Not another book on Verb Raising

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CHAPTER 1

Preface

1.1 Introduction[1]

All humans have language. It is a part of our biology (Lenneberg 1964). Compared to the language of other animals, human language is much more complex in how meanings are linked to sounds (see Hauser et al. 2002 for discussion). A central aspect of the field of linguistics is to investigate what makes human language special. A first notable property of human language is that it comes in so many different forms. There are many languages, each with its own properties. The word order in Japanese is, for instance, very different from the English word order.

Assuming that language is part of human biology, it is remarkable that languages can vary so much. Particularly striking in this respect is that a healthy child can acquire any language spoken in the world. A partial explanation for this issue might be that the variation observed in human languages, while abundant, is nevertheless finite. Languages can only vary to a certain extent (Chomsky 1995). Such a view makes it easier to account for the relative ease of language acquisition, as it is not the case that *anything goes*.

Indeed, language variation has its limits. Word orders that are logically possible are empirically absent in human languages. These gaps may in some cases be coincidental. In other cases, they might follow from properties of the human cognitive language system (if there is such a thing), or from more general properties of human cognition. In this dissertation, I present two illustrative

[1] A part of this subsection is taken and adapted from the introduction of the forthcoming paper by Barbiers, Bennis, and Dros-Hendriks.

examples of clear limits in variation. I argue that these limits follow from properties of human grammar.

In order to determine the properties of human grammars, it is particularly useful to compare languages that are minimally different from each other (Kayne 2000, 2005; Barbiers 2009, among others). In such a way, the effects of confounding variables can be minimized. Kayne (2005:8-9) phrases this as follows: "[C]omparative work taking, for example, English and Japanese as a starting point might lead almost anywhere, at the risk of making the comparative work not impossibly more difficult, but certainly more difficult. Putting things another way, we might say that microcomparative syntax work provides us with a new kind of microscope with which to look into the workings of syntax." For this reason, this dissertation focusses on languages that are very similar to each other: varieties of Dutch and Frisian. These varieties are related to each other and have many commonalities. As a result, the amount of variation is reduced to a limited number of variables, and it becomes more straightforward to analyze the differences between these languages.

This dissertation will focus on the variation in word order in these variaties, which is a rather infrequent phenomenon, as is clear from the Syntactic Atlas of the Dutch Dialects (SAND I & II, Barbiers et al. (2005, 2008)). Most variation is found in the domain of morphosyntax, and thus relates to variation in form rather than in order. In those cases the form of a particular word varies across varieties. Well-known examples concern subject pronouns, relative pronouns, complementizers and verbal inflection (cf. SAND I). Another issue that has been discussed in the literature quite extensively (cf. Barbiers 2008a for an overview) is the phenomenon of syntactic doubling, often found in situations in which both positions are independently available, as in the case of relative pronoun doubling, for instance in *Dit is de man* ***die*** *ik denk* ***die*** *ze gezien hebben* ('This is the man REL.PRON. I think REL.PRON. they saw'). Generally, there exists a non-doubling variant. In this specific case, the second relative pronoun can be replaced by the complementizer *dat* 'that'. In doubling constructions it is not word order that varies, but the spell-out of (multiple) positions in a movement chain.

Compared to morphosyntactic variation, the word orders observed within the Dutch language area is remarkably constant. For instance, all 267 varieties that are part of the SAND-research show exactly the same pattern for the placement of the finite verb. There is no variation with respect to *verb second*, although the placement of the finite verb is variable cross-linguistically, as is clear from the vast literature on Verb Movement in for instance the Germanic and Romance languages. Similarly, although there is much cross-linguistic variation in the ordering of verbs and objects, all Dutch varieties have the verb following the object in subordinate clauses. Without exception, Dutch varieties have OV-order and move the finite verb to the beginning of the clause in clauses without a complementizer. Similarly, the order in nominal phrases is rather strict. There is for instance no dialectal variation in the position of the

adjective in the nominal phrase. It always precedes the noun and is preceded by the determiner. This is by no means the 'logical order' in nominal phrases, given that other Germanic languages (Scandinavian) and Romance languages (e.g. French) show different orders in the nominal domain. It is thus remarkable that the DP-order is constant across varieties of Dutch.

However, there is one domain in which word order variation is abundant. This concerns the famous verb clustering phenomenon in Dutch (and German), where all verbs cluster together in a clause-final position – with the exception of the finite verb in the main clause. When more than one verb occurs at the end of the clause, for instance a main verb and one or more auxiliary or modal verbs, the order appears to be unstable across varieties. In a subordinate clause in which the main verb is accompanied by two modals, four orders are observed (out of six logically possible orders). This is shown in (1).

(1) a. Ik vind dat iedereen *moet kunnen zwemmen.* V_1-V_2-V_3
I find that everyone must can swim
'I think that everybody should be able to swim.'

b. Ik vind dat iedereen *moet zwemmen kunnen.* V_1-V_3-V_2

c. Ik vind dat iedereen *zwemmen kunnen moet.* V_3-V_2-V_1

d. Ik vind dat iedereen *zwemmen moet kunnen.* V_3-V_1-V_2

While verb clusters display abundant variation, this variation is not without limits (see also Barbiers 2009). The limits of variation are particularly clear in two respects. First, certain orders of verbs cannot be found. While many speakers of Dutch allow both the orders in (2a) and (2b), the order in (2c) is never observed. The reason for this restriction is not immediately apparent. I argue that this is not by chance, but a result of properties of human grammar.

(2) a. ...dat hij de wagen $moet_1$ $hebben_2$ $gemaakt_3$.
...that he the car must have made
'...that he must have repaired the car.'

b. ...dat hij de wagen $gemaakt_3$ $moet_1$ $hebben_2$.
...that he the car made must have

c. * ...dat hij de wagen $hebben_2$ $gemaakt_3$ $moet_1$.
...that he the car have made must

There are no clear semantic or pragmatic differences between these sentences, although there are differences in stylistic preferences (see Coussé 2008, and references cited therein). The different orders found in verb clusters appear to be determined by:

(3) (i) geographical location of the language variety
(ii) type of auxiliaries in the verbal cluster
(iii) hierarchy of auxiliaries in the verbal cluster

Another clear limitation in language variation lies in the elements that can occur inside the verb cluster. In most varieties of Dutch, both orders in (4) are acceptable.

(4) a. Ik vind dat Jan Marie *moet* **op** *bellen.*
I find that Jan Marie must up call
'I think that Jan should call Marie.'

b. Ik vind dat Jan Marie **op** *moet bellen.*
I find that Jan Marie up must call

While some non-verbal items, such as particles, can both precede or interrupt the verb cluster, many non-verbal items can only precede the verb cluster. Sentence (5b) is, for instance, ill-formed in standard Dutch (but acceptable in West-Flemish), and sentence (6b) is ill-formed in both varieties.

(5) a. ...dat hij daarom **zacht** *moet praten.*
...that he therefore quietly must talk
'...that he therefore has to speak quietly.'

b. % ...dat hij daarom *moet* **zacht** *praten*
...that he therefore must quietly talk

(6) a. ...dat Jan morgen **zeker** *moet werken.*
...that he tomorrow definitely must work
'...that he therefore definitely has to work.'

b. * ...dat Jan morgen *moet* **zeker** *werken.*
...that he therefore must definitely work

Where the type of auxiliary plays a role in the order of verbs, no such effect is observed on the acceptability of non-verbal material inside the verb cluster.[2] The acceptability of this construction is solely determined by:

(7) (i) geographical location of the language variety
(ii) type of non-verbal element in the verbal cluster

Most often speakers are not aware of these types of word order differences. Superficially, it appears to be rather arbitrary to select one of these orders. However, while the variation in this domain might seem random, clear patterns emerge once one considers the geographic distribution of the various orders across the language area. No existing theory of verb clusters can account for these patterns, and they would consequently have to be assumed to be a sociolinguistic accident. I demonstrate, however, that these patterns are not random, but systematic. I argue that they largely follow from properties of the human linguistic system.[3] In this way, this dissertation provides a principled account of the properties of verb clusters.

[2] See chapter 5.
[3] This approach is in line with Weinreich (1954).

I am far from the first to write about verb clusters, so I first demonstrate in the next section why this dissertation is very different from all previous work on verb clusters.

1.2 General relevance of this dissertation

This dissertation contains many aspects that set it apart from previous discussions of verb clusters. It has a different starting point; it takes a different standpoint; it builds on ideas from a variety of linguistic frameworks; it uses a different methodology; and it presents a number of newly discovered findings. I briefly discuss all these aspects here.

Note that this dissertation is based on three-verb clusters containing modal and aspectual auxiliaries. I will not discuss verb clusters with so-called 'lexical restructuring verbs', such as *proberen* 'try'. The interested reader is referred to Susi Wurmbrand's work on verb clusters (see for instance Wurmbrand 2001, 2017).[4] I also do not address verb clusters containing the infinitival marker *te*. I refer the reader to work by Cora Pots (e.g. Pots (forthcoming)), who is currently investigating the profuse variation observed in those constructions.

1. The starting point for this dissertation is the geographic distribution of verb cluster orders across verb types. As far as I am aware, no other theory takes these patterns into account – with the exception of Barbiers and Bennis (2010), on which the current approach is based. The most remarkable patterns are listed here.

    - All varieties of Dutch display various orders across verb types, except for many Frisian varieties, where only the 3-2-1 order is observed.
    - The geographic distribution of verb cluster orders depends on the types of verbs involved.
    - The word order variation in these languages contrasts with a rigid ordering in the nominal domain.
    - The 1-3.PTCP-2 order, particle incorporation and verb cluster interruption show similar geographic distributions.
    - The 1-3.INF-2 occurs only in border varieties.
    - In West-Flemish varieties, non-verbal material can occur inside the verb cluster. The acceptability of such constructions decreases geographically in moving from West-Flanders to the north.

    Even though Dutch verb clusters have been a topic of research since at least 1975 – with Arnold Evers' influential dissertation – there still is no consensus on the underlying structure of verb clusters. I argue that the

[4] On the different properties of these constructions amongst the world's languages see Wurmbrand (2014, 2015).

geographic distribution of verb clusters can shed light on the underlying structure of verb clusters.

2. This dissertation takes a different theoretic standpoint: all verb clusters are base-generated. This assumption is not new. However, it is additionally assumed that only purely ascending (1-2-3) and purely descending (3-2-1) orders are three-verb clusters. The remaining orders that are observed in Dutch and Frisian varieties involve non-verbal material. As a result, 'particle incorporation' and the 1-3-2 order can be argued to have a similar syntactic structure (see also Evers 2003, among others).

3. According to current Minimalist theory (Chomsky 2005, 2007, 2008), multiple factors play a role in the shaping of human languages. Such a theory necessitates the need to investigate multiple potential factors that might affect speakers' word order preferences. For this reason, ideas from other frameworks, such as functional approaches, are taken into consideration here. It is demonstrated that those ideas supplement, rather than contradict, the findings in generative approaches. By staying away from the controversial topics in generative research, such as whether or not *Merge* is specific to language, I think this dissertation can appeal to all types of linguists.[5]

   I think it is crucial to mention that Merge by itself is not controversial for most linguists. Although it is associated with Noam Chomsky and Generative Grammar, most linguists outside the generative framework also assume that human cognition contains some type of mechanism that derives the hierarchic structure of language. The existence of a neurophysiological mechanism that combines small linguistic units into larger hierarchic structures has been supported by neuroscientific research (Ding et al. 2016).

4. I made use of a different methodology. In my investigation, I made ample use of grammatical judgements in order to determine what orders are possible in language varieties. But I also made use of an unconventional approach that allowed me to get judgements on varieties that were not used by the informants themselves, namely a comparative ranking task. Informants were asked to rank word orders with respect to each other. This task included (i) word orders of the informant's own variety, (ii) word orders that are observed in language varieties that are different from the informant's own variety, and (iii) word orders that are not observed in any language variety. The informants could only proceed with the questionnaire if they had ranked all sentences in a single order. As a

[5] Merge is a syntactic operation that combines two syntactic units into a new syntactic unit. For instance a verb *walk* and a noun phrase *the people* can be combined into a verb phrase *the people walk*. According to Chomsky, Merge is a fundamental part of the human linguistic system.

consequence, the informants were forced to assess and compare orders that they did not use themselves.

5. This dissertation introduces a number of original ideas and new findings:

   - The geographic distribution of verb orders provides insight in the grammatical structure of verb clusters.
   - Speakers possess knowledge of word orders that can occur in language varieties different from their own. This can be explained by properties of human grammar. Both familiarity and properties of language processing are insufficient in accounting for these results.
   - Verb clusters are base-generated in a low position, within the lexical domain.
   - There is a clear cut-off point for cluster interruption. Only elements that are merged in a syntactic position below this cut-off point are acceptable inside the verb cluster.

1.3 Outline of the chapters

Chapter 2 will discuss problems of previous accounts of verb clusters. While these analyses are well equipped to derive the observed orders of verbs, they all have problems motivating the variation. Additionally, these theories cannot explain the geographic distribution of different orders of verb clusters, which depends on the types of verbs in the cluster. Crucially, I demonstrate in this dissertation that these patterns are systematic. I argue that they follow from properties of human grammar.

Chapter 3 presents my analysis of verb clusters, which is a result of joint work with Sjef Barbiers and Hans Bennis. I show that the merge procedure can derive all observed orders of verbs in a cluster. Unlike in previous approaches, the formation of verb clusters therefore does not require any special movements and operations. Such movements are even required for most existing base-generation approaches, in order to account for the 3-1-2 order.

It will be argued that the variation in the order of verbs is a result of the following three options made available by the language system:

(i) the direction of linearization;

(ii) the categories involved;

(iii) the timing of Merge.

The direction of linearization can lead to either ascending (1-2-3) or descending (3-2-1) verb orders. Remaining orders involve non-verbal material. The timing of Merge can lead to differences between the 1-3-2 and 3-1-2 order, as 3 can be merged before or after merging 1 with 2.

This theory can account for a number of special properties of verb clusters. Most importantly, it provides an account for the observed geographic distribution of verb clusters. For instance, the theory can explain why the 1-3-2 and 3-1-2 orders occur in grammars of Dutch that have ascending (1-2), rather than descending (2-1), verb clusters. In this approach, the 1-3-2 and 3-1-2 orders involve an ascending verb cluster with a non-verbal 3. Additionally, the theory can explain why the 1-3.PTCP-2 order is most common in the region where non-verbal material can interrupt the verb cluster.

Chapter 4 further looks at the source of the variation observed in verb clusters. Assuming that variation is the result of a range of options made available by the language system, the question arises how language users choose between the options available to them. For instance, what determines if a participle is preferred in a position preceding the auxiliary (3.PTCP-1-2), or in a position following the auxiliary (1-3.PTCP-2)? The theory of *Third factor minimalism* (Chomsky 2005) makes the prediction that general principles of computation can drive speakers' preferences. This chapter demonstrates that processing principles play a limited role in the order of verbs in a cluster. No processing model can account for all speakers' preferences. However, a combined model that takes both the grammar and language processing into account comes very close to explaining the results.

Chapter 5 further examines the choice between different orders of Merge by considering interruptions of verb clusters by non-verbal material. Properties of cluster interruption further support the claim that verb clusters are base-generated. The main data on which this is based are:

1. The lack of freezing effects. There are no problems in extracting from DPs that precede the verb cluster, suggesting that these elements are base-generated in their surface position.

2. The position of adverbs. Manner adverbs can occur in three positions in West-Flemish three-verb clusters: (ADV)–V_1-(ADV)–V_2-(ADV)–V_3. It will be demonstrated that all theories of cluster formation that assume movements in syntax, or at PF, have difficulties deriving these possible positions.

3. The types of adverbs that can interrupt the cluster with different types of auxiliaries. While the type of adverb has a clear effect on the acceptability of cluster interruption, no such effect is observed for the type of auxiliary. All types of auxiliaries obligatorily follow all *v*P-external adverbs in all varieties of Dutch. This clearly indicates that all auxiliaries are generated in a low position.

A particularly interesting observation that will be discussed in chapter 5 is that there is a clear cut-off point for cluster interruption in the syntactic structure; only elements that are merged below this point can interrupt the verb cluster.

Chapter 6 concludes the dissertation.