from the theory.

The generalization in (74) answers the question why nominative Case cannot be assigned under government in English, but it does not answer the question why nominative assignment under SPEC-Head Agreement is impossible in Dutch. The answer to this question has to be deferred until future research has clarified this issue.

I think that (74) is the strongest generalization that can be made for the moment, since it appears not to be true that nominative assignment under SPEC-Head Agreement is restricted to languages in which V-to-I applies at LF. In French, for instance, V-to-I is possible in the syntax (cf. Pollock 1988), but nominative assignment under SPEC-Head Agreement seems to be possible as well. I am not aware of facts that indicate that nominative Case may be assigned under government in French. Therefore, it also appears to be false that in every language in which V-to-I applies in the syntax, nominative Case may be assigned under government. For this reason, I make no stronger claim than the one expressed in (74).

At first sight, it seems attractive to relate the difference between Dutch and French to the fact that Dutch, but not French, has Verb Raising. This would imply that VR is somehow comparable to V-to-I in so far as it necessarily applies to fulfil some syntactic requirement (as has been assumed for example by Bennis and Hoekstra 1989a,b). In chapter 8, however, it will be shown that this is not the case; it is argued that VR is a

quite superficial phenomenon that is forced by basically non-syntactic principles.

Alternatively, the difference between Dutch and French can be accounted for by assuming that languages in which nominative Case could be assigned under government in principle are parametrized in the following way:

- (75) Nominative Case is assigned either under government or under Spec-Head Agreement.

If the suggestions above are on the right track, we expect that languages fall into three different groups with respect to nominative Case assignment. These are given in the following table, in which [$\pm V\text{-to-I}$] indicates whether V-to-I applies overtly or not, and [$\pm \text{Agreement}$] whether nominative Case is assigned under Spec-Head Agreement or under government.

Table 6.1 Nominative assignment in languages

	+ V-TO-I	- V-TO-I
+ AGREEMENT	French-type	English-type
- AGREEMENT	Dutch-type	-

As can be seen in this table, we predict that no language-type exists in which V-to-I does not apply overtly and in which nominative Case is assigned under government. As far as I know, this prediction is correct.

Part 3

More Evidence for Chain-Government

Introduction

In the previous part I discussed Den Besten's hypothesis that nominative Case can be assigned under chain-government, and modified his proposal in several respects. What I ignored until now, however, is that the assumption of chain-government has been criticized. Although the critics seem to agree that Den Besten's proposal is able to account for the facts, they conceive of it as an *ad hoc* solution (cf. for example Grewendorf 1989:p.137ff.). Since it has never been argued that the assumption of chain-government is independently motivated, this criticism appears to be justified.

In this part, though, I will show that chain-government plays a role in the explanation of several other phenomena in the grammar of Dutch, viz. binding and T-linking, and, consequently, that this notion is independently motivated after all.

This part is organized as follows. In chapter 7, the distribution of the two anaphor types Dutch distinguishes will be discussed. It will be shown that their distribution can be explained by introducing the notion of chain-governing category into Binding theory.

In chapter 8 Verb Raising (and other movements of the verb) in Dutch will be discussed. It has been argued by Bennis and Hoekstra (1989a,b) that every verb must be a link in a T-chain and that Verb Raising may establish such chains. If they are on the right track, a natural assumption would be that the possibility of chain-government in Dutch follows from the availability of Verb Raising. Following Den Besten and Broekhuis (1989), however, I will argue that it is not Verb Raising that makes chain-government possible. Rather, it is chain-government that plays a role in establishing the T-chain.

In chapter 9 I will discuss some properties of Verb Raising constructions. This discussion will enable us to solve a problem concerning binding that was left aside in chapter 7. This will be done in section 9.4.

7.0. Introduction

In this chapter, it will be shown that the notion of chain-government as reformulated in chapter 6 plays a role in an entirely different domain than Case theory. It will be shown that distinguishing between what we may provisionally call the governing and chain-governing category of an anaphor correctly accounts for the distribution of the anaphor types Dutch distinguishes. Sections 7.1–7.2 summarize the main findings in Broekhuis (1988a,b). Section 7.3 elaborates on work by Den Dikken (1990) to account for some facts that were not solved satisfactorily in the former work.

Since Chomsky's Pisa Lectures and *On Binding* a lot of work has been done on the distribution of reflexives in Dutch. In Dutch two anaphor types can be distinguished. In the third person singular and plural they appear as *zichzelf* and *zich*, respectively. These anaphors differ with respect to the domain within which they must be bound. In 7.1.1 some basic observations concerning their distribution are discussed.

In 7.1.2, I give an explanation for the differences in distribution of the two anaphor types in complement positions. The explanation is based on incorporation of the notion of chain-government into Binding theory.

In 7.1.3, the binding conditions for anaphors given in 7.1.2 will be slightly revised in order to explain the distribution of the two anaphor types in specifier positions. According to the theory to be proposed, the two anaphor types may only overlap in distribution if they do not occupy a complement position.

In 7.1.4, the discussion of the binding conditions for anaphors will be concluded with some remarks on the inherent reflexive construction and anaphoric control.

In section 7.2, the distribution of personal pronouns is discussed. Besides the two anaphor types, Dutch has two pronominal types: the stressed pronoun *bij/bem* and the unstressed one *-ie/um*. The latter type can sometimes occur in the same environment as the anaphor *zich*, whereas the

first cannot. Again, it will be shown that we may account for this by incorporating the notion of chain-government into Binding theory.

In 7.3, an apparent counterexample to the binding conditions for anaphors will be discussed.

7.1. The distribution of anaphors in Dutch

7.1.1. Some notes on the distribution of *zich* and *zichzelf*

The observation that underlies most recent work on the distribution of the Dutch anaphors *zichzelf* and *zich* (such as Everaert 1986, Koster 1985/1987, Reinhart and Reuland 1991 and Vat 1980) is that in simple sentences that are not inherently reflexive, *zich* may only occur as the complement of a locational preposition (i.e. a preposition of location or direction). *Zichzelf* on the other hand is not possible in this position according to this view, but may occupy all other complement positions of the sentence. Compare for instance the following quote from Koster and Reuland (1991b).

In Koster (1985) it is argued that an analysis of Dutch anaphors requires reference to both a smaller (opacity factor P) and a larger domain (factor Comp). The preposition domain was instantiated by locational and directional PPs, which were seen as governing categories in order to block *zichzelf*. Reference to thematic properties is already implicitly present in this account, and is in fact sufficient by itself.

More precisely, Koster (1985) assumes that *zichzelf* must be bound within its smaller domain, whereas *zich* must be bound within its larger domain and be free within its smaller domain. Prediction: *zichzelf* may not occur as the complement of a locative P since it must be bound within its smaller anaphoric domain (cf. (3); coreference is indicated by italics); in simple clauses, on the other hand *zich* may only occur as the complement of a locational preposition, since it must be free in its smaller anaphoric domain (cf. (1–3); a similar approach to the distribution of *zich* and *zichzelf* can be found in Vat 1980).

- (1) *Jan* bewondert *zichzelf/zich*
Jan admires himself
- (2) *Jan* schoot op *zichzelf/zich*
Jan shot at himself
- (3) *Jan* zette de tas voor **zichzelf/zich*
Jan put the bag in front of him

A thematic approach to the distribution of *zich* and *zichzelf* can be found in Everaert (1986). He assumes that *zich* may not be bound by a co-argument. Further, it is assumed that the complement of a non-locational preposition such as *op* in (2) is an argument of the verb and hence a co-argument of the subject of the clause, whereas the complement of a locational preposition such as *voor* in (3) is an argument of the preposition itself and hence not a co-argument of the subject of the clause (Everaert 1986:202, (84) and (85); cf. also Reinhart and Reuland 1991:293/4). Prediction: *zich* can only occur as the complement of a locational preposition, since otherwise it would be bound by its co-argument, the subject.

In Broekhuis (1988a,b) I claimed that the observation that *zichzelf* may not occur as the complement of a locational preposition is wrong, and that therefore the theories that have been based on this observation must be wrong. First, let us consider the example in (4). In this example we find a locational preposition, but nevertheless *zich* is not possible. Hence it is not true that *zich* may always appear as the complement of a locational preposition as predicted by the proposals discussed above.

- (4) *Jan zit naast *zich*
 Jan sits next to himself
 'Jan is sitting next to himself.'

If we replace *zich* by *zichzelf* as in (5), the result is strange as well, but as will become clear by taking (6) into account, (5) is not ungrammatical. The example in (4) on the other hand is ungrammatical.

- (5) *Jan zit naast zichzelf*
- (6) a. *een mens kan niet naast *zich* zitten
 b. *een mens kan niet naast zichzelf* zitten
 a person can not next to himself sit
 'A person cannot sit next to himself.'

In (6) *zichzelf* is possible as the complement of a locational preposition, whereas *zich* is still impossible. This shows that the observation that *zichzelf* may never occur as the complement of a locational preposition is wrong as well.

The grammaticality of (6b) suggests that the unacceptability of (5) has nothing to do with a violation of the binding condition for *zichzelf*, but with our conception of reality; the idea expressed in (5) is nonsensical, whereas (6b) makes perfect sense. Since (6a) is unacceptable alongside the example in (4), the impossibility for *zich* to occur in this construction seems to represent a genuine violation of the binding conditions.

More evidence can be provided for the conclusion that only the unacceptability of (4) is the result of a violation of the binding conditions. In a paranormal context, for instance, both (4) and (5) become perfectly sensible, but only the example in (5) is acceptable. Further, constructions comparable to (5) are fine if they are used in a metaphorical sense, while constructions like (4) remain unacceptable. This can be seen in (7), in which *zichzelf* cannot be replaced by *zich*.

- (7) *zij* loopt de hele dag al achter *zichzelf* aan
 she walks the whole day already behind herself on
 'She has been extremely/too busy all day.'

Another reason to assume that anaphors of the type of *zichzelf* may occur as the complement of a locational preposition has to do with the distribution of the reciprocal *elkaar*. If we assume that *zichzelf* and *elkaar* are subject to the same binding condition, just as *himself* and *each other* in English are, we have to assume again that anaphors of this type may occur as the complement of a locational preposition, as is clear from the following example.

- (8) *zij* zitten naast *elkaar*
 they sit next to each other

From now on, I will assume that there are two anaphor types in Dutch. *Zichzelf* and *elkaar* are examples of the first type, *zich* is an example of the second one. Henceforth, I refer to these anaphor types as A1 and A2, respectively.

7.1.2. The binding conditions for anaphors

Let us consider the distribution of the two anaphor types in more detail. Compare the following examples. (Above, we have seen that due to our knowledge of reality *zichzelf* sometimes gives rise to a strange result. If this is the case in the examples below, as for instance in (11) and (12), *elkaar* will be used to represent A1; otherwise *zichzelf* will be used.)

- (9) *Jan* bewondert *zichzelf***zich*
 Jan admires himself
- (10) *Jan* schoot op *zichzelf***zich*
 Jan shot at himself

- (11) *zij houden de honden bij *elkaar/zich*
 they keep the dogs next to each other/themselves
 'They are keeping the dogs with them.'
- (12) *zij houden de honden bij elkaar/*zich*
 They are keeping the dogs together.'

In (9) the anaphor is the complement of the verb and in this case only A1 is possible. In (10) the anaphor is the complement of a non-locational preposition and again only A1 is possible. But now consider the examples in (11) and (12) which are taken from Everaert (1981). The possibility for A1 and A2 to occur depends on the choice of the antecedent. If the subject of the clause is chosen as the antecedent, only A2 is possible, but if the object is chosen, only A1 is.

As was discussed in Chomsky (1981), pronominals may occur as the complement of a locational preposition in English. As he shows, one way to explain this fact is to assume that locational prepositions are Small Clause (henceforth: SC) predicates. Although he finally rejects this possibility (since this assumption does not fit in with the conception of SCs adopted there; cf. also Koster 1985/87), I will try to exploit this idea here. (Cf. section 5.1 for evidence for the SC-analysis of locational PPs.)

If non-locational prepositions do not form a SC, the structure of (10) is as given in (13). If locational prepositions may be the predicate of a SC, the structure of (11) and (12) is as in (14). (I assume here that the SC is the maximal projection of the preposition and that the subject is the specifier of the maximal projection.)

- (13) Jan schoot [_{PP} op zichzelf/zich]
 (14) zij houden [_{PP} de honden bij elkaar/zich]

As a point of departure, I adopt the definition of governing category in (15) (Chomsky 1981:211).

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

In (13) the PP does not contain a SUBJECT accessible to the anaphor. The first category higher up that contains one is the whole clause, which is therefore the governing category for the anaphor. Since *zichzelf* may, but *zich* cannot be bound within this governing category, we have to conclude that A1 may be bound within its governing category, but A2 must be free within its governing category.

In (14) the PP does contain a SUBJECT accessible to the anaphor, so the PP is the governing category for the anaphor. Since *elkaar* may be bound by the subject of the SC, but cannot be bound by the subject of the sentence, we have to conclude again that A1 must be bound within its governing category. With respect to *zich* it is just the other way round, so we again have to conclude that A2 has to be free in its governing category.

If we assume the binding conditions of Chomsky (1981), this result leads to the conclusion that A2 is not an anaphor, but a pronominal. As Koster (1985, 1987) has argued, this conclusion is unwarranted, since *zich* must always be bound, which is a feature of an anaphor and not of a pronoun.

If we want to assume that A1 and A2 are both anaphors, we have to complicate the binding conditions a little. Here I do so by incorporating the notion of chain-government into Binding theory (cf. Everaert 1981, Koster 1985/87 for similar proposals). The definition of chain-government (cf. 6.2.1) is repeated here for convenience.

(16) α *chain-governs* β iff α and the governor of β are coindexed.

(17) A head β may be *coindexed* with a head α iff:

- (i) both α and β are not [+N], and;
- (ii) α governs β .

I want to propose that in addition to the notion of governing category in (15) we have to assume the notion of chain-governing category as defined in (18).

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

In (14) neither the verb *boudet* nor the preposition *bij* has the feature [+N]. Since the verb L-marks the PP, the PP is not a barrier, and so the verb governs the preposition. Hence both conditions in (17) are fulfilled, and the verb and the preposition may be coindexed. This gives rise to the following result. (For simplicity, I neglect the coindexing with I here).

(14)' zij houdenⁱ [PP de honden bijⁱ elkaar/zich]

According to (16) the verb *boudet* chain-governs the anaphor, and according to (15) and (18) the PP is the governing category and the whole sentence is the chain-governing category for the anaphor. If we assume the following binding conditions, the facts in (11) and (12) are explained.

(19) *Binding conditions for Dutch anaphors (first version):*

An anaphor must be bound within its chain-governing category and:

- (i) A1 (e.g. *zichzelf* and *elkaar*) must be bound within its governing category.
- (ii) A2 (e.g. *zich*) must be free within its governing category.

From (19) it follows that in (14') *elkaar* has to be bound within the PP, and that *zich* has to be bound within the sentence but has to be free within the PP.

Now, consider (9) and (10), repeated here.

- (9) *Jan bewondert zichzelf/*zich*

- (10) *Jan schoot op zichzelf/*zich*



On the assumption that a lexical category is always coindexed with itself, in (9) *bewonderen* is both the governor and the chain-governor of the anaphor. Consequently, the whole sentence is both the governing and chain-governing category for the anaphor. Now, according to (19), *zichzelf* must be bound by *Jan* and *zich* is excluded, since it may not be bound in both its governing and chain-governing category.

In (10) the verb *schoot* and the preposition *op* may be coindexed by (17), and consequently *op* is the governor and *schoot* is the chain-governor of the anaphor. But since the preposition is not locational, the PP does not contain a subject. Hence the whole sentence is again both the governing and the chain-governing category for the anaphor. As a result, *zich* is excluded again.

Additional evidence in favour of the binding conditions in (19) can be provided by taking A.C.I.-constructions into consideration. In Dutch, Exceptional Case Marking is only possible into bare infinitives. In 2.2, we assumed that bare infinitives are VPs. Now, consider the examples in (20).

- (20) a. dat Jan [_{VP} Peter [_{PP} op¹ *zichzelf/zich*] schieten] liet⁴
 that Jan Peter at himself shoot let
 'that Jan let Peter shoot at himself/him.'
 b. dat *Jan* Peter op **zichzelf/zich* liet schieten
 c. dat *Jan* *Peter* op *zichzelf/*zich* liet schieten

According to (17), the verbs *liet* and *schieten* and the verb *schieten* and the preposition *op* may be coindexed. Hence, by transitivity of coindexing, the verb *liet* and the preposition *op* are coindexed as well, and *liet* may function as the chain-governor of the complement of the preposition. Since the PP

does not contain a SUBJECT accessible to the anaphor, but the VP does, the VP is the governing category for the anaphor. But since the chain-governor *het* is not contained within the VP, the chain-governing category for the anaphor is the whole sentence. According to (19), this means that A1 has to be bound within VP, and that A2 has to be bound within the whole sentence, but must be free within VP. This prediction is correct; *zichzelf* can only be bound by *Peter* (20c) and *zich* must be bound by *Jan* (20b). These bindings exhaust the possibilities.¹

What does the theory predict with respect to anaphors that are complements of adjectives or nouns? Consider the following structures.

- (21) [CP dat ... [AP ... [A' verliefd op zichzelf/zich]] V]
that in love with himself

- (22) [CP dat ... [NP ... [N' kritiek op zichzelf/zich]] V]
that criticism on himself

In (21/22) the anaphor is governed by the adjective/noun.² Therefore, if the AP/NP contains a SUBJECT accessible to the anaphor, the AP/NP is the governing category for the anaphor. If this is not the case, the first projection higher up that contains a SUBJECT accessible to the anaphor will be the governing category.

Since the adjective/noun has the categorial feature [+N], (17) blocks coindexing of the adjective/noun and its governing verb. Consequently, the adjective/noun is always both the governor and the chain-governor of the anaphor, and the governing and chain-governing category for the anaphor are always identical. By (19), we therefore predict that A1 must be bound within the smallest category containing a SUBJECT accessible to the

¹ A problem is that in (i) *zich* cannot be bound by the NP *Marie* if the subject of the VP is present. I refer the reader to Koster (1987) and Broekhuis (1988b:270ff.) for a discussion of this and other problems concerning A.c.I.-constructions.

(i) a. *Marie liet* [vp (*Kees) *zich* kussen]
Marie let Kees refl. kiss
'Marie let Kees kiss her.'
b. *Marie hoorde* [vp (*Peter) *zich* roemen]
Marie heard Peter refl. praise
'Marie heard Peter praise her.'

² In fact the anaphor is governed by the preposition. If we adopt the suggestion given in chapter 6:fn.10 that only β is subject to the not-[+N] constraint, we may claim that the anaphor is governed by the preposition, but chain-governed by the adjective/noun. Since the preposition is non-locational and therefore has no external argument, this assumption has no consequences for the topic under consideration.

anaphor, and that A2 never occurs as the complement of an A or an N. If we assume that the genitive NP acts as the subject of NP, these predictions are indeed correct. This can be seen in the examples in (23–26).

In (23/25) the AP/NP does not contain a SUBJECT accessible to the anaphor, and *zichzelf* but not *zich* can be bound within its governing category, the whole sentence. In (24/26) the AP/NP has a subject and hence functions both as the governing and the chain-governing category. As is predicted, *zichzelf* must now be bound within AP/NP, and *zich* cannot be bound at all.

- (23) *Peter_i* is [_{AP} (_{t_j}) verliefd op **zich/zichzelf*
 Peter is in love with himself
- (24) a. Marie acht [_{AP} *Peter* verliefd op **zich/zichzelf*
 Mary considers Peter in love with himself
 b. *Marie* acht [_{AP} *Peter* verliefd op **zich/*zichzelf*
 Mary considers Peter in love with her(self)
- (25) *Peter* zag [_{NP} een foto van **zich/zichzelf*
 Peter saw a picture of himself
- (26) a. Peter hoorde [_{NP} *Maries* kritiek op **zich/zichzelf*
 Peter heard Mary's criticism on herself
 b. *Peter* hoorde [_{NP} *Maries* kritiek op **zich/*zichzelf*
 Peter heard Mary's criticism on him(self)

Note that if we assume that *zijn* ('to be') is an ergative verb and that the subject of the sentence is the D-structure subject of the AP, i.e. that SpecAP is occupied by the trace within parentheses, (23) of course reduces to (24). With respect to (25), we may further assume that the NP contains a PRO-subject (cf. Chomsky 1986b) that is controlled by *Jan*. This does not change the predictions we make.³

³ It is not clear to me whether the assumption that the genitive NP in (26) is the subject of the NP can be sustained. Since NPs containing a genitive specifier are always specific, the binding facts in (26) may also follow from a specificity constraint on binding (cf. Fiengo and Higginbotham 1981).

A problem for the present analysis is the example in (i), adapted from Koster (1987).

(i) *Jan* schopte [_{NP} het meisje voor *zich/*zichzelf* per ongeluk
 Jan kicked the girl in front of refl. by accident
 'Jan kicked the girl in front of him by accident.'

In (i) the anaphor *zich* is contained within an NP (which is clear since the whole constituent (continued...)

If we assume that the nominal predicate of copular constructions is a nominal SC, the theory presented here seems to give the correct results for these constructions, too. The structure of the nominal SC is similar to the one given in (22), and therefore the same predictions follow as for AP SCs and referential NPs. Now, consider the examples in (27–29).⁴

- (27) *Marie_i* is [_{NP} *t_i* [_{N'} een goed verdediger van *zichzelf/*zich*]]
Mary is a good defender of herself
- (28) *Jan* vindt [_{NP} *Marie* [_{N'} een goed verdediger van *zichzelf/*zich*]]
Jan considers Mary a good defender of herself
- (29) *Jan* vindt [_{NP} *Marie* [_{N'} een goed verdediger van **zichzelf/*zich*]]
Jan considers Mary a good defender of himself

Since *is* and *verdediger* may not be coindexed, the governing and chain-governing category for the anaphor are identical. Hence *zichzelf* must be bound within the minimal category containing a subject, and *zich* cannot be bound at all. In these examples, the NP is the minimal category containing a subject and therefore *zichzelf* must be bound within NP. Since in (27) the sentential subject *Marie* is coindexed with the trace in SpecNP, it is correctly predicted that *zichzelf* is coreferential with the sentential subject *Marie*. In (28) and (29), on the other hand, *zichzelf* cannot be bound by the sentential subject *Jan*, since it would then be free within its governing category, but must be bound by the NP *Marie* in SpecNP.

³ (...continued)

bet meisje voor zich can be preposed), but nevertheless it can be bound by the sentential subject *Jan*. I have no explanation for this phenomenon that only arises if the anaphor is governed by a locational preposition.

⁴ What is called NP in (27–29) probably has to be called DP (cf. Abney 1987). In Broekhuis (1990), I attempted to give a unified account for both (27–29) and (25) and (26).

In Zwart (1989) it was argued that in *een goed verdediger van zichzelf-er* is an affix bearing the external θ-role of the stem *verdedig*, and that the anaphor has to be bound by this affix. The coreferentiality facts in (27–29) are assumed to follow from the subject-predicate relation between *Marie* and the nominal predicate. Although this is an interesting idea, it leaves unexplained that we find the same facts when the noun is not derived from a verb.

- (i) *Marie* is een probleem voor *zichzelf/*zich*
'Mary is a problem to herself.'
- (ii) *Jan* acht *Marie* een probleem voor *zichzelf/*zich*
'John considers Mary a problem to herself.'
- (iii) *Jan* acht *Marie* een probleem voor **zichzelf/*zich*
'John considers Mary a problem to himself.'

7.1.3. The distribution of anaphors in specifier position

Thus far, we only considered anaphors that occur in complement position. In this case A1 and A2 can never appear in the same environment. This is not true when the anaphor occupies a specifier position. Consider the following structures. (Since *zichzelf* and *zich* cannot occur as genitive specifiers, no examples can be given with referential NPs.)

- (30) *zij* zien [_{VP} *zich/elkaar* in de spiegel kijken]
 they see themselves/each other in the mirror look
 'They see themselves/each other look in the mirror.'
- (31) *zij* vinden [_{AP} *zich/elkaar* geschikt voor zulk werk]
 they consider themselves/each other fit for such work
- (32) *zij* wierpen [_{PP} *zich/elkaar* voor de trein]
 they threw themselves/each other in front of the train
- (33) *zij* vinden [_{NP} *zich/elkaar* een goed verdediger]
 they consider themselves/each other a good defender

In (30–33) the anaphor is governed and chain-governed by the matrix-verb. Consequently, we would expect the whole sentence to be both the governing and chain-governing category for the anaphor and *zich* to be excluded in these examples. This is not true.

In Broekhuis (1988a,b) this problem was solved by associating the notions of government and chain-government to the assignment of θ-roles and Case, respectively (cf. also Everaert 1981). That chain-government may be associated with Case-assignment does not come as a surprise after the discussion of nominative assignment in chapter 6. That government may be connected to θ-role assignment seems to be quite plausible too, since internal θ-roles are always assigned to the sister of the θ-marking head.

The notion 'governing category' in the binding condition for A1 in (19) is changed to 'θ-governing category' in (34). θ-government has been defined in section 2.1.4 as in (35).

- (34) β is a θ-governing category for α iff β is the minimal category containing α, a θ-governor of α, and a SUBJECT accessible to α.
- (35) α θ-governs β iff α θ-marks β and α,β mutually c-command each other.

The notion 'chain-governing category' is replaced by the notion 'Case-governing category'. The notion of chain-government has been incorporated into the definition of Case-government.

- (36) β is a *Case-governing category* for α iff β is the minimal category containing α , a Case-governor of α , and a SUBJECT accessible to α .
- (37) α *Case-governs* β iff α is the head of the chain that contains the (chain-)governor that assigns Case to β .⁵

The binding conditions for A1 and A2 can now be restated as in (38).

- (38) *Binding conditions for Dutch anaphors* (second version):
An anaphor must be bound within its Case-governing category, and (if possible):
 - (i) A1 must be bound within its θ -governing category.
 - (ii) A2 must be free within its θ -governing category.

For the cases discussed in 7.1.2, (38) makes the same predictions as (19). The predictions for (30–33), however, differ. As we have seen, (19) predicts that in (30–33) *zich* may not occur since the governing and chain-governing category are identical. (38) on the other hand predicts that both A1 and A2 may occur. Since all the anaphors in (30–33) are occupying a specifier position, they do not have a θ -governor. Hence the anaphors do not have a θ -governing category, and therefore (38,i) and (38,ii) cannot apply. The result is that (38) demands that both A1 and A2 are bound within their Case-governing category, and this requirement is fulfilled in all the examples under discussion.

7.1.4. Inherent reflexive constructions and anaphoric control

I conclude this section on the distribution of Dutch anaphors with a brief discussion of the inherent reflexive construction and anaphoric control. In the case of inherent reflexive verbs, only *zich* can be used. This can be seen in (39).

⁵ According to (37), only the head of the chain may act as a Case-governor. Perhaps, we may relax the definition such that each member of the chain may act as such. In that case, we must accept that some choices give rise to a violation of the binding conditions in (38), whereas others may satisfy them. The construction will then be grammatical if at least one choice satisfies these conditions.

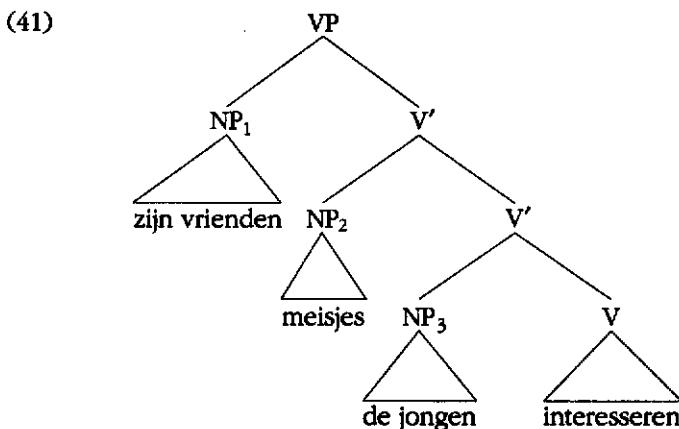
- (39) zij vergissen zich/*zichzelf/*elkaar
 they mistake refl.
 'They are mistaken.'

The impossibility of *zichzelf* and *elkaar* is generally accounted for by assuming that the anaphor occupies a θ -position, and that *zichzelf* and *elkaar* are arguments that must receive a θ -role (cf. Vat 1980, Everaert 1981/1986). I will adopt these assumptions without further discussion.

The matter I want to discuss here is whether the binding conditions on A2 allow *zich* to occur in this construction. Recall the discussion of the examples (58a) and (60) in section 5.2.1, repeated here for convenience as (40).

- (40) a. dat zijn vrienden de jongen voor meisjes hebben geïnteresseerd
 that his friends the boy for girls have interested
 b. dat hij zich voor meisjes interesseert
 that he refl. for girls interest

In (40a) the causative psych-verb *interesseren* has been used as an unergative verb. We adopted the following D-structure for this example, irrelevant details omitted.



In (41), NP₂ does not receive structural Case, but is saved from the Case filter by the insertion of the lexical preposition *voor*.

According to Bennis, the inherent reflexive alternant of (40a) in (40b) is an ergative construction in which accusative Case is absorbed by the reflexive *zich* (cf. also Everaert 1986). Since *zich* is assigned structural Case we must assume that it is Case-governed by the verb. However, since *zich* is not an argument according to this analysis, we may conclude that it is not assigned a θ -role, hence that it has no θ -governor. As a result *zich* only has

a Case-governing category. Consequently, the binding conditions in A2 in (38) correctly predict that it can be bound by the subject of its clause. So, if we assume that Bennis' analysis can be extended to all inherent reflexive constructions, (38) gives the desired result.

Whereas the inherent reflexive construction can immediately be accounted for with the help of (38), anaphoric control cannot. Consider the following Remnant Extrapolation example taken from section 2.3.

In (42) the object *dat boek* has been moved out of the sentential complement. If the complementizer *om* is present as in (42a), the construction is ungrammatical. Since IP is not L-marked, the subjacency condition on chain-formation is not fulfilled, and the construction leads to a violation of the Identification requirement on traces. However, if the complementizer is absent as in (42b), the sentential complement is an IP, and since it is L-marked by the matrix-verb, no barrier intervenes between the trace and its antecedent. Now, chain-formation is possible and the Identification requirement is satisfied.

In (42b) IP does not constitute a barrier for government either. As a result, PRO will be governed by the matrix-verb and according to the assumption that governed PRO is an anaphor, it must be bound. This correctly predicts the ungrammaticality of (43), since no antecedent is available for PRO.

According to the binding conditions for anaphors in (38), an anaphor must be bound within its Case-governing category. However, since PRO is not assigned Case (and probably may not be assigned Case), it has no Case-governor and no Case-governing category. This indicates that the formulation of the binding conditions in (38) are still too specific. We may amend this by revising (38) as in (44).

- (44) *Binding conditions for Dutch anaphors (final version):*
An anaphor must be bound within a governing category, and (if possible):
(i) A1 must be bound within its θ -governing category.
(ii) A2 must be free within its θ -governing category.

In (44) the reference to the Case-governing category of the anaphor has been dropped. In (42b) and (43) the matrix-verb governs PRO, and as a result PRO has a governing category, namely the matrix-clause. Now, the binding conditions on anaphors correctly predict that PRO must be bound within the matrix-clause.

The first clause of (44) expresses that all anaphors must be bound in some local domain, and the "if possible" clauses express that some anaphor types must meet some additional requirements. In the following section, I will show that the binding conditions on pronouns have the same kind of format. This concludes our discussion of the binding conditions on anaphors for the moment.

Note that we will return to anaphor-binding in section 7.3 where an apparent counterexample to the conditions in (44) will be discussed. But first we will discuss the distribution of the Dutch personal pronouns.

7.1.5. Summary

In this section we discussed the distribution of the two anaphor types in Dutch. I showed that it can be accounted for if we distinguish the two anaphoric domains in (45) and (47). The binding conditions for the Dutch anaphors are stated in (44).

- (45) β is a *θ -governing category* for α iff β is the minimal category containing α , a θ -governor of α , and a SUBJECT accessible to α .
- (46) α *θ -governs* β iff α θ -marks β and α, β mutually c-command each other.
- (47) β is a *Case-governing category* for α iff β is the minimal category containing α , a Case-governor of α , and a SUBJECT accessible to α .
- (48) α *Case-governs* β iff α is the head of the chain that contains the (chain-)governor that assigns Case to β .
- (49) α *chain-governs* β iff α and the governor of β are coindexed.
- (50) A head β may be *coindexed* with a head α iff:
 - (i) both α and β are not [+N], and:
 - (ii) α governs β .

The binding conditions in (44) correctly account for the distribution of A1 an A2 in argument positions which is depicted in table 7.1. In addition, it

has been shown that we can handle inherent reflexive and anaphoric control constructions as well.

Table 7.1 The distribution of anaphors in argument position

STRUCTURE	A1	A2	EXAMPLES
(I) [NP _i V NP _j]	+	-	9
(II) [NP _i V ⁱ [P _P P ⁱ NP _j] _j]	+	-	10
(III) [NP _i V ⁱ [_{SC} NP _j V ⁱ /P ⁱ .. NP _j] _j]	+	-	12/20c
(IV) [NP _i V ⁱ [_{SC} NP _j V ⁱ /P ⁱ .. NP _j] _j]	-	+	11/20b
(V) NP _i V ⁱ [_{SC} NP _j A/N ⁱ .. NP _j] _j]	+	-	24a/26a/28
(VI) NP _i V ⁱ [_{SC} NP _j A/N ⁱ .. NP _j] _j]	-	-	24b/26b/29
(VII) [NP _i V [_{SC} NP _j X ...] _j]	+	+	30-34

... = boundary of the θ-governing category of A1/A2
 [] = boundary of the Case-governing category of A1/A2

7.2. The distribution of pronouns in Dutch

In Dutch, singular personal pronouns may occur either in a full or in a reduced form. For instance, the third person nominative pronoun may either appear as *bij/zij* 'he/she' or as *-ie/ze* and the third person objective pronoun has the form *bem/baar* or *um/(d)ur* (the standard spelling of the reduced pronoun is generally '*m/(d)r*'). In this section, it will be shown that the full and reduced objective pronouns exhibit different binding properties. Whereas the full pronoun is in complementary distribution with the anaphors discussed in 7.1, the reduced pronoun is not; the latter may sometimes occur in environments where A2 is possible as well. This difference between full and reduced pronouns will be accounted for by assuming different binding conditions for the two pronominal types. Henceforth, I will refer to the full pronoun as P1 and to the reduced pronoun as P2.

7.2.1. The binding conditions for pronouns

The binding condition on pronouns in Chomsky (1981) is stated in such a way that they must be free within a certain anaphoric domain. It is therefore not surprising that both pronominal types can remain entirely free as in (51),

and that they need not be bound within the governing categories we distinguished above, i.e. may occur in construction (VI) in table 7.1 in which both A1 and A2 are excluded. This is shown in (52).

- (51) ik heb hem/um niet gezien
I have him not seen

- (52) a. *Marie* acht [_{AP} Peter verliefd op *haar/ur*]
Mary considers Peter in love with her
b. *Peter* hoorde [_{NP} Maries kritiek op *bem/um*]
Peter heard Mary's criticism on him
c. *Jan* vindt [_{NP} Marie [_N een goed verdediger van *bem/um*]]
Jan considers Mary a good defender of him

Further, if we assume that the anaphoric domains we have distinguished in section 7.1 exhaust the possibilities, it is to be expected that neither of them can be bound both within their Case- and θ-governing categories, i.e. that they cannot occur in the structures (I), (II), (III) and (V) of table 7.1. That this expectation is borne out is shown in (53).⁶

- (53) a. **Jan* bewondert *bem/um*
Jan admires him
b. **Jan* schoot op *bem/um*
Jan shot at him
c. *dat Jan [_{VP} Peter op *bem/um* schieten] liet
that Jan Peter at him shoot let
d. **Marie* acht [_{AP} Peter verliefd op *bem/um*]
Marie considers Peter in love with him
e. **Jan* vindt [_{NP} *Marie* [_N een goed verdediger van *baar/dur*]]
Jan considers Marie a good defender of herself

This leaves us with the structures in (IV) and (VII). We will have a closer look at these now. First consider the examples in (54) which represent the construction in (IV).

⁶ No example has been given of construction III with a preposition. Since there are no plural reduced pronouns in Standard Dutch, the examples that can be constructed are also excluded for semantic reasons as is shown in (I).

- (I) ik houd *de hond* naast *bem/um*
I keep the dog next to him

- (54) a. *Marie houdt [_{PP} de honden bij *zichzelf/zich/*baar/dur]*
 Marie keeps the dogs next to herself her
 'Marie is keeping the dogs with her.'
- b. *dat Jan [_{VP} Peter op *zichzelf/zich/*hem/um schieten] liet*
 that Jan Peter at himself him shoot let

As can be seen in (54), P1 is excluded in construction (IV), whereas P2 is possible alongside the anaphor *zich*. This can be accounted for by assuming that P1 must be free both within its Case- and θ-governing category, whereas P2 may be bound within its Case-governing category. Nevertheless, we still must assume that P2 must be free in its θ-governing category, since otherwise we wrongly predict that the examples in (53) are grammatical with P2. This leads to the following binding conditions on pronouns.⁷

- (55) *Binding conditions for Dutch pronouns* (first version):
 A pronoun must be free within its θ-governing category, and (if possible):
- (i) P1 (e.g. *bem* and *baar*) must be free within its Case-governing category.
 - (ii) P2 (e.g. *um* and (*d'ur*) may be bound within its Case-governing category.

Now, consider the examples in (56–59) which represent the construction in (VII).

- (56) **Jan ziet [_{VP} *bem/um* in de spiegel kijken]*
 Jan sees him in the mirror look
- (57) **Jan vindt [_{AP} *bem/um* geschikt voor zulk werk]*
 Jan considers him fit for such work

⁷ Recall from fn.1 that contrary to the predictions *zich* may not occur as the direct object of the embedded verb in the A.c.l.-construction if the subject of the VP is present. The conditions in (55) predict that P2, but not P1, may occur in this position. Although the judgements are not entirely clear, it seems to be the case that this prediction is fulfilled.

- (i) a. *Marie liet [_{VP} (Kees) ?*baar/ur kussen]*
 Marie let Kees her kiss
 'Marie let Kees kiss her.'
- b. *Marie hoorde [_{VP} (Peter) ?*baar/d'r roemen]*
 Marie heard Peter her praise
 'Marie heard Kees praise her.'

- (58) *Jan wierp [_{PP} *bem/um* voor de trein]
 Jan threw him in front of the train
- (59) *Jan vindt [_{NP} *bem/um* een goed verdediger]
 Jan considers him a good defender

As we have seen before, both anaphor types may occur in this construction type, since the subject position of the SC is not θ -governed. Hence the "if possible" clauses of (44) do not apply, and both anaphor types satisfy the binding conditions on anaphors.

As can be seen in (56–59) both pronominal types are blocked in this construction type. However, since the subject position is assigned structural Case by the matrix-verb, the pronouns have a Case-governor and the "if possible" clauses in (55) are still applicable. Since P2 may be bound in its Case-governing category, we wrongly predict (56–59) to be grammatical with P2.

However, since we have seen that pronouns are characterized by their need of being free in a governing category we can easily account for this problem by revising (55) as in (60).

- (60) *Binding conditions for Dutch pronouns* (final version):
 A pronoun must be free within a governing category, and (if possible):
 (i) P1 must be free within its Case-governing category.
 (ii) P2 may be bound within its Case-governing category.

In (60) the reference to the θ -governing category of the pronoun has been dropped. Now, we correctly predict that P2 may not occur in (56–59), since it cannot simultaneously be bound in its Case-governing category and free in a governing category, since the Case-governing category is the only governing category it has. This completes our discussion of the binding conditions in Dutch.

7.2.2. Summary of the complete binding theory

In 7.1 and 7.2.1, I discussed the distributions of anaphors and pronouns. It has been argued that the binding conditions for these elements must be stated as in (61).

(61) *Binding conditions in Dutch*

- A. An anaphor must be bound within a governing category, and (if possible):
 - (i) A1 (e.g. *zichzelf* and *elkaar*) must be bound within its θ-governing category.
 - (ii) A2 (e.g. *zich*) must be free within its θ-governing category.
- B. A pronoun must be free within a governing category, and (if possible):
 - (i) P1 (e.g. *bem* and *haar*) must be free within its Case-governing category.
 - (ii) P2 (e.g. *um* and *(d)ur*) may be bound within its Case-governing category.

The notions of θ- and Case-governing category are defined as follows:

- (62) β is a *θ-governing category* for α iff β is the minimal category containing α , a θ-governor of α , and a SUBJECT accessible to α .
- (63) α θ-governs β iff α θ-marks β and α, β mutually c-command each other.
- (64) β is a *Case-governing category* for α iff β is the minimal category containing α , a Case-governor of α , and a SUBJECT accessible to α .
- (65) α Case-governs β iff α is the head of the chain that contains the (chain-)governor that assigns Case to β .
- (66) α chain-governs β iff α and the governor of β are coindexed.
- (67) A head β may be *coindexed* with a head α iff:
 - (i) both α and β are not [+N], and;
 - (ii) α governs β .

The binding conditions in (61) correctly account for the distribution of anaphors and pronouns as depicted in table 7.2.

Table 7.2 The distribution of anaphors and pronouns in argument position

STRUCTURE	A1	A2	P1	P2
(I) [NP _i V NP _j]	+	-	-	-
(II) [NP _i V ^l [_{PP} P ⁱ NP _j]]	+	-	-	-
(III) [NP V ^l [_{SC} NP _i V ^l /P ⁱ .. NP _j]]	+	-	-	-
(IV) [NP _i V ^l [_{SC} NP V ^l /P ⁱ .. NP _j]]	-	+	-	+
(V) NP V ^l [_{SC} NP _i A ^l /N ⁱ .. NP _j]]	+	-	-	-
(VI) NP _i V ^l [_{SC} NP A ^l /N ⁱ .. NP _j]]	-	-	+	+
(VII) [NP _i V [_{SC} NP _i X ...]]	+	+	-	-

.. = boundary of the θ-governing category of A1/A2/P1/P2
 [] = boundary of the Case-governing category of A1/A2/P1/P2

7.2.3. A note on the binding conditions in English

In section 6.4, we have seen that nominative assignment under chain-government is excluded in English for general reasons. For the sake of argument, assume that English has no chain-government/coindexing at all. What would this mean for the binding conditions in English? If the anaphor or the pronoun occupies a specifier position, the situation is of course the same as in Dutch; the anaphor/pronoun has only a Case-governing category and hence it must be bound/free in it.

If the anaphor/pronoun occupies a complement position, however, the two languages differ. If the governor of the anaphor/pronoun is not a [+N] category, two distinct anaphoric domains may arise in Dutch, namely the Case- and θ-governing category of the anaphor/pronoun. In English, on the other hand, coindexing is not possible, by stipulation. Hence the Case- and θ-governing category always coincide in English, and only one anaphoric domain arises. From this, it immediately follows that in English there is only one anaphor/pronoun type that must be bound/free in its governing category. To be more precise; the "if possible" clauses in (66A,ii) and (66B,ii) cannot arise since the anaphoric domains defined by the Case- and θ-governing category of the anaphor/pronoun are identical. This amounts to saying that in English the binding conditions in (66) reduce to Chomsky's (1981) binding conditions A and B.

7.3. An apparent counterexample to the binding conditions on anaphors

7.3.1. An unexpected overlap in distribution of the two anaphor types

According to the binding theory discussed in the previous section, the two anaphor types may only overlap in distribution if the anaphors occupy a specifier position. If the anaphors are in complement position the two types are in complementary distribution.

- (68) a. dat *zij* [_{PP} de boeken naast **elkaar/zich*] leggen
 b. dat *zij* [_{PP} *de boeken* naast *elkaar/*zich*] leggen
 that they the books next to each other/themselves put
 'that they put the books next to each other/them'

The status of the examples in (68) are in accordance with the predictions of (61A). In these examples, the verb *leggen* can be coindexed with the preposition *naast*. Consequently, the verb is the Case-governor and the preposition is the θ-governor of the anaphor. Since the PP contains a SUBJECT, it is the θ-governing category of the anaphor, and we correctly predict that *elkaar* must be bound within the PP, whereas *zich* cannot be bound within this PP, but must be bound by the subject of the whole clause.

But now consider the examples in (69).

- (69) a. dat *zij* de boeken naast *elkaar/zich* neerleggen
 b. dat *zij* *de boeken* naast *elkaar/*zich* neerleggen
 that they the books next to each other/themselves down put
 'that they put the books down next to each other/them'

In the paradigm in (69) in which the particle *neer* is added, the complementarity in distribution of the two anaphor types breaks down; in (69) both anaphor types can be used. This paradigm therefore seems to constitute a counterexample to the binding conditions in (61A).

In Broekhuis (1988b:fn.17), I accounted for this problem by assuming that in (69) the PP *naast elkaar/zich* is an adverbial phrase. That this may be the case is clear from the fact that this PP is optional (cf. (70a)). In this respect the examples in (69) differ from those in (68) where the PP is obligatorily present (cf. (70b)).

- (70) a. dat *zij* *de boeken* neerleggen
 b. *dat *zij* *de boeken* leggen

Further, if a particle is present, the PP behaves like a VP-modifier. This is clear from the fact that it can be extraposed (cf. section 5.1.1) or used in a modifying conjunct. The example in (71a) is somewhat odd when an anaphor appears as the complement of the preposition, but it is completely acceptable when we replace the anaphor by an ordinary NP as *de telefoon* 'the telephone'. In (71b) it can be seen that the PP cannot be used in a modifying conjunct if there is no particle. These facts indicate that the locational PP may be an adverbial adjunct if a particle is present, but is an obligatorily selected SC-predicate if the particle is missing.

- (71) a. dat zij de boeken neerleggen (en wel) naast *elkaar/de telefoon*
 b. *dat zij de boeken leggen (en wel) naast elkaar/*de telefoon*

If we assume that the particle is the predicate of a SC (Kayne 1984), the D-structure of the examples in (69) must be something like the one given in (72). In (72) it is assumed that the adjunct-PP is a SC containing a PRO-subject. Further, it is assumed that it is adjoined to V'.

- (72) dat zij [_{V'} [_{PP} PRO naast elkaar/zich] [_{V'} [_{SC} de boeken neer] leggen]]]

The S-structures in (69) can be derived by scrambling the NP *de boeken* to a position in front of the adjunct-PP.

By assuming that the PRO-subject can be controlled either by the subject of the clause or by the subject of the SC, I accounted for the fact that *elkaar* can be interpreted as coreferential with either NP. The fact that *zich* can also be bound by the subject of the clause was accounted for by assuming that the verb *leggen* and the preposition *naast* may be coindexed. Now, if the PRO-subject of the PP is controlled by the NP *de boeken* as in (73), *zich* is free in its θ-governing category and bound in its Case-governing category, as required.

- (73) dat zij *de boeken*, [_{V'} [_{PP} PRO naastⁱ zich] [_{V'} [_{SC} *t_i* neer] leggenⁱ]]]

There are at least two reasons why this account of the examples in (69) cannot be maintained. First, the assumption that *leggen* and *naast* are coindexed in (73) is not in accordance with the definition of coindexing in (67); government is a necessary condition for coindexing of the two heads, but since the PP is an adjunct, it is not selected by the verb, and consequently it is not L-marked and hence a barrier to government. For this reason, we must conclude that coindexing of *leggen* and *naast* is blocked. As a result, the adjunct-PP is the Case- and θ-governing category of *zich*, and thus we wrongly predict that in (69a) *zich* cannot be bound by the sentential subject.

Secondly, the account of the fact that *elkaar* can be coreferential with the NP *zij* is not tenable. If *elkaar* is bound by the PRO-subject of the adjunct-PP and PRO is controlled by *zij*, we predict that the sentence expresses that the persons the NP *zij* refers to are situated next to each other. Since this is not necessarily the case, we must conclude that if the PP is indeed an adjunct, it does not contain a PRO-subject.

To solve these problems with respect to (69), I will argue that these examples are in fact structurally ambiguous. In order to do so, I must first briefly discuss a recent analysis of the (complex) particle construction.

7.3.2. Complex particle constructions

In this section, I discuss Den Dikken's (1990) analysis of the (complex) particle construction. In English, a particle may either precede or follow an object. This can be seen in (74).

- (74) a. they looked the information up
- b. they looked up the information

As has already been briefly discussed in chapter 6, Den Dikken assumes that D-structure of the examples in (74) is as given in (75). According to this structure, the NP *the information* is the complement of the particle *up*.

- (75) they looked [_{SC} *e* [_{PP} up the information]]

Further recall that Den Dikken assumes that particles are prepositions that are not able to assign Case. According to Den Dikken, the NP can be assigned Case either by moving it into the specifier position of the SC (NP-movement) or by reanalysis of the verb and the particle, which enables the particle to transmit the verb's structural Case to its complement.⁸

This analysis of the examples in (74) can immediately be extended to more complex examples, such as for instance those in the paradigm in (76). Their D-structure is given in (77).

⁸ In section 6.2.1 we provisionally assumed that reanalysis in English is an instance of chain-government; since both the verb and the particle are not [+N], the condition on coindexing in (67) is met in (75). If we take the discussion in 7.2.3 as evidence against this assumption, we must conclude that the more traditional approach is to be preferred. This does not imply, however, that the structure Den Dikken proposes for the complex particle construction cannot be maintained. Neither does it imply that chain-government is not at work in the Dutch counterpart of the English particle construction in (75).

- (76) a. they made John out to be a liar
 b. they made out John to be a liar
 c. *they made John to be a liar out

- (77) they made [_{SC} *e* out [_{IP} John to be a liar]]

(76a) can now be derived by regular NP-movement, whereas in (76b) the NP *John* can be assigned Case after reanalysis of the verb and the particle.

The ungrammatical example in (76c) must be derived by moving the IP into the specifier position of the SC. I assume that this structure is blocked since the IP is moved to a non-L-marked position and that the IP-boundary is a barrier in this position as a result. Consequently, structural Case-assignment by the verb to the NP *John* is blocked, since IP is a barrier to government at S-structure (cf. chapter 9), i.e. (76c) violates the Case filter.

Let us now turn to the particle constructions that are more central to our present concerns. Consider the paradigm in (78). The D-structure of these examples is as given in (79).

- (78) a. they put the books down on the shelf
 b. they put down the books on the shelf
 c. *they put the books on the shelf down

- (79) they put [_{PP₁} *e* down [_{PP₂} the books on the shelf]]]

(78a) is derived by NP-movement, and (78b) by reanalysis of the verb and the particle *down*. (78c) is out for the same reason as (76c); (78c) must be derived by moving PP₂ to the non-L-marked specifier position of the higher PP₁, and PP₂ is a barrier for Case-assignment to the NP *the book* as a result. Hence (78c) violates the Case filter.

A problem with respect to this analysis is that in Dutch the embedded PP can be extraposed. In general, a selected PP-predicate cannot undergo PP-over-V as can be seen in (80a). If a particle is present, however, PP-over-V can be applied. This can be seen in (80b).

- (80) a. *dat zij de boeken leggen op de plank
 b. dat zij de boeken neerleggen op de plank

If we assume that only heads and maximal projections can be moved, the ungrammaticality of (80a) can be easily accounted for as an ECP-violation; the PP contains a trace, and after extraposition this trace will not be canonically governed by the verb (cf. chapter 9 for a modification of this account). If this is a correct approach to this example, the grammaticality of (80b) is unexpected given the D-structure in (79); in (80b) a PP containing

a trace has been extraposed, and therefore we expect that the ECP is violated just as in (80a).

Den Dikken solves this problem by stipulating that "in Dutch, PPs may undergo extraposition *unless* they are the predicate of a SC *in the complement of the verb*", but this is not satisfactory, since we lose the principled explanation of (80a) in this way.

The problem we are discussing now only arises because Den Dikken assumes the PP *op de plank* can only occur as the complement of the particle. However, if we assume that these PPs can occur in the particle construction either as an adverbial adjunct (as argued in the previous subsection) or as the complement of the particle, this problem is solved immediately; in (80b) we are dealing with an adverbial adjunct.

7.3.3. The apparent counterexamples explained

Consider again the problematic examples in (69), repeated here as (81).

- (81) a. dat *zij* de boeken naast *elkaar/zich* neerleggen
 b. dat *zij* *de boeken* naast *elkaar/*zich* neerleggen
 that they the books next to each other/themselves down put
 'that they put the books down next to each other/them'

The examples in (81) have two possible structures. The PP *naast NP* may either be an adjunct (cf. 7.3.1) or a SC-complement of the particle *neer* (cf. 7.3.2). Hence the possible D-structures of (81) are as indicated in (82).

- (82) a. dat *zij* [_V [_{PP} naast NP] [_V [_{SC} de boeken neer] leggen]]
 b. dat *zij* [_{PP1} e [_{PP2} de boeken naast NP] neer] leggen]

I will not address the question whether *NP* in (82b) may or must be moved to the empty specifier position of the higher PP, but restrict myself to the question how the binding facts in (81) can be explained. First, consider the structure in (82b).

In (82b) the preposition *naast* is the θ-governor of *NP*. Since PP2 contains a subject, it is the θ-governing category of this element. Further, the verb *leggen* L-marks PP1, which is not a barrier as a result. Since neither the verb nor the particle is [+N], the condition on coindexing in (67) are met. Since the particle *neer* L-marks PP2, this PP is not a barrier either, and as a result the particle and the preposition can be coindexed as well. As a result the chain [V(*leggen*), P(*neer*), P(*naast*)] can be established, and according to (65) the verb *leggen* is the Case-governor of *NP*, and the whole clause is its Case-governing category as a result. Hence *NP* can be free within its

θ -governing category and bound within its Case-governing category by the sentential subject. This correctly predicts that in (81a) *zich* can be bound by *zij*. If *NP* is bound by the NP *de boeken*, it is bound within its θ -governing category. This correctly predicts that *elkaar* can be bound by this NP as in (81b). Of course, *elkaar* cannot be bound by the NP *zij* in this structure, since in that case it would be free within its θ -governing category.

Now, consider the structure in (82a). Since the PP *naast NP* is an adjunct, the PP is not L-marked and a barrier to government. As a result, coindexing of the verb *leggen* and the preposition *naast* is blocked, so the latter is both the Case- and the θ -governor of *NP*. Since the PP does not contain a subject (cf. the discussion in 7.3.1), the whole clause is the Case- and θ -governing category of *NP*. This predicts that *elkaar* can be bound by the sentential subject in this structure, whereas *zich* is excluded.⁹

If this account of the examples in (81) is correct, we make the following prediction. If *zich* is the complement of the preposition, the PP must be a SC-complement of the particle. As a result, extraposition of this PP is impossible. If *elkaar* is the complement of the preposition, the PP may be an adverbial adjunct, and therefore nothing will block PP-over-V in this case.

- (83) a. ?dat *zij* de boeken neerleggen naast *elkaar*
 b. *dat *zij* de boeken neerleggen naast *zich*

As we noted before, extraposition of a PP containing an anaphor is always a little bit odd; example (83a) is not very felicitous, but nevertheless there is a sharp contrast with example (83b) which is completely out. Therefore, we may conclude that our prediction is fulfilled.

To conclude our discussion of the examples in (81), we may wonder whether the NP *de boeken* may act as the binder of *elkaar* in the adjunct-PP. Consider the examples in (84).

- (84) a. ?dat *zij de boeken neerleggen naast elkaar*
 b. ?dat *zij de boeken neerleggen naast elkaar*

Although judgements are more subtle here, *elkaar* is preferably construed as being coreferential with the NP *zij*. This indicates that *de boeken* en

⁹ Consider the example in (i), adapted from Koster (1987). If the PP *achter zich* is an adjunct we wrongly predict (i) to be ungrammatical. I have no explanation for this example.

(i) *zij keken achter zich*
 they looked behind refl.

elkaar can only be coreferential if the PP is the SC-complement of the particle *neer*.

Judgements on examples as in (86) are even more chaotic. First, consider (85). (Note that example (85) differs from the example in fn.3, since the NP *de slangen* and the PP *naast NP* can be separated by an adverbial phrase.)

- (85) dat *zij* *de slangen* (gisteren) *naast zich zagen*/**zagen naast zich*
 that they the snakes yesterday next to refl. saw
- (86) a. dat *zij de slangen* *naast elkaar* *zagen*
 that they the snakes next to each other saw
 b. ?dat *zij de slangen* *zagen* *naast elkaar*
 c. ?dat *zij de slangen* *naast elkaar* *zagen*
 d. ?dat *zij de slangen* *zagen* *naast elkaar*

The judgements with respect to (85) are clear; the sentence is only acceptable if the PP is preverbal. This indicates that we are dealing with a SC here.

If the PP is preverbal (86a,c), *elkaar* is preferably construed as coreferential with the NP *de slangen*. If the PP is post-verbal, however, both readings seem to be equally possible. This indicates at least that an object may bind an anaphor in an adjunct-phrase. If this is really possible, the unacceptability of (84a) comes as a surprise.

If we assume that the given judgements are correct, how may the contrast between (84a) and (86b) be explained? Consider the D-structures of these examples.

- (87) a. dat *zij* [_V [_{PP} *naast elkaar*] [_V [_{SC} *de boeken* *neer*] *leggen*]]
 b. dat *zij* [_V [_{PP} *naast elkaar*] [_V *de slangen* *zagen*]]

According to the definition of c-command in chapter 2, the NP *de slangen* c-commands the anaphor *elkaar* in (87b); the first node that includes *de slangen* (V') does not exclude *elkaar*. Hence *elkaar* can be bound by *de slangen*. In (87a), on the other hand, *de boeken* does not c-command *elkaar*; the first node that includes *de boeken* (SC) excludes *elkaar*. Hence *elkaar* cannot be bound by *de boeken*.

7.4. Conclusion

In this chapter, I showed that the notion of chain-government does not only play a role in the Case-module of the grammar, but also in the binding-module. In section 9.4, I will discuss one more problem concerning Binding theory.

8.0. Introduction

In chapter 6 it was argued that the difference between Dutch and English with respect to (chain-)government and the assignment of nominative Case can be related to their difference with respect to the possibility of V-to-I to apply in the syntax. As we have seen in section 6.4, however, it is not the case that nominative Case can be assigned under chain-government in all languages in which V-to-I applies overtly. This is represented in table 6.1, repeated here as table 8.1.

Table 8.1

Nominative assignment in languages

	+ V-TO-I	- V-TO-I
+ AGREEMENT	French-type	English-type
- AGREEMENT	Dutch-type	-

In 6.4 I accounted for the difference between the Dutch- and French-type languages by assuming that languages may be parametrized such that nominative Case is assigned either under government or under SPEC-Head Agreement. However, it is tempting to relate this difference between Dutch and French to the fact that Dutch, but not French, has Verb Raising (VR). For example, one may assume that VR is chain-creating, and that this enables chain-government to apply in Dutch. In this chapter, however, it will be argued that this is not the case.

If it is VR that creates the chain that is needed for the assignment of nominative Case under chain-government, we expect it to apply obligatorily. This is in fact what has been claimed to be the case by most authors that have written on the subject, and in recent years various proposals have been put forth to derive the alleged obligatoriness of VR (cf. for example

Evers 1982). In section 8.1 the recent proposal of Bennis and Hoekstra (1989a,b) will be discussed.

The main point of this chapter, however, is to show that VR is an optional process that, in as far it applies obligatorily, is forced by basically non-syntactic principles. In fact, in section 8.2, it is argued that the optionality of VR is due to the existence of chain-government in Dutch, i.e. instead of assuming that VR establishes the chain that is needed for chain-government to apply, it is claimed that it is chain-government that makes VR optional.

In section 8.3, finally, a brief discussion of the non-syntactic principles that may force VR is given.

Although VR has been studied from the mid seventies (starting with Evers' 1975 dissertation), comparatively little is known about it. One of the causes for this is the enormous variation among the languages that allow VR to apply. Therefore, I have to confine myself to the discussion of the standard variety of Dutch for practical reasons. Further, I only discuss the behaviour of infinitives, leaving aside the behaviour of participles.¹

Before we start with the discussion of Bennis and Hoekstra's (1989a,b) Tense theory, I give an overview of the various types of verb movements in Dutch. We must at least distinguish the three verb-movement types in (1).

- (1) a. Verb Raising (V-to-V)
 b. V-to-I
 c. Verb second (V/I-to-C)

Recall that VR explains the linear order of the verbs in (2a). Although the arguments of the embedded verb *spelen* precede the matrix verb *zag*, the embedded verb itself follows it. This may be accounted for by assuming that the sentential complement is generated to the left of the matrix verb and that the embedded verb is adjoined to the higher verb at S-structure. That is, the structure of (2a) is as given in (2b).

- (2) a. dat ik Peter met een mes zag spelen
 that I Peter with a knife saw play
 'that I saw Peter playing with a knife.'
 b. dat ik [_{vp} Peter met een mes _{t₁}] zag spelen,

¹ A more extensive discussion of VR which includes the behaviour of participles can be found in Den Besten and Broekhuis (1989), on which this chapter is based.

In section 2.2, I argued that V-to-I is obligatory in Dutch. In English, on the other hand, V-to-I (of main verbs with the exception of copular *to be*) does not apply in the syntax, but at LF (cf. Chomsky 1991). This assumption has some consequences for the barrierhood of VP in the two languages that have been discussed in chapter 6.

Possibly, two types of V-to-I must be distinguished (cf. Rutten 1991:section 7.4). In finite clauses V-to-I creates a new word, namely the inflected verb. This implies that the verb is incorporated into I by substitution for the verbal slot of the inflectional affix.

On the other hand, it is not immediately clear whether V-to-I in infinitival clauses is word-creating; given the fact that the infinitival marker *to* need not be adjacent to a verb in English (cf. the discussion of V-to-I in infinitival clauses in Pollock 1989 and references cited there), it seems to behave as a word and not as an affix. Therefore, it seems rather natural to consider the Dutch infinitival marker *te* as a word as well. If this is correct, the verb cannot be incorporated into I by substitution for a verbal slot, but only by adjunction to the head. As will be shown in 8.1.1, this adjunction rule is also needed in finite clauses to raise the verbal cluster that is derived by VR to the right-hand side of I. The relevance of the distinction between the two types of V-to-I movements will become clear in section 8.3.

Given that Verb Second (V2) is a substitution rule and that we have to distinguish two types of V-to-I, we may give the following classification of the verb movement rules in Dutch, which distinguishes four types of verb movements instead of three as in (1).

(3) VERB MOVEMENT IN DUTCH

- A. Adjunction: (i) Verb Raising
(ii) V-to-I
- B. Substitution: (i) V-to-I (in finite clauses)
(ii) V/I-to-C (V2)

It has been assumed that the notion of Tense-linking plays a central role in the explanation of these movements (Bennis and Hoekstra 1989a,b). Following Den Besten and Broekhuis (1989), I will argue in this chapter that this is not the case and that with the exception of V-to-I (cf. section 2.2) verb movement cannot be explained by making an appeal to syntactic principles of the sort proposed by Bennis and Hoekstra.

8.1. Bennis and Hoekstra's Tense theory

Bennis and Hoekstra (1989a,b) try to give a unified account of the phenomena in (1). Further, they try to give an account of the obligatoriness

of Extrapolation in Dutch. In 8.1.1. their account of (1), and in 8.1.2 their account of Extrapolation is discussed. In 8.1.3 some objections to their proposal will be offered, and in 8.1.4, the revision of Bennis and Hoekstra's proposal in Den Besten and Broekhuis (1989) is discussed.

8.1.1. T-Linking

The central notion in Bennis and Hoekstra's theory is 'Tense'. The semantic intuition that motivates their proposal is that every verb must have a certain temporal reference. To give a syntactic account for this, they assume that each verb has to be linked to the (finite or infinitival) Tense of its clause (cf. Enç 1987).

- (4) *T-Linking*
 A verb must be identified by Tense.

T-linking is established by means of a T-chain.

Bennis and Hoekstra assume that languages may be parametrized in two respects. First, they may differ with respect to the base position of Tense. In Dutch, the base position of Tense is C, whereas in English Tense is base-generated in I. Secondly, languages may be parametrized with respect to the way in which T-chains are established; T-chains may be formed either by movement of the verb to the position of Tense or by percolation of the Tense-features to V. In Dutch, T-chains are established by movement of the verb. In English, on the other hand, the option of percolation is chosen. Bennis and Hoekstra (1989a) summarize these assumptions as follows:

- (5) T-chains may vary across languages on two parameters:
 a. the base position of Tense;
 b. the way in which the chain is established: by Verb movement or by percolation.

Further, Bennis and Hoekstra attempt to show that the assumption that T-chains in Dutch can only be established by verb movement explains the fact that VR of bare infinitives and V2 in main clauses is obligatory.

In main clauses, the T-chain cannot be established by percolation, since percolation of Tense is not possible in Dutch by stipulation. Therefore, the verb has to move (via I) to C, the base position of Tense. In this way, the T-linking requirement is satisfied directly.

Bare infinitivals do not contain Tense, since it is assumed that bare infinitivals are VPs. Consequently, the embedded verb has to be linked to the Tense of the matrix clause. The T-linking requirement of the embedded

verb can be satisfied by VR. After VR the embedded verb is adjoined to its governing verb and now it will be linked to Tense, as soon as its governing verb is.

- (6) Jan zou dat boek graag willen lezen
 Jan would that book gladly want read
 'Jan would very much like to read that book.'

At D-structure, the linear order of the verbs is *lezen willen zou*. In the derivation of (6), all the movements in (3) are involved. First, the verbs *lezen* and *willem* raise to the verb *zou* (cf. (3A,i)). This results in the verbal cluster given in (7a). Then this cluster adjoins to I (cf. (3A,ii)). The result is given in (7b). Subsequently, the highest verb is extracted from the verbal cluster and substitutes for I (cf. (3B,i)). This can be seen in (7c). Finally, the amalgam I+V substitutes for C (cf. (3B,ii)). This leads to the linear order of the verbs in (6).

- (7) a. $[_v \text{zou} [_v \text{willen} [lezen]]]$
 b. $[_i \text{I} [_v \text{zou} [_v \text{willen} [lezen]]]]$
 c. $[_i \text{I+zou}_i [_v t_i [_v \text{willen} [lezen]]]]$

By moving the amalgam I+V the verb *zou* is identified by Tense, since it has been moved to the position of Tense, C. Since *zou* has been extracted from a VR-cluster, the verb that is governed by it, *willen*, is also identified by Tense, and since *willen* is identified by Tense, the same is true for its governee *lezen*.

Although it seems to be irrelevant here, I want to make a small digression on this account of (6). Since V2 only moves the finite verb, it must be assumed that the verbs that are stranded can be identified by Tense via the trace of the finite verb. This seems to imply that I-to-C does not only identify the finite verb, but also its trace that is left behind. Therefore, we must assume (8). I return to (8) in section 8.1.3.

- (8) I-to-C Tense-identifies the I-position.

In embedded finite clauses and *te*-infinitivals, the T-chain is established in a way different from that in main clauses. Since V2 is not possible in embedded clauses, Bennis and Hoekstra must assume that Tense percolates to I. After movement of the verbs to I, the T-linking is established.

We can summarize Bennis and Hoekstra's proposal as in (9):

- (9) In Dutch, a verb can be Tense-identified by:
- movement of the verb to I (V-to-I), possibly by intermediate adjunction to its governing verb (VR), followed by:
 - Tense identification of I by:
 - movement of the finite verb into C (V2), or
 - percolation of Tense to I.

8.1.2. Tense composition

In addition to their explanation of (1), Bennis and Hoekstra want to account for the obligatoriness of Extraposition in Dutch, as in (10).

- (10) a. *dat Piet [dat Jan ziek was] zei
 that Piet that Jan ill was said
 'that Piet said that Jan was ill.'
 b. dat Piet zei [dat Jan ziek was]

Bennis and Hoekstra note that the temporal reference of the embedded clause in (10) depends on the temporal reference of the matrix clause. They want to give a syntactic account of this dependency by demanding that the Tense of an embedded clause is connected to the Tense of its matrix clause. They have named this requirement T-composition (Bennis and Hoekstra 1989b).

(11) *T-composition*

The Tense of an embedded clause (T2) must be connected to the Tense of the matrix clause (T1).

The requirement in (11) is fulfilled if (12) holds.

- (12) T2 is connected to T1 if T1 governs T2.

In (10a) T1 does not govern T2. The dependent clause is governed by the verb(-position), but since V cannot be Tense-identified by percolation, this position does not contain Tense. Therefore T2 in the C of the dependent clause is not connected to T1 and the structure is ruled out by (11).

In (10b) on the other hand, the dependent clause has been moved to a position governed by I. Since this position is identified by T1 (cf. (9b)), T2 in the C of the dependent clause is governed by T1 and the requirement in (11) is satisfied.

Since the matrix verb in (10) has been moved to I, a T-identified position (cf. (9b,i)), we have to note that this account implies the assumption in (13),

since otherwise the verb-position would be Tense-identified and consequently (10a) should be grammatical. We return to (13) in section 8.1.3.

- (13) Movement of a verb to a Tense-identified position does not Tense-identify the V-position.

If the sentential complement is a *te*-infinitival, the T-composition requirement can be satisfied in two ways, viz. either by Extraposition or by VR.

- (14) a. *dat Jan [_{CP} PRO een boek te lezen] probeert
 that Jan a book to read tries
 'that Jan is trying to read a book.'
 b. dat Jan _{t₁} probeert [_{CP} PRO een boek te lezen]_{t₁}
 c. dat Jan [_{CP} PRO een boek _{t₁}] probeert te lezen_{t₁}

(14a) is ungrammatical for the same reason as (10a); the infinitival complement occupies its base-position and is thus governed by the V-position of the matrix-verb which is not a Tense-identified position according to (13). (14b) is fine, since the dependent clause has been moved into a position that is governed by I; this structure is therefore grammatical for the same reason as (10b) is. (10c) is grammatical since the verb of the dependent clause has been raised via the embedded I and C to the matrix verb, taking along the Tense features of the dependent clause. In this way the Tense features are raised to a position in which they are governed by the Tense of the matrix clause, thus satisfying (11).

Note that in (10) VR is excluded since the C of the dependent clause is filled by a complementizer, thus blocking movement of the verb through C. For the same reason VR from infinitival complements containing the complementizer *om* is blocked.

- (15) *dat Jan [_{CP} om [_{IP} PRO een boek _{t₁}]] probeert te lezen_{t₁}

8.1.3. Some objections to Bennis and Hoekstra's Tense theory

The most attractive aspect of Bennis and Hoekstra's Tense theory is that a broad range of phenomena can be explained within a relatively simple theory. At first sight, we only seem to need the assumptions in (16) to explain the phenomena of V2, VR and Extraposition.

- (16) a. In Dutch T-chains are only established by movement.
 b. An empty position cannot be Tense-identified by its relation to a Tense-identified antecedent, i.e. empty positions are not links in a T-chain.

Closer examination, though, reveals that their theory is not that simple. For instance, we have seen that (16a) cannot be maintained in full force, since we had to assume that T-linking in embedded clauses may partially be established by percolation of Tense (cf. (9b,ii)). The same is true for (16b); we had to assume that the trace that is left behind after V2 is identified by Tense (cf. (8) (-(9b,i))).

These additions to (16) are crucial for the proposal discussed in the previous subsections, but since there is no independent evidence for them, the proposal gets an *ad hoc* flavour. Why can the I-position (in embedded clauses) be Tense-identified by percolation, but not the V-position? Why can the I-position be Tense-identified by V2, but not the V-position by VR or V-to-I (cf. (8) and (13))?

Furthermore, the assumption of (9b) renders the theory redundant. (9b,i) stipulates that in main clauses movement of the finite verb to C causes the I-position to be Tense-identified. (9b,ii) states that T-identification of the I-position can be established by percolation. Since it is not clear why the latter should not be possible in main clauses as well, (9b,i) and (9b,ii) are redundant. This redundancy can be eliminated by replacing (9b) by (17).

- (17) The I-position can be Tense-identified by percolation.

An additional advantage of the assumption in (17) is that it solves the problem with respect to (16b); since (9b,i) is eliminated, (16b) can be maintained in full force.

Unfortunately however, if (17) is the correct generalization, it is no longer possible to account for the obligatoriness of V2 in main clauses by means of the T-linking requirement; both in main and in embedded clauses the I-position can be Tense-identified by percolation.

The explanation of V2 by recourse to the T-linking requirement can only be maintained if we reject (17) in favour of (9b,i) and (9b,ii). In this case (9b,ii) has to be construed as only applying to embedded clauses. But this results in a circular argument; V2 is obligatory in main clauses, since percolation of Tense in main clauses is impossible, and that percolation of Tense in main clauses is impossible becomes clear from the fact that V2 is obligatory. For this reasons, I reject the assumption in (9b,ii).

If we adopt (17), we must reject the assumption in (16a). Another possibility is to maintain (16a) and to reject (17) in favour of the assumption that in Dutch Tense is generated in I; in this case V-to-I would be sufficient

to Tense-identify the verb. An additional merit could be that we no longer need to assume that languages are parametrized with respect to the position of Tense; Tense is always base-generated in I.

This assumption, however, is not compatible with Bennis and Hoekstra's proposal. According to their T-composition requirement, the Tense of an embedded clause (T2) must be governed by the Tense of the matrix clause (T1) (cf. (12)). But if Tense is generated in I, T1 and T2 would be separated from each other by both the CP and the IP of the embedded clause, and consequently T1 would not be able to govern T2.² Therefore, Bennis and Hoekstra have to assume that Tense is generated in C.

Summarizing, we can state the following objections to Bennis and Hoekstra's proposal:

- (a) The assumption that the I-position, but not the V-position, can be Tense-identified by percolation, is *ad hoc*.
- (b) The assumption that V2 Tense-identifies the I-position, but that VR or V-to-I does not Tense-identify the V-position, is *ad hoc*.
- (c) If we want to explain V2 by the T-linking requirement, we have to assume (9b,i) and (9b,ii). As we have seen, this leads to a circular argument.

The objections in (a) and (b) could be circumvented, if Bennis and Hoekstra rejected either the assumption that T-linking can only be established by movement of the verb, or the assumption that Tense is base-generated in C.

Rejecting the former assumption means that they are no longer able to explain the obligatoriness of VR (and V2, but this is already a problem because of (c)) with the help of their T-linking requirement. In addition they are no longer able to explain Extrapolation, since if the V-position can be Tense-identified by percolation, the sentential complement can be governed by Tense from the V-position of the matrix clause.

Rejecting the latter assumption means that they will no longer be able to explain Extrapolation by the T-composition requirement; T-composition implies a government relation between the Tense of the matrix and the Tense of the embedded clause, but this relation is blocked by the CP of the embedded clause.

Consequently, neither revision will enable us to account for Extrapolation by the T-composition requirement. For this reason, we may wonder whether

² Note that this is also a problem for Bennis and Hoekstra's assumption that in English Tense is base-generated in I. By this assumption, T-composition will always be blocked in English.

there is any necessity to assume a syntactic notion of T-composition.³ Recall that this notion was only introduced to explain Extrapolation (and VR of *te*-infinitivals). I shall not go into this question here, but will assume that Extrapolation cannot be explained by the T-composition requirement.

8.1.4. An alternative approach

The proposal in Den Besten and Broekhuis (1989) differs from the one in Bennis and Hoekstra (1989a,b) in two ways, both having to do with the parametrization of languages in (5), repeated here for convenience.

- (5) T-chains may vary across languages on two parameters:
 - a. the base position of Tense;
 - b. the way in which the chain is established: by Verb movement or by percolation.

With respect to the position of Tense, we assume that in Dutch (and in fact in all languages) Tense is base-generated in I. The result is that we are not able to explain the obligatoriness of Extrapolation by the T-composition requirement as defined in (11), since if Tense is generated in I, the embedded Tense cannot be governed by the matrix-Tense. Further, we are not able to explain the obligatoriness of V2 in main clauses.⁴ As I have argued, the explanation of these phenomena is also problematic within the Bennis and Hoekstra proposal.

With respect to the formation of T-chains, we assume that in Dutch T-chains may be established by percolation. Percolation we conceive of as

³ There is an additional reason to reject Bennis and Hoekstra's account of Extrapolation. According to Bennis and Hoekstra (1989a:26), T-composition is the syntactic correlate of Enç' (1987) Anchoring Principle which states, simplifying a little, that every embedded COMP must be identified (bound) by a higher Tense. In recent work by Hornstein (1990:ch.4), however, it is extensively argued that Enç' was wrong in assuming this principle, since the embedded Tense can always be given a default interpretation. To account for this, he assumes an *optional* Sequence-of-Tense rule which links the embedded Tense to the matrix Tense. Since T-composition is the syntactic correlate of the Anchoring Principle, this amounts to saying that T-composition cannot be seen as a principle but must be an optional rule. So, if Hornstein's conclusion is correct and if Extrapolation is due to T-composition, we wrongly predict that Extrapolation is optional as well.

⁴ The need for Extrapolation remains mysterious. I believe, however, that V2 in Dutch can be accounted for by exploiting the *Wb*-criterion that has recently been proposed in Rizzi (1990b, 1991), but I will not elaborate on this here.

coindexing of I and its dependent verb(s). Let us tentatively assume (18) which is to be revised later in this chapter.

- (18) In Dutch T-chains may be established either by movement of the verb(s) to a Tense-identified position or by coindexing of the verb(s) and a Tense-identified position.

In accordance with the restriction given in 6.1.2 (28), I assume that the formation of a T-chain by coindexing is only possible if the verb is governed by the Tense-identified position. The result of this assumption is that we are not able to force VR by the T-linking requirement. As I will show in the next section, this should be considered a desirable result.

8.2. T-linking of bare infinitives

The proposal of Bennis and Hoekstra has been designed to explain the obligatoriness of VR. It has been known for a long time, though, that inversion of the verbs is not obligatory if a modal verb is present (cf. Reuland 1983 and Geerts e.a. 1984). In (19) the non-inverted order *komen kan* gives rise to a perfect result.

- (19) dat Jan niet kan komen/komen kan
 that Jan not is able come
 'that Jan is not able to come.'

If one wants to hold on to the claim that VR is obligatory, one must assume either that VR has applied in this constructions as well, but that a late stylistic rule has inverted the verbs once again (cf. Rutten 1991) or that VR has adjoined the lower verb to the left of its governing verb as has been proposed for German by Evers (1975). According to both proposals, the verbal sequence *komen kan* must be a cluster. Alternatively, one may assume that the verb *komen* does not move and still occupies its base position. If this is true, the verbal sequence *komen kan* is not a cluster. In this section, I will argue in favour of the latter assumption.

This section is organized as follows. In 8.2.1, I briefly discuss some of Evers' arguments for the assumption that the verbal sequence *komen kan* in (19) is a cluster, and show that they are not tenable.

In 8.2.2, I will show that non-inverted verbal sequences may occur more often than is generally assumed. In 8.2.3, an explanation for the possibility of the non-inverted order will be given. In 8.3, finally, we will address the question why VR is obligatory in most cases.

8.2.1. Against left-adjoining Verb Raising

It has been noted frequently that VR is restricted to a small set of West Germanic languages; in most languages VR does not apply. From the point of view of Universal Grammar, we may consequently assume that VR is a marked phenomenon. The question that may be asked now is: How does a child know that VR applies in the language it is learning? Since VR is a marked phenomenon, the child is in need of positive evidence. Of course, such evidence occurs abundantly, since in every main clause in which three or more verbs are present and in most embedded clauses that contain two or more verbs, inversion will occur. However, if the child is confronted with a construction in which inversion does not occur, it will conclude that VR did not apply, since VR is marked.

If we limit our discussion to 'marked' head-to-head movements, these remarks lead to the following generalization:

- (20) If X is adjacent to Y at D-structure, adjunction of X to Y is only possible if Y separates X from its trace after the movement has been applied, i.e. the movement may not apply string vacuously.
 ... X] Y ... $\xrightarrow{\hspace{2cm}}$... $t_i]$ Y+X_i ...
 *... X] Y ... $\xrightarrow{\hspace{2cm}}$... $t_i]$ X_i+Y ...

This generalization excludes left-adjoining VR. This generalization implies that we must assume that the German OV-orders as *kommen muss*, *gelacht bat* and *tanzen können muss* are not the result of VR.

In Evers (1975), however, it has been argued that left-adjoining VR does apply in German. I will discuss three of his arguments here (cf. for more discussion Kroch and Santorini 1991). Sometimes his arguments will be reinterpreted in the light of recent syntactic discussion.

(I) THE TRANSPARENCY ARGUMENT

Some of Evers' arguments are concerned with the observation that in Dutch and German Clause Union constructions the phrases of the embedded and matrix clause behave as if they belong to one clause. In the construction *iets niet willen zien* (lit.: something not want see), for example, the object of the embedded verb *zien* precedes the matrix negation, i.e. it appears in the position where the arguments of a simplex sentence often appear as well. This observation holds both for Dutch and German (cf. *etwas nicht seben wollen*), i.e. for Clause Union constructions with and without inversion.

Evers concluded from this observation that in the Clause Union construction the embedded clause is pruned. This pruning would be induced by VR,

which would imply the assumption of left-adjoining VR in the non-inverted verbal sequence.

The present theory seems no longer to allow for mechanisms such as pruning, although this might be disputed if one takes into account some ideas about reanalysis (as in Haegeman and Van Riemsdijk 1986). Those that no longer accept pruning may, however, still interpret Clause Union as an argument in favour of left-adjoining VR by assuming that the transparency of the embedded clause is induced by VR. As a result, in the given examples scrambling of *tets/etwas* may only take place after raising of the embedded verb *zien/seben* to the matrix verb *willen/wollen*.

Nevertheless, this conclusion need not be forced upon us, since in the Remnant Extrapolation construction the embedded clause is transparent in spite of the fact that VR does not apply. Compare (21).

- (21) dat hij dat hek_i geprobeerd heeft [_i groen te verven]
 that he the gate tried has green to paint
 'that he tried to paint the gate green.'

In (21) no VR has been applied and nevertheless the sentential complement is transparent for movement of the NP *het hek*. This transparency must therefore be attributed to the categorial status of the complement; both in Evers' examples and in (21), the complement is not a CP, and only CPs are opaque for extraction by Scrambling (cf. the discussion in section 4.1).

(II) THE FORWARD GAPPING ARGUMENT

The only direct evidence in favour of left-adjoining VR Evers gives is provided by the Forward Gapping Test. Forward Gapping requires that at least the verb of the right conjunct is deleted. If Gapping operates after VR, the A-over-A principle predicts that the whole verbal cluster of the right conjunct will be deleted; deletion of a part of this cluster results in ungrammaticality. Further, it is predicted that left- and right-adjunction (i.e. German and Dutch) behave similarly with respect to this rule.

Most of the German examples Evers provides seem to confirm his predictions, although we encounter some recalcitrant examples in his study as well. Our own observations, however, seem to contradict Evers' conclusion. Compare the following examples.

- (22) a. dat Jan kan dansen en Piet ?(kan) zingen
 that Jan is able to dance and Piet is able to sing
 b. dat Jan dansen kan en Piet zingen (kan)

Sub-gapping scarcely degrades the status of the simple VR-construction in (22a); its status is perhaps only a trifle degraded with respect to the sub-gapping example in (22b) which is fully acceptable.

The fact that subgapping leads to a reasonably acceptable result in (22a) may lead us to reject the Forward Gapping test as an indicator of VR. As a result, this test can no longer be used as an argument for left-adjoining VR. On the other hand, we may still accept it, and view the slightly degraded status of (22a) as an indication for the existence of a VR-cluster. But in that case, we are free to interpret the grammaticality of (22b) as evidence *in favour* of the claim that left-adjoining VR is not possible. (Cf. for further discussion of the Forward Gapping test Kroch and Santorini 1991; in Den Besten and Broekhuis 1989 an alternative explanation for the unacceptability of Evers' Gapping examples was given).

(III) THE IMPENETRABILITY ARGUMENT

A third argument in favour of left-adjoining VR is that the non-inverted verbal sequence cannot be penetrated by extraposed phrases. If VR does not apply in these sequences, it is to be expected that extraposed PPs or extraposed clauses may be adjoined to a projection of their own VP and thus appear directly to the right of the non-inverted verb. However, as can be seen in (23b), this is not possible. If we assume left-adjoining VR, the impenetrability of the verbal sequence follows immediately.

- (23) a. dat hij niet wou wachten op Peter
 that he not wanted wait for Peter
 'that he didn't want to wait for Peter.'
 b. *dat hij niet wou op Peter wachten

If the assumption of a VR-cluster is indeed the appropriate account of the ungrammaticality of (23b), we predict that extraposed phrases can occur immediately to the right of remnants that remain within the VP. Compare (24).

- (24) dat hij op * gemerkt * [zou * hebben] [dat het onmogelijk is]
 dat he prt. noted would have that it impossible is
 'that he would have remarked that it is impossible.'

Since *zou* en *hebben* are inverted in (24), we correctly predict that the sentential complement cannot occur between these verbs. The participle *gemerkt*, however, precedes this cluster. If we assume that it is not a part of the cluster, we wrongly predict that the sentential complement may occur between the participle and the cluster.

Following Evers, we are therefore led to conclude that the participle is left-adjoined to the cluster *zou hebben*. But now we predict that the sentential complement can be placed between the particle *op* and the verbal cluster *gemerkt zou hebben*. But this also results in an ungrammatical structure. Consequently, within the Evers' framework we can only exclude this structure by assuming that the particle is obligatorily incorporated into the participle *gemerkt*. Unfortunately, this stipulation has an *ad hoc* flavour, since the particle need not be incorporated in the case of the inverted verbal sequence: *dat bij dat niet op zou hebben gemerkt*.

Additionally, this stipulation would not suffice to exclude the placement of the sentential complement between *in overweging* and the verbal cluster *genomen heeft* in (25), since the PP *in overweging* can never be incorporated in Standard Dutch: **dat bij dat niet heeft in overweging genomen*.

- (25) dat hij daarbij in overweging * genomen heeft [dat hij ziek is]
 that he with-that into consideration taken has that he ill is
 'that he took into consideration that he is ill.'

These examples seem to indicate that the impenetrability of the verbal sequence is not due to the formation of a verbal cluster; it seems to follow from a condition that (for whatever reason) forces the extraposed phrase to cross the finite verb in V-final position. Consequently, it is not necessary to assume left-adjoining VR.

Now that we have seen that Evers' arguments do not inevitably lead to the assumption of left-adjoining VR, I would like to discuss a final argument in favour of this assumption. Den Besten and Edmondson (1983) have argued that examples such as (26) force us to adopt the assumption of left-adjoining VR.

- (26) a. daß er mich nicht hat sehen können
 that he me not has seen be able
 'that he hasn't been able to see me.'
 b. daß er es doch muß machen können
 that he it yet must make be able
 'that he must be able to make it nevertheless.'

They assume that the order of the sequences are derived by left-adjoining VR and inversion. VR first creates the clusters *sehen können bat* and *machen können muß* and this is followed by an inversion of *bat/muß* and the subcluster *sehen können/ machen können*. Of course, this inversion rule is to be constrained, since its application is restricted to a small set of verbs. Alternatively, examples as in (26) could also be derived by allowing both

left- and right-adjoining VR. In this case, the idiosyncrasies of the inversion rule should be accounted for by restricting right-adjunction to a small set of verbs.

If left-adjoining VR is excluded, analyses such as above are not available by definition. If *sehen können* and *machen können* cannot be considered a cluster but can still appear as a constituent to the right of *hat* or *muß* only one analysis is tenable; the order in (26) can only be derived by idiosyncratically constrained Verb Projection Raising. The following German examples lend additional support to the conjecture that VPR may indeed apply in German.

- (27) a. daß er noch *muß l_{VP} l_{VP} nach Bonn zurückfahren/können*
 that he prt. must to Bonn back-drive be able
 'that he must be able to return to Bonn.'
 b. daß er gerne möchte *l_{VP} l_{VP} wieder Museen besuchen/können*
 that he gladly would-like again museums visit be able
 'that he would like to be able to visit the museums again.'

One might object to this solution that the complements of the raised VP in (26) (*mich* and *es*, respectively) are to the left of the verb, but this can easily be accounted for by assuming that they have been scrambled out of the VP (cf. Den Besten and Rutten 1989, Den Dikken 1989, Vanden Wyngaerd 1989 and Geilfuß 1991).

8.2.2. VR of bare infinitives

As we have seen in the introduction of this section, VR is optional if a modal verb is present; in (28) and (29) both the inverted and the non-inverted order give rise to a perfect result.

- (28) dat Jan niet kan komen/komen kan
 that Jan not is able come
 'that Jan is not able to come.'
- (29) dat Peter hem zal helpen/helpen zal
 that Peter him will help
 'that Peter will help him.'

A very strange restriction on the non-inverted order is that it is only possible if there are no more than two verbs present; if there are three verbs, the acceptability of the non-inverted order decreases dramatically. If we embed (28) under the verb *zullen*, as in (30), only the inverted order is

acceptable. The same is true if we put the sentence in the perfect tense, as in (31). An account of these facts will be given in 8.3.1.

- (30) dat Jan niet zal kunnen komen/*komen kunnen zal
 that Jan not will be able come
 'that Jan will not be able to come.'
- (31) dat Jan niet heeft kunnen komen/*komen kunnen heeft
 that Jan not has been able come
 'that Jan has not been able to come.'

In Den Besten and Broekhuis (1989) it was shown that the non-inverted order is not only acceptable if a modal verb is present, but in all bare infinitivals. Below I will give examples of the other verbal types that select a bare infinitival.

I. *A.c.I.-verbs*

In Dutch, the causative verb *laten* ('to make' or 'to let') and the perception verbs such as *zien* ('to see'), *boren* ('to hear') and *voelen* ('to feel') select a VP-complement. It is generally assumed that these verbs (among others) are able to Case-mark the external argument of the embedded predicate. The non-inverted order is possible with these verbs, for example:

- (32) dat hij mij zag lopen/lopen zag
 that he me saw walk
 'that he saw me walking.'

As with the modals, the non-inverted order is only possible if there are at most two verbs present, compare:

- (33) a. dat hij mij zal zien lopen/*lopen zien zal
 that he me will see walk
 'that he will see me walking.'
 b. dat hij mij heeft zien lopen/*lopen zien heeft
 that he me has seen walk
 'that he has seen me walking.'

II. *(Semi-)aspectual verbs*

Semi-aspectual verbs such as *blijven* ('to continue to') and *gaan* ('to go to') select a bare infinitival. With these verbs the non-inverted order is possible as well, for example:

- (34) dat hij morgen gaat dansen/dansen gaat
 that he tomorrow goes dance
 'that he is going to dance tomorrow.'

As above, the non-inverted order is only possible if there are at most two verbs present. Compare:

- (35) a. dat hij morgen zal gaan dansen/*dansen gaan zal
 that he tomorrow will go dance
 'that he will go and dance tomorrow.'
 b. dat hij gisteren is gaan dansen/*dansen gaan is
 that he yesterday has go dance
 'that he went to dance yesterday.'

The semi-aspectuals *zitten*, *liggen* and *staan* do not select bare infinitives in the present tense, but they do whenever they appear in their infinitive form. I will not discuss these verbs here.

III. *Helpen*, *leren* and *durven*

In addition to the modals, the A.c.I.-verbs and the semi-aspectuals, there are some isolated verbs that select a bare infinitive, such as *leren* ('to learn' or 'to teach'), *helpen* ('to help') and *durven* ('to dare').⁵ They all allow the non-inverted order.

- (36) dat ik hem leerde lezen/lezen leerde
 that I him taught read
 'that I taught him to read.'
- (37) dat ik hem help verhuizen/verhuizen help
 that I him assist move house
 'that I assist him to move.'
- (38) dat hij daar niet durft praten/praten durft
 that he there not dares speak
 'that he doesn't dare to speak there.'

Again, with three verbs the non-inverted order is not possible.

⁵ *Durven* and *helpen* with a bare infinitive are not accepted by everyone. In the perfect tense, however, a bare infinitive is generally preferred.

- (39) a. dat ik hem zal helpen verhuizen/*verhuizen helpen zal
 that I him will assist move
 'that I will assist him to move.'
 b. dat ik hem heb helpen verhuizen/*verhuizen helpen heb
 that I him have assist move
 'that I have assisted him to move.'

8.2.3. T-linking and bare infinitivals

In this section, I want to address the question how it can be explained that the non-inverted order is possible at all. After answering this question I briefly address the question why the non-inverted order is impossible if there are more than two verbs present in 8.3.1.

In 8.2.1, I argued against the assumption that VR is involved if the verbs occur in their non-inverted order, and assumed that in this order the embedded verb remains in its D-structure position. The D-structure of the relevant constructions (irrelevant details omitted) is given in (40).

- (40) dat [I_P ... [V_{P1} ... [V_{P2} ... V2] V1] I]

In 2.2, we assumed that in Dutch T-linking must be met at S-structure, and that therefore the S-structure of the non-inverted constructions cannot be identical to (40), since in this structure the embedded verbs cannot be Tense-identified. Recall that in 8.1.4 we assumed that T-linking may be established by coindexing of I and V. A prerequisite for coindexing, however, is that I governs the verb. This condition is not fulfilled in (40); in (40) I is not lexical and therefore it does not L-mark VP1, which is consequently a barrier for the verbs. Therefore, (40) is ruled out as an S-structure.

T-linking is possible at S-structure, however, if we apply V-to-I (i.e. (3B,i)). In that case the S-structure will be as in (41).

- (41) dat [I_P ... [V_{P1} ... [V_{P2} ... V2] t_I] I+V1_I]

In (41) I is lexicalized. Now I is able to L-mark VP1, which is no longer a barrier for the verbs. Therefore the base-position of V1 is governed by I and according to (18) this position can be Tense-identified by coindexing of V. Since the trace of V1 L-marks VP2, it may also govern V2 and again by (18) V2 can be Tense-identified by coindexing of V2 and the Tense-identified position t_I. Otherwise, we might state that the most embedded verb may be Tense-identified by I, since I chain-governs it. I adopt the latter option here.

Note that this explanation of the acceptability of the non-inverted orders does not make use at all of Tense-linking by movement of the verb. In fact, given this account, movement of the verb is superfluous for the theory of T-linking (although it may be necessary in order to void the barrierhood of the VP). Let me clarify this. Movement of V to I is only possible if in the resulting structure the trace of the verb is governed by I, since otherwise it would result in an ECP violation. But if there is a government relation between I and the V-position, the condition for T-linking of the V-position by coindexing is fulfilled as well and consequently T-linking will always be possible by coindexing.

Of course, this does not necessarily imply that T-linking cannot be established by movement of the verb, but the situation that is created now resembles the one we discussed in chapter 6 concerning NP-movement in Dutch. Since NP-movement in Dutch is not necessary in order for an NP to receive Case, we concluded it might be the case that NP-movement (movement of NP in order to get Case) does not apply in Dutch. Similarly, we may conclude here that it might be the case that verb movement in order for the verb to get Tense-identified does not apply in Dutch.

There are two ways in which we may decide the issue of whether T-linking may be established by verb movement or not. Preferably, the decision should be based on empirical arguments, but unfortunately I am not aware of any empirical facts that bear on this issue. Therefore, we have to resort to arguments of elegance (or, perhaps, economy). Clearly, a theory that allows T-linking to be established by coindexing only is simpler than a theory that allows T-linking to be established either by coindexing or by verb movement. Therefore, the former theory is preferable to the latter, and we have to reject (18) in favour of (42).

- (42) T-chains can only be established by coindexing of the verb(s) and a Tense-identified position.

The result of (42) is that we are no longer able to explain verb movement by making an appeal to Tense theory.

8.2.4. Conclusion

I have shown in section 8.2.2 that inversion of the verbs is optional in several cases. Further, I argued in 8.2.1 that in the non-inverted cases VR has not applied. In section 8.2.3, finally, I showed that the optionality of VR can be accounted for by assuming that the verb may be Tense-identified *in situ* under chain-government. V-to-I on the other hand is obligatory in

Dutch; if it does not apply, I is not lexical, and consequently VP is a barrier for the verb, thus blocking T-linking of the verbs.

If the present proposal is on the right track, we must conclude that it cannot be VR that establishes the chain that is needed for chain-government to apply. Hence the fact that nominative Case can be assigned under chain-government in Dutch, but not in French cannot be related to the fact that VR can only apply in the former language.⁶

8.3. Obligatory Verb Raising

Although we cannot force VR by the theory of Tense, we have seen in 8.2 that VR is obligatory if there are more than two verbs present. Besides these cases, VR is also obligatory in *te*-infinitivals. Although it is immaterial to our present concern how these facts are accounted for, I will briefly summarize the explanation for these facts given in Den Besten and Broekhuis (1989) just to show what kind of factors may be involved.

8.3.1. Obligatory Verb Raising in bare infinitivals

In 8.2 we have seen that VR in bare infinitivals is optional if there are only two verbs present. Given the data presented there, the unacceptability of the non-inverted orders in the following examples comes as a surprise.

- (43) a. dat je hem toch niet aardig kan vinden/?vinden kan
that you him prt. not nice may consider
'it is impossible that you consider him nice.'
- b. dat je dat boek niet uit de kast
that you that boek not out of the bookcase
mag halen/?halen mag
to be allowed get
'that you are not allowed to get that book out of the bookcase.'
- c. dat je mij wel een schat zal vinden/?vinden zal
that you me prt. a darling will consider
'that you will consider me a lovely boy.'

⁶ In a more recent article, Den Besten and Broekhuis (1992) suggested that Dutch has VPR instead of VR. Leaving technical details aside, this has no far-reaching consequences for the discussion of the optionality of raising in this section.

In (43) the embedded verbs (*vinden*, *halen*) select a Small Clause. The Small Clause predicates are *aardig*, *uit de kast* and *een schat*, respectively. In Den Besten and Broekhuis (1989), the unacceptability of these non-inverted orders have been related to the presence of these Small Clauses. One of the characteristics of Small Clauses is that its predicate always receives primary stress. We argued that the non-inverted order is excluded if the embedded verb is adjacent to the constituent that bears primary stress or, perhaps more correctly, that the embedded verb has to bear primary stress itself to occur in non-inverted order. Of course this phonological restriction is language-specific, since in other varieties of Dutch and in German the non-inverted order is always possible.

- (44) A non-inverted embedded verb must bear primary stress.

Evidence for (44) is provided by the examples in (45). These examples differ only with respect to the object. In (45a) the object is a definite NP and it has been scrambled. As a result the embedded verb bears primary stress and the sentence is fine. In (45b,c) the object is indefinite. In (45b) this NP has been scrambled and as a result it receives a generic interpretation. The verb bears primary stress and the sentence is fine. In (45c) the NP has not been scrambled and as a result it receives a non-specific interpretation. In this sentence, the indefinite NP has to bear primary stress, and consequently the embedded verb cannot. Just as we predict, this sentence sounds odd.

- (45) a. dat hij de panters altijd aaien wil
 that he the panthers always stroke wants to
 'that he always wants to stroke the panthers.'
 b. dat hij panters altijd aaien wil
 c. ??dat hij altijd panters aaien wil

Now compare the following example which contains three verbs.

- (46) ?*dat ik hem dat boek geven willen zou
 that I him that book give want would
 'that I would like to give him the book.'

According to (44), both non-inverted embedded verbs in (46), *geven* and *willen*, must bear primary stress. Evidently, this is not possible, and therefore the example is unacceptable. This suffices to exclude non-inversion in structures in which more than two verbs are present. This also holds for the examples in the perfect tense such as: *?dat Jan niet kunnen kunnen heeft* 'that Jan has not been able to come'.

Nevertheless, there is another construction that is not excluded by (44). Take as an example the sentence in (47), which is derived from (46) by raising of the verb *willen*.

- (47) *dat ik hem dat boek geven *t_i* zou willen;

According to (44) only the verb *geven* has to bear primary stress and this condition can be fulfilled. Therefore, this structure should be grammatical.

Note that in (47) the order of the verbs has been totally mixed up. We may assume that this leads to parsing problems and that as a result the sentence becomes unintelligible. To exclude (47), we may provisionally assume the following perception principle:

- (48) Verb Raising preserves the sequence of the verbs in reversed order.

In Den Besten and Broekhuis, it is assumed that the idea underlying (48) can be formulated as a universal principle. More recent work, however, indicates that it cannot. Since the main goal of this section is to show what kind of factors may be involved in the description of the raising phenomenon, I will not digress on this issue here (cf. Broekhuis 1992 for further discussion).

8.3.2. Obligatory Verb Raising in *te*-infinitivals

As we have discussed in 2.2, T-linking in Dutch must be met at S-structure. In order to make T-linking possible at S-structure, I has to be lexicalized by V-to-I. Therefore V-to-I is obligatory in *te*-infinitivals.

- (49) a. Jan probeerde [om PRO te komen]
 Jan tried COMP to come
 b. *Jan probeerde [om PRO komen te]

Now, compare the example in (50).

- (50) a. *Jan ging weg [om PRO zijn huiswerk maken te gaan]
 b. Jan ging weg [om PRO zijn huiswerk te gaan maken]
 Jan went away COMP his homework to go make
 'Jan went to go and do his homework.'

It seems to be the case that V-to-I forces the embedded verb to raise. This may seem surprising, since V-to-I in finite clauses does not force VR to apply.

The difference, however, is that V-to-I in finite clauses is substitution, whereas V-to-I in infinitival clauses is adjunction (cf. (3)). This implies that V-to-I in the first case does not affect the word order, whereas V-to-I in the latter case does. This suggests that, as in the case of VR in (47), the impossibility of (50a) might be induced by a perception principle, similar to (48). We may account for this similarity by restating (48) as (51). This completes our discussion of obligatory VR.⁷

- (51) Adjunction of verbs (cf. (3A)) preserves the sequence of a T-chain in reversed order.

8.4. Conclusion

In this chapter, I have discussed the attempt in Bennis and Hoekstra (1989a,b) to derive several types of verb movement from a theory of Tense. I have shown that their theory meets some internal problems and that it cannot be maintained in its present form. Attempts to amend their theory resulted in the loss of the explanation of the obligatoriness of Extraposition and V2.

Further, I have shown that in some cases VR is optional. If we want to give a syntactic explanation for this possibility, we have to assume that Tense-identification may be established under (chain-)government. As a result we are no longer able to force the application of VR by the T-linking requirement. Finally, I have argued that when VR is obligatory in the standard variety of Dutch, it is forced by non-syntactic principles.

Since we have to assume that Tense-identification may be established under (chain-)government, irrespective of the application of VR, we have to conclude that chain-government is not dependent on VR and, consequently, that it is not VR that makes chain-government possible in Dutch. Rather, it is the availability of chain-government in Dutch that makes VR optional in several cases.

⁷ We have not yet discussed the Raising of *te*-infinitives such as in (i). Since we rejected the notion of T-composition, for the moment we have no explanation for this construction. In the next chapter, though, it will be argued that *beeft proberen te lezen* constitutes a single T-chain. Given this assumption, VR is forced by (51), since adjunction of *lezen* to *te* is necessary to void the barrierhood of the embedded VP; if *te lezen* does not adjoin to the matrix verb in its turn, (51) would be violated.

(i) dat Jan dat boek probeert te lezen/*te lezen probeert.
that Jan that book tries to read
'that Jan tries to read this book.'

Differences between *Te-* and Bare Infinitivals

9.0. Introduction

Although I argued in the previous chapter that VR does not establish a T-chain, it seems to be clear that there is a certain relation between the presence of a T-chain and VR in so far that VR is restricted to contexts in which T-chains may be established. This is especially clear with respect to bare infinitives; VR is always possible if the embedded verb is a bare infinitive, but in this case a T-chain is always established as well, since otherwise the T-Linking requirement will be violated.

Now, compare the examples with *te*-infinitivals in (1). In (1a) the *te*-infinitival has been extraposed, whereas in (1b) the *te*-infinitive has been raised. If it is true that VR is only possible if a T-chain may be established as well, we must assume that in (1b) one single T-chain has been formed that includes both the matrix and the embedded Tense. In (1a), on the other hand, two independent T-chains have been formed.

- (1) a. dat Jan t_1 probeert [PRO een boek te lezen],
that Jan tries a book to read
'that John tries to read a book.'
b. dat Jan [PRO een boek t_1] probeert te lezen,

A possible explanation for this difference may be that the embedded Tense in (1b), but not in (1a), is somehow defective and cannot T-identify the embedded verb. Hence, the embedded verb has to be T-identified by the matrix Tense and consequently a T-chain must be formed that includes both the matrix and the embedded verbs.

At first glance this solution may seem to be mere stipulation, but there seems to be some empirical evidence for this approach. In Rutten (1991) it has been observed that when VR has been applied the time-references of the verbs are necessarily identical, whereas when Extraposition has been applied the time-references may be different. This can be illustrated with the following examples taken from Pardoen (1986).

- (2) a. ik heb gisteren geprobeerd [PRO die jongen vandaag te ontmoeten]
 I have yesterday tried that boy today
 to meet
 'Yesterday I tried to meet that boy today.'

b. *ik heb gisteren [PRO die jongen vandaag t_1] proberen
 I have yesterday that boy today try
 te ontmoeten₁
 to meet

In (2a) the temporal reference of both the matrix and the embedded verb may be modified by a temporal adverb. If VR has been applied, i.e. if the matrix and embedded Tense belong to the same T-chain, this is impossible (cf. (2b)). The sentence is fine, however, if we drop one of the adverbs. In this case the adverb takes both verbs in its scope and therefore we have to assume that it is generated in the matrix clause, as for example in (3).

- (3) ik heb gisteren [PRO die jongen t_1] proberen te ontmoeten,
 I have yesterday that boy try to meet

I believe that the facts in (2) and (3) support the claim that the embedded Tense of *te*-infinitivals is defective in VR contexts and that therefore a single T-chain may be formed in such constructions.

Summarizing, I think we may claim that there are two types of T-chains. The first type consists of Tense and *n* verbs that are T-identified by it. This type is formed if the complement of the matrix verb is a bare infinitival. The second type not only has an I as its head, but also contains a defective I as an intermediate link. This type is formed if the complement of the matrix verb is a *te*-infinitival.

- (4) bare infinitivals: [I, V1, ..., Vn]
te-infinitivals: [I, V1, ..., I, ..., Vn]

In VR-contexts bare and *te*-infinitivals differ systematically in at least three respects. The first difference has to do with control. If the subject of the infinitival complement is PRO, in bare infinitivals PRO may be either controlled by the subject or by the object of the verb, but in *te*-infinitivals PRO can only be controlled by the subject. This can be seen in (5b) and (6b). The a-examples are added to show that in the b-examples the object *Peter* is an internal argument of the matrix-verb and not the external argument of the embedded verb; the infinitival complement in the b-examples corresponds with the part in italics in the a-examples.

- (5) a. dat Jan Peter *Duits* leert
 that Jan Peter German teaches
 'that Jan is teaching Peter German.'
- b. dat Jan Peter [PRO Duits *t_i*] leert spreken,
 that Jan Peter German teaches speaking
 'That Jan is teaching Peter how to speak German.'
- (6) a. dat Jan *het* Peter heeft verboden
 that Jan it Peter has forbidden
 'that Jan forbade it to Peter.'
- b. *dat Jan Peter [PRO dat boek *t_i*] heeft verbieden te lezen,
 that Jan Peter that book has forbid to read
 'that Jan forbade Peter to read that book.'

The second difference has to do with Exceptional Case Marking (ECM): the subject of a bare infinitival may be Case-marked by the matrix verb, whereas the subject of a *te*-infinitival may not, as can be seen in (7) and (8).

- (7) dat Jan [hem een liedje *t_i*] heeft horen zingen,
 that Jan him a song has hear sing
 'that Jan heard him sing a song.'
- (8) *dat Jan [hem een liedje *t_i*] heeft verwachten te zingen,
 that Jan him a song has expected to sing
 'that Jan expected him to sing a song.'

The third difference is concerned with binding. As we have seen in chapter 7, if the reflexive *zich* occurs within a bare infinitival, it can be bound by the subject of the higher verb. This is never possible if it occurs within a *te*-infinitival. Compare the following examples.

- (9) dat *Jan* Peter op *zich* liet schieten
 that Jan Peter at himself let shoot
 'that John let Peter shoot at him.'
- (10) *dat *Jan* op *zich* heeft proberen te schieten
 that Jan at himself has try to shoot
 'that John tried to shoot at himself.'

In 9.2–9.4 I propose to derive these differences between bare infinitivals and *te*-infinitivals from the difference in the T-chains that are formed in the VR-contexts. Before I can undertake this task, I have to digress on Reconstruction of extraposed *te*-infinitivals first. This will be done in section 9.1.

9.1. Remnant Extrapolation and Reconstruction

In the introduction to this chapter I assumed that (11) is derived by VR (cf. (1b)). But recall from section 4.2 that if we put the sentence in the perfect tense, the verb may appear either in its infinitival form as in (12a) or as a participle as in (12b).

- (11) dat Jan PRO een boek probeert te lezen
- (12) a. dat Jan dat boek heeft proberen te lezen
 b. dat Jan dat boek heeft geprobeerd te lezen

Further, we have seen that Den Besten and Rutten (1989) argued that the construction in (12b) is not a VR-construction but a case of Remnant Extrapolation (the Third Construction); the structures of (12a) and (12b) are as given in (13a) and (13b), respectively. If this proposal is correct, we cannot determine whether VR has applied in a certain construction by just looking at the linear order of a sentence in the present or the past tense. Before we can decide, we first have to consider the perfect tense of the sentence.

- (13) a. dat Jan [PRO dat boek t_1] heeft proberen te lezen,
 b. dat Jan dat boek $_1$ heeft geprobeerd [PRO t_1 te lezen]

Further recall from section 4.2 that the infinitival complement must be an IP in the Remnant Extrapolation construction, since otherwise chain-formation will be blocked and the structure will be ruled out by the Identification requirement on traces. In regular Extrapolation constructions such as (14a), however, the infinitival complement need not be IP.

- (14) a. dat (er) geprobeerd werd [$_{CP} \emptyset |_{IP}$ PRO dat boek te lezen]
 that it tried was that book to read
 b. *dat (er) dat boek $_1$ geprobeerd werd [$_{IP}$ PRO t_1 te lezen]

In this way we were able to account for the difference in grammaticality between (14a) and (14b). In (14b) the infinitival complement must be an IP, since otherwise chain-formation would be blocked. Since IP is not a barrier for the scrambling trace, it cannot be a barrier for PRO either. Hence, PRO is governed by the matrix verb. Since we assumed that governed PRO is an anaphor (cf. section 2.3), PRO is an anaphor in (14b) as a result. Since there is no antecedent in (14b) to bind PRO, (14b) violates the binding conditions on anaphors. Hence the sentence is ungrammatical.

In (14a), on the other hand, long distance Scrambling has not been applied. If we assume that the infinitival complement is CP, PRO will not be

governed, because IP is a barrier for PRO. Consequently, PRO is not an anaphor and need not be bound. As a result the sentence is fine.

Although at first sight this account of the contrast between (14a) and (14b) seems to be sound, there may be a flaw in the argument. The explanation of the impossibility of long distance Scrambling in (14b) is based on the assumption that PRO is governed by the matrix verb, but I think it can be proved that PRO is not governed by this verb, neither at D- nor at S-structure.

We have assumed that the external argument of a verb is base generated VP-internally. If this is so, the D-structure of (14b) is as given in (15):

- (15) dat (er) [_{IP} PRO dat boek lezen] tel geprobeerd werd

Since the embedded I (*te*) is not lexical, VP is not L-marked in (15), and as a result it is a barrier for PRO. Consequently, PRO is not governed at D-structure.

At S-structure the embedded verb *lezen* raises to I, thus lexicalizing it. If nothing more happened, PRO would be governed by the amalgam *te lezen*. We must assume, however, that PRO may be moved to SpecIP at S-structure to avoid government, since otherwise PRO would necessarily be governed in both (14a) and (14b) and the explanation for the contrast would be completely lost (cf. Hoekstra in prep.).

Recall that the infinitival complement in (15) must be extraposed. Therefore, the S-structure of (15) is as given in (16).

- (16) dat (er) geprobeerd werd [_{IP} PRO [_{VP} dat boek *t*] te lezen]

Since the θ-marker of the IP, *geprobeerd*, did not move to I (which is clear from the fact that it precedes the auxiliary *werd* that is occupying the I-position), IP is *not* governed by it at S-structure and therefore we may assume that IP is not L-marked at this level.¹ As a result, IP is a barrier at S-structure. Since PRO has been moved to SpecIP to avoid government by the amalgam *te lezen*, it will not be governed at all.

Since PRO is governed neither at D-structure nor at S-structure, we would not expect it to behave as an anaphor, unless it is governed at LF. So, we

¹ In Broekhuis and Hoekstra (1990) we did not have a solution for the problem Reconstruction poses for (18) to be discussed in a moment. We were therefore forced to assume that an extraposed clause may be L-marked by the amalgam I + V that is formed at S-structure (even though the finite verb *werd* in (16) does not θ-mark IP). Following this suggestion, Rutten (1991) assumes that the finite verb and the past participle in (16) have formed a T-chain and that this T-chain may L-mark the extraposed IP compositionally. In Den Besten and Broekhuis (1989), however, it was argued that participles are exempt from the requirement of T-linking.

wrongly predict that (14b) is grammatical.²

This problem can be solved by assuming that at LF Reconstruction must be applied to extraposed clauses (cf. section 3.2 where I argued that Reconstruction of extraposed complements is also necessary to allow for *wh*-extraction). In this way the reasoning given in the previous subsection can be repeated for the structure at LF. Since movement of the (PRO-)subject to SpecIP is optional (cf. chapter 6), at LF the structure of (14b) is as in (17a) or as in (17b).

- (17) a. *dat (er) dat boek_i [IP [VP PRO _i _j] te lezen_j] geprobeerd werd
 b. *dat (er) dat boek_i [IP PRO_i [VP _i _j _k] te lezen_j] geprobeerd werd

Since both VP and IP are L-marked in these structures, PRO is governed in both structures; in the first structure it is governed by the amalgam I+V *te lezen*, whereas in the latter structure it is governed by the matrix-verb *proberen*. Because PRO is governed in both structures in (17), it must be an anaphor and consequently binding condition A is violated in both structures.

There is one problem with respect to this solution, but it can easily be solved. Note that in case Subject Raising has been applied, Extraposition is blocked.³

² Note that the presence of a barrier at S-structure is not necessarily a problem for Long Distance Scrambling if we assume that both the extraposed clause and the scrambled element are adjoined to the I' of the matrix clause, as has been argued for by Broekhuis and Hoekstra (1990) and Rutten (1991). If the embedded IP is a barrier, Long distance Scrambling of course crosses one barrier, IP, but since the scrambled element is dominated by the maximal projection that immediately dominates IP, viz. the IP of the matrix clause, the trace is nevertheless subjacent to its antecedent, and hence chain-formation is possible. Consequently, Reconstruction is not necessary to fulfil the Identification requirement on traces.

In Rutten (1991:section 3.5), some constructions are discussed in which it can be shown that the scrambled element is not adjoined to I', but to a position inside VP. Since the antecedent does not c-command its trace at S-structure, chain-formation is not possible either.

Since Rutten does not assume Reconstruction, this construction is a problem for his theory. To solve this problem, he assumes that in these constructions VR has applied even though the matrix verb cannot appear as an infinitive in the perfect tense. This considerably weakens the claim that VR only applies if the matrix verb appears as an infinitive in the perfect tense. In this way one of the main arguments for the present analysis of the Third Construction will be lost (cf. 9.1.1).

If we assume Reconstruction, this problem concerning chain-formation does not arise, since the trace is c-commanded by its antecedent after Reconstruction and as a result the c-command restriction on chain-formation will be met at LF.

³ In Bennis and Hoekstra (1989b, p.177ff.) it is claimed that the Dutch counterparts of the English verbs of the *believe* type allow Subject Raising if they are passivized. Consider for example the sentence in (i). If Bennis and Hoekstra are right, the structure of (i) is as given in (continued...)

- (18) *dat Jan_i schijnt [IP t_i] dat boek te lezen]
 that Jan seems that book to read
 'that Jan seems to read that book.'

Hoekstra (1984) and Koster (1987) explain the ungrammaticality of (18) with the help of the ECP. Following Kayne (1984), they assume that the ECP can only be satisfied if the trace is canonically governed. In Dutch canonical government is to the left. In (18), however, the trace is to the right of the matrix verb and is thus not canonically governed. This results in an ECP violation. Since the ECP holds at LF (cf. section 3.4), this explanation will be lost if we assume that at LF Reconstruction applies to the complement; in the resulting structure the trace is canonically governed by the matrix verb, and as a result the ECP is satisfied.

The ungrammaticality of (18) may be quite easily explained in another way, though. Recall that in chapter 6 I argued that nominative Case can only be assigned under (chain-)government. This implies that the base position of the subject must be chain-governed by the matrix I. The D-structure and S-structure of (18) are as indicated in (18a)' and (18b)', respectively.

- (18)' a. dat [IP [VP Jan dat boek lezen] te] schijnt
 b. dat Jan_i schijnt [IP [VP t_i] dat boek t_i] te lezen]³

In (18a)' the VP is not L-marked and is therefore a barrier for the NP *Jan*. Hence *Jan* is not governed, let alone chain-governed by the matrix I. In (18b)' the VP is L-marked by the amalgam I+V *te lezen*. But now the complement has been extraposed and as a result the embedded I is no longer governed, since the IP is a barrier now, and, in addition, the

³ (...continued)

(ii). Since this structure is similar to the one in (19), one would expect it to be excluded for the same reason as (19) is.

- (i) dat Jan geacht wordt nog te kunnen lopen
 that Jan considered is still to be able walk
 'that Jan is considered still to be able to walk.'
 (ii) dat Jan_i geacht wordt [IP t_i] nog te kunnen lopen]

The occurrence of Raising Passives such as (i) is restricted to formal registers. Further, speakers tend to disagree with each other with respect to their judgements on less familiar cases; the overwhelming majority of Dutch speakers only allow for this construction with the verbs *achten* 'to consider' and *veronderstellen* 'to suppose', whereas according to others this construction is also possible with *beweren* 'to claim', *verwachten* 'to expect' (Bennis and Hoekstra 1989b), *menen* 'to mean' and *zeggen* 'to say' (Marcel den Dikken p.c.). This variation among speakers may lead one to the conclusion that constructions like (i) are not part of core grammar, but part of the marked periphery.

embedded I is not c-commanded by the matrix verb. Hence, no chain can be formed that includes both the matrix and the embedded I. As a result the base position of the subject is not chain-governed by the matrix I and thus will not receive Case. Since the Case filter must be satisfied at S-structure (or at PF), Reconstruction of the complement at LF does not save the sentence from this filter.

Summarizing, we may say that the problem that we have considered in this subsection may be solved by assuming that extraposed clauses may be reconstructed at LF. This makes it impossible to explain the ungrammaticality of (18) by recourse to the ECP. I have shown, however, that this ungrammaticality may be explained by recourse to the Case filter.⁴

⁴ In section 6.3, I suggested that NP-movement may apply if the target position is assigned Case under government. If this is correct, we may assume that the subject of a Small Clause (SC) may be moved from SpecXP into the SpecAGR position of the SC for Case reasons. Now, consider the following structure in which the SC-predicate has been *wb*-moved.

- (i) $[\text{AP } t_1 \text{ hoe intelligent}]_i \text{ acht } [ij [\text{AGR } \text{ Jan}_i t_2]]_j$
 how intelligent consider you Jan
 'How intelligent do you consider Jan?'

In (i) the NP *Jan* can be assigned Case by the verb *achten* in SpecAGR, and the SC-predicate (as all *wb*-phrases) may be reconstructed at LF to satisfy the ECP. Given this analysis of (i), we may wonder why Extrapolation of a SC-predicate is excluded. If we assume that Extrapolation is similar to *Wb*-movement in that the SC-predicate is moved, the following structure arises.

- (ii) *dat ik $[\text{AGR } \text{ Jan}_i t_1]$ acht $[\text{AP } t_1 \text{ intelligent}]_i$
 that I Jan consider intelligent
 'that I consider Jan intelligent.'

Since the NP *Jan* can be assigned Case under government by the verb *achten* in this structure, we cannot block this example by recourse to the Case filter. Therefore, we must exclude this structure by assuming that the SC-predicate cannot be reconstructed at LF, and hence that the ECP is violated. This would amount to saying that only sentential complements can be reconstructed from an extraposed position at LF.

Alternatively, we may assume that Extrapolation differs from *Wb*-movement in that it obligatorily Pied Pipes all functional projections. If this is indeed the case, the structure would be as indicated in (iii).

- (iii) *dat ik $\text{Jan}_i t_1$ acht $[\text{AGR } t_1 [\text{AP } t_1 \text{ intelligent}]]_i$

Now this example can be excluded by recourse to the Case filter as well.

If the analysis in (iii) is correct, we must conclude that functional projections need not be Pied Piped under *Wb*-movement (or perhaps they even *cannot be Pied Piped*; cf. fn.8 in chapter 4), whereas they must be Pied Piped under Extrapolation. Why this should be so is a topic for future research.

9.2. Control

The most important conclusion for the discussion in this section is that we cannot determine whether VR has applied in a certain construction by just looking at the linear order of a sentence in the present or the past tense. Before we can decide, we first have to consider the perfect tense of the sentence. If the matrix verb can only appear as an infinitive, we are dealing with VR. If it can only appear as a participle, we are dealing with Remnant Extrapolation. If it appears either as an infinitive or as a participle in the perfect tense, the sentence in the present tense may be either a VR or a Remnant Extrapolation construction. Now that we have established this, we can continue to discuss the differences between bare infinitivals and *te*-infinitivals with respect to control, ECM and binding. In this section control is discussed.

Before we discuss control in bare infinitivals, it must be made clear that they may contain a PRO-subject. For this reason, I will first give a brief summary of Klooster (1986).

In Dutch, modal verbs such as *kunnen*, *willen*, *mogen* may be used either with an epistemic or a root reading. In their epistemic use they modify the predicate, i.e. they indicate the probability of something to happen. In their root use they express something about the subject of the clause, viz. they express that the subject has the ability, the wish or the permission to do something.

In Klooster (1986) this difference in meaning has been related to a difference in subcategorizing properties of the modal; in their root use the modal verbs have an external argument, but in their epistemic use they have not. Since the modals do not have an external argument in their epistemic use, they are raising predicates in this case. In their root use, however, they are not. Since the modals select a bare infinitival in both readings, we may assume that they select a VP in both cases.

The modal verb in the sentence in (19) may have either an epistemic or a root meaning. According to the discussion above, we must attribute to the sentence the structure in (20a) in its epistemic use and the structure in (20b) if it has a root meaning. The presence of PRO in (20b) is due to the θ-criterion.

- (19) dat Peter kan komen
 that Peter may/is able to come

- (20) a. dat I_{IP} Peter, $I_{VP} t_i t_j$ kan komen,
 b. dat I_{IP} Peter I_{VP} PRO t_i kan komen,

If the argument of Klooster is correct, we must assume that VP complements may contain PRO. The only requirement that must be fulfilled is that the external argument of the matrix verb receives a θ-role from the matrix verb. In (20b) this is the case; the NP *Peter* receives the role that identifies the referent of this NP as the one who has the ability to perform the action indicated by the embedded verb. This role is not available in (20a).

In the remainder of this subsection I will only present examples in which the condition that two distinct θ-roles are available for the matrix subject and for PRO is fulfilled more clearly than in the case of the modals. Compare the examples in (21) and (22). In these examples the infinitival complement may be replaced by a nominal argument such as *it/German* (cf. for example (5a)) which indicates that in (22) the object *Peter* is indeed an internal argument of the matrix verb *leren*.

- (21) dat Jan [PRO Duits t_1] leert spreken,
 that Jan German learns speak
 'that Jan is learning how to speak German.'
- (22) dat Jan Peter [PRO Duits t_1] leert spreken,
 that Jan Peter German teaches speaking
 'that Jan is teaching Peter how to speak German.'

In (21) PRO is controlled by the subject, and in (22) it is controlled by the indirect object, *Peter*. Now, consider the examples in (23) and (24).

- (23) dat Jan [PRO dat boek t_1] probeert te lezen,
 that Jan that book tries to read
 'that Jan tries to read that book.'
- (24) dat Jan Peter [PRO dat boek t_1] verbiedt te lezen,
 that Jan Peter that book forbids to read
 'that Jan forbids Peter to read that book.'

In (23) and (24) PRO may apparently be controlled by either the subject or the indirect object of the matrix clause, too, and therefore we seem to be forced to accept that there is no difference in control possibilities in construction that involve Raising of bare infinitives and *te*-infinitives, respectively.

In (24) we assumed that VR has applied. In 9.1, however, we have seen that we may only conclude this if the matrix verb appears as an infinitive in the perfect tense. As can be seen in (25) and (26) respectively, the matrix verb of (23) may appear as an infinitive, but the matrix verb of (24) may not. It can only appear in its participial form *verboden*.

- (25) dat Jan dat boek heeft proberen/geprobeerd te lezen
 (26) dat Jan hem dat boek heeft *verbieden/verboden te lezen

Consequently, we have to conclude that although VR may have been applied in (23), this cannot be the case in example (24), i.e. (24) must be a case of Remnant Extrapolation. Hence, the structure in (24) is wrong and should be as indicated in (27).

- (27) dat Jan Peter dat boek_i verbiedt [PRO *t_i* te lezen]

If we go over the list of verbs that select *te*-infinitivals, we note that VR is only allowed if the matrix verb requires subject control. In case the verb requires object control, VR is always blocked and all the apparent cases of VR turn out to be instances of Remnant Extrapolation. Therefore, we must withdraw the conclusion we reached above, and conclude that VR of *te*-infinitives is impossible if object control is required. VR of bare infinitives, however, is possible in this case. How can we explain this difference?

One possible explanation has already been raised by Evers (1975:38ff.). He assumes that the presence of a dative NP (among other constituents) may block VR. The problem with this account, though, is that it predicts that VR of bare infinitives will also be blocked by the presence of a dative NP. As we have seen, this is evidently not the case (cf. (22) for which Evers assumes a similar structure as I do here).

In Broekhuis and Hoekstra (1990) a different approach was taken to tackle this question. As we have assumed in section 9.0, VR is only possible if a T-chain has been formed. The T-chains formed differ in only one respect; in the case of a bare infinitive the T-chain does not contain an embedded I, but in the case of a *te*-infinitive it does. This was stated in (4), repeated here for convenience as (28).

- (28) bare infinitivals: [I, V1, ..., Vn]
te-infinitivals: [I, V1, ..., I, ..., Vn]

Further, we assumed that a T-chain may only contain an embedded I, if this I is defective in one way or another. We may state this in a different way: since a T-chain is constituted by coindexing of I and its dependent Vs/Is, we may assume that a T-chain may only contain an embedded I, if its reference is identical to the reference of the matrix I. Consequently, VR of *te*-infinitives is only possible if the temporal reference of the embedded I is identical to the temporal reference of the matrix I.

Since I does not only contain Tense, but also Agreement features, the same line of reasoning may be used to explain the impossibility of VR of *te*-

infinitives in case the matrix verb requires object control. VR is only possible if the embedded I has been coindexed with the matrix I. As a result, the nominal references of the Agreement features of the matrix and the embedded I are identical.⁵ Consequently, the reference of the NP that is coindexed with the matrix I (the subject of the matrix clause) must also be identical to the reference of the NP that is coindexed with the embedded I, i.e. the PRO-subject. If the matrix verb requires object control, this, of course, cannot be fulfilled.⁶

In case of VR of bare infinitives, the referential identity that is forced in case of *te*-infinitives does not necessarily occur. The T-chain that has been formed does not contain an embedded I in this case. Hence, PRO is not coindexed with a link of the T-chain and its reference may be established independently of the reference of the matrix subject. As a result, both subject and object control is possible.

9.3. Exceptional Case Marking

The proposal put forward in the previous subsection only provides an explanation for the fact that VR of *te*-infinitives is restricted to subject control constructions, and that VR of bare infinitives is also possible in object control constructions. However, it does not say anything about other constructions in which VR is blocked. For instance, VR of *te*-infinitives (but not of bare infinitives) is generally impossible if an indirect object is present in the matrix clause. This might lead one to reject the proposal given here, because if we can give an explanation for the latter fact, the facts discussed above follow immediately. Unfortunately, I am not aware of such an explanation; any proposal I have heard of so far will also block VR of bare infinitives if an indirect object is present.

Further, the generalization that VR of *te*-infinitives is impossible if an

⁵ In Evers (1990) it is assumed that infinitival I is anaphoric in that it is dependent on the matrix I for its values, mood and agreement. The proposal of Broekhuis and Hoekstra seems to amount to the same thing. Note, however, that they assume that infinitival I is 'non-anaphoric' if Extraposition applies. It is not clear to me whether Evers would agree on this assumption or not.

⁶ Note that there may be a problem here. Suppose that the matrix verb requires object control and that the indirect object is an anaphor that is bound by the subject of the matrix clause. In this case object control of PRO implies coreference of PRO and the matrix subject, but still VR is blocked. This indicates that the type of coreference we are discussing in the main text (identity), is not identical to the type of coreference that arises from binding (referential dependency). It leads me too far afield to discuss this difference here. In Hoekstra (in prep.), this difference will be discussed more extensively.

indirect object is present is contradicted by the Subject Raising verb *lijken* 'to seem'. This verb optionally takes an indirect object, and if it does, VR must still apply.

- (29) dat zij mij leken te vechten
 that they me seemed to fight
 'that they seemed to me to fight.'

Of course, the existence of a VR-construction such as in (29) is expected given our proposal, since in this construction the Agreement features of the matrix and embedded I are identical, i.e. they are coindexed with the same argument, namely the nominative subject *zij*.

Besides the fact that it accounts for the wellformedness of (29), another merit of the proposal given here is that it explains a second difference between *te*-infinitivals and bare infinitivals as well. First, consider the English examples in (30) and (31).

- (30) I heard [_{VP} Peter lock the door]
 I expected [_{IP} Peter to lock the door]

In English ECM is possible both to the subject of a bare infinitival and to the subject of a *to*-infinitival. In Dutch, however, ECM is blocked in the latter case.

- (32) dat ik [_{VP} Peter de deur _{t₁}] hoorde sluiten,
 that I Peter the door heard lock
 *dat ik [_{IP} Peter de deur _{t₁}] verwachtte te sluiten,
 that I Peter the door expected to lock

How can this difference between English and Dutch be explained? Let us first consider (33). Since VR has applied, a T-chain has been formed that includes both the matrix and the embedded I. As we have seen in the previous subsection, the presence of this T-chain forces the references of the matrix and the embedded subject to be identical. Evidently this is not the case in (33) and therefore the sentence is ungrammatical.⁷

⁷ Cf. Evers (1990:228). A problem similar to the one discussed in the previous footnote arises here. If the subject of the *te*-infinitival is an anaphor, ECM is still blocked, in spite of the fact that the matrix and the embedded subject are coreferential. Hence, we need a stronger notion than coreference, viz. identity.

The only possibility to avoid the formation of a T-chain that includes both the matrix and the embedded I is by Extraposition.

- (34) *dat ik verwachtte [_{IP} Peter de deur te sluiten]

After Extraposition, however, the embedded subject is not chain-governed by the matrix verb, and hence it cannot be assigned Case. The above explanation of the ungrammaticality of (34) is therefore similar to the earlier given explanation of the impossibility of extraposition in the case of Subject Raising (cf. the discussion of (18)).

(32) is grammatical, since the T-chain that has been formed does not contain an embedded I as an intermediate link. As in the case of PRO, this means that the reference of the embedded subject is not necessarily identical to the reference of the matrix verb and, as a result, the sentence is fine.

The English example in (30) is not problematic. Now, how can (31) be grammatical? Contrary to Dutch, English has NP-movement. Hence the subject of the embedded sentence may be moved to a case-marked position in order to receive Case. Since the matrix verb in (31) assigns objective Case under government, SpecIP will be assigned Case. Consequently, the embedded subject may move to this position in order to receive Case.

Because the embedded verb in (31) may be T-identified by the embedded Tense at LF, there is no need to establish a T-chain that includes both the matrix and the embedded I. The references of the matrix and the embedded subjects therefore need not be identical. This explains the grammaticality of (31).

9.4. A final note on binding

In the previous chapters we have seen that the notion 'chain-government' plays an important role in several modules of the grammar. In chapter 6 we have seen that in ergative constructions nominative Case is assigned under chain-government to the base position of the S-structure subject of the clause.

In chapter 7 we have seen that the distinction between 'government' and 'chain-government' may be used to define two distinct notions of 'governing category', viz. the θ -governing and the Case-governing category. I repeat the definitions given in chapter 7 for convenience.

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

- (36) α θ -*governs* β iff α θ -marks β and α, β mutually c-command each other.
- (37) β is a *Case-governing category* for α iff β is the minimal category containing α , a Case-governor of α , and a SUBJECT accessible to α .
- (38) α *Case-governs* β iff α is the head of the chain that contains the (chain-)governor that assigns Case to β .
- (39) α *chain-governs* β iff α and the governor of β are coindexed.
- (40) A head β may be *coindexed* with a head α iff:
 - (i) both α and β are not [+N], and:
 - (ii) α governs β .

On the basis of these definitions we were able to formulate the following binding conditions for the Dutch anaphors.

- (41) BINDING CONDITIONS FOR DUTCH ANAPHORS:
An anaphor must be bound within a governing category, and (if possible):
 - (i) A1 (*zichzelf* and *elkaar*) must be bound within its θ -governing category.
 - (ii) A2 (*zich*) must be free within its θ -governing category.

In chapter 8, finally, we have seen that T-chains are established under chain-government. Some properties of T-chains have been discussed in the previous sections.

In this section I want to discuss a problem concerning binding that has been left aside in chapter 7. As has been frequently noted (cf. for example Koster 1987, Broekhuis 1988b, Reinhart and Reuland 1991), if the reflexive *zich* is an argument of a *te*-infinitive, it can never be bound by an antecedent that is not contained within its own clause, whereas, as we have seen in chapter 7, it can be bound outside of its own clause if it is an argument of a bare infinitive.⁸ Compare for instance the following examples. As before coindexing is indicated by italics.

⁸ The explanation given for this fact in this section, differs from the one given in Broekhuis (1988b). There it has been stipulated that *I* has the feature [+N] and thus cannot be coindexed with the higher verb. Given the acceptability of VR of *te*-infinitives, this stipulation must be dropped.

- (42) dat *Jan Peter* op *zich* liet schieten
 that Jan Peter at himself let shoot
 'that Jan let Peter shoot at him.'
- (43) a. *dat *Jan heeft geprobeerd op zich te schieten*
 that Jan has tried at himself to shoot
 b. *dat *Jan op zich heeft proberen te schieten*
 that Jan at himself has try to shoot
 'that John tried to shoot at himself.'

As we have seen in chapter 7, in (42) the following chain is formed (as before we neglect the matrix I): [V(*liet*), V(*schieten*), P(*op*)]. Hence, *zich* is chain-governed by the matrix verb *liet* and the matrix clause will be its Case-governing category as a result. Since the PP has no subject, but the embedded clause does, namely *Peter*, the latter is the θ-governing category for *zich*. Consequently, in (42) *zich* is bound within its Case-governing category, but free within its θ-governing category, thus satisfying (41).

In (43a) Extraposition has been applied which implies that two independent T-chains have been formed. Since T-chains are formed under chain-government, this implies that *zich* is not chain-governed by the matrix-verb.⁹ As a result, the embedded clause is the Case-governing category of the anaphor *zich*. Since the PP does not have a subject, the embedded clause is also the θ-governing category of the anaphor. Consequently, *zich* cannot simultaneously be bound within its Case-governing category and free within its θ-governing category, thus violating (41).

Since the matrix verb in (43b) has its infinitival form, we may conclude that VR has applied. As we saw in section 9.1, this means that in (43) only one T-chain has been established. Since T-chains are formed under chain-government, this implies that we have at least the following governing chain in (43b): [V(*proberen*), I(*te*), V(*schieten*)]. However, since the verb *schieten* and the preposition *op* may also be coindexed, we have to assume that the chain includes this preposition as well. This means that *zich* is chain-governed by the matrix verb and that the matrix clause is its Case-governing category. Since the embedded clause is the θ-governing category for *zich*, we expect that *zich* may be bound by the subject of the matrix clause. Nevertheless, (43b) is ungrammatical.

This ungrammaticality can of course be explained straightforwardly; since the verb *proberen* requires subject control, binding of *zich* by the matrix

⁹ Cf. Reuland and Reinhart 1991:306 for a comparable proposal. They assume however (misinterpreting Den Besten et.al. 1988) that all infinitival complements must be extraposed, whereas I assume that in examples like (43b) VR has applied.

subject implies that *zich* is also bound by the subject of the embedded clause, PRO. This, in its turn, means that *zich* is bound within its θ-governing category, thus violating (41). Since there is no other binder for *zich*, the sentence is ungrammatical.

So far, we have seen that there are two reasons for the impossibility for *zich* to be bound by the matrix subject if it appears as the argument of a *te*-infinitive. If Extraposition has applied, *zich* is not chain-governed by the matrix verb, and thus the matrix subject is not included in the Case-governing category for *zich*. If VR has applied, on the other hand, *zich* is chain-governed by the matrix verb and the matrix subject will be in its Case-governing category. But if the embedded subject, PRO, is controlled by the subject of the matrix clause, *zich* is also bound within its θ-governing category, thereby violating (41).

The only remaining logical possibility, now, is a construction in which VR has applied, but in which no subject control is required. If *zich* is bound by the matrix subject, it is not simultaneously bound within its Case- and θ-governing categories in this case. In the previous section, however, we saw that such a construction never occurs, since VR is always blocked in *te*-infinitivals if object control is required. This completes the explanation of why *zich* can never be bound by the matrix subject if it is an argument of a *te*-infinitive.

9.5. Conclusion

In this chapter some differences between bare infinitives and *te*-infinitives in VR contexts have been discussed. These differences are connected to the difference between the T-chains that are formed in these contexts.

General Conclusion

In this study I have investigated the notion of chain-government. The main goal was to show that this notion does not only play a role in Case theory for which it has been devised, but also in other subsystems. In chapter 1 we distinguished the subsystem of principles in (1).

- (1) a. Government theory
- b. Bounding theory
- c. θ -theory
- d. Case theory
- e. Binding theory
- f. Control theory
- g. Tense theory

Of course, the notion 'chain-government' is part of Government theory. Further, we have seen that this notion plays a role in Case theory, Binding theory and Tense theory.

To conclude this study, let us consider the question whether it is potentially relevant for the remaining subsystems as well. Let us first consider θ -theory. In this study I adopted the view that the assignment of internal θ -roles is a strictly local relationship between the assigner and the assignee; internal θ -roles can only be assigned under government, i.e. they cannot be transmitted via intermediate governors (but cf. fn.10 in chapter 6). This amounts to saying that chain-government is irrelevant to θ -theory by definition.

If chain-government is indeed void with respect to θ -theory, it cannot be relevant for Bounding theory either. This subsystem is concerned with the locality restrictions on movement, and comprises the Formal Licensing and Identification requirement on traces. In this subsystem the notion of barrier plays a crucial role: according to the Formal Licensing requirement, the trace must be 0-subjacent to and c-commanded by a head (possibly of the category [+V]); according to the Identification requirement the trace must be subjacent to its antecedent. Since the notion of (n-)subjacency is defined in

terms of barriers which in their turn are defined in terms of θ -government, we may conclude that chain-government (being irrelevant for θ -government by definition) does not play a role in this module either.

This leaves us with Control theory. Again, we seem to be led to conclude that chain-government does not play a role in this subsystem. In the case of non-anaphoric control, PRO is not governed; hence chain-government is of course void in this case. In the case of anaphoric control, though, PRO is governed, and chain-government may play a role in principle. However, as we have seen in chapter 7, the relevant notions for Binding theory are not government and chain-government *sec*, but Case- and θ -government. But since PRO is neither Case- nor θ -governed, chain-government does not enter into the explanation of the binding properties of anaphoric PRO (which of course does not mean that the distribution of anaphoric PRO cannot be accounted for by the Binding conditions proposed in chapter 7; cf. 7.1.4).

If the conclusions reached above are correct, this study covers all current subsystems in which chain-government can be relevant in principle.

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Samenvatting

Het belangrijkste doel van deze studie is te laten zien dat de notie 'keten-regeren' een rol speelt in verschillende modules van de grammatica.

De notie 'keten-regeren' is geïntroduceerd in Den Besten (1985) om te verantwoorden dat in het Nederlands en het Duits het object van de zin (indien het aanwezig is) in een aantal gevallen vooraf kan gaan aan het subject. Enkele voorbeelden uit het Nederlands worden gegeven in (1).

- (1) a. dat mijn broer_{OBJ} de boeken_{SUBJ} aangeboden werden
- b. dat mijn broer_{OBJ} de boeken_{SUBJ} bevallen
- c. dat mijn broer_{OBJ} de boeken_{SUBJ} ergeren

Den Besten betoogt dat de werkwoorden in (1) ergatief zijn in die zin dat ze geen extem argument nemen. Als het werkwoord een transitief onergatief werkwoord is, is de volgorde object-subject in het algemeen onmogelijk. Dit is te zien in (2).

- (2) a. dat mijn broer_{SUBJ} de boeken_{OBJ} heeft gelezen
- b. *dat de boeken_{OBJ} mijn broer_{SUBJ} heeft gelezen

Indien we Burzio's generalisatie aanvaarden (die stelt dat een werkwoord dat geen externe θ-rol toekent ook niet in staat is structurele accusatief naamval toe te kennen), volgt uit de aanname dat de werkwoorden in (1) ergatief zijn, dat de volgorde van de argumenten in (1) de onderliggende volgorde weerspiegelt. (Zoals hieronder nog aan de orde zal komen, is deze conclusie voor voorbeeld (1c) m.i. onjuist.) Verder laat Den Besten zien dat deze volgorde mogelijk is, doordat het subject nominatief-naamval in zijn D-structuur-positie toegekend kan krijgen, m.a.w. dat NP-verplaatsing van het subject niet noodzakelijk is.

Natuurlijk kan het subject zijn naamval niet direct van het nominatief-toekennende hoofd (I of <+Tense>) krijgen, doordat het laatste het eerste niet regeert; het werkwoord blokkeert de regeer-relatie onder minimaliteit. Den Besten neemt daarom aan dat het werkwoord en het nominatief-

toekennende hoofd samen een keten vormen en dat de nominatief naamval via deze keten wordt toegekend. Dit is geformaliseerd in (3) en (4).

- (3) α keten-regeert β dan en slechts dan als $\alpha \gamma_1$ regeert, $\gamma_1 \gamma_2$ regeert, ..., $\gamma_{n-1} \gamma_n$ regeert en $\gamma_n \beta$ regeert ($n \geq 1$).
- (4) Indien NP_1 geregeerd wordt door een categorie α die geen naamval kan toekennen, zal NP_1 zijn naamval verkrijgen van de eerste naamval-toekenner waardoor hij ge-keten-regeerd wordt.

Tot op heden wordt de notie keten-regeren alleen toegepast in het domein van de Casustheorie. Aangezien de notie regeren een van de centrale noties van de theorie is, verwachten we dat keten-regeren ook in andere modules van de grammatica een rol speelt; zou dit niet het geval zijn, dat zouden we deze notie dienen te verwerpen als *ad hoc*. In deze studie laat ik echter zien, dat 'keten-regeren' inderdaad een rol in de andere modules speelt.

Deze studie bestaat uit drie delen. In DEEL 1 bespreek ik de theoretische achtergrond van deze studie. Uitgangspunt is het kader van de generatieve grammatica zoals deze in het laatste decennium ontwikkeld is, meer in het bijzonder door Chomsky (1981, 1982, 1986a), Rizzi (1990a) en Lasnik en Saito (te verschijnen). Hierbij wijk ik echter in een aantal opzichten van hun voorstellen af. Dit is het duidelijkst ten aanzien van de definitie van 'regeren' die in HOOFDSTUK 2 voorgesteld wordt (zie paragraaf 2.1.5 voor de definities van de begrippen die in (5) gebruikt worden).

- (5) α regeert β dan en slechts dan als:
 - (i) α een hoofd is,
 - (ii) $\alpha \beta$ c-commandeert,
 - (iii) β 0-subjacent is aan α , en
 - (iv) er geen γ is waarvoor geldt dat:
 - (a) γ een hoofd is, en
 - (b) $\gamma \beta$ c-commandeert maar niet α .

De conditie in (5,i) is zodanig geformuleerd dat de verzameling regeerders gelijk is aan de verzameling hoofden. Dit verschilt van de gebruikelijke aannname dat zowel (een deelverzameling van alle) hoofden als antecedenten kunnen optreden als regeerders, welke op zijn beurt weer gemotiveerd wordt door de aanname dat zowel hoofden als antecedenten kunnen fungeren als 'proper' regeerders. Rizzi (1990a) heeft echter betoogd dat de licensiëring van hoofden uiteen valt in een formele licensiëringseis (het lege categorie-principe dat vereist dat een spoor 'proper' hoofd-geregeerd is) en een identificatie-eis (die vereist dat een spoor in een bepaalde relatie tot zijn antecedent staat). Als dit juist is, is het niet onmiddellijk duidelijk waarvoor

we de notie 'antecedent-regeren' nog nodig hebben, omdat zij niet langer gebruikt wordt in de formulering van het lege categorie-principe. In hoofdstuk 3 laat ik zien dat de notie 'antecedent-regeren vervangen kan worden door een conditie op keten-formatie.

Ten aanzien van de configurationele conditie op regeren (vgl. (5,ii)) wordt veronderstelt dat zij eerder geformuleerd moet worden als c-commanderen dan als m-commanderen. In hoofdstuk 2 wordt betoogd dat de m-commandeer-conditie ons dwingt om verscheidene hulphypotheses te aanvaarden om gewenste regeerrelaties toe te staan en ongewenste te blokkeren, die niet nodig zijn als we de c-commandeer-conditie aannemen. Voor deze laatste conditie wordt verder enige positieve evidentiële geleverd door Controle- en Tense-theorie.

De conditie in (5,iii) wordt algemeen geaccepteerd en behoeft hier geen verdere verheldering. Blijft dus over de minimaliteitsconditie in (5,iv). Merk op dat Rizzi's (1990) Relativized Minimality voor zover zij ontwikkeld is om te verantwoorden dat een hoofd nooit een antecedent-spoorrelatie en een antecedent nooit een hoofd-regeerrelatie kan blokkeren, overbodig gemaakt is door de definitie van regeren in (5); uit de aannname dat hoofd-regeren en antecedent-spoorrelaties niet gelijkelijk als 'regeren' moeten worden gezien, volgt rechtstreeks dat zij elkaar niet beïnvloeden. In HOOFDSTUK 3 laat ik verder zien dat het overblijvende deel van Relativized Minimality (het feit dat antecedent-spoorrelaties van verschillend type elkaar niet beïnvloeden) afgeleid kan worden uit Chomsky's (1986a:63) Chain Condition.

In DEEL 2 wordt Den Bestens voorstel uitgebreid behandeld en in verscheidene opzichten herzien. In HOOFDSTUK 4 wordt eerst het verschijnsel van 'vrije woordvolgorde' of 'scrambling' besproken. Dit is nodig om het probleem in te perken en te verantwoorden op grond waarvan de volgorde object-subject kan optreden.

In HOOFDSTUK 5 bespreek ik de predikaattypen die deze volgorde vrijelijk toestaan. Er wordt geconcludeerd dat Den Bestens generalisatie dat deze volgorde alleen optreedt als het predicaat ergatief is, gehandhaafd kan worden. Ten aanzien van voorbeelden als in (1c) die werkwoorden van Den Bestens ACC NOM-type bevatten, laat ik zien dat de onderliggende volgorde van de argumenten niet object-subject is zoals wordt verondersteld door Den Besten, maar subject-object. Het feit dat de object-subject volgorde wel in het geval van deze, maar niet in het geval van de transitieve onergatieve werkwoorden mogelijk is, wordt gerelateerd aan het feit dat het direct en indirect object in de bi-transitieve constructie eveneens een zekere mate van vrije woordvolgorde vertonen.

In HOOFDSTUK 6 bespreek ik de notie 'keten-regeren' wat preciezer. Betoogd wordt dat de definitie in (3) te vrij is. Deze wordt daarom geherformuleerd als in (6) en (7), waardoor nomina en adjektieven uitgesloten worden van deelname aan keten-regeren.

- (6) α keten-regeert β dan en slechts dan als α en de regeerde van β gecoindiceerd zijn.
- (7) Een hoofd β kan gecoindiceerd worden met een hoofd α als:
 - (i) zowel α en β niet [+N] zijn en:
 - (ii) α β regeert.

Verder worden de consequenties van Den Bestens voorstel voor NP-verplaatsing in het Nederlands onderzocht. Tenslotte wordt enige aandacht besteed aan de vraag waarom keten-regeren beschikbaar is in het Nederlands maar niet in een taal als het Engels. Gesuggereerd wordt dat dit te maken heeft met het feit dat V-naar-I in het Nederlands plaatsvindt op S-structuur, maar in het Engels (voor zover het hoofdwerkwoorden betreft) op LF.

In DEEL 3 laat ik zien dat de in hoofdstuk 6 geformuleerde notie 'keten-regeren' een belangrijke rol speelt in de Bindingstheorie en wat Tense-theorie genoemd zou kunnen worden.

In HOOFDSTUK 7 wordt de distributie van de twee typen anaforen (geillustreerd aan enerzijds de 'lange-afstandsanafoor' *zich* en anderzijds de lokale reflexief/reciprook *zichzelf/elkaar*) en persoonlijk voornaamwoorden (geillustreerd aan enerzijds *bij/baar* en anderzijds de gereduceerde vormen *um/(d)ur* hiervan) die in het Nederlands te onderscheiden zijn, besproken. Ik laat zien dat hun distributie verantwoord kan worden door de notie 'keten-regeren' binnen de Bindingstheorie te halen. Er worden twee verschillende anaforische domeinen onderscheiden, de θ - en Casus-regerende categorie, die respectievelijk gedefinieerd zijn met behulp van de noties 'regeren' (in de traditionele zin) en 'keten-regeren'. De voorgestelde Bindingstheorie is gegeven in (8) (zie paragraaf 7.2.2 voor de definities van de begrippen die in (8) gebruikt worden).

- (8) BINDINGSCONDITIES VOOR HET NEDERLANDS
 - A. Een anafoor is gebonden in een regerende categorie, en (indien mogelijk):
 - (i) is *zichzelf/elkaar* gebonden in zijn θ -regerende categorie.
 - (ii) is *zich* vrij in zijn θ -regerende categorie.
 - B. Een pronomen is vrij in een regerende categorie en (indien mogelijk):
 - (i) is *bem/baar* vrij zijn in zijn casus-regerende categorie.
 - (ii) is *um/(d)ur*vrij of gebonden in zijn casus-regerende categorie.

In HOOFDSTUK 8 bespreek ik de aannemelijke veronderstelling dat de mogelijkheid van keten-regeren in het Nederlands het gevolg is van het feit dat het Nederlands een Verb Raising-taal is. Als er inderdaad een relatie tussen deze twee verschijnselen gelegd kan worden, dan zou daarmee tevens verantwoord zijn dat in talen zoals het Frans keten-regeren niet mogelijk is.

Er zijn echter verscheidene problemen met deze veronderstelling. Als Verb Raising (VR) de keten tot stand brengt die nodig is voor nominatief-toekenning onder keten-regeren, dan zouden we verwachten dat VR verplicht toegepast moet worden. Dit is overigens wat de meeste auteurs die zich met het onderwerp bezig gehouden hebben, zeggen; er zijn verscheidene voorstellen die de veronderstelde verplichting tot VR afleiden (vgl. bijvoorbeeld Evers 1982). Het belangrijkste punt van hoofdstuk 8 is echter te laten zien dat VR een optioneel verschijnsel is, dat, voor zover het verplicht toegepast wordt, afgedwongen wordt door niet-syntactische principes. In feite wordt er gesteld dat de optionaliteit van Verb Raising het gevolg is van het bestaan van keten-regeren in het Nederlands, d.w.z. in plaats van aan te nemen dat VR de keten creëert die nodig is voor keten-regeren wordt er betoogd dat het keten-regeren is dat VR optioneel maakt.

Hoewel in hoofdstuk 8 beargumenteerd wordt dat de keten die voor keten-regeren nodig is, niet door VR tot stand wordt gebracht, lijkt het wel zo te zijn dat er een zekere relatie tussen VR en keten-regeren bestaat voor zover dat VR alleen mogelijk is als keten-regeren ook mogelijk is. In HOOFDSTUK 9 bespreek ik enkele verschillen tussen kale en *te*-infinitieven in VR-context ten aanzien van controle, exceptionele casustoekenning en lange afstandsbinding die verantwoord kunnen worden door aan te nemen dat de toepassing van VR impliceert dat er een keten van regeerders bestaat.

In deze studie is aangetoond dat keten-regeren een rol speelt in de Casus-, Bindings- en Tense-theorie (en vanzelfsprekend in de Regeertheorie). In de ALGEMENE SLOTBESCHOUWING betoog ik dat er redenen zijn om te verwachten dat keten-regeren geen rol speelt in de overige modules (*θ*-, Begrenzings- en Controle-theorie). Dit betekent dat ik heb laten zien dat keten-regeren een rol speelt in precies die modules waarin dit te verwachten is.