

Introductory remarks to 'On the Interaction of Root Transformations and Lexical Deletive Rules'.

The paper under consideration was written in 1977 and is still waiting for a definitive (partial) incorporation in a larger publication. Since this paper contains ideas which probably will not be dealt with elsewhere and since once in a while references to it appear in the literature, I am grateful for the opportunity to publish it in GAGL.

As for the content, about two third of the paper as well as the Appendix deals with the description of root phenomena in several languages (Dutch, German, French, and English), whereas only the last third deals with what is promised in the title. The paper is reproduced in its original form, except for the bibliography which has been brought up to date.

It will not come as a surprise that my views have changed a little since 1977. Thus, I do not think that my arguments against deriving Dutch Topicalization by means of WH-Movement were that strong and I now believe that Koster (1978a and b) was on the right track in applying Chomsky's WH-analysis to Dutch Topicalization. Furthermore, I now believe that my opposition against a substitution analysis of root transformations was partly mistaken. Root transformations, as defined in Emonds (1976), possess the awkward property of being defined partly in terms of the formal operations they perform - as are structure-preserving transformations and local rules - and partly in terms of ordering, in that they have to apply at the final cycle. On the other hand, root transformations share with the cyclic rule of WH-Movement the property of being Complementizer Attraction Rules. Therefore, it seems reasonable to assume that the operations performed by root transformations (and WH-Movement) do not differ from those performed by structure-preserving and local rules, so that the definition of root transformations can be restricted to the ordering restriction of the original definition.

In 1978 and 1979 a revised hypothesis concerning root-phenomena based upon the above considerations was discussed in some talks I gave (i.a. at the 1978 GLOW Colloquium in Amsterdam) and a brief exposition was taken up in two papers on Afrikaans (Den Besten 1978 and 1981). According to this new hypothesis all Complementizer Attraction Transformations are structure-preserving rules of the following type:

$$(1) \quad \begin{array}{ccccccccc} X & - & [+F_i] & - & Y & - & [C+F_i] & - & Z \\ 1 & & 2 & & 3 & & 4 & & 5 \\ 1 & & 4 & & 3 & & e & & 5 \end{array} \quad \Longrightarrow$$

where C is some constituent and
F_i is some morphosyntactic feature

One instantiation of this rule schema is the rule of WH-Movement, where +F_i = +WH. The corresponding morphosyntactic landing site [+WH] is provided by the following rule:

$$(2) \quad \bar{S} \rightarrow [+WH] \quad [+T] \quad S$$

The [+WH] position is generated outside the COMP-position [+T]. More features may be needed besides [+WH]. Thus, Dutch and German syntax needs a demonstrative position [+D] instead of [+WH] for the derivation of (some (Dutch) or most (German)) Relatives and Left Dislocation. Via deletion of the demonstrative phrase in [+D] Left Dislocation structures can be transformed into Topicalization structures, as has been shown in Koster (1978a and b):

- (3)a. Je moeder die kan ik 't niet laten zingen $\Longrightarrow$
Your mother +D can I it not let sing
b. Je moeder e kan ik 't niet laten zingen

In base rule (2) COMP is rendered as [+T], i.e. as [+Tense]. [+T] lexicalizes as dat 'that' or of 'whether, if' and [-T] as om 'for'. These features are not counterintuitive because in a sense there is agreement between om and a te-infinitival and between dat, of and the finite verb. The position [+T] allows for another instantiation of rule schema (1). The resulting rule is Move Tense, i.e. Verb Fronting (Verb Second). This new formalization of the rule of Verb Fronting predicts that there will be Verb Fronting only if the corresponding lexical complementizer (dat or of) is absent - since the preposed finite verb occupies the complementizer position. This way the obligatory rule of Complementizer Deletion (COMP V_f ==> e 2) which was necessary under the formalization for Verb Fronting proposed in the paper under consideration, is obviated:

- (4) [+WH]Wie [+T]heeft de auto gebracht?

Similarly, the word order variation in the following pair of German clauses - a phenomenon also known in Dutch - can be readily accounted for along these lines:

- (5)a. --, als [+T]ob er es nicht gesehen hätte
 --, as if he it not seen had (conjunctive)
 b. --, als [+T]hätte er es nicht gesehen

Example (5)b. presents a marked (subordinate) case of Verb Fronting. The fronted finite verb cannot cooccur with the lexical complementizer ob, neither on its left (*als ob hätte er ...) nor on its right (*als hätte ob er ...), because they are in complementary distribution.

Similar ideas concerning Verb Fronting are expressed in Coppen (1981), Evers (1981a and b), and Lenerz (1981).

Finally, it should be noted that the fact that in many Dutch and German dialects the 'finite' complementizers dat/das and of/ob evidence person-number agreement with the Subject does not necessarily follow from - but certainly does not militate against - the assumption of these words being [+T]. Compare the following nonstandard (Hollandic) Dutch examples:

- (6)a. --, datte ze komme
 --, that-plur. they come
 b. --, dat(*e) ze komt
 --, that(-*plur.) she comes

Vide Goeman (1980) and the literature mentioned there.

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1. Introduction

On a descriptive plane this paper deals with an anti-root rule in Swedish (Ha-Deletion) and its German counterpart (Haben/Sein-Deletion) and with the ordering of Wh-Movement and Subject Aux Inversion in English, which is commonly assumed to be 1. Wh-Movement 2. Subject Aux Inversion. It can be shown that the apparently extrinsic ordering of the English rules is a natural consequence of the theory, given the appropriate assumptions, and will be imposed only in those contexts where the subject is preposed by Wh-Movement. It can also be shown that the theory is able to predict that under certain conditions the output of grammars defined by the theory will exhibit anti-root phenomena that happen to be special cases of a larger set of phenomena brought about by the interaction of root transformations and specified deletion rules. This, again, given the appropriate assumptions.

This will be done by first considering the formal properties of root transformations on the basis of data about Dutch. The resulting analysis will be applied to German and Swedish. The solution for the German case of Haben/Sein-Deletion is based upon the Counterdeletive Ordering Principle (CDOP) which is independently motivated (Den Besten (1975)). The combined insights gained from German and Dutch suffice as an indication for the solution of the Swedish case of Ha-Deletion, which is less simple, observationally, than its German counterpart. The general tenor of this paper will be ^{that} anti-root phenomena in German and Swedish result from an interaction between Verb Second (a root transformation) and the relevant auxiliary deletion rules. The theory of applicational domains (Williams (1974)) has an important role here. However, it is possible to develop an explanation which goes beyond simply stating the applicational domains for the pertinent rules. The theory of applicational domains can be given a stronger footing by predicting the applicational domain of a rule on the basis of the relevant terms mentioned in its structural index by means of a condition called the Base-Generability Principle. This principle seems to be tacitly assumed in Williams (1974) and it will be shown that it predicts an ordering between Wh-Movement and Subject Aux Inversion for exactly that subset of English interrogatives which linguists normally assume needs that ordering. This result serves as independent evidence for the principle at hand. Thus on a more general plane, this paper deals with the definition of root transformations (Emonds (1976)) and the theory of applicational domains (Williams (1974)).

2. Setting the problem

Emonds's notion of root transformations can be brought under attack from two sides, I think. Root transformations are supposed to operate on so called root sentences (Emonds (1976)). So a possible critique could be that rules that are regarded as root transformations do operate in subordinate clauses too. Furthermore Emonds's Structure Preserving Hypothesis (Emonds (1976)) implies that there are no rules that are by definition confined to embedded clauses. So one could show that such rules do exist.

The first line of attack has been followed by Hooper and Thompson (1973). They claim that the emphatic root transformations are applicable in Ss that are asserted, whether these Ss are subordinate clauses or root sentences. Their claim is substantiated with a wealth of examples where root phenomena show up in subordinate clauses. It does not necessarily follow, though, that Emonds is wrong in stating that root transformations apply to root sentences only. The data Hooper and Thompson present can be interpreted either way: In stead of taking these data as an indication to the effect that Emonds's position is untenable, one might turn the argument around and conclude from the fact that speakers of English accept subordinate clauses with root phenomena only if these clauses are asserted, that these clauses do not belong to the central parts - or core (cf. Chomsky (1976)b) - of English grammar and that the conditions Hooper and Thompson specify define contexts where subordinate clauses or the S-parts of them may be redefined or reanalyzed as root sentences. I hesitate between reanalysis of $\bar{S}$ or reanalysis of S, although I think it should be reanalysis of S. Hooper and Thompson did not consider the question of whether it is of any relevance that root sentences do not exhibit a phonological COMP, whereas these root constructions in subordinates are preceded by complementizers.¹⁾ This is understandable, since their approach is basically an informal one. The observation that surface sequences of simple declarative root sentences without root phenomena are identical to the surface sequences of corresponding subordinate Ss should cause some caution, as should the observation that a language like Dutch with its drastic distinction between root word order and subordinate word order²⁾ does not apply any root transformation to subordinate clauses.³⁾ The same holds for German.⁴⁾ These data about English, Dutch and German may be viewed as pure accidents, quirks of Mother Language, that do not deserve any further attention. But another interpretation might be that in general root phenomena do not occur

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in subordinate clauses, which is in accordance with the definition of root transformations. From that point of view, Dutch and German represent the unmarked case of languages defined by the theory. English on the other hand will be the marked case with root phenomena in subordinate clauses. However the occurrence of root phenomena in subordinate clauses is facilitated by the fact that subordinate Ss do not differ from root $\bar{S}$ s, provided no root movement transformation has applied to the root $\bar{S}$ s. This interpretation of Hooper and Thompson's data may be viewed as an elaboration of Chomsky's idea of grammars as consisting of a core, a central part defined by and in accordance with the theory, and a periphery (Chomsky (1976)b, class lectures fall 1976). A confirmation is found in the fact that subordinate clauses do not freely allow root phenomena. Peripheral rules do not, though, have to yield bad results under all circumstances. Hooper and Thompson's paper contradicts that. Peripheral sentences are acceptable depending upon the context. Nevertheless, it is possible that Hooper and Thompson's data are counterexamples to Emonds's hypothesis of root transformations as rules that apply ^{to} root sentences only. But mere data never decide a theoretical debate. Chomsky (1976)b has put it this way that unanalyzed data cannot be counterexamples. True though that may be, I would like to stress that it is also possible that a theory needs to be more precisely articulated before it can be tested. And that will be the avenue I follow in this paper. I will not pay attention to Hooper and Thompson (1973) anymore, but I would like to point out in advance that given the formulation for a large set of root transformations I propose in this paper it is doubtful whether the data Hooper and Thompson present could ever serve as counterexamples to the theory.

More interesting is the criticism of Emonds which one can deduce from the case presented by Andersson and Dahl (1974). Their squib contains the following sentences ((6) - (9) in their numbering), to which I add glosses in stead of the original translations in order to facilitate the perception of what is going on syntactically:

- (1) Nixon sade/säger att han redan på ett tidigt stadium
Nixon said/says that he already at an early stage
hade insett att han måste förstöra banden
had realized that he had-to destroy tapes-the
- (2) Nixon sade/säger att han redan på ett tidigt stadium
insett att han måste förstöra banden

- (3) Han hade insett på ett tidigt stadium att han måste förstöra
 He had realized at an early stage that he had-to destroy
 banden
 tapes-the

- (4) *Han insett på ett tidigt stadium att han måste förstöra banden

What happens in these sentences is the following. There is an optional rule in Swedish that deletes the auxiliary ha (have) in subordinate clauses only. That is why sentence (4) is ungrammatical. Andersson and Dahl present their sentences as counterexamples to the Penthouse Principle of Ross (1973). But it is clear that these are counterexamples to Emonds's theory as well. This does not surprise, since Ross formulates a theory of upper clause and lower clause syntactic processes which is a weakened version of the theory of the distinction between root and nonroot rules.⁵⁾

To the Swedish examples I add a similar case from German. In German an archaic rule can be found that deletes the auxiliaries haben and sein (both = have) in subordinate clauses only:

- (5) --, weil er gelacht (hat) (hat: 3rd p. sing., pres. tense
 --, because he laughed (has) of haben)
- (6) Er hat/*Ø gelacht,
 He has/*Ø laughed
- (7) --, ob er gekommen (ist) (ist: 3rd p. sing., pres. tense
 --, whether he come (has) of sein)
- (8) Ist/*Ø er gekommen?

Although the solution for the German case seems to be relatively straightforward, the solution for its Swedish counterpart is not. One might want to say that in German there is an ordering 1. Verb Preposing (root transformation) 2. Haben/sein Deletion (nonroot) such that Verb Preposing bleeds the deletion rule.⁶⁾ And one might want to propose a similar ordering 1. Verb Preposing. Ha Deletion for Swedish. This proposal does not suffice, though, to explain the inapplicability of Ha Deletion to main clauses. Whether or not Verb Preposing applied to (3) and (4), ha is still to the left of the participle which happens to be the trigger for the relevant deletion rule:

- (9) X - ha - PART - Y ==> 1, Ø, 3, 4

In the next two paragraphs I would like to show that contrary to the expectations the pertinent rule ordering does suffice given the proper formulation of transformations in terms of their domain. Furthermore,

it can be shown that the rule orderings proposed for German and Swedish follow from a general ordering principle. Thus, the theory which encompasses the root - nonroot distinction plus other conditions can predict that under the proper circumstances languages may present us with antiroot phenomena.

3. Defining root transformations

Emonds contends (Emonds (1976), II.8) that all the root transformations that front phrasal constituents without inducing comma intonation are substitutions for the sentence-initial COMP node, following a suggestion by Higgins (1973). Similar ideas can be found in Koster (1975) and Den Besten (1975). And last but not least, the same idea is expressed in Williams (1974), ch. 4, section 2. However, this author notes some problems. I shall return to that. Den Besten (1975) and Williams agree in that both assume that the Verb Preposing rules of Dutch (and German) and English move a finite verb into COMP, just like other root transformations. This assumption is in apparent contradiction with the general assumption that there is only one root transformation per sentence. I would not say that this conflict is a real problem. Observationally the assumption that there is only one root transformation per sentence is wrong, as can be concluded from the following examples:

(10) Never have I been in Cockaigne

(11) Dit boek heb ik aan mijn moeder gegeven

This book have I to my mother given

In (10) both Negated Constituent Preposing and Subject Aux Inversion (SAI) have applied. Something similar has happened in the Dutch example (11). There Topicalization and Verb Preposing⁷⁾ have been applied. Yet it is clear that those who assume that there is only one root transformation per sentence are on the right track. This idea merely needs a slight reformulation: There are two sets of root preposings, one set with only one member, i.e. Verb Preposing (or SAI in the case of English), and one set with all other root preposings. Per sentence and per set only one rule may be chosen. Thus there are four possibilities: No rule is chosen at all, compare (12); SAI is applied and no rule is chosen from the set of other preposings; SAI is not applied and one rule is chosen from the other set; both SAI and another preposing are applied. These four options are exemplified in (12) through (15):

(12) He will not come

- (13) Is he coming?
- (14) Here he comes
- (15) Only on weekends do I see her

Languages are free in choosing their options. Substituting Verb Preposing for SAI we may say that Dutch does not use the first option at all and relies heavily upon the fourth one. The second option is used for unmarked yes/no-questions and the third one for a declarative construction that is stylistically marked. Compare (16):

- (16) Gelachen dat we hebben
Laughed that we have

Other languages may follow different strategies.⁸⁾ The situation is complicated by the fact that an application of the cyclic rule of Wh-Movement to a root sentence counts as the application of a member of the second set of root transformations. One can draw different conclusions from that observation. Higgins (1973) and Emonds (1976) claim that this observation implies that root transformations move a constituent into the same position as does Wh-Movement.⁹⁾ Alternatively one might want to retain a sharp distinction between root transformations and cyclic rules and therefore one might want to deny that an application of Wh-Movement to a root sentence counts as an application of a root preposing transformation. In that case the observations that underly this assumption may be reanalyzed as follows: It is not true that English yes/no-questions are defined by the second option (SAI only)^{and} English interrogatives by the fourth option (SAI plus Wh-Movement which becomes a root transformation in root sentences). Both yes/no-questions and interrogatives are defined by the second option (SAI only). This means^{that} both types of questions are regarded as root variations on sentences with an initial WH-complementizer that have been processed by the relevant cyclic rules. One of these rules is Wh-Movement and so yes/no-questions are root variants of clauses introduced by whether and interrogatives are root variants of wh-clauses. Echo questions, then, have to be regarded as intonational variants of declaratives. Something similar can be said about Dutch: All questions are defined in terms of the second option (Verb Preposing only) and special questions (i.e. echo questions and questions which the speaker expects to be answered positively) are supposed to be intonational variants of declaratives and so to be defined in terms of the fourth option (Verb Preposing plus another root rule).¹⁰⁾ Since an echo

question can echo a preceding sentence that involves Topicalization, it is possible in Dutch^{to} have Verb Preposing plus Topicalization in an echo question (compare Koster (1975)):

(17) Dat boek had u gelezen, zei u?
That book had you read, said you

(18) Karel mag je niet?
Charles like you not

And also the following sentence, which is an echo question, does not involve Wh-Movement (cf. fn. 10) but only Topicalization:

(19) De vrouw die met wie getrouwd is, ken je niet?
The woman who to whom married is know you not?

This hypothesis about sentence types is not incompatible with the position Higgins and Emonds take. But it is also compatible with the view I want to defend in this paper, namely that Complementizer Attraction Rules are adjunctions and not substitutions.

Before I turn to the touchy subject of whether Complementizer Attraction Rules are adjunction transformations or substitutions, I would like to establish whether it is possible to formulate all root transformations, and especially the fronting rules among them, as rules that move a constituent to a complementizer. And it is also necessary to know whether there are descriptive advantages in assuming such a description. Therefore I would like to first consider some data from Dutch plus some additional data from German. After that I return to the question of the function of COMP in root transformations.

3.1. Some data from Dutch and German

The description of Dutch (and German) root sentences^{I present here} does not essentially differ from the description given in Den Besten (1975). Let us make the following assumptions: Firstly, the grammar of Dutch contains the following base rule that has been taken from Bresnan (1970 and 1972):

(20) $\bar{S} \rightarrow \text{COMP } S$

Secondly, elementary transformations are substitution, adjunction and deletion (and maybe permutation) and all transformations are defined in terms of these elementary transformations such that the maximal number of elementaries involved is two and such that any deletion elementary may be accompanied by a substitution or adjunction of the

deletee elsewhere in the transformation without there being any other combination of elementaries.

Consider the following sentences:

- (21)a --, of je broer nog komt
 --, whether your brother yet comes
 b --, welk boek (of) hij wil lezen
 --, which book (whether) he wants read
- (22)a Komt je broer nog?
 Comes your brother yet
 b Welk boek wil hij lezen?
 Which book wants he read

Dutch happens to have an optional rule of Whether Deletion (Of Deletion) in stead of its obligatory counterpart in English. Thus it is evident that the verb preposings that relate (22)a and b to (21)a and b respectively can be described by one rule moving the finite verb towards the complementizer. After the movement of the verb into complementizer position the phonological representative of the complementizer will be deleted.

Now consider the following sentences:

- (23) --, dat ik dat boek niet gelezen heb
 --, that I that book not read have
- (24)a Ik heb dat boek niet gelezen
 I have that book not read
 b Dat boek heb ik niet gelezen
 That book have I not read
 c Gelezen heb ik dat boek niet
 Read have I that book not

Of course, (24)a-c are all related to (23). If we do not want to accept another verb preposing rule we can use the same rule that accounts for yes/no-questions, i.e. (22)a, and for interrogatives, i.e. (22)b. In that case we have to assume the the elements that are to the left of heb in (24)a-c, namely ik, dat boek and gelezen, have been preposed too by means ^{of a rule} similar in effect to Wh-Movement. That Topicalization has moved dat boek and gelezen into complementizer position is uncontroversial, as far as I can see. But that also ik which is in some sort of first position in (23), namely in the first position of the S, moves into a new first position, namely the first position of the $\bar{S}$, seems to be less evident, witness the way people sometimes speak

of Verb Preposing as being a rule Verb Second which places the finite verb in second position.¹¹⁾ Nevertheless, it is clear that, if one does not want to prepose the subject in (24)a, we shall need a special verb preposing rule Verb Second, adjoining the finite verb to whatever constituent happens to be first in the ^{declarative} sentence. These two verb preposings would be incomparable in formulation. On the other hand the description I favor involves only one Verb Preposing rule and therefore requires one extra rule of Subject Preposing (or maybe First Constituent Preposing) which is comparable in formalization to a rule like Topicalization so that it is possible to collapse Subject Preposing and Topicalization into one rule: Constituent Preposing.

The argumentation I have given above is rather formal, but there is some evidence in favor of the idea that Verb Preposing moves the finite verb towards the complementizer both in declaratives and in questions. This evidence involves certain descriptive advantages that follow from the uniform formalization of Verb Preposing as a Complementizer Attraction Rule. This evidence is neutral as regards the proper description of (24)a but that does not bother me, since the superiority of a grammar of Dutch that accounts for all verb preposings by means of one rule that moves the finite verb from a VP-final position (compare (21) and (23)) to one specified position in COMP, is evident.

Dutch possesses two sets of ^{subject}pronouns: a set of strong pronouns which contains i.a. ji (you), hi (he), zij (she) and wi (we) and a set of weak pronouns which contains i.a. je (you), hi/ie (he), ze (she) and we (we) (the e's represent shwabs). The ^{weak}pronouns have to be adjacent to the COMP, as can be learned from (25):

- (25)a --, dat je/ze gisteren ziek was
 --, that you/she yesterday ill were/was
 b *--, dat gisteren je/ze ziek was
 --, that yesterday you/she ill were/was

Strong pronouns on the other hand behave like nonpronominal NPs in that they may be separated from the complementizer by a suitable adverb, as can be seen in (26) and (27):

- (26)a --, dat ji/zij gisteren ziek was
 --, that you/she yesterday ill were/was
 b --, dat gisteren ji/zij ziek was
 --, that yesterday you/she ill were/was

- (27)a --, dat mijn oom gisteren ziek was
 --, that my uncle yesterday ill was
 b --, dat gisteren mijn oom ziek was
 --, that yesterday my uncle ill was

A description that moves the finite verb into complementizer position by means of a root transformation predicts that weak subject pronouns in Dutch are obligatorily adjacent to the verb in yes/no-questions (see (28), in interrogatives with a nonsubject in first position (see (29)) and in declaratives with a nonsubject in first position (see (30)). It is predicted as well that strong subject pronouns and nonpronominal subject-NPs may be separated from the verb in yes/no-questions (see (31) and (32)), in interrogatives with a nonsubject in first position (see (33) and (34)) and in declaratives with a nonsubject in first position (see (35) and (36)). These predictions are confirmed by the following examples:

- (28)a Was ze gisteren ziek?
 Was she yesterday ill
 b *Was gisteren ze ziek?
 (29)a Waarom was ze gisteren ziek?
 Why was she yesterday ill
 b *Waarom was gisteren ze ziek?
 (30)a Toch was ze gisteren ziek
 Yet was she yesterday ill
 b *Toch was gisteren ze ziek
 (31)a Was zij gisteren ziek?
 Was she yesterday ill
 b Was gisteren zij ziek?
 (32)a Was je oom gisteren ziek?
 Was your uncle yesterday ill
 b Was gisteren je oom ziek?
 (33)a Waarom was zij gisteren ziek?
 Why was she yesterday ill
 b Waarom was gisteren zij ziek?
 (34)a Waarom was je oom gisteren ziek?
 Why was your uncle yesterday ill
 b Waarom was gisteren je oom ziek?
 (35)a Toch was zij gisteren ziek
 Yet was she yesterday ill

- (35)b Toch was gisteren zij ziek
(36)a Toch was mijn oom gisteren ziek
Yet was my uncle yesterday ill
b Toch was gisteren mijn oom ziek

Given the state of affairs observed it does not surprise that additional minor facts about weak pronouns hold both for the position adjacent to the COMP in subordinate clauses and for the position adjacent to the finite verb in main clauses. Consider the following sentences where hij stands for the weak pronoun and hij for the strong one:

- (37)a *-- , dat hij niet kan komen
-- , that he not can come
b -- , dat ie niet kan komen
c -- , dat hij niet kan komen
(38)a Hij wil niet komen
He wants not come
b *Ie wil niet komen
c Hij wil niet komen

It is clear that the strong pronoun hij may occur both to the right of a complementizer in subordinate clauses and to the left of the finite verb in main clauses. The weak pronouns hij and ie however are in complementary distribution: Hij occurs to the left of the finite verb in root sentences and ie to the right of the complementizer in subordinate clauses. Given what we have seen above we can expect that ie and not hij can occur to the right of the preposed verb in main clauses, which is the case indeed:

- (39)a *Daarom wil hij niet komen
Therefore wants he not come
b Daarom wil ie niet komen

The last phenomenon I want to deal with concerns two of the many different pronouns er in Dutch that roughly translate as there.¹²⁾ The constellation of facts I want to consider is somewhat more complicated than in the case of hij vs ie. First consider the er of Dutch There Insertion. This pronoun counts as a weak pronoun and so has to be adjacent to the complementizer or the preposed finite verb:

- (40)a -- , dat er gisteren al veel gasten vertrokken zijn
-- , that there yesterday already many guests left have

- (40)b *--, dat gisteren er al veel gasten vertrokken zijn
 (41)a Daarom zijn er gisteren al veel gasten vertrokken
 Therefore have there yesterday already many guests left
 b *Daarom zijn gisteren er al veel gasten vertrokken

These facts are not surprising. Now consider the usage of the so-called quantitative er. This er has to cooccur with a NP which is empty but for its QP.¹³⁾ Compare the following sentences:

- (42)a --, dat hij er tien heeft gekocht
 --, that he there ten has bought
 b *--, dat hij tien heeft gekocht
 --, that he ten has bought
 (43)a --, dat het er negen zijn
 --, that it there nine are
 b *--, dat het negen zijn

Now these quantified empty NPs can be subjects too. But since they are indefinite and unspecific we may expect them to cooccur not only with quantitative er but also with theer of There Insertion, i.e. we expect quantified, empty subject-NPs to move to the right. And that they do, witness (44):

- (44)a Er waren er gisteren nog vijftien over
 There were there yesterday still fifteen left
 b *Er waren gisteren nog vijftien over

It is not possible to demonstrate the cooccurrence of quantitative er and the er of There Insertion with an example of a subordinate clause, witness (45):

- (45)a *--, dat er er gisteren nog vijftien over waren
 --, that there there yesterday still fifteen left were
 b --, dat er gisteren nog vijftien over waren

Yet, we have to conclude from a comparison of (44) and (45) that there have been two ers underlyingly in (45) that have been collapsed by a rule of Er-er Contraction.¹⁴⁾ It is important to note that the two ers may not be separated by an adverb, so that there is no way to force these pronouns to show up in a subordinate clause:

- (46) *--, dat er gisteren er nog vijftien over waren

Consequently it is not possible to construct a variant of (44)a where gisteren shows up between the finite verb and quantitative er:

(47) *Er waren gisteren er nog vijftien over

Thus we may conclude that in a clause which contains both quantitative er and the er of There Insertion the latter has to be adjacent to the complementizer and the first to the latter. This sequence of elements will invoke Er-er Contraction, unless the subject pronoun has been preposed into COMP. And so, given the description of root sentences presented above, it is predicted that the two ers contract immediately to the right of the preposed verb in yes/no-questions (see(48)), in interrogatives with a nonsubject in first position (see (49)) and in declaratives with a nonsubject in first position (see (50)). These predictions are confirmed:

(48)a *Waren er er gisteren nog vijftien over?

Were there there yesterday still fifteen left

b Waren er gisteren nog vijftien over?

(49)a *Hoeveel dagen geleden waren er er nog vijftien over?

Howmany days ago were there there still fifteen left

b Hoeveel dagen geleden waren er nog vijftien over?

(50)a *Volgens mij waren er er gisteren nog vijftien over

According to me were there there yesterday still fifteen left

b Volgens mij waren er gisteren nog vijftien over

This concludes my discussion of Dutch root sentences. I have proposed a description which involves one Verb Preposing rule that moves the finite verb to the complementizer in root sentences plus two or one root transformations transferring a constituent into the leftmost position inside COMP. The latter rules are comparable to the cyclic rule of Wh-Movement that also moves a constituent, the wh-phrase, into the leftmost position inside COMP (see again (21)b and (22)b). Pending a discussion about the substitutive or adjunctive nature of Complementizer Attraction Rules there are two ways to formalize these rules. A substitution solution assumes the following base rules:¹⁵⁾

(51) $\bar{S} \rightarrow \overline{\text{COMP}} \quad S$

(52) $\overline{\text{COMP}} \rightarrow (\bar{X}) \quad \text{COMP} \quad (V)$

(53) $\text{COMP} \rightarrow \pm \text{wh}$

Wh-Movement and the root transformations of the second set (see above) substitute the prepossee for $\bar{X}$. Verb Preposing substitutes the finite verb for the V inside $\overline{\text{COMP}}$.¹⁶⁾ On the other hand an adjunction solution will formalize Wh-Movement, Constituent Preposings and Verb Preposing as follows:

- (54) Wh-Movement
- | | | | | | | |
|------|---|-------|---|---------------------|---|-------|
| COMP | - | W_1 | - | $\overline{X}_{Wh}$ | - | W_2 |
| +Wh | | | | +Wh | | |
| 1 | | 2 | | 3 | | 4 |
| 3+1 | | 2 | | e | | 4 |
- (55) Constituent Preposing ¹⁷⁾
- | | | | | | | |
|------|---|-------|---|---------------------|---|-------|
| COMP | - | W_1 | - | $\overline{X}_{Wh}$ | - | W_2 |
| -Wh | | | | -Wh | | |
| 1 | | 2 | | 3 | | 4 |
| 3+1 | | 2 | | e | | 4 |
- (56) Verb Preposing
- | | | | | | | |
|------|---|-------|---|---|---|-------|
| COMP | - | W_1 | - | V | - | W_2 |
| | | | | | | |
| 1 | | 2 | | 3 | | 4 |
| 1+3 | | 2 | | e | | 4 |

It is not clear whether the features employed in (54) and (55) are necessary. Envisageable is a filter mechanism as proposed in Chomsky (1973). It is tempting to collapse Wh-Movement and Constituent Preposing in view of the complementarity of their formalizations (however see fn. 17) but that cannot be because Wh-Movement is a cyclic rule and Constituent Preposing is a root transformation. Thus, their applicability conditions differ accordingly. Wh-Movement may 'violate' Subjacency, the Subject Condition and the Propositional Island Constraint (Tensed S Condition), whereas Constituent Preposing may not.¹⁸⁾ Compare (57) with the next examples:

- (57)a Wie heeft Jan gezien?
Whom has John seen?
- b Wie zei je, dat Jan gezien had?
Whom said you that John seen had
- (58)a Jan heeft ie gezien
John has he seen
- b *Jan zei Piet, dat hij had gezien
John said Pete that he had seen
- (59)a Gelachen heeft ie niet
Laughed has he not
- b *Gelachen zei Piet, dat hij niet had
Laughed said Pete that he not had

I return to this in the next subsection. But these observations suffice as an argument against collapsing Wh-Movement and Constituent Preposing in whatever form. Of course the transformations (54) - (56) are complemented by the following base rules:

(60) $\bar{S} \rightarrow \text{COMP } \{S$

(61) $\text{COMP} \rightarrow + \text{wh}$

Furthermore, my description presupposes that under either description, whether substitutive or adjunctive in nature, root constructions are defined in terms of applications of the relevant root transformations. I refer to the remarks I made in the introductory paragraphs preceding this subsection. Root constructions are defined upon those structures that are defined in terms of base rules and cyclic rules them selves. Questions are brought about by the application of Verb Second to structures with an underlying initial Q-complementizer. This is the unmarked case. Declaratives are brought about by application of Verb Preposing and Constituent Preposing to structures with an underlying dat-complementizer. This, again, is the unmarked case. Echo questions, which constitute one set of marked questions, are intonational variants of unmarked declaratives.

This approach has the advantage that we can easily generate marked root constructions. Ideally, there are three marked variants for declarative sentences: Either one of the two root preposing rules is not applied or both rules are not applied. Questions would have only one variant: nonapplication of Verb Preposing. Above I have presented one example of a marked declarative: a Topicalization structure to which Verb Preposing has not applied. Here are some other examples:

(62)a Gelachen dat we hebben (i.e. (16))

Laughed that we have

b Lang dat ie is

Tall that he is

c Een platen dat ie heeft

A records that he has (=So many records he has)

The pertinent structure is used in order to express one's indignation, surprise, or whatever, about the quantity or quality of something.

Another marked declarative would be a structure to which Constituent Preposing has not ^{been} applied, unlike Verb Preposing which has been applied. Examples of these can be easily found in Dutch. The pertinent structure is used for several purposes. First of all, there is a narrative style in Dutch, mainly in the spoken language, I think, which makes use of verb initial declaratives:

(63) Ging ik laatst naar De Swart. Raakte ik aan de praat

Went I to De Swart (a bar) Got I into a talk

met die advokaat, die dronkelap.
with that lawyer, that alcoholic.

Such sentences are extremely effective as an opening for a story. Yet similar sentences have special functions in more formal language, if combined with another independent clause of the unmarked type. For instance, a verb initial declarative followed by an unmarked declarative constitute a minimal text that expresses some sort of opposition:

- (64)a Was de vorige lezing al moeilijk, van dit verhaal zul
Was the last lecture already difficult of this talk will
je helemaal niets meer begrijpen.
you totally nothing anymore understand
- b Stortte Jan zich in de muziek, Aukje was helemaal wild
Threw John himself into music, Aukje was completely crazy
van poëzie.
about poetry

And my guess is that the so-called conditional clauses to which Verb Preposing has applied are verb initial declaratives (see fn. 3).

Although there are all sorts of that-clauses that are independently used, I hesitate to call them marked declaratives to which no root transformation has applied at all. On the other hand the case of marked questions that are defined by nonapplication of Verb Preposing seems to me to be attested. Such sentences, that are pronounced with question intonation, express the dubitative:

- (65)a Gewoonlijk is hij niet te laat. Maar of hij vandaag nog
Usually is he not late. But whether he today yet
komt? (Dat weet ik niet/Daar ben ik niet zeker van.)
comes. (That know I not /There am I not sure about
- b Er is suiker in de erwtensoep gedaan. Maar wie (of)
There has-been sugar inthe peasoup put. But who (whether)
het gedaan heeft? (Ik heb geen idee/Ik zou het niet weten.)
it done has. (I have no idea/I would it not know.)

My main reason for calling these sentences marked questions derives from the fact that these structures do not need the tags I have added within parentheses, which is in accordance with the fact that not all of these tags are possible main clauses, witness (66):

- (66) } *Wie (of) het gedaan heeft, heb ik geen idee.
Who (whether)it done has, have I no idea

whereas all of these tags are possible independent sentences. This counterweighs the observation that several of these tags could be main clauses of left dislocation structures like in (67):

(67) Of hij vandaag nog komt, dat weet ik niet

However, the of-clause in (67) does not need a question intonation.¹⁹⁾

As I have remarked above, a description which defines sentence types in terms of application vis. nonapplication of root transformations, is useful both for the substitutive and for the adjunctive approach of root phenomena. Nothing follows as far as the substitution solution is concerned. The theory requires that $\bar{X}$ and V not be generated in the base in the case that they are not filled during the transformational derivation, otherwise the pertinent derivations are filtered out. That is why $\bar{X}$ and V are optional daughters of $\overline{\text{COMP}}$ (compare (52)). On the other hand there is an important consequence for the adjunctive approach. A description which decides which transformations define which root structures enables us to set an upper bound for the number of complementizer attraction transformations that are applied to one clause. This description will restrict the number of root transformations to two or less, and will tell us which combinations of root transformations are allowed. Thus the transformational component plus the relevant stipulations about (non)applications of root rules has the same filter function as does base rule (52) of the substitutive approach. There will be no double Topicalization, for instance. It cannot be denied, though, that the adjunctive approach does not explain why the actual combinations are chosen and why there are no combinations like double Constituent Preposing or double Constituent Preposing plus Verb Preposing. This is a ^{problem} very important question, which I cannot answer. This ^{question} cannot be used against the adjunctive approach, ^{however,} because the ^{same} question applies to base rule (52) of the substitutive approach: Why that rule and not another one?

After this long excursus about Dutch I have relatively little to say about German. I assume that a description similar to the one proposed for Dutch can be applied to German. German word order is by no means equivalent to Dutch word order, but there are similarities: German is a SOV-language which moves the finite verb to first or second position in root sentences. Yes/no-questions are verb first sentences; interrogatives and declaratives put the verb in second position. All other verbs stay in VP-final position. I have not studied German marked root structures in great detail, but I do know

that dubitative questions without Verb Preposing (compare the Dutch examples in (65)) are frequently used.²⁰⁾ German does not retain the Q-complementizer ob in wh-clauses (compare (68)), but that does not have to prevent us from assuming that basically in German the same root transformations are used as in Dutch, namely Constituent Preposing and Verb Preposing (compare (55) and (56)), and that here too the complementizer is involved.

- (68) --, was (*ob) er geschrieben hat
 --, what (*whether) he written had

And in German too phenomena involving weak pronouns confirm the description proposed.

The sets of German weak and strong pronouns are nearly overlapping. The strong set contains i.a. ich (I), du (you, sing.), er (he), sie (she), das (that), wir (we), all of them being nominative, and mir (me, dat.), dir (you sing., dat), dich (you sing., acc.), ihm (him, dat.), ihn (him, acc.). The weak set contains the same forms but adds es (it) and leaves out das. There are some enclitic forms, but they do not concern us here. Weak subject pronouns must be adjacent to the COMP. In this respect there is no difference between German and Dutch. But these languages do differ in the way they deal with weak object pronouns. In Dutch weak object pronouns have to be adjacent to the subject NP, whether that NP is nominal or pronominal:

- (69)a *--, dat Karel zonder enig probleem het kon oplossen
 --, that Charles without any problem it could solve
 b --, dat Karel het zonder enig probleem kon oplossen
 (70)a *--, dat ie zonder enig probleem het kon oplossen
 --, that he without any problem it could solve
 b --, dat ie het zonder enig probleem kon oplossen

In German weak object ^{pronouns} have to be adjacent to the subject NP, if that NP is a weak pronoun itself. If the subject contains a noun or a strong pronoun, however, weak object pronouns preferably occur immediately to the right of the complementizer:

- (71)a --, dass ihm Karl ein Buch geschenkt hat
 --, that to-him Charles a book given has
 b --, dass Karl ihm ein Buch geschenkt hat
 (72)a --, ob es Karl dem Johann geschenkt hat
 --, whether it Charles to-John given has

- (72)b --, ob Karl es dem Johann geschenkt hat
- (73)a --, dass es ihm der Johann schon gesagt hat
--, that it to-him John already said has
b --, dass der Johann es ihm schon gesagt hat
- (74)a --, dass sich einst die Intellektuellen mit der Armee
that themselves once the Intellectuals with the army
vereinen werden
unite will
b --, dass einst die Intellektuellen sich mit der Armee
vereinen werden

It does not come as a surprise that in German yes/no-questions, in German interrogatives with a nonsubject in first position and in German declaratives with a nonsubject in first position weak object pronouns have to be adjacent to the subject or to the preposed verb. This is what is predicted by a description that puts the preposed verb in complementizer position:

- (75)a Werden sich diese Leute verteidigen oder nicht?
Will themselves these people defend or not?
b Werden diese Leute sich verteidigen oder nicht?
- (76)a Warum würden sich die Intellektuellen mit der Armee
Why would themselves the intellectuals with the army
vereinen?
unite?
b Warum würden die Intellektuellen sich mit der Armee vereinen?
- (77)a Gestern hat ihm Karl ein Buch geschenkt
Yesterday has to-him Charles a book given
b Gestern hat Karl ihm ein Buch geschenkt
- (78)a Gestern hat es ihm der Johann schon gesagt
Yesterday has it to-him John already said
b Gestern hat der Johann es ihm schon gesagt

Finally, there is one little fact about the behaviour of the weak, indefinite subject pronoun es which generally translates with there, because it is the German counterpart of the there of T here Insertion in English. Compare the following example:

- (79) Es standen zwei Bäume im Garten
There stood two trees in-the garden

This es is also used in passive sentences without logical object:

- (80) Es wurde gelacht im Ratskeller
There was laughed in-the rathskeller

This es is probably the same as the expletive es used in passive structures like the following one:

- (81) Es wurde behauptet, dass der Strauss ein Faschist sei
There was contended that Strauss a fascist is (conj.)

For ease of reference I have called the es of sentence (79)-(81) the indefinite es. It must be distinguished from the definite pronoun es (in (82)) and weather-es (in (83)):

- (82) Es ist eigentlich idiotisch (also: Das ist ...)
It is actually idiotic
(83) Es hat wieder gehagelt
It has again hailed

For ease of reference I subsume both definite (referential) es and weather-es under the name 'definite es'.

Syntactically, definite and indefinite es behave differently. Indefinite es deletes, if it is preceded by a complementizer, which is the usual word order in subordinate clauses, because es is a weak pronoun (compare (84)). Definite es in the same position does not delete (compare (85)):

- (84)a --, dass (*es) voriges Jahr noch zwei Bäume im Garten
--, that (*there) last year still two trees in-the garden
standen
stood
b --, ob (*es) im Ratskeller gelacht wurde
--, whether (*there) in-the rathskeller laughed was
c --, dass (*es) behauptet worden ist, dass der Strauss ein
--, that (*there) contended been has that Strauss a
Faschist wäre
fascist was (conj.)
(85)a --, ob es/*∅ eigentlich nicht idiotisch wäre
--, whether it/*∅ actually not idiotic was (conj.)
b --, dass es/*∅ wieder gehagelt hat
--, that it/*∅ again hailed has

Of course it is predicted that indefinite es will delete in yes/no-questions, in interrogatives (indefinite es does not have a wh-form) and in declaratives with nonsubjects in first position, whereas

definite es, when retained in its original subject position in root sentences, will not delete. These predictions are confirmed:

- (86)a Standen (*es) voriges Jahr noch zwei Bäume im Garten?
Stood (*there) last year still two trees in-the garden?
b Wurde (*es) gelacht im Ratskeller?
Was (*there) laughed in-the rathskeller?
c Wurde (*es) behauptet, dass der Strauss ein Faschist wäre?
Was (*there) contended that Strauss a fascist was (conj.)
- (87)a Ist es/*Ø idiotisch?
Is it/*Ø idiotic?
b Hat es/*Ø gestern gehagelt?
Has it/*Ø yesterday hailed?
- (88)a In welchem Garten standen (*es) voriges Jahr noch zwei Bäume?
In which garden stood (*there) last year still two trees?
b Wo wurde (*es) gelacht?
Where was (*there) laughed?
c In welchem Blatt wurde (*es) behauptet, dass der Strauss
In which paper was (*there) contended that Strauss
ein Faschist wäre
a fascist was (conj.)
- (89)a Warum wäre es/*Ø idiotisch?
Why would-be it/*Ø idiotic?
b Wann hat es/*Ø gehagelt?
When has it/*Ø hailed?
- (90)a Voriges Jahr standen (*es) noch zwei Bäume in unserm Garten
Last year stood (*there) still two trees in our garden
b Im Ratskeller wurde (*es) gelacht
In-the rathskeller was (*there) laughed
c In irgendeinem sozialistischen Blatt wurde (*es) behauptet,
In some socialist paper was (*there) contended
dass der Strauss eigentlich ein Faschist wäre
that Strauss actually a fascist was (conj.)
- (91)a Meines Erachtens ist es/*Ø idiotisch
In my opinion is it/*Ø idiotic
b Gestern hat es/*Ø gehagelt
Yesterday has it/*Ø hailed

Thus we may conclude that the occurrence of indefinite es in sentence-initial position in declarative sentences, although being a root phenomenon, does not need a special root transformation for inserting it in front of a preposed verb,²¹⁾ but can be generated via the interaction of Constituent Preposing, a root transformation that

is independently motivated, and Es Deletion, a cyclic rule.²²⁾ More will be said about the ordering of these rules in the next section.

This concludes my discussion of German root sentences. It is evident that the description proposed for Dutch^{and} transposed to German has been proven to be effective. Now one may wonder whether it is merely an accident that in the grammars of German and Dutch COMP is the landing site for root preposing rules. Or, to put it this way, how can we constrain grammar such that root transformations that prepose constituents will necessarily move such constituents into COMP? This is a valid question, since it is always possible to construct other grammars than the one proposed here that would account for the facts. One example of such a grammar is the one which I shortly talked about in the first paragraphs of this subsection, where I used it to contrast it with the grammar I wanted to propose. This grammar doesnot necessarily violate the conditions for root transformation of Emonds (1976), ch. 1.²³⁾ It needs al sorts of extra conditions for the pronoun rules I talked about, but that can be done. However, a simple evaluation will show that the grammar using COMP for root transformations is more highly valued than the grammar I am now talking about. So, it would be desirable to have a theory which enforces us to describe root preposing rulesas Complementizer Attraction Rules.

3.2. The function of COMP in root transformations

Emonds (1976) defines root transformations as follows (p. 3):

- (92) Root Transformation: A transformation (or a transformational operation, in the case of a transformation performing several operations) that moves, copies or inserts a node C into a position in which C is immediately dominated by a root S in derived structure is a "root transformation" (or a root transformational operation).

Suppose we regard English root preposings as substitutions of some constituent for COMP and SAI as apermutation of NP and AUX, immediately to the right of COMP. In that case condition (92) is fulfilled. However, it is also possible to regard SAI as another Complementizer Attraction Rule and we have seen that Verb Preposing in Dutch and German has to be a Complementizer Attraction Rule. So, unless one wants to do some hocus-pocus by somehow substituting two preposees for one complementizer, a base rule like (52) seems to be justified.

And the definition of root transformations has to be changed accordingly. Therefore I propose the following definition:

(92)' Root transformation: A transformation such that its landing site is immediately dominated by a root S or the COMP of that S.

Now Emonds (1976) contains two competing proposals for expanding Ss. The consequences of these proposals under definition (92)' are quite different. First consider the older proposal which is most frequently used for drawing trees in Emonds (1976):

(93) S ---> COMP NP AUX VP (see p. 206)

Both definition (92) and definition (92)' allow a lot, if this is the base rule for expanding Ss in English. Let us assume that adjunction is defined as sister adjunction. In that case, although something would have to be done about the definition of landing site in (92)', nine different landing sites are possible: one to the left of COMP, three between the respective constituents, one to the right of VP and the four constituents themselves. Furthermore, it is predicted that a root transformation raising a NP out of a complement towards the root subject-NP, is a possible rule, which I think is a wrong prediction. Of course, this can be countered by assuming that root transformations, structure-preserving rules and local transformations are properly separated in that no rule of one set will exhibit features of rules belonging to the other sets. In that case noncyclic Complementizer Attraction Rules cannot be substitutions. If one wants to leave open the option of root substitutions this assumption will not do. Besides that the number of possible landing sites is too large. A first step to reduce their number is to assume that adjunctions are defined as chomsky-adjunctions (following Chomsky (1975)). In that case there are four possible landing sites left: the four constituents of (93) themselves. Of these VP does not seem to be a landing site. Root movements are concentrated around the front of a sentence, and Tag Formation, which might serve as an argument for calling VP a landing site of sorts, is certainly not a transformation. As for NP and AUX, only if SAI is defined as a permutation of NP and AUX would there be a reason for calling these constituents landing sites, albeit strange landing sites: there is no constituent to land at. Since a permutation formulation of SAI is not necessary, there is no reason for regarding NP, AUX and VP as landing sites at all. And we are left with the COMP. However, it does not follow from either (92) or (92)' that COMP is the sole landing site,

as long as we maintain base rule (93). Here Bresnan's proposal for describing the expansion of the $\bar{S}$ (Bresnan (1970) and (1972)), that is also considered by Emonds (1976), comes into play. We assume that $\bar{S}$ is the initial category and is expanded as follows:

- (94)a $\bar{S} \rightarrow \text{COMP } S \dots$
 b $S \rightarrow \text{NP AUX VP}$

Now we are left with two root landing sites: COMP and S. I shall not go into the question of how S can be excluded as a possible landing site. S does not seem to be a cyclic landing site either. So, there will be independent reasons for excluding S.

The argument given above can also be found in Williams (1974), ch. 4, section 2 (introduction). Also Williams notes that base rule (93) makes many more positions available than does base rule (94)a. However he notes some problems with Intraposition, a root transformation in Emonds (1970) substituting an extraposed S for the subject-NP. I shall come back to that later. Williams's statements about root transformations are embedded in a larger theory about applicational domains and rule ordering in syntax. His central thesis runs as follows:

- (95) Wherever in a language there is a phrasing internal to cyclic nodes, the transformations of that language can be partitioned and the partitions labeled with phrase nodes such that no rule that is a member of partition X ever need analyze material outside of phrase X, and for all partitions Y bigger than but including X, the rules of X are ordered before the rules of Y. (Williams (1974), ch. 1, 6.0.)

Williams accepts rule (94)a and (94)b. Thus Passive, which has to analyze a subject NP and so, is a S-rule, has to be ordered before Wh-Movement, which is a $\bar{S}$ -rule because it has to analyze COMP. Similarly, Dative, if that is a syntactic rule, will be ordered before Passive because it has to analyze material inside the VP. Principle (95) generalizes strict cyclicity for all rules inside one cycle.²⁴⁾ In fact, ordering evidence of the sort that is required for (95) is scanty. Suppose Dative is an interchange of two NPs via double substitution. In that case, the ordering 1. Dative 2. Passive will not be one of necessity. Either ordering, Dative before Passive or Passive before Dative, will do. Since Dative is an optional rule and nonapplication of Object Preposing will cause the filtering out

of the pertinent derivation, the former ordering will derive both (97)a and (97)b from (96), whereas the latter ordering only yields (97)b:

(96) COMP [_S * PAST be+en give a book to John]

(97)a John was given a book

b A book was given to John

Similarly, the ordering 1. Passive 2. Wh-Movement is not necessary if Passive and Wh-Movement do not analyze the same material. And if they do, general requirements for NP-movements, trace theory and the like, will enforce the ordering of Passive before Wh-Movement.²⁵⁾

Actually, the best argument in favor of (95) I know of is not discussed by Williams. I mean the ordering of Passive before SAI. A free ordering of these rules would also derive (98), an ungrammatical interrogative:

(98) *In which paper you have been criticized for your statements?

Trace theory cannot impose this order upon the pertinent rules. But even here general considerations about the definition of sentence types of the kind I presented in the preceding subsection can destroy the evidence. So, there does not seem to be any independent evidence in favor of principle (95), but note that there is no clear counterevidence either. And since theoretical considerations of a different type can impose orderings where these are necessary, we might claim that maybe principle (95) is not an axiom of the theory but that it will be a theorem of the theory for those cases where an ordering is required in order to derive a specific sentence. Therefore I shall not pay any attention anymore to problems of rule ordering. I shall concentrate upon another aspect of subcyclic strict cyclicity, i.e. the relationship between domain statement and rule application. There is something to be gained from a closer look at the relationship between material analyzed by a rule and material involved in a transformation.

According to Williams all root transformations are $\bar{S}$ -rules and so have to analyze material at $\bar{S}$ -level. While discussing SAI he hits a little problem which he does not say very much about:

"The only evidence we have given that SAI is an $\bar{S}$ rule is that the statement of its affective environment includes the complementizer; nothing need be moved into or out of the complementizer. A stronger position may be taken -- SAI

actually moves the auxiliary into the complementizer -- hence a structural change takes place at the $\bar{S}$ level." (Williams (1974), ch. 4, section 2.1.)

We can generalize the problem we meet here as follows: If a rule analyzes a constituent C which is properly contained^a in domain X and not in domain Y that is improperly contained in domain X too, there is no reason for assuming that this implies that C must be involved in the application of the pertinent rule. Principle (95) does not impose that restriction. Williams makes an ad hoc decision for the case of SAI, but he does not formulate a principle that might decide this case. However, such a principle is easy to formulate. I propose the following definition of 'X-domain rule':

- (99) A rule R_i is a X-domain rule iff the structural index of R_i contains a constant C_k such that
- a) C_k is properly contained in X and
 - b) there is no Y such that X properly contains Y and Y properly contains C_k and
 - c) C_k is satisfied by a factor changed by the rule.

This definition of the relationship between constants that are analyzed by and involved in a rule and the domain of that rule ensures the subcyclic strict cyclicity that underlies (95).²⁶⁾ Now root preposings will move a constituent into complementizer position, provided root transformations are $\bar{S}$ -rules. Nice though this result may be, we may ask whether (99) guarantees that root preposing rules always choose COMP as a landing site. The answer is no. If one prefers base rule (93) over base rule (94)a, definition (99) allows four landing sites for a root transformation: COMP, NP, AUX, and VP. And so we are back at the problem I started this subsection with, the problem Williams tried to evade by assuming the distinction between S and $\bar{S}$. And furthermore we are back at the problem Williams (1974) noted as regards SAI, since now a permutation of NP and AUX is ^{within} the range of possibilities again. Therefore it is important to establish whether the initial base rule for English must be (94)a or not. That will be easier than considering the question of whether SAI in its familiar formalization mentioning both COMP and NP and AUX is an admissible permutation. Nor do I want to go into the question of whether permutations are admissible at all. These questions go way beyond the goals of this paper and would give rise to all sorts of technicalities, which is quite boring.

It has been noticed that usually movement rules 'upgrade'

the constituents they transfer (cf. Chomsky (1976)a, p. 106-110), in that they move a constituent closer to the root of the sentence. Suppose we define 'upgrading' in terms of superiority (for this term: Chomsky (1973)), which is quite natural an interpretation:

- (100) A rule R_i upgrades a constituent C_k iff C_k in the output of R_i is superior to its trace.²⁷⁾

It is assumed that every constituent, whether it is a NP or not, leaves a trace. This assumption is not counterintuitive. But counterintuitive might be the assumption that the relation that obtains between a preposed V or PP and its trace is the same as the anaphoric relation that holds between a NP and its trace (compare Chomsky (1976)a, p. 110). The latter assumption would imply that all movement rules are subject to trace theory. Although I think something could be gained from such a hypothesis,²⁸⁾ I take a weaker stance and adopt Chomsky's definition of the Upgrading Principle:

- (101) Movement rules may upgrade, but they cannot downgrade unless the position they vacate is filled by a later rule, or unless the item downgraded is not a noun phrase. (Chomsky (1976)a, p. 110)

I interpret upgrading as specified in definition (100). The corresponding definition of 'downgrading' requires that the trace of C_k be superior to C_k itself. The Upgrading Principle under the interpretation intended can be used as a criterion for the choice between base rule (93) and (94)a. Once we have found a rule that enables us to choose for (94)a, the definition of domains, i.e. (99), guarantees that AUX moves into COMP, since then COMP and only COMP will be the landing site for root preposings. What we need is a rule that moves NPs across variables into COMP and so has to move subject NPs too. Such a rule cannot use base rule (93), since a movement of a sister of COMP into COMP does not count as upgrading, according to (101)+(100). On the other hand base rule (94)a does not conflict with the Upgrading Principle.

The obvious candidate for the choice between (93) and (94)a is Wh-Movement. This rule moves constituents like AP and PP, but also NP, across a variable. And a subject-NP is one of the possible wh-phrases. Note that adjunction of a wh-phrase to the subject NP is excluded by the Upgrading Principle. So the sole landing site left is COMP. This is the constellation of facts we need: a rule moving over a variable a constituent which may be the subject-NP that is the sister of COMP, the landing site of the rule. Thus (93) is rejected and (94)a is chosen as

the base rule for English and, in fact, for any language that fronts the subject under Wh-Movement, i.a. Dutch and German. And by (99) we know that any root preposing rule in such a language must move a constituent into COMP.²⁹⁾

The hypothesis outlined above makes certain predictions for French. This language has a rule of Wh-Movement and so its grammar must contain base rule (94)a. Now there are two root phenomena in French that are strikingly similar to SAI in English. Emonds (1976) discusses these rules at p. 202 and 203 of his book. He owes the observations to Kayne. The first rule Kayne has termed Subject-Clitic Inversion. This rule applies in root sentences whenever a wh-element or some other suitable trigger is present to the left of the subject-clitic and the first verb in the verbal complex. Some examples taken from Emonds are:

- (102)a Quand parlerez- vous à Jean?
When will-talk-you to John?
- b Ne s' est-il pas souvenu de nous?
Not himself has-he not remembered us? (=Did not he remember us?)
- c Vous y ont-ils amenés à temps?
You there have-they brought in time? (=Have they brought you there in time?)

A more accurate name for this transformation might be Subject-Clitic $\bar{V}$ Inversion. $\bar{V}$ is a category used by Emonds (1976) that dominates the prohibitive companions of the verb and the verb proper. Examples of a preposed verb accompanied by clitics are (102)b and c. Subject-Clitic $\bar{V}$ Inversion looks like SAI, but there are also similarities with Dutch and German Verb Preposing. The feature that SAI inversion shares with this rule is the pseudolocal nature of the process. And the fact that both auxiliaries and main verbs may move under Subject-Clitic $\bar{V}$ Inversion is a feature that is shared with West Germanic Verb Preposing. The rule cannot be local since the application of the rule is dependent upon the presence of certain material outside the subject-clitic - verb sequence. And it cannot be a structure-preserving rule either since there is no clitic or NP position between the auxiliary and the main verb (compare (102)b and c). For some reason Emonds considered only one possible technical variant of the pertinent rule, namely movement of the subject-clitic, probably because his assumption that there is only one position inside COMP to be filled prevented him from assuming that the $\bar{V}$ moves into complementizer position, since a wh-phrase may occur in that position (compare (102)a). Since we already know from German and

Dutch that that does not constitute a real problem, I want to propose the following formalization:

(103) Subject-Clitic $\bar{V}$ Inversion

COMP	-	NP _{+pro}	-	$\bar{V}$	-	X
1		2		3		4
1+3		2		e		4

The objection that clitics are some sort of affixes and so are orphaned after the application of this transformation is not strong enough an reason for rejecting rule (103). Confirming evidence for my hypothesis can be found in Dubuisson and Goldsmith (1976). These authors note that many subject-clitic inversion constructions have variants without Subject-Clitic Inversion (their term) in which a complementizer shows up (generally que (that), sometimes si (whether, if)). This observation does not apply to yes/no-questions but it does to interrogatives:

- (104)a Comment dit-il, qu'il s'appelle? , (D&G (14))
 How says-he that-he is called?
 b Comment qu'il dit qu'il s'appelle?
 How that-he says that-he is called?

Similarly for parentheticals (105), certain preposed adverbs (see (106) and (107)), certain concessives (108) and exclamations (see (109)):

- (105)a Benoit a un nouvel ami, dit-elle (D&G (17))
 Benoit has a new friend, says-she
 b Benoit a un nouvel ami, qu'elle dit
 Benoit has a new friend, that-she says
 (106)a A peine était-il parti, Marie arrivait (D&G (18))
 Hardly had-he left, Mary arrived
 b A peine s'il était parti, Marie arrivait
 Hardly whether-he had left, Mary arrived
 (107)a Peut-être préfèrait-elle l'oublier (D&G (20))
 Maybe preferred-she him-forget
 b Peut-être qu'elle préfèrait l'oublier
 Maybe that-she preferred him-forget
 (108)a Si grande soit-elle, elle n'atteindra pas la branche (D&G (23))
 So tall is (sub.j.)-she, she not-will-reach not to the branch
 b Si grande qu'elle soit, elle n'atteindra pas la branche
 So tall that-she is (sub.j.), she not-will-reach not to the branch
 (109)a Mais est-il grossier! (D&G (28))
 But is-he rude!

- (109)b Mais qu'il est grossier!
But that-he is rude!

Dubuisson and Goldsmith conclude that Subject-Clitic Inversion can be formalized as follows:

- (110) CL $\begin{bmatrix} \text{VP} \\ 1 \\ e \end{bmatrix}$ V (OPT)
 2
 2+1

Furthermore they claim that this rule is independent from the preposing rules and the rule of Complementizer Deletion. Therefore, if I understand their claim well, they contend that descriptively Complementizer Deletion and Subject-Clitic Inversion are not related, i.e. independent processes. This contradicts the observational conclusion we may draw from the examples Dubuisson and Goldsmith present, namely: If Subject-Clitic Inversion occurs then the complementizer is absent. It is not the other way around, because in a sentence like tu manges (you are eating) the complementizer is absent and yet Subject-Clitic Inversion has not applied. This relationship is easy to formalize by means of the rule of Subject-Clitic $\bar{V}$ Inversion I proposed in (103) and subsequent deletion of the complementizer triggered by the preposed $\bar{V}$. This ordering is enforced by the Counterdeletive Ordering Principle that I shall introduce in the next section.

Something similar I would like to propose for the second root transformation that Emonds (1976) discusses, namely the rule of Affirmative Imperative Inversion (terminology Emonds's). This rule interchanges the verb proper and its clitics in affirmative imperatives. Some examples taken from Emonds are:

- (111)a Donnez-moi ces cigares!
Give-me those cigars!
b Conduisez-les-y dans mon auto
Drive-them-there in my car

In negative imperatives this inversion does not occur. Compare:

- (112)a Donne-le-moi
Give-it-(to) me
b Ne me le donne pas
Not (to) me it give not

The root status of Affirmative Imperative Inversion is clear. This rule applies to root sentences only. It cannot be a local rule, because the

inversion is dependent upon material outside of the clitic - verb sequence that is immediately involved. It cannot be a structure-preserving rule either, because direct object clitics may not go to the direct object position. Compare the following sentences, taken from Emonds (1976)

- (113)a Gardez toujours ce souvenir!
Keep always that remembrance
b Gardez-le toujours!
Keep-it always
c *Gardez toujours le!

Here too Emonds is thinking of a rule moving the clitic(s). But I believe that a complementizer attraction analysis as required by my hypothesis is possible as well. Therefore I propose the following rule:

- (114) Affirmative Imperative Inversion
COMP - $\overline{CL}$ - V - X
1 2 3 4
1+3 2 e 4

This analysis presupposes a node $\overline{CL}$ inside $\overline{V}$ which contains all pronominal and adverbial clitics but not the negative clitic ne. Although the node $\overline{CL}$ cannot be found back in Emonds's analysis of French clitics, I do not think that the problems are insurmountable. What is more, it is worthwhile trying out this category, because this way we can make Affirmative Clitic Inversion part of the theory of root transformations that is outlined above.³⁰⁾

This having been established, I think it is useful to compare the hypothesis about root transformations outlined above with the theory presented by Emonds (1976). There are some differences. That I want to describe all Complementizer Attraction Transformations as adjunction rules, even the cyclic rule of Wh-Movement, and that that assumption conflicts with Emonds's theory, is clear. A theoretical argument in favor of an adjunction approach will be discussed in section 5. More important at this moment is in what respects our theories differ as to which ^{root} transformations are Complementizer Attraction Transformations. I think the differences are a matter of degree and not one of principle. For instance, I have shown that it is not impossible to describe SAI and Verb Preposing, etc., as root transformations that substitute a verb for a V inside $\overline{COMP}$. So the fact that I want to move AUX in English into complementizer position, whereas Emonds describes SAI as

a permutation, may not be exaggerated. Nevertheless, there are some more remarks I would like to make about Emonds's division of root transformations.

I quote Emonds (1976):

"The root transformations are now divisible into three categories:

1. Those that induce comma intonation - the tag question rule, left and right dislocation, certain transformations that produce parentheticals of various sorts (discussed in the following sections).
2. The COMP substitution rules, which do not induce comma intonation.
3. The two "inversion" rules - subject-auxiliary inversion and subject-simple verb inversion. Like local rules, these rules interchange two adjacent constituents, one of which is not a phrase node. (Unlike local rules, they depend on conditions external to the two interchanged nodes.)" (Emonds (1976), chapter 2.8.)

The COMP substitution rules of Emonds's are: Negated Constituent Preposing, Directional Adverb Preposing, Topicalization, VP Preposing, Comparative Substitution, Participle Preposing and PP Substitution. Although I agree with Emonds at many points I have my doubts about this division. Therefore I present the following division of root phenomena. After some discussion of that division I am able to formulate another division of root transformations.

For sake of discussion I partition the root phenomena of English as follows:

1. a the tag question rule
b Left and Right Dislocation and Topicalization (and Intraposition)
c VP-Preposing
2. parentheticals of various sorts
3. Complementizer Attraction Phenomena: Negated Constituent Preposing, Directional Adverb Preposing, Adverb Preposing, SAI
4. Subject Simple Verb Inversion
5. Double Movements: Comparative Substitution, Participle Preposing, PP Substitution, which rules may be partly describable in terms of Complementizer Attraction Rules.

There is one clear point where Emonds and I agree: Parentheticals cannot be described in terms of Complementizer Attraction Transformations because the pertinent phenomena differ too much. Therefore I leave out a discussion of my number 2, and I concentrate upon my numbers 1, 4 and 5.

\, Thereason why I have collected under one number the tag question rule

left and right dislocation, topicalization and VP Preposing, is that I believe that all of them can be described in terms of existing rules and do not need novel transformational rules. At various points in his book Emonds (1976) himself refers to a nontransformational solution of left and right dislocation by means of base rules generating a dislocation category to the left or the right of an independent sentence and by means of a special requirement for such structures to the effect that there be an anaphoric pronoun in the sentence referring to the left or right dislocated element. Compare Hirschbühler (1974) and Van Riemsdijk and Zwarts (1974). A similar solution has been proposed for Topicalization by Chomsky (1976)b. I come back to that in a moment.

Something similar can be said about Tag Questions. Consider the following examples:

(115)a You are May, aren't you?

b Peter won't buy that book, will he

We know that a Tag Question is a declarative sentence followed by a repetition of the first auxiliary ^{plus or minus the negation} and the subject. Emonds proposes an analysis involving a rule of Tag Formation copying an entire declarative sentence with addition of whether and with deletion of the negative if the declarative is negative and with addition of the negative if the declarative is affirmative. Subsequent application of the well-known rules of VP Deletion and Subject Aux Inversion will do the remaining work. The power of rules like Tag Formation is enormous and so undesirable. But we do not need that rule at all, since the necessary devices for generating tags are already given by the theory. I mean, of course, the base rules. This means that all rules for generating tags, i.e. base rules, SAI and VP Deletion, are present, and that we do not need any additional transformation for generating Tag Questions. What we need is a textgrammatical requirement for minitexts like (115) that have a special function, i.e. the function of a question that one expects to be answered positively. Such a text grammar rule requires that the first sentence of such a text be a simple declarative, whereas the second question be a yes/no-question that reflects the propositional content of the declarative while changing the truthvalue of the declarative, while this question must delete its VP. Such text rules can be found in other languages too. In this paper I have cited several examples. I refer to the independent conditionals and concessives, discussed in fn. 3. These examples are taken from Dutch

I also refer to the Dutch contrastive minitexts quoted in (64), where the first one of the constituting sentences must be a marked declarative with the finite verb in first position. Some of the French examples I quoted from Dubuisson and Goldsmith (1976) seem to me to have the same characteristics, especially (106) and (108). These are combinations of two independent sentences, the first of which must be marked in that some constituent is preposed and Subject-Clitic $\bar{V}$ Inversion has applied. Thus we can discard Tag Formation as a transformational rule and so, as a root transformation. The sole thing that is root-transformational about tag questions is the fact that SAI is applied to the second constituting sentence of a tag question. But that follows from the requirement that the second sentence be a yes/no-question.

In Chomsky (1976)b it is proposed that Topicalization^{in English} is described as a derivative of Wh-Movement. The topicalized element is supposed to be base-generated under a node TOP, that is generated by base rule (116)a:

$$\begin{array}{lcl} (116)a & \bar{S} & \dashrightarrow \text{TOP } \bar{S} \\ & b & \bar{S} \dashrightarrow \text{COMP } S \end{array}$$

The gap in the sentences that is adjacent to TOP is left behind by a wh-element moving into COMP position, which is deleted in the course of the derivation. The theory, as developed in Chomsky (1973), (1976)a, (1976)b and (1976)c, does not allow the movement of an element out of a cyclic $\bar{S}$, unless it is the subject of an infinitival $\bar{S}$ that is a clause mate of the landing site (COMP, NP), or unless it can move into, and later out of, the complementizer that is a clause mate of the mover. And that COMP serves as a second escape hatch for cyclic $\bar{S}$, whether infinitival or not. Only one cyclic rule is known to satisfy the latter requirement of moving into and out of COMP, i.e. Wh-Movement. Now Topicalization coincides with Wh-Movement in most respects: It leaves a gap; there is apparent violation of Subadjacency, the Subject Condition and the Propositional Island Constraint; the Complex Noun Phrase Constraint and the Wh-Island Constraint are obeyed. However, there is an important difference: Wh-Movement can leave behind its preposee at any point in a cyclic derivation. Topicalization can not. Being a root transformation, Topicalization must move its preposee into topmost position. Therefore Chomsky has proposed to split up the process of Topicalization into two parts: one part defined by the base rules and a pronominalization requirement and one part defined by Wh-Movement. Of course, this idea can be put aside as 'Chomskyan fancies' because of the initial strangeness of the proposal and one can continue describing

Topicalization as a Complementizer Attraction Transformation. I do not think it is wise to do that. Chomsky's theory predicts that root transformations that are not able to apply cyclically will be constrained by Subadjacency and related conditions, i.e. it is predicted that the preposer of a root transformation that moves that constituent over a variable into complementizer position will be the clause mate of the COMP it moves into (or the subject of an infinitival complement that is a clause mate of the pertinent COMP). This prediction is borne out in quite some cases. In the preceding subsection I have pointed out that Constituent Preposing in Dutch, which, by the way, subsumes Topicalization, is a bounded rule. The same applies to the rule of Verb Preposing.³¹⁾ Most root transformations in English seem to be bounded rules. I refer to Negated Constituent Preposing, Directional Adverb Preposing and if the Double Movements (terminology mine, see my number 5) may be split up in a root preposing, and a stylistic postposing, then the root preposings obey the theory. Something similar was noted by Chomsky (1976)a who remarks that what he calls Adverb Preposing does not permit construal of the preposed adverb and an embedded clause. Most of his examples involve Negated Constituent Preposing, only one involves the use of a preposed adverbial PP. So the sole exception seems to be Topicalization, an unbounded phenomenon. But this rule loses its exceptional status if we accept the description of Topicalization proposed in Chomsky (1976)b.³²⁾

Intraposition, a rule Emonds does not talk about anymore in his book (1976), is another candidate for description in terms of existing rules. In Koster (1975)a it is proposed to describe Dutch Intraposition (see (117)) in terms of a left dislocation node and topicalization of a coreferent pronoun that is optionally deleted. This description predicts that also object complements can undergo these rules, which is the case indeed (see (118)):

- (117) Dat ie komt, (dat) is vreemd
That he comes, (that) is strange
(118) Dat ie zou komen, (dat) wist ik niet
That he would come, (that) knew I not

In Williams (1974), ch. 4, section 2.6, it was noted that Intraposition is a clear counterexample to the claim that all root preposings move a constituent into COMP, if one assumes that extraposed sentences are substituted for the subject-NP. The description in Koster (1975)a solves this problem for Dutch. Now Higgins (1973) has noted that English

object complements may topicalize, whether they hail from an embedded sentence or not, (see (119)) and that subject complements from lower clauses may topicalize as well (see (120)). In both cases the expletive pronoun must be absent. This fact corresponds with the fact that the expletive pronoun must be absent in Intraposition sentences too (see (121)). Emonds (1976) has adopted Higgins's description and assumes that sentences dominated by NP may topicalize, in which case the pronoun accompanying the S inside the NP will delete in COMP position. Compare the following examples, which are taken from Higgins (1973) ((119) and (120)) and Emonds (1976) (example (121)):

- (119)a That you refuse even to discuss the matter I most certainly
do resent (*it)
- b That we won't abandon him you may definitely depend on (*it)
- (120) That Susan would be late John didn't think (*it) was very
likely
- (121) That the boys were dancing together (*it) was amusing John

It is evident that we can apply here Chomsky's (1976)b solution for Topicalization too. The difference in description between Dutch and English is motivated by the fact that Dutch sentence topicalization is not an unbounded phenomenon, witness (122):

- (122)a Dat zijn oma ziek was, heeft ie niet meer op tijd
That his grandmother ill was, has he not anymore in time
vernomen
heard
- b *Dat zijn oma ziek was, denk ik(niet), dat ie nog
That his grandmother ill was, think I(not), that he still
op tijd heeft vernomen
in time has heard

Thus the moral of this discussion of tag questions, left and right dislocation, topicalization and sentence topicalization (Intraposition) is that not all root phenomena have to be described in terms of special root transformations. Known rules (SAI, Wh-Movement, base rules, VP Deletion) plus an extension in the area of base rules and text grammar will do the job. Furthermore, within the framework of the theory of Chomsky (1973) and (1976)a, b and c it is expected that root transformations are bounded. Unbounded root phenomena can be described by means of other rules.

Now I come to less clear cases. First the rule of VP Preposing, which is the last rule mentioned in my number 1 and which I did not talk about

in the preceding paragraphs. Compare the following examples of VP Preposing (123) and of Participle Preposing (124):

- (123)a John intends to make a table, and make one he will
b We thought someone would fail the exam, and fail it many people have
- (124)a Speaking at today's lunch will be our local congressman
b Taking turns, as usual, were his two sisters
c Examined today and found in good health was our nation's chief executive

All examples are taken from Emonds (1976). Considering Participle Preposing ^{Emonds} remarks that here too VPs have been preposed. One might want to collapse VP Preposing with the preposing part of Participle Preposing, were it not the case that the cyclic rule of Affix Hopping must apply before the rule of Participle Preposing whereas Affix Hopping must be ordered after VP Preposing because the en-affix of have does not show up in preposed VPs. Compare (124) with (123)b. It is not easy to solve this problem. The weird ordering of Affix Hopping is not something that is expected since all applications of Affix Hopping are supposed to occur in one block. Another way out might be the proposal to base-generate VP in TOP position while deleting (or interpreting an identical VB in the corresponding sentence. This proposal will do for the sentences cited in (123) and it would explain why the preposed VP in (123)b does not have an affix on the verb. However this proposal also predicts that the following sentences should be good, which they are not:

- (125)a *Speak at today's lunch our local chairman was (or: will be)
b *Speak at today's lunch was our local chairman (or: will be)
- (126)a *Examine today and find in good health our nation's chief executive was
b *Examine today and find in good health was our nation's chief executive

Thus there is a descriptive dilemma: Either we accept a weird ordering or we must base generate VP (at least for the cases in (123)) and filter out sentences that are wrongly predicted to be grammatical. This deadlock can be solved however, if we make one more assumption and accept a categorial differentiation between verbs and participles. Either ^{after be} participles are adjectives or they are an intermediate category that might have its own projection within the $\bar{X}$ -theory. In the latter case the preposees in (124) are Participle Phrases. Either choice can be

combined with the assumption I made above that so-called preposed VPs are base-generated in TOP and bind a VP in the sentence that is emptied (or interpreted) by the rule of VP Deletion. Thus another root phenomenon might be describable in terms of an expansion of known rules.

Finally I have to say something about certain inversions between a subject and the verbal sequence in the case of the Double Movements and Directional Adverb Preposing. I agree with Emonds (1976) that the inversion of subject and verbal sequence in the case of the Double Movements, or as Emonds calls them, Preposings around Be, can be attained by means of the rule of Stylistic Inversion (see Emonds (1976), ch. 2, section 7). This stylistic rule accompanies the preposing rules of Comparative Substitution, Participle Preposing and PP Substitution, which may be all described in terms of a Complementizer Attraction Rule. Compare the following examples:

- (127)a More important for the local populace has been the invasion
in Zaire
b Dancing at the table was my cousin Florimund
c On the wall hangs a portrait of Hua, that revisionist!

Such a description would explain the bounded nature of the Double Movements. But boundedness could be also achieved by describing the total process as a stylistic phenomenon via the interchange of subject and AP, PP or Participle Phrase. This would be another explanation for the relative easiness of these rules in certain embedded contexts, which could be a substitute for the explanation I suggested for the data of Hooper and Thompson (1973) in section 2. However the semantic constraints that are necessary for embedding the pertinent constructions suggest that at least one root rule is involved in the generation of (124) and (127). Thus we can define a fourth group of root phenomena: those defined by a Complementizer Attraction Rule and a stylistic rule of Stylistic Inversion, the combination of which is required by the grammar of English. Basically this is not different from the proposal I made for the description of root constructions in English and Dutch and German in general. In the introduction of this section 3 I suggested to describe marked and unmarked root constructions in Dutch and German in terms of ^(non)applications of root transformations taken from two sets, one set containing Verb Preposing, the other set containing all other root preposings. And now certain root constructions in English appear to be defined in terms of a Complementizer Attraction Transformation

taken from the latter set and a stylistic rule. Both rules are required to apply in order to generate the Double Movement structures, which have a specific function to perform, evidently.

Consider the following examples:

- (128)a Never have I heard him swear so loudly
- b Only yesterday did he give me some help
- (129)a So loudly did he swear that I was disgusted
- b He is five feet tall. And so am I
- (130)a Into the room flew Sam, the bald eagle
- b Away ran Snyder
- c Away he ran

In (128) and (129) are exemplified some cases of constructions that require a combination of a root preposing rule with SAI. This is the normal case as compared with the case of the Double Movements. Emonds claims that the sentences under (130) can be described by another combination of root transformations: Directional Adverb Preposing plus Subject Simple Verb Inversion. This latter rule is subject to the requirement that no verb occur to the right of the verb to be inverted. Note that SAI must be ordered before Do Erasure, whereas Subject Simple Verb Inversion must follow that rule. Extrinsic orderings are always suspect. Furthermore this ordering violates a principle which I think is well-motivated, i.e. the Counterdeletive Ordering Principle. This principle is discussed in the next section. However there is more to it. Note that Subject Simple Verb Inversion also requires that the subject be nonpronominal. If the subject is pronominal the rule simply does not apply, which does not jeopardize the grammaticality of Directional Adverb Preposing sentences. So Subject Simple Verb Inversion does not have to be applied in case of Directional Adverb Preposing. This is confirmed by an observation by Williams (1974). Williams remarks that sentences like (131) are grammatical:

- (131) Into the woods, John ran

However, Williams suggests that this sentence might be generated by Adverb Preposing, since that rule induces a comma intonation. He might be right, because Emonds claims that sentences like (132) are ungrammatical

- (132) *Down the street the baby carriage was rolled!

This implies that certain nonapplications of Subject Simple Verb Inversion do jeopardize the grammaticality, whereas others do not. A rather strange constellation of facts. I have to conclude that

Directional Adverb Preposing constructions are stylistically highly marked constructions that are defined in terms of an application of a Complementizer Attraction Transformation (maybe Adverb Preposing) and either an application of a stylistic rule of Subject Simple Verb Inversion in the case of a nonpronominal subject or a nonapplication of that rule in the case that the subject is pronominal and a simple verb is present. This means that a nonapplication of Subject Simple Verb Inversion in the case of more than one verb does not count as a defining property of Directional Adverb Preposing Constructions. This approach is in accordance with my assumptions about rule ordering that exclude that a root movement rule is applied after a deletive rule. Thus the root phenomenon of Directional Adverb Preposing constructions happens to fall in the same class as the Double Movements around be and other verbs. All of these constructions are defined in terms of (non)applications of one root preposing and one stylistic rule.

This concludes my discussion of English root phenomena. It has been established that the class of root transformations is substantially smaller than Emonds thought. There happen to be two groups of root transformations: Firstly, the group of transformations that are responsible for parenthetical structure. These transformations I have not talked about. And it is possible that they are not transformations at all. Secondly, the group of Complementizer Attraction Rules: Negated Constituent Preposing, the adverb preposing rules that might be one and the same rule and the preposing parts of Double Movements, fronting Participle Phrases, comparative APs and PPs; and last but not least Subject AUX Inversion. The first set of root preposing is rather bewildering in its diversity, but as long as it can not be established that English has a second strategy for Topicalization, coinciding with but also nonoverlapping with the general Topicalization strategy as outlined in Chomsky (1976)b, there is no reason to assume a general rule of Constituent Preposing in English. Such a rule would greatly simplify the grammatical description of English. Up to the moment that such a general rule can be established, I have to assume that the multitude of root preposings in English grammar reflects a system in decay, i.e. the old West Germanic system of root constructions in decay. Otherwise, in case of one general preposing rule, reflecting this system in decay could be left for that part of grammar where marked and unmarked root constructions are defined.

There are not any more root transformations. In stead of that it has been established that certain root phenomena are defined in terms of

(non)applications of root transformations: Questions, Negated Constituent Preposing constructions, Adverb Preposing constructions, Parentheticals. Others are defined in terms of (non)applications of a one root transformations and one stylistic rule: Directional Adverb Preposing constructions and Double Movement constructions. And finally, certain root constructions are not defined in terms of root transformations at all, unless indirectly: Tag questions, Left and Right Dislocation, Topicalization and VP Preposing constructions.

- This concludes my discussion of the definition of root transformations. We know now that if we accept the definition of X-domain rule in (99), Chomsky's definition of the Upgrading Principle (101) and the definition of upgrading in (100), the theory formulated that way requires that any language that fronts its Wh-phrase use a base rule expanding $\bar{S}$ into COMP and S and that such a language move its root preposers into complementizer position. This does not exclude that there are other possible landing sites at $\bar{S}$ level, but I do not know of them yet. Furthermore no claim is made about the rules that generate parentheticals

Languages that do have a rule of Wh-Movement are Dutch, German, French and English. And it has been shown that all root preposings in these languages can be described in terms of Complementizer Attraction Transformations, unless there are reasons to adopt a description by means of base rules and other rules (English Topicalization, VP Preposing and Tag Questions; Left and Right Dislocation). It has also been shown that it is descriptively advantageous to formalize Dutch and German root preposing rules as Complementizer Attraction Transformations.

4. Haben/sein Deletion in German and Ha Deletion in Swedish

This having been established I return to the problem of section 2. Consider the following German examples:

(133)a --, dass er noch nicht gekommen (ist)
--, that he yet not come (has)

b Er ist/* $\emptyset$ noch nicht gekommen
He has/* $\emptyset$ yet not come

(134)a --, warum er geweint (hat)
--, why he wept (has)

b Warum hat/* $\emptyset$ er geweint?
Why has/* $\emptyset$ he wept?

An archaic rule in German deletes the finite forms of the temporal auxiliaries haben and sein (in this case hat and ist respectively) only if these are in sentence (or at least VP) final position. This

rule is obligatorily bled by the root rule of Verb Preposing. So the ordering must be 1. Verb Preposing 2. Haben/sein Deletion. This ordering is necessary only if the choice is made to apply both Verb Preposing and Haben/sein Deletion. Both rules are optional. The optionality of Haben/sein Deletion is clear from (133) and (134). The optionality of Verb Preposing can be argued for on the basis of the existence of dubitative questions, marked questions that do not prepose the verb. However, the decision whether one wants to apply a rule or not is made at the point that it is that rule's turn to apply (or not). Thus free ordering of the rules under consideration will not do. And there is as yet no principle that predicts the ordering required. Furthermore the ordering 1. Verb Preposing 2. Haben/sein Deletion is in conflict with Williams's (1974) theory of rule ordering in syntax, if that theory is needed in addition to other theoretical principles. In order to see why, note that Verb Preposing is a $\bar{S}$ -rule and that Haben/sein Deletion is a VP-rule. On the basis of these facts Williams's theory predicts that Haben/sein Deletion is ordered before Verb Preposing, an ordering that is known to be wrong, since it can generate ungrammatical sentences like *Er noch nicht gekommen and *Warum er geweint?.

In Den Besten (1975) the following principle has been proposed, which partly preempts the ordering theory of Williams (1974):

(135) Counterdeletive Ordering Principle

Nondeletive rules precede deletive ones

By deletive rules I mean rules such that not each terminal element contained in an input string of such a rule is contained in the output string of that rule. Thus rules substituting for a specified lexical element another element that is either taken from the lexicon,³³⁾ or specified in the structural index of that rule³⁴⁾ and rules substituting for a specified lexical element and the ^{pre}terminal element immediately dominating it a class of lexical elements defined by the preterminal category immediately dominating them and specified in the structural index of the rule³⁵⁾ are a subset of the class of deletive rules, which furthermore contains normal deletion rules.³⁶⁾ I assume that all rules of control, free interpretation and deletion (i.e. interpretation) under identity suffice as devices for the treatment of most deletion phenomena, which implies that we do not need any additional rules of deletion feeding the ^{corresponding} interpretation rules. Thus the sole examples for deletive rules will be found in the area of lexical adjustment rules: local rules deleting specified lexical elements or local rules

substituting for specified lexical elements other lexical elements or classes of lexical elements. In that set of rules several rules can be found that have to be ordered after movement rules, thereby confirming the Counterdeletive Ordering Principle (henceforth: the CDOP). The best examples are those rules that have to be ordered after a root transformation. Evidence about such interaction with cyclic rules is hard to find. And I present an example with a cyclic rule first, since it also falls outside the scope of this paper.

Remember that Wh-Movement in Dutch does not obligatorily induce deletion of the complementizer of (whether):

- (136) --, wat (of) ie gedaan heeft
 --, what (whether) he done has

There is another rule substituting dat (that) for of (whether) when that complementizer is adjacent to the homophonous coordinating element of (or):

- (137) Ik weet niet, of ie zijn stuk al af heeft ,
 I know not, whether he his paper already has finished,
 of *of/dat ie lui is geweest
 or *whether/that he lazy has been

This rule is bled if a wh-phrase slips between of and of. And so the CDOP predicts that the following sentence is grammatical, which is true:

- (138) Ik weet niet, wat (of) ie geschreven heeft, of hoe (of
 I know not, what (whether) he written has, or how (whether
 ie het geschreven heeft
 he it written has

This would be a nice confirming example, were it not that (139) is also grammatical:

- (139) Ik weet niet, wat (of) ie geschreven heeft, of hoe (dat) ie het
 geschreven heeft

This can be blamed upon another rule substituting dat for of when that complementizer is preceded by a wh-phrase. Compare:

- (140) --, wat (dat) ie gedaan heeft
 --, what (that) he done has

Nevertheless nothing militates against a free ordering of Wh-Movement and the rule transforming of of into of dat. The right results follow as well. I have similar problems with other deletive rules interacting

with cyclic rules. The CDOP can do the job but is not required. Only if the theory requires that Complementizer Attraction Transformations adjoin constituents to the complementizer or if the theory requires that these transformations substitute constituents for $\bar{X}$ or V inside $\overline{\text{COMP}}$ - which implies in both cases that we have a lexical complementizer to delete - . } can it be shown that languages like English and German that obligatorily delete the lexical complementizer in case of Wh-Movement need an ordering 1. Wh-Movement 2. Complementizer Deletion and so confirm the CDOP. Since the substitution approach of Wh-Movement can satisfy the theory outlined in (99)-(101) by ad-hocly disregarding COMP we might say that the theory presented in section 3.2 can serve as the theory that is required. Within that theory then the CDOP is necessary. But it also clear from this example and the preceding one that it is not easy to find a simple example confirming the CDOP with a deletive rule and a cyclic movement rule. Fortunately I do not know of any counterexample in that area either.

There is ample evidence for the CDOP as soon as one considers the interaction between deletive rules and root transformations. Two of these have been dealt with in section 3.1. First of all there is the rule of Er-er Contraction in Dutch which may be bled by Constituent Preposing, depending on which constituent is elected by that transformation. Some relevant sentences are:

- (141)a *--, dat er er gisteren nog vijftien over waren
 --, that there there yesterday still fifteen left were
 b --, dat er gisteren nog vijftien over waren
- (142)a *Gisteren waren er er nog vijftien over
 Yesterday were there there still fifteen left
 b Gisteren waren er nog vijftien over
- (143)' Er waren er gisteren nog vijftien over
 There were there yesterday still fifteen left

Given this corpus we may conclude that the ordering 1. Constituent Preposing 2. Er-er Contraction gives the right results. This ordering is predicted by the CDOP. But that in itself does not suffice as confirming evidence for that principle. A free ordering of Constituent Preposing and Er-er Contraction does too allow an application of these rules in that order. Now free ordering predicts that also (144) is grammatical. Sentence (144) is generated via the ordering 1. Er-er Contraction 2. Constituent Preposing. The CDOP on the other hand

predicts that that order is not possible and that consequently (144) is ungrammatical, which it is.

(144) *Er waren gisteren nog vijftien over

Thus free ordering is excluded. The CDOP is confirmed.

The interaction between the German rule deleting indefinite es and the rule of Constituent Preposing yields a parallel example. But here the necessary extra evidence against free ordering is absent. So free ordering of Es Deletion and Constituent Preposing is not excluded. I quote one set of examples without discussing them:

- (145)a --, dass (*es) voriges Jahr noch zwei Bäume im Garten
--, that (*there) last year still two trees in-the garden
standen
stood
- b Voriges Jahr standen (*es) noch zwei Bäume im Garten
Last year stood (*there) still two trees in-the garden
- c Es standen voriges Jahr noch zwei Bäume im Garten
There stood last year still two trees in-the garden

Afrikaans presents us with an example that is totally parallel to the Dutch one. Afrikaans is a language with double negation like French (see (146)). The negation duplicator nie always appears to the right of the verb, which in Afrikaans, a partly creolized derivative of Dutch dialects, is VP-final. There is one exception to this statement: If there is an extraposed complement in the sentence this complement occurs between the verb and the negation duplicator (see (147)):

- (146)a --, dat hy nie lag nie
--, that he not laughs not
- b --, dat hy nooit lag nie
--, that he never laughs not
- c --, dat hy niemand ken nie
--, that he nobody knows not
- (147) --, dat ek nie weet, of hy kom nie
--, that I not know, whether he comes not

If the complement itself contains a negation it must also contain a negation duplicator (see (148)). But if both embedding clause and embedded complement are negative then the predicted sequence of two negation duplicators is reduced to one nie (see (149)):

- (148) --, dat ek weet, dat hy nie kom , nie
--, that I know, that he not comes not

- (149) --, dat ek nie glo, dat hy nie kom nie (*nie)
 --, that I not believe, that he not comes not (*not)

Let us call this rule Nie-nie Contraction. Now there is one more environment for Nie-nie Contraction: If the negative element nie is immediately to the left of a verb and the negation duplicator nie is immediately to the right of that verb, Verb Preposing will yield a sequence nie nie. This sequence contracts (see (150)). This contraction does not apply if the negation duplicator is immediately preceded by a negation element other than nie or if after Verb Preposing nie and nie still are separated by a verb, a participle or an extraposition complement (see (151)):

- (150) Ek lag nie (*nie)
 I laugh not (*not)
- (151)a Hy lag nooit nie
 He laughs never nie
- b Hy ken niemand nie
 He knows nobody not
- c Hy kan nie huil nie
 He can not weep not
- d Ek het nie gelag nie
 I have not laughed not
- e Ek weet nie, of hy kom nie
 I know not, whether he comes not

The rule ordering that is required is 1. Verb Preposing 2. Nie-nie Contraction. This ordering is predicted by the CDOP. Free ordering of Verb Preposing is excluded, because that ordering predicts that both (150) and (152) are grammatical.

(152), *Ek lag nie nie

But we know already that this ^{latter} sentence is ungrammatical. And that is exactly what is predicted by the CDOP. So, again the CDOP is confirmed.

It may be concluded that the ordering 1. Verb Preposing 2. Haben/sein Deletion in German is a member of a larger set of orderings defined by the CDOP. The Afrikaans example is exceptional in that it is the sole example I know of presently that presents us with a feeding ordering of a movement rule (Verb Preposing) and a deletive rule (Nie-nie Contraction). The other examples from Dutch and German are similar in that a deletive rule is followed by a movement rule (Constituent Preposing or Verb Preposing). The Dutch rule of Er-er Contraction and the German

rule of Es Deletion, which I may present now as an example of counterdeletive ordering, are only optionally bled by Constituent Preposing because er and es do not have to front under Constituent Preposing. That rule can prepose other constituents as well. This does not hold for Verb Preposing, because there is only one finite verb that can be preposed. And if the element preposed, i. e. the finite verb, is also a candidate for deletion under Haben/sein Deletion, that rule will be bled as many times as the verb is fronted. Now Verb Preposing is virtually obligatory, since it is the common defining characteristic of unmarked questions and unmarked declaratives. Only dubitative questions that do not front the verb are an exception to the general statement that in root sentences the finite verb is fronted. Thus we may claim, albeit with qualification, that the theory predicts that there are antiroot phenomena if an obligatory ^{necessarily} rule bleeds a deletive rule, i.e. if the element to be deleted is the element to be preposed. This confirms Emonds's claim that there are root transformations and cyclic rules. We do not have to invent a new category of antiroot transformations.

As I have remarked in section 2., the behavior of Ha Deletion is quite similar to the behavior of Haben/sein Deletion. Consider again the following Swedish examples:

- (153) Nixon sade/säger att han redan på ett tidigt stadium
Nixon said/says that he already at an early stage
(hade) insett att han måste förstöra banden
(had) realized that he had-to destroy tapes-the
- (154) Han hade/*Ø insett på ett tidigt stadium att han måste
He had /*Ø realized at an early stage that he had-to
förstöra banden
destroy tapes-the

The auxiliary ha is optionally deleted when it is immediately to the left of the participle (compare (153)). In root sentences this rule does not apply, even though hade is immediately to the left of the participle insett in (154). Howcome? My first guess is that here too Verb Preposing has bled a deletive rule, the rule of Ha Deletion. That there is a rule of Verb Preposing (root transformation) in Swedish, is true. Consider the following sentences:³⁷⁾

- (155)a --, att John (har) sett boken
--, that John (has) seen book! -the

- (155)b John har/*ø sett boken
John has/*ø seen book-the
- (156)a --, att John inte(har)sett boken
--, that John not (has)seen book-the
- b John har inte sett boken
John has not seen book-the
- (157)a --, att Kalle gärna /ofta äter ärtsoppa
--, that Kalle gladly/often eats peasoup
- b Ärtsoppa äter Kalle gärna /ofta
Pea soup eats Kalle gladly/often
- (158)a --, att Kalle äter ärtsoppa på torsdagar
--, that Kalle eats pea soup on thursday
- b Kalle äter ärtsoppa på torsdagar
Kalle eats pea soup on thursday
- (159)a --, vad John (har) sett
--, what John (has) seen
- b Vad har John sett?
What has John seen?

Underlyingly, Swedish is a SVO language. This we may conclude from the a-sentences of (155)-(158). There is one qualification to that statement: The negation element inte (not) and certain adverbs appear between the subject and the first verb (compare (156)-(158)). From (156)-(159) we may conclude that there is a rule of Verb Preposing, fronting the first verb of the verbal sequence, whether that verb is an auxiliary or a main verb (compare (156) and (159) with (157)). This rule is a root transformation. We may assume that Verb Preposing puts the finite verb in complementizer position, because there is a rule of Wh-Movement in Swedish, which - according to my hypothesis - needs a COMP at $\bar{S}$ -level, and so forces all root transformation, which - according to my hypothesis - must be $\bar{S}$ -rules, to move their preposees into COMP. Therefore there must be a general rule of Constituent Preposing that may prepose the subject into complementizer position (compare (154), (155), (156) and (158)), but may prepose other constituents as well (compare (157)). Thus there is a strong resemblance in root behavior between Dutch and German on the one hand - SOV languages undetlyingly - and Swedish on the other hand - a SVO language underlyingly.

If there is such a strong resemblance in transformational behavior, we may expect that the same rule ordering that was sufficient for German suffices for Swedish as well. And it does, though this seems

unreasonable, since the verb ha that deletes in (153), (155)a, (156)a, and (159)a is in the same position, i.e. to the left of the participle, as the verb na in (154), (155)b, (159)b, where it does not delete. However ha is not in the same position, configurationally. In (154), (155)b and (159)b the verb is in COMP position. And that is what counts. Evidently, Ha Deletion is a VP-rule or maybe a S-rule, but not a $\bar{S}$ -rule. Hence, by (99) Ha Deletion will not apply at $\bar{S}$ -level.³⁸⁾

The Swedish antiroot phenomenon is solved in terms of the Counterdeletive Ordering Principle (Verb Preposing before Ha Deletion) and Williams's (1974) theory of applicational domains (Ha Deletion applies to a S or a VP). Yet this leaves open an interesting problem: Why should Ha Deletion be a VP/S-rule at all? In order to give this question some relief, consider the following Dutch examples:³⁹⁾

- (160)a *--, dat er er nog vijftien over zijn
 --, that there there still fifteen left are
 b --, dat er nog vijftien over zijn
- (161)a1 --, dat ik er daar_i nog vijftien t_i van over heb
 --, that I there there_i still fifteen t_i of left have
 a2 --, dat ik er daarvan nog vijftien over heb
 --, that I there thereof still fifteen left have
 a3 Daar_i heb ik er t_i nog vijftien t_i van over
 There_i have I there t_i still fifteen t_i of left
 b1 *--, dat ik er er_i nog vijftien t_i van over heb
 *--, that I there there_i still fifteen t_i of left have
 b2 --, dat ik er_i t_i nog vijftien t_i van over heb
 --, that I there_i t_i still fifteen t_i of left have
- (162)a *--, dat er er er_i nog vijftien t_i van over zijn
 --, that there there there_i still fifteen of left are
 b *--, dat er er_i t_i nog vijftien t_i van over zijn
 --, that there there_i t_i still fifteen t_i of left are
 c --, dat er_i t_i t_i nog vijftien t_i van over zijn
 --, that there_i t_i t_i still fifteen t_i of left are
- (163)a *--, dat er er daar_i nog vijftien t_i van over zijn
 --, that there there there_i still fifteen t_i of left are
 b --, dat er daar_i nog vijftien van over zijn
 c *Daar_i zijn er er t_i nog vijftien t_i van over
 There_i are there there t_i still fifteen t_i of left
 d Daar_i zijn er t_i nog vijftien t_i van over

The sentences under (160) show what we already know: Two ers have to

contract, in this case the er of There Insertion and quantitative er. This contraction takes place at S-level. The examples in (161)a and b show that Er-er Contraction can take place elsewhere too. We know that so-called R-pronouns (daar_i in (161)a and er_i in (161)b) may leave their PPs and move to the general clitic area immediately to the right of the subject-NP. Daar, the strong variant (in (161)a), is sufficiently dissimilar with er and so does not have to contract with er. Ergo, (161)a1 is grammatical. Er, the weak variant (in (161)b1) is homophonous with quantitative er and, not surprisingly, does contract with er. Therefore (161)b1 is ungrammatical and (161)b2 is grammatical. For the bedazzlement of my readers I have added examples (162) and (163) that show that Dutch can contract three ers in a row. I have made an arbitrary decision by assuming that of two ers that contract the righthand er substitutes for the lefthand er, but nothing depends upon that.

It is not implausible to assume that the contraction that yields (161)b2 and (162)b takes place at VP-level or at PredP-level. This implies that one rule may apply at several levels, if its SD is met. A similar remark is made by Williams (1974). He probably thought of rules like Reflexive Formation and Reciprocal Formation (or: Interpretation). Given these considerations it is completely accidental that Er-er Contraction and the Reciprocal and Reflexive rules would be multilevel rules and Ha Deletion a one-level rule. The problem can be put differently. What is the relation between the factors changed by a rule and the domain statement. Can we predict domain statements or are they arbitrary?

I turn back to the theory of applicational domains. Why is a rule like the NP Preposing part of Passive a S-rule? The answer could be: Because we have to move the object-NP towards a subject position and the subject-NP is generated under S. Why are adjunctive Complementizer Attraction Transformations $\bar{S}$ -rules? The answer could be: Because these rules prepose a constituent towards the complementizer and the COMP is generated under $\bar{S}$. Something similar holds for the substitutive approach for Complementizer Attraction Transformations. Now let us review the definition of X-domain rules again:

- (99) A rule R_i is a X-domain rule iff the structural index f R_i contains a constant C_k such that
- C_k is properly contained in X and
 - there is no Y such that X properly contains Y and Y properly contains C_k and
 - C_k is satisfied by a factor changed by the rule.

Does this definition predict that NP Preposing is a S-rule? It does. Does this definition predict that Er-er Contraction could be both a VP-rule and a S-rule? It does, compare fn 38. And does this definition predict that Complementizer Attraction Transformations (under the adjunctive fashion) are $\bar{S}$ -rules? It does. So we might conclude that domain statements do not have an independent status at all, and that we can predict the domain by simply looking at the SD of a rule and at the tree that rule is applied to.

Now Ha Deletion is an interesting rule, since it is not clear whether definition (99) will predict that Ha Deletion is a VP-rule and not a $\bar{S}$ -rule. Compare this transformation with German Haben/sein Deletion. That rule specifies that haben or sein may be deleted if it appears to the right of the participle. Since this situation does not seem to occur at $\bar{S}$ -level (haben or sein has moved to the left), definition (99) seems to safely predict that Haben/sein Deletion is a VP-rule. Now that is not quite correct. Consider the following examples:

- (164)a Gelacht hat/* $\emptyset$ er nicht
 Laughed has/* $\emptyset$ he not
 b Studiert hat/* $\emptyset$ er schon, aber ob er studiert hat?
 Studies has/* $\emptyset$ he yes but whether he studied has?

There is little reason to assume that COMP could ever be a domain. Yet if one would assume that COMP never can be a domain, definition (99) would predict that Haben/sein Deletion, which by the CDOP is ordered after the root transformations, can be both a VP-rule and a $\bar{S}$ -rule. If one would assume that COMP can be a domain,⁴⁰ definition (99) would predict that Haben/sein Deletion can be both a VP-rule and a COMP-rule. Both predictions are incorrect, witness (164). Haben/sein Deletion is a VP-rule. I have to state again that the domain status of COMP is doubtful. In the case of Haben/sein Deletion it does not make any difference whether (99) (wrongly) predicts that this deletion rule is a COMP-rule or a $\bar{S}$ -rule. Similarly those rules that could be stated in terms of a complementizer domain (cf. fn 40) can be stated in terms of a $\bar{S}$ -domain as well. So I do not know of any clear evidence in favor of assigning domain status to COMP. This claim preempts a rather long discussion of Ha Deletion. We can now say that definition (99) would predict that Ha Deletion can be applied at both VP and $\bar{S}$ level. An incorrect prediction. We know that. Ha Deletion is a VP-rule.

The above discussion implies that definition (99) in some clear case makes correct, sometimes twofold predictions as to the domain of a rule.

These predictions can be made on the basis of targets of transformations that are clearly in a base-generated position (subject-NP, COMP, er). However in some unclear cases, all of them involving targets that are moved by root rules into complementizer position, incorrect predictions are made. Now if the fuzzy edges could be cut away, definition (99) or some variant thereof could serve as a principle predicting the domain of a rule by simply reviewing the SD of that rule and the structure it is applied to. Therefore I propose to sharpen the theory of applicational domains by adding the following extra clause to (99):

(165) d) C_k could be base-generated under X

This principle does not make any difference for NP Preposing⁴¹⁾ or even for COMP Attraction Rules. It could make a difference though for lexical deletive rules like Haben/sein Deletion and Ha Deletion. This depends upon the formalization of Complementizer Attraction Transformations. Up to now I have dealt with these rules as being formalizable as substitutions or as adjunctions without making any definitive choice. Let us consider them again. The substitution approach makes predictions that are not desired: If V is base-generated under COMP, it is predicted that the two auxiliary deletion rules may apply at $\bar{S}$ -level, according to (99)+(165). This prediction is wrong and is no different from the prediction (99) made. However, if we assume that Complementizer Attraction Transformations are adjunction rules, (99)+(165) predicts correctly not only that NP Preposing^{is} a S-rule, Verb Preposing a $\bar{S}$ -rule and Er-er Contraction both a VP and a S rule, but also that the auxiliary deletion rules of German and Swedish are VP-rules and not $\bar{S}$ -rules. This result is not unimportant, for only if Complementizer Attraction Rules are adjunction transformations is it possible to predict the domain of a rule on the basis of the target involved.⁴²⁾ Otherwise we have to arbitrarily assign domains. It is clear which theory deserves to be chosen: namely the theory that makes predictions. So we have to assume that the root transformations and Wh-Movement are adjunction rules, until somebody can show either that the adjunction approach follows from some principle as yet unknown or that the assignment of domains follows from another principle that makes my assumption about Complementizer Attraction Transformations superfluous.

As yet I can only show that my hypothesis makes a prediction about the ordering of the English rules of Wh-Movement and SAI that can be supported by independent evidence.

5. SAI and Wh-Movement in English and the Base-Generability Principle

Usually it is assumed that there is a rule ordering 1. Wh-Movement
2. SAI in English. The observation that underlies this assumption is
nicely verbalized in Higgins (1973), fn 5:

"Nearly all the root transformations that Emonds lists cause
subject-auxiliary inversion to take place, effected by a root
transformation, and so does Wh-fronting except out of subject
position." (Higgins (1973), p. 152)

Some examples illustrating this observation are:

- (166)a What did you see?
 - b *What you saw?
 - c *What saw you?
- (167)a Why did you go?
 - b *Why you went?
 - c *Why went you?
- (168)a1 *Who ^odid sign the agreement?
 - a2 Who did sign the agreement?
 - b Who signed the agreement?

From the difference between (166)a and (167)a on the one hand and (166)b
and (167)b on the other hand we may conclude that at least some verb must
move. This cannot be the main verb, witness the difference between (166)a
and (167)a on the one hand and (166)c and (167)c on the other hand. There
must be another, auxiliary verb underlyingly which may partake in SAI.
This underlying auxiliary do normally deletes by a cyclic rule, as can
be concluded from (169), if do is not emphatically stressed or if
a third constituent standing between do and the main verb blocks the
erasure of the auxiliary, which must be ^alocal ^{rule} like all lexical deletive
rules. ⁴³⁾

- (169)a1 *-- , why you ^odid go to North Western University
 - a2 -- , why you did go to North Western University
 - b1 -- , why you did too go to North Western University
 - b2 -- , why you did not (didn't) go to North Western University
 - c -- , why you went to North Western University

However these observations do not justify the claim that SAI did not
apply to (168)b and that so Wh-Movement is ordered before Subject AUX
Inversion. Suppose the ordering of these two rules is free. Then the
following structures are derivable:

- (170) [COMP Who_i did_j] t_i t_j sign the agreement

(171) [COMP Who_i] t_i did sign the agreement

Structure (170) is the intermediate output of the transformational^{component} after application of SAI and Wh-Movement in that order. Structure (171) is derived if Wh-Movement is ordered before SAI. The sole rule that is to apply now is Do Erasure. Whether or not did is in COMP position it is still to the left of sign and therefore eligible for effacement. Once it is established that free ordering of Wh-Movement and SAI can do the job as well as an ordering 1. Wh-Movement 2. SAI, the name of the rule of Subject AUX Inversion becomes dubious. Of course there is an inversion of subject and AUX in most cases. But if structure (170) is allowed, the formal expression of SAI could be either (172) or (173):

(172) Subject AUX Inversion - I

COMP	-	NP	-	AUX	-	X
1		2		3		4
1+3		2		e		4

(173) Subject AUX Inversion - II (V_{erb} Preposing)

COMP	-	X	-	AUX	-	Y
1		2		3		4
1+3		2		e		4

These rules are equivalent in weak generative capacity, but not in strong generative capacity. SAI-I generates both (170) and (171) under free ordering with Wh-Movement. But SAI-II generates (170) only, whatever order is chosen. The late rule of Do Erasure will do the rest.

The above argumentation is all right within the confines of a transformatinal theory that does not incorporate the definition of domain statements expressed in (99) and (165). For ease of reference I call (165) the ^aBase-Generability Principle. The Base-Generability Principle blocks the application of Do Erasure to (170), provided it is assumed that COMP is a preterminal element and so cannot dominate AUX. Therefore, the formalization of SAI as in (173) is excluded, because this rule would generate (170) only, while we have to be able to derive (168). The Base-Generability Principle makes a complex prediction in the case of (172), the traditional formalization of SAI. Consider the following sentences:

(174)a What does he do?

b Why did you do that?

c Where did you see that dinosaur?

(175) Whp knows the difference between a crocodile and a caiman?

We know that extraction of a nonsubject by Wh-Movement combines with an application of SAI. Let us assume that these rules are freely ordered. Now any applicational ordering of them will do - either 1. Wh-Movement 2. SAI or 1. SAI 2. Wh-Movement - if a nonsubject is fronted. I.e. in both cases the auxiliary shifts to the left, lands between the COMP and the subject and so cannot be processed by Do Erasure. Shortly, the Base-Generability Principle leaves the ordering free if the wh-phrase is a nonsubject. We have seen ^{that free} ordering of the pertinent rules derives both (170) and (171). The Base-Generability Principle does not block the further transformational processing of structures like (171) by Do Erasure, since the AUX is in the right, base-generated position for effacement. Application of Do Erasure to (170) is blocked by the Base-Generability Principle. Now this only matters if the AUX is not emphatically stressed. If it is, the derivation is not blocked because Do Erasure may not apply to an auxiliary that is emphatically stressed. But if it is not, the derivation is blocked, because Do Erasure has to apply to an auxiliary that is weakly stressed. Shortly, the Base-Generability Principle predicts an ordering 1. Wh-Movement 2. SAI only if the subject of the sentence processed is a wh-phrase and the adjacent AUX do is weakly stressed.⁴⁴⁾

This claim needs some qualification. In the preceding section I have interpreted the definition of X-domain rule (see below) as a principle predicting the domain of a rule:

- (99) A rule R_i is a X-domain rule iff the structural index of R_i contains a constant C_k such that
- a) C_k is properly contained in X and
 - b) there is no Y such that X properly contains Y and Y properly contains C_k and
 - c) C_k is satisfied by a factor changed by the rule (and)
- (165) d) C_k could be base-generated under X

The simplest interpretation of these predictions is that if a rule is a X-domain rule, its structural index $\underline{a}_1, \dots, \underline{a}_n$ (where $n > 1$ and $\underline{a}_i$ is either a variable or a constant) is embraced by $[_X$ and $]_X$. This interpretation suffices for the German and Swedish auxiliary deletion rules, but it will not do for Do Erasure. Ha Deletion is a VP-rule and if that means that its structural index states in advance that it has to apply to VP, the right results are obtained. Do Erasure is a S-rule, but if that means that its structural index states in advance that it has to apply to S only, both (168)a1 and c are derivable in spite of the fact

that (168)a1 is ungrammatical. One might say that the Base-Generability Principle (165) is incorrect and must be eliminated. If so, we are back at a theory that does not make any prediction as to possible domains of application: Do may erase anywhere and Swedish has arbitrarily chosen VP as the applicational domain of Ha Deletion.

Fortunately this is only one of the possible interpretations of the definition of X-domain rule. A natural interpretation of (99)+(165) would be that any rule may apply to any domain, as long as the requirements a)-d) are not violated. If they do, the derivation blocks. This interpretation ensures strict cyclicity: If Move NP is applied while the rule scans and transforms a $\bar{S}$, the derivation is blocked. This means that (99)+(165) is equivalent to (95) as far as rule ordering is concerned. Also, ensured is that derivations involving Ha Deletion do not block only if Ha Deletion is applied to a VP and that derivations involving Do Erasure do not block only if Do Deletion is applied to a S.⁴⁵⁾ Therefore, the predicate 'be a X-domain rule' is a secondary notion under this interpretation. In order to make this interpretation clear in the definition of X-domain rule and the like, I propose the following, second generation sharpening of the theory of applicational domains:

(176) Condition on Applicational Domains

A rule R_i cannot apply to a phrase X unless the structural index of R_i contains a constant C_k and the C_k analyzed by R_i is such that

- a) C_k is properly contained in X and
- b) there is no phrase Y such that X properly contains Y and Y properly contains C_k and
- c) C_k is satisfied by a factor changed by the rule and
- d) C_k could be base-generated under X.

(177) Definition of X-Domain Rule

A rule R_i is a X-domain rule iff there is a derivation that is not blocked such that R_i has been applied to a phrase X.

Now let us go back a little and see what I have claimed up to now. I contend that given the Condition on Applicational Domains and the Definition of X-Domain Rule the theory will exclude the formalization of SAI as a rule moving AUX over a variable and will impose an ^{extrinsic} ordering 1. Wh-Movement 2. SAI if and only if Wh-Movement moves a subject phrase and SAI an auxiliary do that is weakly stressed. Crucial is the formalization of SAI as a rule moving AUX over an adjacent subject phrase. Evidently, these results are theory-based. The observations that have

been discussed, i.e. (166)-(169) and (174)-(175), do not warrant such a conclusion, although they do not militate against it either. Both formalization (172) (henceforth: SAI-I) and (173) (henceforth: SAI-II) offer themselves as descriptions of what is going on, provided Do Erasure is taken into account. It is evident that a decision in favor of SAI-I is a decision in favor of the Condition on Applicational Domains. Otherwise output (171) does not make any sense, and SAI-II could be chosen as well. And a choice in favor of SAI-II definitely is a choice against the Condition on Applicational Domains. Thus it is crucial that the formalization of SAI-I allows a nonapplication of that transformation. And so if independent evidence could be found that shows that SAI does not have to apply if a subject is extracted by Wh-Movement, SAI-II can be rejected and SAI-I can be accepted, which implies that indirectly the Condition on Applicational Domains is confirmed. However, note that I do not have to provide that evidence, since the theory outlined in this section and the preceding one makes sense out of the Swedish and German data and so forces us to accept SAI-I, unless we want to give up the explanation for the Swedish and German cases. Nevertheless, I can provide additional evidence.

Consider the following sentence:

- (178) Which American has climbed Mount Everest in 1972 and will climb Mount Ararat next year?

It is plausible that (178) contains one and only one complementizer (occupied by which American). A derivation of (178) from a structure underlying (179) is not likely:

- (179) Which American has climbed Mount Everest in 1972 and which American will climb Mount Ararat next year?

Sentence (178) is one conjoined question about one American. (179) contains two questions about two Americans who are not supposed to be the same. A deletion rule relating (178) to (179), while causing this change in meaning, is not feasible. I do not know of any deletion rule that is that drastic in impact. So this analysis must be rejected.⁴⁶⁾ Now two analyses can be proposed for (178): Either has ... next year is a conjunction of two VPs or a conjunction of two Ss. Note in advance that it does not matter which analysis is chosen. We may conclude from (178) that SAI did not apply, which is an argument in favor of SAI-I and against SAI-II. The reason why SAI did not apply to (178) is the same for both analyses and can be dealt with under one heading. That will be

the S-analysis.⁴⁷⁾ The S-analysis requires that which American in (178) be extracted from two subject positions in two respective Ss and so that the two respective subject phrases have been collapsed in complementizer position. I assume that the indices of the two different positions are retained, as indicated in (180), so that which American_{i,j} binds two traces. This implies, furthermore, that surface interpretation in case of (178) is necessary, which is hardly controversial.⁴⁸⁾

(180) [COMP Which American_{i,j}] [S [S t_i has climbed ME in 1972] and [S t_j will climb MA next year]]

This type of extraction is called across-the-board extraction. Two across-the-board extractions have applied to the structures underlying the following sentences:

- (181)a Which mountain has John climbed in 1973 and Peter in 1974?
b Which mountain has John climbed in 1973 and Peter photographed in 1974?

Again a deletion analysis deleting which mountain has is implausible. The structure of (181)a without gapping will be:⁴⁹⁾

(182) [COMP Which mountain_{i,k} has_{j,l}] [S [S John t_j climbed t_i in 1973] and [S Peter t_l climbed t_k in 1974]]

The deletion analysis would also derive sentences that are ungrammatical and would never be derived under the across-the-board analysis. Consider the following ungrammatical deletion of which mountain in (183):

- (183)a Which mountain did John climb in 1973. Which mountain will Peter photograph this year? And which mountain will Carl climb next year?
b *Which mountain did John climb in 1973, will Peter photograph this year and (will) Carl climb next year?

A sentence like (183)b is 'grammatical' if and only if it constitutes a sort of list in a text, something like the following:

- (184) Which mountain
- did John climb in 1973,
- will Peter photograph this year, and
- will Carl climb next year?

A perfect quiz show question for the mountaineering club, but not a grammatical sentence. The across-the-board analysis would never derive this sentence. Why? In order to be an example for across-the-board

extraction, sentence (183)b has to collapse in one complementizer not only the three objects of the three respective sentences but also the three auxiliaries did, will and will. Now will and will are collapsable because they are phonologically identical, but did and will are not. Thus (183)b is out because will is not in the right position according to SAI (whether SAI-I or SAI-II): It should be to the left of John. But that is impossible by the Recoverability Condition. On the other hand the across-the-board analysis will derive (181) because the two auxiliaries has are collapsable. Now let us go back to sentence (178). Why is this sentence grammatical? Which American has been extracted across-the-boardly. But evidently has and will have not been extracted at all and so do not have to collapse. A similar remark applies to a derivation of (178) by means of two conjoined VPs. The conclusion that SAI cannot be SAI-II is inevitable, because that formalization requires that every auxiliary be moved to the complementizer. And that is not correct witness (178). This implies that the formalization of SAI as SAI-I (i.e. (172)) is descriptively motivated. Sentence (178) will be derived by applying Wh-Movement and SAI in that order to (185), so that SAI is bled by Wh-Movement:

(185) COMP [_S [_S which American has climbed ME in 1972] and
[_S which American will climb MA next year]]

The inverse order 1. SAI 2. Wh-Movement yields derivations that are sometimes, if the auxiliaries are not phonologically identical, blocked, as would happen in the case of (185).

So it has been established that SAI-II must be rejected and that SAI-I is an acceptable formalization of the process of Subject AUX Inversion. This implies that indirectly the Condition on Applicational Domains is confirmed. And given that condition we are justified in assuming an ordering 1. Wh-Movement 2. SAI solely on the basis of the difference between (166) and (167) on the one hand and (168)a1 and b on the other hand if we want to derive (168)b. But we do not have to state an extrinsic ordering. The ordering of the pertinent rules is free but constrained by the Condition on Applicational Domains.

6. Conclusion

I have shown that it is possible to define all root preposing transformations as rules involving the complementizer. This idea is a sharpening of ideas found in Higgins (1973), Williams (1974), Den Besten (1975), Koster (1975) and Emonds (1976). This result can be

attained by the combined use of the Condition on Applicational Domains (176) and the Definition of X-domain Rule (177), which constitute an elaboration of Williams's ideas about applicational domains (Williams (1974)). Application of Chomsky's Upgrading Principle (101) (Chomsky (1976)a) as interpreted in (100) to Wh-Movement yields the distinction between S and $\bar{S}$. If we assume that root preposings are transformations applying to the highest subphrase of a root $\bar{S}$, then - by (177) and (176) - the complementizer must be the landing site, as long as there is no clear evidence for other constituents at $\bar{S}$ -level.

Secondly, I have shown that if we assume that Complementizer Attraction Transformations are adjunction rules and not substitution rules, and if we assume the Counterdeletive Ordering Principle (35) the theory can predict the antiroot behavior of rules like Swedish Ha Deletion and German Haben/sein Deletion, which rules happen to be a subset of a larger class of deletive rules that are either fed or bled by root transformations. Thus Emonds's distinction between root and nonroot rules is justified, although a special combination of rules can define antiroot phenomena. A minor result of these assumptions is that the ordering 1. Wh-Movement 2. SAI in English is ensured in exactly that set of cases that are usually brought up in order to justify a general extrinsic rule ordering of Wh-Movement and SAI, and that SAI must indeed be formalized as a rule moving an auxiliary over an adjacent NP, as is normally assumed.

Thirdly, I have proposed that the theory define marked and unmarked root structures in terms of applications and nonapplications of root transformations. This proposal has some implications for text grammar, since: text grammar ^{sometimes} requires the possible combination of a marked root structure with an unmarked one, for instance the Dutch contrastive texts in (64), or the combination of two unmarked root constructions, for instance English Tag Questions in (115). Over and above the application or nonapplication of root transformations text grammar may require the application of other rules, like VP Deletion in the case of Tag Questions. English grammar seems to be marked in terms of the theory in that it defines marked and unmarked root structures not only in terms of applications and nonapplications of root transformations but also in terms of applications and nonapplications of root transformations plus stylistic rules. The occurrence of root structures in English subordinate clauses must be the result of a reanalysis of the reduced S thereof and is a marked phenomenon in view of the fact that root structures do not occur in Dutch or German subordinate clauses.

APPENDIX

In German we find a phenomenon that might be interpreted as a counterexample against Emmons's claim that no root transformation will apply to subordinate clauses. Consider the following examples that have been taken from Bach and Horn (1976):

- (1) Er sagte, dass er morgen komme
He said, that he tomorrow comes (subjunctive)
- (2) Er sagte, er komme morgen
He said, he comes (subj.) tomorrow

The usual interpretation of the phenomenon at hand, which can also be found in Bach and Horn (1976), is that it is possible to have root word order in the complements of verbs like sagen (say), provided the verb be in the subjunctive mood. The latter condition is obligatory. Indicative verbs are excluded in the pertinent constructions. Compare:

- (3) *Er sagte, er kommt morgen

However, this sentence is grammatical if er kommt morgen is a quote, i.e. is a sentence quoted in direct discourse:

- (4) Er sagte: 'Er kommt morgen.'
He said: 'He comes (indicative) tomorrow'

In that case er and er are necessarily disjoint in reference. Now sentence (2) is ambiguous. Either er and er are disjoint in reference and then (4) is a possible variant for (2); or er and er are coreferent and in that case (4) will not be a variant of (2) but (5) will:

- (5) Er sagte: 'Ich komme morgen'
He said: 'I come (ind.) tomorrow'

Thus there happens to be a clear distinction between the use of pronouns in the case of direct discourse ((4) and (5)) and the use of pronouns in the case of subjunctive quotation (see (2)). The fact that (2) is ambiguous and (4) is not seems to be sufficient evidence for claiming that the complement in (2) is a subordinate clause since its subject has the same anaphoric freedom as the subject of the complement in (1). This interpretation of the pertinent facts seems to be incompatible with an approach that salvages the theory of root transformations by optionally redefining complements of verb of saying as root sentences. In the following paragraphs I present evidence that neither approach is right. A complement, like er komme morgen in (2) is not a subordinate clause but a root sentence in spite of its pronominal

usage which is the same as in subordinate clauses.

There are three pieces of evidence to substantiate this claim: Firstly, one can quote a whole text in the subjunctive, even if that text contains questions. Secondly, a subjunctive quotation sentence does not have to follow sagen immediately. It can be separated from sagen by a subordinate clause introduced by dass (that). Thirdly, it is not necessary for verbs of saying to appear in the context of subjunctive quotations at all.

An example of sagen followed by a text, including a question:

- (6) Er sagte, er wäre nicht damit einverstanden. Der Karl wäre
He said, he did (subj.) not agree. Charles was (s.)
ein netter Bursche wenn er nicht zuviel getrunken hätte. Aber
a nice guy when he not too much drunk had (subj.). But
man wüsste ja, dass das normalerweise nicht der Fall wäre.
one knew (subj.) that that usually not the case was (subj.).
Warum hätte man ihn überhaupt eingeladen? Der wäre ja nicht
Why had (subj.) one him at all invited? He was (subj.) not
interessiert an Bürgerinitiativen.
interested in Citizens' Committees.

The importance of the subjunctive interrogative embedded in a subjunctive text preceded by sagen is clear. In absence of such a question one might claim that this subjunctive text is a coordination of dass-complements to sagen that have been transformed into subjunctive quotations. The underlying text might look as follows:

- (7) Er sagte, dass er nicht damit einverstanden wäre. Dass der Karl ein
netter Bursche wäre, wenn er nicht zuviel getrunken hätte. Aber dass
man ja wüsste, dass das normalerweise nicht der Fall wäre. (.....)

This is a possible text, or, say, sentence. But the interrogative constitutes a stumbling block. At the point where this question pops up, we have to turn an independent sentence, after which a return to the subordinate clause strategy is impossible. Compare the following text:

- (8) Er sagte, dass er nicht damit einverstanden wäre. Dass der Karl ein
netter Bursche wäre, wenn er nicht zuviel getrunken hätte. Aber dass
man ja wüsste, dass das normalerweise nicht der Fall wäre. Warum
hätte man ihn überhaupt eingeladen? Der wäre ja nicht interessiert an
Bürgerinitiativen. (*Dass der ja nicht interessiert wäre an Bürger-
initiativen.
- (9) Er sagte, dass er nicht etc. ... der Fall wäre.*Warum man ihn über-
haupt eingeladen hätte.

The text in (9) demonstrates that the interrogative in (6) and (8) cannot be derived from a complement to sagte. The following two texts may be superfluous but they confirm my claim that subjunctive questions may occur in texts that are dependent upon verbs of saying, whereas they cannot be derived from underlying wh-complements:

- (10) Wir glaubten ihm ein Gefallen zu tun und luden ihn ein zum
We believed him a pleasure to do and invited him for
gemeinsamen Musizieren am Dienstagabend. Aber er sagte (erwiderte)
together playing music tuesday evening. But he said (answered)
wütend, warum hätte man ihn eingeladen? Er hätte ja kaum Zeit
angrily, Why had (subj.) one him invited? He had (s.) hardly time
selber zu musizieren.
himself to play music.
- (11) *Wir ... Dienstagabend. Aber er sagte (erwiderte) wütend, warum man
ihn eingeladen hätte. Dass er ja kaum Zeit hätte selber zu musizieren

What do we have to conclude from these examples? A minimal conclusion would be that subjunctive questions dependent upon some verb of saying somewhere in a text are root sentences. But once that concession is made, the defence line of those who want to maintain an analysis that derives subjunctive discourses from underlying subordinate clauses starts crumbling. The next concession must be that subjunctive sentences following such questions cannot be derived from underlying subordinate clauses either, witness the ungrammaticality of subordinate clauses following subjunctive questions (compare (8) and (11)). The fact that subjunctive declarative sentences preceding subjunctive questions could be derived from underlying subordinate clauses witness (6) and (7), can hardly serve as a real argument against calling these declaratives independent sentences. The last straw, and in fact the first and sole argument in favor of a subordination analysis, is the observation that pronouns in subjunctive quotations are used the same way as pronouns in subordinate clauses (see above). For instance, the subject of the first subjunctive sentence in (6) may not be changed into ich, although it can be coreferent with the subject of sagte. Such a change would bring about a change in meaning:

- (12)a Er sagte, ich wäre nicht damit einverstanden
He said, I did (subj.) not agree
b Er sagte, dass ich nicht damit einverstanden wäre

Ich in (12)a refers to the speaker who utters (12)a, not to the subject of sagte. There is no difference in this respect between subjunctive discourses and subordinate clauses, witness (12)b. However note that the same

anaphoric system is applied in subjunctive questions and subjunctive declaratives following them. And for these sentences it has been established that they must be independent clauses. Ergo there is no convincing argument anymore for deriving subjunctive declaratives that are dependent upon verbs of saying from subordinate clauses. This implies that besides direct and indirect discourse German has a third way of quoting somebody that combines features of both direct and indirect discourse. From direct discourse it borrows its root characteristics. From indirect discourse under verbs of saying it borrows its anaphoric system and the use of the subjunctive.

This should suffice as evidence for a root analysis of subjunctive discourse. Nevertheless the other pieces of evidence I have promised are not without interest, because they show that subjunctive quotation has characteristics that distinguish it from direct and indirect discourse.

While considering (8) for other purposes we have seen that a subjunctive sentence does not have to start immediately after a suitable verb. Such a verb may first take a subordinate complement and then a subjunctive sentence. Another example is the following:

- (13) Er rief mich an, um mir zu sagen, dass er nicht kommen
He called me up in order to me tell, that he not come
könnte. Er wäre krank.
could (subj.). He was (subj.) ill.

Interestingly enough, a sentence in direct discourse may not be substituted for Er wäre krank in isolation. A tag sagte er (said he) is required:

- (14)a *Er rief mich an, um mir zu sagen, dass er nicht kommen könnte.
Ich bin krank. (I am ill)
b/ Er rief mich an mir zu sagen, dass er nicht kommen könnte.
Ich bin krank, sagte er.

Apparently, the mixture of direct discourse and indirect discourse characteristics suffices as a syntactic marker for the semantic subordination of Er wäre krank. This does not imply though, that sagte er may not be added to (13). Compare the following example:

- (15) Er rief mich an, um mir zu sagen, dass er nicht kommen könnte.
Er wäre krank, sagte er.

This minitext is all right.

Now that it has been discovered that subjunctive quotation does not need

tags like sagte er and the like, it will not come as a surprise that subjunctive discourse does not need an introducing verb of saying at all. Consider the following texts:

- (16) Aber er wollte nicht mitmachen. Es wäre ja unerhört,
But he wanted not cooperate. It was (subj.) outrageous (said he
dass man nicht verstünde, dass er sich weigerte mit solchen
that one not understood (s.) that he refused (subj.) with such
Faulenzern zusammenzuarbeiten.
bums together-to-work.
- (17) Das Telephon klingelte. Eine unbekannte Stimme kam aus dem
The telephone rang An unknown voice came out of the
Apparat. Man hätte sich die Sache noch mal überlegt, aber
apparatus. One had (s.) thought about it again (it was said), but
es wäre am besten, wenn ich die Krokodiljagd finanzieren würde.
it would be best, if I the crocodile hunt finance would.

Verbs like mitmachen and kommen do not allow dass-complements. Compare:

- (18) *Aber er wollte nicht mitmachen, dass es ja unerhört wäre, dass ...
(19) *Eine unbekannte Stimme kam aus dem Apparat, dass man sich die
Sache noch mal überlegt hätte, aber ...

On the other hand the subjunctive quotations may be expanded by adding any suitable expression, as is exemplified in the following sentences:

- (20) Aber er wollte nicht mitmachen. Es wäre ja unerhört, brüllte er,
shouted he
dass ...
- (21) Eine unbekannte Stimme kam aus dem Apparat. Man hätte sich die
Sache noch mal überlegt, näselte der Unbekannte, aber ...
nasalized the unknown person,

Thus, we may conclude that the very structure of subjunctive discourse has the same function as expressions like said NP in English. Direct discourse on the other hand needs such tags, although that is a gradual matter. Tags like sagte er are preferable for sake of clarity, but they are not indispensable with. Take for instance the following text:

- (22) Das Telephon klingelte. Eine unbekannte Stimme kam aus dem Apparat.
'Man hat sich die Sache noch mal überlegt,' (hörte ich den Unbekann-
'One has (ind.) thought about it again, (heard I the unknown
ten sagen), aber ...
say), but ...

This text without what has been added within parentheses gets even better, if Wir haben uns (we have ^{is substituted} (ind.)) for Man hat sich. Again, this is a gradual matter. The important thing to note is that subjunctive discourse does not need a verb of saying in its introduction or in a tag. This is in stark contradistinction to direct and indirect discourse. Indirect discourse needs a verb of saying in its introduction, the matrix clause. And direct discourse is preferably accompanied by a verb of saying.

Returning to what is the main topic of this Appendix, we may conclude again that there is no reason for the assumption that subjunctive quotations are subordinate clauses. First of all, there are cases of subjunctive discourse that cannot be derived from complements to verbs of saying since the necessary verbs are absent (compare (16) through (19)). Secondly, it is clear that subjunctive discourse can easily dispense with tags like sagte er. This makes subjunctive discourse an even stronger candidate for root sentence-hood than direct discourse. And that in spite of the fact that subjunctive discourse is subordinative as regards the anaphoric system it applies.

I have gone into this matter up to some length because German subjunctive discourse in texts like the one displayed in (2) looks like good evidence for the claim that under certain conditions root transformations may be applied to nonroot sentences. I was pleasantly surprised when it occurred to me that subjunctive discourse has a wider distribution, as I have shown in this appendix. This having been established, there is even more reason to defend Emonds's position that root transformations apply to root sentences and to root sentences only. Therefore, the data presented by Hooper and Thompson (1973) needs a reanalysis, probably along the lines I have indicated in this paper.

Footnotes

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1) Actually, my definition of root transformations presented in the following paragraphs requires that the Hooper and Thompson sentences are reconsidered.

2) Word order in Dutch (and German) subordinates is verb final: COMP - X - C - Y - V^n ($n \geq 1$), whereas declarative sentences and interrogatives have the finite verb in second position, the first position being occupied by virtually any constituent, which must be a wh-phrase in the case of interrogatives of course: C - V_f - X - Y - V^{n-1} ($n \geq 1$). Yes/no-questions prepose the finite verb only: V_f - X - C - Y - V^{n-1} ($n \geq 1$).

3) There is some evidence against this claim, but that evidence is very weak. Judging from sentences like (i) and (ii) that are virtual variants of each other, semantically, one might propose that Verb Preposing has applied to a subordinate clause in (ii):

- (i) Als je nog geld nodig mocht hebben, (dan) wil ik je wel helpen
If you yet money might need, (then) want I you surely help
- (ii) Mocht je nog geld nodig hebben, dan wil ik je wel helpen
Might you yet money need, then want I you surely help

However, the alleged subordinate clause in (ii) is not a true subordinate clause: It cannot be put immediately to the left of the verb of the matrix sentence, ^{while} subordinate clauses usually can (compare (ii) with (i) and (ii) and (iv)). Something must intervene between the conditional clause to which Verb Preposing has been applied and the verb of the matrix sentence (compare (ii) with (iv) and (v)):

- (iii) Omdat hij wat geld nodig had, heb ik hem geholpen
Because he some money needed, have I him helped
- (iv) *Mocht je nog geld nodig hebben, wil ik je wel helpen
- (v) Mocht je nog geld nodig hebben, ik wil je wel helpen

Therefore it is doubtful whether conditionals with root characteristics are subordinate clauses. They probably are marked root sentences, marked in that Constituent Preposing has not applied. In that case these construction are comparable to the first sentence in texts like the following one, that expresses a contrast:

- (vi) Vond je dit museum al om te huilen. Het volgende zal je
Found you this museum already deplorable. The following one will you
nog minder behagen.
still less please.

Finally, there are clauses introduced by al (even if, even though) which are interpreted as subordinate clauses but have more or less the same distribution^{as} conditionals to which Verb Preposing has applied: Some constituent must intervene between the alleged subordinate clause and the verb of the alleged matrix sentence (compare (vii) and (viii)) Furthermore, it is not clear whether (ook) al is a subordinating conjunction, because (ook)al can also be found elsewhere as an adverbial constituent. For these and more observations see Paardekooper (1971).

- (vii) (Ook) al gaf je me een miljoen, dan zou ik het nog niet doen
Even if gave you me a million, then would I it still not do
(viii) (Ook) al gaf je me een miljoen, ik doe het niet
Even if gave you me a million, I do it not
*(Ook) al gaf je me een miljoen, zou ik het nog niet doen
*(Ook) al gaf je me een miljoen, doe ik het niet

4) Subjunctive discourse (compare (i)) seems to be a clear counterexample to this claim. However, see the Appendix for evidence that subjunctive discourse sentences are root sentences.

- (i) Er sagte, er wäre krank . =
He said, he was (subjunctive) ill
(ii) Er sagte, dass er krank wäre
He said, that he ill was (subj.)

5) Ross contends that it is necessary to add the Penthouse Principle to Emonds's theory in order to prevent that local rules are formulated such that they apply to subordinate clauses only. It seems to me that all provisions necessary for preventing that are present in Emonds's theory: There are cyclic rules and root transformations. Cyclic rules (structure preserving rules and local rules) are by definition applicable to all clauses, whether root or subordinate.

6) Details will follow in section 4.

7) This rule is sometimes called Verb Second, a less felicitous terminology. This is understandable because the preposed verb appears in second position in declaratives and also in interrogatives. In yes/no-questions however this rule fronts the finite verb into sentence initial position, because no

other root preposing rule applies. Compare section 3.1 of this paper and Koster (1975) and Den Besten (1975).

8) These remarks are based upon data about Dutch, German, English and the Nordic languages. I have not studied the Slavonic languages in great detail, but I have the impression that they have collapsed both sets of root preposings. If so, one may wonder, whether two constitutes an upper bound to the number of possible disjoint sets of root preposings or not.

9) This position can be specified as Δ (Emonds (1976)) or as $\bar{X}$. The latter option generalizes over the (P) NP of Chomsky (1973), compare (i), and other constituents moving into that position.

(i) COMP $\rightarrow$ (P) NP +wh

10) Of course, something has to be said about the appearance of wh-phrases in echo questions:

(i) You saw who?

(ii) Je hebt wie gezien? (Dutch)
You have whom seen?

The immobility of the wh-phrase cannot be blamed upon the -wh-complementizer that I suppose underlies (i) and (ii). Wh-phrases do not move either when embedded in a WH-complement of an echo question:

(iii) He wanted to know whether I know whom?

(iv) Hij wou weten, of ik wat gedaan had? (Dutch)
He wanted know, whether I what done had?

Evidently, wh-phrases in echo questions are immobile, period. This immobility may be described as follows: In fn 3 I suggested that text grammar may impose requirements upon two consecutive sentences. Were the examples I gave confined to texts that have to be produced by one speaker, echo interrogatives require that a speaker x repeats the sentence of the preceding speaker y, while substituting the appropriate wh-phrase for the phrase of the preceding sentence he wants to know something about.

11) For instance Bach and Horn (1976). They claim a Verb First rule for yes/no-questions. Bach and Horn (1976) claim that Verb Second (Verb Shift in their terminology) ^{could} apply to the complement of sagen (say) in (i) since the complementizer is zero:

(i) Er sagte, er komme morgen
He said, he comes (subjunctive) tomorrow

First of all, this implies that Verb Second would be a transformation triggered by the absence of something - a weird assumption. It seems

selfevident to me that the preposed verb has triggered the deletion of the phonological complementizer, and not the other way around. This assumption also implies that the verb is placed to the right of a subject that has not been moved (cf (i)) or to the right of a constituent like gestern in (ii) which has been preposed:

- (ii) Er sagte, gestern wäre er schon arriviert
He said, yesterday had (subj.) he already arrived

Koster (1975) follows the same strategy as I do in positing a rule that will prepose the subject if that constituent is in first position in a declarative sentence.
12) For an exhaustive study of the many usages of er, see Bech (1952).
13) Compare Blom (1977) and Bech (1952). Er also shows up in sentences like the following:

- (i) Er zijn er die zeggen, dat dat niet kan
There are there who say that that not is possible

Here the relative clause suffices to invoke er.

14) Independently motivated by the following set of examples:

- (i) --, dat ik er daar_i vijftien t_i van gekocht heb
--, that I there there_i fifteen t_i of bought have
(ii) *--, dat ik er er_i vijftien t_i van gekocht heb
--, that I there there_i fifteen t_i of bought have
(iii) --, dat ik er vijftien van gekocht heb

For daar/er ... van, see Van Riemsdijk (1976)a. For a contraction of three ers in a row see p. 49 of this paper.

15) I admit that COMP is a somewhat embarrassing novelty, but I prefer rule (52) over Chomsky's (i) (1973):

- (i) COMP $\rightarrow$ (P) NP⁺ wh

I think the following assumption is a natural one: Every word must be exhaustively dominated by a preterminal node. There are languages like Dutch that (optionally) retain their complementizers after wh-movement. Such words are clearly separate from the preceding constituent and so need their own preterminal. Compare (21)b and (ii):

- (ii) de jongen aan wie (dat) ik die plaat geleend heb
the boy to whom (that) I that record lent havehave

16) In fact, $\bar{X}$ may be inaccurate. Maximal phrases like NP and AP do prepose indeed, but I do not think that that gelachen in (i) or dansen in (ii) or

the preposed particle in (iii) are $\bar{X}s$:

- (i) Gelachen heb ik niet
Laughed have I not
- (ii) Dansen kan ie niet
Dance can he not
- (iii) Weg ga ik niet
Away go I not

17) Here the same objection applies as the one in fn 16.

18) Cf Chomsky (1973) and (1976)b and Van Riemsdijk (1976)b, who makes similar remarks about Dutch.

19) For these sentences see Koster (1975).

20) Furthermore, compare the Appendix to this paper.

21) Breckenridge (1975) argues for such a rule. I think her arguments against Es Deletion are pretty weak. They seem to be based upon the feeling that something is wrong if an element is generated in all clauses and then deleted everywhere except when it is to the left of a preposed verb. I cannot see what is wrong about that. Furthermore, how does she want to account for the empty subject NP position in (84)b, (86)b, (88)b and (90)b? By means of a special interpretation rule I suppose. In that respect Breckenridge's description is a notational variant of the deletion approach. Furthermore, one may wonder how Breckenridge's postcyclic rule of Es Insertion is formulated. Is es a dummy without any categorial status? There is no reason for assuming that transformations inserting lexical material are any different from 'normal' lexical insertions: A preterminal is required. And that the necessary category will be NP is clear from a sentence like (80). Es is a subject filler for intransitive passives, since there is no object NP to fill the subject NP with.

22) In my discussion of the different eses in German I have excluded the expletive es of sentences like:

- (i) Es ist möglich, dass er Schriftsteller sei
It is possible that he writer is (subjunctive)

The behavior of this es is not totally clear to me: Deletion to the right of the complementizer seems to me to be optional, not required:

- (ii) Dennoch ist (es) möglich, dass er Schriftsteller sei
Yet is (it) possible, that he writer is (subj.)

23) Of course, adjunction of V to the first constituent would not put V immediately under the root S. But we might say that the landing site is immediately under S, if we assume $S \rightarrow \text{COMP NP VP}$ as a base rule for Dutch. Something along these lines must be said about adjunction to COMP

and about substitution in COMP (or $\overline{\text{COMP}}$). In the last case we have to disregard COMP (or $\overline{\text{COMP}}$).

24) Chomsky, class lectures autumn 1976; work in progress by Bob Freidin (MIT).

25) I refer to work in progress by Bob Freidin (MIT).

26) Provisions have to be made for the substitution approach of root transformations (cf base rule (52)). $\overline{\text{COMP}}$ may not count as a daughter of $\overline{S}$ or S. Compare the reformulation of (92).

27) Provisions have to be made for the substitution approach of root transformations. $\overline{\text{COMP}}$ (cf base rule (52)) may not count as a major constituent. Otherwise Wh-Movement, Constituent Preposing and Verb Preposing/SAI would not upgrade in the sense of definition (100).

28) If all movement rules are subject to trace theory it is to be expected that every movement rule moving a constituent within one cycle have to front and upgrade that constituent, unless the trace is wiped out. Therefore, preposing rules like Constituent Preposing and Verb Preposing, but also English rules like Negated Constituent Preposing would be in accordance with that theory: They clearly front and upgrade a constituent. SAI would again be the weak spot in the theory: In order to upgrade AUX either COMP is elevated as a daughter of $\overline{S}$ or AUX is made daughter of VP or Predicate Phrase. In the latter case, COMP is not necessarily involved in SAI. However, it can be shown that the upgrading and fronting characteristics of root transformations in English and Dutch and German can follow from Chomsky's Upgrading Principle and Williams's theory of applicational domains. Therefore I take a weaker stance in this paper.

29) I do not want to exclude the possibility that there might be more landing sites at $\overline{S}$ level. I would like to remark, that, as far as I can see, this is the first theoretical argument in favor of the S - $\overline{S}$ distinction after Bresnan's Right Node Raising argument and related arguments in Bresnan (1970) and (1972).

30) Maybe SAI, Subject $\overline{\text{Clitic V}}$ Inversion and Affirmative Imperative Inversion constitute a natural class. Such a class could be obtained by imposing upon structural indices of transformations the condition that of any two terms at least one must be satisfied by a factor changed by the rule. By this condition either the sequences $\text{Constant}_i - \text{Variable} - \text{Constant}_{i+1}$ may be part of a structural index or the sequence $\text{Constant}_i - \text{Constant}_{i+1} - \text{Constant}_{i+2}$. SAI-like rules would then constitute a subset of the latter set, where $\text{Constant}_i = \text{COMP}$ and Constant_{i+2} is followed by a variable.

31) For similar remarks about Topicalization in Dutch see Van Riemsdijk (1976)b. Topicalization in Danish and Swedish is not bounded but it also

violates the CNPC under rather complicated bridge conditions. Vide Erteschik (1974) and Allwood (1976).

32) If my approach is right then Complementizer Root Attractions constitute a problem for the theory of Bresnan's. According to her theory (Bresnan (1976)a and b) a rule moving a constituent across a variable towards a complementizer will be unbounded, while obeying the Complex Noun Phrase Constraint and the Wh-Island Constraint. This predicts that rules like Constituent Preposing in Dutch are unbounded, which they are not. Compare my remarks about (57)-(59).

33) For such rules see Den Besten (1976). The hij - ie interchange could be described that way (vide p. 11) and also the rules changing of into dat (vide p. 43). Similarly for the rule changing the sequence as as (i.e. than as) into dan as in Afrikaans:

- (i) Hy het meer as nasionalis *as/dan as mens gehandel
He has more as a nationalist than as a human being acted

As in Afrikaans means both 'than' and 'as'.

34) Er-er Contraction (vide section 3.1, p. 44, 49) might be such a rule. Another rule ^{of that type} might be the rule optionally collapsing the er of There Insertion and an adjacent weak pronoun in Dutch:

- (i)a --, dat (er) zich moeilijkheden hebben voorgedaan
--, that (there) themselves difficulties have presented
b Toch hebben (er) zich moeilijkheden voorgedaan
Yet have (there) themselves difficulties presented
c Er hebben zich moeilijkheden voorgedaan
d *Zich hebben moeilijkheden voorgedaan
(ii)a --, dat (er) 'm/hem een goede baan is aangeboden
--, that (there) him a good job has-been offered
b Gisteren is (er) 'm/hem een goede baan aangeboden
Yesterday has-been (there) him a good job offered
c Er is hem een goede baan aangeboden
d Hem/*'m is een goede baan aangeboden

(Hem is a strong pronoun and behaves differently than the weak pronoun 'm.)

35) One such rule might be the rule erasing the past participle of the passive auxiliary in Dutch:

- (i) --, dat er hem een goede betrekking aangeboden (geworden) is
--, that there him a good job offered (been) has
(also: aangeboden is geworden, is aangeboden (geworden))

36) A genuine counterexample might be the observation that the rule deletin

the subject of an imperative must precede Affirmative Imperative Inversion (rule (114)). This objection can be easily overcome, since an interpretation rule interpreting an empty subject of an imperative can do the job as well. An interesting assumption might be that all rules of control, free interpretation and deletion under identity involve empty categories and so interpretation rules. We need then the following analyzability principle for transformations:

- (i) $[_C \Delta^n] (n \geq 1) \neq e$ iff C is satisfied by a factor which must be changed

37) I owe these sentences to Elisabet Engdahl, UMass, Amherst, Mass..

38) Evidently, in the case of lexical deletive rules it is the highest constituent exhaustively dominating the lexical element that is to be erased that satisfies the C_k required in (99). This constituent will be a preterminal in most cases, but sometimes also an NP as in the case of Er-er Contraction for instance.

39) cf fn 12 and fn 14.

40) For instance for the deletion of of (whether) to the right of a wh-phrase in Dutch, or for the deletion of the root complementizers after Verb Preposing. Compare Den Besten (1975).

41) Condition (165) subsumes part of Emonds's definition of structure-preserving transformations, namely the part requiring base-generability for the landing site (Emonds (1976)). The other half of the definition of structure-preserving transformations, i.e. the requirement that the landing site be null can be taken care of by the Recoverability Condition (vide Fiengo (1974)).

42) One might make the objection that the deletion of wh-elements in COMP is a counterexample and that so at least Constituent Preposing and Wh-Movement must be substitutive. But it is not clear whether wh-elements are deleted in COMP position at all. Zero wh-elements may be zero right from the start and move to the complementizer in that guise. Their identity to the antecedent is accounted for by a rule of pronominalization that is universally required for relative structures, whether a language fronts its relative pronouns or not. Furthermore, if we do not assume that there is no NP position inside COMP (99)+(165) cannot predict that NP Preposing is a S-rule, and we could expect to find ^{root} passives moving the object into COMP position without moving the subject-NP out of its original position:

- (i) John_i Peter was helped t_i (i.e. John was helped by Peter)

Similarly, it has been noted that rules of construal like the Reciprocal Rule

(vide Chomsky (1976)b) are S-domain rules (Kerstens (1976)). This will follow from (99)+(165) if we assume that there be no NP inside the COMP.
43) cf Den Besten (1975) and (1976) and Emonds (1976).

44) No prediction is made about the position of is, has, can, etc. in the following sentences:

- (i) Who is dancing?
- (ii) Who has revised this book?
- (iii) Who can tell me what charm is in physics?

45) Note that this predicts that if Swedish would make Ha Deletion an obligatory rule, the set of grammatical and ungrammatical structures would change from (i) to (ii):

- (i) 1a --, COMP - NP - (ADV) - ha - PART - X
- 1b --, COMP - NP - (ADV) - e - PART - X
- 2 [COMP ha] - NP - (ADV) - PART - X
- 3a [COMP NP_{+wh} i - ha] - t_i - ADV - PART - X
- b [COMP NP_{+wh} i - ha] - t_i - PART - X
- c * [COMP NP_{+wh} i - e] - t_i - PART - X
- 4 [COMP C_i - ha] - NP - (ADV) - PART - X - t_i - Y
- (ii) 1a *--, COMP - NP - (ADV) - ha - PART - X
- 1b --, COMP - NP - (ADV) - e - PART - X
- 2 [COMP ha] - NP - (ADV) - PART - X
- 3a [COMP NP_{+wh} i - ha] - t_i - ADV - PART - X
- b * [COMP NP_{+wh} i - ha] - t_i - PART - X
- c * [COMP NP_{+wh} i - e] - t_i - PART - X
- 4 [COMP C_i - ha] - NP - (ADV) - PART - X - t_i - Y

I.e. 1a and 3b have become ungrammatical, whereas 2, 3a and 4 still are grammatical, which allows the assumption of an underlying ha in spite of the absence of ha in subordinate clauses. The state of affairs concerning ha in (ii) is similar to the state of affairs concerning do in English (erased by an obligatory rule) and the state of affairs concerning indefinite es in German (erased by an obligatory rule). The root occurrence of es suffices as evidence for an underlying es. And if in English there would not be an emphatic do and if the negative element would occur to the left of the auxiliary, root occurrences of do would still suffice to assume an underlying auxiliary that would never occur in subordinate clauses.

Note furthermore that if English would change from SAI-I to SAI-II, surface structures like (iii) would be possible only if do is emphatically stressed:

(iii) $[_{\text{COMP+wh}} \text{NP}_i - \text{do}] - t_i - V - X$

And if English would also make Do Erasure an optional rule, structure (iii) would be the sole possible surface structure in the case of Wh-Movement of a subject.

46) Note that sloppy identity is not a counterexample to this claim, because that phenomenon is dependent upon the 'sloppy' features of anaphoric pronouns (vide Williams (1977)).

47) Compare Emonds (1976) and Akmajian and Wasow (1975). The arguments in favor of a separation of AUX and VP do not argue against their being part of a higher VP or Predicate Phrase.

48) cf Chomsky (1976)a.

49) An across-the-board analysis of examples like (181) was first proposed by ^{Edwin} Williams in a lecture to the Algemene Vereniging voor Taalwetenschap in the Netherlands (Jan. 1975). A formal discussion of across-the-board extraction can be found in Williams (1976)b, where he discusses Wh-Movement in relative clauses. Across-the-board extraction is necessary if Williams's C/A Principle is valid (cf Williams (1976)b), which requires that Gapping be applied to conjoined Ss and not to conjoined $\bar{S}$ s (compare (181)a). For a discussion of some problems, see Den Besten (1977).

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