The Verbal Complex in Continental West Germanic

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The verbal complex in continental West Germanic

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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 in which direction and by what mechanisms are these languages changing. Contrary to the often heard claim, the OV/VO distribution doesn't always or even 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 enlightening 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.

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

(The auxiliary in an SOV language does not occur between object and verb). 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 two candidates that remain effectively SOV throughout the verb complex. West Frisian (spoken in the province of Friesland, the Netherlands) and Low German (still found among some in N. Germany) put the inflected auxiliary behind the main verb:

(1)

West Frisian (data from Erik Reuland)

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.'

Low German (data taken from Lange (1981:63-4))

- c. *dat he dat book lesen kunnt hett*
 'that he has been able to read the book.'
 d. **dat he dat book hett lesen künn'n*.

As one would expect for an SOV language, the infinitives *lêze/lesen* are always followed by their determining modal verb *kent/kunnt* in the participial form and *kent/kunnt*, in turn, are followed by their determining perfect auxiliary *hat/hett*, the tensed finite element of a complex verb phrase. In main clauses, as in High 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 illustration like 1, however, with a particular intent in mind. Unlike Frisian and Low German, the more widely spoken West-Germanic languages, High 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). This sentence type of the Dutch and High German varieties of West-Germanic and missing from Frisian, Low German, English and North-Germanic, cf. Lange (1981:64), will evidence a systemic pattern of variation allowing us insight into change across these languages.

Consider, now, the German equivalents of 1:

- (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 *gekonnt* 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, thus the shibboleth *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 is probably the source of anecdotes about German professors ending an hour lecture with a five-minute heap of verbs.

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 pairwise, 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 term of a systematic, relatively transparent and theoretically interesting description. We, in particular, will show:

(A) that the 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/Low German (no rule) over High 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 anomalous 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 (1969/1898:195) 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 begreift 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 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.¹

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 presumed 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 4 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 one homogeneous speech communities. This perspective in its most extreme form could, following Popper (1962:31), be branded essentialism, and would correspond to the Platonic view of some in the exact sciences. Ergo: 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 in-exhaustable 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 idealization, 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. Lötscher (1978) while writing for the dialectologist in one place opts 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 einfacheren aufzulösen.’ (a typical characteristic of a performance conditioned rule that serves to resolve difficult constructions into simpler ones.) While appeals to performance play a very minor role in Lötscher’s informative article, 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 this claim rests on the assumption that 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-up grammar, saying:

2

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 subtends, as Labov has observed.³

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 sub-systems 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 of Dutch 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 (which he renamed as VERB 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 (1981).⁴ 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 Emonds (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. Stroop (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 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/Low German, since these West-Germanic languages show only marginal signs of the DIC. The German rules below without INFINITIVIZATION and INVERSION would suffice for Frisian and Low German with only slight revamping.⁵

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).⁶

(5)

a. S	→	NP	VP _t
b. VP _t	→	VP	$\left\{ \begin{array}{l} \text{TM} \\ \text{zu- +INF} \end{array} \right\}$
c. VP	→	VP	$\left\{ \begin{array}{l} \text{Modal} \\ \text{Perfect} \end{array} \right\}$
d. VP	→	VP _o	Pass
e. VP _o	→	... (NP)	V
f. Modal	→	INF	$\left\{ \begin{array}{l} \text{könn-} \\ \text{mögg-} \\ \text{müss-} \\ \text{woll-} \\ \text{soll-} \\ \text{dürf-} \end{array} \right\}$
g. TM	→	$\left\{ \begin{array}{l} \text{pres} \\ \text{past} \\ \text{fut} \end{array} \right\}$	
h. fut	→	(INF werd-)	pres
i. Pass	→	PART	werd-
j. Perf	→	PART	$\left\{ \begin{array}{l} \text{hab-} \\ \text{sei-} \end{array} \right\}$

The essential characteristic of 5 reflects Behaghel's *oberstes Gesetz* 'highest law' of word order '...das geistig eng Zusammengehörige (wird) auch eng zusammengestellt...' (1932:4) (that which in the mind belongs close together is placed close together). The classical transformational manner to express government among elements of the verbal complex, vintage 1957, is to generate two sister nodes in deep structure, one of which then affixes to a neighbor element. Here INF and *könn-*, *mögg-*, *müss-*, etc. as well as PART and *hab-/sei-* are created as sisters. The transformation AUX-AFFIXATION can then attach a tense marker, *zu*+INF, INF or PART to the syntactic element on its immediate left.

(6)

AUX-AFFIXATION

SD:	X	-	A	→
	1		2	
SC:	1+2		e	

Condition: $A \in \{\text{INF, PART, pres, past, zu- +INF}\}$

In the course of a derivation the affixes are adjoined as sisters onto the next left element by repeated application of a transformation. Thus, unlike English AFFIX-HOPPING, not the order but only the structure of the verbal complex is altered. Cf.

(7)

- a. *wiss- PART+hab INF+müss pres* →
wiss+PART hab+INF müss+pres
 known have must
- b. *wiss- INF+müss- INF+werd- pres* →
wiss+INF müss+INF werd+pres
 known 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

Where 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 lects 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-

tion of the perfect. Thus, in place of *gegangen war* 'had gone', one hears the double perfect *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.

Secondly, the rule for dealing with the future auxiliary *werden*, 5h, automatically insures that *werden* (somewhat like the English modals) appears only in paradigmatic forms corresponding to the traditional present tense, assuming that *würde*, the subjunctive, counts as present. Attempts to force another finite or an infinite form on the future auxiliary always produce unacceptable results.⁷

(10)

- a. **wissen werden muss* (before a modal, i.e. *werden*)
know will must [+INF]
- b. **wissen geworden hat/list* (before a perfect, i.e. *werden*)
know willed has [+PART]
- c. **wissen wurde* (in past tense, i.e. *werden*)
know willed [+PAST]
- d. **um morgen rechtzeitig ankommen*
in order tomorrow punctually arrive
zu werden (i.e. *werden*)
to will [+INF]

Thirdly, the subcategorization in 5a, 5d and 5e (cf. VP_t and VP_o) captures the positional restrictions of various paradigmatic forms. While German (and Dutch) positions modals more liberally than English, the tenses, of course,

must be placed on the highest VP and the passive auxiliary must occur adjacent to the main verb. As in Akmajian/Steele/Wasow (1979) and in Gazdar Pullum, Sag (1980) these subcategorization restrictions are stated at various VP levels.

Finally, our VP is 'layered' with branching to the left (as one would expect for an OV structure). Arguments in favor of this kind of tree branching have been familiar since Ross (1969).

Now, in order to have a sufficient number of levels for later stating the inversion rules, we now recast the base rules just suggested for German (Dutch will be nearly identical) in terms of a more contemporary X-type syntax. For ease of exposition we have retained expansions containing an affix and stem parts as syntactic units. We are, however, convinced that a transformation-less, direct generation account along the line proposed by Gazdar, Pullum and Sag (1980) for English might also be possible. Our main aim here is not, however, to argue for the theoretically most satisfying base rules, but to point out the systematic variation among the various languages concerned and emphasize how the differences among them might have arisen.

(11)

a.	$\bar{S}$	$\rightarrow$	Comp	S	
b.	S	$\rightarrow$	NP	VP	TM
				$[\alpha F_i]$	
c.	VP	$\rightarrow$	VP	$\bar{V}$	$F_i = \{\text{Modal, Perfect, Passive}\}$
	$[+F_j]$		$[\alpha F_i]$		$F_j = \{\text{Modal, Perfect}\}$
d.	VP	$\rightarrow$	VP	$\bar{V}$	
	$[+Pass]$		$[-F_j]$		
e.	VP	$\rightarrow$	(NP)...	$\bar{V}$	
	$[-F_i]$				
f.	$\bar{V}$	$\rightarrow$	(P)	V	P=Particle
	$[-F_i]$				
g.	$\bar{V}$	$\rightarrow$	INF	V	
	$[+Modal]$				
h.	$\bar{V}$	$\rightarrow$	Part	V	
	$[+Perf]$				
i.	$\bar{V}$	$\rightarrow$	Part	V	
	$[+Pass]$				
j.	TM	$\rightarrow$	$\left(\begin{array}{l} \text{Pres} \\ \text{Past} \\ \text{Fut} \\ \text{zu} \quad +\text{INF} \end{array} \right)$		
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. $V = \{\text{könn-}, \text{müss-}, \text{sol-}, \text{woll-}, \text{dürf-}, \text{mö-}\}$
[+Modal]
- b. $V = \{\text{hab-}, \text{sei-}\}$
[+Perfect]
- c. $V = \{\text{werd-}\}$
[+Pass]
- d. $V = \{\text{werd-}\}$
[+Future]

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 a Head Feature Convention or 'feature percolation' can be found in much recent transformational work, cf. Gazdar, Pullum and Sag (1980:5) for details. 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.⁸ 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

We now come to dealing with the DIC in German. As we have already noted, this construction occurs whenever there is a sequence:

(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 series 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. 15 represents one such example of the DIC that is particularly revealing, as it shows the grammatical 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* or *hat können*) as 16 shows.⁹

(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 for the reason cited in Kay (1978). The rule 17 makes the following predictions:

(18)

underlying form	gekonnt hat	handeln gekonnt hat
Lect 1	<i>gekonnt hat</i>	<i>hat handeln können</i>
Lect 2	<i>hat können</i>	<i>hat handeln können</i>

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.¹⁰

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 *Ersatzinfinitive* (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)

Once again, the notation in the braces requires an interpretation. The 'less than' signs indicate an implicational hierarchy that would normally be written as *Modal* < *brauchen* < *lassen* < *sensory verbs*.¹¹ INFINITIVIZATION of a participle becomes increasing more obligatory as one proceeds from right to left, from the least obligatory sensory verbs, to the most obligatory modal verbs. Rule 19 predicts a distribution of lects as follows:

(20)

	WITH DEPENDENT INFINITIVE	WITHOUT DEPENDENT INFINITIVE
most acceptable	<i>hat kommen können</i> <i>nicht hat (zu)</i> <i>kommen brauchen</i> <i>hat kommen lassen</i> <i>hat kommen sehen</i> <i>kommen gesehen hat</i> <i>kommen gelassen hat</i> <i>nicht (zu) kommen</i> <i>gebraucht hat</i>	<i>gekonnt hat/gebraucht</i> <i>hat/gelassen hat/</i> <i>gesehen hat</i> <i>hat können</i> <i>hat brauchen</i>
least acceptable	<i>kommen gekonnt hat</i>	<i>hat lassen/hat sehen</i>

For the moment, the POSITION of elements is being disregarded and only the FORM, whether infinitive or participle, is under discussion, e.g. *können* or *gekonnt*. There are at least two factors working together in this rule and table, the influence of the individual infinitivized verb and the presence or absence of a preceding main verb. In actuality we are making a number of necessary simplifications, since *fühlen* 'feel' among the sensory verbs induces infinitivization with considerable less force than does *sehen* 'see' or *hören* 'hear'. Further simplification here is not differentiating between the relative strength of the two determining factors. Table 20 is supposed to indicate that forms in the lower right hand corner are assigned a much lower value than corresponding items on the left, which we interpret to mean that the factor *preceding main verb* counts for far more than the choice of auxiliary. Grimm (1969/1898:195) cites only cases with modal verbs, i.e.

(21)

- a. *das hat meine Emilia nicht wollen* (gewollt)
that has my Emilia not want
(Lessing's *Emilia Galotti*)
- b. *hette mögen* (gemocht)
would like
- c. *hette können* (gekonnt)
would be able
- d. *darjegen heft de marggraff nicht khonen* (nicht gekonnt)
against that has the margrave not can

Native speakers usually react to form like *hat lassen/hat sehen* with consterna-

tion; 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 gekonnt 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 austrocknen sehen < gesehen.*
Then have I last year the big swamp 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 (1898:130) writes 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 gelassen* (Goethe's *Reineke Fuchs*).

and the gloves where have you them hang left

b. *Man hatte Alles weggetragen, nur das Kofferchen ungeschlüssig, in der Mitte des Zimmers stehen gelassen.* (Goethe's *Wahlverwandtschaften*).

One had everything carried off, only the small chest undecidedly in the middle of the room stand let

c. *Etwas, das sie selbst auf eigene Hand sich ausgedacht oder sich einfallen gelassen haben* (Fichte)

Something that they themselves on their own hand thought up or themselves occur let 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 Brust zu besingen gebraucht

He would have only the stirring of his own 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 verfolgen gekonnt zu haben*

I am old enough, the developments 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 inter-

venes 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 such infinitives clauses. 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 treated 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 subsequent INFINITIVIZATION rule. 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*.¹²

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 ein gewaltiges Stirnhorn operativ entfernt haben lassen

A lady from Paris by the name of Dimanche is said (from) herself a great forehead horn by operation removed 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 marking 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-*.¹³

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 'preprogramed' 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.¹⁴

A second argument comes from a particular variant of German, H.J. Sassé (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], als wäre sie unrein, hätte auch nicht DÜRFEN [in Temple gehen]. (Luther)

The mother would have not should the name have borne as if were she impure would have also not should in the temple go

Finally, German permits the finite auxiliary *haben* to be omitted in poetic language 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 33.

(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) gedacht ich zu keiner Frist.* (Freiligrath)
The suffering that I heal could 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 WÜRDE 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 abführen 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 lassen WILL.*
that one oneself rather by Prussians conquer let will

But also occasionally:

(38)

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

Behaghel'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 in most 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 HEISSEN wohnen.*
(Goethe).
would have me only fate in a great area command live
- b. *Er behauptet, er habe auch bei dem besten Willen da nicht KÖNNEN sich in Schweigen hüllen.*
he claimed he has also in faith there not be able himself in silence cloak
- c. *durch welchen list hast du dass schif sus LASEN gan.*
by what trick have you the ship so cause go
(Gottfried)
- d. *ich han dass HOEREN jehen. (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 sub-categories 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 TÖÖRFFEN 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 nondialect 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 Southern 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 HÄTTE werden können* (instead of *getroffen werden HÄTTE können*
so that our camp by an avalanche not hit has be be able
(Middle Bavarian) or *HÄTTE 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. 5 and 11. We, nevertheless, present them in their entirety in order to be able to point out the differences.

(46)

a.	\$	→	Comp	S	
b.	S	→	NP	VP	TM
				[αF _i]	
c.	VP	→	VP	$\bar{V}$	F _i = {Modal, Perfect, Passive}
	[+F _k]		[αF _i]		
d.	VP	→	VP	$\bar{V}$	F _k = {Modal, Perfect}
	[+Pass]		[-F _i]		
e.	VP	→	(NP)...	$\bar{V}$	
	[-F _i]				
f.	$\bar{V}$	→	(P)	V	
	[-F _i]				
g.	$\bar{V}$	→	INF	V	
	[+Modal]				
h.	$\bar{V}$	→	PART	V	
	[+Perf]				
i.	$\bar{V}$	→	PART	V	
	[+Pass]				
j.	TM	→	$\left\{ \begin{array}{l} \text{Pres} \\ \text{Past} \\ \text{te INF} \end{array} \right\}$		

The lexicon will contain entries for the following subcategorized verbs.

(47)

V	=	{kun-, moog-, moet-, wil-, zul-}
[=Modal]		
V	=	{heb-, zij-}
[+Perf]		
V	=	{word-}
[+Pass]		

We wish to emphasize again that V and $\bar{V}$ in 46c-46i contain no features, because such features would be unnecessary. The convention 'feature percolation' will always project the feature from the VP or $\bar{V}$ onto its respective head $\bar{V}$ or V. Although there is near total agreement on which verb forms are periphrastic and which affixes are involved, there are also some fine points of difference. We list these without special comment.

The expected perfect form of the passive auxiliary in Dutch *geworden* is considered today to be old fashioned or non-standard. Instead of *geworden zijn* Dutch employs simply the single auxiliary *zijn* 'be'. Thus, one finds not 48a but 48b.

(48)

a. **Dit boek is door Querido uitgegeven geworden.*

b. *Dit boek is door Querido uitgegeven.*

This book has been by Querido published

Secondly, the modal verb *zullen* is used to construct the periphrastic future in Dutch. It patterns syntactically like the other modals and doesn't show the defective paradigmatic features of German *werden*, which has no forms other than the present tense and the subjunctive.

Finally, as will be shown at length, INFINITIVIZATION in Dutch has been completely generalized and can no longer interact with movement rules such as topicalization or with the screening effect of the complementizer *te*, unlike the German *zu*.

Let us begin by noting that, parallel to German, a modal verb in the perfect with dependent infinitive always leads to the DIC. For this reason 49a with an infinitivized participle represents the only acceptable alternative. Failure to apply this rule yields an unacceptable sentence regardless of order.

(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	<i>heeft kunnen lezen</i>	<i>gekund heeft/heeft gekund</i>
acceptable	have can read <i>heeft hoeven gooien</i> have need throw <i>heeft laten maaïen</i> have let mow <i>heeft zien maaïen</i> have see mow <i>*heeft gezien maaïen</i>	can have have be able <i>*heeft kunnen/*kunnen heeft</i>
least	<i>*heeft gelaten maaïen</i> <i>*heeft gehoeven gooien</i>	<i>*heeft hoeven</i> <i>*heeft laten</i>
acceptable	<i>*heeft gekund lezen</i>	<i>*heeft zien</i>

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	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
[+DIC]

. But unlike German, the list of verbs to which this rule must apply is not limited to these cases. Indeed, we were able find very few verbs, if any, occurring in the

V
[+DIC]

slot that would not cause the DIC.¹⁵ Therefore, the subcategorization feature [+DIC] can be eliminated from the rule altogether. The rule 51 must be written more generally to include such cases

[+DIC]

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/*hebben gestaan praten*
that they there quite some time have stand talk

c. *dat zij nog niet is WEZEN kijken/* is geweest kijken*
that she yet not has be look

a. *dat zij het nooit heeft WETEN op te lossen/*heeft geweten op te lossen.*
that she it never has be able to to solve

b. *dat hij het nooit heeft DURVEN vragen/*heeft gedurfd (te) vragen*
that he it never has dare ask

c. *dat zij mij heeft LEREN paardrijden/*heeft geleerd paardrijden*
that she me has teach horse ride

d. *dat zij het heeft MENEN te moeten ontkennen/*heeft gemeend te moeten ontkennen*
that she it has think to must deny

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 te hebben KUNNEN volgen/*volgen gekund te hebben*

I am old enough for the developments 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]	

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 we saw that the tendency to infinitivization in German only lessened. But, in Dutch, displacing complements by either of these movement rule destroys the environment for 56 totally; the infinitive simply may not be derived in such cases.

(57)

EXTRAPOSITION

*dat hij mij VERBODEN heeft het boek mee te nemen/*het boek mee heeft*

VERBIEDEN te nemen

that he me forbidden has the book along to take

(58)

TOPICALIZATION

Dansen (dat) heeft hij nooit gekund/ kunnen*

Dance that has he never could

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 ₂	Tensed Aux
German	Tensed Aux	MV	Aux ₂
Dutch	Tensed Aux	Aux ₂	MV

MV = main verb

Aux₂ = second auxiliary

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

AUX₂ 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/*horen huilenkon*
that I you could hear cry

Even for verbal complexes whose highest verb has many main-verb properties, inversion is obligatory, e.g. cases with *willen* 'want' and *proberen* 'try'

(64)

- a. *dat men haar niet wilde laten gaan/*wilde gaan laten*
that one her not wanted let go
- b. *dat hij het boek probeerde te laten verdwijnen/*probeerde verdwijnen te laten*
that he the book tried to let disappear

In all these instances the governing verb(s) obligatorily precede(s) the governed verb(s) (i.e. *wilde* before *laten*; *probeerde* before *te laten*). If there are two verbs present with or without intervening *te-* complementizers, then the inversion is almost exceptionless.

The alteration of order in Dutch (and German) auxiliaries in just these instances has been treated by Evers (1975) under the name of VERB RAISING, a schema that, as will be shown, involves more than just the order of elements. Since, in this section, we are interested first and foremost in discussing the environments for infinitivization and then its effects on the order of elements in surface structure, we postpone until later a detailed account of verb raising and continue to examine more facts about the order of elements in Dutch VP's.

The inversion of elements in German, as we now know, occurs basically whenever two infinitives (sometimes one) precede a third verb. There are, though, a number of significant factors making this rule gradient, e.g. what is the governing, 'highest' verb, what is the governing, right-most of the two infinitives and whether the complementizer *zu* intervenes. In Dutch we find that practically any two verbs in sequence will change places. Thus, leaving some details aside, one could write the structural descriptions of INVERSION as follows:

(65)

German		INVERSION	
a. SD:	V	- (V) +	V - V - Y
		$\begin{bmatrix} + \text{INF} \\ + \alpha \end{bmatrix}$	$[+ \beta]$
	<u>1</u>	<u>2</u>	<u>3</u> <u>4</u>

where α and β are features expressing various weightings in the rule application

Dutch		INVERSION	
b. SD:	X	V	V Y
	<u>1</u>	<u>2</u>	<u>3</u> <u>4</u>

Again as before, Dutch has the most general form of the rule showing no sub-categorization features.

Contrary to what was just said though, Dutch does evidence some interesting variation, but variation of a quite different sort from that in German. Finite modal verbs governing a single infinitive may invert to VO-order only optionally. Should either of the two stated conditions, fail to hold, however, then inversion 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/*bewegen zien kan*

that she it can see stir

(two infinitives requires inversion)

b. *dat hij beweerde het niet te kunnen zien/*zien te kunnen*

that he claimed it not to see

(an infinite modal governing a verb requires inversion)

Interestingly, 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 gelachen heeft/heeft gelachen.*

that he laughed has

b. *dat hij beweerde niet gelachen te hebben/te hebben gelachen.*

that he claimed not laughed to have

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 *brauch-/hoev-* 'need' to the causatives like *lass-/laat-* '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)

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*.

¹⁷

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 base rules for German and Dutch each contain an expansion $\nabla \rightarrow (P) V$; ∇ branches into an optional particle and V. The particle P (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. ¹⁸

(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 would 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):

(74)

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.

(75)

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.

(76)

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*

(77)

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 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 thema; 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 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
b.

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	-	$\left\{ \begin{matrix} V \\ \bar{V} \end{matrix} \right\}$	-	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 $\bar{V}$'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 by allowing only $\bar{V}$'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.¹⁹ In fact, the northern forms of Dutch seems to have chosen to apply VR to progressively smaller and smaller VP subconstituents. The introduction of 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 [naar school gaan].*
His father has him 6 years long let 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 't voetbal gaan]*
I would with your car be able to to 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/[$-F_i$] that contains the 'narrower' complements of the verb and excludes the indirect object.

(83)

- a. VP $\rightarrow$ NP ... $\bar{V}$
[$-F_i$]
- b. $\bar{V} \rightarrow$ NP ... 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 ⁿ	-	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 Lötscher (1978) presents 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 Lötscher regards these as rare and subject to still more restrictive conditions.²⁰ Thus, we assume that Zurich German can be formalized as follows:

(85)

	X	-	V ⁿ	-	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 a bicycle give want
(Lötscher:(25))
- b. *Mer händ em Hans es velo wele schänke*
(Lötscher:(25a'))
- c. *Mer händ em Hans wele es velo schänke*
(Lötscher:(25b'))
- d. *Mer händ wele em Hans es velo schänke*
(Lötscher:(25c'))

(87)

The verb second rule yields a sentence 86a, which represents a rare but possible order. 86b through 86d result from successively larger pieces of the VP being raised and right adjoined to nodes at different levels. 86b occurs, for example, when V'_1 *schänke* is raised and adjoined to V_2 *wele*; 86c is produced if, instead of V'_1 , V''_1 *es velo schänke* is right-adjoined to V_2 ; even $VP_1(V'''_1)$ can apparently be raised, given sentences such as 86d, where *em Hans es velo schänke* is right-adjoined to V_2 *wele*. Thus, Zurich 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/[+Perf]. Again, AUX-AFFIXATION and INFINITIVIZATION have already taken place and subcategorization features have been omitted for ease of reading.

(88)

In the first application of VR either V'_1 *ässe* or V''_1 *es gottlett ässe* is raised to V_2 *müese*. Either of the following two sentences can be derived:

(89)

a. *De Joggel hät es gottlett wele müesen [ässe]*

Jockel has a porkchop want have to eat

(Lötscher:(11a))

b. *De Joggel hat wele müesen [es gottlett ässe]*

(Lötscher:(11c))

Suppose however, that after an initial VR of the V'_1 *ässe* to *müese* the second application of VR does not move V'_2 but V''_2 . In such instances a constituent with the following structure is raised

(90)

$[V''_2 [VP [V''_1 [NP \textit{es gottlett}][V'_1 e]]] [V_2 [V[V_2 \textit{müese}][V'_1 \textit{ässe}]]]]$ which can yield the sentence:

(91)

De Joggel hät welen [es gottlett müesen ässe]

(Lötscher:(11b))

Given rule 85 the ungrammaticality of 92b is predictable. The highest constituent that can be moved by VR 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''_1 (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''_2 :

(94)

$[V''_2[S[NP \text{ syni chind}] [VP_1[V''_1 e]]] [V_2 [V[V_2 \text{ la}] [V''_1 [NP \text{ medizyn}][V'_1 \text{ studiere}]]]]]$

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

(95)

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).²¹ 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 of 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 with 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 and Low German reveal 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 OV 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 Germanic territory, passed a recalcitrant Frisian and Low German 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 *te* 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. *

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Eindnoten:

- 1 Accounts of the history of the DIC are at best confusing. With respect to its origin two hypotheses can be found in the literature. Lachmann and Grimm as well as many successors have held the HOMOPHONY HYPOTHESIS, seeing the seed of change in the identity of the prefixless past participle, especially of the verb *lassen* 'let', which into the Middle High German period was *lāzen*, *lān*, and the infinitive. Less common has been the ASSIMILATION HYPOTHESIS, held largely by critics of the first view, cf. for example Erdmann (1886). This latter analysis assumed that a participle form came to take the shape of its surrounding Infinitival environment. Wunderlich and Reis (1924:298-307) claim that the 19th-century German philologist Lachmann was the first to propose the hypothesis that the origin of the DIC could be found in prefixless strong participles of some verbs. Speakers then mistook the participle for the infinitive and the rule was carried over onto other verbs, '...deren Part. Prät. ebenfalls ohne *ge-* mit dem Infinitiv gleich lauteten, wie *heissen*, *sehen* und *pflügen* (mhd. Part. Prät. gepflegen). (...whose past participles without *ge-* would also be formed identically to the infinitive), Dal (1966:113). Grimm 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 (those ending in *-en*) as well as weak ones (those ending in *-t*). According to Grimm *helfen*, *hören*, *lehren*, *lernen* and *fühlen* were added to the DIC class a little later.

The data presented by Erdmann (1886), Kern (1912) for Dutch and Behaghel (1924), do not fully support the HOMOPHONY HYPOTHESIS. Wunderlich and Reis (1924) also note that in a study by Kurrelmeyer it was found that the infinitivus pro participio occurred for *tun*, *helfen*, *hören*, *heissen*, *lassen* and somewhat later for *sehen*, *müssen* and *türren*. Not until the 15th century is the DIC attested for verbs such as *mögen*, *wollen*, *können*, *sollen* and *dürfen*. Erdmann (1886:110-111) points out that the Lachmann/Grimm account leads to wrong predictions, since only the prefixless past participles of *sehen*, *lazen* and *heizen* would yield the requisite identity with infinitives, i.e. *(ge)sehen*, *(ge)lazen*, *(ge)heizen*. Other forms of so-called preterito-presentia fail to be identical because of vowel differences, cf. *(ge)kunnan* instead of the usual *gekonnt*, *(ge)wizzen* instead of *gewusst* and that some strong verbs with the DIC today would never have had identical participles and infinitives because of Ablaut, cf. *helfen* vs. *(ge)holffen*. Behaghel (1924) and Kern (1912:46-53) notice further difficulties. Behaghel claims that the Old High German past participle of *lazen* was *gilazan* and *lazan* is never attested. Kern, however, doesn't wish to exclude the possibility of this unattested form (parallel to *heizen*). He adds, though, that the *ge-* prefixed past participle is the original one and that only a limited number of past participles could pass unprefixes. Furthermore, Kern demonstrates that even a revised homophony account based upon *lassen* and *heissen* does not work for Dutch, which already had a richly developed DIC in the 13th century. Without exception the past participles of *laten* and *heten* in Middle Dutch were *gelaten* and *geheten* and still the infinitives is the normal form in the DIC construction. Furthermore, preterito-presentia also required *ge-* as participles and yet showed up as infinitives in the DIC. Kern bases his account upon data collected by Van Helten (1892). This latter named study shows that the DIC sometimes gave rise to unoriginal participles such as *gewillen*, instead of the usual participle *gewilt* (*willen*).

It seems to us, given this impressive array of arguments, that the HOMOPHONY HYPOTHESIS has been severely challenged and requires new evidence if it is to be retained at all. We find it quite impossible to decide from the attested cases which of the two hypotheses is more convincing and what environments might have initiated the change. It does seem to us, however, that Dutch was ahead of German in general.

The results of the study we are presenting in this paper probably favor the ASSIMILATION HYPOTHESIS to the extent that an infinitive environment for the rule is needed. In one sense our account remains at odds with the historical data. We predict on the grounds of present-day variation that the modal verbs of German were the first to undergo the change and the sensory verbs the last. This chronology is not supported by the order of first citations in documents. Yet, the historical sources are often manuscripts that have gone through the hands of many scribes from many different areas. The reliability of such sources must be in doubt. So much for the history of the FORM of the DIC.

Our account does shed light on the history of the POSITION of elements in the DIC. The German data show us that the unexpected position results most likely for *haben* and less likely for *werden* and the modals. As Naro (1981) has shown for Brazilian Portuguese syntactic change often begins in the most salient environment. Identity of FORM of participle and infinitive would be most conducive to change, since here the opacity of FORM is at its greatest, as Grimm said 'the true infinitive here would be counterintuitive'; a change in syntax then marks the form that has become opaque. Also, the nature of some of these historical changes may have been clouded by reanalysis. In fact, VERB RAISING seems in some cases to be just such a rule.

- 2 Reis, in our opinion, is employing 'core grammar' in a sense that apparently differs from that in Chomsky (1976).
- 3 Implicit in the frustration of Kohrt and Reis rests the idea that variation complicates and weakens an analysis. Yet, Labov's work has made clear that the opposite should be true. Indeed, two approaches have been proposed to incorporate language variation into linguistic theory: (a) the *wave model-implicational scale* treatment advocated by Bailey (1973) and Bickerton (1971) and (b) the *variable rule-as-community grammar* treatment found in diverse forms in Labov's writing, cf. Kay (1978) for comparison and discussion. In dealing with variation in German and to a lesser degree in Dutch we have made use of the former, since this model predicts that variation will occur only at the leading edge of change and that lects already having been 'rolled over' by the change will show only categorial behavior. This is just what is found.
- 4 Hoeksema (1980) represents an approach to VERB RAISING and the DIC in Dutch from a non-transformational perspective. He uses Gazdar's (1980) metarule concept in order to write 'multiplication rules'.
- 5 The only cases of the DIC in our Frisian corpus involve the governing verbs *skyne* 'appear, seem' and *begjinne* 'begin'.
- 6 We ignore here the necessary expansions for verbal complements.
- 7 Notice that the inacceptability of *werden* in 10 depends on its status as the helper in the periphrastic future. When *werden* occurs as the auxiliary for the passive, it may be used in a full range of environments.
- 8 The projection of features of a given node A onto the head node dominated by A can be viewed as a reflection of head-complement structure. Endocentric constructions typically have one

member, the head, belonging to the same category as the complex phrase as a whole. Feature grammars of the type employed here use subcategorization in the expansion rules in order to produce just the proper set of phrase markers and avoid needless transformational and/or lexical filtering. Their liability rests, of course, in the proliferation of categories (as subcategories). Gazdar, Pullum and Sag (1980) have developed an analysis of the English verb complex in terms of 'feature grammar' that eliminates the need for AFFIX-HOPPING. This proposal incorporates both *feature percolation* and the cross classification of the VP with subcategorization. We adapt here their analysis for the German situation.

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

b. $S \rightarrow \{NP\} VP$

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

c.

$VP \rightarrow VP \bar{V}$ $\begin{bmatrix} \alpha \\ +AUX \end{bmatrix}$	α	β	V's under $\bar{V}$
	+Modal	+INF	könn-, müss-, dürf-, soll-, woll-, mög-
	+Perfect	+PART	hab-, sei-
	+Fut	+INF	werd-

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

d.

$VP \rightarrow (NP) \dots \bar{V}$
 $\begin{bmatrix} \alpha \\ -AUX \end{bmatrix}$

e.

$\bar{V} \rightarrow (P) V$
 $\begin{bmatrix} \alpha \\ -AUX \end{bmatrix}$

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

- 9 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.
- 10 Paul (1968/1920) and Grimm (1969:1898) 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.
- 11 This sort of rule resembles Labov's variable rules in many respects. In Labov (1969:737, 738) 'a specific quantity ϕ (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 possible apply.’
 ϕ is equal to 1 for categorial rules, of course; here, for example, *modal*.
 Our approach employs greater-than signs, which probably reflect values on some markedness scale rather than frequency of occurrence.

- 12 The respective derivation of the complex *haben verfolgen zu können* vs. *verfolgen gekonnt zu haben* occur as follows.

(i)

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

(ii)

underlying	<i>verfolg- INF+könn- PART+hab- zu+INF</i>
INFINITIVIZATION/INVERSION	<i>INF+hab- verfolg- INF+könn- zu+INF</i>
AUX-AFFIXATION	<i>INF+hab- verfolg+INF zu könn+INF</i>

- 13 The derivations of *entfernt haben lassen* vs. *haben entfernen lassen* by reordering comes about as follows:

(i)

underlying	<i>entfern- INF+lass PART+hab INF+soll</i>
AUX-AFFIXATION	<i>entfern+INF lass+PART hab+INF soll</i>
INFINITIVIZATION	<i>entfern+INF +lass+INF hab+INF soll</i>
INVERSION	<i>hab+INF entfernen+INF lass+INF soll</i>

(ii)

underlying	<i>entfern- INF+lass PART+hab INF+soll</i>
INVERSION	<i>entfern- PART+hab INF+lass INF+soll</i>
AUX-AFFIXATION	<i>entfern+PART hab+INF lass+INF soll</i>

- 14 Example 31 is adapted from Grimm (1969/1898). 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]
- 15 In fact, there are only two: *schijnen* 'appear', which allows neither the DIC nor the participle (also true of *lijken* 'seem'), and *beginnen* 'begin', which can surface as a participle or infinitive with variation among speakers.
- 16 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 unexpected fashion here as well. *Zijn* has two infinitives: *zijn* and *wezen*. However, in 52c only *wezen* and not the usual infinitive FORM of 'be' *zijn* is required. This form may well be the last visible remnant of a Middle Dutch past participle *gewezen*, which today always takes the shape *geweest*. It is unclear to us whether such evidence supports the homophony account of the origin of the DIC proposed by Grimm and Lachmann or not, cf. footnote 1.
- 17 There are some aspects of inversion not covered in these tables that represent an interpretation. As depicted here German finite *haben* must obligatorily invert. However, the correct form is usually *gelacht hat* 'laughed has' and not *hat gelacht*. This indicates that other factors influence invertability in German. Furthermore, it is difficult to indicate for Dutch that optional inversion with *zullen* and the other modals depends on the presence of only one INF.
- 18 The German examples in 72 with the Dutch word order **auf wollte stehen/aus liess spreken* are, of course, also unacceptable for reasons not having to do with particle splitting.
- 19 Cf. the discussion in Koelmans (1965).
- 20 Zurich German chooses to disregard the presence of a complementizer in applying 85. Unlike Standard German, one finds sentences such as:
(i) *Er fing das Buch an zu lesen.*
he began the book Part to read
Both the particle *an* and the complementizer *zu* can separate the verb *lesen* and its immediate direct object *das Buch*. From Lötscher's data (1978) one must conclude that there is third (probably very limited) way languages may vary their respective rules of Verb Raising. Most allow only V' to be affected by this rule, whereas Zurich German tolerates either V or V'.
- 21 The inversion/VR facts of Afrikaans closely resemble those of Dutch with some idiosyncrasies, part of which can also be found in Dutch dialects and part of which are peculiar to Afrikaans, (a) Past Participles never invert with the governing auxiliary (similarly for Belgian Dutch).
(i) *dat hulle (vir) Piet raakgeloop het/*het raakgeloop.*
that they (for: Obj. Marker) Piet met have
(ii) *dat die Kind deur sy eie pa geslaan is/*is geslaan.*
that the child by his own dad beaten has been
(b) Past Participles are incorporated in the Verbal Complex if the governing auxiliary is *het* 'have', whereas they are not when governed by a passive auxiliary (this resembles the option of incorporating any past participle in the verbal complex in Belgian Dutch):
(iii) *dat hulle (vir) Piet kan/kon raakgeloop het*
that they for Piet can/could met have
(iv) *dat hy ontslaan kan word/*kan ontslaan word.*
that he fired can be
(Note the optional application of Preterite Assimilation, a rule peculiar to Afrikaans.) (c) If *het* governs two infinitives it must follow that cluster, and if the first infinitive it governs is a modal auxiliary Preterite Assimilation is obligatory:
(v) --, *dat ek haar hoor sing het*
--, that I her hear sing have
(vi) --, *dat hy niet kon /*kan kom het nie*
--, that he not could/* can come have not
This exceptional ordering of the perfect auxiliary and two infinitives can also be found in some Belgian dialects of Dutch (cf. Pauwels 1965) and in Zurich German (cf. Lötscher 1978). Other aspects of VR in Afrikaans we leave out of consideration and we refer the reader to Ponelis (1979).

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