

A new and challenging view on verb clustering^{*}

On *Not another book on Verb Raising* by Lotte Dros-Hendriks

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Abstract: This review article discusses Lotte Dros-Hendriks' PhD thesis *Not another book on Verb Raising* (2018). A ground-breaking book, it provides a simple, principled account for the geographical distribution of the various word orders found in so-called “verb” clusters in the Dutch dialects. It will be shown, however, that the account is based on a number of controversial and insufficiently motivated premises. This article raises a number of potential problems for these premises, which should find a satisfactory solution before we can wholeheartedly adopt the core insights provided by this interesting work.

Keywords: verb clustering, linearization, adjectival participle, nominalization

1 Introduction

This review article discusses Lotte Dros-Hendriks' PhD thesis *Not another book on Verb Raising* (henceforth: LDH).¹ The book is a highly welcome contribution to the vast literature on verb clustering in that it sets out to provide a principled account for the geographical distribution of the various word orders found in two- and three-verb clusters in the Dutch

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¹ LDH is freely available from lotpublications.nl/not-another-book-on-verb-raising, and some parts of it are also published in Barbiers et al. (2018). The reader would do well to download the book, as the maps in it that will be discussed, unfortunately cannot be reproduced in legible form: the information they provide is color-coded while this journal is printed in black and white. Some of the maps discussed here are available in an even higher quality in SANDII, which is freely available from oopen.org/search?identifier=341458. The following abbreviations will be used: ASP(ectual verb), AUX(iliary verb), INF(itive), MOD(al verb), PART(icipule), and ACI (verbs that trigger the *accusativus cum infinitivo* effect).

dialects, as established earlier in Barbiers et al. (2008), that is, the *Syntactische Atlas van de Nederlandse Dialecten* [*Syntactic Atlas of the Dutch dialects*], volume II (henceforth: SANDII). SANDII has established that clusters of the form MOD₁-MOD₂-INF₃ (*moet kunnen zwemmen* ‘must be able to swim’) and MOD₁-AUX₂-PART₃ (*moet hebben gemaakt* ‘must have made’) can occur in four of the six logically possible orders: 3-2-1 in the northern (especially Frisian) part of the Netherlands and combinations of 1-2-3, 1-3-2 and 3-1-2 in the remaining parts of the Netherlands and in Belgium; the order 2-1-3 does not occur and the order 2-3-1 is restricted in that it occurs only in clusters of the type AUX₁-ASP₂-INF₃ (*is gaan zwemmen* ‘has gone swimming’) in Belgium.² Section 2 of this article discusses the main ingredients of LDH’s account of this distribution, which are formulated in the form of the three binary parameters in (1). LDH shows convincingly that these parameters provide a highly elegant description of the geographical spread of the various orders in verb clusters of the form MOD₁-MOD₂-INF₃ and MOD₁-AUX₂-PART₃.³

- (1) a. Parameter 1: A dialect is uniformly {descending/ascending} in the linearization of verbs.
 b. Parameter 2: A dialect {does/does not} have verbal participles.
 c. Parameter 3: A dialect {does/does not} have nominalized infinitives in “verb” clusters.

The parameter approach in (1) breaks with the traditional view that the full range of variation in the word order of verb clusters should be described with the help of some special means. It is normally assumed that one order is base-generated, while all other orders are derived by means of movement, as in (2a-b), or inversion in the phonological component, as in (2c), although there are also proposals maintaining that all available orders should be base-generated, as in (2d). LDH (ch.2) argues against these earlier analyses by showing that they do not satisfy the rigid methodological demand that optionality be excluded from the

² I trust that the reader will be able to construct the intended surface orders, in the case at hand *gaan₂ zwemmen₃ is₁*. I will largely ignore the 2-3-1 order in the present article, as discussing it would add little to my critical assessment of LDH. I will briefly sketch LDH’s analysis of this order in note 9.

³ LDH occasionally uses quotation marks in “verb” clusters, as in (1c), because she claims that some of the strings analyzed as three-verb clusters in the earlier literature should be reanalyzed as two-verb clusters with a nominal or adjectival complement.

grammar. Note that this chapter also evaluates the competing approaches on the basis of various other properties but these will not play a role in the discussion provided here.⁴

- (2) a. Syntactic movement approaches from a head-final (OV) base
- b. Syntactic movement approaches from a head-initial (VO) base
- c. PF inversion approaches
- d. Base-generation approaches

LDH (ch.3) meets this methodological demand by assuming that syntax creates a (uniform) hierarchical structure, which is subsequently linearized in accordance with parameter 1. Depending on the setting of this parameter in the language under discussion, verb clusters of the form MOD₁-MOD₂-INF₃ and MOD₁-AUX₂-PART₃ are linearized in the order 1-2-3 or in the order 3-2-1. This entails that the attested 1-3-2 and 3-1-2 orders are *not* verb clusters but configurations of the form V₁-X₃-V₂ and X₃-V₁-V₂, respectively, where X is nominal when we are dealing with an infinitival form and adjectival when we are dealing with a participial form.⁵ These ingredients (unidirectional linearization of verb clusters and the non-verbal status of X₃ in the apparently mixed orders), which are crucial for LDH's account of the geographical spread of the attested orders of MOD₁-MOD₂-INF₃ and MOD₁-AUX₂-PART₃, will be scrutinized in more detail in Sections 3 and 4 below, and we will see that there are still a number of problems that necessitate more discussion in the future. Section 5 concludes by providing my assessment of LDH's account of the attested word variation in Dutch verb clusters.

2 Highlights from the book

LDH is a study of verb clustering, that is, the phenomenon found in various Dutch and German varieties that verbs tend to align in sentence-final position, as is illustrated for

⁴ As noted by LDH (p. 17), the base-generation approach wrongly excludes the 3-1-2 order; this order can only be derived by movement of V₃. Nevertheless, LDH adopts some version of this approach, which is made possible by the claim that element 3 in this order is in fact not verbal.

⁵ The version given above simplifies LDH's proposal. LDH (p. 76-77) notes that the V₁-INF₃-V₂ order only occurs at the border of the northern 3-2-1 and southern 1-2-3 areas (see map 2.5, p. 40), and therefore assumes that this order can be analyzed as a "mixed" verb cluster resulting as a transitional phenomenon. I will ignore this analysis in what follows, as it will not affect my general assessment of the proposal, while noting that, whatever the virtues of allowing verb clusters of the form V₁-INF₃-V₂

Standard Dutch in (3a). The word order in verb clusters is relatively free, as is clear from the fact that many speakers of Standard Dutch also allow the order in (3b), but it is not the case that anything goes. The word order is partly language-specific, as is clear from the fact that the order in (3d), which is found in some northern varieties of Dutch, is impossible for most other speakers of Dutch.⁶ Furthermore, Belgian speakers tend to use order (3c), which is marked or even impossible for other speakers of Dutch. The two remaining logically possible orders (*hebben moet gemaakt* and *hebben gemaakt moet*) are not attested at all; I will return to this when I discuss Table 2 below.

- (3) a. Ik vind [dat Jan de wagen voor 3 uur moet hebben gemaakt]. [MOD₁-AUX₂-PART₃]
 I find that Jan the car before 3 o'clock must have made
 'I think that Jan must have repaired the car before 3 o'clock.'
- b. Ik vind [dat Jan de wagen voor 3 uur gemaakt moet hebben]. [PART₃-MOD₁-AUX₂]
- c. Ik vind [dat Jan de wagen voor 3 uur moet gemaakt hebben]. [MOD₁-PART₃-AUX₂]
- d. Ik vind [dat Jan de wagen voor 3 uur gemaakt hebben moet]. [PART₃-AUX₂-MOD₁]

Verb clustering has been one of the central concerns of generative grammar ever since Evers' (1975) seminal study, which argues that verb clusters are derived by means of a *Verb Raising* transformation. The ensuing research has resulted in an ever growing body of empirical knowledge concerning the word order variation in verb clusters of various kinds found both *across* and *within* Dutch and German varieties; I refer the reader to Wurmbrand (2017) for an extensive overview.

Wurmbrand (2017: 4706) also observes that “[t]he theoretical tools available for deriving verb clusters are diverse [...] and the accounts on the market are generally successful in generating the different verb cluster configurations attested”. LDH (p. 44) takes the position that this state of affairs should not be considered desirable, as we are not primarily interested in *possible* ways of deriving the attested verb orders, but in the *correct* way of deriving them: “many of the existing accounts of verb clusters are not much more than descriptive rule systems that are not deeply motivated”. LDH is an attempt to answer the

as a transitional phenomenon may be, it clearly undermines the conceptual motivation of LDH's parameter approach by allowing exceptions to parameter 1.

⁶ The use of the notion *language-specific* in this context is justified in light of the fact that dialects are full-fledged, autonomous linguistic systems; this means that for our present purpose “languages” and “dialects” can and should be treated on a par.

deeper “question of *why* the elements of a verb cluster are inverted in certain languages and constructions” (Wurmbrand 2017: 4706).

LDH’s answer to the *why*-question is based on the rigid methodological requirement that the grammatical system underlying natural language does not allow for optional rule applications; see Chomsky (1995) and much subsequent work. Chapter 2 starts by showing that most theories of verb clustering do not meet this requirement. LDH distinguishes the four main types in (2), repeated here as (4).

- (4)
- a. Syntactic movement approaches from a head-final base
 - b. Syntactic movement approaches from a head-initial base
 - c. PF inversion approaches
 - d. Base-generation approaches

The approaches in (4a-c) either take the ASCENDING 1-2-...-n or the DESCENDING n-...-2-1 order as the base order and derive the alternative orders by means of syntactic movement of (a projection of) the verb(s) or an inversion operation in the phonological component of the grammar. For instance, Evers’ (1975) proposal is that in line with the OV-nature of Dutch and German, the verbs in the examples in (3) are base-generated in the descending 3-2-1 order [_{VP} [_{VP} [_{VP}... *gemaakt*₃] *hebben*₂] *moet*₁], and that the surface orders are derived by Verb Raising, that is, by adjoining V_n to the left/right of V_{n-1} . Languages with the order in (3d) have the left-adjoining version of the Verb Raising rule, while language with the order in (3a) have the right-adjoining version. Problematic, however, are the mixed orders in (3b) and (3c), as these can only be derived by combining left and right-adjunction in the derivation of a single sentence. Similar problems arise with the systems in (4b-c). The base generation approaches in (4d) assume a uniform (unordered) hierarchical syntactic structure, which is linearized by means of language-specific rules in the phonological component of the grammar; deriving the mixed orders is also problematic for these approaches, as it severely complicates the system of linearization rules.⁷

LDH’s solution for the problem posed by mixed orders is given in chapter 3 (p. 79) and is based on a restricted version of the base-generation approaches in (4d); the language system is again assumed to produce a uniform hierarchical syntactic structure, but linearization in the phonological component is restricted by parameter 1, repeated here in (5).

⁷ I doubt whether the existing base-generation approaches to verb clustering all fit the description given in LDH, but since this is of minor importance I will not discuss this here.

- (5) Parameter 1: A dialect is uniformly {descending/ascending} in the linearization of verbs.

Parameter 1 entails that only fully ascending orders such as (3a) and fully descending orders such as (3d) can be analyzed as 3-verb clusters, as in (6a) and (7a). The participles in the mixed orders (3b) and (3c) are not analyzed as verbs but as adjectives, which may or may not interrupt the ascending 2-verb cluster *moet hebben*, as in (6b) and (6c). If the participle can also be adjectival in the descending order, parameter 1 predicts (3d) to be threefold structurally ambiguous, as shown in (7). In short, there are six options in total: the participle *gemaakt* is verbal in (6a) and (7a), but must be analyzed as an adjective in all remaining cases; see LDH (p. 72-73).

- (6) Ascending verb clusters

- | | |
|---|---|
| a. ... [moet _{V1} [hebben _{V2} gemaakt _{V3}]] | [3-verb cluster] |
| b. ... gemaakt _A [moet _{V1} hebben _{V2}] | [2-verb cluster with adjectival complement] |
| c. ... [moet _{V1} [gemaakt _A hebben _{V2}]] | [2-verb cluster with adjectival complement] |

- (7) Descending verb clusters

- | | |
|--|---|
| a. ... [[gemaakt _{V3} hebben _{V2}] moet _{V1}] | [3-verb cluster] |
| b. ... gemaakt _A [hebben _{V2} moet _{V1}] | [2-verb cluster with adjectival complement] |
| c. ... [[gemaakt _A hebben _{V2}] moet _{V1}] | [2-verb cluster with adjectival complement] |

Parameter 1 is central in LDH's account of the geographical distribution of the verb cluster configurations in the Dutch language area established in SANDII (ch.1). First, consider Map 2.1 in LDH (p. 18)⁸ depicting the distribution of 2-verb clusters in the Dutch-speaking area for the two combinations in (8) with an infinitival and a participial main verb, respectively. The map shows that this language area can be divided into two parts: the northern part (especially Friesland) has a strictly descending 2-1 order (*zien mag/gestorven is*), while the remainder has the ascending 1-2 order, possibly alternating with the 2-1 order.

- | | |
|--|--|
| (8) a. Ik vind [dat jij het ook niet mag zien]. | [MOD ₁ -INF ₂] |
| I find that you it also not may see | |
| 'I think that you must not see it either.' | |
| b. Ze weet niet [dat Marie gisteren is gestorven]. | [AUX ₁ -PART ₂] |
| She knows not that Marie yesterday is died | |
| 'She does not know that Marie died yesterday.' | |

⁸ References to the corresponding maps in SANDII (if available) are given in the captions of the maps in LDH. See also footnote 1.

More or less the same division can be observed for configurations with three verbs. Map 2.2 (p. 37) shows this for the distribution of the verb combination MOD₁-AUX₂-PART₃ (*moet hebben gemaakt* ‘must have made’) and map 2.5 (p. 40) for the verb combination MOD₁-MOD₂-INF₃ (*moet kunnen zwemmen* ‘must be able to swim’); the northern part of the Dutch language area allows the descending 3-2-1 order only, while the remainder again exhibits a more mixed behavior. The conclusion that LDH draws from this division is that the two language areas have different settings for parameter 1 in (5), as illustrated in (9).

- (9) a. Verb clusters in the northern (Frisian) dialects have a descending order (V_n-V_{n-1}-...-V₁)
 b. Verb clusters in the remaining Dutch dialects have an ascending order (V₁-...-V_{n-1}-V_n)

Let us now consider in more detail the results for the verb combination MOD₁-MOD₂-INF₃ given on map 2.5 in LDH (p. 40). SANDII (commentary, §1.3.2.1) summarizes the main findings as in Table 1. Since the number of sampling points in SANDII is 267, the fact that the total number of orders in this table is higher than that (viz. 396) shows that some varieties allow more than one order. The column *# as only order* indicates the number of sampling points that only accept the given order as acceptable; the column *# as alternative order* indicates the number of sampling points where the given order alternates with one or more other orders. The results in this table are in accordance with LDH’s conclusion in (9): the descending order is restricted to Frisian (northern) varieties while all other dialects have the ascending order. The mixed orders 1-3-2 and 3-1-2 do occur but *never* as the only order, which supports LDH’s claim that mixed orders are special in the sense that the presumed main verb (that is, the infinitive *zwemmen*) is actually not a verb: LDH hypothesizes that it is a nominalization. Note in passing that the 2-1-3 order was not tested because a pilot study for SAND confirmed the finding of earlier studies that it is not a grammatical order in any of the Dutch/German varieties.

Table 1: MOD₁-MOD₂-INF₃ (*moet kunnen zwemmen* ‘must be able to swim’)

Order	Gross #	# as only order	# as alternative order	Core area
1-2-3	242	146	96	Belgium + Netherlands
1-3-2	34	0	34	Eastern Netherlands
2-1-3	—	—	—	Not tested
2-3-1	0	—	—	—
3-1-2	83	0	83	Netherlands (not Brabant)
3-2-1	37	13	24	Friesland

The situation is somewhat more complex when we consider the distribution of the verb combination $MOD_1-AUX_2-PART_3$ given on map 2.2 (p. 37) for the examples given in (3)/(6) above. SANDII (commentary, §1.3.2.2) summarizes the main findings as in Table 2.

Table 2: $MOD_1-AUX_2-PART_3$ (moet hebben gemaakt ‘must have made’)

Order	Gross #	# as only order	# as alternative order	Core area(s)
1-2-3	91	1	90	Central/Eastern Netherlands
1-3-2	163	48	115	Belgium
2-1-3	—	—	—	Not tested
2-3-1	0	—	—	—
3-1-2	186	28	158	No core area
3-2-1	48	18	30	Northern Netherlands

Parameter 1 in (5) entails that there are at least 76 varieties in which the participle *gemaakt* ‘made’ cannot function as a verb, namely those varieties that require the use of the mixed order 1-3-2 or 3-1-2, that is, that do not allow the 1-2-3 order. This surprising finding is consistent with the fact that these varieties, which are mainly located in Belgium, do not allow the 1-2 order for configurations consisting of an auxiliary and a participle either, despite the fact that they do require this order for configurations consisting of a modal and an infinitive; see map 2.1 (p. 18). LDH accounts for this by postulating parameter 2 in (10a). Map 2.1 also shows that many Belgian dialects do not allow the 2-1 order for configurations consisting of a modal and an infinitive; LDH accounts for this by assuming parameter 3 in (10b).

- (10) a. Parameter 2: A dialect {does/does not} have verbal participles.
 b. Parameter 3: A dialect {does/does not} have nominalized infinitives in “verb” clusters.

Parameters 2 and 3 account for a quite conspicuous difference between Table 1 and Table 2, namely that the mixed order 1-3-2 is quite common in Belgium for configurations with a participle form but extremely rare for configurations with an infinitival form. That participles frequently occur in the $MOD_1-PART_3-AUX_2$ order is expected if they are not verbs but adjectives, as many Belgian varieties quite generally allow interruption of the verb cluster by adjectives; see Barbiers et al. (2008: chapter 2). However, since Belgian (especially West and East Flemish) verb clusters can also easily be interrupted by bare nominal phrases, we might

also expect the mixed order $MOD_1-INF_3-MOD_2$ to be common. That this expectation is not borne out can now easily be explained by assuming a negative setting for parameter 3; if nominalized infinitives do not occur in Belgian “verb” clusters, we predict the mixed order $MOD_1-INF_3-MOD_2$ to be impossible as well. For completeness’ sake, note that LDH also discusses the fact that 1-3-2 orders occur less frequently in the Netherlands than in Belgium, despite the fact that verbal particles such as *op* in *oppassen* ‘to look out’ are allowed to interrupt verb clusters in both areas. LDH (ch.5) accounts for this by saying that the Belgian varieties allow a wider range of elements to interrupt the verbal sequence than the Dutch varieties: the claim is that in the Dutch—but not the Belgian—varieties such elements must be part of the verbal expression (which is argued to hold for verbal particles but not for participles).

LDH has constrained the theory of verb clustering by means of the set of parameters in (11). By adopting parameter 1, the theory of verb clustering satisfies the rigid methodological demand that optionality be excluded from the grammar: verb clusters either have a descending or an ascending order, that is, mixed verb clusters are excluded. Parameters 2 and 3 make it possible to account for a quite complex pattern of geographical spread of configurations that were previously considered verb clusters, but which are now partly reanalyzed as smaller verb clusters with a deverbal (adjectival or nominalized) element corresponding to what was previously assumed to be the main verb of the construction; $V_1V_3V_2$, for instance, is reanalyzed as $V_1X_3V_2$, where X is an adjective if it has a participial form and a noun if it has an infinitival form.

- (11) a. Parameter 1: A dialect is uniformly {descending/ascending} in the linearization of verbs.
 b. Parameter 2: A dialect {does/does not} have verbal participles.
 c. Parameter 3: A dialect {does/does not} have nominalized infinitives in “verb” clusters.

LDH’s proposal tries to address Wurmbrand’s (2017: 4706) complaint that the current theories of verb clustering are mainly devoted to answering the question *how* the attested word order variation within verb clusters can be accounted for, but largely ignore the “question of *why* the elements of a verb cluster are inverted in certain languages and constructions”. Wurmbrand notes that *why*-questions can be interpreted at two levels: at a shallow level the question relates to the contribution of the grammatical system as such, while at a deeper level the question relates to extra-grammatical factors, for example, more general cognitive principles pertaining to computational complexity. LDH’s answer to the *why*-question does not reach the deeper level that Wurmbrand mentions, but it should not be

considered a flaw here because Wurmbrand (2017: 4707) already suggested that answering the deeper version of the question may be beyond the reach of generative grammar, which simply aims at accounting for the attested cross-linguistic restrictions on the order of verb clusters. LDH (ch.4) agrees with this and discusses a hypothesis developed in Chomsky (2005) and much subsequent work that the three factors in (12) play a role in the development of human language (the formulations between brackets are taken from LDH):

- (12) a. Factor I: Genetic endowment (i.e., Universal Grammar)
 b. Factor II: Experience (i.e., intake from the environment)
 c. Factor III: Principles not specific to the language system (including principles of data analysis and principles of efficient computation).

LDH argues that factor I takes precedence over factors II and III. This conclusion is based on a test in which speakers were asked to rank all six logically possible orders of the “verb” clusters $MOD_1-MOD_2-INF_3$ and $MOD_1-AUX_2-PART_3$ with respect to their relative acceptability. LDH (§3.7) first argues that it is unlikely that the results of this test depend on factor II because the outcome of the test depicted in Figure 3.1 (p. 82) shows that all informants strongly disprefer orders that cannot be produced by the grammatical system (viz., 2-1-3 and 2-3-1) to orders that can be produced by it.⁹ This points to factor I as decisive in the outcome of this test; if factor II were the decisive one, we would wrongly expect informants to accept the order or orders spoken in their environment only, that is, not to make any distinction between the remaining orders. The same conclusion is enforced by the even more surprising fact that the informants’ judgments do not seem to be affected by the question as to whether they are dialect speakers; see Figures 3.2-5 (p. 84-85). LDH concludes from this, convincingly in my view, that it is highly unlikely that informants’ judgments are based on their experience (familiarity with a specific order). Chapter 4 argues that more or less the same holds for factor III; it critically assesses the claim made by, for instance, Hawkins (1994) that word order preferences follow *entirely* from general properties of language

⁹ Section 1 of this article already mentioned that the 2-3-1 order does occur in Belgium for clusters of the type $AUX_1-ASP_2-INF_3$ (*is gaan zwemmen* ‘has gone swimming’). It will be clear that LDH (p. 62-4) denies that the order *gaan₂ zwemmen₃ is₁* should be analyzed as a 3-verb cluster: it is claimed instead that *gaan zwemmen* is a complex adjectival participle selected by the copular *zijn* ‘to be’: [[*gaan zwemmen*]_A is]_V. LDH suggests that the participial morphology may be absent because we are dealing with a syntactically complex form (which, I believe, may be problematic in view of the fact that it does appear in complex forms like *ge-stof+zuig-d* ‘vacuumed’).

processing. LDH (§4.2) discusses the problem that evaluating this claim is hampered by the fact that processing theories are normally not worked out in sufficient detail to apply them to new data and, more importantly, often contradict each other. LDH (§4.3) shows that processing theories have difficulty in accounting for acceptability judgments on the order of “verb” clusters on their own. LDH (§4.4) suggests, however, that factors I and III together may account for the relative judgments: the language system first distinguishes between grammatical and ungrammatical orders while factors related to language processing subsequently determine the relative acceptability of the grammatical orders. If so, it weakens Hawkins’ claim in the sense that language processing only *partly* determines word order preferences. Answering the deeper version of the *why*-question may therefore require a linguistic model incorporating aspects from both formal and functional theories.

3 Not another book on Verb Raising?

The previous section already mentioned that LDH (ch.2) discusses earlier theories of verb clustering of the type in (4), repeated here as (13). Such theories aim at describing, often successfully, the verb orders attested in verb clusters.

- (13) a. Syntactic movement approaches from a head-final base
 b. Syntactic movement approaches from a head-initial base
 c. PF inversion approaches
 d. Base-generation approaches

Early generative theories were mainly of type (13a) and followed Koster (1975) in assuming that German and Dutch clauses have an underlying head-final order: complements of verbs are generated to the left of the verb (that is, in the OV-order) regardless of their category (V, N, A or P) but can be moved to the right of the verb under specific conditions. Evers (1975) proposed that the base-generated order of verbs (3-2-1) can be changed by the transformation Verb Raising, which adjoins a lower verb (or verb cluster) V_n to the left or the right of the first higher verb V_{n-1} . German normally opts for left-adjunction, which does not change the underlying OV-order, while Dutch opts for right-adjunction, which does invert the underlying OV-order. Soon various variants were proposed, like raising of verb projections V^n ($n > 0$) in Den Besten & Edmundson (1983), uniform right-adjointing verb (projection) raising in Den Besten & Broekhuis (1989), and uniform verb projection raising followed by leftward scrambling of non-verbal material in Coppen & Klein (1992) and Den Besten & Broekhuis (1992). These proposals all easily derive the uniformly descending/ascending verb orders, but

require special stipulations for deriving the mixed orders: Evers' claim that German has left-adjunction predicts a descending 3-2-1 order for German while his claim that Dutch has right-adjunction predicts an ascending 1-2-3 order for Dutch; the claim in Den Besten & Broekhuis (1989) that verb (projection) raising is right adjunction predicts the descending order for languages without raising (German) and the ascending order for languages with raising (Dutch); etc. Problems for these proposals are the mixed orders 1-3-2 and 3-1-2, as these require combining left- and right-adjoining verb raising (Evers) or raising of some but not all verbs/verb projections (Den Besten & Broekhuis 1989) within a single language.

Theories of type (13b) arose in the wake of Kayne (1994) and especially Zwart (1993), who claimed that all languages are head-initial: complements of verbs are always generated to the right of the verb (that is, in the VO-order). For verb clusters, this entails that the ascending 1-2-3 order is base generated, while the descending 3-2-1 order is derived by leftward movement of the verb (Zwart 1993) or its projection (Broekhuis 1997; Barbiers 2005, 2008). The fully ascending/descending orders can be accounted for by assuming that a lower verb projection V_nP can be attracted by the next higher verb V_{n-1} : if attraction leads to movement, we derive the descending order, but if it does not, the underlying ascending order remains intact. Deriving the mixed orders is again potentially problematic in that we have to assume that VP-movement is optional within a single language, in the sense that it applies in some but not all cases.

PF inversion approaches do not avail themselves of movement but involve a reordering operation in the phonological component of the grammar under certain conditions; see Haegeman & Van Riemsdijk (1986) and the reformulation of their proposal in Williams (2004). The fully ascending/descending orders can easily be explained (regardless of the presumed underlying order of the verbs) by assuming that inversion is obligatory/prohibited in a given language; the problem is again that in order to account for the mixed orders, we have to assume that inversion is optionally applied within a single language. The same problem arises for the base-generation approaches: mixed orders can only be derived if dependent verbs are sometimes linearized to the left and sometimes to the right of the selecting verb within a single language.

LDH (§3.2) solves the problem pertaining to the mixed orders 1-3-2 and 3-1-2 by postulating that these orders are not 3-verb clusters but 2-verb clusters with a third, non-verbal, complement: $V_1-X_3-V_2$ and $X_3-V_1-V_2$. The existence of 3-verb clusters is not denied but they must have a strictly descending/ascending verb order, in accordance with parameter 1. This is formally accounted for by assuming a variant of the base-generation approach:

syntax is taken to generate an invariant hierarchical (but unordered) structure on the basis of a given enumeration (the lexical input of the syntax), which is linearized in the phonological component either as in (14b) or as in (14b').¹⁰

- (14) a. Hierarchical (unordered) structure: $[_{VP1} \dots V_1 [_{VP2} \dots V_2 [_{VP3} \dots V_3]]]$
 b. Linearization 1: MOD₁-MOD₂-INF₃ and MOD₁-AUX₂-PART₃
 b'. Linearization 2: INF₃-MOD₂-MOD₁ and PART₃-AUX₂-MOD₁

It should be noted, however, that it is not *a priori* given that (14) is the only viable option for implementing the core idea that verb clusters are unidirectional, as the competing movement/inversion approaches can also obtain this result by introducing parameters stating that movement or inversion is obligatory/prohibited in the language in question. Movement approach (13b), for instance, could easily derive the ascending/descending order by assuming that some feature of non-main verbs does/does not trigger movement of the verbal projection they select. The ascending order in (15b) arises when movement is prohibited; the descending order is derived by obligatory movement of VP₃ into the domain of V₂, which gives rise to $[_{VP2} [_{VP3} \dots V_3] V_2 t_{VP3}]$, followed by obligatory movement of VP₂ into the domain of V₁, which gives rise to the descending order in (15b').

- (15) a. Underlying structure: $[_{VP1} \dots V_1 [_{VP2} \dots V_2 [_{VP3} \dots V_3]]]$
 b. Ascending order: $[_{VP1} \dots V_1 [_{VP2} \dots V_2 [_{VP3} \dots V_3]]]$
 b'. Descending order: $[_{VP1} [_{VP2} [_{VP3} \dots V_3] V_2 t_{VP3}] V_1 t_{VP2}]$

Surprisingly, we have to wait until the concluding chapter (p. 165) for LDH's acknowledgment of this fact. In §3.2, LDH simply lists a number of—in my view—questionable conceptual advantages of the proposal in (14). The first advantage mentioned is that this proposal eliminates the “special” rule of Verb Raising. It should be noted, however, that the movements deriving the structure in (15b') are not special from a theoretical point of view, as they have the same format as other, independently motivated, rules affecting phrases. Rather, LDH's proposal needs a “special” assumption, as it reintroduces a variant of the directionality parameter which recent approaches to generative grammar have eliminated from the grammar. The second advantage is that the elimination of Verb Raising would make the need of searching for the trigger of this movement, which has proven to be problematic,

¹⁰ LDH's presupposition that the “perfect” syntactic system should deliver an invariant hierarchical structure on the basis of a given enumeration is controversial. I will not discuss this issue here, but refer to Broekhuis (2008:ch.1) for arguments against that position.

unnecessary. This argument is not very convincing, however, as LDH also points out that Barbiers (2005) and Barbiers (2008) propose two different, plausible solutions to this problem (the first of which can in fact also account for some of the mixed orders in a non-*ad hoc* way).¹¹ As was already mentioned above, LDH (p. 165) acknowledges that the proposals in (14) and (15) are more or less equivalent and therefore appeals to Occam's razor for establishing the superiority of (14): because (14) does not appeal to movement, it is to be preferred to (15). I am not convinced by this argument and it is in fact easy to use Occam's razor in order to argue for the opposite conclusion: because (15) only appeals to the independently motivated notion of syntactic movement (internal merge) and does not require the stipulation of directionality parameter 1, it is to be preferred to (14).¹² The title *Not another book on Verb Raising* suggests that one of LDH's main goals is to show that the movement/inversion approaches to verb clustering should be replaced by the version of the base-generation approach in (14). I conclude from the discussion above that LDH has not succeeded in achieving this goal.

4 Mixed (1-3-2 and 3-1-2) orders

LDH's main claim is that verb clusters are unidirectional in a given language: they either have a strictly ascending (1-2-...-n) or a strictly descending (n-...-2-1) order. Mixed orders

¹¹ LDH (p. 47) provides a third argument in favor of the base-generation of verb clusters, which is based on nominalizations such as *het moeten kunnen eten van een koekje* 'the necessity of being able to eat a cookie'. LDH maintains that in the movement approach "these complex nouns are derived from syntactically derived clusters" while in the base-generation approach the cluster "is only recategorized as a noun". There is reason, however, to assume that at least BARE-INF nominalizations (i.e., without a determiner) have a verbal projection embedded in them, as is clear from the fact that infinitives in such nominalizations are able to assign accusative case: *[koekjes eten] is gezellig* 'eating cookies is cozy'; if *eten* indeed were a noun, case-assignment to *koekjes* should be prohibited. The question as to whether nominalizations can be used as evidence for or against some specific approach to verb clustering thus depends on the internal syntax of nominalization one assumes, an issue that is far too complex to be answered without extensive discussion, which is missing in LDH.

¹² What should be brought into the equation as well is that complements and modifiers of the main verb normally precede the verb cluster as a whole; proponents of (15) normally appeal to movement, while LDH (p. 61) appeals to percolation of theta-roles. Because movement but not percolation of theta-roles is independently motivated in the grammar, this may again lead to the conclusion that (15) is to be preferred to (14).

like 1-3-2 and 3-1-2 involve a non-verbal element X: $V_1-X_3-V_2$ and $X_3-V_1-V_2$. More specifically, LDH claims that the configurations $MOD_1-INF_3-MOD_2$ and $INF_3-MOD_1-MOD_2$ involve an ascending 2-verb cluster with a nominalized infinitive (but see fn. 5), while the configurations $MOD_1-PART_3-AUX_2$ and $PART_3-MOD_1-AUX_2$ involve an ascending 2-verb cluster with an adjectival participle. The strictly ascending 1-2-3 order must be analyzed as a verb cluster, the reason for this being that the $V_1-V_2-X_3$ order is ungrammatical because selected nouns and adjectives must precede clause-final main verbs (V_2 in these cases). The strictly descending 3-2-1 order is ambiguous, as $V_3-V_2-V_1$ and $X_3-V_2-V_1$ can both be generated by the grammar proposed in LDH. The claim that mixed orders involve a non-verbal element enables LDH to provide a very elegant account of the geographical spread of the various orders established in SANDII (see section 2 above), but lacks independent motivation. This section therefore aims at investigating this claim in the light of more empirical evidence: it will be shown that there are several potential problems for this claim.

4.1 Nominalization

That infinitives can be nominalized in Dutch is uncontroversial. Such nominalizations come in two forms: BARE-INF nominalizations (without a determiner) behave like verbs in that they may select a nominal object; DET-INF nominalizations (with a determiner) are more nominal-like in that their complements must appear as a PP; see Broekhuis & Keizer (2012: §1.3 and §2.2.3) for a detailed discussion of the various forms of nominalization in Dutch. To my knowledge, all varieties of Dutch accept nominalizations of the kind in (16) both in subject and in object position.

- (16) a. [(Boeken) lezen] is leuk. a'. Jan haat [(boeken) lezen].
 books read is fun Jan hates books read
 ‘Reading books is fun.’ ‘Jan hates reading books.’
- b. [Het lezen (van boeken)] is leuk. b'. Jan haat [het lezen (van boeken)].
 The read of books is fun Jan hates the read of books)
 ‘The reading of books is fun.’ ‘Jan hates the reading of books.’

The fact that BARE-INF nominalizations can occur as nominal objects in Standard Dutch may accidentally lead to ambiguous structures such as *Jan leert duiken* ‘Jan is learning to dive’: the infinitival form *duiken* ‘to dive’ can be interpreted as a noun or as a verb. This ambiguity is already suggested by the word order in the embedded clauses in (17): *duiken* is a noun when it precedes, but a verb when it follows the clause-final verb *leren* ‘to learn’. The perfect tense constructions in the (b)-examples are especially instructive, as the categorial status of

the infinitive is also reflected morphologically: when *duiken* is interpreted as a verb, it becomes part of the 3-verb cluster *heeft leren duiken*, exhibiting the so-called Infinitivus-Participio (IPP) effect; when it is interpreted as a noun, it precedes the 2-verb cluster *heeft geleerd*.¹³ We refer the reader to Den Besten & Broekhuis (1989) for detailed discussion.

- (17) a. dat Jan leert duiken_v. a'. dat Jan duiken_N leert.
 that Jan learns dive that Jan diving learns
 'that Jan is learning diving.' 'that Jan is learning diving.'
- b. dat Jan heeft leren_{INF} duiken_v. b'. dat Jan duiken_N heeft geleerd_{part}.
 that Jan has learn dive that Jan diving has learned

LDH's claim that the configurations MOD₁-INF₃-MOD₂ and INF₃-MOD₁-MOD₂ should be analyzed as ascending 2-verb clusters with a BARE-INF nominalization is in accordance with the discussion above and deserves serious consideration. The problem is, however, that the word order in the (a)-examples in (17) does not seem to be a foolproof test for establishing the categorial status of the infinitive. Den Besten & Broekhuis (1989) have shown that configurations of the form V₁-INF₂ normally have two alternating orders in Standard Dutch, while configurations of the form V₁-V₂-INF₃ are normally strictly ascending. The first observation is illustrated for various verb types in (18); see Den Besten & Broekhuis (1989: 83-84) for more examples. Observe that the ascending order is the one normally used; the descending order is less frequent and stylistically marked.

- (18) a. dat Jan niet kan komen/komen kan. [MOD₁-INF₂]
 that Jan not can come/come can
 'that Jan is unable to come.'
- b. dat Jan over die vraag bleef tobben/tobben bleef. [ASP₁-INF₂]
 that Jan about that question stayed worry/worry stayed
 'that Jan kept worrying about that question.'
- c. dat Jan mij zag lopen/lopen zag. [ACI-INF₂]
 that Jan me saw walk/walk saw
 'that Jan saw me walk.'

The second observation is illustrated by the corresponding perfect tense constructions in (19); for other cases with three verbs, for instance, MOD-MOD-INF, I again refer to Den Besten &

¹³ IPP refers to the phenomenon that a verb selected by an auxiliary does not appear as a participle (as would normally be the case) but as an infinitive (without *te*) when it selects a verbal projection itself, as in (17b): cf. **dat Jan heeft geleerd duiken*.

Broekhuis (1989: 85-87). Since the unmarked verb order in Standard Dutch is strictly ascending (1-2-...-n), LDH's proposal entails that the infinitive is a verb in the ascending (1-2) order but a noun in the descending (2-1) order. We therefore expect that, like in the examples with *leren* 'to learn' in (17), the two orders in the examples in (18) would give rise to different perfect tense constructions. The examples in (19) show, however, that this expectation is not borne out: the INF₃-AUX₁-PART₂ cases in the primed examples are unacceptable. This seems to go against the grain of the proposed analysis, unless one could come up with some independent reason as to why the configuration INF_N-AUX₁-PART₂ is excluded; it is important to observe that the answer cannot be that V₂ is not able to select a nominalized verb, as this would also block the INF₂-V₁ order in the examples in (18).

- (19) a. dat Jan niet heeft kunnen komen.
 that Jan not has can_{inf} come
 a'. *dat Jan niet komen heeft gekund.
 that Jan not come has can_{part}
 b. dat Jan over die vraag is blijven tobben.
 that Jan about that question is stay_{inf} worry
 b'. *dat Jan over die vraag tobben is gebleven.
 that Jan about that question worry is stayed_{part}
 c. dat Jan mij heeft zien lopen.
 that Jan me has see_{inf} walk
 c'. *dat Jan mij lopen heeft gezien.
 that Jan me walk has seen_{part}

Another potential problem for LDH's proposal is posed by examples with transitive verbs. If the transitive infinitive *bezoeken* 'to visit' in (20a) is a BARE-INF nominalization in the descending (2-1) order, we have to conclude that the phrase *zijn moeder bezoeken* is a nominal object. On the standard assumption that noun phrases are islands for movement, we therefore predict that the NP-complement *zijn moeder* of the infinitive *bezoeken* cannot be moved leftward while stranding the infinitive. The examples in (20b) and (20c) show, however, that this *is* possible: example (20b) is a case of scrambling, while (20c) is a case of *wh*-movement.¹⁴

¹⁴ The prominent reading of (20b) is the one in which negation takes scope over the modal verb *willen* 'want', which shows that negation is part of the projection of the modal *willen*, not of that of the infinitive *bezoeken* 'to visit'. Note further that the acceptability of [*zijn moeder bezoeken*] (*dat*) *wil*

- (20) a. dat Jan [_{XP} zijn moeder bezoeken] wil.
 that Jan his mother visit wants
 ‘that Jan wants to visit his mother.’
- b. Ik denk dat Jan zijn moeder_i niet [_{XP} *t_i* bezoeken] wil.
 I think that Jan his mother not visit wants
 ‘I think that Jan does not want to visit his mother.’
- c. Wie_i denk je [*t_i* dat Jan [_{XP} *t_i* bezoeken] wil]?
 Who think you that Jan visit wants
 ‘Who do you think that Jan wants to visit?’

The lack of island effects in (20b-c) suggests that XP is not an NP (as proposed in LDH) but simply a verbal projection. This is confirmed by the fact that the nominal complement of the uncontroversial nominalized infinitive *lezen* in (21) cannot be *wh*-moved.

- (21) a. dat Jan [boeken lezen] haat.
 that Jan the books read hates
 ‘that Jan hates reading books.’
- b. *Wat_i denk je dat Jan [*t_i* lezen] haat.
 what think you that Jan read hates

It is difficult to illustrate the islandhood of the nominal object *boeken lezen* by means of scrambling across negation because nominal complements of nominalized verbs are normally bare indefinites, which also tend to resist scrambling. There is, however, another way of showing that infinitival complements of modals differ from BARE-INF nominalizations functioning as objects of verbs such as *haten* ‘to hate’ in negative clauses. When a negative clause contains a bare plural nominal object, negation cannot be expressed by means of *niet* ‘not’ but must be realized as the negative article *geen* ‘no’: **Jan leest niet romans* versus *Jan leest geen romans* ‘Jan doesn’t read novels’. Now consider the examples in (22), which show that while the complement of *lezen* can express sentence negation in example (22a), it cannot in (22b). If we conclude from the unacceptability of (22b) that negation cannot take sentential

Jan niet cannot be used as an argument in favor of nominalization, because examples of this kind are normally analyzed as cases of VP-topicalization; see, e.g., Den Besten & Webelhuth (1987, 1990). It is also important to note that the option of using the pro-form *dat* in examples of this kind does not show that the bracketed phrase is nominal because *dat* is more generally used as a pro-form for predicative phrases; cf. *Aardig, dat is hij niet* ‘Kind, he is not’. This in fact also shows that LDH’s argument in favor of nominalization based on pronominalization (p. 60) is invalid.

scope if it is part of the nominal object in a BARE-INF nominalization, we are forced to conclude that XP in (22a) cannot be a BARE-INF nominalization, contrary to what is claimed in LDH.

- (22) a. dat Jan [_{XP} geen boeken lezen] wil.
 that Jan no books reads wants
 b. *dat Jan [_{NP} geen boeken lezen] haat.
 that Jan no books read hates

Note in passing that I do not exclude the possibility that modal verbs take a BARE-INF nominalization as their complement, but when they do, the nominalization must precede negation just as in the case of *haten* ‘to hate’; this is illustrated by the stylistically marked examples in (23); the angled brackets indicate alternative placements of the phrase *boeken lezen* ‘reading books’.

- (23) a. dat Jan <boeken lezen> niet <*boeken lezen> wil.
 that Jan books read not wants
 b. dat Jan <boeken lezen> niet <*boeken lezen> haat.
 that Jan books read not hates

A third problem for the claim that the descending order INF₂-MOD₁ should be analyzed as involving a BARE-INF nominalization is that Den Besten & Broekhuis (1989) have observed that the INF₂-MOD₁ order is actually best when the nominal complement is a definite noun phrase; cf. example (24a). This goes against the observation in Broekhuis & Keizer (2012: 195-197) that nominalized infinitives normally do not take definite plural noun phrases as their complement; cf. example (24b). Again, this leads to the conclusion that XP in (24a) cannot be a BARE-INF nominalization.

- (24) a. dat Jan [_{XP} [?](de) kinderen komen] zag.
 that Jan the children come saw
 ‘that Jan saw (the) children come.’
 b. dat Jan [_{NP} (*de) boeken lezen] haat.
 that Jan the books read hates
 ‘that Jan hates reading (the) books.’

The discussion above has shown that LDH’s claim concerning nominalization cannot be taken for granted; more research is needed before we can safely adopt it, and, consequently, we should also consider parameter 3, repeated here as (25), unsubstantiated for the present.

(25) Parameter 3: A dialect {does/does not} have nominalized infinitives in “verb” clusters.

There is in fact another reason why parameter 3 requires more discussion. Parameter 3 is not phrased categorically as “A dialect does/does not have nominalized infinitives”, given that most dialects do have BARE-INF nominalizations. The addition ‘in “verb” clusters’ seems essential. As far as I can see, however, there is no reason for assuming that BARE-INF nominalizations are a part of the “verb” cluster, as they should simply be considered nominal direct objects. The formulation clearly has an *ad hoc* flavor, as it suggests that the selectional restrictions of a main verb may depend on whether or not the main verb is part of a verb cluster.

4.2 Adjectival and verbal participles

That participles can have a verbal or an adjectival reading is also uncontroversial; see Broekhuis (2013: §9.1-3) for an extensive review of the arguments in favor of this claim. The distinction is normally made for constructions with *zijn*, as this verb can be used not only as a perfect/passive auxiliary but also as a copular verb. The traditional view is that verbal participles denote events, as in (26a), while adjectival participles denote states, as in (26b). The examples in (26) are further taken to show that verbal participles can precede or follow the auxiliary, while adjectival participles must precede the copula.

- (26) a. dat Jan gisteren getrouwd_V is/is getrouwd_V. [event reading]
 that Jan yesterday married is
 ‘that Jan married yesterday.’
- b. dat Jan jaren getrouwd_A is/*is getrouwd_A. [state reading]
 that Jan for years married is
 ‘that Jan has been married for years.’

The same aspectual ambiguity can sometimes also be found in constructions with the verb *hebben* ‘to have’. This verb is normally used as a perfect auxiliary in the standard variety of Dutch but can sometimes also be used as a semi-copula, as in *Jan heeft het raam open* ‘Jan has the window open’. The examples in (27) show that some participles, such as *gesloten* ‘closed’, exhibit a similar ambiguity as *getrouwd* in (26) in constructions with *hebben*; see Broekhuis & Cornips (1994, 2012) for detailed discussion and more references. As in (26), the examples in (27) show that verbal participles can precede or follow the auxiliary, while adjectival participles must precede the semi-copular verb.

- (27) a. dat Jan de deur zojuist gesloten_V heeft/heeft gesloten_V. [event reading]
 that Jan the door just.now closed has
 ‘that Jan closed the door just now.’
- b. dat Jan de deur altijd gesloten heeft/*heeft gesloten_A. [state reading]
 that Jan the door always closed has
 ‘that Jan has the door closed all day.’

The adjectival state reading is suppressed in Standard Dutch for many participles; this is illustrated for *gestolen* ‘stolen’ in (28b). The percentage sign is used, however, to indicate that the state reading is readily available in various south-eastern varieties of Dutch provided that the participle precedes the verb *hebben*. The difference in acceptability judgments seems to correlate with the availability of possessive datives; I will not discuss this here but refer the reader to Broekhuis & Cornips (1994, 2012) and references cited there.

- (28) a. dat Jan de fiets gestolen_V heeft/heeft gestolen_V. [event reading]
 that Jan the bike stolen has
 ‘that Jan has stolen the bike.’
- b. dat Jan de fiets %gestolen_A heeft/*heeft gestolen. [state reading]
 that Jan the bike stolen has
 ‘that Jan has the bike stolen, i.e., that Jan’s bike has been stolen.’

On the assumption that the standard variety of Dutch has a uniformly ascending AUX₁-PART₂ order in verb clusters, we must conclude that the traditional view that the participle in the descending order PART₂-V₁ can be either verbal or adjectival is wrong, and this is indeed what LDH (§3.5.2) concludes: when the participle precedes the verb selecting it, it is always adjectival. The price to be paid for this assumption is that we can no longer distinguish verbal and adjectival participles semantically by saying that the former denote events while the latter denote states; LDH assumes that adjectival participles can denote events or states, while verbal participles can only denote events. The argument given for this claim is that participles can occur in prenominal attributive position, which is prototypically occupied by adjectives, regardless of their denotation. This is illustrated in (29): the denotation of *getrouwd* ‘married’ and *gesloten* ‘closed’ in (29) depends on the accompanying adverbial modifier, just as in the corresponding examples in (26) and (27).

- (29) a. de gisteren/al jaren getrouwde man
 the yesterday/for years married man
- b. de zojuist/altijd gesloten deur
 the just.now/normally closed door

The data discussed so far are in accordance with the claim that participles in the descending order $PART_n-...-V_1$ are always adjectival. However, let us now look at some reasons for being skeptical about this claim. First, LDH accounts for the ambiguity of adjectival participles by assuming that participles become adjectival by merging with an abstract adjectival head, that is, that adjectival participles are deverbal “but retain their verbal properties” (p. 58). This, however, does not do justice to the diachronic development of perfect tense and passive constructions; since Kern (1912) at least, it has been widely assumed that the verbal participial constructions have developed from predicative constructions with an adjectival participle; see the review in Broekhuis (to appear). Consequently, if there were a morphological relation between adjectival and verbal participles, it would be more plausible to assume that verbal participles are deadjectival: if so, we cannot account for the presumed event reading of adjectival participles by assuming that they have a verbal core.¹⁵

Second, if participles in the descending order $PART_n-...-V_1$ were adjectival, and if adjectival adjectives were indeed ambiguous between an event and a state reading, it would become a mystery why the state reading is normally not available in Standard Dutch for examples such as *dat Jan de fiets gestolen heeft* (cf. (28)), as this example should then be ambiguous between an event and a state reading in *all* varieties of Dutch. Related to this is the fact, illustrated in (30), that this example differs from uncontroversial examples with an adjectival participle such as (26b) and (27b) in that it cannot be perfectivized in Standard Dutch: examples such as (30c) are only possible in those varieties that allow the state reading of (28b); cf. WALSII, map 40A, and Koeneman et al. (2011).

¹⁵ LDH seems to veer toward the position taken by Van der Wal (1986:ch.3/5) and Coussé (2008) that participles constitute a single category incorporating both a ‘resultative’ and an ‘eventive’ meaning aspect; Broekhuis (to appear) provides empirical evidence against this position.

- (30) a. dat Jan jaren getrouwd_A is geweest.
 that Jan for.years married is been
 ‘that Jan has been married for years.’
- b. dat Jan de deur de hele dag gesloten heeft gehad.
 that Jan de door the whole day closed has had
 ‘that has had the door closed all day.’
- c. %dat Jan de fiets gestolen heeft gehad.
 that Jan the bike stolen has had
 ‘that Jan has had the bike stolen.’

Third, the presumed adjectival participles in the descending order PART_n-...-V₁ differ in various respects from run-of-the-mill adjectives. We already mentioned that LDH has to assume that adjectival participles differ from adjectives in that they should be able to denote events. We also have to assume that that adjectival participles differ from run-of-the-mill adjectives in that they are able to assign structural accusative case to the object *de fiets* in examples such as *dat Jan de fiets gestolen heeft*, unless we are prepared to assume that accusative case is assigned by (the semi-copula) *heeft*.¹⁶ Furthermore, we would have to assume that adjectival participles differ from other adjectives in that they are able to select other adjectival predicates; this assumption is needed to account for examples of the kind in (31). The fact that participles are able to select an adjective is a typically verbal property; the hash signs in (31) indicate that it is not obvious that the given structures are grammatical.

- (31) a. #dat Jan [[het hek rood_A] geverfd_A] heeft.
 that Jan the gate red painted has.
 ‘that Jan has painted the gate red.’
- b. #dat Marie [[de hond dood_A] getrapt_A] heeft.
 that Marie the dog dead kicked has
 ‘that Marie has kicked the dog dead.’

Moreover, it is a typical property of adjectives that they obligatorily select a noun phrase of which they can be predicated: example (32a) is unacceptable when the object is left out. This does not hold, however, for the presumed adjectival participle in (32b), which is acceptable both with and without the direct object.

¹⁶ This has been argued to be necessary for transitive perfect-tense constructions on general grounds in Broekhuis & Van Dijk (1995), but the point is not discussed in LDH.

- (32) a. dat Jan [(**het hek*) rood_A] verft.
 Jan paints the gate red paints
 ‘that Jan is painting the gate red.’
- b. dat Jan [(*het hek*) geverfd_A] heeft
 that Jan the gate painted has
 ‘that Jan has painted the gate.’

A similar difference can be observed in the semi-copular constructions with *hebben* in (33). In (33a) the nominal object *de deur* cannot be left out because this would result in a structure in which the adjective *dicht* is unsaturated (that is, in which the adjective is not predicated of something), but this problem does not seem to arise for the presumed adjective *geverfd*. In fact, the claim that participles in clauses with the descending order PART_n-...-V₁ are adjectival even implies that there is a whole class of adjectival participles which *cannot* be predicated of a noun phrase, viz., intransitive verbs such as *lachen* ‘to laugh’ in (33c).

- (33) a. dat Jan [(**de deur*) dicht_A] heeft. [cf. *de dichte deur* ‘the closed door’]
 that Jan the door closed has
 ‘that Jan has the door closed.’
- b. dat Jan [(*de deur*) geverfd_A] heeft. [cf. *de geverfde deur* ‘the painted door’]
 that Jan the door painted has
 ‘that Jan has painted (the door).’
- c. dat Jan [(*de hond*) gelachen] heeft. [cf. **de gelachen hond* ‘*the laughed dog’]
 that Jan the dog laughed has
 ‘that Jan has laughed.’

This section has shown that although there are conclusive reasons for saying that many participles can be verbal or adjectival in nature, there are various problems with LDH’s claim that participles in the descending order PART_n-...-V₁ are always adjectival.

5 Conclusion

LDH provides a descriptively adequate account for the intricate geographical distribution of “verb” clusters in the Dutch-speaking area revealed by SANDII by means of the parameters in (34). The analysis proposed is both simple and highly elegant.

- (34) a. Parameter 1: A dialect is uniformly {descending/ascending} in the linearization of verbs.
 b. Parameter 2: A dialect {does/does not} have verbal participles.
 c. Parameter 3: A dialect {does/does not} have nominalized infinitives in “verb” clusters.

However, LDH focuses one-sidedly on the virtues of the proposal and makes no attempt to critically assess the ingredients underlying it. Section 3 above has shown that LDH aims at showing that the postulation of parameter 1 favors the base-generation approach to verb clustering over the various movement (and inversion) approaches developed in earlier work. The argumentation in favor of this claim is unconvincing, however, and may even lead to the opposite conclusion. For this reason I concluded that LDH does not succeed in showing that the (presumably) special mechanisms used in earlier analyses of verb clustering should (or can) be eliminated from the grammar. Section 4 above has further argued that LDH's claim that infinitives and participles occurring in configurations with a mixed order are non-verbal raises a variety of problems that should be extensively addressed before we can adopt it.

It should further be noted that the database used for the study presented in LDH is not exhaustive in that it does not contain all attested verb cluster types, and it is not hard to come up with potential problems for the general approach. German, for instance, normally has a strictly descending 3-2-1 order in 3-verb clusters but there is one notable exception in that constructions of the type in (35) have a 1-3-2 order; see, e.g., Den Besten & Edmundson (1983) and; Wurmbrand (2017: Table 2 on p.4624).¹⁷ Since we are dealing with a mixed order, the string V_3 - V_2 cannot be analyzed as a verbal complement of V_1 but it cannot be an adjectival participle or nominalization either, as these should precede the finite verb.¹⁸ So, examples of this kind do not seem to receive a natural account in the general approach assumed in LDH.

- (35) a. dass er mich nicht hat₁ sehen₃ können₂.
 that he me not has see can
 ‘that he hasn’t been able to see me.’
- b. das er es doch muss₁ machen₃ können₂.
 that he it PRT must make can
 ‘that he must be able to make it after all.’

Although I believe that some of the claims underlying the parameter approach in (34) will prove difficult to maintain, I also believe that LDH will play an important role in the

¹⁷ Such cases are not discussed in LDH despite the fact that SANDII (p. 20) lists 8 Dutch dialects that allow this order for clusters of the type AUX_1 - MOD_2 - INF_3 (*had kunnen roepen* ‘had been able to call’).

¹⁸ The suggestion that V_2 - V_3 can be analyzed as an adjectival participle in (35a) would be in line with LDH, which adopts a similar analysis for the combination *gaan zwemmen* in the configuration *gaan zwemmen is*; see footnote 9.

discussion of verb clustering for years to come, as it is the only publication so far which has something interesting to say about the geographical distribution of 3-“verb” clusters in the Dutch speaking area. Future research should aim at preserving the core insights pertaining to this distribution provided by this—in my view—highly interesting work.

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