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Against Scrambling as Move-Alpha*

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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 halfway 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

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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 crossover 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_j Sekretärin vorstellen
(to) the professor his secretary introduce
'to introduce to the professor his secretary'
 - b. *seine_j Sekretärin [dem Professor]_i vorstellen.
 - c. [Seine_j Sekretärin]_i 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_j Sekretärin vorstellen
each Professor his secretary introduce
'to introduce to each professor his secretary'
 - b. *seine_j Sekretärin [jedem Professor]_i vorstellen.

¹Note that we are making a crucial distinction here between "scrambling" to "first" position in V-2 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. 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.

- c. Seine_i Sekretärin wollten wir [jedem Professor]_j 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_j Eltern sehr liebt
 that the Hans his parents very loves
 'that Hans loves his parents very much'
 b. *daß seine_j Eltern der Hans_i sehr liebt

2. 4. Adjunction to IP(2)

- (4) a. daß jeder_i seine_j Eltern liebt
 that everybody his parents loves
 'that everybody loves his parents'
 b. daß seine_j 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_j 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_j really loves

2. 5. Reflexive and Reciprocal Binding

Consider next the binding of reflexive and reciprocal elements:

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

²Movement 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.

- c. *daß sogar EINANDER_i die Familienmitglieder_j nicht mögen
 d. Sogar EINANDER_i mögen die Familienmitglieder_j t_j nicht
 e. ... that even EACH OTHER_i, the family members_j do not really like t_j

(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 sogar 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 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 seiner is c-commanded by the masculine NP. Indeed, it seems that many of Weibelhuth'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 ausstehen. 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_j 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_j ins Gefängnis
 gesteckt
- c. ?*Man hat diesen Mann_i [ohne pg_i verwarnt zu haben] e_j ins
 Gefängnis gesteckt
- d. Da hat ihn_i der Polizist [ohne pg_i verwarnt zu haben] e_j ins
 Gefängnis gesteckt
- e. *Da hat diesen Mann_i der Polizist [ohne e_j verwarnt zu haben] e_j
 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 zu-/te- complements can scramble into the matrix IP if the matrix verb belongs to a limited lexical class of control verbs; e.g.

³We have no explanation for the fact that clitics seem to be better able to license PGs than full NPs.

⁴See also Fanselow (1990:118f).

⁵With respect to Dutch, Neeleman (1990) has made analogous observations.

⁶See den Besten and Rutten (1989), den Besten, Rutten, Veenstra, Veld (1988) and Bayer and Kornfilt (1990).

- (12) da Heinrich den Wagen_i versprochen hat [PRO e_i 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]_i hat Heinrich versprochen [PRO e_i 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:

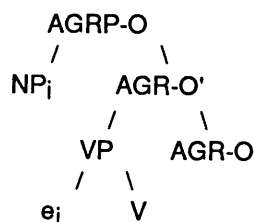
⁷Please note that, ultimately, we shall not be assuming a trace where an empty category is indicated here, since we shall propose a base-generated, non-movement account for scrambling structures. The empty category has been entered in this example for expository purposes only.

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:



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 subjects as 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 e_j
 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 e_j 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

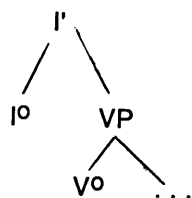
We suggest that scrambling constructions are due to neither A'-movement, nor A-movement, but rather are base-generated, in ways we shall elaborate below.

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

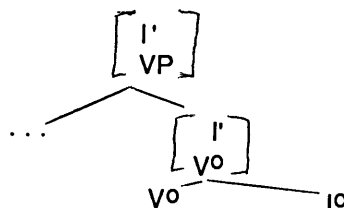
⁸By "scrambling position", M&S mean an adjunction site to any phrasal category, with the exception of adjunction sites to Spec/CP. The latter serve as operator positions (in addition to the regular operator position provided by Spec/CP) for multiple WH-questions--at LF for languages like English without 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. English



b. German



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

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 Dative-Nominative-Verb, 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'

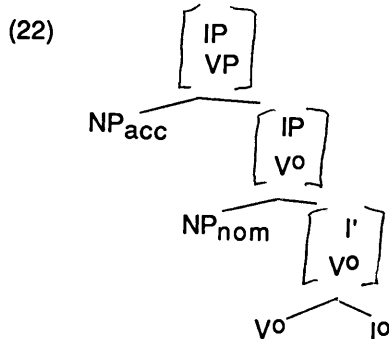
Under the more traditional analysis of German phrase structure, i.e. the mirror image of (17) a., the Nominative Case would have to be assigned into VP. While there have been some suggestions as to how to achieve this (cf. den Besten 1984), this situation remains a problem under regular assumptions about 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

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):



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 licensed 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)'

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.

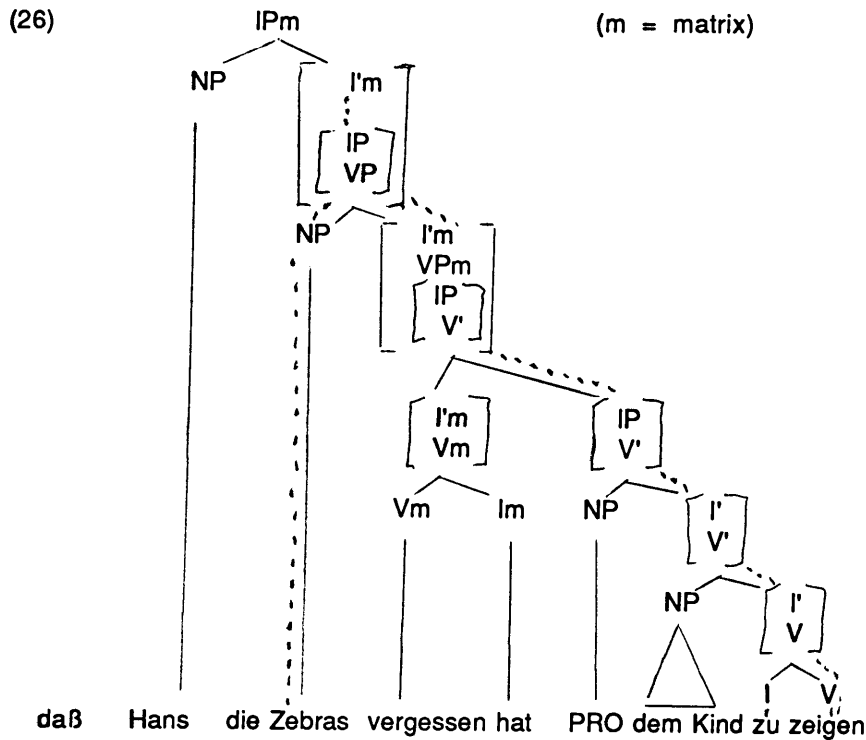
4.3. Long Distance Scrambling (LDS)

(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-complement¹⁰. 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'

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

¹⁰The 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.



The dotted line in (26) 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 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) 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_j gegeben?
- c. Wer hat wem vergessen [PRO die Zebras zu zeigen]?
 who has whom (Dat.) forgotten the zebras(Acc.) to show
 'Who has forgotten to show the zebras to whom?''

(28) WH-movement ("was-für split")

- a. Was_i hat Heinrich dem Mann [e_j 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_j für ein Buch]_j Heinrich dem Mann e_j empfohlen?

¹¹For 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_j 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_j 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:

- (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.

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¹²For 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).

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