Against Scrambling as Move-Alpha

Josef Bayer
Max-Planck-Institut für Psycholinguistik

Jaklin Kornfilt
Syracuse University

Against Scrambling as Move-Alpha[*]

Josef Bayer
Jaklin Kornfilt

Max-Planck-Institut für Psycholinguistik
Syracuse University

1. Introduction

"Scrambling" is a term due to Ross (1967); it roughly means that constituents can change positions within a clause. Languages differ greatly as to the extent to which they allow for such permutation. Syntactic research has recently given increased attention to scrambling; this has contributed to a clearer understanding of the data and to concrete proposals for explaining scrambling insightfully. At present, there are two major proposals in GB-theory. According to the first, scrambling is due to 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 Dutch by Bennis and Hoekstra (1985), and for German by Webelhuth (1988, 1989, 1990) --W. (1989) ultimately concludes that scrambling may be halfways between A'- and A-movement with respect to binding theory--, by von Stechow and Sternefeld (1988), by Sternefeld (1990), and by Felix (1985). While 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 (see vanden Wyngaerd (1989) for Dutch and German and Mahajan (1988, 1989, 1990) for Hindi).

The goal of this investigation is twofold. We first argue that the core cases of scrambling in German cannot be captured adequately by syntactic movement. Second, we sketch a base-generation account that is not committed to a non-configurational account of German syntax. We will first turn to evidence against

1

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?

Given a configurational structure for German whereby subject and object are separated by a VP-boundary and the arguments inside VP are hierarchically organized, it seems natural to derive the scrambled order of arguments by adjunction to either VP or IP. This approach, attractive at first, is problematic, however. Mahajan (1988, 1989, 1990) has shown that scrambling in Hindi (unlike QR or WH-movement at LF) does not show the weak crosssover effects (WCO) typical for A'-movement, and that scrambling does not allow for reconstruction. Consider now the following examples from German.

2. 1. Adjunction to VP(1)

(1)   Wir wollten ...
        we wanted
   a. [dem   Professor]$_i$ seine$_i$ Sekretärin vorstellen
      (to) the professor his   secretary introduce
      '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$_j$ noch nicht vorgestellt.
      his   secretary   have we (to) the professor   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) is an instance of A'-movement (to Spec/CP). The binding of seine is possible here, because NP$_j$ reconstructs into a trace position at LF; thus, the binding NP can c-command NP$_j$. If (1b) were a case of A'-movement, we would wrongly predict that reconstruction is possible here, too.[1]

2. 2. Adjunction to VP(2)

The examples in (2) show that the same holds true when the dative NP is quantified; consequently, the possessive pronoun functions as a bound variable.

(2)   Wir wollten ...
        we wanted
   a. [jedem Professor]$_i$ seine$_i$ Sekretärin vorstellen
      each Professor   his   secretary introduce
      'to introduce to each professor his secretary'
   b. *seine$_i$ Sekretärin [jedem Professor]$_i$ vorstellen.

---

[1]Note that we are making a crucial distinction here between "scrambling" to "first" position in V-2 structures (as in (1)c.) 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. Spec/CP), and hence is an instance of Move-α. We claim that other scrambling patterns do not involve movement. Consequently, they lack traces into which reconstruction could take place.

AGAINST SCRAMBLING AS MOVE-ALPHA

c. Seine_i Sekretärin wollten wir [jedem Professor]_i vorstellen.
　his　　secretary　wanted we　each　professor　introduce
'We wanted to introduce his secretary to each professor'

Consider next adjunction of an object NP to IP. The examples in (3) involve an unquantified subject NP, those in (4) a quantified subject NP.[2]

2. 3.　Adjunction to IP(1)

(3) 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

2. 4.　Adjunction to IP(2)

(4) 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

Note the difference between (3b) and (4b), and 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 generalization is that, under scrambling, binding is possible when the binder is a quantified subject NP. Binding in (4b) is not a consequence of reconstruction into the putative trace of the scrambled object. If such reconstruction were, indeed, taking place, the example in (5) should exhibit a Weak Crossover effect:

(5)　daß jeden_i　　　　seine_i Eltern　lieben
　　　that everybody (Acc.) his　　parents love
　　'that his parents love everybody'

Since such an effect is entirely absent, we conclude that A'-movement is not at issue here. Notice that (3b) contrasts with the parallel English case in (6), which is the result of move-α. Consequently, reconstruction is possible, and pronominal binding can take place:

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

2. 5.　Reflexive and Reciprocal Binding

Consider next the binding of reflexive and reciprocal elements:

(7) a. daß sich_i　　der Heinrich_i t_i haßt
　　　　that himself Heinrich　　　　hates
　　b. daß die Familienmitglieder_i sogar EINANDER_i nicht mögen
　　　　that the family-members　　　even each other　not　　like
　　'that the members of the family hate even each other'

---

[2]Movement of the object NP to the preverbal A'-position (equivalent to Spec/C) would again lead to a reconstruction that is in accordance with the binding theory.

BAYER AND KORNFILT

4

c. *daß sogar EINANDER$_i$ die Familienmitglieder$_i$ nicht mögen
d. Sogar EINANDER$_i$ mögen die Familienmitglieder$_i$ t$_i$ nicht
e. ... that even EACH OTHER$_i$, the family members$_i$ do not really like t$_i$

(7a) is well-formed because <u>sich</u> 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 <u>sogar einander</u> 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 rescue such examples. The same holds true for English, as shown by (7e). Thus, (7c) is another indication that object scrambling in German can't be A'-movement. In contrast, notice that PP-adjuncts can freely adjoin to VP or IP as shown in (8):

2. 6. PP-adjuncts

(8)a. daß [in seiner$_i$ Wohnung]$_j$ Maria den Professor$_i$ e$_j$ schon oft   besucht hat
   that   in his   apartment Maria the professor   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   oft e$_j$ von Maria
                                                                      besucht wurde
   'that in his apartment the professor was often visited by Maria'

As indicated by the traces, it is possible to reconstruct the PP into a position where the pronoun <u>seiner</u> is c-commanded by the masculine NP. Indeed, it seems that many of Webelhuth's (1989, 1990) examples fall under the A'-movement generalization. W.'s examples are essentially like those in (9) which we modify somewhat 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 Film e$_j$] anschauen würde
        since refl. about his   wife   the Hans   no   film   watch   would
        'since Hans would not watch a movie about his wife'
      b. weil [auf seine$_i$ Kinder]$_j$ der Hans$_i$ [sehr stolz   e$_j$] ist
        since of his   children the Hans   very proud   is
        'since Hans is very proud of his children'

Many researchers haven't noticed, however, the fact that these cases must be quite different from those German cases in which an NP is scrambled. An obvious surface reflex of this is that adjunction to IP creates a prosodic break which is clearly absent in object scrambling. Consider the following examples in (10) where # marks the break:

2. 7. Prosodic Break (#)

(10)   a. daß den Heinrich niemand ausstehen kann
         that   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 <u>ausstehen</u>. A prosodic break after the scrambled NP is rather awkward.

In English, the pattern is reversed. Without prosodic break, scrambling is almost impossible; cf. (10c, d). 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, showing that there is a correlation between types of scrambling and intonational phrasing, such that only adjoined XPs allow for a prosodic break.

Consider next parasitic gap (PG) constructions. Bennis and Hoekstra (1985) and Felix (1985) use PGs as evidence to show that an object NP can be scrambled inside the IP to an A'-position from where it can license a PG. An informal investigation of native speaker judgements revealed, however, that there are some interesting differences:

2. 8. Parasitic Gaps

(11) a. ?Diesen Mann$_i$ hat man [ohne **pg**$_i$ verwarnt zu haben] e$_i$ ins
        this   man   has one without   warned to have   in-the
                                Gefängnis   gesteckt
                                prison   put
        'One has put this man into jail without having warned him'
     b. Man hat ihn$_i$ [ohne **pg**$_i$ verwarnt zu haben] e$_i$ ins Gefängnis
                                gesteckt
     c. ?*Man hat diesen Mann$_i$ [ohne **pg**$_i$ verwarnt zu haben] e$_i$ ins
                                Gefängnis gesteckt
     d. Da hat ihn$_i$ der Polizist [ohne **pg**$_i$ verwarnt zu haben] e$_i$ ins
                                Gefängnis gesteckt
     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 Spec/C in (11a) as well as the clitic's position in (11b) head possible reconstruction chains.[3] If PGs can be licensed by adjunction to VP, (11c) should be equally acceptable. Most native speakers, however, reject such cases or find them less good than the others. This tendency becomes even clearer with PGs that are licensed from a position to the left of the subject NP. While clitic binders are still good (see (11d)), full NPs as in (11e) lead to ungrammaticality.[4] Summing up, we can assume that, contrary to some claims in previous studies, PGs don't provide any convincing argument for object scrambling to an A'-position within IP.[5]

Consider finally "long-distance scrambling" (LDS), sometimes also referred to as the "Third Construction".[6] In German and Dutch the object NP of infinitival <u>zu</u>-/<u>te</u>- complements can scramble into the matrix IP if the matrix verb belongs to a limited lexical class of control verbs; e.g.

---

[3]We have no explanation for the fact that clitics seem to be better able to license PGs than full NPs.
[4]See also Fanselow (1990:118f).
[5]With respect to Dutch, Neeleman (1990) has made analogous observations.
[6]See den Besten and Rutten (1989), den Besten, Rutten, Veenstra, Veld (1988) and Bayer and Kornfilt (1990).

BAYER AND KORNFILT

6

(12) da Heinrich den Wagen; versprochen hat [PRO e; zu waschen]
Heinrich the car   promised   has   to wash
'because Heinrich has promised to wash the car'[7]

Consider now apparent movement of an adverb of quantification from its D-structure position in the complement into the matrix clause:

(13)a. da Heinrich versprochen hat [PRO dreimal   den Rosenkranz zu
since Heinrich promised   has   three-times the rosary   to
beten]
pray
'because Heinrich has promised to count his beads three times'
b. [Dreimal]; hat Heinrich versprochen [PRO e; den Rosenkranz zu
beten] (ambiguous)
c. da Heinrich [dreimal] versprochen hat [PRO 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 can also bind a trace inside the matrix IP; we thus get a reading of three promises, leading to ambiguity. Assuming now that scrambling is adjunction to VP, the same ambiguity should be available in (3c). However, (3c) is very clearly unambiguous, and it allows only the reading of three promises.

We conclude that, at least in German, the scrambling of object NPs is not an instance of A'-movement. Evidence from a variety of phenomena has revealed that object scrambling does not give rise to LF-reconstruction and that what matters is exclusively the S-structure position of the scrambled item. In these respects, scrambling differs significantly from clitic movement. However, focused PPs and, presumably, also APs and adverbials do scramble in the sense of adjunction to IP. We will next investigate whether there are reasons to analyze object scrambling in German as an instance of NP-movement.

3. Scrambling as NP-movement?

We start with one conceptual reservation against analyzing scrambling as NP-movement, namely that scrambling lacks the functional motivation of NP-movement: NP-movement is claimed to be triggered by the interplay of theta-theory and Case-theory. Note that scrambling does not enter this interplay at all, since the "scrambled" elements do have Case (which they retain in their S-structure positions).

We now briefly review some earlier proposals that view scrambling as an instance of NP-movement. We shall consider two types of such proposals:

---

[7]Please note that, ultimately, we shall not be assuming a trace where an empty category is indicated here, since we shall propose a base-generated, non-movement account for scrambling structures. The empty category has been entered in this example for expository purposes only.

AGAINST SCRAMBLING AS MOVE-ALPHA

3. 1. Adjunction to VP or IP (Fanselow (1990))

Fanselow argues for scrambling as adjunction -- a position we view as paradoxical, since Chomsky-adjunction creates A'-positions; 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".

3. 2. Movement to SPEC (Mahajan (1988); vanden Wyngaerd (1989))

In analyses positing VP-internal subjects, such subjects move up to Spec/IP position to pick up Case. But since scrambling NPs do have Case already, their putative movement would lack a Case-based explanation. This objection might be countered by referring to Chomsky (1989), who suggests that object Case may be assigned by AGR-O:

```
        AGRP-O
        /     \
     NP_i      AGR-O'
             /     \
           VP       AGR-O
          /  \
        e_i    V
```
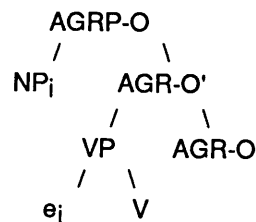
This analysis would explain the movement from a VP-internal position to Spec/AgrPO-position. However, we would still have no explanation as to what could drive NP_i further up, for instance across the subject's S-structure position. One could posit, of course, a Spec/AgrP-O position which is higher than Spec/IP, and which functions as the target of the movement associated with scrambling. Note, however, that this move leads to a proliferation of AgrP-O nodes and of their associated Spec positions; furthermore, this approach does not explain, but rather only restates the Binding facts we reviewed earlier.

Another point of interest is that--at least given certain NP-types--scrambling in German is always optional. An analysis of scrambling in terms of NP-movement does not capture this fact. Note, however, that this optionality isn't mysterious, since VP-internal subjects can receive Case in situ (cf. den Besten (1984)) and therefore need not scramble; hence the optionality in scrambling subjectsas well as any other Case-marked NP.

There are more problems that arise with viewing scrambling as NP-movement. For instance, consider (12), where the embedded object is in a "scrambled" position in the matrix. How could the NP have moved from its original position to its landing site? Spec/IP (i.e. Spec/AgrP-S) of the embedded clause is already filled with the subject, i.e. PRO. If we are right in saying that Spec of AgrP-S (=Spec/IP) is the landing site in 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. It might be suggested here that, in examples like (12), the embedded object might first move to an A'-position before moving on to an A-position, thus leading to a chain which is partially an A-chain. More specifically, it might be proposed that the embedded object uses Spec/CP of the infinitival clause as an escape hatch. However, this proposal is problematic, as well. Examples like (14) below, for which the derivation just mentioned is plausible, are ungrammatical:

(14) * weil Heinrich [die Zebras]ᵢ gesagt hat [e [daß [er dem Kind eᵢ
         because H.   the zebras   said   has   that   he the child-Acc.
                                                       zeigen wird]]]
                                                       show will
         'because Heinrich has said that he will show the zebras to the child'

Hence, (12) cannot be derived by moving the scrambled object NP via the Spec/CP of the embedded infinitival clause.

Müller and Sternefeld (1990) (M&S) propose a Principle of Unambiguous Binding (PUB), which predicts the ungrammaticality of (14):

(15) "A variable cannot be (simultaneously) bound by an operator position and by a scrambling position." (M&S, p. 18)

If PUB is correct, a scrambling position is crucially distinct from an A'-position.[8] But is a scrambling position also distinct from an A-position? We haven't found arguments showing that it is, and we therefore claim that it _is_ an A-position. However, the movement to such a position has different properties from straightforward A-movement, as we just argued. One further argument is offered by grammatical examples like (16):

(16) da Heinrich [dem Kind]ᵢ vergessen hat [PRO eᵢ die Zebras zu   zeigen]
        Heinrich the child   forgotten has   the zebras to   show
        'because Heinrich has forgotten to show the child the zebras'

(16) is parallel to (12); but (16) is particularly interesting due to the Case on the scrambled NP, which is the Dative, i.e. a lexical Case. Crucially, this Case could not have been assigned by AgrO; hence, no A-movement has taken place here.

Conclusion: Though "anaphoric" (i.e. local) in nature, German scrambling cannot be NP-movement, i.e. A-movement.

## 4. On Projecting Scrambled Order

We suggest that scrambling constructions are due to neither A'-movement, nor A-movement, but rather are base-generated, in ways we shall elaborate below.

Our account is motivated by the fact that in German, there is no reason for licensing a subject NP, marked for Nominative Case, only outside the VP; 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 (1987), that V is the semantic head, while I is the formal head of the clause. In this way we can capture the insights of Jackendoff (1977), who proposed that V is the head of S, without having to say that S is a formal projection of V. Instead, we follow recent developments of X'-theory and

---

[8] By "scrambling position", M&S mean an adjunction site to any phrasal category, with the exception of adjunction sites to Spec/CP. The latter serve as operator positions (in addition to the regular operator position provided by Spec/CP) 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. M&S, p. 18.

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 in English and French. For German, then, V and I are jointly visible at the mother node, but are kept separate for English and French:
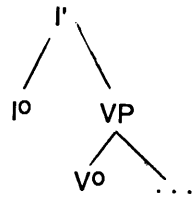
(17) a. <u>English</u>　　　　　　　b. <u>German</u>
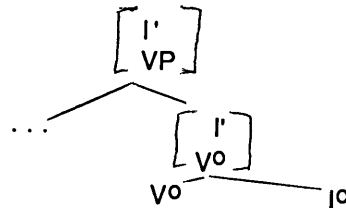
Our formalism for creating these jointly visible nodes is the following:

4.1. Complex Category Formation (CCF)

(18) If X^0 is an inflectional affix I, the V-stem will attach to I in morphosyntax before it heads a VP. In English, however, I may be a terminal syntactic node (cf. the earlier notion AUX).

(19) In a structure $[...X^0 \ Y^n ...]$ where X^0 is a raising category that governs Y^n, $(0 \leq n \leq max)$, X^0 will project into the complex category $\begin{bmatrix} X' \\ Y^n \end{bmatrix}$.

In German, then, an inflected V is a syntactic primitive which is both [V] and [I']. 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 (17) above. German, then, is treated as a configurational language in our approach.

4.2. VP-internal Nominatives

German allows for VP-internal nominatives. This is seen very clearly in the case of ergative verbs. Ergative verbs which require a dative experiencer argument typically exhibit as the unmarked constituent order <u>Dative-Nominative-Verb</u>, as in (20):

(20)　daß dem Taucher (Dat.) die Luft (Nom.) ausgegangen ist
　　　 that the diver　　　　 the air　　　　 ran-out　 is
　　　 'that the diver ran out of air'

Under the more traditional analysis of German phrase structure, i.e. the mirror image of (17) a., the Nominative Case would have to be assigned into VP. While there have been some suggestions as to how to achieve this (cf. den Besten 1984), this situation remains a problem under regular assumptions about government and Case assignment. In the phrase structure proposed under (17) b., this problem does not arise.

Another situation where we find VP-internal Nominative subjects in German is in scrambling constructions. This is true for unergative verbs, as well. In these
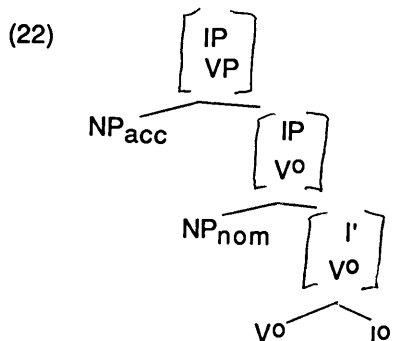
BAYER AND KORNFILT

10

instances, the (unergative) V seems to license a Nominative subject in VP; this is possible, however, because the verb is, at the same time, an I'. A scrambled clause can therefore be base-generated:

(21) daß den Postboten (acc) der Hund (nom) beißt
that the postman   the dog   bites
'that the dog bites the postman'

In the system we propose here, the structure of a clause like (21), with the object NP apparently scrambled over the subject NP, will be as depicted in (22):

(22)

$$\begin{bmatrix} IP \\ VP \end{bmatrix}$$

NP_{acc} $\begin{bmatrix} IP \\ V^0 \end{bmatrix}$

NP_{nom} $\begin{bmatrix} I' \\ V^0 \end{bmatrix}$

V^0 I^0

We make the following assumptions:

1. Case assignment doesn't have to take place under strict string-adjacency. Otherwise, V would be able to assign Accusative Case only to its sister NP. In this system, however, the governing force (and hence Case-assigning ability) of V must be kept intact in the projection(s) of V.

2. The Nominative NP in (22) is governed by V, but it isn't also <u>licensed</u> by V--at least not in the same way as an argument of V is licensed. If V did license the subject, the marked scrambling order of (21) would be indistinguishable from the unmarked ergative order shown in (20).

According to generally accepted assumptions, an unergative V cannot take a 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, (22) is just an ordinary IP; the only difference between it and a "regular", unscrambled IP is that in the scrambling construction, the VP remains unsaturated until the formal Spec/IP position is licensed.

The fact 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.) erst einmal
the dog   bitten   has the mailman   only once
Intended reading: 'The dog has bitten the mailman only once (so far)'

AGAINST SCRAMBLING AS MOVE-ALPHA

Since the 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.) erst einmal
     the air   ran-out   is the diver   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.[9] Note that we are treating German (as well as Dutch) auxiliaries as raising verbs, and we claim that those trigger CCF.

There is another class of verbs which, we claim, share this property with auxiliaries in German: They, too, enter CCF constructions. These are Control verbs like _versprechen_ ('promise'), _vergessen_ ('forget'), _befehlen_ ('command, order') etc. These may govern IP complements (i.e. complements which, we claim, are not CPs). The effects of CCF with such Control verbs will be discussed in the next section.
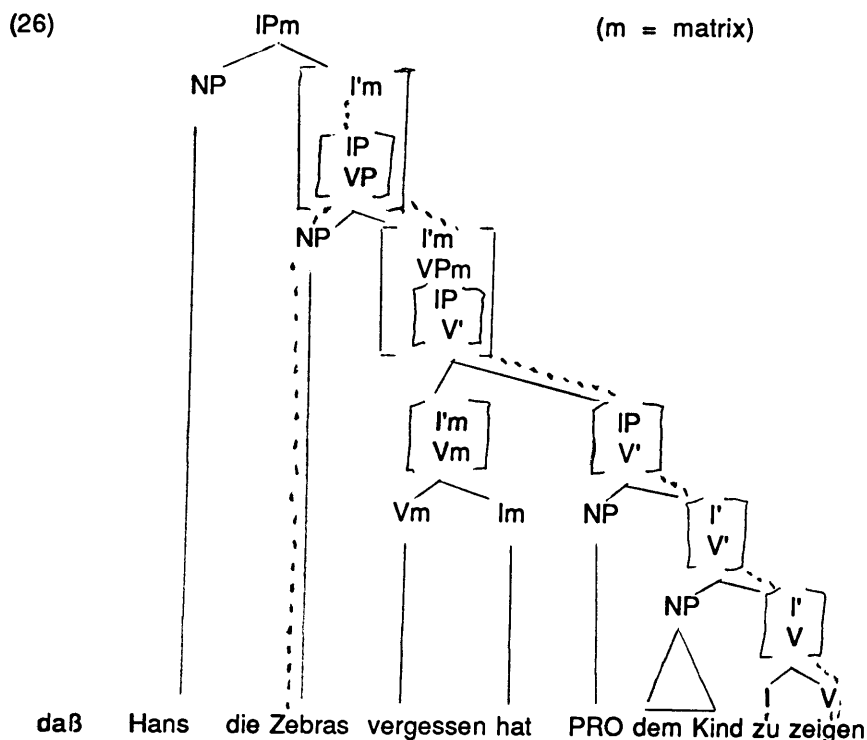
4.3. Long Distance Scrambling (LDS)

(19) predicts that V will form a complex category with auxiliaries, and that raising Control verbs will form a complex category with the infinitival IP-complement[10]. Therefore an argument of the complement can be assigned a θ-role as well as Case in the domain of a raising Control verb. To see this, note (25), an example of Long Distance Scrambling, with (26) as its representation :

(25) da Heinrich _die Zebras_   vergessen hat [PRO dem Kind   zu zeigen]
     since H.   the zebras(Acc.) forgotten has   the child(Dat.)to show
          'since Heinrich forgot to show the zebras to the child'

---

[9]The contrast depicted in (22) versus (23) is due to Thiersch (1982).

[10]The system proposed here might seem to be equivalent to a categorial framework with function composition. Suppose that category X has valency n and category Y has valency m, and that combining X with Y will lead to a new functor Z with the valency n+m. In this sense [V+I], with V a simple transitive verb, would be a functor which "seeks" two arguments. Note that there is an important difference between our system and a categorial framework: Complex categories are allowed in our system only where there is a "raising" head element which permits the visualization of the non-head at the mother node. In most of the categorial frameworks known to us no such assumption is made. Since categorial systems are intended to provide the entire format for the combinatorial rules of the grammar, it is not possible to use this format for only a designated class of operations. Precisely such a constraint on the use of function composition is necessary, however, if we don't want to allow for unrestricted (and unprincipled) combinatorial power.

BAYER AND KORNFILT

12

(26) IPm   (m = matrix)

daß   Hans   die Zebras   vergessen hat   PRO dem Kind zu zeigen

The dotted line in (26) illustrates the government link between the embedded verb <u>zeigen</u> and the "scrambled" constituent <u>die Zebras</u>. Instead of moving an argument of the lower clause into the matrix clause, we now have expressed the government (and hence Case and θ-) relation with complex categories.[11]

We now turn to some examples which give further support to our base-generation account of LDS constructions as the one in (26). The examples we have in mind show that operator-movement (overt movement as well as LF-movement) cannot take place from (or out of--cf. (28)) a "scrambling" position. Note the following examples:

(27) <u>Multiple Interrogation</u>
    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 <u>wem</u>   vergessen [PRO die Zebras   zu   zeigen]?
         who has whom (Dat.) forgotten   the zebras(Acc.) to   show
         'Who has forgotten to show the zebras <u>to whom</u>?'

(28) <u>WH-movement ("was-für split")</u>
    a. Was$_i$ hat Heinrich dem   Mann [e$_i$ für ein Buch] empfohlen?
         what   has H.   the(Dat.) man   for a 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?

---

[11]For more information and details of our account, particularly with respect to "Restructuring" constructions, the reader is referred to Bayer and Kornfilt (1990).

    c.   Was$_i$ hat Heinrich [e$_i$ für einem Kind] vergessen [PRO die Zebras zu zeigen]?

(29) 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]

We assume that in multiple interrogation, the WH-element which cannot occupy an operator position at S-structure undergoes movement to an operator-position at LF. Focussed elements also undergo LF-movement to operator position. In "was-für split" constructions, a WH-element which is part of a larger "was-für" ('what kind of') constituent undergoes syntactic movement to operator position. In all of these examples, movement to operator position is possible from the canonical argument position (cf. the a.-examples), but not from the "scrambled" position (cf. the b.-examples).

This observation (as well as the observation we mentioned earlier that scrambling from an operator position is impossible) is made in M&S (1990), where the PUB (cf. (15)) is proposed as an explanation unifying both observations. As mentioned briefly earlier, M&S view scrambling positions as non-argument, non-operator positions; for M&S, these positions are of a third type and are created by adjunction. Since we view scrambling positions as neither adjoined nor operator positions, and since we don't allow a third kind of position, we have treated the positions of "scrambled" elements as base-generated A-positions. Therefore, we cannot use the PUB the way it stands in order to explain the ungrammaticality of the b.-examples in (27)-(29).

Space considerations make it impossible to sketch our treatment of these examples, i.e. of the difference between operator movement from canonical versus non-canonical positions, within our CCF-approach. However, what is important for the present paper is not the ungrammaticality of the b.-examples, but rather the contrast between them and the perfectly grammatical c.-examples. The crucial point here is that, with respect to operator movement, the element in all c.-examples which appears to be moved to the matrix clause from the embedded infinitival behaves just like the corresponding elements in canonical argument positions in the a.-examples. This means that even within accounts like M&S's where scrambling is treated as movement, the elements having undergone LDS behave like non-moved constituents in canonical argument positions. These examples therefore provide independent evidence in favor of our treatment which base-generates such elements outside the infinitival, in their (matrix) S-Structure position.

(iii) Long Distance Passives (LDP)

As mentioned earlier in passing, there are Passive constructions in German where the Nominative subject is construed as the object of an embedded infinitive. This construction is found with some Control verbs; only the matrix verb bears Passive morphology:

BAYER AND KORNFILT

14

(30) a. da der Wagen [PRO in die Garage zu fahren] vergessen wurde
    since the car(Nom.) into the garage to drive forgotten was
    'Since it was forgotten to drive the car into the garage'
   b. da der Wagen vergessen wurde [PRO in die Garage zu fahren]

Movement across the clause boundary in one fell swoop would violate locality. We argued earlier that movement via Spec/CP would violate the PUB. Instead, we propose to treat the particular class of Control verbs that enter the LDP construction as (Verb-) Raising verbs that can trigger Complex Category Formation. The constituent which has apparently undergone NP-movement is base-generated in the matrix, just as the corresponding "scrambled" elements in examples (27)-(29). 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 kann 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.[12]

5. Conclusions

1. Scrambling in German does not fall into the A/A'-chain dichotomy.
2. If Scrambling leads an NP to a canonical object position, this position has all the properties of an A-position.
3. Complex Category Formation (CCF) can draw a principled distinction between pure moving languages (e.g. English) and mixed, i.e. moving as well as "scrambling" languages (e.g. German).
4. CCF violates string adjacency between governors and their complements, but retains adjacency between these elements via its projection system.

References:

Abney, S. P. (1987) The English Noun Phrase in its Sentential Aspect, Ph.D. dissertation, MIT, Cambridge, MA.

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

Bennis, H. and T. Hoekstra (1984) "Gaps and Parasitic Gaps", The Linguistic Review, vol. 4, 29-87.

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 Publications, 23-64.

Besten, H. den, J. Rutten, T. Veenstra, J. Veld (1988) "Verb Raising, Extrapositie en de Derde Constructie", Ms., Universiteit van Amsterdam.

Besten, H. den and J. Rutten (1989) "On Verb Raising, Extraposition and Free Word Order in Dutch", in D. Jaspers, W. Klooster, Y. Putseys, Pieter Seuren (eds.),

---

[12]For more details of facts, explanation and execution of our CCF-based account for such apparent locality violations involving certain infinitivals, the reader is referred to Bayer & Kornfilt (1990).

Sentential Complementation and the Lexicon. Studies in Honour of Wim de Geest, Dordrecht: Foris, 41-56.

Chomsky, N. (1989) "Some Notes on Economy of Derivation and Representation", in I. Laka and A. Mahajan (eds.), Functional Heads and Clause Structure, MIT Working Papers in Linguistics, vol. 10, 43-74.

Fanselow, G. (1990) "Scrambling as NP-Movement", in G. Grewendorf and W. Sternefeld (eds.), Scrambling and Barriers, Amsterdam: Benjamins, 113-140.

Felix, S. (1985) "Parasitic Gaps in German", in W. Abraham (ed.), Erklärende Syntax des Deutschen, Tübingen: Narr, 173-200.

Jackendoff, R. (1977) X'-Syntax: A Study of Phrase Structure, Cambridge, MA: MIT Press

Mahajan, A. (1988) "On the A/A-bar Distinction: Scrambling, Weak Crossover and Binding", Ms., MIT, Cambridge, MA.

Mahajan, A. (1989) "Toward a Unified Theory of Scrambling", Ms., MIT, Cambridge, MA

Mahajan, A. (1990) On the A-A' Distinction, Ph.D. dissertation, MIT, Cambridge, MA.

Müller, G. and W. Sternefeld (1990) "Improper Movement", Fachgruppe Sprachwissenschaft, Universität Konstanz, Arbeitspapier Nr. 26.

Neeleman, A. (1990) "Scrambling as a D-Structure Phenomenon", Ms., OTS, Utrecht University.

Ross, J. R. (1967) Constraints on Variables in Syntax, Ph.D. dissertation, MIT, Cambridge, MA.

von Stechow, A. and W. Sternefeld (1988) Bausteine syntaktischen Wissens. Ein Lehrbuch der generativen Grammatik, Wiesbaden: Westdeutscher Verlag.

Sternefeld, W. (1990) "Scrambling and Minimality", in G. Grewendorf and W. Sternefeld (eds.), Scrambling and Barriers, Amsterdam: Benjamins, 239-257.

Thiersch, C. L. (1982) "A Note on 'Scrambling' and the Existence of VP", Wiener Linguistische Gazette, vol. 27-28, 93-95.

Webelhuth, G. (1988) "A Universal Theory of Scrambling", in Rosén, V. (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, Ph.D. dissertation, University of Massachusetts, Amherst

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

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, vol. 11, 256-271.

21