

Against scrambling as an instance of Move- α '

Josef Bayer — Jaklin Kornfilt

1. Introduction

“Scrambling” is a cover term that arose from Ross (1967), and that roughly means that two constituents can be permuted if they are clause mates. The languages of the world differ greatly as to the extent to which they allow for such permutation. Syntactic research has recently given an increased attention to this phenomenon which has borne a clearer understanding of the data as well as concrete proposals as to how scrambling can be explained by UG and without recourse to ad-hoc means such as “stylistic transformations” or “PF-operations” (see Williams 1984 and others). At the moment there are two major proposals in GB-type generative grammar. According to the first, scrambling is an instance of Chomsky-adjoining an XP (NP, PP, to a more limited extent also AP or ADV) to VP or to IP (perhaps also AP). In other words, it is movement to an A'-position. This view has recently been advocated for German by Webelhuth (1985, 1989, 1990) -- Webelhuth (1989) actually concludes in the end that scrambling may be halfway between A'- and A-movement with respect to binding theory -- , Sternefeld (1990) and Felix (1985); Bennis — Hoekstra (1985) take a similar position for the analysis of Dutch.¹ While there is little doubt that certain instances of scrambling can be adequately captured in this way, there are cases which obviously cannot be the result of A'-movement. Relevant observations to which we will turn below have led to the proposal that certain subcases of scrambling are instances of A-movement.²

The goal of this investigation is twofold. We first want to argue that the core cases of scrambling in German can neither be captured adequately by an adjunction operation nor by some movement to an argument position i.e., we will deny a movement account altogether. Second we want to sketch a base-generation account that is not committed to the inadequacies of a non-configurational account of German syntax. It will be shown that this proposal makes use of morphosyntactic and lexical properties that are independently attested in the language. We will first turn to evidence against A'-movement, then to evidence against A-movement, and finally propose an alternative account that is not committed to syntactic movement at all.

2. Scrambling as A'-movement

Assuming a strictly configurational structure for German according to which subject and object are separated by a VP-boundary and the arguments inside a VP are hierarchically organized, it seems natural to derive the scrambled order of arguments by adjunction to either VP or IP. Let us turn to some of the difficulties that emerge from this solution which seems attractive at first glance.

2.1. Bound pronouns

Mahajan (1988, 1989, 1990) has shown that scrambling in Hindi (unlike Quantifier Raising (QR) or instances of WH-movement that applies only at LF) does not exhibit the weak crossover effects (WCO) that are typical for A'-movement, and that scrambling does not allow for reconstruction. Note that reconstruction is usually possible in instances of A'-movement, thus voiding violations of the binding theory.³ Consider first the following examples from German which involve a coindexation relation between a definite NP and a possessive pronoun:

(1) Adjunction to VP (name-like binder)

Wir wollten ...
we wanted

- a. [*dem Professor*]_i *seine*_i *Sekretärin vorstellen*
(to)the professor his secretary introduce
'We wanted to introduce to the professor his secretary.'
- b. **seine*_i *Sekretärin* [*dem Professor*]_i *vorstellen*.

- c. [*Seine_i Sekretärin*]_j haben wir [*dem Professor*]_i e_j
 his secretary have we (to) the professor

noch nicht vorgestellt.

yet not introduced

'We haven't introduced his secretary to the professor yet.'

In (1a) the dative NP (which is in canonical position) can bind the possessive pronoun *seine*. (1b), however, which is a normal case of "object scrambling", does not allow this binding. (1c) shows a clear-cut instance of A'-movement. Here one of the object NPs has been moved to SpecC, which is always an operator position in German. Interestingly, the binding of *seine* is possible here. The reason which we assume is that NP_j can reconstruct into a trace position at the level of LF; thus, the binding NP can c-command NP_j, thus allowing *seine* to be coindexed with the NP *dem Professor*. If the case of scrambling in (1b) were a case of normal A'-movement, we would wrongly predict that reconstruction is possible here, too.⁴ The examples in (2) show that the same holds true when the dative-NP is quantified; in this case the possessive pronoun functions as a bound variable:

- (2) Adjunction to VP (non-referential binder)

Wir wollten ...

we wanted

- a. [*jedem Professor*]_i *seine_i Sekretärin vorstellen*
 (to) each professor his secretary introduce
 'Introduce to each professor his secretary.'

- b. **seine_i Sekretärin [jedem Professor]_i vorstellen.*

- c. *Seine_i Sekretärin wollten wir [jedem Professor]_i*
 his secretary wanted we each professor

vorstellen.

introduce

'We wanted to introduce his secretary to each professor.'

The pronoun to be bound remains unbound in (2b), but not in the reconstruction case (2c). Consider next adjunction of an object NP to IP. The examples in (3) involve a name as a subject and those in (4) a quantified subject NP i.e., a non-referential expression:⁵

(3) Adjunction to IP (name-like binder)

- a. *daß der Hans_i seine_i Eltern sehr liebt*
 that the Hans his parents very loves
 ‘that Hans loves his parents very much.’
- b. **daß seine_i Eltern der Hans_i sehr liebt*

(4) Adjunction to IP (non-referential binder)

- a. *daß jeder_i seine_i Eltern liebt*
 that everybody his parents loves
 ‘that everybody loves his parents.’
- b. *daß seine_i Eltern jeder_i liebt*

The crucial difference concerns (3b) and (4b). The effect is independent of the Case of the scrambled NP. Thus, we would also get it when the scrambled phrase is a dative or a genitive. What is the difference between (3b) and (4b)? Notice that (3b) becomes more acceptable when *der Hans* receives focal stress or when it is modified by a focusing particle like *nur* (‘only’) or *sogar* (‘even’). The proper generalization seems to be that, under scrambling, binding is still possible when the binder is a quantified subject NP. This fact was noted in Webelhuth (1985) and used as an argument for a subject/object asymmetry in German. Notice that it would not suffice to assume a trace into which the scrambled object NP could reconstruct because this possibility would apply to the ill-formed case of (3b) as well. Another problem for the binding-by-reconstruction analysis was to our knowledge first pointed out in Haider (1986) and then independently seen by Anoop Mahajan. If movement to an A’-position were the right account for scrambling, the example in (5) should exhibit a WCO-effect:

- (5) *daß jeden_i seine_i Eltern lieben*
 that everybody-ACC his parents-NOM love
 'that everybody is loved by his parents.'

Such an effect is, however, absent, and (5) is completely well-formed. Notice that (3b) contrasts with the parallel English case shown in (6).

- (6) ...*that his_i parents, John_i really loves*

According to what we know about the syntax of English, this must be the result of move- α , in particular, movement to an adjoined operator position. As a consequence, reconstruction should be possible, and pronominal binding should be able to take place. The relative well-formedness of (6) shows that this prediction is indeed correct.

2.2. Anaphors

Consider next the binding of reflexive and reciprocal elements:

- (7)a. *daß sich_i der Heinrich_i e_i haßt*
 that REFL the Heinrich hates
 'that Heinrich hates himself.'
- b. *daß die Familienmitglieder_i einander_i nicht mögen*
 that the family-members each other not like
 'that the members of the family dislike each other.'
- c. **daß einander_i die Familienmitglieder_i nicht mögen.*
- d. *Einander_i mögen die Familienmitglieder_i e_i bestimmt nicht.*
- e. *that himself_i John_i really despises e_i.*

(7a) is well-formed because *sich* is a clitic that attaches to C and binds a clitic-trace which is c-commanded by the subject NP. Thus no violation of principle A arises. The reciprocal *einander* in (7b, c), however, is not a clitic. Scrambling it over the subject NP as in (7c) leads to marked awkwardness, and for many speakers to straight ungrammaticality. (7d) shows that reconstruction can, in principle,

rescue such examples. The same seems to hold true for English, as shown by (7e). Thus, (7c) is another indication that object scrambling in German may not be A'-movement.

2.3. Scrambling as adjunction

Notice as a contrast that PP-adjuncts can freely adjoin to VP or IP as shown in (8). We want to suggest that the preposed PP can be reconstructed into a trace-position as indicated in these representations:

- (8)a. *daß [in seiner_i Wohnung]_j Maria den Professor_i e_j*
 that in his apartment Maria the professor
- schon oft besucht hat*
 already often visited has
 'that Maria has often visited the professor in his apartment.'
- b. *daß Maria [in seiner_i Wohnung]_j den Professor_i e_j schon oft besucht hat.*
- c. *daß [in seiner_i Wohnung]_j der Professor_i schon*
 that in his apartment the professor already
- oft e_j von Maria besucht wurde*
 often by Maria visited was

As indicated by the traces, there is always a way of reconstructing the PP into a position where the pronoun *seiner* is c-commanded by the masculine NP. PPs with argument status, however, behave differently as shown by the grammaticality contrast between examples like *daß der Vater die Tochter [auf ihren Stuhl] gesetzt hat* ('that father has seated the daughter on her chair') versus **daß der Vater [auf ihren Stuhl] die Tochter gesetzt hat* and **daß [auf ihren Stuhl] der Vater die Tochter gesetzt hat*. Arguments of the verb can be licensed in scrambling positions, but from there they are obviously unable to reconstruct into a purported D-structure position. On the other hand, many of Webelhuth's examples do fall under the A'-movement generalization e.g., those in (9) which we modify somewhat in order to show a

possible co-indexation between the pronoun in a scrambled phrase and a referential subject NP:

- (9)a. *weil sich [über seine_i Frau]_j der Hans_i [keinen
 since REFL about his wife the Hans no
 Film e_j] anschauen würde
 film watch would
 ‘since Hans would not watch a movie about his wife.’*
- b. *weil [auf seine_i Kinder]_j der Hans_i [e_j sehr stolz]
 since of his children the Hans very proud
 ist
 is
 ‘since Hans is very proud of his children.’*

What has escaped the attention of many researchers is, however, the fact that these cases must be quite different from those cases in which an (unfocused) NP (or PP with argument status) is scrambled.

2.4. Prosody

An obvious surface reflex of this difference is that adjunction to IP creates a prosodic break which is clearly absent in the scrambling of an object-NP. Consider the following examples in (10) where # marks the break:

- (10)a. *daß den Heinrich niemand ausstehen kann
 that the Heinrich nobody stand can
 ‘that nobody can stand Heinrich.’*
- b. *??daß den Heinrich # niemand ausstehen kann.*
 c. *??that Henry nobody can stand.*
 d. *that Henry # nobody can stand.*

(10a) is naturally packaged into a single intonation phrase with phrasal stress on *ausstehen*. A prosodic break after the

scrambled NP as in (10b) is rather awkward. In English, the pattern seems to be just the opposite. If there is no prosodic break, scrambling is almost impossible, as the contrast in (10c, d) shows. According to our intuitions, the cases of scrambling which allow for LF-reconstruction in (8) and (9) are most naturally pronounced with a prosodic break after the scrambled PP. This suggests that there is a correlation between types of scrambling and intonational phrasing, according to which only adjoined XPs allow for a prosodic break.

2.5. Parasitic gaps

Consider next parasitic gap (PG) constructions. PGs have been used by Bennis — Hoekstra (1985), Felix (1985) and others following them as a diagnostic to show that an object NP can be scrambled within IP to an A'-position from where it can license a PG. An informal investigation of native speaker judgements revealed, however, that for those speakers who accept PGs, there are some interesting differences. Consider the data in (11) which summarize the result of our poll:

- (11)a. ?*Diesen Mann_i hat man [ohne pg_i verwarrt zu*
 this man has one without warned to
 haben] e_i ins Gefängnis gesteckt
 have in-the prison put
 ‘One has put this man into jail without having warned (him).’
- b. *Man hat ihn_i [ohne pg_i verwarrt zu haben] e_i ins Gefängnis gesteckt.*
- c. ?**Man hat diesen Mann_i [ohne pg_i verwarrt zu haben] e_i ins Gefängnis gesteckt.*

- d. *Da hat ihn_i der Polizist [ohne pg_i verwarnt*
there has him the policeman without warned

zu haben] e_i ins Gefängnis gesteckt
to have in-the prison put
'The policeman has put him into jail without having warned
(him).'
- e. **Da hat diesen Mann_i der Polizist [ohne e_i verwarnt zu haben]*
e_i ins Gefängnis gesteckt.

(11a, b) are compatible with a movement account because SpecC in (11a) as well as the clitic's position in (11b) head possible reconstruction chains.⁶ If PGs can be licensed by adjunction to VP, (1c) should be equally acceptable. Most native speakers, however, reject such cases or find them less good than the others. This tendency becomes even clearer when one considers PGs that are licensed from a position to the left of the subject NP. While clitic binders are still well-behaved (see (11d)), full NPs as in (11e) lead to a noticeable ungrammaticality.⁷

Summing up, we can assume that, contrary to some claims in the literature, PGs do not provide a convincing argument in favor of object scrambling to an A'-position within IP.⁸ We would like to keep up this claim at least until more thoroughly investigated data are available.

2.6. Long-distance scrambling

Consider now "Long Distance Scrambling" (LDS), sometimes also referred to as the "Third Construction".⁹ In German and Dutch it seems possible to scramble the object-NP of infinitival *zu/-te*-complements into the matrix-IP if the matrix verb belongs to a limited lexical class of control verbs:

- (12) *weil Heinrich den Wagen_i versprochen hat*
 since Heinrich the car promised has

[PRO e_i zu waschen]
 to wash
 'because Heinrich has promised to wash the car.'¹⁰

Consider now a case in which we move an adverb of quantification from its D-structure position in the complement into the matrix clause:

- (13)a. *weil Heinrich versprochen hat [PRO dreimal*
 since Heinrich promised has three-times

den Rosenkranz zu beten]
 the rosary to pray
 'because Heinrich has promised to tell his beads three times.'
- b. *[Dreimal]_i hat Heinrich (e_i) versprochen [PRO e_i den*
Rosenkranz zu beten] (ambiguous)
- c. *weil Heinrich [dreimal]_i versprochen hat [PRO (*e_i) den*
Rosenkranz zu beten] (unambiguous)

(13b) is a clear case of A'-movement. *Dreimal* ('three times') can bind a trace inside the complement, and we thus get the reading of three prayers, which (13b) has in common with (13a). Alternatively, *dreimal* could also bind a trace inside the matrix IP; we would then get a reading according to which there are three promises. This creates the ambiguity. Assuming now that scrambling is adjunction to VP, the same ambiguity should be available in (13c). However, (13c) is clearly unambiguous, allowing only for the three promises reading. We will return to the phenomenon of LDS below. For the time being it is enough to see that LDS is very unlikely to be a case of A'-movement, as was suggested by den Besten et al. (1988). Our argument is this: Adverbs of quantification can move to an A'-position, with all the consequences of A'-movement as in (13b). If LDS is A'-movement, these adverbs should behave as in A'-movement. However, they do not, as illustrated in (13c). We would therefore be surprised to see that

scrambled NPs should behave differently. We will later present evidence that they do not either.

2.7. Summary

We can conclude from what has been said so far that in German the scrambling of an object NP is clearly not an instance of A'-movement. Evidence from pronominal and reflexive/reciprocal binding, prosody, parasitic gaps and the scope of adverbs has revealed that object scrambling does not give rise to reconstruction effects and that what matters is exclusively the S-structure position of the scrambled item. In these respects, scrambling differs significantly from clitic movement. As the contributions to this volume by Mahajan, Neeleman, Lee — Santorini and others show, there are further arguments against an A'-movement analysis of (most cases of NP-)scrambling which we cannot review here.

At the same time, we cannot deny that focused adjunct PPs and, presumably, also APs and adverbials do scramble in the simplex clause in the sense of adjunction to IP. For Dutch, this point has been made quite clear in Neeleman (this volume).

We will next investigate whether there are reasons to analyze the scrambling of object-NPs in German as an instance of NP-movement.

3. Scrambling as NP-movement

We start with one immediate reservation which can be held against analyzing the scrambling of NPs as NP-movement, namely that it lacks the functional motivation of NP-movement. NP-movement is classically triggered by the interplay of Theta-theory and Case-theory. Scrambling, however, does not enter this interplay at all, since the scrambled elements are assigned a Case in their purported D-structure position which they retain in their S-structure positions. There is no obvious reason either why Theta-marking of a scrambled position should be impossible. We will show in section 4 that this can even be achieved without giving up the requirement that a Theta-assigner has to mark its sister (see Chomsky 1986). We will first review two proposals in the literature in favor of viewing scrambling as an instance of

NP-movement, and then point to a problem that an NP-movement account faces in connection with quantifier floating.

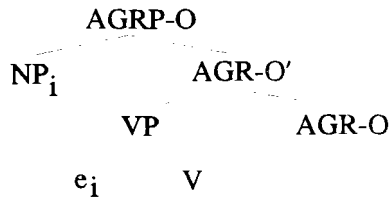
3.1. Adjunction to VP or IP

Fanselow (1990) argues for scrambling as adjunction to XP (VP or IP), but he stipulates that such a newly created position counts as an A-position. Without extensive justification, however, such a proposal is paradoxical, given that Chomsky-adjunction by definition creates an A'-position; yet, under current assumptions, NP-movement is A-movement. Therefore, adjunction seems to be the wrong tool to explain the phenomena we have been calling "scrambling".¹¹ Clearly, any theory that can opt for a substitution of an existent A-position would have to be preferred over a theory that has to stipulate A-positions which have to be created by adjunction. As we shall see, however, the matter is not trivial because there are indeed proposals in favor of conventional NP-movement. We will next turn to those, showing that - at least with respect to German - they do not convince us either.

3.2. Movement to SpecAGR

In analyses positing VP-internal subjects, such subjects are said to move up to the SpecI-position to pick up Case. But since scrambling NPs do have Case already, it is hard to see what scrambling NPs would need to pick up, so as to motivate their movement. This objection might be countered by referring to Chomsky (1989), where it is suggested that object Case may not be assigned by the verb itself, but by a functional category, AGR-O, which has its own projection and thus provides a position, say SpecAGR-O, into which the object NP would have to move in order to get Case:

(14)



An analysis in this spirit has recently been proposed in Mahajan (1988, 1989, 1990) for Hindi, vanden Wyngaerd (1989) for Dutch and German, and others. It could explain the movement from a VP-internal position to a SpecAGR-O position. However, we would still have no explanation as to what could drive an NP further up, for instance across the subject's S-structure position. Vanden Wyngaerd (1989) suggests that German cases of subclausal OSV-order are due to "a reversal of Case-assignment patterns that makes the OSV-order possible i.e., accusative is assigned directly to the object by the higher functional head and nominative to the subject by the lower one, AGR. Dutch differs from German in not allowing this Case reversal." In our view, this proposal is nothing but a restatement of the facts, which of course does not explain anything. The AGR-projections enter the stage as some "deus ex machina" in order to provide for a derivation of the surface order. A natural question would be why in German AGR-S and AGR-O should change their places.¹² We are afraid that there is no satisfactory answer to this question, and that the proposal amounts in the end to the claim that AGR-O can scramble over AGR-S. But this just begs the question. In the following we will give three further arguments against this account of scrambling.

3.2.1. Long-distance scrambling again

There are further problems that arise with viewing scrambling as NP-movement when we turn back to LDS. Consider, for instance, (12), an example in which the object NP of the embedded infinitival clause has apparently scrambled into a position of the matrix clause which is normally filled by the direct object NP. (12) is reproduced here for convenience:

- (12) *weil Heinrich den Wagen_i versprochen hat [PRO e_i zu waschen]*
 ‘because Heinrich has promised to wash the car.’

Assuming that we reject an empty proliferation of functional projections, how could the hypothetical movement of NP from its original position to its landing site have taken place here? SpecI (i.e. under this proposal, SpecAGR-S) of the embedded clause is already filled with the subject i.e., PRO. If we are right in saying that SpecAGRP-S is the landing site of NP-movement, that position would be unavailable to the embedded object NP, which would then have to move out of the infinitival clause in a way that would violate locality conditions: Assume that for some unknown reason the *zu*-infinitive lacks an AGR-O head, but that AGR-O is available in the matrix clause. Since *zu* is not a proper governor, it cannot L-mark the VP. According to Chomsky (1986), the VP would then be a “Blocking Category” from which its immediately dominating maximal category, say AGRP-S, would inherit the status of a “Barrier”. Thus, even if there is no CP involved - as den Besten et al. (1988) as well as Bayer — Kornfilt (1990) argue - NP-movement into the matrix clause should be impossible. The only way out would be adjunction to VP and then - assuming now a CP-complement - movement via SpecC. The ill-formedness of (15) signals, however, that this analysis cannot be right:

- (15) **weil Heinrich [die Zebras]_i gesagt hat*
 because Heinrich the zebras said has

[e_i [daß [er dem Kind e_i zeigen wird]]]
 that he the child-DAT show will
 ‘because Heinrich has said that he will show the zebras to the child.’

Given that the scrambled NP terminates in some quasi A-position of the matrix clause rather than in an A'-position, (15) can be explained. It is then a case of “Improper Movement”.¹³ In their account of scrambling as movement to an adjoined position, Müller — Sternefeld (1990) propose the “Principle of Unambiguous Binding” (PUB) given in (16):

- (16) "A variable cannot be (simultaneously) bound by an operator position and by a scrambling position."
Müller — Sternefeld (1990: 18)

By stipulating a distinction between scrambling positions and operator positions, they can rule out (15).¹⁴ With respect to the NP-movement approach, this shows - in connection with what has been said above - that there will not be an obvious derivation of cases of LDS such as (12), since if (15) is ruled out by the PUB, (12) should be ruled out as well -- yet (12) is perfectly grammatical. As we shall discuss in more detail later on, we distinguish between (12) and (15) as follows: The "scrambled" NP in (12) is base-generated in an A-position which receives its Case marking and its theta role from the embedded infinitive. This is made possible by an operation of Complex Category Formation (CCF), to be elaborated later. CCF cannot apply in (15), since neither the verb *sagen* nor the complementizer is a trigger of CCF (while *versprechen* is). Thus, even if the matrix verb were a CCF-trigger, the C-position occupied by the complementizer would prevent CCF.

Notice further that not only accusative Case can be assigned under LDS, but any other Case as well, as shown for the dative in (17):

- (17) *weil Heinrich [dem Kind]_i vergessen hat*
since Heinrich the child-DAT forgotten has
- [PRO e_i die Zebras zu zeigen]*
the zebras to show
- 'because Heinrich has forgotten to show the child the zebras.'

Vergessen is a verb that cannot assign dative Case. How could it then be in the domain of an AGR-O that could license a dative? We can only conclude that the dative is assigned by *zeigen* directly. If we are right, LDS cannot be a Case-driven process.

3.2.2. Floating quantifiers

Sportiche (1988) has suggested a theory of quantifier float (QF) according to which there is no quantifier movement to the right, but

rather NP-movement to the left. If a quantified NP or DP of the kind $[_{QP} Q[_{DP}\dots]]$ is generated in a position in which Case cannot be assigned, the DP must move to a Case position, leaving Q behind. A typical case would be $[_{IP}[_{DP} \textit{The men}]_i \textit{will} [_{VP} [_{QP} \textit{all} [_{DP} e_i]] \textit{take beer}]]$. Although Sportiche is not very specific with respect to the nature of the movement involved, it is quite obvious that he considers it “some kind of” NP-movement, not A'-movement. Giusti (1990) tries to exploit Sportiche's idea in connection with scrambling in German. QF is said to follow from the fact that German has scrambling anyway. But let us ask the more basic question first: What is scrambling? Although Giusti follows Sportiche (1988), she seems to think that scrambling is adjunction to VP or IP. We have seen, however, that there are serious drawbacks to this proposal.

As the following examples show, there is an important difference between English and German, namely that in German, the remnant Q has to be Case marked like a normal DP. Simplifying somewhat, we may say that English pre-DP *all* and *both* lack nominal features, while their German counterparts *all-* and *beid-* have nominal features, and thus must be Case marked:

- (18)a. *daß die Männer im Gasthaus beide-e*
 that the men-NOM in-the pub both-NOM

Bier bestellen
 beer order

- b. *daß sie den Männer-n gestern beid-en den*
 that she the men-DAT yesterday both-DAT the

Ausgang zeigte
 exit showed

- c. *daß ich mir dies-er Fehler erst jetzt*
 that I REFL these mistakes-GEN only now

all-er bewußt werde
 all-GEN aware become

'that I become aware of all these mistakes only now.'

Notice that **beide die Männer*, **beiden den Männern* etc. are ill-formed QPs which cannot be taken as the D-structure source of (18a,b). By adopting a proposal for explaining so-called ‘‘Split Topicalization’’ that has been made in Fanselow (1988) one could, however, argue that the D-structure A-position contains two segments, a DP of the form $[_{DP} D [_{NP...}]]$ and a QP of the form $[_{QP} Q[_{DP} pro]]$, where *pro* should be an empty N-head. Both segments get Case-marked in situ, but the DP has to move to an operator position to the left of QP in order to (Theta-)bind its inherent empty element *pro*. Both the Case assignment procedure and the fact that there is a *pro* which has to be bound allow only one type of movement: A'-movement. But notice now that examples of QF have all the properties of A-movement, and that accounts of split topicalization cannot be used automatically for explaining QF, since cases of IP-internal topicalization are ungrammatical (cf. Bayer 1987 — van Riemsdijk 1989). An example is given in (19) which contrasts A'-movement with IP-internal adjunction:

- (19)a. $[_{CP} Socken [_{zieht} [_{IP} der Heinrich im Sommer$
socks puts the Heinrich in summer

keine an]]

none on

‘Heinrich doesn’t put on socks in summer.’

- b. *??daß* $[_{IP} Socken [_{IP} der Heinrich im Sommer keine anzieht]]$
c. **daß* $der Heinrich [_{VP} Socken [_{VP} im Sommer keine anzieht]]$

While adjunction of a bare plural DP to IP, as in (19b), seems to be borderline, adjunction to VP as in (19c) is truly offending. If QF were derived by scrambling to an adjoined position, the well-formedness of (18b, c) would be surprising. We conclude - contrary to Giusti’s proposal - that if German QF is derived by movement at all, it must be derived by movement to an A-position. But notice that now the old dilemma reappears: We have direct evidence that the remnant QP is Case-marked.¹⁵ Thus, given there is already a Case position in D-structure, why should the DP have to move to some SpecAGR-position in order to pick up Case?

Another problem is that there should now be two identical AGR-projections, one for the QP and one for the scrambled DP. This underlines once again the ‘deus ex machina’ character of the NP-movement account.¹⁶ We can safely conclude that in German the QF-phenomenon cannot be derived from the need of a DP (inside a QP) to escape the Case Filter. For reasons of space, we cannot attempt to discuss QF in more detail or sketch our own solution. The purpose of this section was rather to show the limits of the NP-movement account with respect to German.

3.2.3. *Obligatoriness and the functional aspect of scrambling*

A last point worth mentioning is that - at least given two definite NPs - scrambling in German is always optional.¹⁷ Movement of an NP to a (non-thematic) position as dictated by the Case filter is clearly obligatory, as can be seen in the ill-formedness of sentences like **Yesterday was invited Bill* or **Yesterday seemed Bill to have been invited*. Unscrambled sentences, of course, are fully grammatical. It follows that nothing like the Case filter could possibly *force* the NP to move. Thus, an analysis of scrambling in terms of NP-movement faces a serious conceptual problem. Note also that this conclusion is corroborated by more traditional accounts, especially those of the Prague school’s and other linguistic traditions’ “Functional Sentence Perspective”. It is general wisdom that scrambling has something to do with the informational structure of the clause according to which “old information” tends to precede information that should be highlighted (see for German Behagel (1929), Lenerz (1977), Lange (1978), Hoberg (1981), Abraham (1984), Eroms (1986) and numerous others). Of course, the grammar has to have ways of providing the prerequisites i.e., it must somehow allow object NPs to surface in exceptional A-positions; but once there are such ways, the question is again whether this kind of NP-movement is *obligatory*. If it were obligatory, as NP-movement classically is, the reason for scrambling would first and foremost derive from the grammar, and certainly not from some communicative ordering principle. Given that scrambling cannot be driven by *both* principles, one type of explanation must be on the wrong track. We would be surprised if a substantial part of the linguistic tradition were so completely misguided.

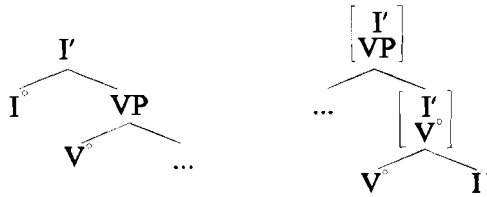
3.3. *Summary*

Although we acknowledge that unfocused scrambled NPs appear in an A-position rather than in an A'-position, we have found little reason to explain scrambling in terms of NP-movement to a specifier position of some stipulated functional head such as AGR-O. For methodological reasons, a proliferation of invisible functional projections is undesirable. Serious problems arise in connection with LDS, where NP-movement is likely to cross barriers. German QF clearly shows the properties of movement to an A-position, but at the same time the QP left behind gets Case as well. NP-movement as a Case-driven process is therefore implausible. Finally we argued that such an approach loses contact with the linguistic tradition in an area where this does not seem to be desirable.

4. **On projecting scrambled order**

If scrambling is neither an instance of A'-movement, nor of A-movement, what is it? We would like to suggest that scrambling of unfocused NPs is not due to movement, but rather is base-generated, in ways we shall elaborate below. Our account is based on the observation that in German, there is no compelling reason to assume that a subject NP, marked for nominative Case, can only be licensed outside VP. This is because INFL in German can be viewed as a morphological category that attaches to V, rather than as a terminal syntactic category which takes VP as its complement. We can then say, in the spirit of Abney (1986), that V is the semantic head, while I is the formal head of the clause. In this way we can capture the insight behind the proposal in Jackendoff (1977) that V is the head of S, without committing ourselves to the view that S is a formal projection of V. Instead, we follow recent developments of X'-theory and propose, for German, that I is the sister of V at morphological structure (with I as the head of the resulting entity), not the sister of VP at syntactic structure, as is the case for languages like English and French. For German, then, V and I are jointly visible at the mother node, while they are kept separate for English until V moves to I from its position in VP:

(20)



The general mechanism which we assume for creating these jointly visible nodes is the following enrichment of the theory of phrase structure:

(21) Complex Category Formation (CCF)

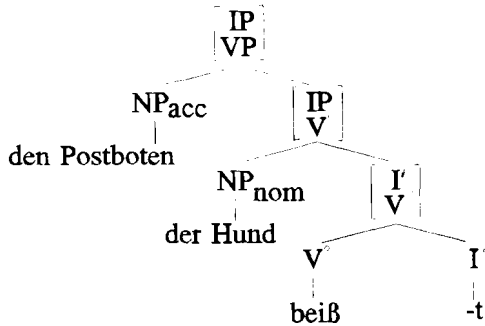
In a structure [...X° Yⁿ ...] where X° is a raising category that governs Yⁿ, (0 ≤ n ≤ max), X° will project into the

complex category $\left[\begin{array}{c} X' \\ Y^n \end{array} \right]$

In German, if X° is an inflectional affix I, the V-stem will attach to I in morphosyntax i.e., “before” it heads a VP. In English, however, due to the presence of a designated auxiliary system - cf. the original notion AUX - I is a terminal syntactic node. In German, then, an inflected V is morphologically an X°-category which is however syntactically complex in that it is both V and I'. A rather similar account has been given by Reuland (1990). One difference between Reuland's account and ours is that he takes the inflected verb to be [X°/I°], while we take it to be [X°/I']. In other words, we assume that once the (formal) I-head has taken its “lexical complement” it will have ceased to be a syntactic primitive.¹⁸ How can I take something as an argument that is not maximal? The status of I as an inflectional morpheme and the lack of a special AUX vocabulary dictates that its complement is a sub-word level category.¹⁹ Both V and I assign Case to the left, and license their arguments in the same fashion as under the current assumptions for English phrase structure. The only difference between English and German involves the contrast shown in (20) above. German allows for VP-internal nominatives. This is seen very clearly in the case of ergative verbs, which often show an unmarked constituent order dative-nominative-Verb. Under the more conventional

analysis of German phrase structure i.e., the mirror image of (18)a., the nominative Case would have to be assigned into VP. While there have been some suggestions as to how one could achieve this (cf. den Besten 1981; 1985), this situation remains a problem under more parsimonious assumptions about government and Case assignment. In the phrase structure proposed under (18b), this problem does not arise. Another situation where we find nominative subjects in the span of VP arises, of course, in scrambling constructions. It would appear here, at first sight, that the V licenses the subject in the same way in which it licenses its objects. However, this is only apparent. The true reason for the ability of an unergative verb to license a nominative subject in VP is that the verb is, at the same time, an I'. Thus, the subject-NP will be licensed by a regular SpecI-position. This makes it possible to base-generate a scrambled clause such as *daß den Postboten-ACC der Hund-NOM beißt* ('that the dog bites the postman') as in (22):

(22)



Some clarifications are necessary: First, Case assignment does not take place only under strict string-adjacency. Otherwise, V would be able to assign accusative Case only to its sister NP. In our system, however, the governing force (and hence Case-assigning ability) of V is kept intact in the projection(s) of V. Second, the nominative NP in (22) is governed by V. This does not mean, however, that it is also licensed by V -- certainly not in the same way as an argument of V is licensed. If it were the case that V licenses the subject, the marked scrambling order of (20) would be indistinguishable from the comparable unmarked dative- nominative order of ergative or psych-verbs. According to standard assumptions, an unergative V cannot take a (definite) subject NP as an argument. The subject NP is (in the active

clause) licensed by I for Case and by VP for its theta-role. We adjoin the nominative-NP to V-zero, but this adjoined position must be licensed, since it bears Case and a theta-role. The NP is licensed as the specifier of I. Thus, the only difference between a scrambled IP like (22) and an unscrambled canonical IP is that in the scrambling construction, the VP remains unsaturated until the SpecIP position is licensed. That the nominative NP in scrambling constructions is not licensed by V is shown very clearly by the fact that the nominative-NP/participle sequence cannot be moved together to first position in V2-clauses:

- (23) **[Der Hund-NOM gebissen] hat den Postboten-ACC*
 the dog bitten has the mailman

erst einmal
 only once
 intended reading: ‘The dog has bitten the mailman only once so far.’

Since V does not license the nominative NP here, it also does not form a constituent with it. This situation contrasts sharply with corresponding constructions involving ergative verbs:

- (24) *[Die Luft-NOM ausgegangen] ist dem Taucher-DAT*
 the air ran-out is the diver

erst einmal
 only once
 ‘The diver ran out of air only once (so far).’

Here, the nominative subject is a genuine argument of the verb, hence is licensed by it and forms a constituent with it.²⁰

4.1. NP-movement from VP?

It has been suggested by den Besten — Webelhuth (1987) that sentential and VP-modifying adverbs and the negation morpheme *nicht* are to the left of VP, and that alternative surface orderings are achieved

by scrambling the object NP(s) out of VP. As one can expect on the basis of what we have said here so far, the landing site of this movement has the properties of A-positions, not A'-positions. If we are right in claiming that scrambling is not NP-movement, den Besten — Webelhuth's account is untenable. One reason why it is untenable is that the ordering NEG [_{VP} NP ... V] is ungrammatical unless the constituency changes to [_{VP}[_{NP} NEG NP] ... V]. But in this case NEG focuses the object NP, and the we get "term negation".²¹

Simplifying somewhat, one can say that sentential negation requires NEG to immediately precede the verb. This means that scrambling becomes *obligatory* here. As we have shown above, however, the scrambling of NPs is always optional. In particular, it cannot be for reasons of the Case filter that NPs have to scramble out of the scope of NEG. Notice that NPs can well remain in the scope of an adverb as long as it does not function as a focusing operator. As Diesing (1988) and Kratzer (1989) have pointed out with respect to indefinite subject NPs and Moltmann (1990) for object NPs, the positioning inside or outside the VP creates a semantic effect. An indefinite NP like *Kinder* ('children') in (25) is interpreted as existential when it appears inside VP, while it must be interpreted as generic when outside VP.

(25)a. *weil [bestimmt [Kinder auf der Straße spielen]]*
 since certainly children in the street play

b. *weil Hans [meistens [Kinder verführt]]*
 since Hans mostly children seduces
 (existential reading on NP, event reading on clause)

(26)a. *weil Hans Kinder [bestimmt auf der Straße spielen]*

b. *weil Hans Kinder [meistens verführt]*
 (generic reading on NP, state reading on clause)

This semantic effect has been connected to scrambling, especially by Moltmann. Diesing's and Kratzer's suggestion is roughly that the VP contains an event argument to which a VP-internal indefinite NP is linked by existential closure. When the indefinite NP scrambles out of the VP, it is bound by a generic operator in the sense of Carlson (1977). This is not the place to discuss this proposal in more detail.

What we see is a rather stable semantic effect that is also observed in other languages (cf. Kornfilt (1990) and Enç (1991) for Turkish in connection with details due to Case assignment). What we do *not* see is that this effect provides a strong point in favor of scrambling, and in particular not in favor of NP-movement.

We suggest tentatively that (non-focusing) adverbs can be adjoined to any projection of V i.e., also to V^o or intermediate projections of V, and that there will ultimately be a semantic explanation of the issue at hand that is based on S-structure scope rather than on purported processes that lead to the S-structure in question.

4.2. *Scope and binding*

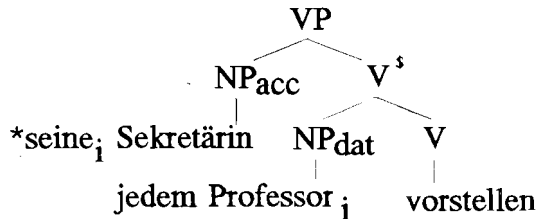
CCF allows us to generate OSV-order without recourse to syntactic movement. As a consequence, the scrambled object NP will be in a regular A-position. This yields the results of the NP-movement theory which are desirable with respect to binding and WCO without requiring the functional trigger of NP-movement. Recall now that with respect to a quantified binder we have found a significant difference between apparent adjunction to VP and apparent adjunction to IP. The relevant examples are reproduced below, with traces indicated only for convenience:

- (2)b. **Wir wollten* [_{VP} [*seine*_i *Sekretärin*]_j] [*jedem Professor*]_i *e*_j
vorstellen]
- (4)b. *daß* [_{IP} [*seine*_i *Eltern*]_j] *jeder*_i *e*_j *liebt*]

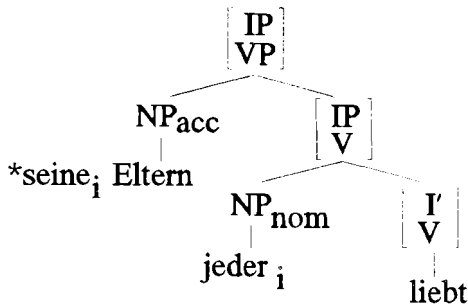
Imagine now a representation without traces of movement. Thanks to the CCF mechanism the constituent structure of (4b) is obvious. The structure of double object constructions is less clear. Let us hypothetically (and neglecting VP-internal subjects) assume that in the canonical IO<DO order the dative NP is attached to an A-position outside VP for reasons of the thematic structure of the verb i.e., in [_{VP} IO [_{VP} DO V]] the dative IO would still be in an A-position, because the lexical entry of the verb requires such a position. One could argue that the IO is licensed as an argument of the verb by virtue of its lexical Case, while the DO is licensed by virtue of the structural object position provided by X'-syntax. Attachment of IO to V would yield the

scrambled order in (2b). In order to distinguish the resulting structure from a pure head category we use the superscript “\$” i.e., V^{\$} refers to a phrase that is not induced by the X'-system but by the satisfaction of the theta grid of the ditransitive verb.²² (2b) and (4b) will then have the following structures:

(27)a.



b.



Why does the node IP together with the node VP reappear as the top node of (27b)? The reason is that as long as there is no new head, any category under construction will remain visible. This is necessitated by the selectional properties of heads. C, for instance, selects an IP. Thus, the IP label must appear in the top node of the category to be selected by C.

If we invoke unrestricted movement of the quantified NP to an operator position by QR, we can account for the ill-formedness of (27a). (27a) would cause a case of WCO. But so would (27b), which however is well-formed. What could be the reason that QR does not apply in clauses with scrambled word order? Kiss (1987) has suggested

that LF-movement occurs in languages with a rather fixed order of constituents, while languages like Hungarian, which can reorder their constituents at S-structure more freely make LF-movement superfluous. According to Kiss, Hungarian has a flat IP, but an articulated pre-IP structure into which operators move at S-structure. Thus, Hungarian is said to encode scope relations syntactically, while English leaves scope assignment to LF. With respect to word order freedom, German is somewhat between English and Hungarian. As Scherpenisse (1986) has observed, deviations from the unmarked order of a quantified IO and a quantified DO leads to a loss of the otherwise observed scope ambiguity. If LF-movement could freely **undo** the S-structure scope relations exhibited by scrambled sentences, the semantic effect of scrambling would be destroyed, and scrambling would lose its function (see 3.2.3 above). Since natural languages do not seem to behave that way, we can suggest the informal principle in (28), where we mean by “scrambling” the projection of complex categories or $\$$ -categories:

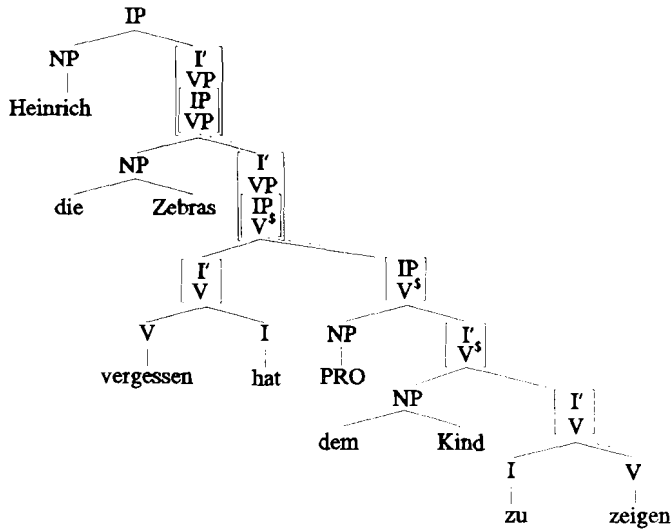
(28) Scrambling bleeds LF-movement

Observe now how we can predict the facts shown in (2b) and (4b) on the basis of the structures shown in (27a) and (27b). (27a) is a case of scrambling. Thus, (28) applies, and the Q-NP cannot move. As a consequence, the Q-NP will not c-command and thus fail to bind the possessive pronoun *seine*. The same is true for (27b). The only difference is that here the pronoun and its potential binder are dominated by an identical segment, namely IP. We assume that the scope of a Q-NP will spread to the highest common node that dominates it.²³ As a consequence, the pronoun in (27b) will be in the scope of the Q-NP without LF-movement to have taken place. We see that although (28) holds in this case as well, the CCF-mechanism will still guarantee the bound variable reading. If the subject NP is a name, however, there will be no scope and therefore no spreading of scope either. In this case, the scrambled order will prevent binding. This is exactly what we have observed (cf. (3b) above).

4.3. Verb raising and LDS

The rule of CCF given in (21) allows applications outside morphosyntax. This is the case when the head is not a bound but a free morpheme. Note that we are treating German (as well as Dutch) auxiliaries as raising verbs, and we claim that those trigger CCF. Thus, a sequence like *gesehen haben wird* ('will have seen') is predicted to form a cluster. Although the main verb *sehen* is governed by two other verbs, it will retain its own governing force through the cluster. This analysis can - among other things - explain why extraposition cannot attach material anywhere inside the cluster, as among others Reuland (1990) has observed. Thus, we get *gesehen haben wird [daß...]*, but not **gesehen [daß...] haben wird* or **gesehen haben [daß...] wird* etc. The control verbs that allow for LDS such as *versprechen* ('promise'), *vergessen* ('forget'), *aufhören* ('stop'), *befehlen* ('command, order') and a number of others are also raising verbs. Such verbs may govern IP complements i.e., infinitival complements which are distinct from CPs (see den Besten et al., 1988). (21) guarantees that V will form a complex category with auxiliaries, and that raising Control verbs will form a complex category with their infinitival IP complement.²⁴ We follow Chomsky (1981, 1986) in the assumption that IP is for some reason a "defective" category. Speaking in terms of movement, IP would not by itself be a barrier. If this is true, we can assume that the verbal projection which is linked to the I-system can continue beyond the IP. The category C, on the other hand, clearly lacks the raising property. Thus, we predict that there will be no extended projection of V beyond C' or CP. As the ungrammaticality of (15) shows, this prediction is correct. As we have argued in Bayer — Kornfilt (1990), CCF allows for the base generation of LDS sentences in a principled and explanatory way. To see how this works, consider the example *daß Heinrich die Zebras vergessen hat [PRO dem Kind [-] zu zeigen]* ('that Heinrich has forgotten to show the zebras to the child') and its representation in (29):²⁵

(29)



The dotted line in (29) illustrates the government link between the embedded verb *zeigen* and the scrambled constituent *die Zebras*. Instead of moving an argument of the lower clause into the matrix clause, we now have expressed the existing government (and hence Case and Theta) relation with complex categories.²⁶ Notice that there are no traces and there are no landing sites which would have to be justified. The scrambled NP is in a regular A-position.

We now turn to some examples which, we claim, give further support to our account of LDS constructions as base-generated and not due to movement. It has been observed in Müller — Sternefeld (1990) that operator movement (overt as well as LF-movement) cannot proceed from a scrambling position. Relevant examples are cases of multiple interrogation, so-called *was für* split, and focus. As the grammaticality of the c-sentences in the following examples show, the targets of LDS must be A-positions.²⁷

(30) Multiple Interrogation

- a. *Wer hat dem Mann was gegeben?*
 who has the man-DAT what-ACC given
 'Who gave the man what?'

- b. **Wer hat was_i dem Mann (e_i) gegeben?*
- c. *Wer hat wem vergessen [PRO die
who has whom-DAT forgotten the
Zebras zu zeigen]?*
zebras-ACC to show
'Who has forgotten to show the zebras to whom?'

(31) WH-movement ("was-für split")

- a. *Was_i hat Heinrich dem Mann [e_i für ein
what has Heinrich the-DAT man for a
Buch] empfohlen?*
book recommended
'What kind of book has Henry recommended to the man?'
- b. **Was_i hat [e_i für ein Buch]_j Heinrich dem Mann (e_j)
empfohlen?*
- c. *Was_i hat Heinrich [e_i für einem Kind] vergessen [PRO die
Zebras zu zeigen]?*

(32) Focus

- a. *weil der Mann das BUCH liest*
'because the man reads the book.'
- b. **weil das BUCH_i der Mann (e_i) liest*
- c. *Heinrich hat dem KIND vergessen [PRO die Zebras zu zeigen]*

Müller — Sternefeld (1990) argue that the b-sentences are ruled out by the PUB, because in each case - in (31) in syntax and in (30)/(32) in LF - there would be operator movement from a scrambled position. Let us for the sake of the argument assume that the PUB-account is correct. Then if LDS instantiates move- α , the c-sentences should be equally ungrammatical. This prediction is wrong, as these sentences are

perfectly grammatical. In our account, the scrambled positions in LDS are equivalent to ordinary A-positions “in situ”. Thus, overt movement as well as LF-movement is predicted to freely proceed from these positions.²⁸

4.4. Long passives

As we have shown in Bayer — Kornfilt (1990), CCF can also provide a solution to the phenomenon of the so-called “Fernpassiv” (long passive (LP)).²⁹ In this construction there is passive morphology in the matrix clause, but not - as in comparable constructions in Turkish (see Kornfilt 1989) - in the embedded clause. Still, NP-movement seems to have shifted the object of the embedded infinitival clause into the subject position of the matrix clause.

As the examples in (33) show, the clause from which the object NP comes can be in situ or in extraposed position:

- (33)a. *daß der Wagen [PRO in die Garage zu*
that the car-NOM into the garage to

fahren] vergessen wurde
drive forgotten was

‘that it was forgotten to drive the car into the garage’

- b. *daß der Wagen vergessen wurde [PRO in die Garage zu*
fahren]

Movement across the clause boundary in one fell swoop would violate locality principles. We argued above that movement via SpecCP would amount to improper movement. Instead, as mentioned earlier, we propose to treat the particular class of control verbs that enter the LP construction as Raising verbs that can trigger CCF. The constituent which has apparently undergone NP-movement is base-generated in the matrix, just as the corresponding “scrambled” elements in examples (30c)-(32c). The verbal projection (of *fahren*) within the embedded clause will be non-maximal, since one of its arguments (i.e. *der Wagen*), is missing from that clause. The matrix verb *vergessen* can govern the embedded verb; consequently, the embedded verb *fahren*

can pass on its features to the VP-node dominated by *vergessen*. Since the two verbs are co-present at one syntactic node, they can be jointly affected by passive morphology, which explains why that morphology is found on the matrix verb only. The matrix-I, also co-present in the node where the projection of the embedded V is completed, causes the nominative marking of the “scrambled” NP.³⁰

4.5. Recursion

NP-movement from one Ȧ-position to another can be performed repeatedly, as is known from cases like *Mary seems to have been kissed*. If LDS and LP are cases of syntactic movement, one should expect iterated applicability of NP-movement. This is indeed the case, as the following examples show in which we represent traces for convenience.³¹

- (34)a. *daß Hans [den Wagen]_i vergessen hat e_i zu*
 that Hans the car forgotten has to

versprechene_i zu reparieren (LDS)
 promise to repair
 ‘that has forgotten to promise to repair the car.’

- b. *daß [der Wagen]_i vergessen wurde e_i zu*
 that the car forgotten was to

versprechen e_i zu reparieren (LP)
 promise to repair
 ‘that it was forgotten to promise to repair the car.’

Does the recursive nature of LDS/LP challenge our non-transformational account? It surely does not, because CCF is a recursive rule, as Riny Huybregts has pointed out to us. As such, it will freely allow for projections within projections. CCF can be shown to carry the governing force of the lowest V through the projection, as long as all the heads involved have the lexically conditioned property of raising their complement. Let us simplify somewhat and ignore the I-head *zu* and PRO. Then CCF will apply to (34a) in a bottom-to-top

fashion and will form the following categories: [_v*reparieren*], [_{IP/N}(PRO) [_v*reparieren*]], [_{VP}(_{IP/N})*versprechen* [_{IP/N}(PRO) [_v*reparieren*]]], [_{VP}(_{VP}(_{IP/N}))*vergessen* [_{VP}(_{IP/N})*versprechen* [_{IP/N}(PRO) [_v*reparieren*]]]. Since the Case- and Theta-assigning property of the lowest verb *reparieren* is retained in this category, the object of this verb can be licensed as an argument directly. This shows that the recursivity of NP-movement can be captured in our system in a straightforward way.

5. Conclusions

As Henk van Riemsdijk, Craig Thiersch (personal communication) and others have noticed, there is an obvious similarity between our approach and GPSG here, especially with the way in which slash categories project in this theory (see Gazdar, Klein, Pullum and Sag 1985). The essential difference between our account and GPSG is, however, that we assume such a projection algorithm only in specific lexically or morphologically conditioned cases. This means that there will still be vast areas in the grammar of movement which will be accounted for by move- α . Since the lexical or morphological conditioning we talked about can vary from one language to the next, we do not expect CCF to apply cross-linguistically either. Thus, we acknowledge that there may be good reasons to assume NP-movement in the syntax of English, while there may be no such good reasons to assume it in the syntax of German.³² The advantage of our account is that it enables us to distinguish the quasi-movement process of scrambling from both cases of widely attested “real” movement, namely A'-movement and A-movement, instead of lumping it together with one of them. In this sense, our theory is in the spirit of Webelhuth (1989) and Müller — Sternefeld (1990) where it is recognized that scrambling is a process that cannot adequately be captured by either one of the two chain forming algorithms. The novelty of our account is that it draws this distinction in a more radical way by arguing that scrambling is not an instance of move- α at all, and that a mechanism other than chain formation is needed in order to explain this phenomenon.

We have given ample empirical evidence to the effect that scrambling in German does not fall into the A/A'-chain dichotomy. We have furthermore pointed out that once an NP appears in a canonical object position due to scrambling, this position seems to have

all the properties of an A-position. Most clearly this is seen in the case of Long Distance Scrambling and Long Passivization. We have then suggested a rule of Complex Category Formation (CCF), which allows certain heads to “visualize” their complement along their projection line. The existence of such heads is uncontroversial at least since the groundbreaking work of Bech (1955/57) on German coherent infinitive constructions and Evers’ (1975) study on verb raising in Dutch and German.³³ Especially with respect to the projection of the inflected verb, we could draw a principled distinction between pure moving languages such as English and mixed i.e., moving as well as scrambling languages such as German. The present account also gives a fresh perspective on Long Distance Scrambling and Long Passives in German, constructions which are problematic for all theories we know that try to defend a uniform movement theory.

Notes

- * Acknowledgements: Part of the research presented here was also presented at the 1989 Edinburgh Conference on Parametric Variation in Germanic and Romance (see Bayer and Kornfilt, 1990) and at NELS 21 in Montreal (see Bayer and Kornfilt (forthcoming), of which the present article is an extension). We would like to thank the Max-Planck Institute for Psycholinguistics in Nijmegen for a research fellowship awarded to Jaklin Kornfilt in the summer of 1989, during which time the joint research presented here was initiated, as well as the NWO for a grant awarded to Josef Bayer in the beginning of 1991 at the University of Groningen. We benefitted from discussions with and/or suggestions by Riny Huybregts, Katalin É. Kiss, Anoop Mahajan, Gereon Müller, Ad Neeleman, Beatrice Santorini, Wolfgang Sternefeld, and from the comments of an anonymous reviewer.
- 1. A very useful synopsis of the facts and the recent discussion on scrambling in German is found at the end of chapter 12 of von Stechow and Sternefeld (1988). These authors consider both A'- and A-movement theories, and come to the conclusion that neither of them is satisfying.
- 2. See Moltmann (1990) for German, vanden Wyngaerd (1989) for Dutch and German, and Mahajan (1988, 1989) for Hindi.
- 3. Informally, WCO is given when an operator i.e., a WH-phrase in SpecC or some operator at LF, c-commands a bound variable type pronoun and its own trace at the same time. Examples are **Who_i does [his_i mother] like e_i?* and **[His_i mother] likes everybody_i?* As we just use it as a test, we will not attempt any more elaboration here.

4. Note that we are making a crucial distinction here between movement to the preverbal position in V2-structures (as in (1c) and (apparent) scrambling to other positions. The first type is not an instance of a genuine scrambling construction for us: rather, it shows movement to an A'-position (i.e. SpecC), and hence is an instance of move- α . We claim that most other scrambling patterns do not involve movement. Consequently, they lack traces into which reconstruction could take place.
5. Movement of the object NP to the preverbal A'-position equivalent to SpecC) would again lead to a reconstruction that is in agreement with the binding theory.
6. We assume that the clitic, presumably of category X⁰, moves from an A-position and adjoins to the verb carrying I which is in C-position (traditionally known as "Wackernagel's position"). The chain induced by clitic movement can then be seen as the head movement equivalent to XP-movement that induces regular A'-chains. We have no explanation for the fact that clitics seem to be better able to license PGs than full NPs. It is possible that phonological weight plays a role here, although this is far from obvious.
7. See also Fanselow (1990: 118f) for similar observations, as well as Santorini (this volume) who shows - following Huybregts — van Riemsdijk (1985) - that PGs are in general not a reliable diagnostic for A'-movement. An anonymous reviewer of this paper points out that structurally similar examples can be found which are more easily accepted by native speakers e.g.,

- (i) *Offenkundig hätte [diese Flasche]_i auch der Peter [ohne*
obviously had this bottle also the Peter without
- pg_i aufzumachen] e_i einfach weggeworfen*
to-open simply thrown-away

In work in progress, the first author and Jack Hoeksema find that German parasitic gaps tend to be more acceptable when the VP of the adjunct clause is confined to [zu+V]. Once it is [V+zu+haben] etc. acceptability decreases quite sharply. At this moment, the conclusions for the grammar of parasitic gaps remain unclear.

8. With respect to Dutch, Neeleman (this volume) has made analogous observations.
9. See den Besten et al. (1988), den Besten — Rutten (1989), Bayer — Kornfilt (1990) as well as Santorini (this volume).
10. Note that ultimately we shall not be assuming a trace where an empty category is indicated here, since we will propose a base-generated, non-movement account for scrambling structures. The empty category has been entered in this example for expository purposes only.
11. For more detailed critical discussion of Fanselow's account see von Stechow and Sternefeld (1988).

12. Notice that usually functional heads are positionally fixed, the position of C in the Germanic languages being one of the most prominent examples. Another example is the D-head of DPs. It is hard to see why in this scenario AGR-O should scramble.
13. See Chomsky (1986) and Müller — Sternefeld (1990); syntactic movement is “improper” when it leads from an A'-position into an A-position.
14. By “scrambling position”, Müller — Sternefeld (1990) mean an adjunction site to any phrasal category, with the exception of adjunction sites to SpecCP. The latter serve as operator positions (in addition to the regular operator position provided by SpecCP) for multiple WH-questions--at LF for languages like English without overt multiple WH-movement and at SS for languages like Bulgarian where overt multiple WH-movement is possible; cf. Müller — Sternefeld (1990: 18). Note that this proposal remains problematic, because German has certainly adjunction sites (especially IP) which behave like operator positions e.g. with respect to reconstruction as we have shown in section 2 (see also Neeleman, this volume).
15. This is observed in postverbal position where Case cannot be assigned, e.g. **weil [die Leute] in das Haus gegangen sind [alle]* ('since the people went into the house all'). For control sentences one could argue that PRO moves to SpecI while stranding a QP-shell. This QP-remnant should not get Case. The data are less clear, but according to our intuitions they still show a noticeable awkwardness e.g., *??weil [die Leute] bedauert haben [alle] weggehen zu müssen* ('since the people have regretted to all have to leave'). We do not understand why such cases should be only marginal and not fully ungrammatical.
16. Recall that the situation in German cannot be directly compared with the situation in English where due to the parametric difference between the two languages an NP-movement account of QF has some theoretical coherence.
17. See Lenerz (1977) and Moltmann (1990) for the role of indefiniteness and specificity.
18. The anonymous reviewer of this article claims that the assumption of $[V^{\circ}I']$ for an inflected verb leads to a conflict with current assumptions about head-movement as it is exemplified in the I-to-C movement that derives Germanic V2-clauses. We see, however, no problem here, because $[V^{\circ}I']$ is - as we said - a *morphological* (X°) object as well; and there are good reasons for head-movement to affect morphological rather than syntactic objects. The argument can actually be turned against those theories that assume head-movement with X° -formation also in cases where there is no morphological X° -correlate, because purported X° 's like German *geküßt haben wollen* ('kissed have want') never move to an X° -position like C.
19. The fact that I must ultimately have scope over VP or IP is no reason to reject this analysis, especially in a theory that can make use of the level of LF. Once the semantic features of I can raise at LF, there is no need to adopt a Generative

Semantics type constituent structure in order to arrive at the proper representation of scope.

20. The contrast exhibited in (21) versus (22) is due to relevant observations in Thiersch (1982).

21. Consider the following pair of examples:

(i) Sentential negation

Heinrich hat dem Kind die Esel nicht gezeigt
 Heinrich has the child the donkeys not shown
 'Heinrich didn't show the child the donkeys.'

(ii) Term negation

Heinrich hat dem Kind [nicht die Esel] gezeigt (...sondern die Affen)
 'Heinrich showed the child not the donkeys (but the monkeys).'

Since NEG is semantically a sentential operator, NEG+NP will have to move in LF. See Bayer (1990) for argumentation in connection with focusing particles such as *only*, which extends to NEG, showing that it must in this case be a focusing particle.

22. This proposal is in the spirit of Larson's (1988) adoption of the so-called "Single Complement Hypothesis" according to which additional (internal) arguments of the verb have to be licensed by Theta theory. For various reasons we cannot deal here more seriously with the intricacies of the double object construction.

23. This idea also underlies May's (1985) Scope Principle, which suggests that two quantified NPs can exchange their mutual scope if dominated by different segments of one and the same maximal category. Multiple adjunction to IP creates such a situation.

24. During presentations of this material it has repeatedly been observed that this system has a strong flavor of Categorical Grammar with function composition or with the percolation mechanism of GPSG. We will say a few words in the conclusion about how we see our proposal in relation to these theories.

25. For convenience, we simplify by not representing the full structure of the auxiliary *hat*, which is, of course, complex as well. To make the structure transparent, the category labels of matrix and embedded clause are graphically distinguished.

26. For more information and details of our account, particularly with respect to "Restructuring" constructions, the reader is referred to Bayer — Kornfilt (1990). We are fully aware of the fact that our analysis like many others leads to an undesirable government of the PRO-subject of the IP-complement. The only way to protect PRO from being governed seems to be to assume a CP-structure for *zu*-infinitives *in general*. This solution is adopted in Sternefeld (1990). There the CP-barrier can be transgressed by moving the lower VP to SpecCP; an NP-object can then move out

of this topicalized VP and adjoin to the VP of the matrix-clause. This process has to be confined, however, to the lexical class of raising control verbs. Largely following Sternefeld's analysis, Grewendorf — Sabel (1991) suggest that the V-head of the lower VP "incorporates abstractly" into the V-head of the matrix-VP. (For the notion of 'abstract incorporation' see Müller 1991). However this may be, these analyses are not available to us, because they crucially rest on long-distance scrambling as A'-movement. Thus, we simply leave the problem with PRO as it is.

27. We do not take a stand on the precise representation of the b-sentences. We indicate trace positions in brackets without intending a more serious analysis. Since the elements that scramble in this case are focused, it may be argued that they indeed leave a trace.
28. The anonymous reviewer of this article points to an interesting problem with our analysis. It is illustrated by the following examples:

- (i) *[e_j zu küssen]_i hat Maria [den Studenten]_j dreimal*
to kiss has Maria the student three-times

e_i versucht
tried
(Remnant-IP-Topicalization)

- (ii) **daß [den Studenten]_i Maria [e_j zu küssen]_j dreimal e_i versucht hat*
(Remnant-IP-Scrambling to VP)

- (iii) **daß [e_j zu küssen]_j Maria [den Studenten]_i dreimal e_i versucht hat*
(Remnant-IP-Scrambling to IP)

The descriptive generalization is that scrambling can take place from infinitival clauses that move to SpecCP, but not from those that move by adjoining (scramble to a position) inside IP. The problem in our account is that we allow the raising control verb to govern "through" the V-adjoined adverb such that in (ii) the IP can be licensed directly i.e. without recourse to movement. Grewendorf — Sabel (1991) derive the fact that only CPs may scramble, while CPs as well as TPs (tense phrases) may move to SpecCP. The contrast is reminiscent of the familiar facts of VP-topicalization and VP-scrambling e.g.:

- (iv) *[Den Studenten küssen]_i wollte Maria schon oft e_j*
the student kiss wanted Maria already often

- (v) **daß [den Studenten küssen]_i Maria schon oft e_j wollte*

It cannot be denied that verbal categories like VP and IP are subject to licensing conditions different from nominal categories like NP (and perhaps certain CPs). But although cases like (ii) and (v) are not captured at this moment, our theory of scrambling is as open to such modifications as any pure movement account.

29. See Bierwisch (1982), Kvam (1983), Fanselow (1987) and others for brief discussions of this peculiarity, which is, however, not confined to German. See the examples from a Russian chronicle of the 15th century in Taube (1979) to which Edit Doron has drawn our attention.
30. For more details of facts, explanation and execution of our CCF-based account for such apparent locality violations
31. We must admit that these examples are laboratory sentences which can presumably never be observed. On the other hand, they seem to us perfectly grammatical. It remains to be seen what sort of processing difficulty they could set up.
32. Notice that the universality of NP-movement has been challenged by researchers working on German e.g., Olsen (1981), and Hubert Haider in various publications e.g., in Haider (1985, 1989) and surely others as well.
33. Coherent infinitive constructions are those in which the clause boundary of the infinitival complements seems to be removed, thus allowing for trans-clausal processes of movement and scope into the matrix clause that are not possible as long as there is a CP-boundary around the complement.

References

- Abney, S.
1986 Functional elements and licensing. Talk presented at the GLOW-conference in Girona, Spain.
- Abraham, W.
1984 "Wortstellung und das Mittelfeld im Deutschen", in: W. Abraham (ed.), *Erklärende Syntax des Deutschen*. Tübingen: Narr, 27-52.
- Bayer, J.
1987 The syntax of scalar particles and so-called 'floating quantifiers'. Ms., Max-Planck-Institute for Psycholinguistics, Nijmegen.
- Bayer, J.
1990 Directionality of Government and Logical Form: A Study of Focusing Particles and WH-Scope. Habilitation thesis, University of Konstanz.

Bayer, J. — J. Kornfilt

- 1990 "Restructuring Effects in German", in: E. Engdahl — M. Reape — M. Mellor — R. P. Cooper (eds.), *Parametric Variation in Germanic and Romance: Proceedings for a DYANA Workshop*, September 1989; *Edinburgh Working Papers in Cognitive Science* 6, Centre for Cognitive Science, University of Edinburgh, 21-42.

Bayer, J. — J. Kornfilt

- forthcom. "Against scrambling as move-alpha", in: *Proceedings of NELS 1990* in Montreal.

Bech, G.

- 1955/57 *Studien über das deutsche verbum infinitum*. (Det Kongelige Danske Videnskabers Selskab; Dan. Hist. Filol. Medd. Bind 35, no.2 (1955) & Bind 36, no.6 (1957), new edition 1983. Tübingen: Niemeyer.

Behagel, O.

- 1929 "Zur Stellung des Subjects im Nebensatz des Deutschen", *Zeitschrift für Deutsches Altertum* 66, 203-206.

Bennis, H. — T. Hoekstra

- 1984 "Gaps and parasitic gaps", *The Linguistic Review* 4, 29-87.

Besten, H. den

- 1981 "Government, syntaktische Struktur und Kasus", in: M. Kohrt — J. Lenerz (eds.), *Sprache: Formen und Strukturen. Akten des 15. Linguistischen Kolloquiums, Münster 1980*. Tübingen: Niemeyer, 97-107.

Besten, H. den

- 1984 "The Ergative Hypothesis and Free Word Order in Dutch and German", in: J. Toman (ed.), *Studies in German Grammar*. Dordrecht: Foris, 23-64.

Besten, H. den — J. Rutten — T. Veenstra — J. Veld

- 1988 *Verb Raising, Extrapositie en de Derde Constructie*. Ms., University of Amsterdam.

Besten, H. den — J. Rutten

- 1989 "On Verb Raising, Extraposition and Free Word Order in Dutch", in: D. Jaspers — W. Klooster — Y. Putseys — P. Seuren (eds.), *Sentential Complementation and the Lexicon. Studies in Honour of Wim de Geest*. Dordrecht: Foris, 41-56.

Besten, H. den — G. Webelhuth

- 1987 "Remnant topicalization and the constituent structure of VP in the Germanic SOV-languages", *GLOW Newsletter* 18, 15-16.

- Bierwisch, M.
1982 "Linguistics and Language Error", in: A. Cutler (ed.), *Slips of the Tongue*. Amsterdam: Mouton.
- Carlson, G.
1977 Reference to Kinds in English. Doctoral dissertation, Amherst, University of Massachusetts.
- Chomsky, N.
1986 *Barriers*. Cambridge Massachusetts: MIT Press.
- Chomsky, N.
1989 "Some Notes on Economy of Derivation and Representation", in: I. Laka — A. Mahajan (eds.), *Functional Heads and Clause Structure, MIT Working Papers in Linguistics* 10, 43-74.
- Diesing, M.
1988 Bare plural subjects and the stage/individual contrast. Ms., University of Massachusetts, Amherst.
- Enç, M.
1991 "The Semantics of Specificity", *Linguistic Inquiry* 22, 1-25.
- Eroms, H.-W.
1986 *Funktionale Satzperspektive*. Tübingen: Niemeyer.
- Evers, A.
1975 The Transformational Cycle in Dutch and German. Doctoral dissertation, University of Utrecht. Distributed by Indiana University Linguistics Club.
- Fanselow, G.
1987 *Konfiguralität*. Tübingen: Narr.
- Fanselow, G.
1988 "Aufspaltung von NP und das Problem der freien Wortstellung", *Linguistische Berichte* 114, 91-113
- Fanselow, G.
1990 "Scrambling as NP-Movement", in: G. Grewendorf — W. Sternefeld (eds.), *Scrambling and Barriers*. Amsterdam: Benjamins, 113-140.
- Felix, S.
1985 "Parastic Gaps in German", in: W. Abraham, (ed.), *Erklärende Syntax des Deutschen*. Tübingen: Narr, 173-200.

- Gazdar, G. — E. Klein — G. Pullum — I. Sag
1985 *Generalized Phrase Structure Grammar*. Cambridge, Massachusetts: Harvard University Press.
- Grewendorf, G. — J. Sabel
1991 "Scrambling and incorporation", *Sprachwissenschaft in Frankfurt*, Arbeitspapier Nr.2.
- Giusti, G.
1990 "Floating Quantifiers, Scrambling, and Configurationality", *Linguistic Inquiry* 21, 633-641.
- Haider, H.
1985 "The case of German", in: J. Toman (ed.), *Studies in German Grammar*. Dordrecht: Foris, 65-101.
- Haider, H.
1986 *Deutsche Syntax - generativ: Parameter der deutschen Syntax*. Habilitation thesis, University of Vienna.
- Haider, H.
1989 "Against raising", in: D. Jaspers — W. Klooster — Y. Putseys — P. Seuren (eds.), *Sentential Complementation and the Lexicon. Studies in Honour of Wim de Geest*. Dordrecht: Foris.
- Hoberg, U.
1981 *Die Wortstellung in der geschriebenen deutschen Gegenwartssprache*. München: Hueber.
- Huybregts, R. — H. van Riemsdijk
1985 "Parasitic gaps and ATB", *Tilburg Papers in Language and Literature* 76, University of Tilburg.
- Jackendoff, R.
1977 *X'-Syntax: A Study of Phrase Structure*. Cambridge, Massachusetts: MIT Press.
- Kiss, K.É.
1987 *Configurationality in Hungarian*. Dordrecht: Reidel.
- Kornfilt, J.
1989 NP-movement and 'restructuring'. Ms., Massachusetts Institute of Technology and Syracuse University.
- Kornfilt, J.
1990 "Remarks on headless partitives and case in Turkish", in: J. Mascaró — M. Nespó (eds.), *Grammar in Progress*. Dordrecht: Foris, 285-303.

- Kratzer, A.
1989 Stage-level and individual-level predicates. Ms., Amherst: University of Massachusetts.
- Kvam, S.
1983 *Linksverschachtelung im Deutschen und Norwegischen*. Tübingen: Niemeyer.
- Lange, K.-P.
1978 "Subjektinversion im Mittelfeld des deutschen Satzes", *Deutsche Sprache* 6, 193-202.
- Larson, R.
1988 "On the double object construction", *Linguistic Inquiry* 19, 335-391.
- Lee, Y.-S. — B. Santorini
this vol. "Scrambling and INFL in German".
- Lenerz, J.
1977 *Zur Abfolge nominaler Satzglieder im Deutschen*. Tübingen: Narr.
- Mahajan, A.
1988 On the A/A-bar Distinction: Scrambling, Weak Crossover and Binding. Ms., Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Mahajan, A.
1989 Toward a Unified Theory of Scrambling. Ms., Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Mahajan, A.
1990 On the A-A' Distinction. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- May, R.
1985 *Logical Form*, Cambridge, Massachusetts: MIT Press.
- Moltmann, F.
1990 Scrambling in German and the Specificity Effect. Ms., Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Müller, G.
1991 "Abstrakte Inkorporation", in: S. Olsen — G. Fanselow (eds.), *DET, COMP und INFL*. Tübingen: Niemeyer, 155-202.
- Müller, G. — W. Sternefeld
1990 "Improper Movement", Arbeitspapier 26, Fachgruppe Sprachwissenschaft, Universität Konstanz.

- Neeleman, A.
this vol. "Scrambling as a D-Structure Phenomenon".
- Olsen, S.
1981 *Problems of 'seem/scheinen' Constructions and the Implications for a Theory of Predicate Sentential Complementation*. Tübingen: Niemeyer.
- Reuland, E.
1990 "Head Movement and the Relation Between Morphology and Syntax", in: G. Booij — J. van Marle, (eds.), *Morphology Yearbook* 3. 129-161.
- Riemsdijk, H. van
1989 "Movement and regeneration", in: P. Benincá (ed.), *Dialect Variation and the Theory of Grammar*. Dordrecht: Foris, 105-135.
- Ross, J. R.
1967 Constraints on Variables in Syntax. Doctoral dissertation, Massachusetts Institute of Technology, Cambridge, Massachusetts.
- Scherpenisse, W.
1986 The Connection Between Base Structure and Linearization restrictions in German and Dutch. Doctoral dissertation, University of Groningen.
- von Stechow, A. — W. Sternefeld
1988 *Bausteine syntaktischen Wissens. Ein Lehrbuch der generativen Grammatik*. Wiesbaden: Westdeutscher Verlag.
- Sternefeld, W.
1990 "Scrambling and Minimality", in: G. Grewendorf — W. Sternefeld (eds.), *Scrambling and Barriers*. Amsterdam: Benjamins, 239-257.
- Sportiche, D.
1988 "A theory of floating quantifiers and its corollaries for constituent structure", *Linguistic Inquiry* 19, 425-449.
- Taube, M.
1979 Les Formes Verbales et leurs Emplois dans la Chronique Moscovite de la Fin du XV^e Siècle. Doctoral dissertation, Sorbonne Paris.
- Thiersch, C. L.
1982 "A Note on 'Scrambling' and the Existence of VP", *Wiener Linguistische Gazette* 27/28, 93-95.
- Webelhuth, G.
1985 "German is configurational", *The Linguistic Review* 4, 203-246.

Webelhuth, G.

- 1988 "A Universal Theory of Scrambling", in: V. Rosén (ed.), *Papers from the 10th Scandinavian Conference of Linguistics 1987*. Department of Linguistics and Phonetics, University of Bergen, 284-298.

Webelhuth, G.

- 1989 *Syntactic Saturation Phenomena and the Modern Germanic Languages*. Doctoral dissertation, University of Massachusetts, Amherst

Webelhuth, G.

- 1990 "Diagnostics for Structure", in: G. Grewendorf — W. Sternefeld (eds.), *Scrambling and Barriers*. Amsterdam: Benjamins, 41-75.

Williams, E.

- 1984 "Grammatical Relations", *Linguistic Inquiry* 15, 639-673.

Wyngaerd, G. vanden

- 1989 "Object Shift as an A-Movement Rule", in: P. Branigan — J. Gaulding — M. Kubo — K. Murasugi (eds.), (*Proceedings of the Student Conference in Linguistics 1989, MIT Working Papers in Linguistics* 11, 256-271.