Not another book on Verb Raising

Dros, L.D.H.

CHAPTER 5

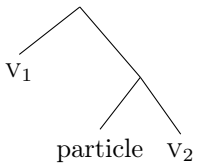
Verb cluster interruption

What are you going to do about it Belgium?
Call me when you get your own language.
John Stewart, the Daily show 30-9-2010

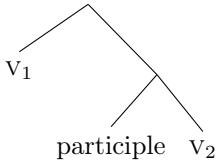
5.1 Introduction[68]

Chapter 3 discussed verb clusters that are interrupted by particles and adjectival participles. These types of constructions were argued to have the same underlying structure; of the type 1-x-2, as in (97).

(97) a.



b.



The chapter further discussed verb cluster interruption by bare nouns. It was shown that this phenomenon is mostly restricted to the Flemish part of the language area. This is especially interesting in light of the fact that the orders in which particles and participles interrupt the verb cluster was also shown to be common in Flanders. It seems that cluster interruption in general is a southern phenomenon. In fact, in this region, phrasal material, such as full noun

[68] Parts of this subsection are also discussed in Barbiers, Bennis, and Dros-Hendriks (2017)

phrases, can also interrupt the verb cluster. In (98) the interruption possibilities are depicted in a descending order.[69]

(98) a. MOD$_1$-**PTCL**-V$_2$: n=182
Jan had het hele brood wel [*willen* **op** *eten*].
Jan had the whole bread AFF want up eat
particle; verywhere except Friesland (SAND II-31b)

b. MOD$_1$-**PTCP**-V$_2$: n=163
...dat hij voor drie uur de wagen... [*moet* **gemaakt**
...that he before three o'clock the car... must made
hebben].
have
participle; everywhere except the north of the Netherlands (SAND II-17b)

c. MOD$_1$-**N**-V$_2$: n= 62
Ik weet dat Eddy morgen [*wil* **brood** *eten*].
I know that Eddy tomorrow wants bread eat
bare noun; frequent in the south-west of the language area, sporadic in the rest of the language area; (SAND II-28a)

d. MOD$_1$-MOD$_2$-**ADV**-V$_3$: n=54
Eddy *moet* [*kunnen* **vroeg** *opstaan*].
Eddy must can early rise
VP-adverb; absent in the Netherlands; frequent in the west of Flanders, sporadic in the rest of Flanders; (SAND II-28b)

e. MOD$_1$-**N.PL**-V$_2$: n=46
Ik weet dat Jan [*wil* **varkens** *kopen*].
I know that Jan wants pigs buy
plural noun (object); absent in the Netherlands; frequent in the west of Flanders, sporadic in the rest of Flanders; (SAND II-29a)

f. MOD$_1$-**OBJ.INDEF**-V$_2$: n=27
Ik weet dat Jan [*moet* **een nieuwe schuur** *bouwen*].
I know that Jan must a new barn build
indefinite object DP; only in the west of Flanders; (SAND II-29b)

[69] Note that verb cluster interruption can sometimes look like embedded V2, where the finite verb occurs in the second position after the complementizer, usually following the subject. This phenomenon is observed in some varieties of Dutch. However, there are two reasons for rejecting an analysis of verb cluster interruption as embedded V2. First, adverbs and objects can intervene between the subject and the verb, as some of the examples in (98) indicate. Secondly, the distribution of embedded V2 is a property of varieties from the north of the language area (see the data from the SAND atlas (Barbiers et al. 2008)). It is not observed in precisely those areas where verb cluster interruption occurs.

g. MOD_1-**PP**-V_2: n=26
Ik vind dat Jan [*moet* **naar Jef** *bellen*].
I think that Jan must to Jeff call
prepositional phrase; absent in the Netherlands; sporadic in Flanders; (SAND II-30a)

h. MOD_1-**OBJ.DEF**-V_2: n=15
Ik zei dat Willy [*moest* **de auto** *verkopen*].
I said that Willy had the car sell
definite object DP; absent in the Netherlands; infrequent in Flanders; (SAND II-29c)

Map 5.1 depicts the proportion of verb cluster interruptions across the language area. Darker colors indicate more interruption types accepted in that particular area. The map illustrates clearly that the possibilities to allow interruption increase geographically in moving from north to south-west.[70]

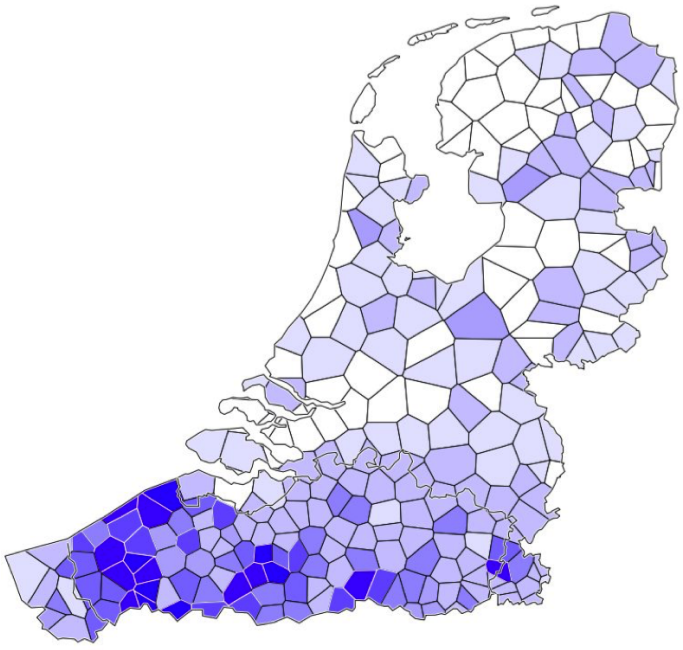


Figure 5.1: Cluster interruption – synthesis
(= occurrences of verb cluster interruption + particle interruption + 1-participle-2)[71]

Most types of interruption are not observed in Netherlandic Dutch varieties. Interruptions by phrasal material and adverbs are especially unacceptable in

[70] This observation will be discussed further in section 5.7.
[71] I'd like to thank Erik Tjong-Kim-Sang for his assistance with this map.

that part of the language area. The question that arises is whether all these types of interruption have an identical underlying structure.

Note that it is assumed here that both interrupted and non-interrupted orders are part of the West-Flemish grammar. Theoretically, there is the possibility that the two constructions are part of different sub-grammars possessed by speakers of West-Flemish (cf. Roeper 1999). Such an approach would be in line with the Minimalist claim that there is no optionality in grammar (Chomsky 1995). However, as section 5.3 will illustrate, cluster interruption is not a manner of a simple yes/no distinction. In three-verb clusters, West-Flemish allows not one, but two interrupting positions for manner adverbs: V_1-V_2-ADV-V_3 as well as V_1-ADV-V_2-V_3. Both orders are ill-formed in standard Dutch. Even if one were to argue that speakers of West-Flemish possess two grammars (say an interrupting grammar and a non-interrupting grammar), one would still need to account for the apparent optionality in the interrupting positions. I will simply assume here that all orders that can occur in West-Flemish are a part of a single grammar.

This chapter is organized as follows. For verb clusters with particles and participles, it was argued in chapter 3 that both the interrupted order and the non-interrupted order are base-generated. The next section will illustrate that other types of interruptions should be analyzed in a similar vein.

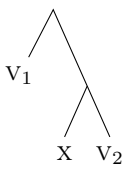
Section 5.3 will present data from the position of adverbs in the verb cluster. It will be illustrated that these data are problematic for previous theories of verb cluster formation. This hence supports the claim that verb clusters are base-generated. This claim will be further substantiated by the results in section 5.3, where it will be illustrated that all auxiliaries in varieties of Dutch behave the same in that they have to be merged in a low position.

The novel observation that will be presented from section 5.4 onward is that there is a clear cut-off point for cluster interruption. This cut-off point lies within the *v*P in West-Flemish, and lower in standard Dutch.

5.2 The underlying structure

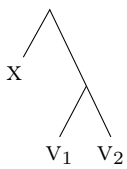
Chapter 3 argued that verb clusters with interrupted and non-interrupted particles and participles are base-generated. This is depicted in (99). This approach can account for the lack of an interpretative difference between these orders.

(99) a.



(interruption)

b.

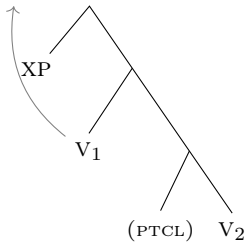


(no interruption)

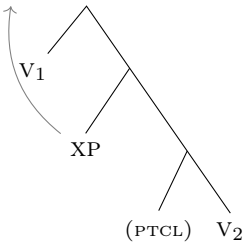
Potentially, all types of interruptions in (98), have the underlying structure of (99a). If this is the case, one needs to determine why all these elements can be base-generated in an interrupting position in West-Flemish, while in Netherlandic Dutch varieties, not all interruptions are acceptable.

Alternatively, it might be that the types of interruptions that are typical for West-Flemish are derived differently from interruptions by particles and participles. In such an analysis, a movement operation might underlie one of the orders. Two scenarios are conceivable. In the first scenario, aside from some elements such as particles and participles, non-verbal elements are always base-generated in a position preceding the verb cluster. This would mean that the Netherlandic Dutch order is the basic order and the Flemish interrupted order arises through head-movement of the auxiliary verb. This is depicted in (100a). In the second scenario, the interrupted order is the basic order and the non-interrupted order arises through movement of the non-verbal material, as in (100b). This would mean that West-Flemish exhibits the basic order and all interrupted elements in (98) are generated in their surface position. In Netherlandic Dutch, those elements obligatorily undergo movement to a higher position.

(100) a.



b.



This section aims at discovering which of these three options is correct. For a large part, this will be based on data from three native speakers of a variety of West-Flemish spoken in *Klemskerke*.[72]

[72] One of these speakers, Madga Devos, is both a linguist, as well as a speaker of that variety. She translated a large variety sentences from standard Dutch to West-Flemish. Subsequently, the three informants together provided judgements. Unless indicated otherwise, all judgements in the remainder of this chapter are provided by them. I cannot express my gratitude to Magda and her friends enough. They filled in multiple questionnaires without any complaints. The conclusions of this chapter could not have been reached without these informants. Of course, any wrongly drawn conclusions are my fault.

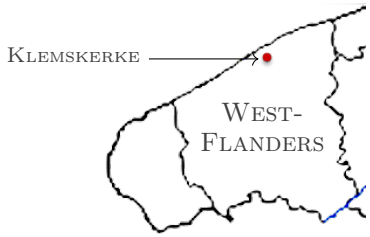


Figure 5.2: The West-Flemish village Klemskerke

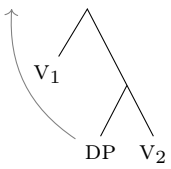
It will be argued that a base-generation approach can best account for the speakers' judgements. This hence provides a uniform analysis for all types of verb cluster interruptions.

5.2.1 Non-interrupted orders via movement of XP?

The first option to be investigated here is that non-verbal material such as DP objects are always generated inside the verb cluster. In this scenario, West-Flemish interrupted verb clusters are base-generated and non-interrupted verb clusters arise via movement of the non-verbal material. Sentence (101) would thus involve movement of the DP to a position preceding the verb cluster, as in (102).

(101) Ik zei dat Jan **de auto**$_i$ *moest* t$_i$ *kopen*.
I said that Jan the car had buy
'I said that Jan had to buy the car.'

(102)



This movement would be obligatory for speakers of Netherlandic Dutch varieties, and optional for speakers of West-Flemish varieties.

This approach would make a clear prediction with respect to further syntactic processes. Generally, constituents that have undergone syntactic movement become islands for extraction, i.e. become *frozen* (see for instance Corver (2017) and references cited therein). If XPs that precede the verb cluster have undergone movement, the prediction arises that nothing can be extracted from such constituents. Sentence (103) clearly demonstrates that this prediction is not borne out.[73] This sentence is well-formed in standard Dutch as well as in West-Flemish.

[73] See also Salzmann (2011) and references cited therein.

(103) Wat$_i$ heeft Jan laatst [$_{DP}$ t$_i$ voor auto's] *moeten kopen*?[74]
What has Jan the.other.day for cars had buy
'What kind of cars did Jan have to buy the other day?'

In contrast, extraction is not allowed from moved subjects (Den Besten 1985; De Hoop 1996), as is illustrated for standard Dutch in sentence (104b). This is in line with the general assumption that subjects are generated in a position lower than their surface position. Indeed, extraction is perfectly fine if the subject remains in the lower position and an expletive pronoun is placed in the higher position, as in (104c).

(104) a. [Dat soort mensen] zijn hard nodig.
That type.of people are hard needed
'That type of people are really needed.'

b. * Wat$_i$ zijn [t$_i$ voor mensen] hard nodig?
What are for people hard needed?

c. Wat$_i$ zijn er [t$_i$ voor mensen] hard nodig?
What are EXPL for people hard needed?

The fact that extraction is allowed from object DPs that precede the verb cluster, suggests that they are base-generated in their surface position.

An apparent contradiction to this suggestion arises when one considers the interpretation of sentences with interrupted and non-interrupted verb clusters. Haegeman and Van Riemsdijk (1986) demonstrate that sentences in which DPs

[74] It should be mentioned here that in West-Flemish varieties, extraction is also allowed from a position inside the verb cluster, as argued by Haegeman and Van Riemsdijk (1986). This also applies to LF movement of *wh*-words as in (i). They argue that the the *wh*-in-situ may have wide scope, allowing for a multiple question interpretation.

(i) K weten nie wien dan-ze *goan willen* voo wekken cursus *anduden*.
I know not whom that-they go want for which course appoint
'I wonder whom they will want to assign to which course.' (Haegeman and Van Riemsdijk 1986:451)

Indeed, my informants allowed extraction of a pronoun from a position inside the verb cluster.

(ii) ...dat Jan de borden daar$_i$ *moet* [**t$_i$** op] *zetten*.
...that Jan the plates there must on put
'...that Jan should place the plates on there.'

However, for reasons unknown to me, the West-Flemish informants did not allow *wh*-extraction from a position internal to the verb cluster (as in (iiib)).

(iii) a. Ik weet dat Jan laatst *moest* dat type auto *kopen*.
I know that Jan the.other.day had that type car buy
'I know that Jan had to buy that type of car the other day.'

b. * Wat heeft Jan laatst *moeten* voor auto *kopen*?
What has Jan the.other.day had for car buy
'What kind of cars did Jan had to buy the other day?'

Note that these facts argue against an approach that derives non-interrupted verb clusters through movement of the non-verbal material. Following such an approach, extraction should be allowed from a position internal to the verb cluster, but not from a position preceding the verb cluster. The judgements indicate, however, that extraction is allowed from a position preceding the verb cluster, but extraction is restricted from a position inside the verb cluster.

precede a verb cluster with a modal auxiliary are scopally ambiguous, while sentences in which DPs interrupt a verb cluster only have one interpretation. This is supported by the judgements in (105).

(105) a. ...dat Jan **geen toestemming** *heeft*$_1$ *kunnen*$_2$ *geven*$_3$.
...that Jan no permission has could give
'Jan was able to give no permission.' (MOD>NEG)
OR: 'Jan was not able to give permission.' (NEG>MOD)

b. ...dat Jan *heeft*$_1$ *kunnen*$_2$ **geen toestemming** *geven*$_3$.
...that Jan has could no permission give
'Jan was able to give no permission.' (MOD>NEG; *NEG>MOD)

At first sight, the interpretations suggests that DPs that precede the verb cluster are associated with a position below *kunnen* 'can'. However, this suggestion is in conflict with the lack of freezing effects in this ordering. Now, two options arise. First, one might argue that the DP has undergone movement in non-interrupted orders and, accordingly, stipulate an explanation for the possibility of extracting from this moved phrase. Alternatively, one might argue that the DP can be base-generated in a position preceding the verb cluster and, accordingly, argue that the modal verb can take scope over the DP in some other way. There are many plausible options to achieve such a result. The literature provides at least three. First, one might assume that modal verbs undergo *quantifier raising.*[75] Such a view is supported in a discussion on head movement by Matushansky (2006), who argues that "[i]f heads can reconstruct, they are predicted to be able to undergo Q[uantifier] R[aising] covertly as well." However, the question that this raises is where the landing site of the raised modal verb might be. Since, for instance, the scope of root modal verbs is smaller than the scope of epistemic modal verbs, one would have to assume multiple landing sites for different raised auxiliaries.

Another approach that allows modal verbs to be interpreted in a higher position than their surface position, is one in which a modal verb is generated in a low, lexical position, and forms a chain with a functional projection higher up in the structure, perhaps by covert movement. There is much theoretic literature on the presence of a functional projection for modal verbs higher in the clausal structure (Cinque (1999, 2006) and Wurmbrand (2001), among others).[76] Note that such a view crucially differs from Wurmbrand's as well as Cinque's, who argue that (epistemic and root) modal auxiliaries are generated as functional heads.

A final option by which modal verbs can occupy a higher position at LF, is one in which all verbs are assumed to move covertly to a higher position, such as T°. Salzmann (2011) also discusses the apparent contradiction between the scope facts and the lack of freezing effects in verb clusters and argues that verbs covertly incorporate into higher verbs. Subsequently, the entire verb

[75] But see footnote 78 on page 133.
[76] Cinque's theory will be explicated in section 5.3.

cluster covertly incorporates into T. Such a movement could be motivated by a requirement for verbs to be linked to tense, in order to anchor the reference of the event (Bennis and Hoekstra 1989).[77]

I conclude that there are at least three possible accounts according to which the modal verb might be interpreted in a higher position than its surface position. There are no conclusive arguments against either of these possible ways and I will not make a choice between these accounts here. I will simply assume that modal verbs can covertly raise to a higher position. The idea that head movement can have semantic effects has been established by Zwart (2001), Lechner (2007), Matushansky (2006), and Keine and Bhatt (2016) (contra Chomsky 2000).

We can now account for the interpretation of the sentences in (105). In sentence (105a), the DP is base-generated in a position preceding the modal verb and can hence take wide scope. Additionally, the modal verb can take wide scope over the DP, as these verbs covertly move to a higher position. In contrast, in sentence (105b), the DP is base-generated in a position below the modal verb and cannot take wide scope. The only possible interpretation of this sentence is one in which the modal verb takes scope over the DP.[78, 79]

I conclude that the contrast in scope and extraction possibilities do not straightforwardly follow from previous approaches to verb clusters.

---

[77] Crucially, in this approach, linking to tense has to involve a movement of the verb to account for the scope facts. Hence, this cannot involve downward percolation of the tense features.

[78] The question that remains is why the DP cannot take wide scope from a position inside the verb cluster; why can it not undergo *quantifier raising*, especially considering the fact that wh-words can extract from the cluster without problems? One might assume that there is no such thing as quantifier raising. Quantifiers do not raise in order to get different scope relations. Such an approach is taken by Den Dikken (1994), following Kitahara (1992). He argues scope relations are encoded at s-structure. However, a dismissal of quantifier raising does not necessarily entail that scope is encoded at s-structure. Other covert movements can still affect scope relations. In fact, I argued above that modal verbs can always take wide scope as a result of a covert movement to a higher position. If there is no such thing as quantifier raising, such a movement would have to be triggered by something else. A few possibilities were discussed above.

[79] The freezing and scope effects do not straightforwardly follow from other theories of verb clusters. I will briefly illustrate this for the two most stereotypical of the previous approaches: one that assumes an underlying left-branching OV-order and one that assumes a right-branching VO order.

In an OV-approach with a left-branching structure, non-interrupted verb clusters arise because DPs are either stranded, or moved to a higher position before the verb (projection) raises. To account for the fact that a DP can take scope over the modal verb in non-interrupted orders, one needs to assume that this DP moves to a position above the modal verb in this order. This approach is not straightforward, as there is no clear motivation for the DP to move, especially considering the fact that this movement is apparently optional in West-Flemish. In addition, one needs to assume that the *wh*-word can be extracted from the DP prior to verb projection raising, to account for the extraction possibilities.

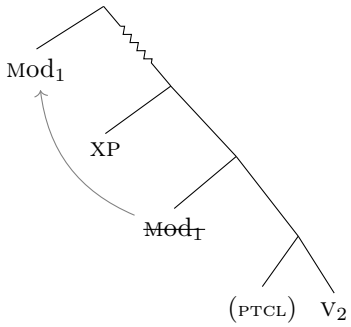
A VO-approach with a right-branching structure can clearly account for the scope facts in (105). However, it still does not explain why there are no freezing effects in non-interrupted verb clusters, as in (103). If the object has undergone movement in all these orders, one would not predict that *wh*-words can extract from these projections.

This subsection has argued that DPs that precede the verb cluster are generated in their surface position. To account for the fact that modal verbs can always take wide scope, it was argued that (auxiliary) verbs move covertly to a higher position.

5.2.2 Interrupted orders via movement of the auxiliary?

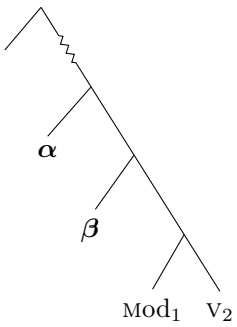
Another option worth investigating is that verb clusters interrupted by material other than particles and participles arise by means of movement of the auxiliary to some higher position. This is illustrated in (106). In this scenario, Netherlandic Dutch verb clusters are base-generated.

(106)

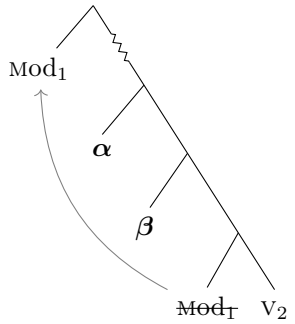


Following such an approach, verb clusters are interrupted when the modal verb overtly moves to the higher position and verb clusters are not interrupted when the modal verb does not move (overtly). In this scenario, verb cluster interruption should be all or nothing: either the verb overtly moves, or it does not. In other words, if two constituents (say α and β) can both interrupt a verb cluster, they may also be observed in a position preceding the verb cluster. However, it should not be possible to derive an order in which only one of these items interrupts the verb cluster. This situation is illustrated in (107).

(107) a. no verb movement → no verb cluster interruption:
...that SUBJ $\boldsymbol{\alpha}$ $\boldsymbol{\beta}$ MOD$_{\mathbf{1}}$ V$_{\mathbf{2}}$



b. verb movement → verb cluster interruption:
...that SUBJ MOD_1 $\boldsymbol{\alpha}$ $\boldsymbol{\beta}$ ~~MOD_1~~ V_2



c. * Impossible order:
...that he $\boldsymbol{\alpha}$ MOD_1 $\boldsymbol{\beta}$ V_2

In light of this, consider sentence (108), which contains an indefinite object as well as a PP resultative.

(108) I think that he has to$_1$ put$_2$ [$_{\text{DP}}$ something] [$_{\text{PP}}$ on a shelf].

The West-Flemish informants accepted both the orders in (109).

(109) a. MOD_1-**OBJ-PP-**V_2:
...dat hij *moet* **wat** **op een plank** *zetten.*
...that he must something on a shelf put

b. **OBJ-PP-**MOD_1-V_2:
...dat hij **wat** **op een plank** *moet zetten.*
...that he something on a shelf must put

If verb cluster interruption arises through movement of the modal verb to a single landing site, this landing site would have to precede both the DP and the PP. Now consider sentence (110), in which one of the phrases interrupts the verb cluster, while the other precedes the verb cluster.

(110) **OBJ-**MOD_1-**PP-**V_2 (partial verb cluster interruption):
...dat hij **wat** *moet* **op een plank** *zetten.*
...that he something must on a shelf put

Crucially, the informants also accepted this sentence. This suggests that verb cluster interruption is not the result of a single landing site of the modal verb.[80]

Another conceivable option is that there is a variety of higher positions to which the auxiliary can move, due to the presence of multiple landing sites for

[80] Note that this ordering cannot be attributed to a *scrambling* operation of the object. This was controlled for by using the indefinite, non-specific pronoun *wat*, which does not undergo scrambling (see Postma 1994).

the modal verb. While it might become difficult to motivate all required movements, this is a theoretical possibility.[81] However, there are empirical problems with this assumption. If the auxiliaries in sentence (105b) (repeated here) were generated in a position below the DP and have moved to their surface position, one would expect an interpretation in which the interrupting DP scopes over the modal verb. This is not the case.

(105) b. ...dat Jan *heeft*$_1$ *kunnen*$_2$ **geen toestemming** *geven*$_3$.
...that Jan has could no permission give
'Jan was able to give no permission.' (MOD>NEG; *NEG>MOD)

In contrast, Barbiers (2015) demonstrates that the original scope of a verb remains even after it moves to the second position of the clause (V2), across the negation marker.

(111) a. Ik denk dat Jan dat **niet** *hoeft*.
I think that Jan that not needs
'I think that it is not the case that Jan needs that.' (NEG>need)

b. Jan *hoeft* dat **niet**.
Jan needs that not
'I think that it is not the case that Jan needs that.' (NEG>need)[82]

Apparently, the scope relations of the base-position can be reconstructed after a verb undergoes head movement. It is hence unlikely that sentence (105b) involves movement of the modal verb across the DP.

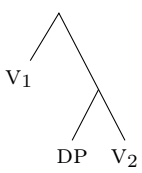
To conclude, it is unlikely that the difference between sentences with interrupted verb clusters and sentences with non-interrupted verb clusters lies in movement(s) of the auxiliary verb(s).

5.2.3 Base-generating all orders

If the difference between interrupted and non-interrupted verb clusters cannot be attributed to movement of the auxiliary, nor to movement of the non-verbal material, the option that remains is that both orders are base-generated. This should be a theoretical possibility. In a structure with a DP object and an auxiliary verb, the auxiliary selects the main verb, while the main verb selects the object. There is nothing in the Merge procedure that forces either of the required elements to be selected prior to the other.

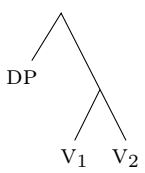
[81] Consider for instance Cinque's (1999) clausal spine, which contains a large variety of head-positions to which verbs can move (see section 5.3).
[82] The fact that *hoeven* 'need', does not take wide scope in (111b) could be attributed to this verb being a Negative Polarity Item, which needs to be interpreted in the scope of the negation.

(112) a.



(interruption)

b.



(no interruption)

As a consequence, all verb cluster interruptions are analyzed in a uniform manner; interruptions by particles and participles are not derived differently than other types of non-verbal material. No additional mechanisms are required to account for interruptions by phrasal material. This is particularly attractive in light of the facts that (i) all types of interrupted orders can co-occur with non-interrupted orders; (ii) neither of these types of interruptions display a meaning difference compared to their non-interrupted counterpart, putting aside the scopal differences discussed above; and (iii) cluster interruption by phrasal material displays a similar geographic distribution as verb clusters with particles and participles, in that interruption is more common in the south of the language area (see section 2.10.3 on page 40). This approach still requires an account for the lack of some types of interruptions in the Netherlandic Dutch varieties. Section 5.6 returns to this issue.

The next sections discuss cluster interruptions by adverbs. It will become clear that the variation in this construction poses problems for movement approaches to verb clusters. This further underlines the arguments presented in chapter 3 in favor of a free base-generation approach.

5.3 Verb cluster interruptions by adverbs

The previous section argued that all observed interrupted and non-interrupted verb clusters are base-generated. In non-interrupted verb clusters, all auxiliaries are hence merged directly in a low position. This section further substantiates this claim by considering verb cluster interruption by adverbs. The relevant issue here is that not all adverbs can freely be merged both inside and outside the verb cluster. While all adverbs that can interrupt the verb cluster can also occur in a position outside the verb cluster, the reverse is not true: some adverbs can only precede the verb cluster. This is illustrated in (114).

(113) a. ...dat Jan daarom *moet* **zacht** *praten.*
...that Jan therefore must quietly talk
'...that Jan therefore will have to talk quietly.'

b. ...dat Jan wel **zacht** *moet praten.*
...that Jan AFF quietly must talk.

(114) a. * ...dat hij vrijdag *moet* **helaas** *werken.*
...that he Friday must unfortunately work
'...that he unfortunately has to work on Friday.'

b. ...dat hij vrijdag **helaas** *moet werken.*
...that he Friday unfortunately must work.

It will be demonstrated in section 5.5 that theories in which verb clusters are assumed to have either an underlying left-branching OV-order, or a right-branching VO order require peculiar movements to account for the data.

Before going into this discussion, it is important to discuss the assumed position of adverbs in the clausal structure. According to Cinque (1999, 2006), the functional portion of each clause in all natural human languages consists of a hierarchy of rigidly ordered functional projections, as specified in (115).

(115) [MoodP $_{\text{speech act}}$ [MoodP$_{\text{evaluative}}$ [MoodP$_{\text{evidential}}$ [ModP$_{\text{epistemic}}$ [TP$_{\text{past}}$ [TP$_{\text{future}}$ [MoodP$_{\text{irrealis}}$ [TP$_{\text{anterior}}$ [ModP$_{\text{alethic}}$ [AspP$_{\text{habitual}}$ [AspP$_{\text{repetitive(I)}}$ [AspP$_{\text{frequentative}}$(I) [ModP$_{\text{volitional}}$ [AspP$_{\text{celerative(I)}}$ [AspP$_{\text{terminative}}$ [AspP$_{\text{continuative}}$ [AspP$_{\text{perfect}}$ [AspP$_{\text{retrospective}}$ [AspP $_{\text{proximative}}$ [AspP$_{\text{durative}}$ [AspP$_{\text{progressive}}$ [AspP$_{\text{prospective}}$ [AspP$_{\text{inceptive}}$(I) [ModP$_{\text{obligation}}$ [ModP $_{\text{ability}}$ [AspP $_{\text{frustrative/success}}$ [ModP $_{\text{permission}}$ [AspP$_{\text{conative}}$ [AspP$_{\text{completive}}$(I) [VoiceP [AspP $_{\text{repetitive(II)}}$ [AspP$_{\text{frequentative(II)}}$ [AspP$_{\text{celerative(II)}}$ [AspP $_{\text{inceptive}}$(II) [AspP $_{\text{completive}}$(II) [V]]]]]...] (Cinque 2006:175-176)

These projections are all headed by, possibly covert, functional heads. Each functional head has a semantic relation with an associating adverb that can be generated in its specifier. This entails that adverbs are generated in fixed positions in each and every human language. Cinque (2006) further argues that auxiliaries are merged as the functional head of these functional projections. This makes the prediction that the relative order of adverbs and auxiliaries is also rigid. However, this relative order can be changed, since Cinque argues that verbs can move to a higher head position in languages like Italian, as is illustrated in (116).

(116) Non gli riesco$_i$ [AspP$_{\text{terminative}}$ più [AspP$_{\text{frustrative/success}}$ t$_i$
Not to.him manage any.longer
[AspP$_{\text{continuative}}$ a continuare [a parlare
to continue to speak
'I do not manage to continue to speak to him any longer.'
(Cinque 2006:97, fn. 26)

Cinque's claim that adverbs are generated as specifiers of designated functional heads deviates from the traditional assumption that adverbs can be adjoined to various maximal projections. The data that I present in this chapter has nothing to say about which of these assumptions is correct. I further assume it

to be irrelevant whether the relative order of adverbs follows a rigid syntactic template (as in Cinque 1999, 2006) or is a result of semantic composition (as in Ernst 2001).[83] A choice between these approaches is beyond the scope of this dissertation. However, I make use of Cinque's hierarchy to demonstrate the relative position of adverbs. Broekhuis and Corver (2016) have established that the order of adverbs in Dutch for a large part corresponds to this hierarchy.[84] This is illustrated in (117).

(117) a. ...dat Jan helaas$_{evaluative}$ waarschijnlijk$_{epistemic}$ brutaal$_{voice}$
...that Jan unfortunately probably rudely
praat.
talk
'...that Jan unfortunately probably speaks rudely.'

b. * ...dat Jan brutaal$_{voice}$ waarschijnlijk$_{epistemic}$ helaas$_{evaluative}$
...that Jan rudely probably unfortunately
praat.
talks

The sentences in (118) illustrate that the relative order for auxiliary verbs also corresponds to Cinque's hierarchy (see also Barbiers 1995).

(118) a. ...dat Jan kan$_{epistemic}$ mogen$_{permission}$ zwemmen.
...that Jan can may swim
'It might be that Jan will be allowed to swim.'

b. * ...dat Jan mag$_{permission}$ kunnen$_{epistemic}$ zwemmen.
...that Jan may can swim

c. ...dat Jan mag$_{permission}$ kunnen$_{root}$ zwemmen.
...that Jan may can swim
'Jan will be allowed to be able to swim.'

As has been extensively discussed, in Dutch, all verbs cluster together in a sentence-final position. In this respect, this language is different from languages such as Italian, where verbs can occur in various positions between the adverbs. Consider for instance sentence (119), in which the auxiliary *mag* 'may' is preceded by a low, manner, adverb.

(119) ...dat Jan brutaal *mag praten.*
...that Jan rudely may talk
'...that Jan may speak rudely.'

The question that arises is how such sentence-final verbs clusters are derived, given Cinque's hierarchy. Important for any approach to verb clusters is that

[83] Ernst's (2001) theory is discussed further in section 5.5.3.
[84] See also Barbiers (2017).

the judgements of the West-Flemish informants with regards to cluster interruptions by adverbs show clear correspondences with Cinque's (1999; 2006) hierarchy. In a comparative judgement task, the informants rated cluster interruptions by lower adverbs as more acceptable than interruptions by higher adverbs. The informants were asked to rank sentences in which various adverbs interrupt a three-verb cluster. Five sentences containing different adverbs were presented at the same time. The three-verb cluster consisted of the auxiliary *gaat* 'will',[85] the modal auxiliary of obligation *moet* 'must', and a main verb. Three-verb clusters have two positions where adverbs might interrupt, so the informants were presented with two separate lists of sentences: one in which the adverbs interrupt the lowest position, as in (120a), and one in which the adverbs interrupt the highest position, as in (120b).

(120) a. (Jan wil niemand storen. Hij weet) dat hij daarom $gaat_1$
(Jan wants nobody interrupt. He knows) that he therefore will
$moeten_2$ **zacht** $praten_3$. (1-2-**ADV**-3)
must quietly talk
'Jan does not want to disturb anyone. He knows that he will have to speak quietly.'

b. (Jan wil niemand storen. Hij weet) dat hij daarom $gaat_1$
(Jan wants nobody interrupt. He knows) that he therefore will
zacht $moeten_2$ $praten_3$. (1-**ADV**-2-3)
quietly must talk

I asked the informants to rank the five different sentences relative to each other. In each of these sentences an adverb interrupted the verb cluster. The position of interruption was the same across the five sentences, but the type of adverbs was different. These were two manner adverbs: *wijs* 'wisely' and *zacht* 'quietly'; the continuative focus particle *nog* 'still'; the modal adverb *zeker* 'definitely' and the speaker-oriented adverb *helaas* 'unfortunately'. In Cinque's hierarchy, the manner adverbs are in a low position, the modal adverb is somewhat higher, and the speaker-oriented adverb is in a high position. As for the focus particle, this element could be in a variety of positions.[86]

For sentences in which the adverb interrupts the lowest position (1-2-ADV-3), the sentences were ranked as follows (from good to bad):

(121) *zacht* 'quietly' > *wijs* 'wisely' > *nog* 'still' > *zeker* 'definitely' > *helaas* 'unfortunately'.

[85] Actually, the standard Dutch sentence offered to the informants contained the auxiliary *zal*. Crucially, the informants translated this auxiliary with *gaat*, because they cannot use *zal* as a future auxiliary. As stated by Devos and Vandekerckhove (2005), *gaat* in West-Flemish is a future auxiliary and *zal* has a speaker-oriented modal flavor. (Note that Broekhuis and Corver (2016:135-141) (among others) argue that *zullen* is actually an epistemic modal in standard Dutch as well.) In order to avoid any misinterpretations, the examples in the text contain the auxiliary *gaat*.

[86] See for instance Barbiers (2014).

This clearly corresponds to Cinque's hierarchy, in that the two manner adverbs were ranked better than the modal adverb, which was ranked better than the speaker-oriented adverb.

For sentences in which the adverb interrupts the highest position (1-ADV-2-3), the ranking was almost identical:

(122) *wijs* 'wisely' > *zacht* 'quietly' > *nog* 'still' > *zeker* 'definitely' > *helaas* 'unfortunately'.

This means that, in both the 1-ADV-2-3 and the 1-2-ADV-3 orders, adverbs that are clearly lower in the clausal hierarchy were ranked better.[87] Thus, even in the highest position of three-verb clusters, lower adverbs are more acceptable than higher adverbs. For instance, for both the 1-2-ADV-3 orders in (123) as well as the 1-ADV-2-3 orders in (124) the informants ranked the sentence with the low adverb in (a) much better than the sentence with the higher adverb in (b).

(123) a. ...dat hij daarom *gaat moeten* **zacht** *praten.*
...that Jan therefore will must quietly talk
'(Jan does not want to disturb anyone. He knows) that he will have to speak quietly.'

b. * ...dat hij morgen *gaat moeten* **zeker** *werken.*
...that he tomorrow will must definitely work
'(Since he doesn't have to work today, Jan knows) that he will definitely have to work tomorrow.'

(124) a. ...dat hij daarom *gaat* **zacht** *moeten praten.*
...that Jan therefore will quietly must talk
'(Jan does not want to disturb anyone. He knows) that he will have to speak quietly.'

b. * ...dat hij morgen *gaat* **zeker** *moeten werken.*
...that he tomorrow will definitely must work
'(Since he doesn't have to work today, Jan knows) that he will definitely have to work tomorrow.'

Section 5.5 discusses the mechanisms involved in deriving verb cluster interruptions by adverbs in various previous approaches to verb cluster formation. It will become clear that the position of adverbs both inside and preceding the verb cluster poses problems for those approaches.

I argue that the position of adverbs with respect to the verb cluster can be understood if one takes the base-generation approach. It was established above,

[87] The fact that the two manner adverbs get different results might be a result of the methodology. The informants were forced to choose a single order. I take this difference to be irrelevant here. The main point is that these adverbs are the most acceptable as a cluster interrupter.

that low manner adverbs such as *zacht* 'quietly' are more acceptable inside the verb cluster than higher adverbs, such as *zeker* 'definitely'. In a 'regular' grammatical judgement task, the West-Flemish informants indeed judged interruptions by *zacht* 'quietly' (as in (125a)) as acceptable, while they judged interruptions by the higher adverb *zeker* 'definitely' (as in (125b)) as unacceptable.

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

b. * ...dat Jan morgen *moet* **zeker** *werken.*
...that he tomorrow must definitely work
'...that he therefore definitely has to work.'

In light of this, consider the syntactic structure when other auxiliaries, such as *gaat* 'will' and *wil* 'want' are used. These auxiliaries are in a higher position according to Cinque's (1999; 2006) hierarchy. Now, a prediction arises. The aspectual adverbs *altijd* 'always' and *bijna* 'almost' are positioned higher than the functional projection where the root modal is licensed, but below the future auxiliary *gaat* 'will' and the volitional modal auxiliary *wil* 'want'. This is depicted in (126).

(126) [ModP$_{\text{epistemic}}$ ***zeker*** 'definitely'
[TP$_{\text{future}}$ *gaat* 'will'
[ModP$_{\text{volitional}}$ *wil* 'want'
[AspP$_{\text{perfect}}$ ***altijd*** 'always'
[AspP$_{\text{prospective}}$ ***bijna*** 'almost'
[ModP$_{\text{obligation}}$ *moet* 'must'
[VoiceP ***zacht*** 'quietly'
[VP V$_{\text{main}}$]]]]]]]]

If cluster interruption is dependent on the position of auxiliaries in Cinque's hierarchy, the future and volitional auxiliaries should allow cluster interruption by these aspectual adverbs, while the modal auxiliary *moet* 'must' should not allow cluster interruption by these adverbs.

Crucially, this prediction is not borne out. The informants were asked to rate the sentences in (127) and (128) on a five-point scale. If the acceptability of cluster interruption conforms to Cinque's hierarchy, the (a) sentences should be ill-formed, while the (b) sentences should be acceptable. The informants, however, scored all four sentences as ill-formed (with a score of 2 out of 5).

(127) a. * Ik weet dat Jan *moet* **bijna** *werken.*
I know that Jan must almost work
'I know that Jan almost has to work.'

b. * Ik weet dat Jan *gaat* **bijna** *werken.*
I know that Jan goes almost work
'I know that Jan almost goes to work.'

(128) a. * Ik weet dat Jan *moet* **altijd** *werken.*
I know that Jan must always work
'I know that Jan always has to work.'

b. * Ik weet dat Jan *wil* **altijd** *werken.*
I know that Jan wants always work
'I know that Jan always wants to work.'

These results clearly indicate that the acceptability of cluster interruption is not related to the position where the auxiliary should be licensed in Cinque's hierarchy.

The data indicate that all auxiliary verbs behave the same in that they can be merged freely with respect to low manner adverbs, but not with higher adverbs. This can be understood if one assumes that auxiliary verbs are base-generated in a low position, as part of a complex predicate. All auxiliaries have to be merged at least before higher functional projections, such as AspP – the position of aspectual adverbs – are merged. Lower functional projections, such as VoiceP can be merged in various orders with respect to the auxiliary, in a similar vein as has been argued for particle phrases in chapter 3. The question that now arises is where the exact cut-off point for merging the auxiliary is. This is the topic of the next section.

5.4 The extent of free merge

To investigate the exact cut-off point for cluster interruption, the informants were asked to provide judgements on cluster interruptions by a variety of adverbs. All test sentences consisted of a finite auxiliary, namely a modal of obligation, and an infinitival main verb. Aside from *volledig* 'completely', only adverbs that correspond to a single position in Cinque's (1999; 2006) hierarchy were included in these items. The relevant adverbs and their corresponding functional projections are listed in (129) and the entire list of test sentences can be found in appendix C.

(129) [MoodP$_{\text{evaluative}}$ *helaas* 'unfortunately'
[ModP$_{\text{epistemic}}$ *zeker* 'definitely'
[TP$_{\text{future}}$ *straks* 'later'
[MoodP$_{\text{irrealis}}$ *misschien* 'maybe'
[ModP$_{\text{alethic}}$ *onvermijdelijk* 'necessarily'
[AsP$_{\text{habitual}}$ *gewoonlijk* 'usually'
[AspP$_{\text{continuative}}$ *nog steeds* 'still'
[AspP$_{\text{perfect}}$ *altijd* 'always'
[AspP$_{\text{prospective}}$ *bijna* 'almost'
[ModP$_{\text{obligation}}$ *verplicht* 'obligatorily'
[AspP$_{\text{completive}}$(I) <*volledig* 'completely'>

[VoiceP *zacht, wijs* 'quietly', 'wisely'
[AspP$_{\text{completive}}$(II) <*volledig* 'completely'>] ...]]

Table 5.1 depicts the informants' judgements for each interrupting adverb.

Adverb		**Score**					
		Sounds bad					*Sounds good*
helaas	'unfortunately'	●	○	○	○	○	
zeker	'definitely'	○	●	○	○	○	
straks	'later'	●	○	○	○	○	
misschien	'maybe'	●	○	○	○	○	
onvermijdelijk	'necessarily'	○	○	●	○	○	
gewoonlijk	'usually'	○	○	●	○	○	
nog steeds	still	●	○	○	○	○	
altijd	'always'	○	●	○	○	○	
bijna	'almost'	○	●	○	○	○	
verplicht	'obligatorily'	○	○	○	●	○	
volledig	'completely'	○	○	○	●	○	
zacht	'quietly'	○	○	○	○	●	
wijs	'wisely'	○	○	○	○	●	

Table 5.1: The acceptability of various adverbs inside the verb cluster

These results clearly demonstrate that adverbs that are lower in the hierarchy are better interrupters.[88] The cut-off point for cluster interruption is not random, but lies somewhat below AspP$_{\text{prospective}}$; all lower adverbs can interrupt the verb cluster.

Note that obligation is a property usually attributed to the subject of the clause. The fact that the adverb of obligation *verplicht* 'obligatorily' is acceptable inside the verb cluster, leads to the prediction that low, indefinite subjects can also interrupt the verb cluster. This prediction is confirmed by sentence (130), which the informants found acceptable.[89]

(130) MOD$_1$-**SUBJ**-V$_2$:
Ik vind dat er morgen *moet* **een vrouw** winnen.
I think that EXPL tomorrow must a woman win.
I think that a woman has to win tomorrow.

Since it is generally assumed that subjects are generated in *v*P, one may hypothesize that this is the domain where auxiliaries can freely be merged in West-Flemish. After *v*P is merged, no auxiliaries can be merged anymore and

[88] There is one exception to this claim. The questionnaire included another alethic modal adverb, *mogelijk*, which was judged as acceptable as a verb cluster interrupter with a score of 4 out of 5. Currently I do not have an explanation for this.
[89] See also (Haegeman 1992:117), among others.

higher projections are merged. The cut-off point hence seems to lie on the border between the lexical and the functional domain of the clause.[90]

Cluster interruption by adverbs are thus derived as follows. A verb projection may take (an) auxiliary verb(s) to create a cluster that is interpreted as a complex predicate. The verb (projection) may also be modified by an adverb. Consequently, we find situations in which an auxiliary verb and an adverb are available for Merge with the main verb. In West-Flemish it clearly does not matter which element is merged first. No movements are involved to derive the available orders. Since manner adverbs, such as *zacht* 'quietly', are generated within *v*P, these types of adverbs can occur in various positions with respect to the auxiliaries.[91] Since the higher adverb *zeker* 'definitely' is generated in a higher position, this adverb cannot interrupt the verb cluster.

This provides an account for the unidirectional implicational relation observed in section 5.3. An adverb that can interrupt the verb cluster can also occur in a position preceding the verb cluster, but an adverb that can precede the verb cluster cannot always interrupt the verb cluster.

Section 5.6 considers the cut-off point for cluster interruption in varieties of Dutch spoken in the Netherlands. First, the next section demonstrates that previous theories of cluster formation cannot straightforwardly account for the available positions of adverbs with respect to the verb cluster.

---

[90] Note that this cut-off point does not correspond to the classical distinction between clausal and predicate (or VP) adverbs (Jackendoff 1972). This distinction has been reestablished for Dutch by Broekhuis and Corver (2016) and Barbiers (2017). Both Broekhuis and Corver and Barbiers make use of a number of tests to distinguish clausal and predicate adverbs. Following these tests some aspectual adverbs, such as *altijd* 'always' and *nog steeds* 'still' fall into both classes. Nevertheless, these adverbs are unacceptable as verb cluster interrupters. It seems that only adverbs that belong solely to the class of VP adverbs can interrupt the verb cluster. This indicates that the aspectual adverbs belonging to the group of VP adverbs, are in a somewhat higher position than the cut-off point for cluster interruption.

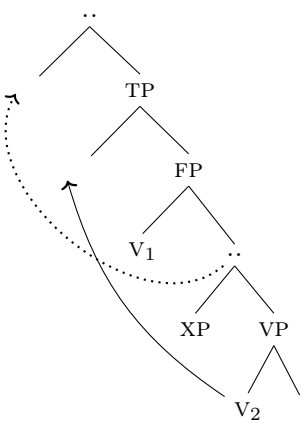
[91] An analysis in which adverbs can be base-generated in a higher position than where they are interpreted, requires some type of mechanism by which adverbs can be related to lower verbs. According to (Bouma 2003:25), in sentences in which two adverbs precede the verb cluster, multiple possible interpretations arise: The higher adverb modifies V_1, while the lower adverb modifies V_2, both adverbs modify V_1 or both adverbs modify V_2. A reading in which the higher adverb modifies V_2, while the lower adverb modifies V_1 (a "nested" reading) is impossible.
A possible way to account for these facts is to adopt Bouma's (2003) analysis and assume (following Van Noord and Bouma 1994) that the adverb is lexically introduced by the verb it modifies. This selection can then be *inherited* by higher verbs (in line with what has been proposed for arguments on page 61). In this way, a higher adverb can behave as an adjunct of an embedded verb. To account for the observation that the higher adverb cannot take a narrower scope than the lower adverb, Bouma argues that adjunct scope follows word order. There may be a deeper explanation for this fact. The relative positions of adverbs with respect to other adverbs resembles the relative position of arguments with respect to other arguments. While it is argued in this dissertation that arguments can be base-generated in higher positions, arguments are certainly not inserted at random with respect to each other. Rather, arguments that are associated with lower positions generally need to be merged first. This ordering restriction on adverbs and arguments hence seems to be a more general property of Dutch syntax. I hope to address these issues in future research.

5.5 Deriving the position of adverbs in previous approaches

5.5.1 The position of adverbs in a fixed head-initial base order

First consider an analysis with an underlying right-branching, head-initial order. Cinque argues that verb-final orders can be analyzed as "raising of the V to T/AGRs and then movement of the entire remnant past the V (cf. Kayne 1994:52)." (Cinque 2006:128)[92]

(131)



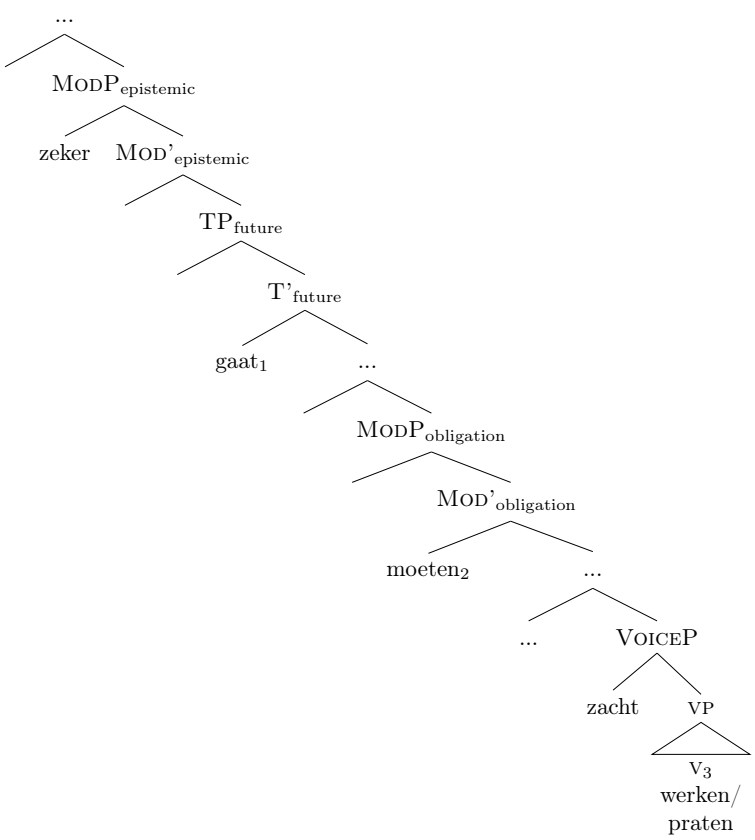
This movement can derive a verb cluster with a descending order, as in Frisian or German. To achieve an ascending word order, the landing site of the lower verb would have to be in a position below the higher verb. It is unclear what this position should be. Following the hierarchy in (115), this could not be TP. Of course, Cinque's clausal spine hosts many head positions where the verb may land, but there is no obvious motivation for such a movement.

Crucially, it is not only the movement of the verb that is not clearly motivated in this approach. In Cinque's (1999; 2006) framework, the sentences in (124) have a base-structure of (132).[93]

[92] Such a remnant movement approach is similar to Koopman and Szabolcsi (2000) and Hinterhölzl (2006), except that they argue that auxiliaries are main verbs that select full CP complements.

[93] For reasons of simplicity, the irrelevant projections are not depicted in this structure.

(132)



Since Cinque (1999, 2006) explicitly argues that adverbs do not move, the derivation of the 1-ZACHT-2-3 order is not straightforward in this structure. One way to derive this order would involve movement of (a projection containing) V_3 to a position above *zacht*, followed by movement of the projection containing *zacht* to a position in between V_1 and V_2.

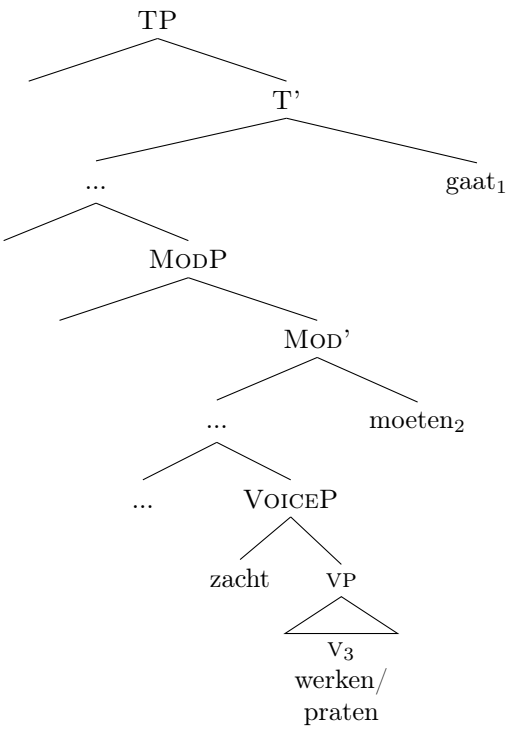
The motivations for moving the remnant projection are not straightforward in this approach, especially considering the fact that the remnant projection is empty except for the adverb, which does not provide a clear trigger for movement. Moreover, the ZACHT-1-2-3 order, which is a third possibility in these varieties, requires an additional landing site of the projection containing *zacht* above the highest auxiliary. One might attribute the difference between these landing sites to some type of parameter. However, this makes it difficult to explain why all three orders can occur in West-Flemish.[94]

[94] Hinterhölzl (2006) presents another approach to verb cluster formations, which also has an underlying SVO structure and is therefore worth mentioning here. His approach is similar to the approach taken by Koopman and Szabolcsi (2000), but involves fewer movement operations. He argues that all verbs project to a full CP. In this approach, a number of movements take place to derive verb clusters. First, elements such as objects move out of the embedded

5.5.2 The position of adverbs in a fixed head-final base order

The syntactic structure with an underlying left-branching order is depicted in (133).

(133)



Many different movements are required to derive the different positions of the adverb in the verb cluster. First, the 1-2-ZACHT-3 order requires movement of VoiceP to a position following *moeten* (but below the TP), and a subsequent movement of ModP to a position following *gaat*. The 1-ZACHT-2-3 order requires movement of VP to a position following *moeten*, followed by movement

verb phrase to a slightly higher position. Subsequently, the embedded AspP, which contains only the verb phrase and potentially a particle, moves to the embedded Spec-CP. After this movement, the embedded TP, which contains the objects, adverbs, and the trace of AspP, moves to a position above the higher verb, but below higher adverbs.
To derive verb cluster interruptions by elements other than particles, Hinterhölzl assumes that a projection higher than AspP is moved to the embedded Spec-CP. Again, these movements are difficult to motivate, especially considering the fact that there is optionality in verb cluster interruption within one language.
In addition, this approach requires further assumptions to account for the possibility of extracting from a DP preceding the verb cluster. Hinterhölzl argues that freezing is a "specificity effect" and therefore does not affect movement of objects out of the lower clause. See Salzmann (2011:476) for arguments against this claim.

of MODP to a position following *gaat*. Finally, the ZACHT-1-2-3 order presents the most problematic case. This requires movement of the VP to a position following *moeten*, followed by movement of MODP to a position following *gaat*. Importantly, this movement has to exclude the adverb. There are two ways in which one could achieve this, but both are problematic. The first is to assume that the verbs undergo head movement only in this order, which has obvious problems. The other way to derive the ZACHT-1-2-3 order is to assume that the adverb has undergone movement to a position above MODP. However, there is no clear trigger for moving this adverb, especially considering the fact that it does not move in the other two available orders.

To summarize, a derivation from an underlying left-branching SOV word order requires a number of movements that are difficult to motivate.

5.5.3 A lexicosemantically based position of adverbs

The derivations in the previous sections assumed that adverbs and auxiliaries are generated in fixed positions in the syntactic structure, in accordance with Cinque (1999, 2006). However, Ernst (2001) argues that the ordering of functional projections is not as rigid as claimed by Cinque, but depends on lexicosemantic properties. According to him, adverbs can be merged in a range of positions, as long as their surface positions meet their selectional properties. One adverb might select an event, while another selects a proposition. Crucially, events and propositions do not correspond to particular syntactic projections. In a well-formed clause, the projections are hierarchically ordered as in (134).

(134) Speech-Act > Fact > Proposition > Event > Specified Event

This hierarchy entails for instance that an adverb can take an event and turn it into a proposition. However, the reverse is not a possibility; a proposition cannot be turned into an event. The sentences in (135) illustrate this.

(135) a. Theo probably cleverly bought flowers.
b. * Theo cleverly probably bought flowers.
(Ernst 2001:19)

While *cleverly* takes an event as its argument to form an event, *probably* takes a proposition to form a proposition (as only propositions have truth-values). Once an event becomes a proposition, it can no longer function as an event. As a consequence, *probably* can select a proposition containing the event and the adverb *cleverly*, but the event-selecting *cleverly* cannot select the constituent containing the proposition with *probably*.

Ernst states that auxiliaries are merged in a position outside the event. Epistemic modals even select full propositions. The adverb *zacht* is a manner adverb; it selects an event. Accordingly, all auxiliaries always have to precede all manner adverbs (in a head-initial approach), or they always have to follow

manner adverbs (in a head-final approach). Consequently, the same problems arise as in the previous two sections.

5.5.4 The position of adverbs in a PF inversion approach

Another type of approach to verb clusters discussed in previous chapters is one where different verb orders are the result of a reordering at PF. Chapter 2 discussed two recent approaches. The first type of approach assumes that linearly adjacent words can be inverted (Salzmann 2013). Such an approach cannot explain why low adverbs, but not high adverbs, can interrupt the verb cluster. Salzmann himself mentions that his accounts overgenerates (Salzmann 2013:115).

The other type of PF approach involves an inversion of nodes that are sisters in the syntactic structure, as in Wurmbrand's (2006; 2017) modified version of Haegeman and Van Riemsdijk (1986). In this approach, an order in which the lowest adverb precedes the verb cluster cannot be derived. If one assumes a head-initial base order, the base-generated order is 1-2-ZACHT-3. Inversion of sister nodes cannot place the adverb in a position preceding the highest verb. If one assumes a head-final base order, all verb projections have to invert to derive an ascending verb cluster. These inversions cannot exclude the lowest adverb. Again, the ZACHT-1-2-3 order cannot be derived.

These sections clearly demonstrate that earlier approaches to verb clusters cannot straightforwardly derive the various available positions of adverbs in the verb cluster. This further supports the claim that auxiliaries are generated and spelled-out in a low position. Such a base-generation approach can account for the available positions of adverbs.

I thus argue that cluster interruption is the result of a free choice in the timing of merging the auxiliary with respect to other low material. In West-Flemish, 'low' corresponds to vP, as was argued in section 5.4. The next section investigates the restrictions on cluster interruption in Netherlandic Dutch. The theory outlined so far makes the prediction that Netherlandic Dutch should also have a clear cut-off point for cluster interruption.

5.6 The restrictions on VCI in NL Dutch

So far, it has been argued that verb cluster interruptions arise because the auxiliary can be merged after other vP-internal material is merged. Chapter 3 already showed that varieties of Netherlandic Dutch, such as standard Dutch, also allow a free order of Merge between particles and auxiliaries. In fact, it seems that the particle can interrupt anywhere inside the verb cluster; this is illustrated in (136a). Interruptions by adverbs, as in (136b), however, are completely unacceptable in standard Dutch.

(136) a. ...dat Jan het hele brood wel (**op**) *had* (**op**) *willen* (**op**) *eten*.
...that had the whole bread AFF up had up want up eat
'...that Jan would have liked to eat up the whole bread.'

b. ...dat Jan daarom (**zacht**) *had* (***zacht**) *moeten* (***zacht**) *praten*.
...that Jan therefore quietly had quietly must quietly talk
'...that he therefore had to speak quietly.'

Note that the restrictions on verb cluster interruptions in Netherlandic Dutch formed problems for all previous analyses of verb clusters. None of the movement analyses provides a clear explanations for this issue. As an example, consider the account by Blom (2005:110), who states that "projections are excluded from the cluster-internal position in (standard) Dutch. This can be accounted for by assuming that Verb Raising may only apply to V-bars that do not contain projecting words." This statement is descriptively correct (if one assumes that adverbs are XPs), but not explanatory.

To determine the underlying structure of the verb cluster, it is important to notice that bare nouns, but not full noun phrases, can interrupt the verb cluster in standard Dutch.

(137) ...dat Jan kan **fluit**-spelen.
...that Jan can flute-play
'...that Jan can play the flute.'

These bare nouns block the presence of an additional argument, which indicates that the interrupting bare noun receives a theta-role.

(138) a. ...dat mijn dochter een liedje *kan fluiten*.
...that my daughter a song can flute
'...that my daughter can play a song on the flute.'

b. * ...dat mijn dochter een liedje *kan* **fluit** *spelen*.
...that my daughter a song can flute play

Crucially, singular count nouns such as *fluit* generally require an article. Bare singular nouns in Dutch typically do not occur in regular argument positions; this is illustrated in (139) (De Swart et al. 2007).

(139) a. * Kat drinkt graag melk.
cat drinks gladly milk

b. * Ze kocht fluit.
she bought flute

Regular argument positions require nominals that introduce a discourse referent. Farkas and De Swart (2003) and De Swart and Zwarts (2009) argue that

discourse referents are specified for number and/or definiteness. As a consequence, bare nouns, which are not specified for number and definiteness, cannot occur in argument positions.[95]

The fact that the interrupted position requires nouns to be bare, indicates that this is not an argument position. Sentence (140c) indeed illustrates that bare nouns that precede or interrupt the verb cluster are not referential in standard Dutch.

(140) a. Ik denk dat ik vanavond een fluit$_i$ *moet hebben*. Kun jij 'm$_i$
I think that I tonight a flute must have. Can you it
meenemen?
with.take
'I think I need to have a flute$_i$ tonight. Could you take it$_i$ with you?'

b. Ik denk dat ik vanavond *moet* **fluit**$_i$ *spelen*. *Kun jij 'm$_i$
I think that I tonight must flute play. Can you it
meenemen?
with.take
'I think I need to play flute$_i$ tonight. *Could you take it$_i$ with you?'

c. Ik denk dat ik vanavond **fluit**$_i$ *moet spelen*. *Kun jij 'm$_i$
I think that I tonight flute must play. Can you it
meenemen?
with.take
'I think I need to play flute$_i$ tonight. *Could you take it$_i$ with you?'

Such nouns are usually referred to as incorporated nouns, whether or not a movement process is assumed to underlie this construction. Incorporated nouns are typically not referential (see Mithun 1984).

I follow Mithun (1984), Farkas and De Swart (2003) and De Swart and Zwarts (2009) and assume that the bare nouns that precede or interrupt the verb cluster form a part of the predicate. As a consequence, they receive a part-of-predicate interpretation.[96] The noun-verb combination forms a single event, where the noun is part of the activity denoted by the verb, in a stereotypical way.

Bare nouns thus participate in the formation of the predicate. The noun does not refer to a discourse referent and can hence denote an activity together with

[95] The idea that bare nouns are not specified for number is confirmed by the meaning of sentence (ia).

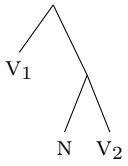
(i) a. Jan moet brood bakken.
Jan must bread bake
'= Jan has to bake one or more breads.'

b. Jan moet een brood bakken
Jan must a bread bake
'= Jan has to bake one bread.'

[96] See also De Hoop (1996).

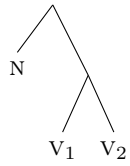
the verb. The fact that bare nouns can also precede the verb cluster suggests that they can also be a part of the predicate in that position. Accordingly, one can analyse verb cluster interruptions by bare nouns in a similar vein as verb cluster interruptions by particles:

(141) a.



(interruption)

b.



(no interruption)

The fact that bare nouns can interrupt the verb cluster follows if they are part of the event or state denoted by the verb. In fact, it seems that only elements that can be part of the predicate can interrupt the verb cluster in Netherlandic Dutch varieties. Indeed, many have noted that elements that interrupt the verb cluster in Netherlandic Dutch varieties often form a semantic unit with the main verb (Verhasselt 1961, Koster 1994, among others). Particles can clearly be part of the event or state denoted by the verb.

Low adverbs, which are less acceptable interrupters, are generated in a higher position than particles:

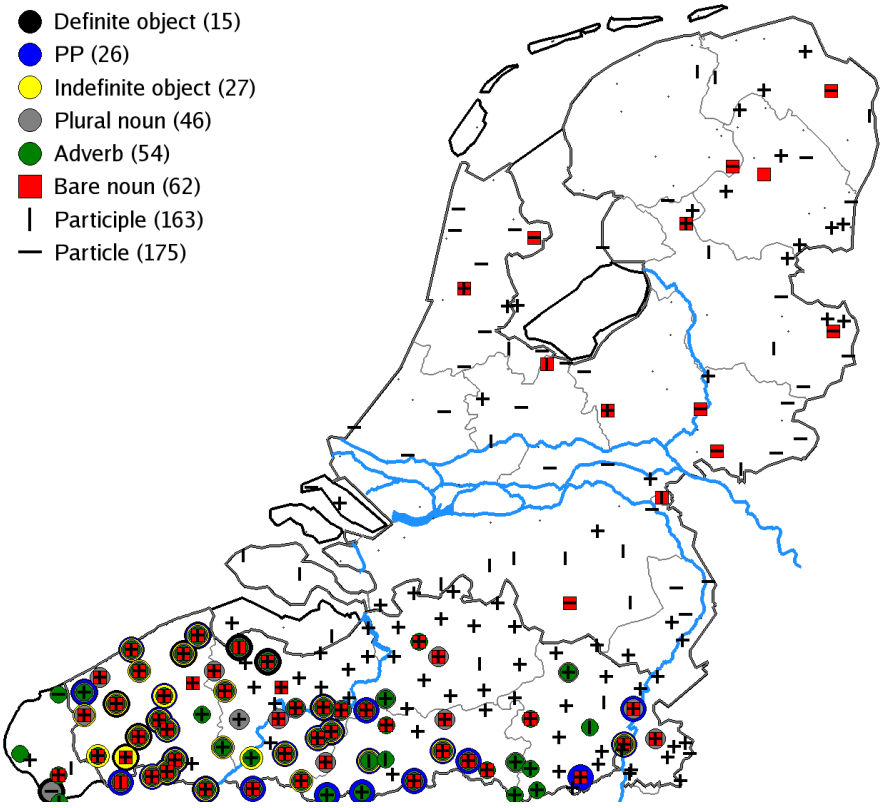
(142) ...dat Jan <**zachtjes**> af <***zachtjes**> wast.
...that Jan quietly PTCL quietly washes
'...that Jan quietly washes dishes.'

Section 5.4 argued that the cut-off point for verb cluster interruption in West-Flemish is *v*P. The auxiliary can be merged anywhere within that domain. The results in this section suggest that the cut-off point in Netherlandic Dutch varieties is lower within the predicate. In an approach where predicates are decomposed into three subevental components: a causing subevent, a process-denoting subevent and a subevent corresponding to result state (Ramchand and Svenonius 2002; Ramchand 2008; Ramchand and Svenonius 2014), auxiliary verbs in Netherlandic Dutch have to be assumed to be spelled out in the lowest verbal head, below the level of manner adverbs, which most likely attach to the process phrase. I assume that anything that is merged in that projection forms a part of the event or state denoted by the verb, and anything that forms a part of the event or state can interrupt the verb cluster in Netherlandic Dutch.

5.7 A transition zone

The previous section argued that variation in cluster interruption is a result of differences in the order of merging auxiliaries, objects and adverbs. This ordering is freer in West-Flemish varieties than in Netherlands Dutch varieties.

In West-Flemish, the auxiliary can be freely merged with any element within *v*P. In Netherlandic Dutch, only elements that are a part of the event or state denoted by the verb can be merged prior to the auxiliary. The cut-off point for cluster interruption is hence much lower in Netherlandic Dutch varieties than in West-Flemish varieties. In light of this, consider the geographic distribution of verb cluster interruptions.



Map 5.1: Interruption of the verb cluster by non-verbal elements

The map clearly illustrates that there is no clear border between the West-Flemish region where cluster interruption is very acceptable, and the Netherlandic Dutch varieties where cluster interruption is exceptional. Rather, there is a gradual decline.[97] Some items are more commonly accepted than other items. Informants from areas closer to West-Flemish accepted more types of interruption than informants from areas further away. This becomes particularly clear when the frequencies are divided into regions, as in table 5.2.

[97] Note, this gradual decline is another argument against assuming that verb cluster interruption arises through a movement of the verb to a higher position. There is no apparent reason why verb movement would be sensitive to the type of object involved.

	West Flanders	East Flanders	Flemish Brabant	Limburg	Antwerp
Bare noun	20	14	7	5	2
Low adverb	18	12	12	6	2
Plural noun	18	14	7	4	2
Indefinite object	17	7	2	1	0
PP object	11	5	7	3	0
Definite object	10	4	0	0	0
High adverb	0	0	0	0	0

Table 5.2: Verb cluster interruptions by region (Barbiers et al. 2008)

Hypothetically, the area in between West-Flanders and the Netherlands is a transition zone.[98,99]

The hypothesis that these languages are in transition accounts for the disorder in the acceptability of the types of interruptions in this region. For instance, bare nouns are among the most common and acceptable interrupters in both West-Flemish and Netherlandic Dutch varieties. Interruptions by indefinite noun phrases, on the other hand, are only acceptable in West-Flemish varieties. Now, in the transition zone, some informants accepted an interruption by an indefinite object, while they rejected an interruption by a bare noun. This is not expected if these languages are in their final state, but it might be expected in a transitional phase.

If the other Flemish languages are in a transition from a West-Flemish type of language to a Netherlandic Dutch type of language, one might predict the cut-off point in these varieties to be somewhere in between *v*P and the predicate. Indeed, while there is a lot of variation in the types of elements that can interrupt the cluster in these varieties, no informant accepted interruptions by the high adverb *jammergenoeg* 'unfortunately'.

Hypothetically, the languages in the transitional area have cut-off points that correspond to precise functional projections, such as VP. Unfortunately,

[98] For Flemish Brabant and Antwerp, this has been independently argued for by Barbiers et al. (2016).

[99] Potentially, the observed synchronic variation reflects a diachronic change. Unfortunately, the data are too scarce to make statements of this nature. However, it does seem that such a change has taken place in varieties spoken in the Netherlands as well, as these varieties used to have more interruption possibilities. It has been observed in Old-Frisian texts (Van der Meer 1990; Hoekstra 2007) and texts from Holland (Coussé 2002, 2003)), Brabant, Drenthe and Utrecht (Coupé 2007). The construction started to decline in the 17$^{\text{th}}$ century (Koelmans 1965; Hoeksema 1993, 1994).

(i) Dat hi daer *soude* **de viande** *jaghen* uut sijns vader lande.
that he there should the enemy chase from his father land
'That he should chase the enemy from his father's land there.'
14$^{\text{th}}$ century Holland. From: Rijmkroniek van Melis Stoke (From Brill (1885) as cited by Hoeksema (1993:160))

It thus seems that northern varieties have undergone a change to fewer interruption possibilities.

I currently do not have the data to investigate the cut-off points for these intermediate varieties. This requires further detailed research.

5.8 Conclusion

This chapter considered properties of verb cluster interruptions, which provide further support for the claim that auxiliaries are base-generated in a low position. This support is based on the lack of freezing effects, the position of adverbs in the verb cluster, and the types of adverbs that can interrupt clusters with different types of auxiliaries. First, the fact that there are no freezing effects in the extraction from DPs that precede the verb cluster, suggests that these elements are base-generated in their surface position. Secondly, the various positions of adverbs in verb clusters posed problems for all theories of cluster formation that assumed movements in syntax or at PF. Finally, while the position of adverbs is indicative of their ability to interrupt the verb cluster, the type of auxiliary did not play a role; all auxiliaries obligatorily occupy a low position.

The chapter further illustrated that there is a clear cut-off point for cluster interruption just above vP in West-Flemish, and lower in Netherlandic Dutch. Auxiliaries form a part of the event or state denoted by the verb in standard Dutch, but form a part of the entire lexical domain in West-Flemish. As a result, West-Flemish exhibits much more freedom of Merge than standard Dutch.