

Hans Den Besten and Jerold A. Edmondson

## THE VERBAL COMPLEX IN CONTINENTAL WEST GERMANIC

There are ten parts of speech, and they are all troublesome. An average sentence, in a German newspaper, is a sublime and impressive curiosity; it occupies a quarter of a column: it contains all the ten parts of speech--not in regular order, but mixed: it is built mainly of compound words constructed by the writer on the spot, and not to be found in any dictionary--six or seven words compacted into one, without joint or seam--that is, without hyphens, it treats of fourteen or fifteen different subjects, each enclosed in a parenthesis of its own, with here and there extra parentheses which reenclose three or four of the minor parentheses, making pens within pens: finally, all the parentheses, one of which is placed in the first line of the majestic sentence and the other in the middle of the last line of it--after which comes the VERB, and you find out for the first time what the man has been talking about; and after the verb--merely by way of ornament, as far as I can make out,--the writer shovels in "haben sind gewesen gehabt haben geworden sein," or words to that effect, and the monument is finished.

Mark Twain. The Awful German Language.

0. INTRODUCTION. The position of the verb in the Continental West-Germanic languages is Janus-faced. As many investigators have remarked, matrix clauses evidence some characteristics of SVO word order, whereas introduced embedded clauses (S) reveal the SOV word order pattern. Such divided typological loyalties have thus rightly been the topic of much discussion. Cf. Bach (1962,1968), Bierwisch (1963), Lehmann (1971,1972), Vennemann (1974,1975), Koster (1975) and Hawkins (1979) to name only a few. The discussion in these works has centered around the issues: which of the two orders OV/VO constitutes the majority and which the minority pattern of these languages and which direction and by what mechanisms are these languages changing. Contrary to the often heard claim, the OV/VO distribution doesn't always or often correspond to the opposition dependent/main clause, since in the vast majority of sentence patterns the main verb follows the verbal complements in sentences involving periphrastic verbal constructions, i.e. all those with auxiliaries. For this reason and a lot of others we don't need to discuss here, we will assume an underlying SOV major pattern for this language group. The apparent SVO order in main clauses, we further assume, results from a general rule placing the tense-bearing element in second syntactic position in declaratives and in wh-questions. A similar rule puts the tense bearing element in first position for some other types of main clauses. Thus, following usual practice we will direct

our attention primarily at embedded clauses in as much as we presume these clauses to reveal the underlying word order more directly than main clauses.

However revealing the dependent clause order might be, the word order dilemma can not be satisfactorily resolved by restricting one's attention to the relative position of the verb and verbal complements in this subtype. A consistent SOV language, according to Greenberg's Universal 16, should require that an inflected auxiliary always follow the main verb. Steele's (1975) subsequent study of generically diverse languages uncovers a wider distribution for such auxiliaries, showing that they surface in sentence initial, sentence second or sentence final position. If we assign the numbers 1 through 4 to the positions between the symbols for subject, object and verb, (i.e. 1-S-2-O-3-V-4), the two observations can be combined into one implicational universal

1. (SOV)  $\rightarrow \sim$ (Aux position 3)

(The auxiliary in an SOV language does not occur in position 3.)

An SOV language prohibits placing the inflected auxiliary before the sentence final main verb. Furthermore, should a language evolve mixed typologies, for example SOV and SVO patterns, then an inflected auxiliary in position 3 might reflect this hybridization. As Hawkins (1979:620) has demonstrated, languages develop in harmony with synchronic universals, "at each stage in their historical evolution, languages remain consistent with synchronic universal implications."

In the following we investigate a number of diverse forms of the West Germanic languages, showing the family of rules that position inflected auxiliaries exactly in position three. Assuming that the West-Germanic languages have predominantly SOV typology, the Law of Contraposition ( $P \rightarrow Q \leftrightarrow (\sim Q \rightarrow \sim P)$ ) will force us to conclude that these languages also manifest nascent SVO patterns, which is of course in agreement with the observation of many investigators. What will be novel in our account of the syntactic change in progress in this family is how the language specific rules conform to simple and well-established linguistic processes, the most important of which will be rule generalization.

1. THE DOUBLE INFINITIVE CONSTRUCTION. Our investigations of the West-Germanic languages turned up one candidate language that remains effectively SOV throughout the verb complex. West Frisian (spoken in the province of Friesland, the Netherlands) consistently puts the inflected auxiliary behind the main verb.

(1) West Frisian

a. dat er it boek lêze kent hat  
that he the book read can(PP) has  
'that he has been able to read the book.'

b. dat er de bal net goaien hoecht hat  
that he the ball not throw need(PP) has  
'That he has not needed to throw the ball.'

As one would expect for an SOV language, the infinitive *lêze* is always followed by its determining modal verb *kent*, itself in the participial form and *kent*, in turn, is followed by its determining perfect auxiliary *hat*, the tensed finite element of a complex verb phrase. In main clauses, as in German or Dutch, the finite verb appears in second syntactic position. Nevertheless, we see the well-established pattern that the determining element consistently dictates the paradigmatic form of the verbal element on its immediate left.

We have selected an illustrative sentence like 1, however, with a particular intent in mind. Unlike Frisian, the more familiar continental West-Germanic languages, German and Dutch, do not behave as expected of SOV-languages in

precisely this sentence type. Whenever a modal verb governing a main verb is itself put into the perfect tense, as in 1, a structure ensues that is traditionally known as the DOUBLE INFINITIVE CONSTRUCTION (DIC). The German equivalents of 1, for example, are:

(2) German

a. ...dass er das Buch hat lesen können  
that he the book has read can(inf.)

b. ...dass er den Ball nicht hat (zu) werfen brauchen  
that he the ball not has to throw need(inf.)

In lieu of the expected participle form gekannt only the infinitival form können may appear in 2a; lesen, as predicted, takes the infinitival form. Hence, the sentence appears to end in two infinitives; that's why this construction carries the name double infinitive construction. In more complex cases three, four or even more infinitives can occupy this position. This perplexing feature strikes nearly everyone who has learned German, and has been the point of many jokes.

But, beyond the paradigmatically anomalous FORM of the verb können, sentence 2 also shows a completely unexpected ORDER of elements. The finite auxiliary hat precedes both infinitives, i.e. demonstrates VO-behavior, whereas lesen and können serialize according to the OV-pattern.

Finally, consider the corresponding case in Dutch, where we find the following equivalents of 1.

(3) Dutch

a. dat hij het boek heeft kunnen lezen  
that he the book has can(inf.) read

b. dat hij de bal niet heeft hoeven gooien  
that he the ball not has need(inf.) throw

Even though the verbal complex as a whole appears sentence final, the order of elements in this structure, taken two elements at a time, demonstrates the VO-pattern. As in the case of German; the modal verb kunnen governs the infinitive form, this time on its right.

The problem of form and position, of the inter- and intralanguage variation with respect to the DIC has been a troublesome feature in grammatical analyses for both traditional and modern treatments. However, we intend to show that this complex set of facts is capturable in terms of a systematic, relatively transparent and theoretically interesting description. We, in particular, will show:

- (A) that the three above mentioned languages and a number of their non-standard variants can be described in terms of basically the same deep structure order of elements.
- (B) that the rules deriving the unexpected syntactic phenomena concerning the DIC and word order can be described in terms of basically the same transformational rules.
- (C) that the individual differences will largely be describable in terms of rule generalization, running from Frisian (no rule) over German (restricted application) to Dutch (completely generalized application).
- (D) that some of the other differences will be describable in terms of the manner each language variant chooses to analyze constants with respect

to the rules in question.

In the history of descriptive grammar nearly every grammarian has been struck by the ~~as a result of~~ phenomena we are calling the DIC. Indeed, the number of names attached to this construction testifies to the amount of interest paid to it. It has been called: (a) Doppelte Infinitivkonstruktion (DIC); (b) Ersatzinfinitiv, (c) Infinitivisches Partizip, (d) infinitivus pro participio and doubtless others. Nearly everyone since at least Jakob Grimm (1796/1848:195) has called attention to it. Thus, Grimm says

Wenn nun nhd. nicht das allein stehende, sondern das mit einem inf. verbundene part. scheinbar selbst in den inf. verwandelt wird, so befreit sich so seltsame structur bloss aus der zufälligen Ähnlichkeit starker participialformen mit dem inf., der wirkliche inf. wäre widersinnig.

When in Modern German the participial--if combined with an infinitive--apparently itself turns into an infinitive, then such bizarre structure can only be understood as the accidental similarity of strong participle forms with the infinitive. The true infinitive (i.e. underlying) would be counterintuitive. (our translation.)

Grimm is here referring to one account of the historical source of the DIC, according to which the infinitive and participle merged for certain members of the seventh class of the strong verbs.<sup>1</sup>

The German prescriptive grammarian and lexicographer Daniel Sanders invokes homophony in accounting for the unexpected word order. In many respects his treatment (Sanders 1898) represents a synchronic recapitulation of Grimm and Lachmann's account of the historical sources of this construction. Sanders is also most valuable for his abundant store of documented sentences, many of which we have employed as illustrations here.

Bech (1955) like Sanders has collected a wealth of interesting examples, which he analyzes as configurational templates or patterns of the language. Since both of these investigations antedate generative descriptive techniques, only taxonomies are provided. Furthermore, neither addresses the question of language variation.

Bierwisch (1963:114) formulates probably the first attempt to deal with the DIC in generativist terms. He advocates changing the verb feature [+inf, +part] into [-inf, -part] just in case an infinitive precedes. There are further conditions on the rule that block the change if the complementizer *zu* is present and make the rule sensitive to the position of *haben*. A second rule called HABEN-UMSTELLUNG positions a finite form of *haben* (the perfect auxiliary) to the left of the infinitives under certain conditions. Reis (1974:314) and Kohrt (1979:3-5) point out the manifest inadequacy of this treatment, noticing that the movement rule for German can invert (a) non-finite forms of *haben* and (b) also the future auxiliary *werden*. Examples of these are given in <sup>4</sup> below.

- (4) a. Er wird ihn haben schlagen wollen.  
He will him have hit want
- b. Ich glaube, dass sie ihn wird treffen wollen.  
I believe that she him will meet want

Recent treatments of the DIC in German have emphasized the variation among speakers. As we intend to show at length, this portion of German syntax evidences multiple forms that correlate with different styles and geographic areas. To a lesser extent there is variation in Dutch.

Interlanguage variation, as illustrated in 1 to 3, as well as intralanguage diversity have experienced an inconstant fate in 20th century linguistics, because such data have been dealt with in a schizophrenic manner. Many investigators have insisted that one can and should describe only homogeneous speech communities. This perspective in its most extreme form could, following Popper, be branded essentialism, and would correspond to the view of some in the exact sciences. Nature is shaped in invariant essences that are reflected in the real world only imperfectly. Variance is consequently the product of imperfect observation, an artefact and not a significant property of reality.

What strikes the biologist and dialectologist, on the other hand, is the inexhaustible individuality in nature; every flower, every insect, every idiolect is unique. Such an enormous potential for diversity within a single species dictates collection and classification and all but prevents transcending a taxonomy. It was only with the development of the theory of molecular genetics that such opposing viewpoints for investigating the physical and the natural worlds could be harmoniously resolved. Once variation was seen not as troublesome interference to observation but as a direct outgrowth of the nearly astronomical number of gene combinations, then a generalization capturing and predicting explanation became possible.

Even the layman notes the heterogeneity in natural language. The assumption of an ideal speaker/hearer living in a monolithic speech community is counterfactual but the description of language in terms of transpersonal constructs is indispensable. Unfortunately, the ideal construct of a homogeneous speech community has not always been used like the ideal gas or the ideal spring in physics to enable one to formulate laws. Instead, it has often taken on the status of an immunization strategy; thus making some claims irrefutable. While less true today, many still remember the "your dialect-my dialect" gambit from only a few years ago. Variation has also been denied systematic significance by calling it performance. Löttscher (1979) while writing for the dialectologist in one place opt for this approach in dealing with the diversity in the DIC. He notes that the continuously increasing obligatoriness of a movement rule as a function of the complexity of a construction is "ein typisches Charakteristikum einer performanzbedingten Regel, die dazu dient, schwierige Konstruktionen zu einfachere auszuführen." (a typical characteristic of a performance conditioned rule that serves to resolve difficult constructions into simpler ones.) While we do not wish to raise the competence-performance controversy anew, we must point out that rules that produce a continuous, non-discrete output need not be performance rules. In invoking performance as a factor one is espousing essentialism to the extent that it is claimed continuously varying language behavior is probabilistic and therefore not systematic. Our data suggest for the DIC something quite different; that there is an underlying system connecting various lects.

Another avenue of retreat suggested to account for the lack of homogeneity in the DIC has been proposed by Kohrt (1979) and Reis (1979) in separate papers. The former sees the need of differentiating a "Kernbereich" (central area) and "dialektale Randzonen" (dialectal border areas). Despite this severing into two systems Kohrt pessimistically predicts that there remain "immer noch ein gut Teil dialektaler und ideolektaler Variation, der nur sehr schwer zu erfassen ist." (still a good deal of idiolectal and dialectal variation that is very difficult to capture.) Reis advocates a similar division into a core grammar and a patch-u grammar, saying<sup>2</sup>

Wer die vorgetragenen Analysen akzeptiert, hat sich meines Erachtens auf folgendes eingelassen: Er betrachtet die Grammatik einer Sprache als ein unvollständiges System im folgenden Sinn: Die grammatischen Regeln x,y,z sind nicht anhand aller und für alle linguistischen, 'grammatischen' Situationen definiert,... (16)

(Whoever has accepted the analyses presented, has, in my judgment, opened the way for the following, he is viewing the grammar of a language as an incomplete system in the following sense. The grammatical rules x, y and z are not defined for all linguistic, 'grammatical' situations.)

The view of grammar suggested by both these keen observers crucially involves a discontinuity. This discontinuity in the object of description can fall along two dimensions; either the rules for describing the Hochsprache cannot be elaborated to cover the periphery (Kohrt) or the rules producing the central core of sentences are incapable of producing sharp wellformedness decisions for less commonly employed, or in some sense less central, outputs (Reis). While we have not carried out extensive sociolinguistic case studies of the language variants discussed here and have relied in large part on attested examples found in written language or on unsystematic observation, our data strongly suggest not discontinuity but that speakers control continuous and uninterrupted subintervals of the total spectrum of wellformed sentences in a language continuum, though the size of this subset may vary from speaker to speaker. During actual production speakers can constantly switch code levels across the lects that their grammar subtend, as Labov has observed.

In the beginning of modern linguistic description of German, linguists were interested in developing rule systems that captured the transdialectal standard language. More recent work on the DIC has concentrated on variation in the verbal complex. Indeed, in the auxiliary complex--as in English--the diversity of syntactic alternatives is particularly apparent. Not so, however, with Dutch, which unlike German does not manifest a wide range of heterogeneity. Most studies have indicated only two minimally varying subsystems of the standard language, i.e. the northern variant, in use in The Netherlands and the southern variant, in use in Belgium, even if the division doesn't exactly parallel national borders. None of the literature on Dutch that we are familiar with is primarily concerned with variation in the DIC. Moreover, our own investigation indicates some diversity, but diversity of a quite different sort than that found in the German lects. Oversimplifying, Dutch generally shows the DIC FORM "across the board" without any significant variation; only the POSITION of elements lacks total homogeneity. Cf. below. The Dutch verbal complex follows, with some minor exceptions to be mentioned, the VO-pattern, as example 3 above illustrated. It is to this deviation from the general OV-properties of Dutch that much interest has been drawn.

Until 1975 traditional grammars, <sup>of Dutch</sup> merely noted the FORM and POSITION of elements in the DIC without offering a theoretically interesting account of it. Evers (1973, 1975) altered this attitude of benign neglect by successfully bringing the significance of this syntactic fact to the attention of a wider circle of linguists. He related it to the previous discussions of PREDICATE RAISING in generative grammar and showed its importance for questions of cyclic rule application. Evers' work managed to concentrate the interest of many Dutch grammarians in the generativist tradition on this construction and its theoretical

applications. Unfortunately, not all of this discussion is readily available in print; some of the more important and accessible contributions include: Nieuwenhuijsen (1975), Zwarts (1975), Van Riemsdijk (1978), Hoekstra/Moortgat (1979), De Haan (1979) and Den Besten (to appear). Part of this discussion attempts to redefine Evers' rule of VERB RAISING, which derives the Dutch surface VO order in the verbal complex from an underlying OV order. In particular the question was posed as to whether it was possible to formulate VERB RAISING as a LOCAL rule in the sense of Emmons (1976). Nearly all investigators agree that it can. However, unanimity about the necessary type of transformation does not extend to the nature of the complements involved. The choice of complement types has corresponding consequences for the issue of cyclicity.

Returning for a moment for a brief survey of more traditional scholarship on Dutch, we have found that if variation is discussed at all, then three differences in the word order of the verbal complex are noted: (a) the position of past participles; (b) the behavior of verbs with SEPARABLE PREFIXES; and (c) the nature of verb complement type as a function of the VO-pattern. A. Pauwels (1953) presents data on regional differences in the use of word order in connection with auxiliaries and main verbs in verbal complexes with two members. Pauwels (1970) contrasts synchronic and diachronic data in the use of participles and separable prefixes in northern vs. southern forms of speech. Vanacker (1970) documents the order of elements with respect to the position of the main verb within the verbal complex for a few southern dialects. Strop (1970) presents a dialectological survey of the order of verbal elements in spoken Dutch in the Netherlands. Koelmans (1965) shows the historical development for data of the type discussed by Vanacker. These three studies constitute the major investigations of the verbal complex in the post-war era.

In summarizing the Dutch scholarship, we have the impression that the relative lack of variation in Dutch has determined a different research program than for German and its dialects, where richer diversity from one form of speech to another has led more to taxonomic classification than to theory-oriented research. Evers (1975) treated the two languages in tandem and chose to ignore their differences.

2. INFINITIVIZATION AND INVERSION IN GERMAN. Having pointed out the sentence type under study here, discussed its variation and the difficulty of capturing non-discrete data in a monolithic grammar, we now move on to making a proposal for German that will yield the correct distribution of attested forms in different linguistically and speaker-determined environments. We will have little to say here about the grammar of Frisian, since this West-Germanic language shows only marginal signs of the DIC. The German rules below without INFINITIVIZATION and INVERSION would suffice for Frisian with only slight revamping.<sup>3</sup>

We begin by proposing a set of base rules for the relevant part of German as a background against which the necessary additions for the DIC can be thrown into relief. Once the principle of organization for the German verbal complex becomes clear, we will refine the first proposal in terms of a more adequate model. Cf. Edmondson (1980:62).<sup>4</sup>





- b. wiss- INF+müss- INF+ward- pres ⇒  
wiss+INF müss+INF ward+pres  
know must will
- c. erzähl- PART+hab PART+hab pres ⇒  
erzähl+PART hab+PART hab+pres  
told have has
- d. wiss- INF+müss- PART+hab- pres ⇒  
wiss+INF müss+PART hab+pres  
know must have

Were there no DIC, then derivations like 7d would yield the unacceptable surface form

- (8) \*wissen gemusst hat  
know must have

It is forms like 7d that fall into the scope of rules leading to the DIC.

Some of the features of the rule system 5 deserve comment before proceeding. In particular, we wish to emphasize the points of difference between English and some of the other members of the *West Germanic* family. Rule 5c recursively expands a VP into a VP plus Modal or Perf. Unlike most varieties of English, the German and Dutch dialects we have studied regularly allow more than one modal, e.g. German *turnen können muss* 'must be able to do gymnastics.' Furthermore, the southern forms of German regularly show *Präteritum-Schwund* 'missing preterite': instead of preterite inflection this missing form of the verb paradigm is normally replaced with the perfect. And, in order to construct the Plusquamperfekt 'past perfect', there is reduplication of the perfect. Thus, in place of *gegangen war* 'had gone', one hears *gegangen gewesen ist* 'have have gone'. These cases motivate the recursively embedded VP. Nonetheless, this feature results in strong overgeneration. For example, 5 produces strings like:

- (9) a. \*weil er gegangen gewesen gewesen ist.  
because he gone been been has
- b. \*weil er gegangen sein können gemusst hat  
because he gone been can must has
- c. \*weil er turnen können kann  
because he do gymnastics can can
- d. \*weil er turnen können können kann  
because he do gymnastics can can can

to name just a few deviant examples. Cases such as those in 9 are not possible in any kind of German familiar to us. In general one cannot double the same modal. Nevertheless, some kinds of repetition may be marginally possible if they aren't given the same interpretation, i.e. epistemic vs. modal. It is unclear to us exactly how to state these restrictions and whether 9 represents illformed syntactic strings or merely semantically uninterpretable ones.



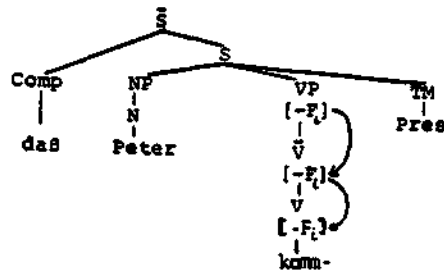
- d. VP  $\rightarrow$  VP  $\bar{V}$   
     [+Pass] [-F<sub>i</sub>]
- e. VP  $\rightarrow$  (NP)...  $\bar{V}$   
     [-F<sub>i</sub>]
- f.  $\bar{V}$   $\rightarrow$  (P) V P=Particle  
     [-F<sub>i</sub>]
- g.  $\bar{V}$   $\rightarrow$  INF V  
     [+Modal]
- h.  $\bar{V}$   $\rightarrow$  Part V  
     [+Perf]
- i.  $\bar{V}$   $\rightarrow$  Part V  
     [+Pass]
- j. TM  $\rightarrow$   $\left\{ \begin{array}{l} \text{Pres} \\ \text{Past} \\ \text{Fut} \\ \text{zu +INF} \end{array} \right\}$
- k. Fut  $\rightarrow$  (INF V) Pres

In addition to the rules in 11 two further assumptions must be made. First, the lexicon entries for verbs must be specified with the various subcategorization features. Thus,

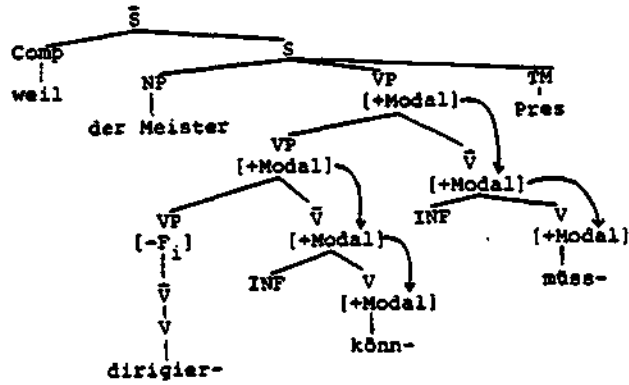
- (12) a. V [+Modal] = {könn-, müss-, soll-, woll-, düf-, mög-}
- b. V [+Perfect] = {hab-, sei-}
- c. V [+Pass] = {werd-}
- d. V [+Future] = {werd-}

Secondly and very importantly, we must assume a convention that features on dominating nodes spread down to the head of the phrase at the next lower level; such "feature spreading" or "feature percolation" will be needed on independent grounds. In this case the  $\bar{V}$  and the V in rules (11c-11e) and (11f-11i and 11k) respectively, as heads, acquire the features on the dominating nodes to the left of the arrows. Thus, phrase markers as in 13 are generated

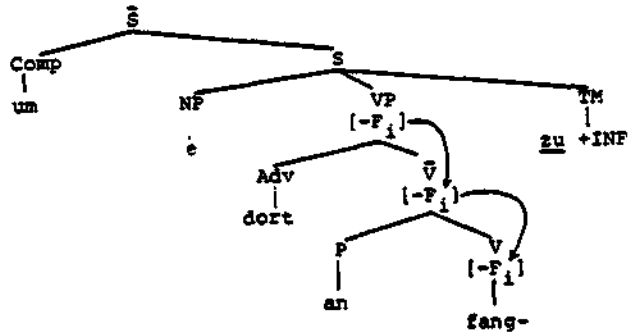
(13) a. dass Peter kommt.  
That Peter comes.



b. weil der Meister dirigieren können muss  
because the master conduct can must



c. um dort anzufangen  
in order there to begin



We now come to dealing with the DIC in German. As we have already noted, this construction occurs in the format:

(14) Main Verb    INF+Modal    PART+haben

The syntactic symbol (or feature) PART is altered to INF and haben is moved to the left. At least, this sequence of changes represents a typical scenario. It does, however, not cover the instances differing somewhat from 14, cases that we feel give decisive insight into the mechanisms of the derivation. *the grammatical* 15 represents one such example of the DIC that is particularly revealing, as it shows process in development. The rules yielding the DIC are gradient in nature. Both 15a and 15b occur in German with the same paradigmatic value, i.e. they fill the same paradigmatic slot, but with different stylistic and regional connotations.

(15) a. weil er nicht anders hat können

b. weil er nicht anders gekonnt hat.  
because he not otherwise *can* has ( do).

15a counts as more strongly dialect colored, innovative, southern and regional, whereas 15b represents the more conservative standard language. For those familiar with both structures an interesting coupling of FORM and POSITION is observed. If the participle is infinitivized (gekonnt → können), then inversion of the determining finite auxiliary hat is obligatory (gekonnt hat → hat können), as 16 shows.

(16) a. \*weil er nicht anders können hat.

b. \*weil er nicht anders hat gekonnt.

The lock step of INFINITIVIZATION and INVERSION is so characteristic that we feel any adequate account of the DIC must assign it a central role. Furthermore, the variation in the data here and in that yet to be illustrated, we feel, should also be accorded a determining role in the account. Labov (1969:737) once required "that the study of variation add(s) to our knowledge of linguistic structure, and simplifies the situation rather than reducing the precision of the rules by uncontrolled and unaccountable notations." Labov then goes on to introduce the notion VARIABLE RULE to capture the variation when... "the rule is involved in the process of linguistic change." (1969:738). Bailey (1973:13) augments Labov by postulating a single level of abstraction for all the systematic variation attested, "...whatever the level of abstraction represented by a grammar may be, it should contain underlying representations and rules which will generate all the systematic variation in the data at the systematic phonetic level of every lect abstracted from." In this specific instance we will assume one underlying representation for all the systematic variants of the DIC we will describe; here intralinguistically for the southern, dialectal hat können vs. the northern, gekonnt hat and later interlinguistically for the Dutch vs. German cases.

Let us begin by formulating INFINITIVIZATION for the two contexts so far encountered

(17) INFINITIVIZATION (first attempt)  
PART → INF/(V)    INF    Modal        haben

The formalism in 17 corresponds to that found in the usual context sensitive rules. The parentheses around V, however, do not indicate that the alteration is to be carried out optionally. Rather they, along with the subscripted "greater than" sign, signify that the presence of a verb will favor carrying

out the rule. There could, for example, be speakers who execute INFINITIVIZATION only when INF Modal is preceded by a full verb, but others that do it even when no verb is present. Unlike Labov we employ only general tendencies (i.e. the greater than signs) instead of real statistical values or probabilities. The rule 17 makes the following predictions:

(18) underlying form	gekonnt hat	Handeln gekonnt hat
Lect 1	<u>gekonnt hat</u>	<u>hat handeln können</u>
Lect 2	<u>hat können</u>	<u>hat handeln können</u>

The rule 17 captures not only the various dialect forms but also clearly shows that lect 2 in 18 implies lect 1. It predicts that there will not be a variety of German showing hat können that does not also have hat handeln können. Further, since lect 2 represents a variety of German showing the application of 17 "across the board", we can conclude that it corresponds to the historically original form, since a change is most general at the origin of change and as it spreads becomes weaker, assuming the wave model of propagation of language change.<sup>3</sup>

Returning now to rule 17, we point out that INFINITIVIZATION is much more widespread than this formulation would suggest. Today the participle assumes the paradigmatic shape of an infinitive not only for the six modal verbs but also for brauchen 'need', lassen 'cause, permit', the sensory verbs sehen 'see', hören 'hear' and helfen 'help' and in more archaic German pflügen 'accustom', machen 'make'; in Swiss German even anfangen 'begin', aufhören 'quit' and bleiben 'stay' as Lötscher (1978:3) reports. In Dutch the number of verbs in the slot occupied by Modal in rule 17 can include a great many items that are strictly unacceptable in German. Cf. below. However, here too the distribution is gradient. Erben (1967:54) notes first that the six modals must govern the Ersatzinfinitiv (i.e. the DIC). But:

Auch bei brauchen und helfen tritt in dieser Konstruktion meist der 'Ersatzinfinitiv' ein  
(Also for brauchen and helfen the Ersatzinfinitiv usually occurs in this construction).

Bei anderen Verben schwankt der Sprachgebrauch, wenn gleich dort, z.B. bei fühlen, heissen, lehren, lernen, machen die eigentliche Partizipialform zu überwiegen scheint.  
(For other verbs usage varies, although by fühlen 'feel', heissen 'call', lehren 'teach', lernen 'learn', machen 'make' the true participle form seems to dominate).

This variation is taken account of in 19

(19)	PART → INF/(V)	INF	{	Modal	
	>		<	<brauchen	
			>	<lassen	
				<sensory verbs	
					_____ haben

Once again, the notation in the braces requires an interpretation. The "greater than" signs indicate a hierarchy that would normally be written



Native speakers usually react to form like hat lassen/hat sehen with consternation; while hat brauchen appears to be on the very extreme limit of the possible.

On the left hand side of the table all of the forms are at least conceivable. Yet, those we consulted found forms like kommen gekornnt hat quite impossible. Nonetheless, unlike \*hat lassen/\*hat sehen, there are documented cases of it. Cf. Dal (1966:112)

- (22) a. Ich habe mitteilen gemusst. (Arndt)  
I have communicate must
- b. Hatte er die Reise nach Petersburg machen gewollt. (Arndt)  
Had he the trip to Petersburg make want
- c. Länger hatte sie nicht warten gewollt.  
Longer had she not wait want

The rule also predicts that in 23 sehen or gesehen should both be possible, but that sehen will be given the nod in terms of acceptability. This is, of course, exactly what is found.

- (23) Da habe ich voriges Jahr den grossen Sumpf  
Then have I last year the big swamp
- austrocknen sehen < gesehen.  
dry up see

Some dialects of German permit here only the participle, e.g. Middle Bavarian Willi Mayerthaler (p.c). And also, in the 18th and 19th centuries the participle was found even in finer literature.

- (24) a. Ich hatte dich kaum reden gehört (Goethe)  
I had you scarcely speak heard
- b. Ich habe niemand besser spielen gehört. (Heine)  
I have no one better play heard

Predictably, the choice between lassen and gelassen should be easier to make. Sanders (1896:130) write of this choice.

Ausser in dem Infinitiv Perfekti kommt von dem mit einem abhängigen Infinitiv verbundenen "lassen" das Partizip in der Form "gelassen" nur vereinzelt vor, wofür wir die folgenden Beispiele (aber durchaus nicht als Muster zur Nachahmung) anführen. (our emphasis).

(In addition to the infinitive perfect, there occurs a lassen with a dependent infinitive which appears from time to time in the participle form gelassen, for which we list the following examples but not as models to imitate.)



- (25) a. Und die Handschuh, wo habt Ihr sie hängen  
and the gloves where have you them hang  
gelassen (Goethe's Reineke Fuchs).  
left
- b. Man hatte Alles weggetragen, nur das Kofferchen  
One had everything carried off, only the small chest  
unschließend, in der Mitte des Zimmers  
without key in the middle of the room  
stehen gelassen. (Goethe's Wahlverwandtschaften).  
stand left
- c. Etwas, das sie selbst auf eigene Hand  
Something that they themselves on their own hand  
sich ausgedacht oder sich einfallen  
thought up or themselves occur  
gelassen haben (Fichte)  
left have

Finally, the choice between brauchen and gebraucht for most speakers is no choice at all. Of those we asked there was no doubt about intuitions, even with respect to attested examples of gebraucht such as

- (26) Er hätte nur die Regungen der eigenen  
He would have only the stirring of his own  
Brust zu besingen gebraucht  
breast to sing in praise need

All speakers questioned without exception preferred brauchen in 26 and in every other case with dependent infinitive.

Having illustrated the gradience in 18 we move on to some other traits. Rule 18 shows an interesting interaction with the rule placing zu+INF on the last element of the verbal complex. Consider, for example, how AUX-AFFIXATION will circumfix the complementizer ZU+INF to haben in 27.

- (27) a. Ich bin alt genug, die Entwicklungen  
I am old enough the developments  
verfolgen gekonnt zu haben  
follow be able to have
- b. verfolg- INF+könn- PART+hab- zu+INF ⇒  
verfolg+INF könn+PART zu hab+INF

Normally, zu+INF is circumfixed to the last element and the zu then intervenes between haben and the modal können. This affixed complementizer then effectively blocks INFINITIVIZATION from applying. It struck Grimm and Sanders and later also Reis that there are attested examples with a different and totally unexpected ordering of elements involving infinitives. For instance, 27 sometimes appear as 28

- (28) Ich bin alt genug, die Entwicklungen haben  
verfolgen zu können.

Here the zu has simply been ignored and the infinitive clause created as if it were finite. Another theoretically more interesting account of structures like 28 would be to assume a reordering of AUX-AFFIXATION and INFINITIVIZATION. In the usual case the affixation rule bleeds the zu. Speech errors have often been interpreted as reorderings, especially reorderings to the unmarked order. After both INFINITIVIZATION and INVERSION (to be discussed presently) have applied, only then are the complementizer zu and INF attached but in this case not to haben but to the product of the inversion, i.e. können.<sup>10</sup>

Another interesting reordering has been documented by Reis (1979:15) who reports on a sentence that appeared in the German news magazine Der Spiegel

- (29) Eine Pariserin namens Dimanche soll sich  
A lady from Paris by the name of Dimanche is said  
ein gewaltiges Stirnhorn operativ entfernt  
(from) herself a great forehead horn by operation removed  
haben lassen  
have let

instead of the normal

- (30) haben entfernen lassen

As in the previously discussed case haben has been repositioned to a spot in front of entfern. Only then does AUX-AFFIXATION induce the participle making onto entfern. But, as above, the shifting of affixes must be reordered, i.e. delayed until haben has been moved to the right of entfern.<sup>11</sup>

Although it would be premature to put very much weight on just two such cases of reordering, it, nevertheless, suggests that in German an element induces a certain affix on a neighbor quite arbitrarily regardless of what it is. This behavior militates against the "preprogrammed" approach of direct generation by means of feature grammars.

Further support for the kind of approach presented here in broad strokes comes from the interaction of other movement rules with 18. As soon as the main verb is removed from in front of the auxiliary modal by topicalization, a participle instead of an infinitive immediately becomes more acceptable. Our first observation about the gradience of 18 was that the presence of a full verb enhanced INFINITIVIZATION.

- (31) a. Schreiben hätte er wenigsten gekonnt or, of course, können.  
Write would have he at least can  
b. Er hätte wenigstens schreiben gekonnt.

31a with a topicalized verb and gekonnt is significantly better than 31b with a full verb in place untopicalized before the modal.<sup>12</sup>

A second argument comes from a particular variant of German, H. J. Sasse (p.c.). In German with a Saxon substrate some parts of the VP can be extraposed

to the right of a modal verb. Though impossible in normative German, this construction will also bleed INFINITIVIZATION, as rule 19 predicts. Cf. this curious quote from Martin Luther, who employs both extraposed and non-extraposed alternatives in one single sentence.

- (32) Die Mutter hätte nicht GEDURFT [den Namen tragen].  
The mother would have not should the name have *borne*  
als wäre sie unrein, hätte auch nicht DÜRFEN  
as if were she impure would have also not should  
[in Temple gehen]. (Luther)  
in the temple go

Finally, German permits the finite auxiliary *haben* to be omitted <sup>in poetic language</sup> in some dependent clauses. Since *haben* plays a crucial role in stating transformation 18, removing it should and, as we have just demonstrated, does lower the obligatoriness of INFINITIVIZATION. Cf. the participles *gekonnt* in 35.

- (33) a. Wie er mich nicht wiederfinden gekonnt. (hat) (Chamisso)  
As he me not find again could  
b. Des Leids, das ich heilen gekonnt (habe)  
The suffering that I heal could  
gedacht ich zu keiner Frist. (Freiligrath)  
pondered I at no time

In summary, eliminating either the main verb or the *haben* in rule 18 by means of topicalization, extraposition or deletion alters the class of candidate phrase markers to make them less eligible to undergo INFINITIVIZATION. This is as it should be according to the rule.

Having developed a scheme for constructing the appropriate FORMS in the German DIC, we now turn our attention to finding a characterization of the POSITIONS of the elements for this construction. The distribution first observed by Behaghel (1932:111-14) we feel, remains basically valid with some exceptions to be noted: (a) If *haben* is the finite verb, then it appears in front of the infinitive(s).

- (34) a. HEBBEN vinden unde horen laten.  
have find and hear let  
b. der ehe HAT schiessen wollen  
who rather has shoot want  
c. HÄTTE anders bestimmen lassen  
would have otherwise decide let

(b) If *werden* is the finite verb governing modals, then it is inverted. If the governed verb is not a modal, there is no inversion.

- (35) a. wie er seine Gegner WORDE überwinden können  
As he his opponents would conquer can  
b. sich selbst WERDE helfen können  
one's self would help can

vs.

- (36) a. dass er sitzen bleiben WIRD  
that he seated remain will  
b. dass wir schießen hören WERDEN  
that we shooting hear will  
c. dass er sich schlafen legen WIRD  
that he himself sleep lay will

(c) Should other verbs governing infinitives occur, then these can precede or follow. The latter is the common practice in today's written language.

- (37) a. dich nit abfahren lassen WÖLLEST  
yourself not led away let would want  
b. im anderen heulen hören KANN  
besides cry hear can  
c. dass man sich lieber von Preussen erobern  
that one oneself rather by Prussians conquer  
lassen WILL.  
let will

But also occasionally:

- (38) a. Die Lebensideen Goethes, die sich so  
The great ideas of Goethe that themselves so  
nicht WOLLTEN vereinigen lassen  
not wanted unify let  
b. det man sie nicht WOLDE gan laten  
that one them not wanted go let  
c. die sich mit keinen Worten WOLLTEN  
Who themselves with no words wanted  
auflösen lassen  
disintegrate let

The rule effecting this positioning is clearly also of gradient nature: (a) haben obligatorily, (b) werden in some environments and (c) a modal usually not at all.

Behagel's description, however, fails to be general enough to encompass all cases of inversion found in German. If more complex structures are

considered, then not only the finite verb but also non-finite forms can and sometimes must be inverted. The Duden (1973:622) gives examples like 39.

- (39) a. Er wird nicht HABEN kommen können.  
He will not have come can
- b. Er wird nicht kommen gekonnt haben.  
He will not come can have
- c. weil er nicht WIRD HABEN kommen können  
because he not will have come can
- d. weil er nicht kommen gekonnt haben wird  
because he not come can have will

(capitalized forms have been inverted)

39a and 39b as well as 39c and 39d represent in turn two paradigmatic variants of the future perfect of a modal (meaning 'He probably won't have been able to come.') in main and dependent clauses respectively. Of special interest here are 39a and 39c. The two remaining forms 39b and 39d are very near the underlying structure; no DIC is present. 39a indicates that haben has been inverted even when it is not finite; in fact it must be inverted. As well, 39c shows that both wird and haben have undergone this rule. Leaving either of the two behind yields an unacceptable structure.

- (40) a. \*Er wird nicht kommen können HABEN.
- b. \*weil er nicht kommen können HABEN WIRD.
- c. \*weil er nicht WIRD kommen können HABEN.
- d. \*weil er nicht HABEN kommen können WIRD.

(Notice the positions of wird and haben).

The restrictions illustrated in 40 are valid only in those special cases in which INFINITIVIZATION has applied. Should, for example, a modal verb such as wollen instead of the perfect auxiliary haben occur in the environments illustrated in 40, then no inversion is necessary.

- (41) a. Er wird nicht tanzen können WOLLEN.  
he will not dance can want
- b. weil er nicht wird tanzen können WOLLEN.

Thus showing again the gradience that haben, even when not finite, will invert far more readily than a modal verb.

Aside from the inversions in these more complex structures, one also finds almost non-standard forms of German and frequently in older texts a more VO-like ordering in the verbal complex. 42c and 42d give examples from Middle High German.

- (42) a. Hätte mich nur das Schicksal in einer grossen Gegend  
would have me only fate in a great area  
HEISSEN wohnen. (Goethe).  
command live
- b. Er behauptet, er habe auch bei dem besten Willen da  
he claimed he has also in faith there  
nicht KÖNNEN sich in Schweigen hüllen.  
not be able himself in silence cloak
- c. durch welchen list hast du das schif sus LASEN gan.  
by what trick have you the ship so cause go  
(Gottfried)
- d. ich han das HOEREN iehen. (Kudrun).  
I have that hear say

Up to this point we have disregarded the place where the inverted element finally winds up and have concentrated our attention on which subcategories of the verbal complex alter their position in the DIC. We now turn to discussing the actual location of such inverted elements. Behaghel's description again defines the usual position of inverted elements, immediately in front of the verb series. This is a position that sometimes separates off the main verb from its object complements. The sentences in 2 illustrated this architypical positioning for the Standard language. In southern dialects, especially Swiss German, the inverted form can occur much further to the left than one usually finds in more northern lects. Data from Lötscher (1978:8).

- (43) a. Mer händ em Hans WELEN es velo schänke töörffe.  
we have Hans want the bicycle give be allowed
- b. Mer händ em Hans WELE TÖÖRFEN es velo schänke.

Some of these examples will be discussed below.

The position of inverted items in the southern standard language also deviates from the northern types. Generally, this kind of German is that employed when speaking or writing to outsiders, on radio and television, etc. and it will permit the finite auxiliary to exchange places with the last infinitive of a string. The motivation probably comes from an attempt to sound non-dialect like, since the local varieties show no inversion whatsoever, Willi Mayerthaler (p.c.). Thus, in Middle Bavarian speaking territory, i.e. the broad band including Munich, Salzburg and Vienna, finite haben appears as follows:

- (44) a. weil er sich untersuchen lassen HAT wollen.  
because he himself examine have has want  
(instead of HAT untersuchen lassen wollen)
- b. weil er sie sprechen hören HAT können  
because he her speak hear has can  
(instead of HAT sprechen hören können).

Further to the South in the dialect area of Kärnten and Tyrolia with So-Bavarian substrate, finite haben appears even further to the left, but still in positions different from that in typical northern speech. The conqueror of Mount Everest, Reinhold Messner from Tyrolia, once produced the sentence 45 in an interview on German television.

- (45) damit unser Lager von einer Lawine nicht getroffen HAT  
 so that our camp by an avalanche not hit ha  
werden können (instead of getroffen werden HATTE können  
 be be able  
 (Middle Bavarian) or HATTE getroffen werden können  
 (normative German)).

'So that our camp could not have been hit by an avalanche.'

Before trying to develop a set of rules with proper weighting to guarantee generating not only the positions in the normative language but also showing how the rules for southern forms differ, we wish to expand the data under consideration to include Dutch examples. As we will see, Dutch shows an even more extreme type of inversion than any so far encountered. We will also want to argue for a particular kind of rule to carry out this inversion.

3. INFINITIVIZATION AND INVERSION IN DUTCH. The base rules one needs to posit for Dutch are nearly identical to those for German. Cf. 3 and 11. We, nevertheless, present them in their entirety in order to be able to point out the differences.

- (46) a.  $\bar{S} \rightarrow \text{Comp } S$   
 b.  $S \rightarrow \text{NP VP TM}$   
      $\quad \quad \quad \{ \langle F_1 \rangle \}$   
 c.  $\text{VP} \rightarrow \text{VP } \bar{V}$   $F_1 = \{ \text{Modal, Perfect, Passive} \}$   
      $\{ +F_k \} \quad \{ \langle F_1 \rangle \}$   
 d.  $\text{VP} \rightarrow \text{VP } \bar{V}$   $F_k = \{ \text{Modal, Perfect} \}$   
      $\{ +\text{Pass} \} \quad \{ -F_1 \}$   
 e.  $\text{VP} \rightarrow (\text{NP}) \dots \bar{V}$   
      $\{ -F_1 \}$   
 f.  $\bar{V} \rightarrow (\text{P}) V$   
      $\{ -F_1 \}$   
 g.  $\bar{V} \rightarrow \text{INF } V$   
      $\{ +\text{Modal} \}$   
 h.  $\bar{V} \rightarrow \text{PART } V$   
      $\{ +\text{Perf} \}$





- (49) a. dat hij het boek heeft kunnen lezen.  
 that he the book has be able read
- b. \*dat hij het boek heeft gekund lezen/gekund lezen  
heeft/lezen gekund heeft.

But, unlike German there is no gradience in the rule INFINITIVIZATION. Be it for modals like kunnen 'can, be able', semi-modals like hoeven 'need', the causative laten 'have, let' or verbs of sensory perception like zien 'see', no hierarchy of strength such as that found in 19 and 20 exists. In Dutch this rule is completely general and always must apply. A second difference must also be noted. Whereas more progressive dialects of German allow INFINITIVIZATION even when no dependent full verb complements accompany the modal, i.e. hat können as well as gekonnt hat, Dutch shows again categorial behavior. No such form as heeft kunnen or kunnen heeft but only gekund heeft or heeft gekund occurs. The Dutch table corresponding to the German data found in 20 would be:

(50)	WITH DEPENDENT INFINITIVE	WITHOUT DEPENDENT INFINITIVE
most acceptable	<u>heeft kunnen lezen</u> have can read	<u>gekund heeft/heeft gekund</u> can have have be able
	<u>heeft hoeven gooien</u> have need throw	
	<u>heeft laten maaien</u> have let mow	
	<u>heeft zien maaien</u> have see mow	
least acceptable	* <u>heeft gezien maaien</u> * <u>heeft gelaten maaien</u> * <u>heeft gehoeven gooien</u> * <u>heeft gekund lezen</u>	* <u>heeft kunnen/*kunnen heeft</u> * <u>heeft hoeven</u> * <u>heeft laten</u> * <u>heeft zien</u>

The lack of gradience in Dutch enables a much easier statement of INFINITIVIZATION than for the corresponding German cases. We begin with a rule recapitulating table 50.

- (51) PART → INF/V INF V \_\_\_\_\_ heb-  
 [+DIC]

The symbol PART becomes INF whenever two verbs precede and heb-follows. The first of the preceding verbs must be one of the DIC verbs and therefore be able to induce an infinitive form on its nearest neighbor to the left. As with German, modals, semi-modals, causatives and sensory verbs fall in the subcategory V. But unlike German, the list of verbs to which this rule must apply is

[+DIC] not limited to these cases. Indeed, we were able find very few verbs, if any, occurring in the V slot that would not cause the DIC.<sup>18</sup> Therefore, the

subcategorization feature [+DIC] can be eliminated from the rule altogether. The rule 51 must be written more generally to includes such cases as: auxiliaries

expressing inception (plus movement) and location (plus duration) such as INF gaan 'go, will, be going to', INF komen 'come, come in order to', te INF zitten 'sit', te INF staan 'stand', INF zijn 'be' fit into the V slot.<sup>24</sup> Cf. as well as [±DIC]

- (52) a. dat hij de stoel is GAAN halen/\*is gegaan halen  
 that he the chair has go get
- b. dat ze daar een hele tijd hebben STAAN praten/  
 that they there quite some time have stand talk  
 \*hebben gestaan praten
- c. dat zij nog niet is WEZEN kijken/\*is geweest kijken  
 that she yet not has been look

More interesting than these are the following relatively main verb-like instances that also partake in rule 51. To mention just a few: te INF weten 'be able to, know'; te INF durven 'dare to'; INF leren 'learn, teach'; INF helpen 'help'; te INF menen 'believe' and te INF proberen 'try'. For a more complete list of such verbs cf. Evers (1975: ).

- (53) a. dat zij het nooit heeft WETEN op te lossen/  
 that she it never has be able to to solve  
 \*heeft geweten op te lossen.
- b. dat hij het nooit heeft DURVEN vragen/\*heeft gedurfd  
 that he it never has dare ask  
 (te) vragen
- c. dat zij mij heeft LEREN paardrijden/\*heeft  
 that she me has teach horse ride  
geleerd paardrijden
- d. dat zij het heeft MENEN te moeten ontkennen/  
 that she it has think to must deny  
 \*heeft gemeend te moeten ontkennen

Not only do there appear to be no exceptions to the rule INFINITIVIZATION in Dutch, we note further that some DIC verbs such as gaan must in the perfect be governed by the auxiliary zijn 'be' and not hebben 'have'. We can incorporate all of these new observations into a revised form of 51, which we give here as 54.

- (54) PART → INF/ V (te) INF V \_\_\_\_\_ {heb }  
 {zij }

We have in passing pointed out that te doesn't influence INFINITIVIZATION in Dutch. This is another feature that makes the Dutch rule differ from its German counterpart. Example 27a illustrated the destructive effect of German zu on creating infinitives from participles. The Dutch infinitivization rule, for its part, is totally oblivious to the presence of such a te complementizer; only

the infinitive is ever possible (with, of course, the Dutch ORDER of elements). Cf. 27a and 28.

- (55) Ik ben oud genoeg, om de ontwikkelingen  
 I am old enough in order the developments  
te hebben KUNNEN volgen/\*volgen gekund te hebben  
 to have be able follow

Therefore, whereas the German morpheme zu can have syntactic influence on its surrounding, Dutch te is simply a prefix. For this reason reordering AUX-AFFIXATION and INFINITIVIZATION is simply not a possibility.

Since the elements INF and PART turn out to be mere inflection at the word level 54 can be simplified even further to a feature changing rule.

(56) INFINITIVIZATION

X	-	V	-	V	-	{heb-}	-	Y
		[+INF]		[+PART]		{zij-}		
1		2		3		4		5 ⇒
1		2		3		4		5
				[+INF]				
				{+L <sub>2</sub> }				

In yet another way Dutch syntax is discrete where German is gradient. We have already noted that the presence of an infinitive to the left to the verb undergoing INFINITIVIZATION is obligatory in Dutch. Should extraposition or topicalization remove this infinitive from the verbal complex as in German examples 31 and 32, then the tendency to infinitivization in German only lessened. But, in Dutch, displacing complements by either of these movement rule destroys the environment for 56; the infinitive simply may not be derived in such cases.

(57) EXTRAPOSITION

dat hij mij VERBODEN heeft het boek mee te  
 that he me forbidden has the book along to  
nemen/ \*het boek mee heeft VERBODEN te nemen  
 take

(58) TOPICALIZATION

Dansen (dat) heeft hij nooit gekund/\*kunnen  
 Dance that has he never can to

Some typical and simple cases of the Dutch surface order include:

- (59) a. dat hij het heeft kunnen zien  
 that he it has can see  
 b. dat hij het heeft laten zien  
 that he it has let see

which should be compared with their German equivalents

(60) a. dass er es hat sehen können

b. dass er es hat sehen lassen

Remembering that Frisian shows strict OV order, we can set up the following table of comparison of the three languages for simple cases

(61)	Frisian	MV	Aux <sub>1</sub>	Tensed Aux	
	German	Tensed Aux	MV	Aux <sub>2</sub>	MV = main verb Aux <sub>2</sub> = second auxiliary
	Dutch	Tensed Aux	Aux <sub>2</sub>	MV	

In conclusion, the Dutch rule of infinitivization is less gradient than German; indeed it is nearly exceptionless with respect to the catalyzing environments. If any complement shows up to the left of a V, then this verb will infinitivize as a result. This change pertains to all auxiliaries, verbs of perception and causation, as well as to some clear cases of main verbs. The issue of whether all main verbs require infinitivization can't be decisively settled here, since the lexicon apparently demands extraposition of their infinitive complements for some higher verbs and as we have just shown, such constructions always bleed the DIC.

We now turn our attention to the inversion of verbal elements in Dutch. In German the infinitivization of an auxiliary (or main verb) triggered a rule INVERSION, which would reverse the order of the auxiliary and the two (sometimes one) preceding infinitives. Examples in the previous section should have made it clear that a much more encompassing rule of inversion exists for Dutch. Dutch, like German and unlike Frisian, demands the inversion of the tensed auxiliary and unlike German also requires the inversion of AUX<sub>2</sub> as well. This auxiliary may not be left in the underlying position. Cf.

(62) \*dat hij het heeft zien kunnen/zien laten.

Not only must Dutch invert the perfect auxiliary heb but also the tensed modal verb, an alteration disfavored by German.

(63) dat ik je kon horen huilen/\*kon huilen horen/  
that I you can hear cry  
\*horen huilen kon



become obligatory. Cf. 66 vs. 67.

- (66) dat hij dat wel begrijpen kan/ kan begrijpen  
 that he that indeed understand can  
 (optional inversion)
- (67) a. dat zij het kan zien bewegen/\*zien bewegen kan/  
 that she it can see stir  
 \*bewegen zien kan (two infinitives required inversion)
- b. dat hij beweerde het niet te kunnen zien/\*zien te kunnen  
 that he claimed it not to can see  
 (an infinite governing a verb required inversion)

Interesting, the variation of two verb complexes shows dependence on environment. The highest verb can exert determining influence on the strength of the inversion. A tensed modal with a single dependent infinitive allows the original underlying *OV*-order to be retained. "Aspectual" auxiliaries like *gaan* 'go' also permit non-inversion. More main verb-like auxiliaries progressively show increasing tendency toward inversion. Semi-modals like *hoeven* 'need' and verbs of perception, for example, must undergo inversion. *heb-/zij* plus dependent past participle constitute an environment of only optional inversion. And this generalization holds irrespective of whether *heb-/zij* is finite or infinite.

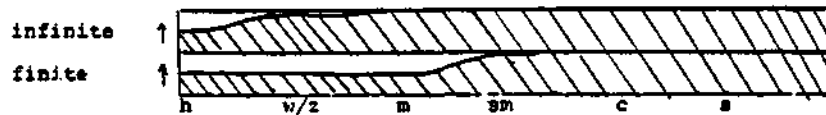
- (68) a. dat hij gelacher heeft/heeft gelachen.  
 that he laughed has
- b. dat hij beweerde niet gelachen te hebben/te hebben  
 that he claimed not laughed to have  
gelachen.

In fact, past participles can be left uninverted even in a sequence of several verbs or auxiliaries. The generalization to be made here is that the variation found in Dutch runs nearly antiparallel to that found in German along the dimension of "auxiliariness": from *hab-/heb-* 'have' to *werd-/zul-* 'will' to the modals to the semi-modals like *brauchen-/hoev-* 'need' to the causatives like *lass-/laas-* 'let, have' and finally to the *verba sentiendi* *sehen/zien* 'see', etc. Furthermore, the two languages are at odds along the dimension finite vs. infinite. We illustrate tendencies and antitendencies in inversion in the two languages with the following tables.

(69) German



Dutch



 = environments with inversion

h = haben/hebben; w/z = werden/zullen; m = modal; sm = semi-modal;

c = causative and s = sensory verbs

Again the two languages do not vary randomly but in a quite non-arbitrary manner. It would appear in this specific case that Dutch has generalized inversion everywhere and then allows the non-inversion in a few residual cases, i.e. with hebben and modals. German, being generally more conservative and more OV-like, still applies the inversion rule in those places of least resistance first, finite haben and werden.<sup>25</sup>

As tempting as this account may be, further study is still necessary to confirm or disconfirm it. Some evidence in Dutch indicates that participles in fact may be moved by an entirely different process than that moving infinitives. If this should turn out to be the case, then perhaps it is misleading to compare data like 66, 67 and 68 to one another.

We now come to a topic mentioned only obliquely heretofore but left undiscussed in depth. The basic rules for German and Dutch each contain an expansion

$V \rightarrow (P) V$ ;  $V$  branches into an optional particle and  $V$ . The particle  $P$

$[-F_i]$  (traditionally called the SEPARABLE PREFIX) in the Continental Germanic languages has a clear independent syntactic status. Particles can, for example, be conjoined with and as in:

(70) Er ging die Treppe herauf und herunter.  
he went the stairs up and down

A further characteristic of separable prefixes like herauf and herunter in both languages is that in root sentences they get split from their verbs by the verb second rule, but attach to the verb in introduced dependent clauses as 71 shows.

- (71) a. dat hij morgen wat vroeger OPSTAAT.  
dass er morgen etwas früher AUFSTEHT.  
That he tomorrow somewhat earlier up gets.  
(introduced dependent clause)
- b. Hij STAAT morgen wat vroeger OP.  
Er STEHT morgen etwas früher AUF.  
he gets tomorrow somewhat earlier up.  
(root clause)

Now it is interesting to note that particle splitting and the auxiliary inversion may interact in Dutch, but not in German. Or to put it differently, particles of separable compounds do not always accompany an infinitive when it is inverted, as the following examples show.<sup>16</sup>

- (72) a. dat hij wat vroeger OP wilde STAAN.  
\*dass er etwas früher AUF wollte STEHEN.  
that he somewhat earlier up wanted to get
- b. dat hij haar niet UIT liet SPREKEN.  
\*dass er sie nicht AUS liess SPRECHEN.  
that he her not out let speak
- c. dat hij haar niet liet UITSPREKEN.  
dass er sie nicht AUSSPRECHEN liess.

The Dutch particle (cf. *op* and *uit* above) can even be stranded over more than one intervening verb. 73 gives an example with four verbs:

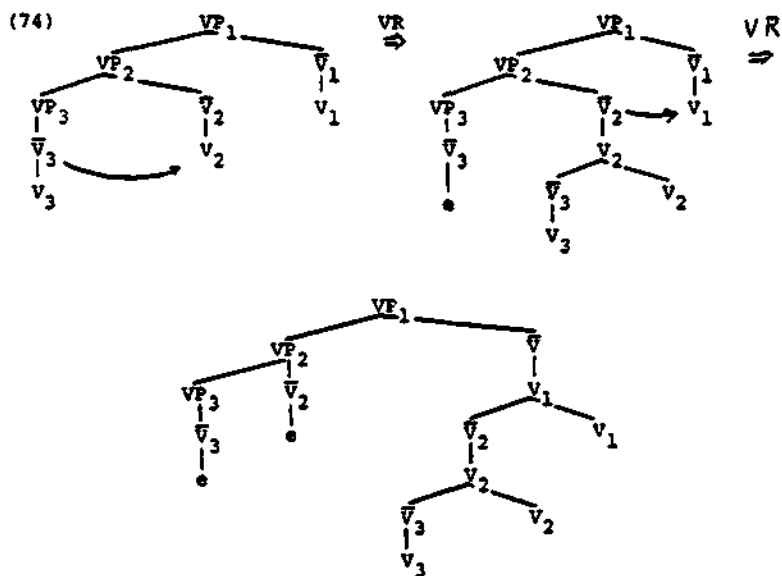
- (73) dat hij wel wat vroeger OP zou hebben kunnen STAAN/  
that he indeed somewhat earlier up will have be able get  
zou hebben kunnen OPSTAAN.

Many regard the splitting of particles from their accompanying verbs as a typical special trait of northern, Hollandic Dutch; Belgian speakers are not fond of sentences like 72a, 72b and 73. The consequences of particle splitting for verb raising will be dealt with below.

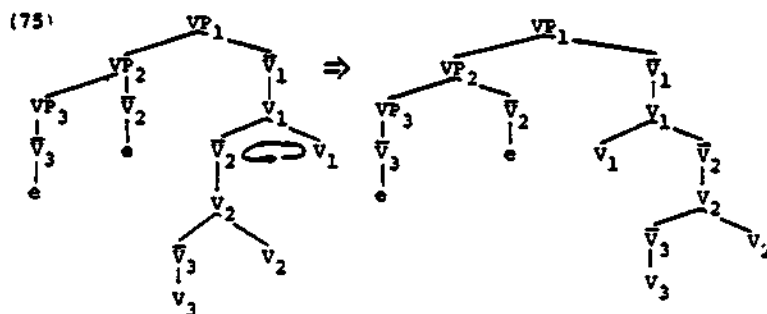
4. VERB RAISING, INVERSION AND VARIATION. In the past two sections we have analyzed the unexpected infinitive FORM and the non-OV POSITION of elements in a family of structures called the DIC. We have assumed a gradient rule for German that alters the paradigmatic form PART into a form resembling the infinitive. For Dutch, this rule applies for all cases in the sequence infinitive plus participle plus heb-/zij-. For the second half of the DIC phenomena, inversion, we have stopped short of formulating adequate rules and have contented ourselves with making generalizations and listing the diverse and gradient conditions yielding the observed POSITIONS of the involved elements. It is now to the inversion, the structural change, to the inter and intralanguage variation and to the rules of VERB RAISING (VR) that we turn.

Evers (1975) was able to convincingly demonstrate the necessity of restructuring in the VP in the DIC. In brief, he shows with tests for constituent structure such as gapping that in the DIC the verbal elements at sentence end form a single, syntactic constituent, whether there is inversion of the members or not. For German, for instance, VR first restructures more or less as follows (details below):



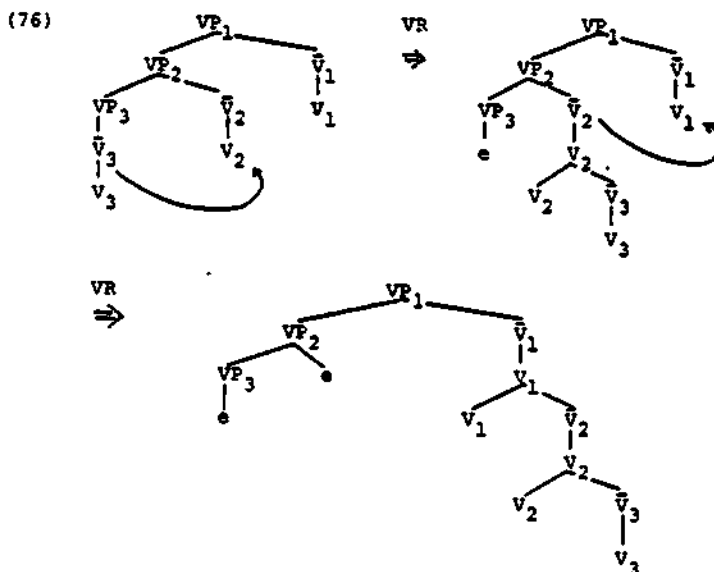


A  $\bar{V}$  is Chomsky adjoined to the left of its governing verb/auxiliary, while AUX-AFFIXATION and INFINITIVIZATION carry out the different task of properly creating the correct paradigmatic forms in the given context. VR, for its part, generates a "heavy" verbal cluster at sentence end. Finally, the rule of INVERSION (in German but not in Dutch) locally inverts the last two elements of this cluster.



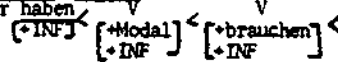
Significantly, both infinitivization and verb raising must feed inversion. Notice also that some kind of restructuring of the VP must be assumed in any case, since direct object NP's in the DIC are structurally cut off from the main verb and the other members of the verbal complex as we have repeatedly seen from the very first examples on.

In Dutch AUX-AFFIXATION and INFINITIVIZATION operate pretty much as in German. Only VERB RAISING and inversion may operate differently. Since, in Dutch, inverted elements occur pretty nearly "across the board", there is really no reason to believe that two distinct rules still exist, inversion and verb raising in Dutch can be carried out simultaneously, as follows. Cf. 74.

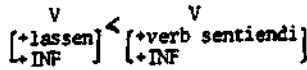


The  $\bar{V}$  is Chomsky adjoined to the right of the neighbor element on its immediate right. Such a rule schema would generate the required "across the board" inversion automatically.

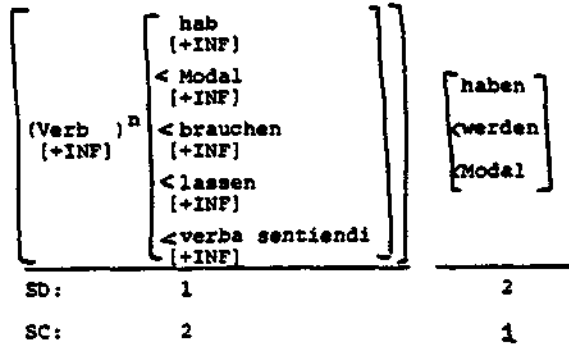
We remember too that the German rule of INVERSION is a gradient rule sensitive to three things: (a) the highest verb, whether haben, werden or modal; (b) the second of two (or more) infinitives, whether haben



and (c) whether there is or is not a preceding infinitive. Cf...



(77) INVERSION (German)



Let us hastily add that rule 77 has some interesting properties needing comment. We specify that this rule is to be a PERMUTATION RULE and, thus, that 1 and 2 in the structural description must be sisters nodes. Furthermore, 77 belongs to the set of LOCAL RULES in the sense of Emonds (1976), a desirable rule type.

A further point should be made as well. The local rule 77 becomes possible for German only because restructuring by virtue of verb raising has preceded. A well-defined permutation rule is dependent upon the previous application of VR. This combination must be accorded great significance since both rules VR and INVERSION on this analysis have a place in Emonds typology of rules. Any other description would have the liability of not according with a well-known and defined rule types.

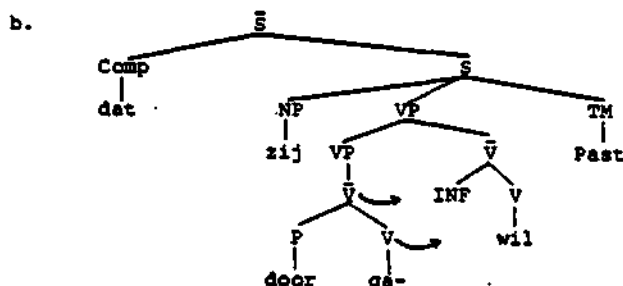
Just as in rule 19 the catalyzing environment has been appropriately weighted to give various outputs, even if actual numerical values to the

weights haven't been assigned. 77 and the verb raising schema can produce exactly the variation in normative German Behaghel describes.

Having dealt with the restructuring theme surfacing in Dutch and German, we now turn to the variation on this theme; how do the individual cases emerge out of this rule. Let us begin by regarding the derivation of structures found in the particle splitting dialects of Dutch, since this allows us to discuss the minor constituents in the entire verbal complex.

In the spirit of the  $\bar{X}$  analysis and disregarding problems of non-parallelism among some category types and problems concerning the maximum number of levels per lexical projection, cf. Chomsky (1970:210) and Jackendoff (1977), we assign the sentence 78a the underlying analysis 78b:

(78) a. dat zij DOOR wilde GAAN/wilde DOORGAAN  
           that she on wanted go



A great many details (such as some features) have been omitted to facilitate comprehending the structural changes. Once past and INF have been redistributed onto their neighbors, verb raising can take effect. Since, according to this dialect, either  $\bar{V}$  doorgaan or just V gaan can be right-adjoined, then either of these two SYNTACTIC categories must satisfy the VR restructuring operation, i.e.

(79) VERB RAISING (Dutch)

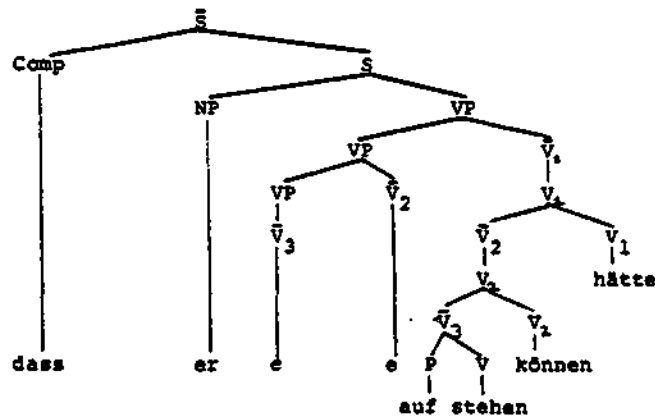
$X - \left\{ \begin{matrix} \bar{V} \\ V \end{matrix} \right\} - V - Y$

SD: 1    2    3    4     $\Rightarrow$

SC: 1    e    3+2    4

Rule 79 represents one of important ways German and Dutch, and for that matter, many of the non-standard variants of these two can differ. The rule for these language variants is basically identical (except for the side to which adjunction occurs) only the definition of constants in the statement of the transformation differ. German VR, for example, must apply only to V's, as the derived phrase marker 80 sans INVERSION indicates. Cf. 78b.

(80) dass er hätte aufstehen können never \*dass er auf HÄTTE stehen können.



The inversion rule then reverses the sister nodes  $V_1$  and the complex  $\bar{V}_2$  to yield the surface form. As we see, the German VR rule differs from the Dutch<sup>2</sup> by allowing only V's to be raised.

(81) VERB RAISING (German)

X	-	$\bar{V}$	-	V	-	Y
SD: 1		2		3		4
SC: 1		e		2+3		4

In this respect Belgian Dutch parallels German, since, as mentioned, speakers of southern dialects disfavor particle splitting. This characteristic feature of the South dovetails with other facts, because we know that until the 17th century both northern and southern forms of Dutch particle splitting are documented only very rarely.<sup>3</sup> In fact, the northern forms of Dutch seem to have chosen to apply VR to progressively smaller and smaller VP subconstituents. The introduction of  $\bar{V}$  into 79 represents a general trend away from raising "large" constituents, cf. Koelmans (1965). In 17th century Dutch, for example, even predicate nominals, adverbial phrases and direct objects (but not indirect objects) could be incorporated into verb raising. Contemporary Belgian nonstandard varieties, especially some dialects spoken in the provinces of West and East Flanders, still accept this kind of sentence. Vanacker (1970:157)

(82) a. Zijn vader heeft hem 6 jaar (lang) laten  
 His father has him 6 years long let  
[naar school gaan].  
 to school go

- b. En ge zoudt nog moeten [uw eigen pintje betalen].  
and you would yet have to your own beer pay
- c. da'k snavonds moeste [mijn kousen afdoen].  
that I that evening had to my stockings off pull
- d. 'k zou met joenen auto kunnen [naar  
I would with your car be able to to  
't voetbal gaan]  
the soccer match go

Now, data such as these and the non-incorporation of indirect object NP's into VR must cause us to question the internal structure of the VP heretofore postulated. Though it is still far from being unproblematic, such data argue for the assumption that the West-Germanic languages have a structural level between IO's and other units "closer" to the verb such as the DO or adverbial phrases, a level at which the restrictions on VR can be stated. We assume, for example, a  $\bar{V}$  level within the VP that contains the "narrower"

$[-F_i]$

complements of the verb and excludes the indirect object.

- (83) a.  $VP \rightarrow NP \dots \bar{V}$   
 $[-F_i]$
- b.  $\bar{V} \rightarrow NP \dots \bar{V}$   
 $[-F_i]$

Having enriched the VP structure, we can now perspicuously collapse the VR schema for northern, more innovative Dutch, which prefers raising small constituents, with the schema for southern, more conservative Dutch, which tends to invert larger VP chunks.

(84) VERB RAISING (Dutch panlectal)

	X	-	v <sup>n</sup>	-	v	-	Y	
SD:	1		2		3		4	⇒
SC:	1		e		3+2		4	

Conditions: Belgian Dutch n = 1 E. and W. Flanders

n = 1 or 2; Hollandic Dutch n = 1 or 0

with a tendency to innovate toward

smaller n-values.

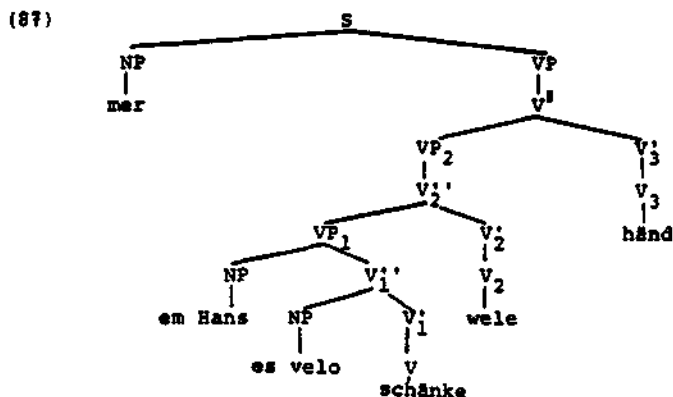
German, on the other hand, seems to have fixed the lowest value of n at 1 and with some exceptions to have set this as the highest value as well. However, marginally in the standard language and actively in the Alemannic dialects higher values of n are found.

In a paper on word order phenomena in a large number of German dialects with special reference to Alemannic Löttscher (1978) present a rich set of data on the problem under discussion here. Strikingly, Zurich Swiss German resembles in its order of verbal elements the Belgian dialects, both with respect to VR and the tendency toward a VO-verb complex. There are exceptions to this pattern, of course--participles always precede the temporal auxiliary, whereas a verb governing an infinitive may precede or follow it-- but Löttscher regards these as rare and subject to still more restrictive conditions.<sup>18</sup> Thus, we assume that Zurich German can be formalized as follows:

- (85)     x - v<sup>n</sup> - v - y  
                   [+Inf]  
 SD: 1       2           3    4   ⇒  
 SC: 1       e           3+2  4

While rule 81 does not as yet cover all of the data in the verbal complex in Zurich German, it does allow us to consider what values n may assume. In order to exemplify 85 we examine some Alemannic data. The following sentences 86 are all derivable from the underlying form 87.

- (86) a. Mer händ em Hans es velo schänke wele  
       We have Hans the bicycle give want  
       (Löttscher: (25))  
 b. Mer händ em Hans es velo wele schänke  
       (Löttscher: (25a'))  
 c. Mer händ em Hans wele es velo schänke  
       (Löttscher: (25b'))  
 d. Mer händ wele em Hans es velo schänke  
       (Löttscher: (25c'))

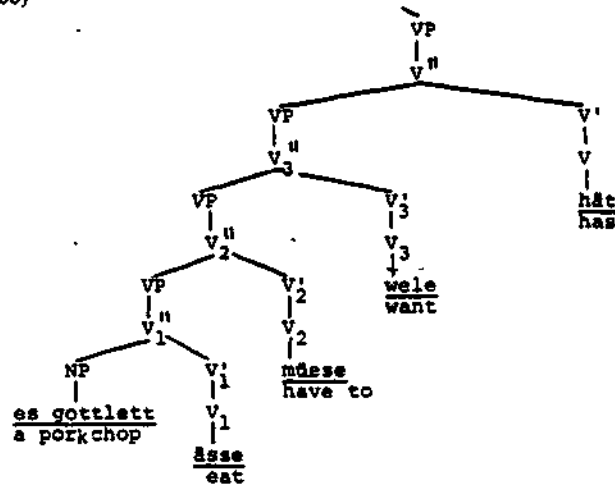


The verb second rule yields a sentence 86a, which represents a rare but possible order. 86b through 86 result from successively larger pieces of the VP being raised and right adjoined to nodes at different levels. 86 occurs, for example, when  $V_1$  schänke is raised and adjoined to  $V_2$  wele; 85c is produced if, instead of  $V_1$ ,  $V_1'$  es vele schänke is right-adjoined to  $V_2$ ; even  $VP_3 (V''')$  can apparently be raised, given sentences such as 86d, where em Hans es vele schänke is right-adjoined to  $V_2$  wele. Thus, Zürich German has a VR rule accepting  $n$ -values on the  $V^n$  from 1 to 3.

Finally, we would like to consider the question of what happens when the value of  $n$  varies during a sequence of applications of VR. Consider the following underlying structure for a VP. Again, AUX-AFFIXATION and INFINITIVIZATION [+Perf]

have already taken place and subcategorization features have been omitted for ease of reading.

(88)



In the first application of VR either  $V_1$  esse or  $V_1'$  es gottlett esse is raised to  $V_2$  müese. Either of the following two sentences can be derived:

- (89) a. De Joggel hät es gottlett welle müesen [esse]  
 Jockel has the porkchop want have to eat  
 (Lötscher: (11a))
- b. De Joggel hat welle müesen [es gottlett esse]  
 (Lötscher: (11c))



Suppose however, that after an initial VR of the  $V_1$  Esse to müese the second application of VR does not move  $V_2$  but  $V_3$ . In such instances a constituent with the following structure is raised

- (90)  $[_{V_2} [_{VP} [_{V_1} [_{NP} \underline{es\ gottlett}] [_{V_1} e]]] [_{V_2} [_{V'} [_{V_2} \underline{müese}] [_{V_1} \underline{esse}]]]]]$

which can yield the sentence:

- (91) De Joqgel hāt welen [es gottlett müesen esse]  
(Lötscher: (11b))

Thus, whereas an initial application of VR may leave behind parts of VP's, later applications of VR may drag these remnants along with a VR cluster. The above conclusion is confirmed by the existence of sentence in Zurich German like:

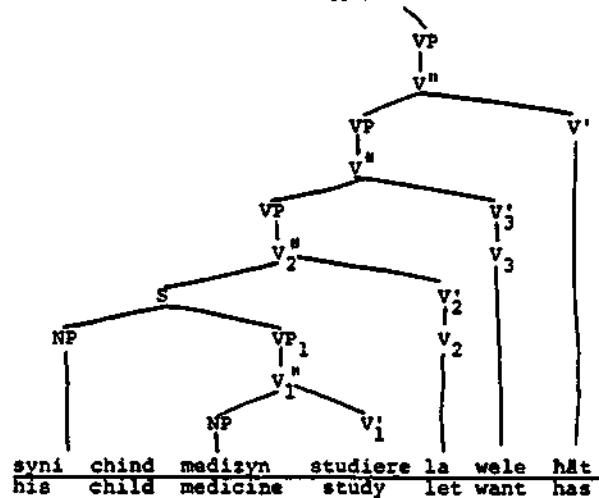
- (92) a. De Häiri hāt wele syni chind la medizyn studiere  
Heinrich has want his child have(let) medicine study  
(Lötscher: (20a))

but:

- b. \*De Häiri hāt wele la syni chind medizyn studiere  
(Lötscher (20b))

Now, in order to treat these two structures, we need to make some assumption about la (lassen)-complements. Here, for the purposes of discussion we take it that an S-complement is involved. Nothing will, however, crucially depend upon this choice. The VP to which VR will apply is:

(95)

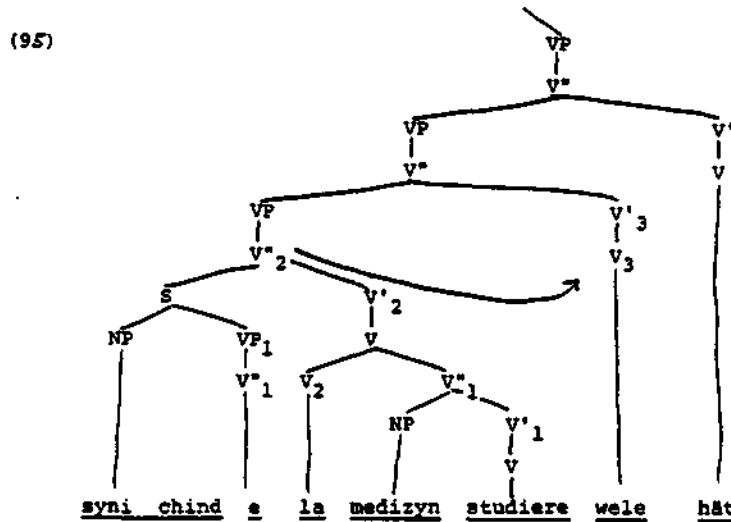


Given rule 85 the ungrammaticality of 92b is predictable. The highest constituent that can be moved by on its first application is  $VP_1$  medizyn studiere. But, the  $S$  syni chind medizyn studiere can not be raised. Similar conclusions follow if we were to assume that la subcategorizes for  $NP + VP$ .

The derivation of example 92a is relatively simple and resembles the derivation of example 91. The first application of Verb Raising results in  $V'$  (or  $VP_1$ , that does not matter) being raised to the right of  $V_2$  la. On the next application of VR it is not the  $V_2$  la medizyn studiere being raised but the dominating category  $V'$ :

$$(94) (v^*_2 [S (NP \text{syni chind}) (VP_1 (v^*_1 e))] ] [v^*_2 (v (v_2 \text{la}) (v^*_1 [NP \text{medizyn}] (v \text{studiere}))) ] ] ] ]$$

Thus, represented in a tree diagram, the following process takes place:



And eventually 92a is derived.

As we noted above, more could be said about the structure of the verbal complex in Zurich German. However, this paper is not meant to be an exhaustive reference grammar of the complete range of variation in the syntax of the verbal complex in West Germanic. We are fully aware of the fact that there are a number of phenomena that add to the variability of the verbal complex in West Germanic (including its semi-creolized variant Afrikaans).<sup>19</sup> We believe, though, that with the above in part incomplete description of the verbal complex in Zurich German we have made the point we wanted to make; the seemingly chaotic variation in the verbal complex in West Germanic can be described in terms of a relatively simple set of rules with the potential for a

surprisingly wide range outputs.

6. SUMMARY AND CONCLUSIONS. We began this study by claiming that the Continental West-Germanic languages form a single syntactic system. In the course of the exposition we have tried to show how this claim is justified by developing an analysis assuming a single set of base rules and thus a nearly identical set of underlying forms. To such common underlying structures is subsequently applied a battery of gradient transformational operations. We consider it a significant finding that this gradience, both with respect to change of FORM and to change of POSITION of verbal elements, follows a definite pattern. On the basis of our evidence it appears that different auxiliaries show different reactive force in the face of linguistic change. The perfect auxiliary is the harbinger of linguistic transition, followed by the periphrastic marker of futurity, the modals being more resistant to these tendencies. Then, come causatives and the sensory verbs and, finally, full verbs begin to line up <sup>behind</sup> the leaders, led in German by *helfen*, *lehren*, *lernen* etc. We pointed out further that finite more than infinite members of the verbal paradigm are inclined to change. In German, like the English modals for example, only the finite form of future-*werden* occurs.

Although we haven't argued directly for a position in the SOV-SVO controversy in Germanic, we conclude that the SOV position as majority pattern is more in harmony with the theoretical nature of language change. We noted, for example, that West-Frisian reveals the most verb-final traits, obliging the main verb or other governed auxiliary element to lead the governing auxiliary at sentence end--with the well-known exception of main clauses, where here as elsewhere in this family the tense bearing element serializes further to the left. The inversion and infinitivization facts indicate that the middle position on a scale of OV/VO properties belongs to the German Standard language (northern varieties), in which *haben* always, *werden* sometimes and modals rarely take a position to the left of their governing full verbs. Dutch and non-standard German varieties occupy a position of more pronounced VO-ness, with a more assertive minority VO pattern, having the most generalized, across-the-board rule application of infinitivization and verb raising. This evidence speaks for the following picture of wave-like spread of a change. Innovation began in the North and West of West-Germanic territory, passed a recalcitrant Frisian minority of this region unscathed and disseminated itself to the East and South, having, it seems, more success in the latter than the former named area. It first attacked the most auxiliary like elements, and step by step encompassed other candidates for periphrasis and ultimately main verbs, until in Dutch no verb falling in the environment failed to be affected. There are, of course, a few perturbations in the propagation of these changes, interference from other waves of change. In Dutch a sequence of two verbs must occur in order that a participle become an infinitive and also a complementizer is felt to offer no hindrance to the application of this rule. Another source of disturbance stems from the size of VP chunk that becomes inverted. The more progressive northwestern and southeastern varieties, i.e. Hollandic Dutch and Bavarian, invert smaller chunks of VP, whereas German (northern varieties), and especially Alemannic and some Belgian dialects can permute nodes at higher syntactic levels.

In summary, we believe to have shown that for all their idiosyncracies, the West Germanic languages are much more similar than one might think, given the manifold and confusing diversity at the surface. Despite apparent and capricious variation that would seem to transfigure a constant syntactic theme, Dutch, German and Frisian are, in fact, what they have always been known to be, linguistic brothers under the skin.

FOOTNOTES:

<sup>1</sup> The discussion about the history of the DIC that can be found in the literature is quite confusing. There are two hypotheses concerning the origins of the DIC. According to the hypothesis proposed by Lachmann and Grimm homophony between prefixless past participles such as lassen (= ge-lassen) 'let' and their corresponding infinitives (lassen 'let') gave rise to the construction, whereas the competing assimilation hypothesis defends the idea that infinitivization is caused by an assimilation of the past participle to the immediately adjacent infinitive it governs. Though most authors show that the actual data base for the homophony account is weak, many still adhere to the latter hypothesis.

For a thorough discussion of Lachmann's and Grimm's homophony hypothesis we refer to Wunderlich and Reis (1924) and to Kern (1912) whose study on the past participle in Dutch probably was never noticed by the German philological community at large. Additional critical remarks can be found in Erdmann (1886). Despite the many objections that have been mounted against the homophony account, the latter hypothesis still persists albeit in a modified version (cf. Lockwood 1968).

According to Wunderlich and Reis (1924: 298-307) the German philologist Lachmann was the first one to propose the hypothesis that the origin of DIC can be found in prefixless strong participles of the preterite-presents since such participles cannot be distinguished from infinitives. Grimm's assumptions embraced Lachmann's hypothesis in so far as können, sollen, wollen, mögen, müssen, dürfen, heissen, lassen and sehen are concerned - all of which are supposed to have had strong participles originally. According to Grimm helfen, hören, lehren, lernen and fühlen were added to the DIC class a little later. However, Wunderlich and Reis (1924) - following a study by Kurrelmeyer - point out that in the 13th century the infinitivus pro participio came to be used for tun, helfen, hören, heissen, lassen and somewhat later also for sehen, müssen and türren. Not until the 15th century is the DIC attested for the other verbs such as mögen, wollen, können, sollen, and dürfen. These data conflict heavily with the original hypothesis by Lachmann and Grimm, but they are supported by Behaghel (1924), Erdmann (1886) and Kern (1912). Furthermore, Wunderlich and Reis (1924) point out that the DIC had to depart from main verbs (heissen, hören, helfen) since originally modal auxiliaries in early humanist prose could govern perfect auxiliaries but not vice versa, the construction containing haben governing a modal auxiliary governing an infinitival verb being a rather late phenomenon. Thus the homophony hypothesis must be rephrased for a small group of main verbs. However, Erdmann (1886: 110-111) points out that even under such an assumption problems arise, since only prefixless past participles of sehen, lazen and heizen would yield the required forms ((ge)sehen, (ge)lazen, (ge)heizen), whereas for other verbs one has to postulate less usual past participles (ge-kunnen instead of gekonnt (können), ge-wizzen instead of gewusst (wissen)) or else one cannot postulate any useful participle at all (either because there is Ablaut (helfen: (ge)holfen) or because the pertinent verbs are weak verbs, even though such verbs belong to the oldest attested examples of the DIC (hören: gehört, machen: gemacht). Finally, Behaghel (1924) and Kern (1912: 46-53) point out that the Old High German past participle of lazen was gilazan, although Kern does not want to exclude the possibility of an as yet unattested past participle \*lazan (similarly for heizen). Referring to the literature, the latter author points out that the ge-prefixed past participle is the original one and that only a limited number of past participles could pass unprefixated. Furthermore Kern demonstrates that even a revised homophony account based upon lassen and heissen does not work for Dutch, which language already has a richly developed DIC in the 13th century. Without exception the past participles of laten and heten in Middle Dutch are gelaten and ge-



(1) a.  $\bar{S} \rightarrow \text{Comp } S$

b.  $\bar{S} \rightarrow \bar{NP} \text{ VP}$  Syntactic features on VP,  $\bar{V}$ , V =  
 {+Pres, +Past, +Fut, +INF, +PART,  
 +PASS, +Modal, +Perfect, +AUX,  
 +zu -INF}

c.  $\text{VP} \rightarrow \text{VP } \bar{V}$   
 $\left[ \begin{array}{l} \alpha \\ +\text{AUX} \end{array} \right] \left[ \begin{array}{l} \beta \end{array} \right]$

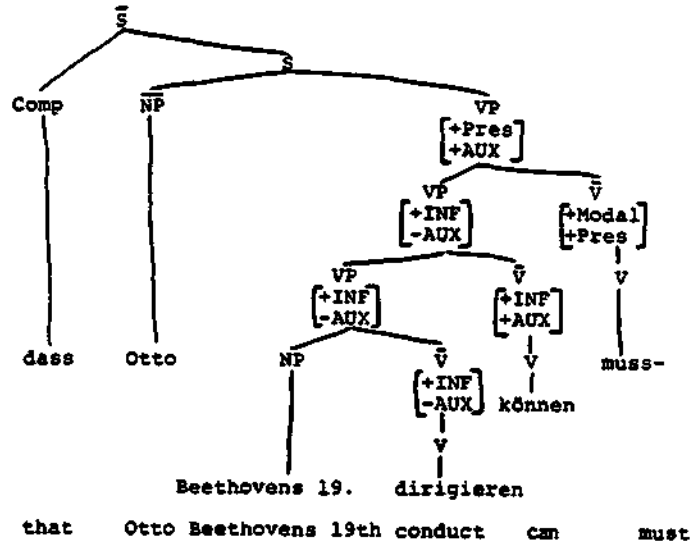
$\alpha$	$\beta$	V's under $\bar{V}$
+Modal	+INF	könn-, möss-, dürf-, soll-, woll-, mög-
+Perfect	+PART	hab-, sei-
+Fut	+INF	werd-

This feature table lists the subcategorization necessary in the verbal complex.

d.  $\text{VP} \rightarrow (\text{NP}) \dots \bar{V}$   
 $\left[ \begin{array}{l} \alpha \\ -\text{AUX} \end{array} \right]$

e.  $\bar{V} \rightarrow (\text{P}) \text{ V}$   
 $\left[ \begin{array}{l} \alpha \\ -\text{AUX} \end{array} \right]$

An example of the kind of structures produced by i would be:



<sup>7</sup>The structures in 16 are not unacceptable in every kind of German. The order 16a represents the usual FORM and ORDER in Middle Bavarian according to Willi Mayerthaler (p.c.), which has no inversion rule at all. Infinitivization in this form of German is also found only for modal verbs, brauchen and lassen, but not for the sensory verbs.

<sup>8</sup>Paul (1968/1920) and Grimm (1967/1898) list no cases of the perfect infinitive without dependent verbs before Lessing (18th century), while the infinitive with dependent verb is attested in the 13th century.

<sup>9</sup>This sort of rule resembles Labov's variable rules in many respects. In Labov (1969:737,738) "a specific quantity  $\phi$  (is associated with every rule) which denotes the proportion of cases in which the rule applies to a total population of utterances in which the rule can possibly apply."  $\phi$  is equal to 1 for categorial rules, of course; here, for example, model.

Our approach employs greater-than signs, which probably reflect values on some markedness scale rather than frequency of occurrence.

<sup>10</sup>The respective derivation of the complex haben verfolgen zu können vs. verfolgen gekonnt zu haben occur as follows.

(i) underlying	<u>verfolg-</u> <u>INF+könn-</u> <u>PART+hab-</u> <u>zu-</u> <u>+INF</u>
AUX AFFIXATION	<u>verfolg+INF</u> <u>könn+PART</u> <u>zu hab+INF</u>
(3 times)	
INFINITIVIZATION	(zu blocks INFINITIVIZATION from applying)
INVERSION	
(ii) underlying	<u>verfolg-</u> <u>INF+könn-</u> <u>PART+hab-</u> <u>zu+INF</u>
INFINITIVIZATION	<u>INF+hab-</u> <u>verfolg-</u> <u>INF+könn-</u> <u>zu+INF</u>
INVERSION	
AUX-AFFIXATION	<u>INF+hab-</u> <u>verfolg+INF</u> <u>zu könn+INF</u>

<sup>11</sup>The derivations of entfernt haben lassen vs. haben entfernen lassen by reordering comes about as follows:

(i) underlying	<u>entfern-</u> <u>INF+lass</u> <u>PART+hab</u> <u>INF+soll</u>
AUX-AFFIXATION	<u>entfern+INF</u> <u>lass+PART</u> <u>hab+INF</u> <u>soll</u>
INFINITIVIZATION	<u>entfern+INF</u> <u>+lass+INF</u> <u>hab+INF</u> <u>soll</u>
INVERSION	<u>hab+INF</u> <u>entfern+INF</u> <u>lass+INF</u> <u>soll</u>
(ii) underlying	<u>entfern-</u> <u>INF+lass</u> <u>PART+hab</u> <u>INF+soll</u>
INVERSION	<u>entfern-</u> <u>PART+hab</u> <u>INF+lass</u> <u>INF+soll</u>
AUX-AFFIXATION	<u>entfern+PART</u> <u>hab+INF</u> <u>lass+INF</u> <u>soll</u>

<sup>12</sup>Example 31 is adapted from Grimm (1967/1898) Sanders (1898:122) gives this further example with a participle from Gotthelf.

(i) Heiraten hätte er nicht gebraucht.  
Marry would have he not needed [+PART]

as well as brauchen.  
[+INF]

<sup>13</sup>In fact, there are only two: schijnen 'appear', which allows neither the DIC nor the participle. (also true of lijken 'seen') and beginnen 'begin', which can surface as a participle or infinitive with variation among speakers.

<sup>14</sup>Not only do these "aspectual" auxiliaries gaan, komen, zitten and staan and as well zijn pattern like the more accepted or traditional auxiliaries, i.e. modals, causatives and sensory verbs, with respect to FORM (they demand the infinitive and not the participle), they also put constraints on the FORM and structure of their complements. A dependent infinitive such as praten in 52b must lose its complementizer prefix te whenever staan is an infinitive. Furthermore, in this connection we observe that zijn behaves in an anomalous fashion here as well. Wezen in 52c, and not the usual infinitive FORM of 'be' zijn is required. This FORM may well be last visible remnant of the Middle Dutch past participle gewezen, which today always takes the shape geweest. It is unclear to us whether such evidence support the homophony account of the origin of the DIC proposed by Grimm and Lachmann or not.





BIBLIOGRAPHY

- Akmajian, A., S. Steele and T. Wasow. 1979. The category AUX in universal grammar. *LJ* 10.1.-64.
- Bach, E. 1962. The order of elements in a transformational grammar of German. *Lg* 38.263-69.
- . 1968. Nouns and noun phrases. *Universals in Linguistic Theory*, edited by E. Bach and R. Harms, 91-124. New York: Holt, Rinehart and Winston.
- Bailey, C-J. N. 1973. *Variation and Linguistic Theory*. Washington: Center for Applied Linguistics.
- Bech, G. 1955. *Studien über das deutsche Verbum infinitum*. (volume 1). Munksgaard: Kopenhagen.
- Behaghel, O. 1932. *Deutsche Syntax* (volume IV). Heidelberg: Carl Winter Verlag.
- Bierwisch, M. 1963. *Grammatik des deutschen Verbs*. Berlin: Akademie Verlag.
- Chomsky, N. 1970. Remarks on nominalization. *Readings in English Transformational Grammar*, edited by R. Jacobs and P. Rosenbaum, 184-221. Waltham, Toronto and London: Ginn and Co.
- . 1976. Conditions on rules of grammar. *LÁ* 2. 303-351.
- Dal, I. 1966. *Kurze deutsche Syntax*. Tübingen: Niemeyer Verlag.
- De Haan, G. 1979. *Conditions on Rules. The proper balance between syntax and semantics*. Dordrecht: Foris Publications. *Publications in Language Sciences* 2.
- Den Besten, Hans. (to appear). A Case filter for passives. in: A. Belletti, L. Brandi, and L. Rizzi (eds.). *Proceedings of the 1979 GLOW Colloquium on the Theory of Markedness*. Scuola Normale Superiore, Pisa.
- Duden. 1973. *Grammatik* (volume 4). Mannheim, Wien and Zürich: Bibliographisches Institut.
- Edmondson, J. 1980. Gradienz und die doppelte Infinitivkonstruktion. *Papiere zur Linguistik* 22.59-82.
- Emonds, J. 1976. *A transformational approach to English syntax*. Academic Press: New York.
- Erben, J. 1976. *Abriss der deutschen Grammatik*. Berlin: Akademie Verlag.
- Evers, A. 1973. The Syntactic Motivation of Predicate Raising. *Spektator* 3, 69-94.
- . 1975. *The Transformational Cycle in Dutch and German*. Bloomington: IU Linguistics Club.
- Gazdar, G. 1980. Subject-aux inversion-without subject, Aux or, inversion. Talk presented to the 4th Groningen Roundtable.

- Grimm, J. 1979/1898. *Deutsche Grammatik* (volume 4). Hildesheim: Georg Olms Verlagsbuchhandlung.
- Hawkins, J. 1979. Implicational universals as predictors of word order change. *Lg.* 55. 618-648.
- Hoekstra, T. and M. Moortgat 1979. Passief en het lexicon. *Forum der Letteren* 20, 137-161.
- Jackendorff, R. 1977. *x-Bar syntax. A study in phrase structure*. Cambridge: MIT Press.
- Koelmans, L. 1965. Iets over de woordvolgorde bij samengestelde predikaten in het Nederlands. *Nieuwe Taalgids* 58. 156-165.
- Kohrt, M. 1979. Verbstellung und "Doppelter Infinitiv" im Deutschen. *Leuvense Bijdragen* 68. 1-31.
- Koster, J. 1975. Dutch as an SOV Language. *Linguistic Analysis* 1, 111-136.
- Labov, Wm. 1969. Contraction, deletion and inherent variability of the English copula. *Lg.* 45. 715-762.
- Lehmann, W. 1971. On the rise of SOV patterns in New High German. *Grammatik, Kybernetik Kommunikation* (Festschrift Alfred Hoppe) ed. by K. Schweisthal, 19-24. Bonn: Dümmler.
- . 1972. Proto Germanic syntax. *Toward a grammar of Proto Germanic*, ed. by F. van Coetsem, H. Kufner 239-68. Tübingen: Niemeyer Verlag.
- Lötscher, A. 1978. Zur Verbstellung im Zürichdeutschen und in anderen Varianten des Deutschen. *ZfDL* 45. 1.29.
- Nieuwenhuijsen, P. 1976. Review of Evers 1975. *Spektator* 5, 589-602.
- Paul, Hermann 1968/1920. *Deutsche Grammatik*. Tübingen: Niemeyer Verlag.
- Pauwels, A. 1953. *De plaats van hulpwerkwoord verleden deelwoord en infinitief in de Nederlandse bijzin*. Leuven.
- Pauwels, J. 1970. Statistisch onderzoek van de Nederlandse zinsbouw. *Nieuwe Taalgids* (Van Haeringen nummer) 93-100.
- Popper, K. 1962. *The open society and its enemies*. New York: Harper Torchbooks.
- Pullum, G. 1980. Auxiliary Hypotheses. Paper delivered at the Fourth Groningen Roundtable.
- Reis, M. 1974. Syntaktische Hauptsatz-Privilegien und das Problem der deutschen Wortstellung. *ZGL* 2. 299-327.
- . 1979. Ansätze zu einer realistischen Grammatik. *Befund und Deutung*, 1-21. Tübingen: Niemeyer Verlag.
- Ross, J. 1969. Auxiliaries as main verbs. *Studies in philosophical linguistics*, edited by W. Todd, 77-102. Evanston: Great Expectations.

- Sag, I. 1980. Phrase Structure versus restructuring: on the ASW analysis of English auxiliaries. Paper delivered at the Fourth Groningen Roundtable.
- Sanders, D. 1898. *Satzbau und Wortfolge in der deutschen Sprache*. Weimar: Verlag von Emil Felber.
- Steele, S. 1975. On some factors that affect and effect word order. *Word Order and word order change*, edited by C. Li. Austin: University of Texas Press,
- Stroop, J. 1970. Systeem in gesproken werkwoordsgroepen. *Taal en Tongval* 22.128-47.
- Van Riemsdijk, H.C. 1978. *A Case Study in Syntactic Markedness: The Binding Nature of Preposition Phrases*. Dordrecht: Foris Publications. *Studies in Generative Grammar* 4.
- Vanacker, V. 1970. Een "Zuidnederlandse" konstruktie in een paar Zuidnederlandse dialecten. *Nieuwe Taalgids* (Van Haeringen-nummer). 140-157.
- Vennemann, T. 1974. Topics, subjects and word order studies: from SXV to SVX via TVX. *Historical linguistics*, edited by J. Anderson and C. Jones. Amsterdam: North Holland.
- . 1975. An explanation of drift. *Word order and word order change*, edited by C. Li Austin: University of Texas Press.
- Zwarts, F. 1975. Some Remarks on the Linear Cycle in Dutch Syntax. Unp., University of Amsterdam.