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ON EXTRAPOSITION OF COMPLEMENT CLAUSES[†]

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0. Introduction

In this paper I will be discussing the well known, relatively well described, but to my mind as yet insufficiently well explained configuration of data in Dutch infinitival complements. I will be primarily concerned with three complement types. These are the bare infinitival complements the base structure of which is given in (1),

- (1) dat ik [_S Max een verhaal vertellen] hoorde
 that I Max a story tell heard

a standard type of infinitival complement, the base structure of which is illustrated in (2),

- (2) dat hij Kees [_S PRO het boek te lezen] vroeg
 that he Kees the book to read asked

and a third type of infinitival complement, illustrated in (3).

- (3) dat Jan [_S PRO het boek te lezen] stond
 that Jan the book to read stood

Apart from these, there are tensed complements, infinitival complements as indirect questions, and infinitival complements introduced by om (comparable to for, but not followed by a lexical NP). I will not discuss complements of the latter types except for some brief

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remarks in the final section. As is well known, Dutch is an SOV language underlyingly, the SOV order appearing most clearly in subordinate clauses. Complement clauses generally occur in a position to the right of the verb. I will be assuming that they are moved there from preverbal position by a rule of extraposition. Besides this rule of extraposition, there is another rule operating on infinitival complements; it is the rule of V-raising, which moves the infinitival verb out of the complement to a position to the right of the verb of the matrix clause. The result of applying V-raising to (1-3) is shown in (4-6).¹

- (4) dat ik [_S Max een verhaal e_i] hoorde vertellen_i
that I heard Max telling a story
- (5) dat hij Kees [_S PRO het boek e_i] vroeg te lezen_i
that he asked Kees to read the book
- (6) dat Jan [_S PRO het boek e_i] stond te lezen_i
that Jan stood reading the book

Applying extraposition to the complement types under discussion is not as straightforward as applying it to tensed complements, indirect questions and *om te* ('for to') complements. Whereas these complements undergo extraposition (but may not undergo V-raising), applying extraposition to (1-3) gives the results shown in (7-9).

- (7) *dat ik e_i hoorde [_S Max een verhaal vertellen]_i
- (8) dat hij Kees e_i vroeg [_S PRO het boek te lezen]_i
- (9) *dat Jan e_i stond [_S PRO het boek te lezen]_i

I.e. extraposition can only be applied to infinitival complements of the 'standard type'. Both in the case of bare infinitivals and in the case of complements such as those in (3) the result of applying extraposition is ungrammatical.

One of the most striking facts about Dutch clausal complements is that in order to obtain a grammatical sentence either extraposition or V-raising must have applied. So, the examples (1-3) are ungrammatical as surface structures. Where extraposition is impossible V-raising is obligatory, where V-raising is impossible extraposition is obligatory. The facts mentioned so far give rise to a number of questions, such as:

- 1) Under what conditions does V-raising yield a grammatical result ?
- 2) Under what conditions does extraposition yield a grammatical result ?
- 3) Whence the conspiracy; i.e. why is a sentence with a clausal complement to which neither V-raising nor extraposition has been applied ungrammatical ?

An answer to the first question is proposed in Reuland (1980a). At the same time it is shown there that, contrary to previous analyses (eg. Evers (1975)), after losing its verb by V-raising the complement must still be analyzed as an S. The answer can be summarized as follows: V-raising is possible only out of bare tenseless Ss, i.e. pre-

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cisely when the subject of the complement can be analyzed as an argument of the matrix verb under the definition of argument in Rouveret & Vergnaud (1980). This accounts at the same time for the fact that the verbal trace left by V-raising does not constitute a violation of opacity conditions.

After V-raising has applied extraposition is not allowed, even if the complement, as in the case of the complement of vragen 'ask' ordinarily could undergo extraposition. This is one more fact to be explained. The reasons for the conspiracy will play a crucial role in the answers to be given to the other questions; so, we will start with a discussion of the third question. The framework I adopt is that of the government/binding theory as it is being developed at present (cf. Chomsky's Pisa Lectures).

1. A Conspiracy

In the framework I am assuming movement rules are optional in principle. Restrictions on this optional character, i.e. impossibility or obligatoriness of rule application in a certain context are taken to follow from locally stateable conditions on representations. Hence, in order to account for the conspiracy I will have to state such a condition. Recent proposals on the subject of this conspiracy can be found in Van Riemsdijk (1978), Van Riemsdijk & Williams (1980), Den Besten (1980), and Bok & Crougns (1980). All these proposals, including a proposal by myself (Reuland (1980a)) are based on the adoption of a surface filter. The filter proposed by Bok & Crougns requires a clause to be right peripheral in the minimal constituent containing it unless it contains at least one empty verb position. Although it is quite ingenious the proposal seems to have a couple of drawbacks:² The position in the complement clause to the right of the verb may contain any number of extraposed PPs and lower complement clauses, as is noted by the authors; as a consequence the filter as they formulate it contains an essential variable. This runs counter to attempts to reduce the power of filters (cf. Chomsky & Lasnik (1977)). Moreover, if the filter is not to incorrectly rule out subject sentences, adverbial clauses, conjoined complement clauses, etc. a number of controversial assumptions as to the structures concerned must be made. The proposals by Van Riemsdijk & Williams, Den Besten and Reuland basically rule out sequences of verbs in which a verb asymmetrically c-commands a verb to its left.³ While these proposals do not involve reference to an essential variable, and are not dependent on assumptions like those made by Bok & Crougns, they share a drawback in depending on quite idiosyncratic predicates such as asymmetrical c-command or S-subjacency. Instead of giving a detailed evaluation of each of the proposals, for which there is neither space, nor time, I will confine myself to stating briefly why to my mind any analysis based on such filters is in principle unsatisfactory.

Syntactic surface filters cannot be used to represent in a natural and principled way the fact that the conspiracy basically involves complement clauses with respect to the matrix verb; i.e. not subject clauses, adverbial clauses, adnominal modifiers, etc. The

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conspiracy, if accounted for by a surface filter, remains unrelated to other facts of Dutch, and other principles of grammar. One specific fact which would remain unexplained is the obvious relation between the obligatoriness of V-raising and the impossibility of extraposition in (1,4,7) and (3,6,9); any of the filters proposed would have to treat (7,9) on a par with (8). To the extent in which the proposal to be advanced here succeeds in relating the conspiracy to other facts, and succeeds in relating obligatoriness of V-raising to impossibility of extraposition, to that extent it constitutes an advancement with respect to any proposal based on filters of the kind discussed.

In order to acquire some understanding of the reasons behind the conspiracy it appears worth-while to look for differences between the position in which the constituents involved originate and the position they move to. Both V-raising and extraposition are rightward movements. Both relate a position to the left of the matrix verb with one to its right. Now, there is a number of constituents occurring in both positions; many prepositional objects occur at the left of the verb and at its right; the same holds true for many adverbial phrases. Also attributive PPs and relative clauses may under certain conditions appear at the right of the verb. As we have seen, complement clauses also occur in both positions - subject to V-raising in preverbal position. But there is one important restriction: there are no NPs in positions to the right of the verb. Trivially, the simplest rule relating preverbal and postverbal positions would be Move X;⁴ this would leave us with the task to find an explanation for the non occurrence of NPs in postverbal position. However, a very simple explanation is available. Suppose we were to say: Dutch being SOV, verbs assign Case only to positions on their left. The relevant restriction on the occurrence of NPs would immediately follow, since they are confined to Case positions. I will proceed adopting this solution.

Comparing the surface positions of NPs and complement clauses we arrive at the following descriptive generalization: clauses containing a verb cannot stay in precisely those positions in which NPs must stay; and conversely, clauses containing a verb end up in positions in which NPs do not occur. And in a sense which must eventually be made more precise, the same holds true for the infinitival verb forms as such. Another way of stating the same fact is by saying that infinitival verb forms are confined to non Case positions in surface structure. In order to be able to use the distinction between Case positions and non Case positions in an account of the distribution of infinitival verb forms it is clear that we must assume that infinitives are 'visible' to principles of Case assignment. Suppose now that infinitival verb forms have a nominal character; if this is true one might expect them to be visible to a rule of Case assignment. Then, they are assigned (objective) Case if and only if they occur in preverbal position. Suppose finally that infinitives, though nominal, are defective, in that they cannot bear the Case they get assigned. Under that assumption one will expect them to have to move to a non Case position. As we have seen, this expectation is satisfied.

I claim that a theory of Case assignment in which the position of the infinitive is 'close enough' to the matrix verb to be in prin-

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principle accessible for Case assignment by the latter is necessary anyhow. Furthermore, Dutch infinitives are obviously nominal elements, both historically and synchronically. The synchronic situation is sufficiently characterized by the observation that for virtually any verb there exists a verbal noun taking determiners and adjectives, which is formally identical to the infinitive. I.e. next to the verbal infinitives vertellen 'tell' (with the stem vertel-) or lezen 'read' (with the stem lees-) we find verbal nouns as in het vertellen van verhaaltjes 'the telling of stories (litt.)' or dat ijverige lezen van Jan 'that industrious reading of John (litt.)' with an adjectival agreement marker e on ijverig. NPs formed on the basis of such verbal nouns are ordinary NPs in that they occur in all Case positions and only there. Now, verbal noun and verbal infinitive differ syntactically in a number of respects; e.g. the infinitive is a Case assigner, the noun is not, cf. the form assumed by the direct object of vertellen in het vertellen VAN verhaaltjes. So, given the formal identity a process of dissimilation between the two forms is quite plausible. Under the analysis I will propose, the filters accounting for the conspiracy reduce to the stipulation that the infinitival noun in a position in which it assigns objective Case is defective in that it cannot bear objective Case.⁵

This is quite a gain, both on the descriptive and on the explanatory level. On the descriptive level it follows now that only complement clauses are affected by the conspiracy. On the explanatory level the problems with the formulation of the filter are obviated, and an otherwise isolated fact is shown to follow from general properties of structures, the cost consisting of one plausible stipulation.

Clearly the analysis presupposes that infinitives in the position they occupy in the embedded clause can be governed by the matrix verb. Apart from the theoretical reasons to be given in the next section to the effect that this must indeed be assumed to be the case, the following facts about Frisian can be taken to provide independent support for this position. Like for instance German, Frisian is similar to Dutch in that it is SOV underlyingly. Only, it is in a sense more rigidly so; in complement structures without extraposition it exhibits the 'German order': all verbs remain in their original position with respect to their matrix verb, there is no change of participles to infinitival form, and in subordinate clauses the finite verb occupies the rightmost position in the sequence of verbs (in the latter two respects it differs from German). Unlike Dutch and German it has two infinitival forms, one ending in schwa, the other in schwa /n/. The form in schwa /n/ must be chosen in the complement of any verb but what is traditionally considered an auxiliary. This is illustrated by the contrast in (10-12)

(10) dat er [Gurbe rinnen] hearde (*rinne)
 that he Gurbe walk heard

(11) dat Gurbe rinne woe (*rinnen)
 that Gurbe walk wanted

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(12) dat Gurbe [it boek to lêzen] stie (*lêze)

that Gurbe the book to read stood (=stood reading the book)

Examples (10) and (12) correspond to (1) and (3), i.e. to cases where in Dutch the conspiracy applies. But (11) corresponds to Dutch (13).

(13) a. dat Gerben lopen wil

that Gerben walk wants

b. dat Gerben e_i wil lopen

This example shows that the corresponding construction in Dutch has only optional movement of the verb. So, the form on schwa in Frisian appears precisely in a case where in Dutch the conspiracy does not apply. A traditional account which can be found in Frisian grammars⁶ consists in saying that there is a verbal infinitive appearing in (11), i.e. with auxiliaries, which ends in schwa, and a verbal noun appearing in (10) and (12), i.e. with verbs such as hearre 'hear' and sjen 'see', and after prepositions such as to 'to', út 'out', etc., which ends in schwa /n/. Assuming this account of the difference between the two infinitival forms to be in principle correct, we see that it requires the verb position in the complement of hearre to be accessible to government by the matrix verb. An analysis in which verbs assign Case to their complements, but auxiliaries do not, together with the assumption that in Frisian, unlike in Dutch, infinitives may be assigned (objective) Case, can now be seen to account not only for these facts of Frisian, but also for the corresponding facts of Dutch, and for the relation between the two sets of facts.

The account given of the Dutch facts makes crucial use of a notion of defectiveness. The traditional notion of defectiveness is that of lacking a member of a paradigm. For instance Webster's gives the auxiliary must as an example of a defective verb: it lacks an infinitive. Clearly, this traditional notion does not presuppose formal differentiation. If a lexical item lacks some form of its paradigm it obviously cannot occur in a position in which this form is required. This may be taken to hold true regardless of whether the form that is lacking is or is not phonetically distinct from some other forms the lexical item does possess. This is exemplified in the behaviour of the past participle geweest 'been' in Dutch. In Dutch participles occur as the heads of adnominal modifiers. In prenominal position they take adjectival inflection marking. The form they assume is either identical to the stem or to stem followed by schwa, depending on the class of the head noun and the class of the determiner. In postnominal position the form does not vary, neither for participles nor for adjectives. Now, unlike most participles, geweest does not occur in prenominal modifier position, but it does in postnominal position. So, (14) is grammatical.

(14) deze minister, lang op vakantie geweest, begint weer

this minister, long on holiday been, starts all over again

Replacing minister by its diminutive ministertje (and deze by dit) preserves grammaticality. Dutch allows quite complex prenominal modifiers as is shown by (15).

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- (15) deze [eens te vaak benoemde] minister ...
 this once too often appointed minister

Substituting the diminutive ministertje in (15) requires benoemd instead of benoemde (and again dit instead of deze). However, putting the modifier of (14) in prenominal position gives an ungrammatical result. The obvious way to account for this fact is by saying that geweest may not appear in a position in which it is subject to adjectival agreement marking. The relevant examples are shown in (16).

- (16) a.*deze [lang op vakantie geweeste] minister ...
 b.*dit [lang op vakantie geweest] ministertje ...

I.e. the paradigm of geweest is defective in that it does not contain the form geweeste, as a realization of geweest+A₁, nor does it contain the form geweest as a realization of geweest+A₂, where A₁ and A₂ stand for the relevant agreement morphemes. As shown by (14), on the other hand, the paradigm does contain the form geweest as a realization of the stem geweest plus whatever morpheme one must assume to be present in postnominal position. The point of this example is that it would not do to simply assume the defectiveness of geweest to reside in the absence of the form geweeste. One must also assume the paradigm to lack a realization for the zero agreement marker.

In the same abstract sense we will assume nouns and therefore infinitives to be associated with a paradigms of Case forms, the defectiveness of infinitives residing in their lacking a member marked for objective Case. There is a difference between the two cases of defectiveness we discussed. Geweest is an isolated item in its category; in the case of infinitives we must assume a whole class in a certain position to be defective. Moreover, infinitives are defective only when appearing in verbal positions, not when they appear in ordinary noun positions. Notice, however, that infinitives as the verbal heads of clauses cannot be assumed to have a feature composition identical to that of nouns, if only for the reason that any item occurring as the head of a VP must be nondistinct from [+V]. Following the interesting ideas developed by Henk van Riemsdijk on a theory of syntactic neutralization (Van Riemsdijk (1980)), we will assume that it is precisely such neutralization which makes infinitives nondistinct from [+V]. Similarly, infinitives assign Case to NPs they govern, in fact objective Case; as a consequence they should be nondistinct from [-N]. If on some level infinitives were to be analyzed as nouns, i.e. with the feature composition [+N, -V], they would constitute an example of complete neutralization: [ON, OV]. The possibility of complete neutralization is explicitly rejected by Van Riemsdijk, and as a possible synchronic state probably rightly so. At the moment I don't have a specific feature analysis to offer. However, if complete neutralization is to be avoided, and the basic intuition behind our analysis is correct, a dissimilatory process which the conspiracy can be argued to be, is precisely what we would expect.⁷ It is for this reason that I wish to claim that there is a natural connection between the defectiveness of infinitives on the one hand and the neutralization they are subject to on the other. And it is for this reason that I decided to go beyond the descriptively equivalent statement that infinitives may not be governed.

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2. The Analysis

I will now bring the discussion from this rather general level to a more concrete plane. In order to be able to do this I will give a precise account of the relevant difference between preverbal and postverbal positions, and of the notion of government into clauses. In the previous section we attributed the fact that NPs are confined to preverbal position to principles of Case assignment. There is another difference between the two positions. Prepositions in PPs on the left of the verb may be stranded; in positions to the right of the verb stranding is impossible. This is illustrated by the examples in (17).⁸

- (17) a. dat de studenten [_{PP} tegen de maatregelen] protesteren, ...
 that the students against the measures protest
- b. dat de studenten e_i protesteren [_{PP} tegen de maatregelen]
- c. de maatregelen waar_i de studenten [_{PP} tegen e_i] protesteren
 the measures which the students against protest
- d. *de maatregelen waar_i de studenten e_j protesteren [_{PP} tegen e_i]_j

So, there is an asymmetry between preverbal and postverbal positions in these two respects. One expects there to be a link between these facts. Kayne (1979) develops a theory of preposition stranding; it is in this theory that precisely such a link finds a natural representation. There is a similarity in the relation between the direct object NP and its verb and the relation between a prepositional object and its verb. This is expressed by having the verb assign a superscript to an NP it governs (and assigns Case) as well as to a PP it governs. It is proposed that the possibility of stranding is dependent on the possibility for the superscript to percolate to the head of the PP, viz. the preposition. Movement is assumed to be possible only if the resulting trace is properly governed; i.e. it must be governed by an item cosuperscripted with a verb. So, if an NP is extracted from a PP the trace violates ECP unless the preposition governing its trace bears a superscript identical to that of the verb. Since stranding, i.e. also stranding in preverbal positions, is a rather restricted phenomenon in Dutch, this is not a sufficient condition for stranding to be allowed; it is however a necessary condition, and for our present purposes this suffices.

Several possibilities suggest themselves to make use of the principle of superscript assignment in order to account for the asymmetry under consideration. One of them I will explore. There is a rather interesting issue in the balance between the role in the grammar of the notion of government and that of the notion of strict subcategorization. This account will be based on the latter notion to a larger extent than is usually the case. There is an advantage to this. Many questions about Dutch phrase structure have not yet found generally accepted solutions. Specifically the structural position of PPs and complement clauses on the right of the verb constitutes a moot

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point. Evers (1975) even expresses doubt as to the existence of the constituent VP in Dutch. Therefore I have framed my analysis in such a way that it does not depend on any specific assumptions with regard to the internal structure of the VP; more specifically, it does not depend on the assumption that positions to the right of the verb are outside its domain. Obviously the analysis will be compatible with such an assumption. I will not pursue the idea that VP is not a structural notion for Dutch, so the VP will be considered part of Dutch phrase structure.

I will be assuming that the fact that Dutch is V-final underlyingly is represented in the strict subcategorization frames of verbs. As a consequence a typical strict subcategorization frame, e.g. that of the verb besteden 'spend' (cf. *geld besteden aan ___* 'spend money on ___') will be represented as in (18a). A verb taking a clausal complement (e.g. beweren 'claim') will be subcategorized as in (18b).

- (18) a. +[_{VP} NP PP ____]
 b. +[_{VP} S ____]

No verb is strictly subcategorized for a position to its right. Now, strict subcategorization is not limited to frames such as those given in (18). In principle strict subcategorization can also involve positions inside a complement. This part of the theory of strict subcategorization I will adopt can be justified e.g. on the basis of an analysis of English NP-ing constructions (*I hate him being hanged*) and of the respects in which they differ from infinitival complements (cf. Reuland (1980b) and (in prep.)). Here I will be content just stating the relevant principles, and investigating their consequences for the present problem. The basic idea is that a verb may be strictly subcategorized for any position meeting the following conditions: The position is minimally c-commanded by the verb under the definition given in (19); and the phrase strictly subcategorized for bears a thematic relation to the verb, or is the head of such a phrase.

- (19) a is minimally c-commanded by b iff a is c-commanded by b and there is no c such that a is c-commanded by c and c is c-commanded by b, unless b is c-commanded by b (where c is a possible governor, i.e. c=[+N, +V] or c=AG or Comp)

It is assumed that S' and NP are absolute boundaries for government and strict subcategorization. It is assumed furthermore that the set of strict subcategorization frames meets the requirement of Chomsky (1965) that every accessible position must be relevant for some lexical items. It is also required that every position mentioned in some frame represent a real option, i.e. there must be some lexical item requiring another category in the same position. Every lexical NP must be assigned Case (cf. Chomsky (1980a,b)). A verb assigns objective Case to an NP it governs, where for the present purposes the definition of government can be identified with (19) with a restricted to NP. For sake of concreteness I mention that I take the position of Chomsky (1980b) that the property of being a bridge verb is represented as causing S'-deletion. A verb is taken to cause S'-deletion iff it is strictly subcategorized for S or material contained in S.

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I will assume that in the unmarked case a verb strictly subcategorized for S or S' takes both tensed and tenseless complements. Unless specified otherwise a tenseless complement is realized as a *te/to*-infinitival. Under the definition given in (19) at most items in the position of INFL are accessible to the matrix verb for purposes of strict subcategorization, if the position of INFL is occupied. If the complement clause contains a nonempty Comp the position of INFL is not accessible, not being minimally c-commanded by the verb. Suppose some verb requires a tenseless complement; this will be expressed by the strict subcategorization frame (20); i.e. the verb excludes tensed complements.

(20) $+[_{VP} [_S \dots te..] \underline{\quad}]$

The contents of the dots need not, and as a consequence, may not be specified in the frame. It need not be specified since it is predictable: the base rules generate a subject position in each S, and the presence of *te/to* requires the presence of a VP. If the contents is predictable there is no option, so it cannot play a role in the strict subcategorization according to the principle stated above. It is possible for a verb to dip deeper into its complement for purposes of strict subcategorization. This is the case when the position of INFL is empty. Consider the case of bare infinitivals in Dutch as in (1). In bare infinitivals the position of INFL may be taken to be realized as \emptyset . This means that there is no governor within the S - I am assuming throughout a rule like $S \longrightarrow NP \text{ INFL VP}$ for English and for Dutch I assume $S \longrightarrow NP \text{ VP INFL}$, with INFL the head of S. Clearly, if $INFL = \emptyset$, then the agreement marker AG, which is in the expansion of INFL, is zero too. But now both the subject NP and the VP are minimally c-commanded by the matrix verb. However, the subject NP of the complement may not appear in the strict subcategorization frame of the matrix verb for two reasons: first, it neither bears a thematic relation to the matrix verb, nor is it the head of a phrase bearing such a relation; second, it does not represent an option: presence of a subject NP is predictable in a clause. However, it can be plausibly argued to my mind that the VP does meet the requirements we discussed. Given the existence of so many proposals to treat S and S' as V-projections even if INFL is present, it seems uncontroversial to assume at least that it is a V-projection when INFL is absent (I do not wish to go into questions concerning the possible relation between INFL and V). If this can be accepted, the V or the VP (the choice depending on considerations that do not concern us here) must indeed be taken to satisfy the requirement of being the head of a phrase that is thematically related to the verb. Finally, the VP represents a real option in the sense discussed when $INFL = \emptyset$. In bare complements there can be a PP, an AP, or an NP instead of a VP. Stowell (1980) presents a very interesting discussion of such complements.⁹ It follows now that (21) is a possible strict subcategorization frame, which is realized in bare infinitival complements.

(21) $+[_{VP} [_S \dots VP] \underline{\quad}]$

With (21) constituting the marked option for a verb requiring a tense-

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less complement, I take it to imply a negative specification for a te/to-infinitival complement (cf. Chomsky (1965; 164). So, if some verb is positively specified for (18b) and also for (21) it is negatively specified for (20). I will take this negative specification to have precedence over the principle that in the unmarked Case a verb positively specified for (18b) admits tensed complements as well as te/to-infinitivals.

This theory of strict subcategorization entails that the position of the preposition in a PP is accessible to the governing verb; i.e. the strict subcategorization frame of the verb may mention the preposition, since the preposition is minimally c-commanded by the verb which is the head of the VP. The asymmetry in the behaviour of PPs to the left of the verb with respect to those on the right of the verb can now be shown to follow from this theory of strict subcategorization and a slight modification of Kayne's superscript proposal. Suppose the verb assigns its superscript precisely to the positions appearing in its strict subcategorization frame. Suppose that in cases where the superscript may percolate down, it does so to positions minimally c-commanded by the superscript assigner only. So, in the case of PPs the superscript may percolate down to the preposition. So, typically we will have derivations of the following kind.

- (22) a. [_{VP} NP [_{PP} P NP] Vⁱ...]
 b. [_{VP} NPⁱ [_{PP} P NP]ⁱ Vⁱ...]
 c. [_{VP} NPⁱ [_{PP} Pⁱ NP]ⁱ Vⁱ...]

In (22c) the NP within the PP is governed by a preposition cosuperscripted with a verb; therefore, if the NP is extracted, its trace is properly governed in the sense required by Kayne. Consider now the result of moving this PP to the right of the verb. Superscripts are assigned to constituents in a specific position, viz. that position in which they occur in the strict subcategorization frame. Therefore, if the PP is moved to the right the derivation will be as shown in number (23).

- (23) a. [_{VP} NP [_{PP} e]_j Vⁱ [_{PP} P NP]_j]
 b. [_{VP} NP [_{PP} e]_jⁱ Vⁱ [_{PP} P NP]_j]

Since only the PP on the left of the verb is mentioned in the strict subcategorization frame, only the latter is assigned a superscript. Since the trace of the PP is properly bound by its 'antecedent' the structure in (23b) is well-formed, and the strict subcategorization requirements of the verb are satisfied. However, extracting from a position on the right of the verb leads to a violation of ECP. This is illustrated by the structure given in (24).

- (24) [_@ NP_k [_{VP} NPⁱ [_{PP} e]_jⁱ Vⁱ [_{PP} P e_k]_j]]

Since the verb does not assign a superscript to the PP on its right, there is no superscript in this position to percolate down onto the

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preposition. So, e_k is not governed by a constituent cosuperscripted with a verb. As a consequence it is not properly governed.

We will now consider a related fact about PPs. It appears to be the case that some verbs do not allow a PP for which they are strictly subcategorized to appear on their right. An example is the verb zijn 'to be'. The relevant property is illustrated in (25).

- (25) a. dat dit boek [_{VP} [_{PP} [_P voor] [_{NP} een jongen uit Roden]] [_V is]]
 that this book for a boy from Roden is
- b. *dat dit boek [_{VP} [_{PP} e] [_V is] [_{PP} voor een jongen uit Roden]]
- c. dat dit boek [_{VP} [_{PP} voor een jongen] e_i [_V is] [_{PP} uit Roden]]

The grammaticality of (25c) shows that the restriction only involves PPs that are relevant for strict subcategorization.¹⁰ The ungrammaticality of (25b) follows from the assumption that superscripts are directly assigned to constituents mentioned in the strict subcategorization frame and the assumption that movements on this level are subject to the requirement that a properly bound trace is left for every constituent appearing in the strict subcategorization frame of an item (in this case the verb zijn), together with the assumption that the strict subcategorization frame of zijn specifically mentions the preposition in these cases. Under this assumption zijn is strictly subcategorized as in (26).

- (26) [_{VP} [_{PP} [_P voor] ...] ____]

So, the superscript structure of (25a) is as given in (27).

- (27) dat dit boek [_{VP} [_{PP} [_P voor]ⁱ NP]ⁱ [_V is]ⁱ]

Since traces are not layered, the strict subcategorization frame of zijn is not met in (28), where the superscript structure given is the only one possible:

- (28) [_{VP} [_{PP} e]_jⁱ [_V is]ⁱ [_{PP} [_P voor] NP]_j

In (28) the superscripted preposition voor 'for' that was present in (27) is not recoverable from the structure in its original position.¹¹ So, in these cases I will have the superscripts assigned directly, and not by percolation.

I will now return to the main subject of this paper, viz. the reasons for the behaviour of the several complement types under V-raising and extraposition. First we will investigate the bare infinitival complements, i.e. the complements of verbs such as horen 'hear' or zien 'see'. Consider example (29).

- (29) a. *dat Johan [_{VP} [_S Cecilia [_{VP} een lied zingen]ⁱ]ⁱ hoordeⁱ]]
 that Johan Cecilia a song sing heard
- b. dat Johan [_{VP} [_S Cecilia [_{PP} in de kamer]ⁱ]ⁱ hoordeⁱ]]
 that Johan Cecilia in the room heard

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c. *dat Johan [_{VP} [_S e]_jⁱ hoordeⁱ [_S Cecilia [_{VP} een lied zingen]]_j]

As discussed above, these verbs must be assigned the strict subcategorization frame (21), repeated here as (30) - besides (18b) of course.

(30) +[_{VP} [_S ...VP] ____]

Since INFL=∅ the matrix verb governs the subject NP of its complement, which does not appear in the strict subcategorization frame, and it assigns a superscript to the VP. Since Cecilia in (29a,b) is governed by the matrix verb it is assigned objective Case. The effect of the superscript on the VP will be considered below. It is now immediately clear why (29c) is ungrammatical: first the subject Cecilia is in a position to the right of the matrix verb, i.e. a position in which it cannot be assigned Case; and second, the structure violates the requirement that every item that received its superscript directly, i.e. every item appearing in the strict subcategorization frame of the verb, must be represented in the derived structure in its proper position. In other words, the S-trace in (29c) does not satisfy the strict subcategorization requirements of the verb horen. It is obvious that application of V-raising does not change this.¹²

I will now consider the other case of obligatory V-raising where extraposition is impossible. The relevant cases are given in (31).

- (31) a. *dat Cindy [_{VP} [_S PRO een boek te lezen] stond]
 that Cindy a book to read stood
- b. *dat Cindy [_{VP} [_S e]_j stond [_S PRO een boek te lezen]_j]
- c. dat Cindy [_{VP} [_S PRO een boek e_k] stond te lezen_k]
- d. *dat Cindy [_{VP} [_S e]_j stond te lezen_k [_S PRO een boek e_k]_j]
- e. *dat Cindy stond [_S dat ze een boek las]
 that Cindy stood that she a book read

The impossibility of construing stond with a tensed complement, illustrated by the ungrammaticality of (31e) shows that such verbs should be explicitly marked as requiring an infinitival complement. Under the assumption that in Dutch, as in English and other languages, the infinitival marker te is an S-daughter, generated in the position of INFL, the strict subcategorization frame of staan 'stand', komen 'come', etc. - verbs which appear in this construction - must be represented as in (32).

(32) +[_{VP} [_S te ...] ____]

So, by convention, te will become superscripted when it occurs in the complement of a verb with such a feature. But now, it immediately follows that (31b) and (31d) are ungrammatical: in both cases the constituent to the left of the verb is a simple S-trace, violating the strict subcategorization requirements of the matrix verb. In (31c), on the other hand, the relevant infinitival form is separately repre-

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sented by a trace, which is properly bound. So, the result of V-raising is grammatical. Thus, the account explains the restrictions on extraposition. The answer to the second question posed in the introductory section can be formulated as follows: a constituent can undergo extraposition only if its trace satisfies all strict subcategorization requirements that were satisfied by the constituent moved.

I will now proceed answering the third question: whence the conspiracy? I will do so assuming the intuitive account given in the first section: infinitives cannot bear Case, so they move to a non Case position. The question to be answered here is: how do they get Case? Given the analysis presented so far, perception verbs such as horen are strictly subcategorized as in (30). Therefore, the VP of their complement is assigned a superscript. Under the theory of superscripts we discussed the superscript percolates to the head of the VP, viz. the verb (cf. Kayne (1979)). Since this form of the verb, being a nominal element, is subject to Case marking, being superscripted implies being assigned objective Case. Being defective, the verb has to move to postverbal position in order to be exempt from Case assignment. The account given of the limitations on extraposition taken together with this account of V-raising gives the required result: V-raising is obligatory in perception verb complements.

The properties of te-infinitivals can be shown to follow from the same principles after clarifying the analysis of the infinitival marker te. As far as I know its precise status is somewhat mysterious under all analyses proposed so far; in most recent analyses it is not an expansion of INFL (or Aux), but rather an element appearing in the position of the latter. In many languages the infinitival marker assumes a form homophonous to a preposition, cf. Dutch te, English to German zu, etc. The null hypothesis is then that it is a preposition. This tallies quite nicely with the infinitival form of the verb having a nominal character; i.e. infinitival form is to be analyzed as an object of the preposition te/to/zu. So, I will adopt this analysis. As a consequence the infinitival marker may be taken to assign Case to its verb. In most positions this will be oblique Case, for which the infinitival form is not defective. However, if a preposition is cosuperscripted with a verb it assigns objective Case (cf. Kayne (1979)). We saw that verbs such as staan and komen when taking clausal complements do so on the basis of the strict subcategorization frame given in (32) only. So, extraposition of their complements is impossible, as we saw. But, since te is specifically mentioned in (32) it is cosuperscripted with the matrix verb. Therefore it assigns objective Case instead of oblique Case to the infinitival form of the verb. As a consequence, as in the case of the bare infinitivals, the infinitive has to move. Again, V-raising being the sole possibility to jointly satisfy all conditions it is obligatory.

The third category to treat is that consisting of verbs such as beloven 'promise', vragen 'ask', beweren 'claim', zeggen 'say', etc. All of these verbs take tensed as well as tenseless complements. If they have a tenseless complement it is a te-infinitival. The verbs of this category have the option for their complement to either undergo extraposition, or V-raising. One of these must be applied, and after V-raising extraposition is impossible. The reasons for this

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configuration of data will be obvious from the preceding discussion. The strict subcategorization frame of these verbs is the one given in (18b), and the superscript is assigned to the item for which the matrix verb is strictly subcategorized, viz. the S. The superscript percolates down to the head, which is te when the complement is an infinitival. So, the situation arises represented in (33).

- (33) dat Richard [_{VP} [_S PRO het boek teⁱ lezen]ⁱ beloofⁱt]
 that Richard the book to read promises

Te being cosuperscripted with beloofⁱt, the infinitive it governs is assigned objective Case. So, it has to move. Moving te lezen yields the structure given in (34).¹³

- (34) dat Richard [_{VP} [_S PRO het boek [_V e]_jⁱ]ⁱ beloofⁱt te lezen_j]

The infinitival form that moved is sufficiently represented in its original position by its trace. Moreover, the trace is properly governed by beloofⁱt. Therefore the sentence is grammatical. Under extraposition the result is as illustrated in (35).

- (35) dat Richard [_{VP} [_S e]_jⁱ beloofⁱt [_S PRO het boek te lezen]_j]

Since beloven is strictly subcategorized for S, and not specifically for the infinitival marker, there is no violation of the strict subcategorization frame of beloven in (35): (18b) is satisfied. So, the sentence is grammatical. Consider finally the result of jointly applying V-raising and extraposition. It is given in (36).

- (36) *dat Richard [_{VP} [_S e]_jⁱ beloofⁱt te lezen_k [_S PRO het boek e_k]_j]

This structure is ill-formed since the trace of te lezen is not properly governed. It should be governed by an item cosuperscripted with the verb, but it isn't. Another way of saying the same thing is as follows: the infinitival verb may, and must be moved to an ungoverned position as soon as it is assigned objective Case. But if a constituent has moved, the fact that it moved, together with the reasons why it had to move must be recoverable from, i.e. directly represented in the resulting structure. This information is not recoverable from (36), and, since traces are not layered, cannot be made recoverable. As a consequence, (36) is ungrammatical.

The analysis is based on the assumption that te is a preposition, as we saw. There is of course an abundance of trivial and less trivial evidence that it is a preposition in other positions. It is less trivial to find independent evidence that it is a preposition in the position under consideration. However, the assumption that te in Dutch and to in English are essentially prepositions (although they may have lost some prepositional properties) has at least one non trivial consequence, given the assumption that they are S-daughters: te being a preposition it is a governor in the sense of (19), and the same holds true for to. Consider now the structures in (37).

- (37) a. ... [_{VP} [_S PRO VP te..] beloofⁱt]

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b. ... [_{VP} promises [_S PRO to VP]]

Under current analyses it is quite unclear why the matrix verb in these examples does not govern the PRO of the complement clause:¹⁴ government is blocked by S', and not by S. There is the possibility of assuming the presence of S' in such complements, but since beloven and promise are bridge verbs this would lead to further complications (cf. Chomsky (1980b)), S' being an absolute boundary for movement. One might propose that S'-deletion means that S' goes to S. I.e. the structure resulting from applying S'-deletion to (38a) is not (37a) but (38b).

(38) a. ... [_{VP} [_{S'} [_S PRO VP te..]] beloof(t)]b. ... [_{VP} [_S [_S PRO VP te..]] beloof(t)]

The hypothesis is then that government goes across one S-boundary, but not across two of them. Exceptional governors such as believe and seem have the property of deleting one S-boundary, thereby creating a structure in which they do govern the subject of their complement. There are two quite severe conceptual problems with this solution. First under the theory of analyzability (37a) is simply identical to (38b): a tree, or a labelled bracketing is no more but a representation of a set of is a statements. If such a set contains the statement that some string x is an S, adding another occurrence of that statement to the set does not make it a different set. Moreover the process of S'-deletion is assumed to consist of replacing the predicate is an S' on some string by the predicate is an S. S-deletion must be quite different if it is to result in deleting a predicate. However, nothing of this sort is needed if te/to are analyzed as prepositions. Prepositions are governors, but they govern only to the right. So, te/to do not govern the PRO subject of their clause. However, being governors, they do enter into relations of minimal c-command, in the sense that their domain is opaque to outside governors. I.e. simply applying the definition given in (19) gives the result that the PRO in (37) is not governed by the matrix verb if te/to is analyzed as a preposition (at least, as a member of a lexical category viz. of [+N, +V]). It is a direct consequence of this analysis that te/to infinitivals with PRO subjects constitute the unmarked case throughout. In Dutch, or German there are absolutely no constructions with exceptional Case marking into infinitival complements of this sort. In English they constitute the marked case. Exceptional Case marking is now analyzed in the following way: suppose English to is on its way to lose its status as a preposition in this construction. Clearly, since the whole construction has become rather verbal one must assume some such process historically, involving not only the preposition to, but of course also the infinitive - also the English infinitive must be ascribed a nominal origin. Synchronically being on its way to lose prepositional status will be represented in there being a doublet: one to with prepositional status, and a second to lacking sufficiently many lexical features so

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as to count no longer as a member of a lexical category. Exceptional governors can now be taken to be strictly subcategorized for the second to. Since this to is not lexical, it does not count as a governor for (19); as a consequence the subject position of a complement with this to is open for government by the matrix verb.

3. Summary and Conclusion

We started with a number of questions concerning sentential complements in Dutch. The main question was why there is a conspiracy in Dutch to destroy configurations of a complement verb followed by a verb in the matrix clause. The second question was how this conspiracy is to be represented. The third question was why certain complement types cannot be extraposed. All these questions have received an answer on the basis of the following assumptions: Infinitival verb forms are nominal, but defective in that they cannot bear objective Case. The infinitival marker te is a preposition. A superscripting mechanism as proposed by Kayne (1979) applies to the positions mentioned in the strict subcategorization frame of a verb. A theory has been proposed specifying the set of positions accessible to strict subcategorization. After movement strict subcategorization requirements must be satisfied in terms of simple traces. The verb must move if otherwise it would receive objective Case. Movement may proceed by either extraposition, or V-raising. Extraposition of the complement clause is only possible if the resulting structure allows the strict subcategorization requirements of the matrix verb to be met. So, the conclusion seems warranted that the present proposal indeed constitutes an advancement with respect to existing ones.¹⁵

I wish to conclude by making some remarks on the status of the complements not discussed in this paper. Some verbs idiosyncratically allow an infinitival complement headed by om 'for'. Also complements of this type are obligatorily extraposed. The structure can be taken to be as in (39).

(39) ..._{VP} [_S omⁱ [_S PRO VP teⁱ...]]ⁱ belooftⁱ]

The verb belooft subcategorizes for om, assigning it its superscript, and the preposition om subcategorizes for a te complement, transmitting the superscript of the verb. One ends up with the same situation as before, the verb is assigned objective Case by te cosuperscripted with the verb. This time it cannot move due to subjacency, so the complement as a whole has to move. In the case of infinitival indirect questions one can give the same account, te becomes cosuperscripted with the matrix verb; so, the conspiracy becomes relevant. Again, the verb cannot move alone, due to subjacency, and extraposition is the sole possibility. However, somewhat problematic, and hence more interesting, is the behaviour of finite complement clauses. Like the other types of complement clauses they are subject to extraposition. In order to account for this one might wish to make use of the percolation principle proposed by Ken Safir and David Pesetsky (this volume). Under this principle the superscript would automatically percolate to the head of the clause viz. INFL, the carrier of AG.

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In the best of all possible worlds all this would be well, since it would enable us to account for the behaviour of tensed complements in much the same way as we accounted for the behaviour of tenseless ones: AG in tensed clauses is assigned nominative Case by tense. If the superscript of the matrix verb percolates down onto AG this would cause objective Case to be assigned. The result: a Case conflict. So, extraposition must follow in order to allow escape from the conflict. Compare , however, the examples in (40).

(40) a.*dat Cindy [_S PRO dat artikel te zullen afmaken] echt beloofd heeft, kan ik niet bevestigen

that Cindy really promised to finish that article I cannot confirm

b.?¹dat Cindy [_S dat ze dat artikel zou afmaken] echt beloofd heeft, kan ik niet bevestigen

that Cindy really promised that she would finish that article I cannot confirm

These examples show that there is a considerable difference between infinitival clauses in preverbal position and tensed ones. The infinitival clauses are wholly beyond repair. The tensed clauses in that position are not. With, admittedly, strong intonational help, especially stress on echt 'really', (40b) is not nearly as bad as (40a). This result is quite impossible under the assumption that anything so fundamental as a Case conflict is involved. Among other things this shows that this is not the best of all possible worlds; and it leaves us a puzzle . The reason might be that dat may not appear in Case positions - like infinitivals it might be nominal and visible to Case assignment, not being able to bear objective Case - but under that assumption there still is no reason for the relative acceptability of (40b). The conclusion must be that something has been left for further research.

FOOTNOTES

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¹An extensive overview of the phenomenon of V-raising can be found in Evers (1975) who provides the first modern treatment. My analysis diverges in rejecting S-pruning and in its treatment of auxiliaries.

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⁷One problem that might be raised as regards the present analysis is why the infinitive in its derived non Case position is not filtered out by the Case filter. The obvious answer is then that the raised verb lost sufficiently many of its nominal characteristics so as to be exempted from the Case filter. Although this is non explanatory, this is not as ad hoc as it might seem. There is in Dutch and German - interestingly not in Frisian - a process generally referred to as infinitivus pro participio. It is exemplified in (i).

- (i) a. *dat Johan [Cecilia zingen] gehoord heeft (base structure)
 that Johan Cecilia sing heard has
 b. dat Johan [Cecilia e_i] heeft horen zingen

In (ib) the matrix verb has no longer participial form, as would ordinarily be required by the auxiliary heeft 'has', but infinitival form. What has happened is that zingen has been adjoined to gehoord creating a verbal cluster, the latter has been adjoined to heeft (presumably). Such a change is quite plausible under the assumption that incorporation of the participle gehoord in the verbal cluster, which is forced by the adjunction of the complement verb forces the former to lose its nominal character which it would have as an adjective. Loss of the feature [+N] could cause it to assume infinitival form. If the nominal character of some form would be lost in general by it being incorporated into a verbal cluster we would have an account as to why the verb in its new position is exempted from Case marking.

⁸The possibility of stranding in Dutch is subject to rather severe restrictions. In most dialects of Dutch it is possible only if the object of the preposition is a [+R] pronoun, i.e. a pronoun such as waar 'where', er 'there' etc. This is discussed in Van Riemsdijk (1978). Moreover, stranding in a position adjacent to the verb is better than stranding in positions more to the left. However, stranding in a nonadjacent position to the left of the verb is still much better than stranding in a postverbal position. So I will disregard these relatively minor differences. Huybregts (1976) proposes a freezing principle, the "Antecedency Binding Condition", to account for the impossibility of stranding in postposed PPs and a number of other facts. I think that to a large extent it will be possible to explain freezing principles on the basis of approaches based on conditions on empty categories along the lines adopted here.

⁹Stowell develops an interesting theory in which 'small clauses' i.e. clauses without an INFL are claimed to be projections of their heads, with an NP subject. So, the complement clause in (29b) would be a PP under his analysis presumably. I will not adopt this analysis here.

¹⁰I am assuming some detachment principle to be operative here. Cf. Evers (1975). So, on the relevant level the PP uit Roden is available for movement.

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¹¹Under Wh-movement the preposition may be moved along with the NP. So, under the analysis given, the difference between preverbal and postverbal positions supports the hypothesis in Van Riemsdijk & Williams (1980) that there is a difference between the level of NP-structure, and the level of Wh-structure. Cf. also fn.4.

¹²An analysis based on the hypothesis that the complement of (29b) is a PP rather than an S would run into difficulties, since it cannot explain why it cannot be extraposed. Since any PP can be moved to the right of the verb, e.g. in de kamer can, one would expect it to be possible for Cecilia in de kamer to move, since being a PP it would leave a simple PP trace, satisfying the strict subcategorization requirements of hoorde as adapted to the analysis. However, the result is ungrammatical. One could say that Cecilia in postverbal position would not get Case, thereby causing the Case filter to apply. But then one would expect PRO to be possible. I.e. the example cited below should be grammatical.

- (i) *dat Johan [_{PP} e]_j hoorde [_{PP} PRO in de kamer]_j
 that Johan heard in the room

It is fully ungrammatical, however. Under our analysis it is ungrammatical for the same reason (29c) is ungrammatical. Notice that small clauses in preverbal position will always have a lexical subject, since the subject position is governed. One might wonder as to the status of sentences such as (ii).

- (ii) dat Johan een lied wilde horen zingen
 that Johan a song wanted hear sing
 that Johand wanted to hear a song sung

However, there is no reason to assume a PRO subject in such sentences given the existence of sentences such as (iii).

- (iii) dat Johan een lied door Cecilia wilde horen zingen
 that Johan wanted to hear a song sung by Cecilia

In such cases there is no passive marking on the verb in Dutch, as shown by (iii). So, (ii) is to be analyzed as a passive with an empty by-phrase: een lied is simply in subject position.

¹³The infinitival marker te has to move along with the verb. Synchronically it forms a very close unit with the latter. They cannot be separated except by material that forms a morphological unit with the verb: the so-called inseparable particles. So, for the rule of V-raising te V is analyzed as a V presumably. It must be noted that there is a largely unexplained 'restructuring' operative in Dutch VPs causing even larger chunks of the VP adjacent to the verb to optionally move along with the verb. The process is subject to heavy dialectal variation. There is work in progress by Hans den Besten and Jerry Edmundson on these matters.

¹⁴In my analysis of NP-ing constructions in English I present more discussion of these issues (Reuland (in prep.)).

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¹⁵ It is only under an account as proposed in this paper that it is immediately guaranteed that the trace resulting from V-raising does not violate ECP. Since, clearly, only the fact that its original position is governed causes the infinitive to move. It has been observed a number of times in the literature that lexical material intervening between the complement verb and the matrix verb, though it does not block the conspiracy, does block the possibility of deriving a grammatical output by V-raising in a number of cases. Not all of the data are clear, nor are the principles involved. One of the options is stipulating V-raising to be a local rule (Cf. Van Riemsdijk (1978)). Another option is that of defining the notion of proper government in such a way that the trace of a verb moved by V-raising is not properly governed unless it is adjacent to the verb with which it is cosuperscripted; i.e. intervening material causes a violation of ECP. This issue I will leave open for the time being.

There is another issue, accounted for in Evers (1975) for which my analysis is perhaps not obviously clear. Dutch allows rather large V-raising constructions. The general effect of V-raising is that structure (i) is mapped onto (ii). Other orders should be excluded.

(i) $V_1]_S V_2]_S \dots V_{n-1}]_S V_n$

(ii) $e_1]_S e_2]_S \dots e_{n-1}]_S V_n V_{n-1} \dots V_2 V_1$

So, the effect is precisely that of inverting the base order of the verbs. Taking V-raising to be the rule given in (iii),

(iii) vbl, V, vbl, V, vbl
 $\quad 1 \quad 2 \quad 3 \quad 4 \quad 5$
 $\quad 1 \quad e \quad 3 \quad 4\#2 \quad 5$

the required result follows from subjacency.

REFERENCES

- Besten, H. den (1980), 'Verb Raising and Auxiliary - Main Verb Dependencies in Dutch', paper presented to the Fourth Groningen Round Table (July 4 - 8 1980).
- Bok-Bennema, R. & A. Croughs-Hageman (1980), 'Verb-Raising en Structuurbehoudendheid', Ms. University of Amsterdam.
- Chomsky, N. (1965), Aspects of the Theory of Syntax, MIT Press.
- Chomsky, N. (1980a), 'On Binding', Linguistic Inquiry 11
- Chomsky, N. (1980b), 'Principles and Parameters in Syntactic Theory', Ms. MIT.
- Chomsky, N. (Pisa Lectures), transcript MIT
- Chomsky, N. & H. Lasnik (1977), 'Filters and Control', Linguistic Inquiry 8.
- Evers, A. (1975), The Transformational Cycle in Dutch and German, Doctoral Dissertation University of Utrecht, distributed by the Indiana Linguistics Club.
- Huybregts, M.A.C. (1976), 'Vragende(r)wijs: progressieve taalkunde' in: G. Koefoed & A. Evers (eds.), Lijnen van Taalkundig Onderzoek, Groningen, Tjeenk Willink.

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- Kayne, R.S. (1979), 'E.C.P. Extensions', Ms. Université de Paris 8
- Reuland, E.J. (1980a), 'V-Raising in Dutch: Anomalies Explained' in: Papers from the Sixteenth Regional Meeting, Chicago Linguistic Society.
- Reuland, E.J. (1980b), 'Governing '-ing' and the Search for the Universal Aux', paper presented to the Fourth Groningen Round Table (July 4 - 8 1980).
- Reuland, E.J. (in prep.) 'Governing '-ing'', Ms. University of Groningen.
- Riemsdijk, H. van (1978), A Case Study in Syntactic Markedness: the Binding Nature of Prepositional Phrases, Foris Publications, Dordrecht.
- Riemsdijk, H. van (1980), 'On Theories of Case: the Case of German Adjectives', Ms. University of Amsterdam/MIT.
- Riemsdijk, H. van & E. Williams (1980), 'NP-Structure', Ms. University of Amsterdam/MIT/ University of Massachusetts at Amherst
- Roggen, C. (1976), Aasters, Oosterschellinger Dialect, Algemeine Fryske Underrjocht Kommisje.
- Rouveret, A. & J.R. Vergnaud (1980), 'Specifying Reference to the Subject; French Causatives and Conditions on Representations', Linguistic Inquiry 11.
- Safir, K. & D. Pesetsky (this volume), 'Inflection, Inversion and Subject Clitics'.
- Stowell, T. (1980), 'Subjects across Categories', Ms. MIT.
- Thiersch, C. (1978), Topics in German Syntax, Unpublished Ph.D. dissertation, MIT.