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Movement and Regeneration¹

Henk van Riemsdijk
Tilburg University

1. INTRODUCTION

This article is concerned with two issues that are central to the theory of movement as it has developed within recent versions of generative grammar, in particular the framework known as the Government Binding theory. Evidence will be presented concerning the following two questions:

- A. Should movement be “real movement” in the sense of a unidirectional mapping from D-structure to S-structure? Phrased in terms of chains (and thereby potentially in terms of a representational conception of syntax), should the S-structure chains corresponding to movement constitute a history of movement and only that?
- B. Should movement be restricted to movement of heads (X^0) and maximal projection categories (X^{\max}) in terms of X-bar theory?

The evidence will come from some peculiar properties of the topicalization construction in certain southern varieties of German, and it suggests a positive answer to the first and a negative one to the second question.

2. THE PROBLEM

Consider the following examples.

- (1) Bücher habe ich keine mehr
books have I none more
(As for books, I don't have any anymore)
- (2) Augen hat sie grössere als ich
eyes has she bigger than me
(As for eyes, she has bigger ones than me)

Sentences of this type, which occur in all varieties of German suggest that N or N' can be topicalized, leaving the outer shell of the NP with

the determiner behind in what I will refer to as the source position. Archaic and/or literary varieties of English are also reported to have this construction as in (3).

- (3) Brothers and sisters have I none

A problem that arises immediately is whether this is indeed N' -movement. Because an apparently reasonable restriction on “move α ” adopted for example in Chomsky (1986), says that only X^o and X^{\max} may be moved. Empirically, however, there is a more immediate concern. Consider (4).

- (4) Einen Wagen hat er sich noch keinen leisten können
 a car has he refl yet none afford could
 (As for cars, he has not been able to afford one yet)

In this sentence, both the topic and the source position contain a determiner. The two determiners can never cooccur in a non-split NP:

- (5) a. *Einen keinen Wagen
 b. *Keinen einen Wagen

This means, of course, that there is no source from which sentences like (4) could be derived by means of movement.

More generally, there are several indications that movement cannot be at the basis of this construction. On the other hand it is also straightforward to argue that the construction has all the diagnostic properties of movement. We are thus faced with a paradox. It is, in fact, typically the type of paradox that researchers have tended to resolve by means of chains and chain formation algorithms. I will argue below that while a fairly coherent account in terms of chains can be constructed, it is possible to devise a solution to the paradox in terms of “real movement” that is preferable on empirical and theoretical grounds. Before turning to these arguments, however, let us consider the empirical properties of what I will call “Split Topicalization” (or ST) in more detail.

3. PROPERTIES OF SPLIT TOPICALIZATION

3.1. Adjuncts and complements

Basically, adjuncts and complements of the NP can be found both in the topic and in the source position, subject, of course, to restrictions pertaining to what are plausible topics in a sentence. Some examples follow.

- (6) a. Eine Lösung hat er eine bessere als ich
 a solution has he a better than I
 (As for solutions, he has a better one than I)
 b. Eine bessere Lösung als ich hat er auch keine
 a better solution than I has he also none
 (As for better solutions than mine, he doesn't have one either)
- (7) a. Ein definitiver Beweis ist bis jetzt erst
 a definitive proof is so far only
 einer der dritten Konjektur gefunden worden
 one of-the third conjecture found been
 (As for definitive proofs, so far only one of the third conjecture has been found yet)
 b. Ein Beweis der dritten Konjektur ist
 a proof of-the third conjecture is
 bis jetzt kein definitiver gefunden worden
 so far no definitive found been
 (As for a proof of the third conjecture, so far no definitive one has been found)

It appears, then, that (disregarding the determiner for a moment) the split does occur at the level of N' . It should be noted that, again subject to restrictions having to do with the topic-focus organization of the sentence, adjuncts and complements behave very much alike and display no clear separation of levels with respect to each other. In this sense the internal structure of NPs is similar to that of the structure of the verbal/sentential projection in German. In view of this I will be assuming Muysken's version of X-bar theory (cf. Muysken (1983)), which uses the features [\pm maximal] and [\pm projection] to define a unique head, a unique maximal projection node and recursively iterable intermediate nodes that are not formally distinguishable.

Another point worthy of note that emerges from the above examples is that the restriction against moving X' cannot be saved by having recourse to the DP-hypothesis.² This would have been a viable possibility if adjuncts and complements, which are presumably part of the nominal projection, not of the D-projection, were always in the topic position. But the above examples show they are not.

3.2. Determiner overlap

The most compelling reason for not considering the topic part of the split noun phrase to be a N' but rather a full NP is the fact that, as we saw above, the topic part has its own lexicalized determiner, at least in certain

southern varieties of German.³ It is important to note that the determiner in the topic position is always the simple indefinite one, that is *ein-* for singular count nouns and \emptyset for singular mass nouns and plurals. No other indefinite determiners (negated ones, quantified ones such as *viele* (many), *manche* (some), etc.) may occur nor may any definite articles be used. This makes the split topic different both from the split source, which must be indefinite but is not otherwise restricted, and from the non-split topicalization, which is not subject to any definiteness restriction. The following examples illustrate this.

- (8) a. *Manche Häuser habe ich auch noch kleinere gesehen
 some houses have I also even smaller ones seen
 b. *Wenige Computer gibt es so leistungsfähige
 few computers are there so powerful ones
 für so wenig Geld
 for so little money
 c. *Viele Schallplatten hat er keine
 many records has he none

In each case the corresponding topicalized structure without the split is grammatical.

- (9) a. Manche noch kleinere Häuser habe ich auch gesehen
 some even smaller houses have I also seen
 b. Wenige so leistungsfähige Computer gibt es
 few so powerful computers are there
 für so wenig Geld
 for so little money
 c. Viele Schallplatten hat er nicht
 many records has he not

It will be seen below (section 5.3) that the examples in (8) are also ungrammatical because there is no source for movement: *kleinere manche Häuser*, *so leistungsfähige wenige Computer*, *keine viele Schallplatten*.

3.3. Complete noun phrases in both positions

On the assumption that ST is derived by something like N'-movement, we would not expect the two chunks of the source NP to be able to occur independently as a well-formed NP, or at least if they were this would be an unexplained accident. But the fact is that under ST both the partial NP in the topic position and the remnant NP in the source position *are* complete NPs in that sense, i.e. they can function as independent NPs

in other contexts. As far as the topic position is concerned, this is true for the restrictive variety of German in which determiner overlap is disallowed because this dialect allows ST only for indefinite plural NPs and singular mass NPs, i.e. exactly those that have a zero determiner for independent reasons. It is also true for the more permissive variant which allows determiner overlap because the determiner turns the incomplete NP (generally a singular count NP, which requires an overt determiner) into a complete one.⁴ As far as the source position is concerned, the main fact to note is that German permits the occurrence of elliptic NPs quite freely. Unlike, say, English the missing head (or N') is not replaced by a pronoun such as *one* but is simply absent. The inflection of the determiner is sometimes somewhat different in that a strong form must sometimes be chosen when the determiner is followed by a lexically empty head, comparable to English *my* vs. *mine* etc. The same switch from weak to strong inflection is observed in the source position in the ST construction.⁵ (11) demonstrates this, for example.

- (10) a. *Neuen Wagen (sg.) kann er sich noch keinen leisten
 new car can he refl yet none afford
 b. *Er hat sich neuen Wagen gekauft
 he has refl new car bought

- (11) a. Ein Schwimmbad hat er sich noch keins/*kein gebaut
 A pool has he refl yet none no built
 b. Er hat sich noch *keins/kein Schwimmbad gebaut
 c. Er hat sich noch keins gebaut

3.4. Non-sources

The morphological facts alluded to in the previous section might be construed as indications that even disregarding the obvious problem of determiner overlap, there is, in many cases, no source for the split construction. In (11), for example, (11b) would have to be the source of (11a), yielding the wrong form of the determiner: *kein* instead of *keins*. But as suggested in footnote 5, there is a straightforward ordering solution to that type of problem. Discrepancies of this sort are not limited to morphology, however. Consider the following paradigm:

- (12) a. Unbeschädigte Exemplare habe ich kaum noch welche
undamaged copies have I hardly still any
[*welche* = some]
- b. Hast du welche?
have you any
[*welche* = some]
- c. Hast du *(irgend)welche unbeschädigte(n) Exemplare?
- d. Welche unbeschädigten Exemplare hast du?
which undamaged copies have you
[*welche* = which]

It appears from these facts that the word *welch-* is dependent in its meaning on the syntactic context in which it occurs. It can have the meaning of the existential quantifier, but only when it is part of an elliptic NP. When it is part of an NP with a lexically realized *N'* it has the meaning of *which*, or, if the other meaning is to be preserved, *welch-* must be preceded by *irgend-*. Again, the very same contextual dependency can be observed in the ST construction, as is shown in (12a). Here, too, the discrepancy can only be construed as a problem for a movement account if lexical meanings are required to be constant throughout a derivation. If, on the other hand, we allow certain choices in lexical meaning to be fixed at or after S-structure, these facts remain neutral with respect to the choice between movement and base-generation.

3.5. Movement diagnostics

Among the considerations mentioned above, there is one that stands out as a seemingly insurmountable barrier to any attempt to analyze ST in terms of an actual movement rule, i.e. the application of "Move α " viz. the occurrence of determiner overlap. Why, then, can we not simply conclude that ST must be base-generated? The reason is that the relationship between the topic and source positions in ST exhibits all the properties we would normally attribute to movement. So, if we have to adopt a base-generation analysis, we will have to supplement it with some elaboration of the notion of chain. We will return to this type of approach in section 4.1. First, however, we will review the movement diagnostics that obtain.

3.5.1. Gap

ST is characterized by the fact that there has to be a gap in the source position. Since there is a remnant in the source position, consisting of a determiner and/or an adjective and/or a complement, this gap cannot be a trace of the usual sort, that is it cannot correspond to a full NP.

Furthermore, what is missing inside the remnant NP is precisely the type of gap that is also found in elliptic NPs, as was pointed out above. The gap corresponds to the category *N'*. The theory of empty categories is not optimally elaborated when it comes to non-maximal projections, but it is fair to assume that in the case of simple elliptic NPs the empty category is either PRO (more precisely PRO_{arb}), or pro, depending on one's assumptions as to whether *N'* is or is not governed, case marked etc..⁶ On either assumption, however, it is quite unexpected that the remnant NP *must* be "elliptic" in the case of ST, as is shown in the following examples.

- (13) *Bücher hat er noch keine Romane geschrieben
books has he yet no novels written
- (14) *Einen Wagen hat er sich nicht einmal einen VW
a car has he refl not even a VW
leisten können
afford could

This fact is particularly striking in view of the fact that examples of this type are perfectly grammatical in languages like Japanese⁷ or Chinese.⁸

- (15) Kudamono - wa ringo - o kaimasi - ta
fruit apples bought
(As for fruit, I bought apples)
- (16) Shuiguo, wo zui xihuan xianjiao
fruit I most like banana
(As for fruit, I like bananas most)

In view of the obligatoriness of the gap in ST constructions we have to conclude that the empty category can be an A-bar-bound empty *N'*, essentially an *N'*-trace.

3.5.2. Verb Second: cf. Left Dislocation

The topic position is the first position of the main clause. It is the position with respect to which the finite verb is second after it has undergone the rule of Verb Second. It is generally assumed that Verb Second moves the verb into the complementizer position, more specifically into the position of the head of the complementizer projection (*C*^o). Accordingly, the constituent that is found in the first position is in the position of the specifier of *C*. As in English, this position is typically the target of movement and not a site in which elements are assumed to be base generated. In

this respect, ST (as well as regular topicalization) differs from Left Dislocation. In German, the left dislocated NP is to the left of the C-projection and the resumptive pronoun is more or less like a relative pronoun which is moved into the specifier of C, as shown in (17).

- (17) Den VW, den kann sich ja jeder leisten
 the VW pron can refl everybody afford

On standard accounts, the left dislocated NP is base generated⁹. One way of thinking about topicalization is to say, essentially following Chomsky (1977), that topicalization is derived from left dislocation by the deletion of the relative pronoun in the specifier of C position.¹⁰ But notice that on this assumption the problem of the choice between movement vs. base generation remains largely the same. I will not pursue this issue in any more detail here except to note that the arguments in favor of movement to be given below strongly suggest that ST should be derived by movement of N', not by movement of some intermediary relative pronoun (or empty operator). By extension, there is no reason not to assume that in the case of regular topicalization it is the whole NP that moves.

3.5.3. Agreement

In translating some of the examples above, I have used the English *as for NP* construction. There can be little doubt that this construction is base generated. It is often useful, then, to compare ST with *as for NP*. The latter construction does not require a gap, for example. In this sense it is like topicalization in Japanese and Chinese. Another fact is that *as for NP* does not require number agreement between the topic NP and the source NP, witness (18).

- (18) As for Shakespeare's plays, he hasn't read a single one yet

ST always requires number agreement:¹¹

- (19) a. *Bücher ist erst eins von ihm erschienen
 books has only one by him appeared
 b. *Ein Buch sind schon zwei von ihm erschienen
 a book have already two by him appeared

This fact is not in itself an argument for movement, but all we are interested in at this point is to establish a list of properties that are either consistent with movement or with base generation, properties which the analysis will have to account for. In this case agreement is a property fully consistent with movement and not necessarily inconsistent with base generation. But the latter tack would at least require further elaboration.

The same situation holds in the case of case agreement. Again, full agreement is required between the topic NP and the source NP position.

- (20) Einen/*ein Wagen hat er sich noch keinen gekauft
 a (acc/nom) car has he refl yet none bought

This fact follows immediately if we assume movement. If we assume base generation, a special agreement rule would have to be invoked.

3.5.4. Island phenomena

One of the more straightforward diagnostics for movement is island sensitivity. While testing for island sensitivity in German involves some complications, it is nevertheless quite clear that ST behaves like movement in this respect.

One of the complications is that long movement is not considered to be acceptable in all varieties of German. Specifically, in northern regions of Germany long movement out of truly subordinate clauses is judged ungrammatical.¹² It should be noted, however, that island sensitivity can be observed even in the northern variety, the contrasts there being between bad and worse instead of between good and bad. But since the more 'radical' instances of ST (those involving determiner overlap) seem to be restricted to a number of southern dialects of German, we will ignore this complication below.¹³

Examples (21) and (22) show that long distance dependencies are permitted with ST. (23) constitutes a violation of the wh-island constraint and (24) of the complex NP constraint.

- (21) Unbeschädigte Exemplare glaube ich,
 undamaged copies believe I
 dass ich nur noch zwei auf Vorrat habe
 that I only still two in stock have

- (22) Eine Lösung sagt er hat er eine
 a solution says he has he a
 bessere als ich
 better (one) than I

- (23) *Unbeschädigte Exemplare wollte er wissen,
 undamaged copies wanted he (to) know
 wer noch zwei auf Vorrat hat
 who still two in stock has

- (24) *Eine Lösung kenne ich keinen,
 a solution know I none
 der eine bessere hat als ich
 who a better (one) has than I

3.5.5. Preposition stranding

The basic fact about preposition stranding in German is that it is not permitted.¹⁴ In particular it is not possible to topicalize out of a PP, as shown in (25).

- (25) *Diesen Wagen kannst du dich auf verlassen
 this car can you refl. on rely

Whatever one's account of this fact, it will *a fortiori* predict that ST with the remnant NP in a PP is ungrammatical, on the assumption that ST is like movement. This is indeed borne out:¹⁵

- (26) *Mädchen hat er mit vielen getanzt
 girls has he with many danced
- (27) *Einen Wagen kann man sich auf keinen
 on a car can you refl on none
 so verlassen wie auf diesen
 so rely as on this (one)

3.5.6. ECP effects

There is considerable debate about the question whether German does or does not have any ECP effects.¹⁶ What is clear is that there are instances of subextraction (extraction of a left branch element out of an NP) which exhibit ECP-like behavior (cf. Den Besten (1985)). Roughly speaking, the closer the NP is to the verb (i.e. the further it is to the right), the easier it is to extract from it. Unfortunately, there is another principle which obscures the picture somewhat. This is the fact that there is a strong tendency in German to scramble NPs in such a way that indefinite NPs pile up as far to the right as possible. And since ST is subject to a definiteness restriction, remnant NPs have a tendency to occur on the right quite apart from any ECP-like effects. It does appear to be the case, however, that ST shows effects which are comparable to those produced by subextraction. That is, the sensitivity of the remnant NP to its positioning in the sentence is stronger than one would expect given the normal tendencies under scrambling. The following examples show that ST patterns with subextraction.

- (28) a. ??Ein Experte hat keiner den Schaden geprüft
 an expert has none the damage inspected
 b. Keiner hat den Schaden geprüft
 c. ??*Was hat für ein Mann den Schaden geprüft?
 what has for a man the damage inspected
 (What kind of man inspected the damage?)
- (29) a. ??Einem älteren Mann (dat.) bin ich noch
 an older man have I yet
 keinem begegnet
 none met
 b. Ich bin noch keinem begegnet
 c. ??*Was bist du für einem Mann begegnet?
 what have you for a man met
 (What kind of man did you meet?)

3.5.7. Reconstruction

It is a well known (and ill understood) fact that reconstruction effects are found in a number of constructions which are not normally analyzed in terms of movement. In fact, a number of such cases have precisely given rise to the idea that the theory should provide a separate A-bar-chain-forming algorithm (cf. in particular Cinque (1983) and (1984), as well as Cardinaletti (1986)). On the other hand, movement to A-bar positions always produces reconstruction effects. In this sense it may be useful to point out, as a consideration pertaining to the consistency rather than the cogency of the argument, that ST exhibits reconstruction behavior. The following examples demonstrate this for principles A, B and C of the binding theory respectively.

- (30) [Bücher von einander_i]_j sind uns_i [keine e_j] bekannt
 books by each other are (to) us none known
 (As for books by each other, we don't know of any)
- (31) *[Bücher von ihm_i]_j hat Halle_i [keine e_j] im Schrank
 books by him has Halle none on shelf
- (32) [Bücher von H._i]_j hat *er_i/sein_i Vater [keine e_j] im Schrank
 books by H. has he his father none on shelf

What the above considerations have shown is that ST consistently behaves like a movement construction, despite the fact that the phenomenon of determiner overlap strongly suggests that ST cannot be derived by means of actual movement. In view of this paradox, let us examine in more detail what the options are that the theory provides us with to solve it.

4. TWO HYPOTHESES

4.1. *A-bar chains*

The paradox arrived at above, a construction that has all the diagnostic properties of movement but apparently cannot be derived by movement, is by no means new in its kind. In the domain of A-chains, it is in particular Rizzi (1986) who has presented an argument that chains should be invoked that have properties that are close to but not identical with movement. In the area of A-bar chains, which is also what is at stake in the case of ST, the work by Cinque stands out (cf. Cinque (1983) and (1984)). Also, Koster's work (Koster (1978, 1987)) has been informed by the idea that dependencies should be handled representationally rather than derivationally. Roughly speaking, the arguments are generally based on the necessity to assume the existence of chains that contain non-head links that are not traces. So, for example, resumptive pronouns which behave like A-bar traces will be assumed to constitute the foot of a chain, but since they are lexically realized they cannot arise from movement, given standard assumptions. Hence, either they are the spelling out of a trace in PF, or the construction does not arise via movement but via the construction of an A-bar chain by some chain formation algorithm distinct from movement. Similarly for intermediate links in a chain. The normal manifestation of Left Dislocation in German and Dutch, for example, has a kind of relative pronoun instead of a normal personal pronoun as in English Left Dislocation. This relative pronoun moves into the complementizer position next to the dislocated NP. Crucially, however, this NP displays the full range of movement properties, as argued in Vat (1981). In particular, it is subject to connectedness, requiring its reconstruction on standard accounts, meaning that it has to be considered part of some chain. A movement analysis is only available if we assume head raising à la Brame (1968) or Vergnaud (1985). The alternative, again, is to assume an independent chain formation algorithm. Against this background, let us examine the possibilities for a solution to the paradox in terms of an A-bar chain formation algorithm.¹⁷

The essential requirement that chains would have to be subject to can be expressed either as (33a) or as (33b).¹⁸

- (33) a. The foot of a chain must be an NP (or a DP) that contains
 [e]_{N'}
 b. The foot of a chain must be [e]_{N'}

In the first case, the containing NP is the foot, which has the advantage of preserving the idea of categorial identity among the various links of

a chain. The original requirement that the foot be a trace is replaced by the requirement that the foot contain a trace-like element in the form of an empty N' which would be, presumably, coindexed with the NP in question for independent reasons. In the second case that empty N' itself is considered the foot of the chain. Categorial identity is then abandoned, at least as far as the bar level is concerned, and depending on the particular theory one adopts complications arise in the formulation of the bounding theory since the lowest two links of the chain cross the NP boundary which may, depending on its context, be a barrier.

The DP hypothesis adds spice to this proposal. This is so because proponents of the DP hypothesis (cf. footnote 2) have argued that pronouns should be considered to be the head of the D-projection, making the pronoun more like a determiner than like a noun, a proposal due originally to Postal (1966). In this manner the case of resumptive pronouns and the case of ST outlined above could be accounted for in a unified manner. More specifically, it might be assumed that resumptive pronouns have essentially the structure

[_{DP} [_D *pronoun*] [_{Nmax} e]].

Despite this apparent advantage, I will argue first that an analysis in terms of real movement is actually possible (4.2) and second that it is in fact superior (5).

4.2. *Regeneration*

The core of my alternative proposal is that X-bar theory is fully operative at S-structure. By this I mean that the X-bar module evaluates S-structures and, in the case of a clash, either filters them out or causes them to be restructured so as to be in line with its requirements. In particular, I will assume, unlike Chomsky (1986), that not only heads and maximal projection nodes may undergo movement, but that any node, including X', is eligible for movement. What makes X'-movement rare is not a direct restriction on "Move α " but the fact that X-bar theory disallows S-structures containing an X' which is not dominated by its maximal projection node. In many instances that is all that has to be said. In particular cases, however, the language may permit the regeneration of the missing structure and in some instances even the partial relexicalization of the regenerated structures. Regeneration will "grow back" on an X' its maximal projection node XP and, to the extent that it is an obligatory constituent, the specifier dominated by that XP. In the case of a moved N', the NP-node will grow back on as well as the determiner node. Relexicalization is subject to a strict recoverability requirement: only words that are fully determined by the features of the head of the moved phrase may be relexicalized.

Consider in more detail the case of N'-movement in German. This

movement results in the presence of an *N'* in the specifier of the C-projection at S-structure. X-bar theory rules this out, but regeneration turns that *N'* into a full-fledged NP including a determiner. The relevant morpho-syntactic features, which are for the most part inherent features of the head noun, are then used to determine the lexical form of the determiner. In particular, it is the features [α count, β gender, γ number, δ case] which play a crucial role here. The first three of these are easily seen to be inherent features of the lexical head noun. In the case of the case feature(s) this is perhaps less obvious in that case is largely contextually determined. Nevertheless, there is no question that the noun is inflected for case and so must be assumed to carry the appropriate feature for case at some stage of the derivation anyway. At this point I will simply assume that case features are on a par with the features for gender, number and count/mass.

These features differ crucially from the other properties generally expressed by means of the choice of the determiner such as operator status, type of quantification etc. These are typically properties that are *only* expressed on the determiner and not, perhaps never, in the inflectional makeup of the head noun. Minimally, however, this is true for German: nouns are not inflected for any distinctions such as definite vs. indefinite, universal vs. existential, negative vs. positive, question vs. non-question, etc. How do we expect relexicalization to operate, then? The natural options appear to be (a) don't relexicalize at all if part of the information is missing, i.e. the quantificational status of the determiner, or (b) pick the unmarked form of the determiner and relexicalize it in terms of the recoverable features. Both strategies seem to be used in different varieties of German, cf. section 6. The crucial assumption under strategy (b), then, is that the simple indefinite article is the unmarked form of the nominal determiner, an assumption that strikes me as a quite natural one which is in line with recent work on the semantics and syntax of indefinites.¹⁹

5. ARGUMENTS IN FAVOR OF REGENERATION

5.1. General considerations

There is a fairly straightforward argument from expressive power that applies to extended A-bar chains of the type required for constructions such as ST. Basically, any theory of A-bar chains has to allow for what I have been referring to as "real movement" i.e. chains which represent a true history of movement and nothing else. Any extension of this minimal theory of chains leads to increased power. This argument is balanced, of course, by the fact that the theory of regeneration sketched above also

constitutes an increase in the expressive power of the theory. The comparison of the two in terms of power is not easy, therefore.

In a general way there is something odd about the way chains are discussed and used in the literature. A chain is simply a syntactic object consisting of various coindexed elements that entertain certain structural relationships with each other. But regardless of the nature of the links in the chain, these chains are treated as if they originated from movement. In other words other properties of chains never play a role in any syntactic principle. For example, no principle is sensitive to the number of links in a chain. This in itself is a good reason for being suspicious of chains (cf. Chomsky (forthcoming)).²⁰

There are, however, a number of more specific considerations pertaining to the analysis of ST that shed additional light on the issue. These considerations we turn to in the next two sections.

5.2. The distribution of lexical heads

If one looks at topicalization constructions across languages, it appears that in many instances both the topic position and the source position contain a lexical head. This is true, for example, in the English *as for NP* construction:

- (34) a. As for John, I don't like his brother
b. As for desserts, Mary only eats ice cream

Similarly, as mentioned earlier, in the Japanese *wa* construction, both heads can be filled, as in (35).²¹

- (35) Hon - wa [shoosetu sika yoma nai hito] wa baka da
books novels only read NEG person stupid is
(As for books, a person who reads only novels is)

As pointed out above, this is not the case in the German ST construction (cf. 3.5.1). As a further example, consider (36).

- (36) a. *Bücher habe ich zwei Exemplare verkauft
books have I two copies sold
b. *Ich habe zwei Exemplare Bücher verkauft

Interestingly, there is one apparent class of exceptions to this generalization. These cases involve a type of partitive relation between a quantifying noun and another noun.

- (37) Wein habe ich nur zwei Flaschen dabei
 wine have I only two bottles with me

Here it seems as if we have a head noun (*Wein*) in topic and another head noun (*Flaschen*) in the source position. But notice that this is precisely a case in which both nouns *can* cooccur in the non-split NP:

- (38) Ich habe nur zwei Flaschen Wein dabei

This partitive construction in German is interesting in its own right because it raises the question as to which noun is the head. Roughly speaking, the first, quantifying noun is syntactically the head in that it determines number agreement with the tensed verb:

- (39) Zwei Flaschen (pl.) Wein (sg.) stehen/*steht
 two bottles wine stand stands
 auf dem Tisch
 on the table

Semantically, however, there is a sense in which the second noun is the head and the first the determiner. This is so because the second noun cannot be quantified in any way other than by the first noun:

- (40) a. *Er hat mir eine Kiste 25 Zigarren geschickt
 he has me a box 25 cigars sent
 b. Er hat mir eine Kiste kubanische Zigarren geschickt
 he has me a box cuban cigars sent
 c. *Er hat mir eine Kiste zahlreiche Zigarren geschickt
 he has me a box numerous cigars sent

To the extent that the first noun is really syntactically the head of the whole NP, the question arises as to what the status of the second NP (or N') is. In particular, how does that NP get its case. It turns out that it can get its case by means of case agreement from the syntactic head, as shown in (41).

- (41) Er hat mir 24 Flaschen (acc.) guten (acc.) Wein geschickt
 he has me 24 bottles good wine sent

What seems to be the case, then, in examples like (37) is that the partitive complement is extracted from a complex NP of this type and moved into the topic position. This fact raises interesting questions in their own right with respect to the bounding theory, but these questions go beyond the

scope of the present article. What is important here is that examples like (36) do not constitute counterevidence to the claim that the head of the source position in ST must be empty.

Another question that arises in connection with the distribution of heads in ST is why the gap should have to be in the source position rather than in the topic position. For example

- (42) *Amerikanische habe ich bis jetzt nur Männer gekannt
 American have I so far only men known

- (43) Amerikanische Frauen habe ich bis jetzt keine gekannt
 American women have I so far none known

Note again that there is no general reason relating to the semantics or pragmatics of topicalization that can account for this asymmetry. English equivalents with the *as for NP* construction are grammatical.

- (44) As for the American ones, I prefer the typical huge station wagons or limousines

Note, incidentally, that it is not impossible to have an NP with an empty head in the topic position in German, *as long as the NP in the source position has an empty head*. This is so because the NP in the topic position can be an elliptic NP for reasons that have nothing to do with movement.

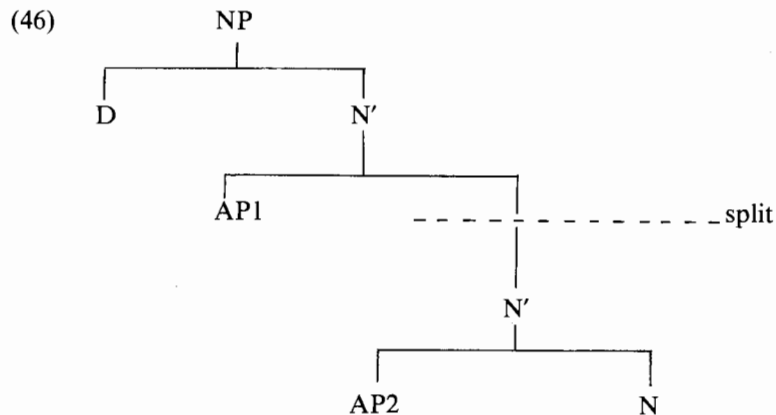
- (45) Einen grösseren kann ich mir noch keinen leisten
 a bigger can I me yet none afford
 (As for a bigger one, I cannot afford one yet)

Real movement predicts this distribution quite straightforwardly, but it is far from clear how the extended chain approach can account for the facts in a non-stipulative way.

5.3. Preservation of ordering restrictions

Another striking prediction that the movement theory makes is that when strict ordering of adjuncts or complements obtains within an NP, the split will, if it occurs between the two elements in question, be such that the element nearest to the head appears in the topic position. Take the case of adjuncts.

Diagram (46) shows why this is predicted.



The following examples show that this prediction is entirely borne out.

- (47) a. Ein Amerikanisches Auto kann ich mir kein neues leisten
 an American car can I refl no new afford
 b. *Ein neues Auto kann ich mir kein Amerikanisches leisten

Under the movement theory, the contrast can be immediately reduced to the principles (largely unknown, as far as I am aware) that account for the ordering restriction on the adjectives in the non-split NP, shown in (48).

- (48) a. Ein neues Amerikanisches Auto
 b. *Ein Amerikanisches neues Auto

Similarly for complements:

- (49) a. Eine Verurteilung dieses Tatbestandes wäre
 a condemnation of this state of affairs would-have
 mir eine durch den Präsidenten lieber gewesen
 me one by the president dearer been
 (I would have preferred a condemnation of this state of affairs
 by the president)
 b. *Eine Verurteilung durch den Präsidenten wäre mir eine dieses
 Tatbestandes lieber gewesen
- (50) a. Eine Verurteilung dieses Tatbestandes durch den Präsidenten
 b. *Eine Verurteilung durch den Präsidenten dieses Tatbestandes

Note again that the *as for NP* construction does not impose such ordering restrictions. Take the equivalent of (47a) and (47b).

- (51) a. As for American cars, I cannot afford a new one yet
 b. As for new cars, I cannot afford an American one yet

Finally, the issue of determiner overlap and of the interaction of determiners with other modifiers such as adjectives can also be viewed as a case of non-preservation of ordering restrictions. The examples given in section 3.2 above, for example can be taken to be ungrammatical because there is no well-formed source under a movement approach.

How would a theory based on chains approach this type of problem? In such a theory, presumably, there must be a level at which the various parts of a noun phrase that are scattered over the various links of a chain are assembled, for semantic reasons at least. What the above data suggest, then, is that this process of reassembling the NP results in a structure which is in all respects equivalent to the structure imposed on non-split NPs by X-bar theory and whatever other principles impose ordering restrictions on such NPs. But notice now that if this is indeed the correct formulation of this process of reassembling the NP under the chain theory, then this process is identical to a version of reconstruction which is the exact equivalent of movement except for the direction of the mapping. But then, the problem of the determiner overlap will reappear in the chain theory as well.

The reassembling of the NP under the chain theory could in fact be taken to be a process of unification. More specifically, NPs (and, in fact, all XPs) could be assumed to be essentially represented as quadruples or supersets such that each member of the quadruple or superset is a set of elements making up the NP: a set of heads, a set of determiners, a set of complements, and a set of adjuncts. X-bar theory would then be responsible for arranging the members of these sets in well-formed syntactic phrases. Among other things, X-bar theory would impose the condition that the set of determiners and the set of heads must contain exactly one member. Unification of two NPs would in general lead to violations of that condition. But if the head of one of the two NPs is empty, no violation arises. Similarly, if one determiner is (semantically) entirely contained in another one, we could say that it disappears under unification. This would account for part of the determiner overlap problem. But it would not account in any way for the fact that the only type of determiner that shows up in the topic position is the simple indefinite determiner. And the fact would remain that the chain theory would require a form of reconstruction which is a pure notational variant of the movement theory. Nevertheless, such an inverted D-structure model may well be preferable for other reasons; see Williams (1986) for some general proposals in this direction.²²

6. VARIATION

At this point it is worthwhile to consider the main types of ST that seem to occur in the areas where German and its dialects are spoken. In doing so, I will try to establish the limitations within which the phenomenon of regeneration is allowed to operate. Recall that not all varieties of German allow determiner overlap. Does this mean that those varieties that do not lack the option of regeneration? But notice that these varieties still have the option of moving part of an NP into the specifier of C position, leaving behind a remnant. So perhaps this dialect does have N'-movement and regeneration of a more limited kind. More particularly, the spelling out of the regenerated determiner might be subject to some restriction. This spelling out of the regenerated structure is what I referred to in section 4. as relexicalization.

In this section I will pursue the latter tack, which seems preferable for the following reasons. First, we have already concluded that N'-movement has to be allowed for the derivation of ST structures in German. This means that the constraint limiting movement to X° and X^{\max} must be abandoned. But this in turn means that we lose the generalization that movement of non-maximal projections is quite rare among the languages of the world. The natural way to express this generalization under the regeneration model is to say that 'move α ' is unrestricted in itself, but that whenever a non-maximal category has been moved the resulting S-structure is filtered out unless a marked option of regeneration has applied to turn the non-maximal category into a maximal one. The filter can be expressed in the following way:

- (52) $*[\alpha N, \beta V, -\max]$, unless dominated by $[\alpha N, \beta V, -\max]$ or by $[\alpha N, \beta V, +\max]$

The second reason this version of regeneration theory is to be preferred is that there is a certain amount of interesting variation that concerns relexicalization. But since relexicalization presupposes regeneration, this again means that we have to assume that regeneration does apply whenever the result of N'-movement, in whatever form, is grammatical.

Let us consider the main variants in more detail. Consider (53).

- (53) a. Bücher hat er keine mehr
books has he none more (= any more)
b. Ein Buch hat er noch keins
a book has he yet none
c. Buch hat er noch keins
book has he yet none

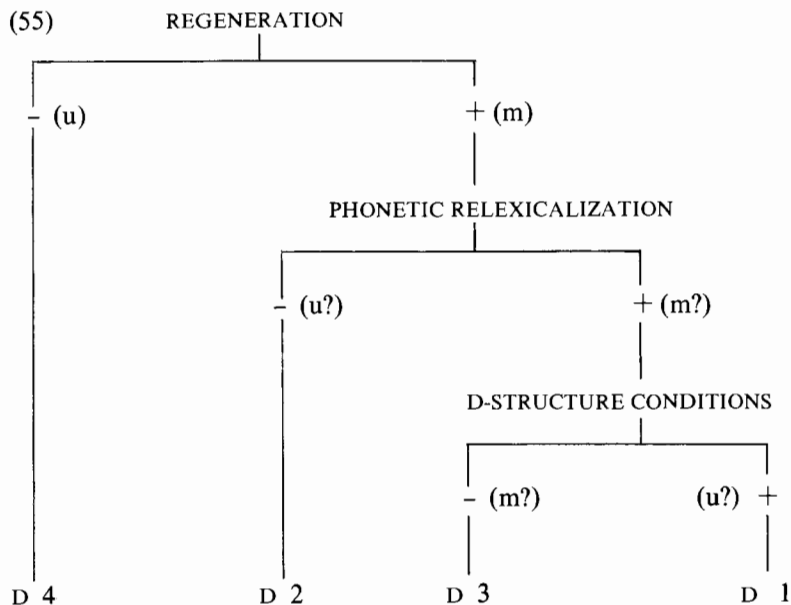
Languages like Dutch and Modern English have none of these possibilities. Archaic English and northern varieties of German have type (53a) only. Some dialects in southern regions of Germany as well as dialects in Switzerland and Austria in addition have the possibility of determiner overlap as in (53b). Finally, some speakers in addition allow cases with bare singulars as in (53c).²³ These bare singular cases are peculiar in that bare singular NPs cannot occur in any ordinary NP position but are limited to the specifier of C position when a remnant NP is present in the source position.

We can sum up the main variants as follows:

- (54) a. Dialect 1: (53a/b): Southern German varieties, Swiss German
b. Dialect 2: (53a) only: Northern German varieties, archaic English
c. Dialect 3: (53a/b/c): certain southern varieties
d. Dialect 4: none of the above possibilities: Dutch, English

What seems to be the appropriate characterization of these types is to say that dialect 4 lacks the possibility of regeneration altogether. Dialects 1, 2 and 3 do have regeneration but differ in more subtle ways. Dialect 1 relexicalizes the determiner as if it were a D-structure determiner. That is why in this dialect the fronted part of the NP is like an independently generated NP. Dialect 2 lacks the possibility of relexicalizing, but the resulting structure is nevertheless subject to the same conditions as D-structure determiners. In other words, a non-relexicalized determiner is acceptable only in those contexts in which a zero determiner is permitted.²⁴ Finally, dialect 3 has relexicalization in the same way that dialect 1 does, but in addition it allows for an empty determiner in case the noun is a singular count noun. This could either be handled by saying that relexicalization is optional and that when it does not apply the output is not subjected to the D-structure conditions on lexicalizing determiners, or by saying that the rules for S-structure lexicalization in this dialect are slightly different from those that apply at D-structure. In particular, the rule would say that at S-structure singular nouns can take a zero determiner, whether they be [+count] or [-count]. Neither of these alternatives, needless to say, is terribly elegant, but then, this whole account does not pretend to be more than a rough description. More work on regeneration on the one hand and on the lexicalization of determiners on the other will be required before a more explanatory account can be envisaged.

Choosing more or less at random among the above options, we can graphically represent the main divisions among the dialects as follows.



In view of the crucial role that S-structure lexicalization plays in this account, one might ask whether all lexicalization could not be relegated to S-structure. This is, in fact, a theoretical possibility that has been available since the introduction of trace theory and which has been explored in Den Besten (1976) and Otero (1976), among others. But there are several reasons why this possibility is not available in the framework sketched here. In the first place, the facts concerning the relative order of adjuncts (cf. section 5.3) cannot be handled if the adjectives are not inserted at D-structure and subjected to whatever principles determine these ordering restrictions. Clearly such principles have to refer to the lexical content of the adjectives in question.²⁵ In the second place, the variation among various dialects of German strongly suggests that there are two levels at which lexicalization applies, since the conditions to which the distribution of zero determiners is subjected can vary, depending on whether we have a D-structure context or a derived context (that is, a regenerated NP in topic position).

A proposal which is closer to the one presented here is found in Emonds (1985). Emonds proposes that closed class lexical items are sometimes inserted at S-structure. More precisely, contextual restrictions on the insertion of grammatical formatives may sometimes be met only after certain transformations have applied. In this sense, the two proposals are complementary: in the case of split topicalization no context is involved beyond the purely local (i.e. recoverable) presence within the same projection of the relevant morpho-syntactic features. To the extent that determiners have

to satisfy contextual restrictions outside the NP they are inserted into we would expect these restrictions to be relevant in the argument position not after topicalization. To see this difference, consider what would have to be the assumptions if we decided to adopt S-structure lexicalization instead of D-structure lexicalization plus S-structure relexicalization. We would then have to say that the choice among available determiners is free, modulo whatever contextual restrictions apply, when they are inserted into an NP in an A-position, but that only the unmarked determiner is available when the NP is in an A-bar-position. In other words, on this view it becomes somewhat mysterious why recoverability seems to play a role for insertion in a moved NP. Subject to this reservation, however, Emonds' proposal is very close in spirit to the one presented here, precisely because the range of categories allowing surface lexicalization in any form is restricted to grammatical formatives on both approaches. Future research will have to determine to what extent the two proposals can be made fully compatible with each other.

7. REGENERATION IN THE VERBAL DOMAIN

If the above reasoning is on the right track, then we would expect examples of X'-movement and of regeneration in other languages and for categories other than NP. A full exploration of such an extension is, of course, beyond the scope of the present essay. I will therefore limit myself to a few tentative observations from the syntax of VPs that may be relevant to the issue.

Observe, first, that German, as well as the other Continental West Germanic languages, has the possibility of topicalizing parts of a VP, parts that arguably have the status of V'. While even the facts are still unclear in many respects,²⁶ examples like (56) show very clearly that the phenomenon does exist.

- (56) Zur Post gebracht hat er den Brief noch nicht
 to post brought has he the letter yet not
 (He hasn't taken the letter to the post office yet)

If the direct object stays behind and the directional PP moves along with the verb,²⁷ then presumably what is moved is V'. This conclusion is not entirely without problems, however, because it has been argued that it is the VP as a whole which is moved after some of its constituents have been scrambled out of it by adjunction to VP or to I'.²⁸ The problem with such an analysis is, however, that it rests on the assumption that the VP is the exclusive domain of strictly subcategorized constituents, and adjuncts being base generated outside the VP. But note that it is not at all impossible to have a fronted verb accompanied by true adverbs.

- (57) Noch später zur Probe gekommen ist auch
 even later to-the rehearsal come is even
 der Hans nur selten
 Hans only seldom
 (Even Hans only rarely came to the rehearsal even later)
- (58) Länger als 24 Stunden festhalten kann die Polizei
 longer than 24 hours hold can the police
 nicht einmal offensichtlich gefährliche Kriminelle
 not even obviously dangerous criminals
 (For longer than 24 hours the police cannot even keep obviously
 dangerous criminals in custody)

Observe that in (58) the direct object remains behind.

There is more evidence to the effect that scrambling cannot be the result of leftward adjunction to *I'*. The evidence comes from the fact that NPs that occur to the left of some adjunct (and therefore would be assumed to have undergone adjunction under that theory) do not produce any Weak Crossover effects. Consider (59).

- (59) Wir haben den Peter_i während seines_i Aufenthalts
 we have Peter during his stay
 nur dreimal ([e]_i) gesehen
 only three times seen

In fact, the process of ST itself provides interesting evidence against scrambling by movement. Note, in fact, that split NPs as found under ST cannot occur within the so called "middle field" (Mittelfeld), the domain of scrambling in German. This is shown in (60).²⁹

- (60) *Er hat einen Wagen sich noch nie einen leisten können
 he has a car refl yet never one afford could

In this respect ST is crucially different from quantifier float, witness (61).³⁰

- (61) Er hat die Zigarren gestern alle vier geraucht
 he has the cigars yesterday all four smoked

Finally, it is not clear that adjunction should be allowed to be an elementary operation for Move α in linguistic theory, as argued in Van Riemsdijk (1986).

If we are correct, then, in assuming that *V'* can undergo topicalization in German, the conclusion reached above, namely that *X'*-movement must be permitted by the theory receives independent support. At the same time, however, we are immediately faced with the question how the output of movement can be saved from the filter (52). To be consistent with the framework presented here, I will assume that regeneration applies to *V'* as well as to *N'*. I further assume *I* (or *INFL*, or *AUX*) to be the specifier of *V*. More precisely, *I* is to *V* what *Det* is to *N*.³¹ The next question concerns relexicalization of the regenerated structure, in particular of the regenerated *I*. To my knowledge, there is no evidence for any kind of relexicalization of *I* in a fronted *V'* in any variant of German. That is, with respect to *V'*-fronting German consistently has the properties that Dialect 2 has for ST.

In fact, one might ask whether relexicalization ever occurs in the verbal domain. A priori there is reason to expect the answer to be negative, since the features usually realized on or by *I* are generally not part of the inherent semantic make-up of a verb. Features like tense and aspect, person, number and whatever else verbs inflect for are typically non-inherent. In this they contrast with features like count/mass and gender in nouns. On the other hand, typically inherent features of verbs like stativity do not seem to determine the inflectional properties of *I* very often, as far as I am aware. If it is correct to say that the features determining verbal inflection are non-inherent, then recoverability automatically rules out relexicalization of regenerated structures in the verbal domain.

While this is the conclusion that I will tentatively stick with, it must be pointed out that there are two pieces of evidence that may point in the direction of something like relexicalization with VPs.

First, various Mainland Scandinavian languages have inflected fronted VPs (or *V*'s).³² Consider the following examples from Norwegian.³³

- (62) a. Snakker Italiensk gjør hun ofte
 talks Italian does she often
 b. Skrev brev gjorde hun ofte
 wrote letters did she often
 c. Skrevet brev har hun ofte gjort
 written letters has she often done
 d. *Har skrevet brev har hun ofte gjort
 has written letters has she often done
 e. *Skal skrive brev skal hun nok gjøre
 will write letters will she sure do

Apparently, the synthetic tenses and the participle form of the verb allow doubling of inflection, but the analytic tenses do not. If the auxiliary verbs

(*har* and *skal* in (62d) and (62e) respectively) are in I, then this is unexpected on the assumption that this is a genuine instance of regeneration and relexicalization. But there are more reasons to doubt that assumption. Note, first, that while *har* and *skal* are more or less plausible candidates for the status of AUX (in I), the verb which remains stranded, *gjøre*, is not. In fact, there is no evidence to suggest that *gjøre* is in any way different from normal main verbs. Furthermore, the construction is ungrammatical when the more plausible auxiliaries are stranded:

- (63) a. *Har skrevet brev har hun ofte
b. *Skal skrive brev skal hun nok

Moreover, there is no reason to assume, in Scandinavian, that it is V' rather than VP that is moved. Observe, for example, that the direct object in (63) is obligatorily fronted and cannot remain behind as the object of *gjøre*.³⁴

- (64) a. *Snakker gjør hun ofte Italiensk
b. *Skrev gjorde hun ofte brev
c. *Skrevet har hun ofte gjort brev

It appears to be safe, then, to conclude that the inflected fronted VP in Scandinavian, while interesting in its own right, is not a genuine instance of regeneration in the verbal domain.

A second suggestive datum comes from English. As is well known, English has a rule of VP fronting. In the standard case the fronted VP is always infinitival, the inflected auxiliary staying behind, as in (65).

- (65) John said that he would win the race, and win the race he did

Interestingly, however, there are speakers of English, who can marginally accept fronted VPs with an inflected verb. Thus, alongside (66) these speakers would have (67).

- (66) John said that he would win the race, and win the race he did

- (67) ??John said that he would win the race, and won the race he did

Furthermore, it appears that even for those who find cases like (67) essentially ungrammatical, there is a subtle contrast between regular and irregular inflection, as illustrated in the following paradigm.

- (68) John said that he would (a) go home
(b) eat the cake
(c) stay longer
(d) count the money
and (a) go / ??went home he did
(b) eat / ??ate the cake he did
(c) stay / *stayed longer he did
(d) count / *counted the money he did

Given that irregular inflection must be part of the inherent properties of lexical items, this is very suggestive evidence that some form of regeneration and relexicalization is at work here. Unfortunately, however, the data are too marginal to base any kind of conclusion on.

8. CONCLUSIONS

The main conclusions I have reached in this study can be summarized as follows.

- A. X-bar theory is fully active at S-structure in that
(a) it filters out incomplete projections, and
(b) permits the (re-)generation of structure. In other words, X-bar theory is like the theta criterion in being a filter on several levels of representation. Ideally, X-bar theory could be subsumed under the projection principle.
- B. Movement (i.e. "Move α ") is not inherently restricted, e.g. to moving only heads or maximal projection nodes; rather the effect of such restrictions follows largely from (52), to the extent that regeneration cannot serve to avoid the filter.
- C. Movement theory is to be preferred to purely representational theories in terms of A-bar chains. More specifically, evidence was presented in favor of a unidirectional mapping from D-structure to S-structure (or, alternatively, from S-structure to reconstructed structure, cf. section 5.3).

NOTES

1. For comments I am grateful to Emmon Bach, Dan Brink, Noam Chomsky, Joseph Emonds, Günther Grewendorf, Jane Grimshaw, Ken Hale, Hubert Haider, Riny Huybregts, Angelika Kratzer, Elisabeth Löbl, Barbara Partee, David Pesetsky, Tim Stowell, Craig Thiersch, Jean Roger Vergnaud, Amy Weinberg, Ken Wexler, and Edwin Williams.

2. The DP hypothesis says that the determiner is a functional head: functional in the sense

that it is dependent in its occurrence on the presence of a nominal projection, head in the sense that it heads a projection of its own. Thus, what used to be called a noun phrase is now a DP headed by Det having N^{\max} as its complement. For details, see Brame (1981, 1982), Abney (1985), Thiersch (1985), Fukui and Speas (1986), Fukui (1986) as well as ongoing work by Vergnaud.

3. For more detailed discussion of the variation among German dialects in this respect, see section 6.

4. We will have occasion, in section 6, to qualify this statement somewhat, because there is one variety of German that allows topics with singular count nouns but without an overt article, i.e. a type of N-projection that cannot occur independently. This fact detracts from the force of this line of argumentation in favor of a non-movement analysis.

5. I will not enter into the details of the morphology of the determiner here. What will turn out to be important under the proposal I present below is that the principles determining the form of the determiner, either by assignment or by checking, apply at or after S-structure, i.e. after the split has occurred.

6. Cf. Belletti & Rizzi (1981) and Myers (1984).

7. Thanks to Mari Takahashi for supplying the example.

8. The Chinese example is from Huang (1982), example (116), p. 86.

9. See Cardinaletti (1986) for discussion, but cf. Vat (1981) for an alternative view.

10. Alternatively, if one wishes to conform to recent trends, one might assume that in the case of topicalization, the resumptive element is not a relative pronoun but an empty operator. The choice between the two alternatives does not affect the point made in the text.

11. Elisabeth Löbl points out that there are cases like

- (i) Autos hat er nur eins
cars has he only one

I find such cases rather marginal. What is interesting, however, is that in general remnants in non-subject positions yield better results. This is presumably because in subject position the non-agreement shows not only on the subject itself, but also on the finite verb. Alongside (i), which for me has at least a “?”, (ii) is significantly less felicitous:

- (ii) ?*Autos hat erst eins diese Geschwindigkeit erreicht
cars has only one this speed reached

12. By truly subordinate clauses I mean clauses introduced by a lexical complementizer (*dass* ‘that’) and with the finite verb in final position. There is a second way of embedding complement clauses in which the complementizer is absent and the verb undergoes Verb Second. In this type of case long movement is permitted in all varieties of German. Note that sentence (22) shows this type of embedding with an instance of ST.

13. I have not been able to establish with a sufficient degree of certainty whether there is a real correlation between the acceptability of long movement and the acceptability of determiner overlap. If such a correlation exists, it will be an interesting problem for the theory to account for it. I do not have any ideas at this point about what such an account might look like.

14. I ignore here the fact that various dialects permit stranding of the preposition by extraction of *da* (‘there’ as in *therewith*) to various degrees. These cases are irrelevant to the point made in the text.

15. It should be noted that these cases are also bad when the preposition is present in both positions:

- (i) *Mit Mädchen hat er mit vielen getanzt

16. See, among many others, Haider (1981) and Den Besten (1985).

17. It should be noted that Cardinaletti (1986) argues for a base-generation-cum-chains analysis for regular, non-split topicalization in German. Her arguments, which I will not discuss in detail here, are heavily dependent on her contention that topicalization should be handled along the lines of Chomsky (1977), i.e. with the topic constituent base-generated in a special topic position and some operator element moving into the adjacent COMP (more precisely specifier of CP) position. This element would be a d-pronoun in the case of left dislocation and a 0-operator in the case of topicalization. Note, however, that regardless whether this premise is correct, it is far from obvious that it carries over to ST. In particular, it is telling that there is no left dislocation variant of ST. For example, (i) is entirely excluded.

- (i) *Einen neuen Wagen, den kann er sich keinen neuen leisten
a new car that can he refl no new afford

More generally, an extension of Cardinaletti’s analysis would imply that there are N' -operators, an assumption that strikes me as much more dubious than, for example, the assumption that the specifier of CP is not reserved for operator elements but can also receive topicalized NPs.

18. For a more complete discussion of the theory of A-bar-chains, cf. Barss (1987).

19. Cf. Reuland & Ter Meulen (eds.) (1986) and references cited there.

20. Also cited in Chomsky’s text is an argument against Rizzi’s (1986) argument for chains in addition to movement. This argument is based on material in Borer & Grodzinsky (1986), but since it bears on the existence of A-chains I will not pursue the matter here.

21. Note, in passing, that this example also shows that the Japanese topic construction, unlike ST, violates the Complex NP Constraint. Thanks to Mari Takahashi and Yutaka Ohno for supplying the subject and to Masaru Honda for providing the predicate of the example.

22. In ongoing research, Vergnaud is also pursuing an approach along these lines. In his perspective, the phrase structure of a sentence consists of a set of X' -projections that may contain open (i.e. empty) positions that act like slots into which other members of the set (i.e. other simplex X' -trees) may fit. As far as the result obtained in the present article is concerned, this would mean in Vergnaud’s terms that the set may contain X' -trees with an open N' -slot. But somehow, the result of the (virtual) substitution of some N' -tree in the set for an empty N' -slot in some other member of the set must be subject to the same well-formedness restrictions that regular N^{\max} -projections are subject to.

23. I have not, so far, been able to determine whether this variety can be geographically defined.

24. Another way of putting this is to say that this dialect does have a limited kind of relexicalization, viz. relexicalization without phonetic effect. The exact choices to be made here are largely underdetermined by the current state of the theory, which is why I do not pursue them any further here.

25. Note that the situation might be different if the notational variant discussed at the end of section 5.3 is adopted. In such an ‘inverted D-structure model,’ lexicalization could be at S-structure or at the level derived after reconstruction and unification, followed by the principles governing adjective order.

26. See Den Besten & Webelhuth (1987) for one recent discussion.

27. Recall that the finite verb (here: *hat*) has been moved out of the VP to the complementizer position by the rule of Verb Second.

28. Cf. Den Besten & Webelhuth (1987).

29. This fact was first pointed out to me by Hubert Haider. Haider also notes what may

amount to a serious problem for any analysis of ST considered here or imaginable, viz. that ST and V'-topicalization may combine to produce sentences like (i):

- (i) Einen Wagen gekauft hat er sich noch keinen
 a car bought has he refl yet none

Observe that a scrambling-prior-to-V'-topicalization would have to assume leftward adjunction of *keinen* followed by regeneration or something of that sort. On the other hand, sentences like (i) seem marginal at best and are rejected by most speakers of dialect 1 that I have consulted.

30. This difference is observed in Bayer (1987). The author attributes the difference to a difference in the nature of the chains in question. ST involves A-bar-chains while QF involves A-chains. In this way, Bayer suggests that a unified treatment of the two phenomena is nevertheless possible. I will not pursue this possibility any further here.

31. See Emonds (1985) for some arguments to this effect. Note that in Emonds' system, unlike the one adopted here, the subject NP is dominated by some projection of V, V3 to be precise. This difference is immaterial to the issue at stake, however. Cf. also Van Riemsdijk (to appear).

32. See Holmberg (1987) and particularly Anward (1987) for more extensive discussion and more facts.

33. These examples were provided by Tarald Taraldsen.

34. Anward (1987) mentions one case in which *göra* (the Swedish counterpart of the Norwegian *gjøre*) seems to have an object:

- (iii) Sjung, gör inte det
 sing do not that
 (Don't sing!)

Note, however, that *det* is more like a sentence anaphor here, a fact which, if anything, reinforces the conclusion that *göra* is a main verb.

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