'On the Interaction of Root Transformations and Lexical Deletive Rules'

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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 - for instance the deletion phenomena referred to above -, which 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.

The exposition of the argument will be in two steps. First the formal properties of root transformations will be established on the basis of data from Dutch and German (section 3.). The pertinent section, which is a paper in itself, will also briefly deal with root phenomena in French (subsection 3.4.), whereas subsection 3.5. will present a revision of Emonds's division of English root phenomena in the light of the preceding discussion. In section 4. the resulting analysis will be applied to the anti-root phenomena from German and Swedish mentioned above. 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 than its German counterpart. The general tenor of this paper will be that anti-root

phenomena 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 to play 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 in section 5. 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, while at a descriptive level this paper addresses some problems in the description of German, Swedish and English, at 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

Edmond'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 is 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: Instead 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 1976b) - 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 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 basically is 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 order [2] does not apply any root transformation to subordinate clauses. [3] The same holds for

1   In fact, the definition of root transformations as presented in section 3. makes it necessary that the Hooper and Thompson sentences be reconsidered. Also see Green (1976) whose considerations give additional support to the idea that root phenomena in subordinate clauses are possible only if the subordinate clause (probably S, not S) is reanalyzed as a main clause.

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

3   There is some evidence against this claim, but that evidence is rather weak. Judging from sentences like (i) and (ii) that are virtual variants of each other, from a semantic point of view, one could imagine 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 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 in the first position preceding the finite verb of the matrix sentence, whereas subordinate clauses usually can (compare (ii) with (i) and (iii) 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 constructions are comparable to the first sentence in texts like the following one, which expresses a contrast:
(vi)
Vond je dit museum al om the huilen. Het volgende zal je
Found you this museum already deplorable. The next 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 with preposed finite verbs: 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

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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 in subordinate clauses, which is in accordance

whether *(ook) al* is a subordinating 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 yet not do
(viii)
a. (Ook) al gaf je me een miljoen, ik doe het niet
Even if gave you me a million, I do it not
b. *(Ook) al gaf je me een miljoen, zou ik het nog niet doen
c. *(Ook) al gaf je me een miljoen, doe ik het niet

4 Conjunctive discourse (compare (i)) seems to be a clear counterexample to this claim. However, see Appendix I for evidence to the contrary.
(i)
Er sagte, er wäre krank
He said, he were (conjunctive) ill
(ii)
Er sagte, daβ er krank wäre
He said, that he ill were (conjunctive)
More problematic are the examples under (7) and (8) in Appendix II. These seem to involve clear cases of subordinate clauses. Still one has to ask why such cases of Verb Preposing are so scanty in Dutch and German, whereas Afrikaans seems to be able to freely apply Verb Preposing in any subordinate clause with concomitant deletion of the complementizer. For a possible explanation see Safir (1980).

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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 Ss in word order, provided no root movement transformation has applied to the root Ss. 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 in periphery (Chomsky 1976b, 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 Thompsons'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 (1976b) 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 instead 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 banden
   He had realized at an early stage that he had-to destroy 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 come as a 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) gelacht
  He *(has) laughed

(7)
  --, ob er gekommen (ist) (*ist*: 3rd p. sing., pres. tense
  --, whether he come (has) of *sein*)

(8)
  *(Ist) er gekommen?
  *(Has) he come

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 2. *Ha* Deletion for Swedish. This proposal does not suffice, though, to explain the inapplicability of *Ha* Deletion to main clauses. Whether or not Verb Proposing is 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

I would like to show that contrary to what one might expect the pertinent rule ordering does suffice given the proper formulation of transforma-

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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, i.e. structure-preserving and local transformations, are by definition applicable to all clauses, whether root or subordinate.

6 Details will follow in section 4.

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tions in terms of domains. This will be done in section 4. The definition of the applicational domain of Verb Proposing and other root transformations as well as other properties of root transformations will be extensively discussed in section 3. Furthermore, it will be shown, also in section 4., that the rule orderings proposed for German and Swedish follow from a general ordering principle. Thus, a theory which encompasses the root - nonroot distinction plus a number of general theoretical principles can predict how under the proper circumstances languages may present us with anti-root phenomena.

3. Defining root transformations

3.1. Introduction: Two sets of 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 (1975a) 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 later. Den Besten (1975) and Williams agree in that both assume that the Verb Proposing 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 speaking 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) are applied. Something similar happens in the Dutch example (11). There Topicalization and Verb Proposing [7] are applied. Yet it is clear

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7   This rule is sometimes called Verb Second, which is a less felicitous terminology. It is understandable why this rule is called so, because the preposed verb appears in second position in declaratives and interrogatives. In yes/no-questions, however, the same rule fronts the finite verb into sentence-initial position, because no other root preposing rule applies. Compare section 3.2. of this paper, Koster (1975)a and (1978), and Den Besten (1975).

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; 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 Proposing 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 transforma-

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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 2 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 $\bar{\text{X}}$. The latter option generalizes over Chomsky's (P) NP (Chomsky 1973), compare (i), and other constituents moving into that position.
   (i) COMP → (P) NP ± wh

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tion. 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 (1975a)):

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

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

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10   The appearance of *wh*-phrases in echo questions deserves some discussion:
 (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 which 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 n. 3 I suggest that text grammar may impose requirements upon two consecutive sentences. The examples I presented were confined to texts that have to be uttered by one speaker. Echo interrogatives require that a speaker X repeat the sentence of the preceding speaker Y, while substituting the appropriate *wh*-phrase for the phrase in the preceding sentence he wants to know more about.

And 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 question of whether Complementizer Attraction Rules are adjunction rules 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 moving constituents to COMP. And it is also necessary to know whether there is any evidence in favor of such a description. The evidence will be taken from Dutch and German (section 3.2.). This will be generalized in section 3.3., which will also consider the question of the substitutive or adjunctive nature of Complementizer Attraction Rules.

3.2. Some data on root transformations in Dutch and German

3.2.1. Dutch

The description of Dutch (and German) root phenomena I will present below does not essentially differ from the description argued for in Den Besten (1975). Let us make the following assumptions: First, the grammar of Dutch contains the following base rule that has been taken over from Bresnan (1970 and 1972):

(20)
   S → COMP S

Second, 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) instead of its obligatory counterpart in English. Thus 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

All of the examples in (24) are related to (23). Now, we do not have to devise a separate verb preposing rule to account for that. The same rule that can account for the position of the finite verb in yes/no-questions and interrogatives, i.e. in (22)a and b respectively, can also be used to derive the examples in (24). In that case we have to assume that the elements to the left of *heb* in (24)a-c, namely *ik, dat boek* and *gelezen* respectively, have been preposed by a rule which is similar in effect to *Wh*-Movement. That Topicalization moves *dat boek* and *gelezen* into COMP position will be uncontroversial. However the assumption that also the Subject phrase *ik* - which is in some sort of first position in (23), i.e. the first position of S - moves into a new first position, i.e. the first position of S, will be less evident, witness the way linguists sometimes speak of Verb Preposing as being a Verb Second rule which puts the finite verb in second position, no matter where that second position is. [11]

  11 For instance Bach and Horn (1976). They propose a Verb First rule for yes/no-questions. The also claim that Verb Second (Verb Shift in their terminology) could apply to the complement of *sagen* 'say' in (i), because the complementizer is zero:
    (i)
    Er sagte, er komme morgen
    He said, he comes (conjunctive) tomorrow
    First of all, this implies that Verb Second would be a transformation triggered by the absence of something, which is a weird assumption unless this is made to follow from general principles. It seems selfevident to me that the proposed verb has triggered the deletion of the phonological complementizer, and not the other way around. Secondly, Bach and Horn's assumption also implies that the verb is placed to the right of a Subject that has not been moved (compare (i)) or to the right of a constituent like *gestern* in (ii) which has been preposed:
    (ii)
    Er sagte, gestern wäre he schon arriviert
    He said, yesterday had (conj.) he already arrived

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Nevertheless, it is clear that - if one does not want to prepose the Subject in (24)a - a special verb preposing rule Verb Second will be needed which adjoins the finite verb to whatever constituent happens to be in first position in the declarative sentence. The two verb preposing rules 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. *jij* 'you', *hij* 'he', *zij* 'she' and *wij* 'we' and a set of weak pronouns which contains i.a. *je* 'you', *hij/ie* 'he', *ze* 'she' and *we* 'we' (the *e*'s represent shwas). 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

Koster (1975)a follows the same strategy as I do in positing a rule that will prepose the Subject in order to derive declaratives with the Subject in first position, so that the finite verb will always land at the same position.

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

(26)
   a. --, dat jij/zij gisteren ziek was
   --, that you/she yesterday ill were/was
   b. --, dat gisteren jij/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 seperated 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?

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(35)
   a. Toch was zij gisteren ziek
   Yet was she yesterday ill
   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 come as a 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
   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:

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12   For an exhaustive study of the many uses of *er*, see Bech (1952).

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(40)

    a. --, dat er gisteren al veel gasten vertrokken zijn
    --, that there yesterday already many guests left have
    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 the *er* 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, witnesss (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

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    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

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 is 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?
   How many 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

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   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 an example of a contraction of three *ers* in a row, see example (162) in this paper.

a constituent into the leftmost position inside COMP. The latter rules are comparable to the cyclic rule of *Wh*-Movement

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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)   S → COM̅P   S

(52)   COM̅P → ($\bar{\bar{X}}$)   COMP   (V)

(53)   COMP → ± wh

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

(54)
  Wh-Movement

COMP	-	W_1	-	$\bar{\bar{X}}$	-	W_2
+wh				+wh		
1		2		3		4
3+1		2		e		4

---

15   I admit that COM̅P is a somewhat embarrassing novelty, but I prefer rule (52) over Chomsky's rule (i) (Chomsky 1973):
    (i)
    COMP → (P) NP ± wh
    I think the following assumption is a natural one: Every word must be exhaustively dominated by a preterminal node. Now, languages like Dutch and many others (optionally) retain their complementizers after *Wh*-Movement. Such words are 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 have

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

(55)
Constituent Preposing [17]

COMP	-	W_1	-	$\bar{\bar{X}}$	-	W_2
-wh				-wh		
1		2		3		4
3+1		2		e		4

(56)
Verb Preposing

COMP	-	W_1	-	V	-	W_2
				+tense		
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 n. 17) but that cannot be right 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

---

  17   Here the same objection applies as the one in fn. 16.
  18   cf. Chomsky (1973) and (1977), and Van Riemsdijk (1976)b, who makes similar remarks
      about Dutch. However see my selfcritical remarks in Appendix II.

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) S → COMP S
  (61) COMP → ± 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 pertinent remarks in subsection 3.1. above. Root constructions are defined upon those structures that are defined in terms of base rule and cyclic rules themselves. Questions are brought about by the application of Verb Preposing 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 does not apply, unlike Verb Preposing which does apply. Examples of such a structure 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 met
  Went I to De Swart's. Got I into a chat with
  die advokaat, die dronkelap.
  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 immarked type. For instance, a verb initial declarative followed by an unmarked declarative constitutes 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
   Threw John himself into music, Aukje was
   helemaal wild van poëzie
   completely crazy about poetry

And my guess is that the so-called conditional clauses to which Verb Preposing is applied are verb initial declaratives (see n. 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.
   There has-been sugar in the peasoup put.
   Maar wie (of) het gedaan heeft? (Ik heb geen
   But who (whether) it done has. (I have no
   idee/Ik zou het niet weten.)
   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 observations 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 mentioned above, a description which defines sentence types in terms of application viz. 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 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 problem is a 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?

3.2.2. Some additional data about German

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

19   For these sentences see Koster (1975)b.

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 there too the complementizer is involved.

(68)
   --, warum (*ob) er das geschrieben hat
   --, why (*whether) het that written has

(In fact, combinations like *warum daβ* 'why that' instead of *warum ob* are known from substandard German.) And also in German the syntax of weak pronouns confirms 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 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
   --, dat Karel het zonder enig probleem kon oplossen

(70)
   *--, dat ie zonder enig probleem het kon oplossen
   --, that he without any problem it could solve
   --, 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. --, daβ ihm Karl ein Buch geschenkt hat
   --, that to-him Charles a book given has
   b. --, daβ Karl ihm ein Buch geschenkt hat

(72)
   a. --, ob es Karl dem Johann geschenkt hat
   --, whether it Charles to-John given has
   b. --, ob Karl es dem Johann geschenkt hat

---

   20   Furthermore, compare Appendix I.

(73)
   a. --, daβ es ihm der Johann schon gesagt hat
   -- that it to-him John already said has
   b. --, daβ der Johann es ihm schon gesagt hat

(74)
   a. --, daβ sich einst die Intellektuellen mit der
   --, that themselves once the intellectuals with the
   Armee vereinen werden
   army unite will
   b. --, daβ 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
   Why would themselves the intellectuals with the
   Armee vereinen?
   army 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 *There* Insertion in English. Compare the following example:

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

This *es* is also used in impersonal passives:

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

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

(81)
    Es wurde behauptet, daβ der Strauβ ein Faschist sei
    There was contended that Strauβ 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
    --, that (*there) last year still two trees in-the
    Garten standen
    garden stood
    b. --, ob (*es) im Ratskeller gelacht wurde
    --, whether (*there) in-the rathskeller laughed was
    c. --, daβ (*es) behauptet worden ist, daβ der Strauβ
    --, that (*there) contended been has that Straus
    ein Faschist wäre
    a fascist was (conj.)

(85)
    a. --, ob *(es) eigentlich nicht idiotisch wäre
    --, whether *(it) actually not idiotic was (conj.)
    b. --, daβ *(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
    Stood (*there) last year still two trees

im Garten?
in-the garden?

b. Wurde (*es) gelacht im Ratskeller?
Was (*there) laughed in-the rathskeller?
c. Wurde (*es) behauptet, daβ der Strauβ ein Faschist
Was (*there) contended that Strauβ a fascist
wäre?
was (conj.)

(87)
a. Ist *(es) idiotisch?
Is *(it) idiotic?
b. Hat *(es) gestern gehagelt?
Has *(it) yesterday hailed?

(88)
a. In welchem Garten standen (*es) voriges Jahr noch
In which garden stood (*there) last year still
zwei Bäume?
two trees?
b. Wo wurde (*es) gelacht?
Where was (*there) laughed?
c. In welchem Blatt wurde (*es) behauptet, daβ.
In which paper was (*there) contended that
der Strauβ ein Faschist wäre
Strauβ a fascist was (conj.)

(89)
a. Warum wäre *(es) idiotisch?
Why would-be *(it) idiotic?
b. Wann hat *(es) gehagelt?
When has *(it) hailed?

(90)
a. Voriges Jahr standen (*es) noch zwei Bäume in
Last year stood (*there) still two trees in
unserm Garten
our garden
b. Im Ratskeller wurde (*es) gelacht
In-the rathskeller was (*there) laughed
c. In irgendeinem sozialistischen Blatt wurde (*es)
In some socialist paper was (*there)
behauptet, daβ der Strauβ eigentlich ein Faschist wäre
contended that Strauβ actually a fascist was (conj.)

(91)
a. Meines Erachtens ist *(es) idiotisch
In my opinion is *(it) idiotic
b. Gestern has *(es) gehagelt
Yesterday has *(it) 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

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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 section 4.1.

3.2.3. Conclusion and questions

In sum: It has been shown that Dutch and German root phenomena can be described in terms of movement rules that transport constituents to COMP. Now one may wonder whether it is a mere accident that in the grammars of German and Dutch COMP is the landing site for 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 acts. 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 does not necessarily violate the conditions for root transformation of Emonds

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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 *es*es in German I have excluded the expletive *es* of sentences like:
(i)
Es ist möglich, daβ er Schriftsteller ist
It is possible that the writer is
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, daβ er Schriftsteller ist
Yet is (it) possible, that he writer is

(1976), ch. 1. [23] It needs all 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 rules as Complementizer Attraction Rules.

3.3 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 a permutation 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 Complimentizer 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 (seep. 206)

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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 → COMP NP VP as a base rule for Dutch. Something along these lines must be said about adjunctions to COMP and about substitutions in COMP (or CŎMP). In the latter case we have to disregard COMP (or COMP).

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 wrong prediction. Of course, this can be countered by assuming that root transformations, structure-preserving rules and local transformations are properly seperated 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 would be assuming that adjunctions are defined as chomsky-adjunctions (following Chomsky 1975). In that case there are four possibe landing sites left: the four constituents of (93) themselves. However, 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 S (Bresnan (1970) and (1972)), that is also considered by Emonds (1976), comes into play. We assume that S is the initial category and is expanded as follows:

(94)

a.	S → COMP	S	…
b.	S → 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 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 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. 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 statemtents?

Trace theory cannot impose this order upon the pertinent rules. But even here general considerations about the definition of sentence types of the

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24   Chomsky, class lectures Fall 1976.

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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 will not pay any attention anymore to problems of rule ordering. I will 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 S-rules and so have to analyze material at 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 S rule is that the statements 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 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 in domain X and not in domain Y which is properly 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). [25] Now root preposings will move a

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[25]   Provisions must be made for the substitution approach of root transformations (cf. base rule (52)). COMP may not count as a daughter of S or S. Compare the reformulation of (92).

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constituent into complementizer position, provided root transformations are 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 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 1976a, pp. 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. [26]

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 1976a, 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, I take a weaker stance and adopt Chomsky's definition of the Upgrading Principle: [27]

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26 Compare n. 25.
27 If all movement rules were subject to trace theory, every movement rule would have to front and upgrade its movee, unless the relevant trace is wiped out. Therefore, preposing rules like Constituent Preposing and Verb Preposing, but also Negated Constituent Preposing in English, would be in accordance with that theory: All the pertinent rules front and upgrade a constituent. But again SAI would be the weak spot in the theory: In order to upgrade AUX one has to assume either that COMP is a daughter of S or that AUX is a daughter of the VP or the 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, Dutch and German can be made to follow from Chomsky's Upgrading Principle and Williams's theory of applicational domains. Therefore, I take a weaker stance in this paper 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 1976a, 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 rules 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 constituent, which may be the Subject-NP, a 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 *wh*-phrases, i.a. Dutch and German. And by (99) we know that any root preposing rule in such a language must move the pertinent constituent to COMP. [28]
   Now that it has been established that the theory can be constrained so that all root preposing rules are Complementizer Attraction Rules, one may wonder whether this hypothesis is also applicable to the other root phenomena as discussed by Emonds (1976). Therefore, the following

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   28   I do not want to exclude the possibility of there being more landing sites at S level. Furthermore, I would like to add that, in so far as I can see, this argument for the S-S distinction based upon *Wh*-Movement and the Upgrading Principle is the first theoretical argument in favor of that distinction after Bresnan's Right Node Raising argument and related arguments in Bresnan (1970) and (1972).

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section will briefly deal with French (section 3.4.). The subsequent section 3.5. will present an extensive discussion of the pertinent phenomena in English.

3.4. Rules moving finite verbs in French

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 pp. 202 and 203 of his book. The observations he owes to Kayne. The first rule Kayne calls 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 (finite) 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 of us?
    'Didn't he remember us?'
    c. Vous y ont-ils amenés à temps?
    You there have-they brought in time?
    'Did they bring you there in time?'

A more accurate name for this transformation may be Subject-Clitic ∇ Inversion. ∇ is a category used by Emonds (1976) that dominates the verb proper and its proclitic companions. Examples of a preposed verb accompanied by clitics can be found in (102)b and c. Subject-Clitic ∇ Inversion looks like SAI, but there are also similarities with Dutch and German Verb Preposing. The feature that Subject-Clitic ∇ Inversion shares with SAI is the pseudolocal nature of the process involved. And the fact that both auxiliaries and main verbs can move under Subject-Clitic ∇ Inversion is a property shared by this rule with West Germanic Verb Preposing. The rule cannot be local since its application is dependent upon the presence of certain material outside the sequence 'Subject-clitic Verb'. And it cannot be structure-preserving either since there is no clitic or NP position between the auxiliary and the main verb (compare (102)b and c). For some reason or another Emonds took only one possible technical variant of the pertinent rule into consideration, i.e. movement of the Subject-clitic, probably because his assumption of there being only one position inside COMP to be filled prevented him from assuming that ∇ moves into complementizer position - since that position can be taken by

a *wh*-phrase (compare (102)a). Since we know from the analysis of German and Dutch in section 3.2. that that does not constitute a real problem, I would like to propose the following formalization: [29]

(103)
Subject-Clitic ∇ Inversion

COMP	-	NP	-	∇	-	X
		+pro				
1		2		3		4
1+3		2		e		4

An objection to the effect that clitics are some sort of affixes and so would be orphaned after the application of this transformation is not strong enough a 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 (terminology theirs) 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 (see (105)), certain preposed adverbs (see (106) and (107)), certain concessives (see (108)) and exclamatives (see (109)):

(105)
   a. Benoit a un nouvel ami, dit-elle (D&G(17))
   Benoit has a new friend says-he
   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 if-he had left, Mary arrived

---

  29 This formalization of Subject-Clitic ∇ Inversion presupposes that in the case of Complex Inversion (compare (i)) the nonprominal Subject phrase is not in Subject position:
    (i)
    Pourquoi *Jean*$_i$ est-*il*$_i$ parti?
    Why John$_i$ has he$_i$ left?
    'Why did John leave?'
    Kayne (1982) has taken up and improved this idea that was implicit in the original version of this paper.

(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
  So tall is (subj.)-she she not-will-reach not
  la branche (D&G (23))
  to the branch
  b. Si grande qu'elle soit, elle n'atteindra pas
  So tall that-she is (subj.), she not-will-reach not
  la branche
  to the branch

(109)
  a. Mais est-il grossier! (D&G (28))
  But is-he rude!
  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	[$_{VP}$	V	(OPT)
1		2	
e		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 correctly, they contend that 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. The converse does not hold, because in a sentence like *tu manges* 'you are eating' the complementizer is absent while Subject-Clitic Inversion does not apply. This relationship is easy to formalize by means of the rule of Subject-Clitic ∇ Inversion formalized in (103) and subsequent deletion of the Complementizer triggered by the preposed ∇. This ordering is enforced by the Counter-deletive Ordering Principle which I will introducé in section 4.1.
   I would like to propose a similar analysis for the second root transformation discussed by Emonds (1976), i.e. 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 (1976):

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

There is no inversion in negative imperatives. 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 need not be argued for at length. The rule applies to root sentences only. It cannot be a local rule, since the inversion is dependent upon material outside of the sequence 'Clitic - Verb'. It cannot be a structure-preserving rule either, because Direct Object clitics may not move to the Direct Object position, witness the following examples 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!

Also in this case Emonds thinks in terms 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	-	CL	-	V	-	X
1		2		3		4
1+3		2		e		4

This analysis presupposes a node CL inside ∇ which contains all pronominal and adverbial clitics but not the negative clitic *ne:* [$_\nabla$ *ne* CL V]. Although the node CL cannot be found 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 as outlined above. [30]

  30 Maybe SAI, Subject-Clitic ∇ Inversion and Affirmative Imperative Inversion constitute a natural class. Such a class can be obtained by imposing upon structural indices of transformations the condition that at least one of any two consecutive terms must be satisfied by a factor changed by the rule. By this condition either the sequence $Constant_i$ - Variable - $Constant_{i+1}$ or the sequence $Constant_i$ - $Constant_{i+1}$ - $Constant_{i+2}$ can be part of a structural index.

This having been established, I think it useful to compare the hypothesis about root transformations outlined in sections 3.1. through 3.3. with the theory presented by Emonds (1976), more specifically with his analysis of English root phenomena. This will be done in section 3.5.

3.5. Repartitioning Emonds's root transformations

3.5.1. Introduction: Two ways to partition the root transformations of English

If the hypothesis about root transformations outlined in this paper is compared with the theory presented in Emonds (1976), some differences can be perceived. That my assumption that all Complementizer Attraction Transformations, including the cyclic rule of *Wh*-Movement, are adjunction rules, conflicts with Emonds's theory, will be clear. A theoretical argument in favor of an adjunction approach will be discussed in section 4.2. More important at this moment is the question in which respects our theories differ as to which root transformations are Complementizer Attraction Transformations and which are not. 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 substituting a verb for a V inside 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 substitutions 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

SAI-like rules would then constitute a subset of the set of transformations allowed by the latter sequence, where $Constant_i$ = COMP and $Constant_{i+2}$ is followed by a variable.

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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. Some discussion of that division will enable me to defend a different view at English root phenomena.

 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 ma partly involve Complementizer Attraction Rules.

There is one point where Emonds and I clearly agree: Parentheticals cannot be described in terms of Complementizer Attraction Transformations, because the pertinent phenomena differ too much - if a special Parenthetical transformation is the right way to deal with parenthetical phenomena at all. Therefore, I leave out a discussion of my number 2. Section 3.5.2. will deal with my number 1., while my numbers 4. and 5. will be discussed in section 3.5.3., The Compementizer Attraction phenomena of my number 3. do not require any further discussion.

3.5.2. No root transformations needed

The reason why I want to collect under one number phenomena like tag questions, 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 (1976) Emonds himself refers to a nontransformational solution for

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left and right dislocation by means of base rules generating a dislocated category to the left or the right of an independent sentence as well as 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 (1977). 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 and the subject plus or minus the negation. 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 devices necessary for generating tags are 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 sentence be a yes/no-question reflecting the propositional content of the declarative while changing the truth value of the declarative, which 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 n. 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 ∇ 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 (1977) it is suggested that Topicalization in English be 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:

(116)
   a. $\bar{\bar{S}}$ → TOP S
   b. S → COMP S

The gap in the sentence 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 (1977), does not allow the movement of an element out of a cyclic S, unless it is the subject of an infinitival 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. Thus COMP serves as a second escape hatch for cyclic 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 an apparent violation of Subjacency, 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 proposes 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, which are not able to apply cyclically, will be constrained by Subjacency and related conditions, i.e. it is predicted that the preposee of a root transformation that moves that consituent 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 section 3.2.1. I have pointed out that Constituent Preposing in Dutch, which 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 4) may be split up in a root preposing and a stylistic postposing, then all 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 looses its exceptional status if we accept the description of Topicalization proposed in Chomsky (1977). [32]

Intraposition, a rule Emonds does not talk about anymore in his book (1976), is another candidate for description in terms of existing rules. Koster (1975)b proposes a description of 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)b 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

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. See Erteschik (1973) and Allwood (1976).

32   If my approach is right, then Complementizer Root Attractions constitute a problem for Bresnan's theory (Bresnan 1976a and b). According to that theory a rule moving a constituent across a variable towards a complementizer will be unbounded, while obeying the Complex NP Constraint and the *Wh*-Island Constraint. This predicts that rules like Constituent Preposing in Dutch are unbounded, which is incorrect. Compare my remarks about (57)-(59).

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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 GOMP 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 Chomsky's (1977) solution for Topicalization here 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
   That his grandmother ill was, has he not anymore
   op tijd vernomen
   in time heard
   b. *Dat zijn oma ziek was, denk ik (niet), dat
   That his grandmother ill was, think I (not), that
   ie nog op tijd heeft vernomen
   he still 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. Existing rules (SAI, *Wh*-Movement, base rule, 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), (1976)a and b and (1977) it is expected that root transformations are bounded. Unbounded root phenomena can be described by means of other rules.
   Now I come to a less clear case, the rule of VP Preposing, which is the last rule mentioned under my number 1. 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). As regards 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 VP 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. Participles governed by *be* are either adjectives or an intermediate category that has its own projection within X̄-theory. In the latter case the preposees in (124) are Participle Phrases. Either choice can be combined with the assumption that so-called preposed VPs are base-generated in TOP and bind a VP that is emptied (or interpreted) by the rule of VP Deletion. Thus, again we may conclude that a root phenomenon can be described in terms of existing rules.

3.5.3. Inversion phenomena

Finally something about certain inversions between a Subject and the

verbal sequence in the case of 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, segtion 7). This stylistic rule accompanies the preposing rules of Comparative Substitution, Participle Preposing and PP Substitution, which can all be 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 also be 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 would 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. Counterdeletive Ordering Principle. This principle is discussed in section 4.1. 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 notes that sentences like (131) are grammatical:

(131) Into the woods, John ran

However, Willams suggests that this sentence can be generated by Adverb Preposing, since that rule induces a comma intonation. He may 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 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 non-application of Subject Simple Verb Inversion in the case of the presence of more than one verb does not count as a defining property of Directional Adverb Preposing constructions. This approach is in accord-

ance with the above-mentioned assumption about rule ordering which excludes the possibility of a root movement rule being applied after a deletive rule. Thus the root phenomenon of Directional Adverb Preposing happens to fall in the same class as the Double Movements around *be* and other verbs. All of these constructions can be defined in terms of (non)applications of one root preposing and one stylistic rule.

3.5.4. Conclusion

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 did not talk 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 (1977), 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. Alternatively, if we were to assume one general preposing rule, it could be left to that part of grammar where marked and unmarked root constructions are defined to account for this system in decay.

In so far as I can see, this exhausts the list of possible root transformations in English. It has been established that certain root phenomena can be defined in terms of (non)applications of root transformations: Questions, Negated Constituent Preposing constructions, Adverb Preposing constructions. Others are defined in terms of (non)applications of one root transformation 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.

3.6. Conclusion

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 S into COMP and S and that such a language move its root preposees into complementizer position. This does not exclude that there are other possible landing sites at 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 Dutch and German syntax presents evidence in favor of formalizing root preposing rules, more specifically the rule of Verb Preposing, as Complementizer Attraction Transformations.

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

4.1 Haben/sein Deletion and the ordering of deletive rules

With the result of the preceding section we can now address the problem expounded in section 2. Consider the following German examples:

(133)
    a. --, daβ er noch nicht gekommen (ist)
    --, that he yet not come (has)
    b. Er *(ist) noch nicht gekommen
    He *(has) yet not come

(134)
    a. --, warum er geweint (hat)
    --, why he wept (has)
    b. Warum *(hat) er geweint?
    Why *(has) he wept?

An archaic rule of German syntax deletes the finite forms of the temporal auxiliaries *haben* und *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 onder 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 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 rule [34] and rules substituting for a specified lexical element and the preterminal 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 rule [35] are a subset

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33   For such rules, see Den Besten (1976). The complementary distribution between *hij* and *ie* (see section 3.2.1.) could be accounted for that way and also the change from *of* to *dat* (compare (137) and (140)). Similarly for the rule changing the sequence *as as* '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

34   *Er-er* Contraction may be such a rule (compare section 3.2.1.).

35   The erasure of the past participle of the passive auxiliary in Dutch may be a rule of that type:
     (i) --, dat er hem een goede betrekking aangeboden (geworden) is
     --, that there him a good job offered (been) has
     (Alternative orders for the verbal complex are: *aangeboden is geworden* and *is aangeboden*). Note that the temporal auxiliary *is* 'has' is in fact a form of *zijn* 'be', Dutch being one of those languages that distinguish between *have*- and *be*-verbs. Finally note that for speakers of Dutch from the Netherlands the use of *geworden* in passives is practically nonexistent. It is felt to be oldfashioned, dialectal, 'Belgian'. Speakers of Belgian Dutch usually do not leave out *geworden*.

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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.

Recall 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':

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36   A genuine counterexample might be the observation that the rule deleting the Subject of an imperative must precede Affirmative Imperative Inversion (rule (114)). However, this objection is easy to overcome, since an interpretation rule for an empty Subject phrase in an imperative can do the job as well. It may well 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 ≥ 1) ≠ e *iff* C is satisfied by a factor that must be changed

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

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

(138)
   Ik weet niet, wat (of) ie geschreven heeft, of
   I know not, what (whether) he written has, or
   hoe (of) ie het geschreven heeft
   how (whether) 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 Transformation adjoin constituents to the complimentizer or if the theory requires that these transformations substitute constituents for $\overline{X}$ or V inside COMP - which implies in both cases that we have a lexical complementizer to delete - can it be shown that languages like English and German, which 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 3.3. can serve as the theory 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. --, daβ (*es) voriges Jahr noch zwei Bäume im
   --, that (*there) last year still two trees in-the
   Garten standen
   garden stood
   b. Voriges Jahr standen (*es) noch zwei Bäume
   Last year stood (*there) still two trees
   im Garten
   in-the garden
   c. Es standen voriges Jahr noch zwei Bäume im
   There stood last year still two trees in-the
   Garten
   garden

Afrikaans presents us with an example that is similar 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 the 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 bled 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 rule necessarily bleeds a deletive rule, i.a. 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.

4.2. Ha Deletion and base-generability

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 example:

(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) insett på ett tidigt stadium att han måste
   He *(had) 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
   b. John *(har) sett boken
   John *(has) 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
   Peasoup eats Kalle gladly/often

(158)
   a. --, att Kalle äter ärtsoppa på torsdager
   --, that Kalle eats peasoup on Thursday
   b. Kalle äter ärtsoppa på torsdager
   Kalle eats peasoup on Thursday

(159)
   a. --, vad John (har) sett
   --, what John (has) seen
   b. Vad har John sett?

[37]   I owe these sentences to Elisabet Engdahl.

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What has John seen?

Swedish is an SVO language underlyingly. 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)-(157)). 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 S-level, and so forces all root transformations, which - according to my hypothesis - must be S-rules, to move their preposees into COMP. Therefore there must be a general rule of Constituent Preposing that may prepose the subject (compare (154), (155), (156), and (158)) as well as other constituents (compare (157)) into complementizer position. Thus there is a strong resemblance in root behavior between Dutch and German on the one hand - SOV languages underlyingly - and Swedish on the other hand - an 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 *ha* in (154), (155)b, (159)b, where it does not delete. However *ha* is *not* in the same configurational position. 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 S-rule. Hence, by (99) *Ha* Deletion will not apply at S-level. [38]

The Swedish antiroot phenomenon is solved in terms of the Counter-deletive Ordering Principle (Verb Preposing before *Ha* Deletion) and Williams's (1974) theory of applicational domains (*Ha* Deletion applies to an 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 background, consider the following Dutch examples: [39]

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

39 Compare n. 12 and n. 14.

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(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 t$_i$ 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 t$_i$ 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), which show that Dutch can contract three *ers* in a row. I have made an arbitrary decision by assuming that the righthand *er* of two contracting *ers* substitutes for the lefthand *er*, but nothing depends upon that.

   It is not implausible to assume that the contraction that yields (161)b2

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and (162)c 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 Transformation S-rules? The answer could be: Because these rules prepose a constituent towards the complementizer and the COMP is generated under 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 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.

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 n. 38. And does this definition predict that Complementizer Attraction Transformations (under the adjunctive fashion) are S-rules? It does. So we may 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 S-rule. Compare this transformation with German *Haben/sein* Deletion. This 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 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) er nicht
Laughed *(has) he not
  b. Studiert *(hat) er schon, aber ob er *studiert* hat?
Studied *(has) he yes, but whether he studied has?

There is little reason for assuming that COMP is a potential domain. Yet, whether or not we assume that COMP can be a domain, definition (99) will make incorrect predictions. Suppose COMP is a domain [40], in that case (99) predicts that *Haben/Sein* Deletion can be both a VP-rule and a COMP-rule. If COMP is not a domain, this deletion rule can be either a VP-rule or an S-rule. Now *Haben/Sein* Deletion must be ordered after the root preposing rules, and - whether this deletion transformation is a COMP-rule or an S-rule - the required ordering permits the erasure of *hat* in (164)a and b, which yields ungrammatical sentences. Therefore, *Haben/Sein* Deletion must be a VP-rule. In that case deletion of *hat* in (164)a and b is not allowed. Thus it does not make any difference whether (99) is able to distinguish between COMP-rules and S-rules. And I have to stress again that the domain status of COMP as such is rather doubtful. Even rules that can be stated in terms of a COMP domain (cf. n. 40) can be restated in terms of an S-domain, and I do not know of any clear evidence in favor of assigning domain status to COMP. This consideration preempts a rather long discussion of *Ha* Deletion. We can now say that definition (99) would predict that *Ha* Deletion can be applied both at VP level and at S level. An incorrect prediction. *Ha* Deletion must be a VP-rule only.

    The above discussion implies that definition (99) in some clear cases 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 analyzing 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 clause to (99):

(165) d. C_k can be base-generated under X

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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).

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This principle does not make any difference for NP Preposing [41] 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 S-level, according to (99)+(165). This prediction is wrong and does not differ from the prediction made by (99). However, if we assume that Complementizer Attraction Transformations are adjunction rules, (99)+(165) correctly predicts not only that NP Preposing is an S-rule, Verb Preposing an S-rule and *Er-er* Contraction both a VP and an S rule, but also that the auxiliary deletion rules of German and Swedish are VP-rules and not 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 principles as yet unknown or that the assignment of domains follows

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41   Condition (165) subsumes part of Emonds's definition of structure-preserving transformations, i.e. 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 (see Fiengo 1974).

42   One could make the objection that the deletion of *wh*-elements in COMP is a counterexample and so that at least Constituent Preposing and *Wh*-Movement must be substitution rules. 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 COMP in that guise. Their identity to the antecedent can be 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 assume an NP position inside COMP, (99)+(165) cannot predict any longer that NP Preposing is a S-rule, and we would expect to find root passives moving the object into COMP 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 (see Chomsky 1976b) are S-domain rules (Kerstens 1976). This will follow from (99)+(165) if we assume that there is no NP inside COMP.

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from another principle that makes my assumption about Complementizer Attraction Transformations superfluous.

As yet I can only show that the above hypothesis makes a prediction about the ordering of the English rules of *Wh*-Movement and SAI that can be suppprted 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 dåd 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 a local rule like all lexical deletive rules. [43]

(169)
   a1.*--, why you dåd 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

43   Compare Den Besten (1975) and (1976) and Emonds (1976).

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 can be derived:

(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*	(Verb 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 transformational theory that does not incorporate the definition of domain statements expressed in (99) and (165). For ease of reference I call (165) the Base-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) Who 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. That is, 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 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 can be base-generated under X

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44   Nothing is predicted as to the position of *is, has, can*, etc. in sentences like the following ones:
     (i) Who is dancing?
     (ii) Who has revised this book?
     (iii) Who can tell what 'charm' is in physics?

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The simplest interpretation of these predictions is that if a rule is a X-domain rule, its structural index $a_1,…,a_n$ (where n > 1 and 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 b can be derived in spite of the fact that (168)a1 is ungrammatical. Suppose we 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 arbitrarily chooses 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 an S, the derivation is blocked. This means that (99)+(165) is equivalent to (95) in so far as rule ordering is concerned. It is also ensured that derivations involving *Ha* Deletion do not block if *Ha* Deletion is applied to a VP and that derivations involving *Do* Erasure do not block if *Do* Deletion is applied to an S. [45] Therefore, the predicate 'be

45 Note that this predicts that if Swedish were to 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$_i$ ±wh] - *ha*] - t$_i$ - ADV - PART - X
b. [$_{COMP}$[NP$_i$ ±wh] - *ha*] - t$_i$ - PART - X
c. *[$_{COMP}$[NP$_i$ ±wh] - *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$_i$ ±wh] - *ha*] - t$_i$ - ADV - PART - X
b. *[$_{COMP}$[NP$_i$ ±wh] - *ha*] - t$_i$ - PART - X
c. *[$_{COMP}$[NP$_i$ ±wh] - *e*] - t$_i$ - PART - X
4. [$_{COMP}$ C$_i$ - *ha*] - NP - (ADV) - PART - X - t$_i$ - Y
In short, 1a and 3b would become ungrammatical, whereas 2, 3a and 4 would still be grammatical, which would justify the assumption of an underlying *ha* in spite of the absence of *ha* in subordinate clauses. Note that the hypothetical system (ii) would be undesirable from a functional point of view, because Swedish would need al sorts of circumlocutions to express simple questions like 'Who has done that' or simple declaratives like 'John has visited his uncle'. In one respect the state of affairs in (ii) is similar to the state of affairs concerning *do* in English and indefinite *es* in German. Both of them are erased by an obligatory deletion rule. The root occurrence of *es* suffices as evidence for an underlying particle *es*. And if in English there were no emphatic *do* and if negation were generated between NP and AUX (as it is in Swedish), root occurrences of *do* would still suffice for assuming an underlying auxiliary *do*, even though it would never show up in subordinate clauses. Note furtermore that if English were to change from SAI-I to SAI-II, surface structures like in (iii) would be possible only if *do* is emphatically stressed:
(iii) [$_{COMP}$[NP$_i$ ±wh] - *do*] - t$_i$ - V - X

However, if in this hypothetical state of affairs *Do* Erasure were made an optional rule, structure (iii) would be the sole surface structure in the case of a Subject moved by *Wh*-Movement or Negative Preposing.

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 a weakly stressed auxiliary *do*. 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, additional evidence can be provided:
    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 unlikely:

(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

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

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 extractecl 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?

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47   Compare Emonds (1976) and Akmajian and Wasow (1975). The arguments in favor of a separation of AUX and VP do not militate against the idea of both of them being part of a larger VP or Predicate Phrase.
48   Compare Chomsky (1976)a.
49   An across-the-board analysis for examples like (181) was first proposed by Edwin Williams in a talk to the Algemene Vereniging voor Taalwetenschap in the Netherlands (Jan. 1975). A formal discussion of across-the-board extraction can be found in Williams (1977)b, where *Wh*-Movement in relative clauses is dealt with. Across-the-board extraction is necessary if Williams's C/A Principle is valid (see Williams 1977b), which requires that Gapping be applied to conjoined Ss and not to conjoined Ss (compare (181)a).

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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 'grammatica' if and only if it constitutes sort of a 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* can be collapsed because they are phonologically identical, but *did* and *will* can 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* can be collapsed. 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 COMP, which 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 justifed 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

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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

It has been shown that it is possible to define all root preposing transformations as rules involving COMP. This idea is a sharpening of ideas found in Higgins (1973), Williams (1974), Den Besten (1975), Koster (1975)a 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 (William 1974). Application of Chomsky's Upgrading Principle (101) (Chomsky 1976a) as interpreted in (100) to *Wh*-Movement yields the distinction between S and S. If we assume that root preposings are transformations applying to the highest subphrase of a root 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 S-level.

Secondly, it has been shown that if we assume that Complementizer Attraction Transformations are adjunction rules and not substitution rules, and if we assume the Counterdeletive Ordering Principle (135) 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 usually 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

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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 S reduced and is a marked phenomenon in view of the fact that root structures do not occur in Dutch or German subordinate clauses.

APPENDIX I

‘Conjunctive discourse’ in German

In German a phenomenon can be found that could be interpreted as a counterexample to Emonds's claim that no transformation will apply to subordinate clauses. Consider the following examples that have been taken from Bach and Horn (1976):

(1)
   Er sagte, daβ er morgen komme
   He said, that he tomorrow comes (conjunctive)

(2)
   Er sagte, er komme morgen
   He said, he comes (conj.) 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 conjunctive 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 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 conjunctive 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 verbs of saying as root sentences. In the following paragraphs I will 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 conjunctive, even if that text contains questions. Secondly, a conjunctive quotation sentence does not have to follow *sagen* immediately. It can be be seperated 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 conjunctive quotations at all.

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

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

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

(7)
    Er sagte, daβ er nicht damit einverstanden wäre. Daβ der Karl ein netter Bursche
wäre, wenn er nicht zuviel getrunken hätte. Aber daβ man ja wüβte, daβ 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 to an independent sentence strategy, after which a return to the subordinate clause strategy is impossible. Compare the following text:

(8)
    Er sagte, daβ er nicht damit einverstanden wäre. Daβ der Karl ein netter Bursche wäre, wenn er nicht zuviel getrunken hätte. Aber daβ man ja wüβte, daβ das normalerweise nicht der Fall wäre. Warum hätte man ihn überhaupt eingeladen? Der wäre ja nicht interessiert an Bürgerinitiativen. (*Daβ der ja nicht interessiert wäre an Bürgerinitiativen).

(9)
    Er sagte, daβ er nicht etc. … der Fall wäre. *Warum man ihn überhaupt 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 conjunctive 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
    We believed him a pleasure to do and invited him
    zum gemeinsamen Musizieren am Dienstagabend. Aber
    for together playing music Tuesday evening. But
    er sagte (erwiderte) wütend, warum hätte man ihn
    he said (answered) angrily, Why had (conj.) one him
    eingeladen? Er hätte ja kaum Zeit selber zu musizieren.
    invited? He had (c.) hardly time himself to play music.

(11)
    *Wir … Dienstagabend. Aber er sagte (erwiderte) wütend, warum man ihn eingeladen hätte. Daβ er ja kaum Zeit hätte selber su musizieren.

What do we have to conclude from these examples? A minimal conclusion would be that conjunctive 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 conjunctive discourses from underlying subordinate clauses starts crumbling. The next concession must be that conjunctive sentences following such questions cannot be derived from underlying subordinate clauses either, witness the ungrammaticality of subordinate clauses following conjunctive questions (compare (8) and (11)). The fact that conjunctive declarative sentences preceding conjunctive 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 conjunctive quotations are used the same way as pronouns in subordinate clauses (see above). For instance, the Subject of the first conjunctive sentence in (6) may not be changed into *ich*, although it can be corefent 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 (conj.) not agree
    b. Er sagte, daβ 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 conjunctive discourses and subordinate clauses, witness (12)b. However note that the same anaphoric system is applied in conjunctive questions and conjunctive 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 conjunctive 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, which 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 pronominal system and the use of the conjunctive.

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

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

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

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

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

This minitext is all right.
   Now that it has been discovered that conjunctive quotation does not need tags like *sagte er* and the like, it will not come as a surprise that conjunctive discourse does not need an introducing verb of saying at all. Consider the following texts:

(16)
   Aber er wollte nicht mitmachen. Es wäre ja
   But he wanted not cooperate. It was (conj.)
   unerhört, daβ man nicht verstünde, daβ er
   outrageous (he said) that one not understood (c.) that he
   sich weigerte mit solchen Faulenzern zusammenzuarbeiten.
   refused (conj.) with such bums together-to-work.

(17)
   Das Telephon klingelte. Eine unbekannte Stimme kam
   The telephone rang. An unknown voice came
   aus dem Apparat. Man hätte sich die Sache noch
   out of the apparatus. One had (c.) thought about it
   mal überlegt, aber es wäre am besten, wenn
   again (it was said), but it would be best, if
   ich die Krokodiljagd finanzieren würde.
   I the crocodile hunt finance would.

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

(18)
   *Aber er wollte nicht mitmachen, daβ es ja unerhört ware, daβ …

(19)
   *Eine unbekannte Stimme kam aus dem Apparat, daβ man sich die Sache noch mal überlegt hätte, aber …

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

(20)
   Aber er wollte nicht mitmachen. Es wäre ja unerhört, brüllte
   shouted
   er, daβ …
   he

(21)
    Eine unbekannte Stimme kam aus dem Apparat. Man hätte
    sich die Sache noch mal überlegt, näselte der
    nasalized the
    Unbekannte, aber …
    unknown person,

Thus, we may conclude that the very structure of conjunctive 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
    'One has (ind.) thought about it again,' (heard I
    den Unbekannten sagen), aber …
    the unknown say), but …

This text without what has been added within parentheses gets even better, if *Wir haben uns* (we have (ind.)) is substituted for *Man hat sich*. Again, this is a gradual matter. The important thing to note is that conjunctive 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 conjunctive quotations are subordinate clauses. First of all, there are cases of conjunctive 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 conjunctive discourse can easily dispense with tags like *sagte er*. This makes conjunctive discourse an even stronger candidate for root-sentence-hood than direct discourse. And that in spite of the fact that conjunctive discourse is subordinate as regards the pronominal system it applies.

    I have gone into this matter up to some length because German conjunctive 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 conjunctive 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 indicated in this paper.

APPENDIX II

A morphosyntactic reanalysis for root transformations

Shortly after I finished my paper on the interaction between root transformations and lexical deletive rules, I started revising my ideas about the formal properties of Complementizer Attraction Transformations. The outcome of all this was that I assumed a more refined version of a substitutive analysis for these transformations without having to give up the Base-Generability Principle or its predictions as regards the auxiliary deletion rules discussed in the main text of this paper. This revised hypothesis concerning root phenomena and *Wh*-Movement was discussed in a short version of this paper presented at the 1978 GLOW Colloquium in Amsterdam and in a paper to the Annual Meeting of the LSA, December 1978 in Boston. A brief exposition of the core idea was taken up in two papers on Afrikaans (Den Besten 1978 and 1981a). (Usually people refer to the GLOW handout.)

There are a couple of considerations that can make one change one's ideas about Complementizer Attraction Transformations in general and Root Transformations in particular. First, note that the Verb Preposing rules I discuss in this paper without exception induce an obligatory rule of Complementizer Deletion. This complementary distribution of preposed finite verbs and lexical complementizers gives one the impression that Verb Preposing (SAI, Subject-Clitic ∇ Inversion) substitutes the finite verb for COMP. However, V and COMP are not supposed to be identical or nondistinct, which seems to be a prerequisite for substitution, since we may assume that all substitution rules are structure-preserving, though not necessarily cyclic, in nature. In fact the solution is quite simple and will be discussed below. Second, root transformations as defined by 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 - partly in terms of ordering, since they have to apply at the final cycle. These properties should be seperated, if possible. More specifically, it would be nice, if the definition of root transformations could be reduced to the ordering statement (application to the highest subcycle of the final cycle), presuming that root transformations do not differ from structure-preserving transforma-

tions and local rules in the formal operations they perform. Third, root transformations share with the cyclic rule of *Wh*-Movement the property of being Complementizer Attraction Rules. Now *Wh*-Movement, being a nonlocal cyclic rule, should be a structure-preserving transformation. Thus, if an acceptable structure-preserving analysis can be devised for *Wh*-Movement, it is envisageable that a similar analysis for root transformations can be found as well. Finally, the fact that root phenomena like Constituent Preposing are bounded in nature is not an argument against a *Wh*-analysis for such phenomena (contra what I claim in the main text of this paper). One first has to consider whether the required type of *Wh*-Movement is bounded or unbounded in nature. It turns out to be the case that the required type of *Wh*-Movement in Dutch, i.e. D(emonstrative)-Movement is also fairly restricted in its domain of application. Therefore, I now believe that Koster (1975b, published 1978) and (1978) was right in applying Chomsky's *Wh*-analysis to Topicalization in Dutch.

These considerations lead to the following hypothesis: All Complementizer Attraction Transformations are of the following type:

(1)

X	-	$[+F_i]$	-	Y	-	$[_C+F_i]$	-	Z
1		2		3		4		5
1		4		3		e		5

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 expansion rule:

(2)
S → [+WH] [±T] S

The [+WH] position is generated outside the COMP-position [±T]. More features are 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 for the derivation of 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 (1975b) and (1978):

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

This way, most but not all of the cases that can be accounted for by means of the rule of Constituent Preposing can be described. However there is a couple of residual cases that require an alternative account. I

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refer to Koster (1978) who deals with Subject pronouns and sentential adverbs in first position in declaratives. Also note that Negative Preposing does not permit a D-analysis:

(4)
  Nog nooit (*toen/*dan) is hij naar de opera geweest
  Yet never (*then) has he to the opera been

It is conceivable that Negative Preposing in Dutch (and English) is another instantiation of rule schema (1) with $+F_i = + NEG$.

    In base rule (2) the position of the lexical complementizer is indicated as [±T], i.e. as [±Tense]. It is a well known fact that specific complementizers construe with specific classes of verb forms (usually not with specific tenses). Thus in English *that* and *if* (not *whether* - *whether* is a *wh*-word that for some reason or another cannot show up in root sentences anymore in Modern English) combine with finite verbs, while *for* is construed with *to*-infinitives. Similar observations can be made for Dutch: *dat* 'that' and *of* 'whether, if' are [+T] complementizers and *om* 'for' (only with PRO Subjects) requires a *te*-infinitive. If [±T] is taken as the defining categorial characteristic for complementizers, the position [+T] can be used for another instantiation of rule schema (1). It is clear that Verb Preposing (the general rule in Continental West Germanic and the Scandinavian languages, with such far outposts as Icelandic and Afrikaans), Subject AUX Inversion and the Clitic Verb Inversion rules in French are rules fronting finite verbs. Thus a redefinition of these rules in terms of [+T] is appropriate. Verb Preposing may now be renamed as Move Tense or Move T (on analogy with Move WH):

(5)
  Move Tense (Verb Preposing)

X	-	[+T]	-	Y	-	[$_V$+T]	-	Z
1		2		3		4		5
1		4		3		e		5

This new formalization of the rule of Verb Preposing predicts that there will be Verb Preposing only if the corresponding lexical complementizer is absent - since the fronted finite verb occupies the complementizer position - and that there may be a lexical complementizer if the verb is not moved (modulo other rules such as *Wh*-Movement which may influence the presence of a complementizer).

    This prediction is correct. Throughout this paper I had to assume a complementizer deletion rule induced by Verb Preposing. Move Tense makes this 'deletion' part of the Verb Preposing rule itself. The assumption of there being a complementizer deletion rule was mainly based upon a comparison of root sentences with the corresponding subordinate clauses. Also compare the following examples:

(6)
   a. Gelachen *dat* we *hebben*, gelachen!
   Laughed that we have, laughed!
   b. Gelachen *hebben* we *e*, gelachen!
   Laughed have we *e*, laughed!

Sentence (6)a is an example of the marked Topicalization structure in Dutch discussed in sections 3.1. and 3.2.1. (compare (16) and (62) in the main text). The finite verb *hebben* is not preposed and the complementizer *dat* is present. Instead of this structure (which is rather frequent, especially in the spoken language) the 'normal' Topicalization structure with Verb Preposing can be used. In that case the complementizer eclipses, as is shown in (6)b. 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:

(7)
   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
   --, as had he it not seen

A similar phenomenon can be found in (mainly written) Dutch after nominalizations of verbs of saying and the like:

(8)
   a. de bewering als *zou* het ministerie dit nooit toestaan
   the claim as would the ministery this never allow

If we undo Verb Preposing in this example, we get the complementizer *dat* 'that', not *of* 'if':

b. de bewering als *dat* het ministerie dit nooit *zou* toestaan

This construction is shunned however, because *als dat* is a socially stigmatized variant of *dat*.
   Similar data from French, concerning *que* 'that', *si* 'if, whether' and Subject-Clitic Ⅴ Inversion, taken from Dubuisson and Goldsmith (1976) were discussed in section 3.4. And also outside the Germanic and Romance language families relevant data can be found. Thus, consider the following Czech examples:

(9)
   a. --, *zda*(li) *učite* Česky
   --, whether you-learn Czech
   b. *Učite*(li) *e* Česky?
   You-learn (Q) *e* Czech?

Czech possesses a variable question complementizer: it is either *zda* or *zdali*. Now *zdali* cannot be a compound (unlike the nonstandard question complementizer *ofdat* 'whether' in Dutch, which disappears under Verb Preposing), since the optional particle -*li* can be affixed to a fronted finite

verb as well. Apparently, *zda* occupies the [+T] position, whereas *-li* serves as an extra complementizing element with a position of its own.

The above hypothesis concerning the nature of Verb Preposing has been taken over by Koster (l978:12). Similar ideas are expressed in Coppen (1981), Evers (1981)a and b and (1982), Lenerz (1981), and McCray (1981). Also see Olsen (1982). Now, note that this structure-preserving analysis obviates Goldsmith's No-Complementizer Condition (Goldsmith 1981), which runs as follows:

(10)
   No-Complementizer Condition (NCC)
A transformation T may not apply to a sentence S_1 if S_1 is headed by a complementizer. (Goldsmith (2))

This condition is supposed to hold for Root Transformations. I do not know whether (10) is a correct generalization for all root phenomena (compare (6)a above), but note that all of the phenomena Goldsmith discusses (i.a. Subject-Clitic ∇ Inversion) involve finite verbs that change positions with other constituents. Verb Preposing rules of the type presented by (5) or pseudolocal variants thereof can easily account for the correlation between root transformations and absent complementizers expressed in Goldsmith's NCC.

The assumption of complementizers like *dat/dass/that/que* and *of/ob/if/si/zda* being 'finite' elements of the categorial type [+T] provides us with a new insight into the phenomenon of the so-called 'agreeing subordinators' in Dutch and German. In many (if not all) of the nonstandard dialects of Dutch and German - but not in the standard dialects - subordinators (not necessarily complementizers) may agree in person with the Subject, or - for the matter - with the finite Verb. There are dialects with full paradigms for this secundary type of agreement, but in most dialects the paradigms seem to be incomplete. Note that this is person agreement only. The verbal endings in Dutch and German can be split into a Tense part and a Person part, as is indicated in the following examples:

(11)
   D ze lach- Ø - en, lach- te - en, kwam - en
   STEM- T - P STEM-T - P STEM - P
   PAST
   they laugh, laughed, came

In these examples can be found a constant plural morpheme *-en*, a zero morpheme (or no morpheme at all) for present tense, a past tense morpheme *-te* (constant for all persons) with the weak verb *lachen* and no past tense ending at all for the strong verb *komen*, because such verbs incorporate past tense in their sterns. It goes without saying that the two

endings -*te* and -*en* merge into one (-*ten*; unlike its German counterpart the *n* usually is not pronounced). Note that the past tense ending is never doubled onto the subordinator. Furthermore it has been shown by Goeman (1980) that the agreement ending on the subordinator is not always a duplicate op the person ending of the verb. Now compare the following nonstandard (Hollandic) Dutch examples:

(12)
   a. --, datt*e* ze komm*e*; --, ovv*e* ze komm*e*
   --, that-plur. they come; --, whether-plur. they come
   b. --, dat(*e) ze kom*t*; --, of(-*e) ze kom*t*
   --, that(-*plur.) she comes; --, whether(-plur.) she comes

In these examples the complementizers *dat* 'that' and *of* 'whether' are inflected with the plural ending -*en* of example (11) (*n* not pronounced). By this ending the underlying *v* in *of* (compare the *b* in German *ob*) reappears which otherwise would be neutralized in word-final position. This *v* also shows up in spoken standard Dutch if a clitic with an initial vowel, for instance *ie* 'he', is put in the enclitic position (*ovvie* = *of ie* 'whether he').

   These person endings must be generated in a position seperate from the complementizer position [+T] - which by the way yields the same T P sequence as in (11) -, because deletion of a lexical complementizer does not force a person marking to delete as well. Thus, many examples can be found in which interrogative or relative pronouns are immediately followed by such a person ending. Compare the following nonstandard German example:

(13)
   --, wenn*ste* komm*st*
   --, when-you come

In this example the subordinator *wenn* (probably a *wh*-word) is followed by the person ending of the second person singular -*st* (compare the verb) which is glued together with the enclitic form of *du* 'you (sing.)' (probably -*te*). This combination -*ste* also occurs in examples with a Subject clitic following the verb, as in *Kommste*? = *Kommst du*? 'Do you come?'.

   For more data on subordinator agreement see Goeman (1980) and the literature mentioned there. Unlike what Goeman claims to be the case subordinators can also agree with nonpronominal Subjects.

Remarks concerning chapter 1

R1. Historical status

As Appendix II of this chapter indicates, this article has a history of its own. The original paper, which was circulated in 1977 and which did not yet contain Appendix II, tries to improve upon Emonds' theory of Root Transformations (cf. Emonds (1976)). The resultant theory is in a sense rigidly 'Structure Preserving' in that it is concluded on the basis of a theory of applicational domains that a Root Transformation like Verb Preposing (i.e. V-to-COMP) cannot be a substitution rule, so that all substitution rules will be cyclic in nature. The pertinent substitution analysis involves a special verbal slot next to COMP. Substitution of the finite verb for COMP itself is not considered due to a hidden assumption according to which substitutions should be 'Structure Preserving' in a wider sense of the word in that the category of the element moved and the category of the landing site are identical or at least nondistinct. This theoretical edifice is partly destroyed in Appendix II where it is shown how Verb Preposing can be made a substitution rule.

The latter idea seems to be universally accepted and it has been followed by new research. Thus, many try to find a theory explaining why V-to-COMP is a Root Transformation. In this context I only mention Platzack (1983) and (1986), Koopman (1984), and Holmberg (1986). Also compare chapter 3. and Haider and Prinzhorn (1986). Furthermore it has been shown by Travis (1984) that V-to-COMP (actually: I-to-COMP) belongs to a set of so-called Head Movement rules if we assume that COMP is the head of S. Also compare Chomsky (1986).

I will not try to evaluate this chapter in the light of the more recent literature in much detail. On the one hand the ideas about the description of Verb Second and Verb First phenomena contained in it seem to be part and parcel of present-day Generative Grammar, as I pointed out in the preceding paragraph. On the other hand this paper is somewhat old-fashioned due to the fact that it dates back to the late '70s. Thus no mention is made of CP or IP. More will be said about this below. Note that the Counterdeletive Ordering Principle (or: CDOP) discussed in section 4.1. in a way prefigures the ordering of the PF-component after the transformational component and S-structure in the standard T-model of Generative Grammar (cf. Chomsky 1981: 5 and 17). However, now

that V-to-COMP is redefined as a rule substituting the finite verb for COMP we have to make sure that it does not count as a deletive rule (erasing the underlying lexical complementizer) for the CDOP because otherwise V-to-COMP would count as a PF rule (which it certainly is not) with the disastrous consequence that the interactions between V-to-COMP and various lexical deletive rules discussed in section 4.1. cannot be predicted anymore. The solution to this minor problem is simple, though. Whether or not V-to-COMP erases a lexical complementizer, the discussion after the general defmition of 'deletive rules' in section 4.1. clearly indicates that only local deletive rules should be set apart by the CDOP because all remaining deletion phenomena can be handled by different mechanisms than the traditional deletion rules. Since V-to-COMP is not a local rule, a slight reformulation of the CDOP in the sense indicated above will do.

R2. CP, Wh-Movement and V-to-COMP

In this chapter much attention is payed to the distinction between an S-level and an S-level, because it helps us - among other things - to define the domain of application for Root Transformations. Unfortunately, the CP analysis of the traditional S creates a problem for my definitions of applicational domains because the way they are formulated presupposes only one level above COMP and not two as is usual for the CP analysis (cf. Chomsky (1986)).

I will refrain from redefining the Condition on Applicational Domains (176) and the Definition of X-Domain Rule (177) here, because they belong to an older stage of Generative Grammar while many of the points made in this paper still hold in spite of the oldfashioned context.

Yet, introducing a CP with a level C between C(OMP) and CP and a Spec, CP immediately under CP makes it possible to make predictions for across-the-board applications of Complementizer Attraction Rules that differ from the predictions made by the traditional S analysis assumed in this chapter. In so far as I can see the CP analysis makes the right predictions, provided we make one assumption:

(i)
   Every X^i (max. $\geq i \geq 0$) may be coordinated

On the basis of this assumption it can be shown that the CP analysis and the traditional S analysis make different predictions for across-the-board applications of Complementizer Attraction Rules. First consider the predictions made by the S analysis. According to this analysis both the landing site for *Wh*-Movement and the landing site for V-to-COMP are at S level as is indicated in the following expansion rule:

(ii)

   S → [+WH] [±T] S (= (2) of appendix II)

Therefore the prediction for across-the-board rule application is that there will be across-the-board *Wh*-Movement in Dutch or German root clauses only if there is across-the-board V-to-COMP. (Compare the discussion on of SAI and *Wh*-Movement in English to which I will return below.)

   This prediction is incorrect. Consider the following Dutch examples. Both sentence (iii) and the sentences in (iv) are grammatical:

(iii)

   Welk dossier *wou* Pieter weggooien en Karel
   Which file wanted Peter throw-away and Charles
   bewaren?
   keep?
   (iv)
   a. Welk dossier *wou* Pieter weggooien en *wou* Karel
   Which file wanted Peter throw-away and wanted Charles
   bewaren?
   keep?
   b. Welke dossiers *heeft* Pieter vandaag doorgenomen en *zal*
   Which files has Peter today gone-over and will
   Karel morgen naar het archief terugbrengen?
   Charles tomorrow to the archives back-bring?

The CP analysis indicated under (v) makes different predictions:

(v)

   CP = [$_{CP}$ … [$_C$ C IP]]

If we want to apply across-the-board *Wh*-Movement of some element to Sp, CP (i.e. the position indicated by the dots in (v)) we can make use either of a coordinated IP (= S) or of a coordinated C. In the case of a coordinated IP across-the-board *Wh*-Movement in root sentences will be accompanied by across-the-board V-to-COMP and sentences like the one in (iii) will be derived. In the case of a coordinated C across-the-board *Wh*-Movement in root sentences will be accompanied by two instances of V-to-COMP and so sentences like those in (iv) will be derived. The relevant structures for (iii) and (iv)a. and b. as predicted by the CP analysis are indicated under (vi):

(vi)

a.   [$_{CP}$ WH$_i$ [$_C$ V$_j$[$_{IP}$ [$_{IP}$ … t$_i$ … V$_j$…] *en*

                                                                [$_{IP}$ … t$_i$ … V$_j$ …]]]]

b.   [$_{CP}$ WH$_i$ [$_C$ [$_C$ V$_j$ [$_{IP}$ … t$_i$ … V$_j$ …]] *en*

                                          [$_C$ V$_k$ [$_{IP}$ … t$_i$ … V$_k$ …]]]]

Therefore the CP analysis is to be preferred over the traditional S analysis.

Hans den Besten, *'On the Interaction of Root Transformations and Lexical Deletive Rules'*

Now if the CP analysis is correct we predict for Subject AUX Inversion

in English that both (vii)a. and (vii)b. are grammatical:

(vii)
   a. Which mountain has John climbed in 1973 and Peter photographed in 1974?
   b. Which mountain did John climb in 1973, will Peter photograph this year, and will Carl climb next year?

Example (vii)a. corresponds to (181)b. in section 5. (Note that it may be more correct to use the auxiliary *did*.) Example (vii)b. corresponds to (183)b. and (184) in the same section.
   The prediction made by the CP analysis is at variance with what I claim in section 5. Or at least, so it seems. Example (183)b. (= (vii)b.) is judged ungrammatical. But note that the evidence is ambiguous because immediately after that a context is suggested where this sentence can be grammatical. This can hardly surprise us because also Dutch across-the-board interrogatives of this type can only be used under special circumstances.
   Therefore the data in (vii)a.-b. (= (181)b. and (183)b./(184) minus the star in (183)b.) can no longer be used to argue that V-to-COMP in English really is Subject AUX Inversion (SAI) and not a nonlocal rule of the type found in Dutch and German. In section 5. this (incorrect) conclusion was based upon the presumedly ungrammatical status of (vii)b. versus the grammaticality of (178) repeated here as (viii):

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

If however both (vii)b. and (viii) are grammatical no conclusion can be drawn as to the S-structure position of the auxiliaries in (viii). They may both be in COMP (in which case SAI must be a nonlocal rule) or they may both be in AUX (= INFL) position (in which case SAI must be what it says it is: inversion of a Subject phrase and an AUX).
   Therefore no conclusion can be drawn as to the domain of *Do* Erasure (deletion of unstressed *do*) in (ix)b.:

(ix)
   a1. *Who dåd sign the agreement?
   a2. Who *did* sign the agreement?
   b. Who signed the agreement?
   (= (168) of section 5.)

Did can delete either in COMP or in AUX position. Yet, this is not a problem for the theory of applicational domains outlined in this chapter because this theory excludes an application of *Do* Erasure in COMP and so favors the idea of Subject AUX *Inversion* (modulo certain changes in the definitions due to the introduction of the CP analysis).
   Now note that there is independent evidence against the nonlocal

nature of SAI in that adverbs may show up between a [+WH] Subject phrase and the finite verb. If SAI were a nonlocal rule we would expect the following example to be ungrammatical. However it is not:

(x)
    Who always speaks about Mozart?

Evidence of this type, though, raises new questions about the nature of *Do* Erasure and SAI. For instance if *Do* Erasure must be a local rule (as is assumed in this chapter) the underlying position of erased *does* in (x) must be between *always* and *speak*. But that implies that SAI cannot be semilocal given examples of the following type:

(xi)
    Which composer does John always speak about?

Yet, it is more reasonable to assume that erased *does* is on the left of the adverb, since lexical AUXes precede such adverbs.
    Therefore *Do* Erasure cannot be a local rule. This is hardly problematic for the theory of lexical deletive rules proposed in this chapter because we may wonder whether the phenomenon of *Do* Erasure may be called a deletion phenomenon at all since the pertinent auxiliary never deletes completely in that its inflectional features are transmitted to the next verb.
    It seems to me that we better analyze the phenomenon of *Do* Erasure as an instance of inflection lowering, as is argued in Pollock (1988). It seems most unlikely that this inflection lowering may start from COMP and then sent back to the AUX position from where it will be lowered onto the main verb, so that we may assume that also this variant of *Do* Erasure does not militate against the assumption that there is no V-to-COMP if the English root clause [+WH] Subject is moved to Spec,CP.

R3. IP and the Base-Generability Principle

In this study it is assumed that lexical items may only be erased by lexical deletive rules if they are in a position where they can be base-generated. This assumption is first introduced under (165) and is referred to as the Base-Generability Principle (or: BGP).
    The BGP excludes deletion of Swedish *ha* and German *haben/sein* in COMP if V-to-COMP is analyzed as an adjunction rule. The same seems to follow if we analyze V-to-COMP as an operation substituting a finite verb for a position [+T] (= the finite COMP) because the finite verb cannot be base-generated in that position.
    The introduction of the IP analysis for the traditional 'bare S' of Generative Grammar creates a problem, though, if we apply this analysis to the following examples from German and Swedish respectively:

(i)
   a. --, weil er gelacht (hat)
   --, because he laughed (has)
   b. --, att John (har) sett boken
   --, that John (has) seen book-the
   (= (5) and (155)a. in this study)

Under the IP analysis we have to assume that *hat* and *har* have been created by movement of a verbal stem to an I(NFL) position. But then the BGP will block the deletion of *hat* and *har*.

   Since V-to-INFL in German and Swedish must be local (cf. chapter 3.) we might of course introduce a principle excluding local V-to-INFL rules. But this seems to be ad hoc because it may remove a problem for the BGP but it creates one for the theory of finite verbs. Another way out might be to assume that in German and Swedish INFL lowers onto the verb.

   However, there may be another way out. Note that V-to-INFL and V-to-COMP (or rather: INFL-to-COMP) have different effects in terms of word-formation. V-to-INFL creates a new word out of a verbal stem and the inflectional material of INFL (which may be invisible in the resultant word) whereas V-to-COMP (INFL-to-COMP) is not an instance of word-formation: no extra morphology is ever added to a finite verb if it moves to COMP. We may furthermore assume that INFL is the head of the finite verb and that the finite verb is created either by adjoining V to INFL or by substituting V for a verbal slot inside the word representing INFL. V-to-COMP (INFL-to-COMP) on the other hand substitutes INFL for COMP and even if we assume that COMP and INFL share certain features (cf. Appendix II) the feature matrix for INFL will be richer than the feature matrix for COMP. Therefore deletion of finite *haben* (also *sein*) and *ha* in INFL position does not have to violate the BGP whereas deletion in COMP position certainly does.

   Future research must tell us whether the above suggestion is on the right track. If not, the prospects for the BGP are bleak - at least if we do not want to permit INFL lowering. In that case it may be advisable to reanalyze lexical deletion rules as being governed by some sort of Empty Category Principle (ECP) besides the general condition of locality (for the ECP see Chomsky (1981)). Empty INFLs may then be licensed by a governing COMP, whereas empty INFLs in COMP position in root clauses will not be licensed because a root clause COMP is not governed.

R4. An erratum

The verb *učite* in the Czech examples in (9) of Appendix II should have a long vowel in the second syllable: *učíte*. Furthermore the gloss is

incorrect. It should be 'you-teach' (you plural or reverential). The gloss can be saved
by putting a reflexive clitic *se* after *(li)*:

(i)
    a. --, *zda*(li) se *učíte* Česky
    b. *Učíte*(-li) se *e* Česky?