

***How might we want to explain them or  
how to deal with double modal verbs in Dutch and German?***<sup>1</sup>

Łukasz Jędrzejowski  
(jedrzejowski@zas.gwz-berlin.de)

&

Marleen van de Vate  
(m.s.vandevate@gmail.com)

### 1. What is this talk about?

Every natural language possesses a more or less determinable class of modal verbs. If modal verbs express miscellaneous kinds of attitudes towards what is embedded, they are supposed to co-occur. Both in Dutch and German, (at least) three patterns containing **two** modal verbs can be attested:

(ia) MV<sub>1</sub> + INF + MV<sub>2</sub> for German:

- (1) *Im Zweifel* [MV<sub>1</sub> **dürfte**] *das Gericht eine erhebliche Verminderung*  
in.the doubt might.3SG the court a considerable decline  
*der Schuldfähigkeit durch den Alkohol nicht* [INF **ausschließen**] [MV<sub>2</sub> **können**]  
the criminal.liability through the alcohol NEG preclude can.INF

‘In case of doubt, the court might not be able to rule out a considerable alleviation of criminal liability due to the alcohol.’ (*Der Spiegel* 36)

In contrast to German, Dutch MV<sub>2</sub> may precede the embedded infinitive; cf. e.g. Abraham (2009) for a constraint-based explanation of verb clustering in West-Germanic languages and Zwart (2011: 296-323) and Haider (2009: 274-297) for Dutch and German respectively:

(ib) MV<sub>1</sub> + MV<sub>2</sub> + INF for Dutch:

- (2) *Je* [MV<sub>1</sub> **moet**] [MV<sub>2</sub> **kunnen**] [INF **luisteren**]  
you must.3SG can.INF hear.INF  
‘One must be able to listen to.’ (Wagenaar 2009: 126)

As for (ib), similar pattern can be observed in some English dialects<sup>2</sup> (cf. Battistella 1995, Elsman & Dubinsky 2009, Hasty 2011, Montgomery & Nagle 1993, Di Paolo 1989, among many others):

- (3) [MV<sub>1</sub> **Should**] *we* [MV<sub>2</sub> **might**] [INF **cancel**] *the trip?*

[<sub>CP</sub> **should**<sub>1</sub> [<sub>TP</sub> *we* **t**<sub>1</sub> [<sub>VP</sub> **t**<sub>1</sub> [<sub>POLP</sub> **might** [<sub>VP</sub> **cancel** ... ]]]]] (Elsman & Dubinsky 2009: 81)

Note, however, that: (i) examples like in (3) do not belong to the standard usage of English, (ii) the English non-finite system differs from those in German and Dutch (but see Nagle 1994 and Roberts 1985 for double modal verbs in the history of English).

The second pattern consists of only two MVs<sup>3</sup>:

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<sup>1</sup> Abbreviations employed in this handout: 1/2/3 – 1st/2nd/3rd person, ACC – accusative, DAT – dative, COMP – complementizer, IMP – imperative, INF – infinitive, MP – modal particle, NEG – negation, NOM – nominative, PL – plural, PTCP – participle, SG – singular. For providing some German spoken examples, we would like to thank Simon Blum and André Meinunger.

<sup>2</sup> See the *Database of Multiple Modals*: <http://artsandsciences.sc.edu/multimo/welcome>.

(ii) MV<sub>1</sub> + MV<sub>2</sub>:

(4a) *Ja, dan* [MV<sub>1</sub> **moet**] *je* *nog* [MV<sub>2</sub> **mogen**]  
yes then must.2SG you.2SG still may.INF  
'Yes, you have to be allowed to.' (CGN: fv901104.sea#fv901104.297)

(4b) [MV<sub>1</sub> **Mocht**] *je* *nou* [MV<sub>2</sub> **kunnen**] *zeg* *maar* *of* *je* *wil*  
may.2SG you well can.INF say.IMP MP if you.2SG want.2SG  
'If you are able, just let me know if you want to.' (CGN: fn008306.sea#fn008306.100)

A similar situation holds for German, as well:

(4c) *Man muss doch wissen, wann man* [MV<sub>2</sub> **müssen**] [MV<sub>1</sub> **darf**]  
one must.3SG MP know.INF when one must.INF may.3SG  
'One has to know when he is allowed to have (to do something).'  
(IDS, *St. Galler Tagblatt*, 03/09/2009)

where *müssen* 'must' idiosyncratically means *pinkeln gehen* ('to go pee').

(4d) *Aber ihr* [MV<sub>1</sub> **müsst**] [MV<sub>2</sub> **wollen**], *betonte Kirschner*.  
but you.PL must.2PL want.INF stressed.3SG K.NOM  
'But you have to want (it), said Kirschner.'  
(IDS, *Mannheimer Morgen*, 18/03/2005)

Finally, double modals are attested with embedded NPs:

(iii) MV<sub>1</sub> + NP + MV<sub>2</sub>:

(5a) *De sollicitant* [MV<sub>1</sub> **moet**] [NP **Hongaars**] [MV<sub>2</sub> **kunnen**]  
the candidate must.3SG Hungarian can.INF  
'The candidate must know Hungarian.'

(5b) *Einzige Voraussetzung: Man* [MV<sub>1</sub> **muss**] [NP **Englisch**] [MV<sub>2</sub> **können**]  
only requirement one must.3SG English can.INF  
'It is required to have a command of English.'  
(IDS, *Nürnberger Nachrichten*, 05/01/2009)

The embedded NP must be equipped with specific semantic features. In most cases it pertains to languages and skills. This restriction is traced back to the semantic contribution of MV<sub>2</sub> and its modal base has to be circumstantial.

Today, we focus on Dutch and German data corresponding to the modal realizations in (i) and restrict ourselves to the present perspective of MV<sub>1</sub>.

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<sup>3</sup> Notice, however, that the pattern in (ii) can be divided into two subgroups. Whereas to the first group belong examples in that the dependent MV is interpreted as a lexical/main predicate, the second group is meant to contain all those instances in that the dependent modal verb ought to be interpreted as a circumstantial modal verb and the embedded lexical/main verb has been deleted (cf. 1 and 2) (elliptical complements).

## 2. Previous accounts

### 2.1. Epistemic Non-Finiteness Gap

Abraham (2001, 2002) proposes the following asymmetric picture w.r.t. iterative occurrences of MVs:

(6) ‘Non-finite gap’ for EMV:

a) \*EMV embeddable under DMV/EMV

b) <sup>OK</sup>DMV embeddable under EMV

c) DMV embeddable under DMV ... not excluded on theoretical grounds

(although double DMV identity may nevertheless be blocked on grounds of *horror aequi*) (Abraham 2001: 21)

As for (c), Nauze (2008) even assumes that a DMV cannot be embedded under another DMV.

Similar conclusions have been drawn in Erb (2001), Fagan (2001) and Wurmbrand (2001) for German. According to them, epistemic MVs are not allowed to occur as non-finite verbal forms:

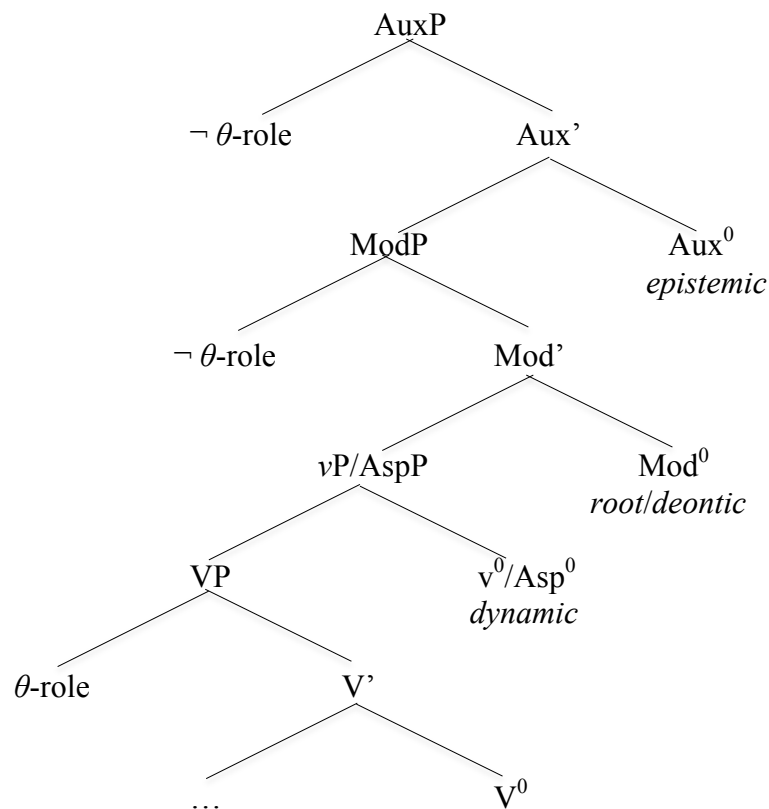


Figure 1: German modal verbs and their merge positions according to Wurmbrand (2001: 183)

From the structure follows that:

- (i) epistemic modal verbs merge in AuxP indicating the feature [+finite] on the verb,
- (ii) both epistemic and deontic modal verbs do not assign a  $\theta$ -role to the subject.

## 2.2. Cartographic Approach

As Cinque (1999) has observed cross-linguistically, various classes of adverbs, depending on their functional notions, are to be differentiated (cf. Cinque 1999: 106 for the full hierarchy):

[*frankly* Mood<sub>speech act</sub> [*fortunately* Mood<sub>evaluative</sub> [*allegedly* **Mood**<sub>evidential</sub>  
 [*probably* **Mod**<sub>epistemic</sub> [*once* T(Past) [*then* T(Future) [*perhaps* Mood<sub>irrealis</sub>  
 [*necessarily* **Mod**<sub>necessity</sub> [*possibly* **Mod**<sub>possibility</sub> [*usually* Asp<sub>habitual</sub>  
 [*again* Asp<sub>repetitive</sub> [*often* Asp<sub>frequentative(I)</sub> [*intentionally* **Mod**<sub>volitional</sub>  
 [...  
 [*fast/early* Asp<sub>frequentative(II)</sub> [*completely* Asp<sub>SgCompleive(II)</sub>]]... ]]]]]]]]]]]]]]]]]]]

The Split IP Hypothesis can account for many double modal verbs possibilities:

(7a) *Ze* [MV1 **moeten**] [MV2 **kunnen**] [INF *schaatsen*]  
 they must.3PL can.INF skate.INF  
 ‘They must be able to skate.’

(7b) *Sie* [MV1 **müssen**] [INF *skaten*] [MV2 **können**]

In (7), (at least) two interpretations immediately spring to mind:

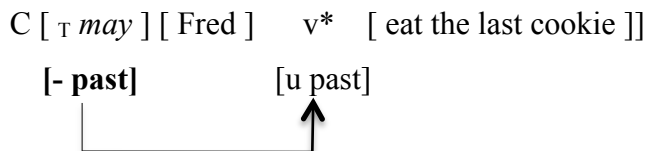
- (i) epistemic modality > ability
- (ii) obligation > ability

## 2.3. Phase-Based Approach

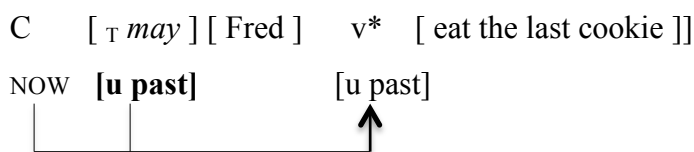
Based on Chomsky (2001, 2008), Butler (2003, 2004, 2006) and Zagona (2007, 2008), a Phase Model claims that the differences in interpretation can be derived from the modal’s interpretive relationship to the phase in which the modal is merged. In other words, the crucial distinction (circumstantial vs. non-circumstantial) is due to the (un)interpretability of features on the modal: [ $\pm$  person], [ $\pm$  tense,], etc.

(8) *Fred may eat the last cookie* (Zagona 2008: 287)

(9a) *May* with a circumstantial modal base has to merge in the vP Phase:



(9b) *May* with a non-circumstantial modal base has to merge in the CP Phase:



Although MVs have been analyzed in other theoretical frameworks, e.g. the Bidirectional Optimality Theory Semantics (cf. Foolen & de Hoop 2009 for Dutch) or the Construction Grammar approach (cf. Boogaart 2009 for Dutch), it is still not clear how double modals can be explained.

### 3. Modal verbs in Dutch and German

Following Maché (2013: 205), we assume a strong definition of modal verbs and modify it as follows:

A verb is a modal verb iff it is evaluated against both a circumstantial and a non-circumstantial modal base.

We also adopt the Kratzerian (1977, 1981, 1991, 2012) possible worlds semantics framework<sup>4</sup> indicating that MVs are existential and universal quantifiers over possible worlds:

- a) each MV has a single lexical entry with its quantificational force (existential vs. universal),
- b) its disambiguation is due a modal base that is contextually determined,
- c) a modal flavor is determined via an ordering source that orders the worlds of the modal base (realisitic, bouletic, theological, etc.).

See Condoravdi (2001) how to derive the modal base using temporal parameters of a MV:

- (i) modal perspective
- (ii) modal orientation

Consequently, we distinguish 6 MVs in Dutch (mainly based on Barbiers 1995):

		circumstantial	non-circumstantial
1.	<i>hoeven</i>	non-assertive, NPI	deductive/assumptive
2.	<i>moeten</i>	obligation	deductive
3.	<i>mogen</i>	permissive	speculative
4.	<i>kunnen</i>	ability	speculative
5.	<i>zullen</i> <sup>5</sup>	future/volitional	assumptive
6.	<i>willen</i>	desire	assumptive

Figure 2: Modal verbs in Dutch

a-examples: circumstantial modal base

b-examples: non-circumstantial modal base

<sup>4</sup> In the Kratzerian system modals with an evidential interpretation take an empty modal base. Our approach does not deviate from that. We only call evidential readings non-circumstantial.

<sup>5</sup> It is more than questionable to treat Dutch *zullen* and German *werden* as modal verbs. First, if they are employed as future auxiliaries (cf. 22a for Dutch and 30a for German), it is hard to imagine that they are equipped with a circumstantial modal base. Instead, both of them seem to involve a temporal operator, not a modal one. Second, even if they can be used epistemically, their epistemicity appears to come about via a pragmatic mechanism that restricts the domain of a covert epistemic necessity operator scoping over the entire proposition, not via a non-circumstantial modal base, let alone an ordering source (cf. Kissine 2008).

(10) *hoeven*:

- a. *Jan hoeft het werk niet af te maken van de leraar*  
John needs the work NEG off to make.INF of the teacher  
'The teacher does not require John to finish the work.' (Barbiers 1995: 143)
- b. *Jan hoeft die moord niet gepleegd te hebben*  
John needs that murder NEG committed.PTCP to have.INF  
'It is not necessarily true that John has committed that murder.' (Barbiers 1995: 145)

(11) *moeten*:

- a. *Jan moet vanmiddag schaatsen van zijn vader*  
John must.3SG this.afternoon skate.INF of his father  
'His father obliges John to skate this afternoon.' (Barbiers 1995: 143)
- b. *Hij moet naar de schaatsbaan zijn gegaan*  
he must.3SG to the ice.rink be.INF gone  
'He must have gone on the ice rink.'

(12) *mogen*:

- a. *Jan mag gaan schaatsen*  
John may.3SG go.INF skate.INF  
'John has permission to go skating.' (Barbiers 1995: 143)
- b. *Jan mag dan vaak zeuren, hij is niet onvriendelijk*  
John may.3SG then often nag.INF he is NEG unfriendly  
'It may be true that John often nags, but he is not unfriendly.' (Barbiers 1995: 143)

(13) *kunnen*:

- a. *Jan kan goed voetballen*  
John.NOM can.3SG well play.soccer.INF  
'John can play soccer very well.' (Barbiers 1995:143)
- b. *Hij kan al naar huis zijn gegaan*  
he can.3SG already to home be.INF gone  
'He must already have gone home.'

(14) *zullen*:

- a. *Je zult voor vijf uur dat werk af hebben*  
you shall.2SG before five hour that work off have.INF  
'You are obliged to finish that work before five o'clock.' (Barbiers 1995: 143)
- b. *Jan zal wel vaak eten laten brengen*  
John will.3SG MP often food let.INF bring.INF  
'Probably, John often has food delivered.' (Barbiers 1995: 145)

(15) *willen*:

- a. *Jan wil dat boek hebben*  
 John wants that book have.INF  
 ‘John wants to have that book.’ (Barbiers 1995: 143)
- b. *Er wil hier nog wel eens een ongeluk gebeuren*  
 there wants here yet MP MP an accident happen.INF  
 ‘Every once in a while an accident occurs here.’ (Barbiers 1995: 145)

Based on Reis (2001), Maché (2013) and Vater (1975, 2010), the German modal verb system consists of 8 verbs:

		circumstantial	non-circumstantial
1.	<i>brauchen</i>	non-assertive, NPI	deductive/assumptive
2.	<i>dürfen</i>	permission	deductive/assumptive
3.	<i>können</i>	ability	speculative
4.	<i>möchten</i>	desire	reportative
5.	<i>mögen</i>	emotive	speculative
8.	<i>sollen</i>	obligation	reportative
7.	<i>werden</i>	future	assumptive
8.	<i>wollen</i>	desire	reportative

Figure 3: Modal verbs in German

(16) *brauchen*

- a. *Du brauchst keinen Satz zu sprechen*  
 you.2SG need.2SG NEG sentence to speak.INF  
 ‘You are not required to speak any sentence.’  
 (IDS, *St. Galler Tagblatt*, 24/03/2012)
- b. *Der Täter braucht am Tatort nicht gewesen zu sein*  
 the culprit.NOM needs at.the crime.scene NEG been to be.INF  
 ‘It might be the case that the culprit wasn’t present at the scene of the crime.’  
 (André Meinunger, personal communication)

(17) *dürfen*

- a. *Namen darf ich keine nennen*  
 names.ACC may.1SG I NEG call.INF  
 ‘I’m not allowed to call any names.’  
 (IDS, *Burgenländische Volkszeitung*, 22/02/2012)
- b. *Es dürfte ein ungewöhnliches Showerlebnis werden*  
 it might.3SG a unusual show.experience become.INF  
 ‘It may become an usual show experience.’  
 (IDS, *Hannoversche Allgemeine*, 12/04/2012)

(18) *können*

- a. *Ich kann schon wieder Auto fahren*  
I can.3SG already again car drive.INF  
'I can drive again.' (IDS, *Hamburger Morgenpost*, 04/01/2012)
- b. *Am Geld kann es kaum gelegen haben*  
at.the money can.3SG it barely lain.PTCP have.INF  
'It is highly unlikely that it was due the money.'  
(IDS, *St. Galler Tagblatt*, 04/06/2012)

(19) *möchten*:

- a. *Halmich möchte nun gegen Elena Reid boxen*  
H.NOM would.like.3SG now against E.R.ACC box.INF  
'Now, Halmich would like to box against Elena Reid.'  
(IDS, *Hamburger Morgenpost*, 18/04/2005)
- b. *Niemand aus der Nachbarschaft will etwas bemerkt haben*  
nobody from the neighbourhood wants something noticed.PTCP have.INF  
*keiner möchte auch nur Verdacht geschöpft haben*  
nobody would.like.3SG also only suspicion scooped.PTCP have.INF  
'All of the neighbours claim that they had not noticed anything, all of them claim they didn't have any suspicion.' (Vater 2010: 107)

(20) *mögen*:

- a. *Lara mag schwimmen und tauchen*  
L.NOM likes swim.INF and skin-dive.INF  
'Lara likes swimming and skin-diving.'  
(IDS, *Braunschweiger Zeitung*, 16/12/2010)
- b. *Meine Antwort mag sie überrascht haben*  
my answer may.3SG she.ACC surprised.PTCP have.INF  
'My answer may have surprised her.'  
(IDS, *Braunschweiger Zeitung*, 21/03/2011)

(21) *sollen*:

- a. *Du sollst unterhalten!*  
you.2SG should.2SG entertain.INF  
'You should entertain (us)!'  
(IDS, *Hannoversche Allgemeine*, 20/02/2010)
- b. *Polizist soll Prostituierte begrapscht haben*  
policeman.NOM shall.3SG prostitute.ACC fondled.PTCP have.INF  
'A policeman is said to have fondled a prostitute.'  
(IDS, *Burgenländische Volkszeitung*, 22/02/2012)



(22) *werden*:

- a. *Wir werden jetzt hier in St. Gallen starten*  
we will.1PL now here in St. Gallen start.INF  
'Now, we will start here in St. Gallen.'  
(IDS, *St. Galler Tagblatt*, 19/05/2012)
- b. *So knapp 1000 Zuschauer werden es wohl gewesen sein, die ...*  
so barely 1000 spectators will.3PL it MP been be.INF who  
'There will have been barely 1000 spectators who ...'. (Maché 2013: 187)

(23) *wollen*:

- a. *Ich will Erfolg haben*  
I want.1SG success.ACC have.INF  
'I want to be successful.'  
(IDS, *St. Galler Tagblatt*, 13/02/2012)
- b. *Den Unfall will er nicht bemerkt haben*  
the accident.ACC wants he NEG noticed.PTCP have.INF  
'He claims he didn't notice the accident.'  
(IDS, *St. Galler Tagblatt*, 23/02/2012)

In addition, from our definition follows that for example Dutch *in staat zijn* ('be able') or German *wissen* (lit. *know*: 'can') cannot be classified as modal verbs. In our view, they are modal predicates:

- (24) *Hij is in staat om veel argumenten te geven*  
he.NOM is able COMP much arguments to give.INF  
'He is able to present many arguments.'
- (25) *Aber Vettel weiß zu unterscheiden: ...*  
but Vettel.NOM knows to distinguish.INF  
'But Vettel can distinguish (it): ...'  
(IDS, *Hamburger Morgenpost*, 20/11/2010)

Since a MV must have at least two different interpretations, it should be possible to embed one MV under another MV using only one modal item. This prediction is borne out:

- (26a) *Ich weiß zwar, daß er das, was er behauptet, nicht kann*  
I know in.fact that he that what he claims NEG can.3SG  
*ja gar nicht [MV2 können] [MV1 kann], er wäre denn*  
MP NEG can.INF can.3SG he were.3SG MP  
*noch größer als der große Frangipani.* (Süskind 1986: 78)  
still greater than the great F.NOM  
'I know for a fact that he can't do what he claims he can, **can't possibly** do it. Why, that would make him greater than the great Frangipani.' (Süskind 1987: 80)
- (26b) *Ik weet weliswaar dat hij wat hij beweert niet kan, zelfs niet [MV1 kan] [MV2 kunnen], want anders zou hij nog groter zijn dan de grote Frangipani.* (Süskind 1994: 78)

## 4. Double modal verbs possibilities and restrictions

### 4.1. Corpus data

#### 4.1.1. Non-circumstantial + circumstantial

As the examples in this section will demonstrate, when a modal conveys an epistemic interpretation, it precedes the other modal which conveys a circumstantial reading. This is exemplified for *kunnen/können* in (27), *mogen/dürfte* in (28) and *moeten/müssen* in (29):

(27) *kunnen/können*:

- a) *ze* [MV1 **kan**] *wel naar 't ziekenhuis* [MV2 **moeten**]  
she can.3SG MP to the hospital must.INF  
'Probably, she will have to go to the hospital.'  
(CGN, fn006935.sea#fn006935.150)

- b) *Man* [MV1 **kann**] *neu* [INF **beginnen**] [MV2 **müssen**]  
one can.3SG new begin.INF must.INF  
'One might have to begin once again.'  
(IDS, *Rhein-Zeitung*, 12/7/1997)

(28) *mogen/dürfte*:

- a) [MV1 **Mocht**] *je nou* [MV2 **kunnen**] *zeg maar of je wil*  
may.2SG you well can.INF say.IMP MP if you.2SG want.2SG  
'If you are able, just let me know if you want to.' (CGN: fn008306.sea#fn008306.100)

- b) *Im Zweifel* [MV1 **dürfte**] *das Gericht eine erhebliche Verminderung*  
in.the doubt might.3SG the court a considerable decline  
*der Schuldfähigkeit durch den Alkohol nicht* [INF **ausschließen**] [MV2 **können**]  
the criminal.liability through the alcohol NEG preclude can.INF  
'In case of doubt, the court might not be able to rule out a considerable alleviation of criminal liability due to the alcohol.' (*Der Spiegel* 36)

(29) *moeten/müssen*:

- a) *dus toen dacht ik ja volgens mij moet dat*  
so as though.1SG I yes according me must.3SG that  
[MV1 **moet**] *je dat veel breder* [MV2 **kunnen**] [INF **maken**]  
must.2SG you that much broader can.INF make.INF  
'so as I though, yes, according to me that must ... you must be able to make it broader.'  
(CGN: fn000116.sea#fn000116.76)

- b) *Die* [MV1 **müssen**] *gut miteinander* [MV2 **können**]  
they must.3PL well with.each.other can.INF  
'They must be able to harmonize with each other.'  
(IDS, *Frankfurter Rundschau*, 4/6/1999)

Prediction: If MV<sub>1</sub> takes a non-circumstantial modal base, MV<sub>2</sub> has to be circumstantial and there are no restrictions w.r.t. the ordering source.

#### 4.1.2. Circumstantial + circumstantial

In their circumstantial reading, the modals can also be placed in first position. As the examples in this section will demonstrate, MV<sub>2</sub> conveys also a circumstantial interpretation. Example (30) exemplifies this for *können* as MV<sub>1</sub>:

- (30) *Man* [MV<sub>1</sub> **kann**] *dafür doch kein Programm* [INF **brauchen**] [MV<sub>2</sub> **müssen**]  
 one can.INF for.that MP NEG program need.INF must.INF  
 ≈‘One wouldn’t need any program for this.’  
 (Simon Blum, personal communication)

Interestingly in the *Corpus Gesproken Nederlands*, we could not find any example in which *mogen* in its circumstantial interpretation precedes *moeten* in its obligation interpretation. Such a constellation does not sound in Dutch as good as it does in German:

- (31a) *Der Patient* [MV<sub>1</sub> **darf**] *zudem nicht lange* [INF **warten**] [MV<sub>2</sub> **müssen**]  
 the patient may in.addition NEG long wait.INF must.INF  
 ‘It’s not allowed that the patient has to wait long.’ (Maché 2012: 133)
- (31b) *?De patient* [MV<sub>1</sub> **mag**] *niet lang* [MV<sub>2</sub> **moeten**] [INF **wachten**]  
 the patient may NEG long must.INF wait.INF  
 Intended: ‘It’s not allowed that the patient has to wait long.’

Instead of *moeten*, *hoeven* is preferred:

- (31b’) *De patient* [MV<sub>1</sub> **mag**] *niet lang* [MV<sub>2</sub> **hoeven**] [INF **wachten**]  
 the patient may NEG long need.INF wait.INF  
 ‘It’s not allowed that the patient has to wait long.’

In German, however, *dürfen* may scope over *müssen*:

- (32) *So sind sie halt, unsere Autoren: Immer bitterlich am Klagen,*  
 so are.3PL they MP our authors always bitterish at.the lamentation  
*bis sie in Klagenfurt endlich selber gute*  
 until they in Klagenfurt finally REFL good  
*Miene zum bösen Spiel* [INF **machen**] [MV<sub>2</sub> **müssen**] [MV<sub>1</sub> **dürfen**]  
 face to.the vicious play make.INF must.INF may.INF  
 ‘So are they, our authors: always bitterish when complaining, until they are allowed to have to put a good face on the matter in Klagenfurt.’  
 (IDS, *Zürcher Tagesanzeiger*, 17/9/1997)

What Dutch and German do have in common is, for example, that *mogen/dürfen* can be in the scope of *moeten/müssen*:

- (33a) *Je* [MV<sub>1</sub> **moet**] *de jongen naar het feest* [MV<sub>2</sub> **mogen**] [INF **laten gaan**]  
 you must the guy to the party may.INF let.INF go.INF  
 ‘In order for the boy to come to my party, I demand that: You are obliged to allow the boy to come to the party.’

- (33b) *Dass Bildung trotz allem auch auf*  
 that education despite all.DAT also on  
*lokaler Ebene etwas [INF wert sein] und*  
 local level something worth be.INF and  
 [INF *kosten*] [MV2 *dürfen*] [MV1 *muss*], *war und ist absolut unstrittig*  
 cost.INF may.INF must.3SG was and is absolutely uncontroversial  
 ‘It was and is absolutely uncontroversial that despite of all that the education must be allowed to be of worth and to cost.’ (IDS, *Rhein-Zeitung*, 9/7/2003)

A lot of similarities between Dutch and German can be found.

## 4.2. Problems with the previous approaches

### 4.2.1. Epistemic Non-Finiteness Gap

Modals that are evaluated against a non-circumstantial modal base do occur as non-finite verb forms. Compare (34) and (35) for German:

- (34) *Der Verdacht, sich täuschen zu müssen, drängte sich auf*  
 the thought REFL be.mistaken.INF to must.INF forced.3SG REFL on  
 ‘The idea that he was wrong forced itself on him’. (Reis 2001: 295)

- (35) *Er befürchtete, ihr an dem Abend nicht gefallen haben zu können*  
 he was.afraid her.DAT at the evening NEG liked have to can.INF  
 Intended: ‘He was afraid that it was possible that she didn’t like him at this evening.’

See also Reis (2001), Reis & Sternefeld (2004), Hetland & Vater (2008), Mortelmans et al. (2009) for German, Eide (2003, 2005) for Norwegian, Davidsen-Nielsen (1990) for Danish, Eide (2011) and Jędrzejowski (2011) for a typological overview. For some corpus data see Maché (2013).

Non-circumstantial MVs do not perhaps iterate in Dutch and German, but they are supposed to iterate in Scandinavian languages. The restriction presented in (6a) cannot be seen as a cross-linguistic generalization:

- (36) Swedish:

*Det [MV1 *lår*] [MV2 *kunna*] [INF *hända*] att flygplan kolliderar i luften.*  
 it is.said can.INF happen.INF that airplanes collide in air.the  
 ‘It is said that it may happen that airplanes collide in mid air.’ (Nordström 2010: 164)

A brief description of a possible development of the Swedish MV *lår* (lit. *learn/teach*) is presented in Svensson (2005).

- (37) Norwegian:

*Jon [MV1 *antas*] å [MV2 *måtte*] [INF *være*] ungar*  
 Jon is.said to must.INF be.INF bachelor  
 ‘Jon is supposed to have to be a bachelor.’ (Eide 2003: 123)

(36) and (37) correspond to our pattern in (i):  $MV_1 + MV_2 + INF$ . Thraínsson & Vikner (1995) provide more data for Danish and Icelandic. Note, however, that their data are more than questionable. See the discussion in Mortelmans et al. (2009).

#### 4.2.2. Cartographic Approach

Although the universal hierarchy of Functional Projections covers many data, it also presupposes that data like in (38) should be impossible:

(38a) *Ich* [<sub>MV1</sub> **will**] *das nicht* [<sub>INF</sub> **tun**] [<sub>MV2</sub> **müssen**]  
 I want that NEG do.INF must.INF  
 ‘I don’t want to be obliged to do that.’ (Maché 2012: 134)

(38b) *Ik* [<sub>MV1</sub> **wil**] *dat niet* [<sub>MV2</sub> **moeten**] [<sub>INF</sub> **doen**]

According to Cinque (1999), volitional modality is not allowed to outscope obligation. Thus, (38) appears unexpected and this scope ordering is supposed to yield an ungrammatical result. Notice, however, that such examples are easy to find in a larger corpus:

(39) *Die Jungs sind heiß, und wir* [<sub>MV1</sub> **wollen**] *nicht* [<sub>INF</sub> **rechnen**] [<sub>MV2</sub> **müssen**]  
 the guys are hot and we want NEG count.INF must.INF  
 ‘The guys are hot and we don’t want to be obliged to count (the points).  
 (IDS, *Rhein-Zeitung*, 08/12/2011)

#### 4.2.3. Phase-Based Approach

Since den Besten (1983), it is well-known that both Dutch and German finite verbs in root clauses are subject to the V-to-T-to-C movement (cf. the special issue in *Theoretical Linguistics* 32:3 on this topic). Using the Phase-Based terminology, all finite verbs in root clauses merge in the CP Phase.

Consequently, there is a mismatch: Modals with a circumstantial modal base are said to merge in the  $vP$  Phase, and therefore they should not be associated with the CP Phase at all. To put it another way, if MVs iterate,  $MV_1$  must always be non-circumstantial. This is also in accordance with Nauze (2008). Since circumstantial modals do iterate, this prediction cannot be borne out though:

(40) *en dan* [<sub>MV1</sub> **moet**] *je toch wel* [<sub>INF</sub> **plooibaar**] [<sub>MV2</sub> **kunnen**] **blijven**]  
 and then must you MP MP flexible can.INF remain.INF  
 ‘And then, you nevertheless have to be able to remain flexible.’  
 (CGN: fn000138.sea#fn000138.241)

(41) *Der Patient* [<sub>MV1</sub> **darf**] *zudem nicht lange* [<sub>INF</sub> **warten**] [<sub>MV2</sub> **müssen**]  
 the patient may in.addition NEG long wait.INF must.INF  
 ‘It’s not allowed that the patient has to wait long.’ (Maché 2012: 133)

Accordingly, *moet* in (40) as well as *darf* in (41) raise to C and thus merge in the CP Phase. Such a Head-to-Head Movement is very hard to abandon. On the other hand, either MVs are evaluated against a circumstantial modal base. According to Butler and Zagana, they should merge in the  $vP$  Phase.

### 4.3. A tentative analysis

The examples in Section 4.1 and 4.2 demonstrate that modals can combine in several ways in Dutch and German.

We observed that in the two languages under consideration epistemic modals when they occur in a double modal constellation, are the first modal. This is in fully agreement with observations made in the literature that epistemic modals scope over a whole utterance while circumstantial modals only scope over an eventuality (we return to this in Section 4.4).

Another interesting observation is that circumstantial modals can co-occur, contrary to claims made in e.g. Nauze (2008). Interestingly in Dutch, *mogen* is restricted to follow *moeten*, the reverse order does not appear in CGN and seems to be ungrammatical. German seems to not share this restriction (cf. 31 and 32).

### 4.4. Towards a typology of double MVs

Based on what we have observed so far, we propose the following typology of double modal verbs:

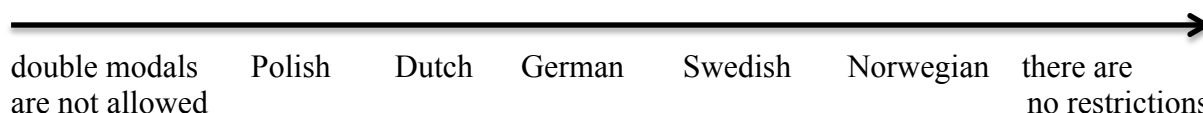


Figure 4: (A very preliminary) typology of double modal verbs

→ double modals are not allowed: any suggestions?

→ Polish: according to Hansen (2004), double modals do not occur or are very rare. If we translate (17) into Polish, we get an ungrammatical result:

(42) \**Pacjent nie* [MV1 *może*] [MV2 *musieć*] *dlugo* [INF *czekać*]  
 patient.NOM NEG can.3SG must.INF long wait.INF  
 Intended: ‘It’s not allowed that the patient has to wait long.’

Although we do find some corpus examples, Polish does not have as many double modals combinations and possibilities as Dutch and German do:

(43) *Nikt nie* [MV1 *powinien*] [MV2 *musieć*] [INF *się zapożyczać*]  
 nobody NEG should.3SG must.INF REFL take.on.loan.INF  
 ‘Nobody should be forced to take on a loan.’  
 (*National Corpus of Polish*, 2008/2/29)

→ German: if double modals occur, MV<sub>1</sub> can be both circumstantial and non-circumstantial (one exception being the *darf* vs. *dürfte* opposition):

	circumstantial	non-circumstantial
<i>darf</i>	+	-
<i>dürfte</i>	+	+

Figure 5: *Dürfen* and its readings German

→ Dutch: if double modals occur, MV<sub>1</sub> can be both circumstantial and non-circumstantial (one exception being the ordering permission > obligation, cf. Section 4.1.2.)

Polish, Dutch and German can be brought down to a common denominator: if double modals occur and MV<sub>1</sub> is evaluated against a non-circumstantial modal base, MV<sub>2</sub> has to be circumstantial (cf. 6b and Abraham 2001, 2002).

→ Swedish: according to Nordström (2010), two non-circumstantial modals can co-occur, iff MV<sub>2</sub> corresponds to *kunna* ('can'):

(44) *Det* [MV<sub>1</sub> *lår*] [MV<sub>2</sub> *kunna*] [INF *hända*] *att flygplan kolliderar i luften.*  
it is.said can.INF happen.INF that airplanes collide in air.the  
'It is said that it may happen that airplanes collide in mid air.' (Nordström 2010: 164)

→ Norwegian: following Eide (2003, 2005) other non-circumstantial modal verb can be embedded, too:

(45) *Jon* [MV<sub>1</sub> *antas*] *å* [MV<sub>2</sub> *måtte*] [INF *være*] *ungkar*  
Jon is.said to must.INF be.INF bachelor  
'Jon is supposed to have to be a bachelor.' (Eide 2003: 123)

It must carefully be examined, however, whether the reportative modals are modal verbs according to our definition.

→ there are no restrictions: any suggestions?

## 5. Conclusion

A LOT MUST BE DONE YET:

- (a) determine all available readings for each modal,
- (b) collect more corpus data (*mission impossible* to some extent),
- (c) prepare questionnaires, let judge double modals constellations,
- (d) take into account miscellaneous constraints affecting the interpretation of MV<sub>1</sub> as well as of MV<sub>2</sub> (e.g. grammatical subject, Aktionsart; cf. Foolen & de Hoop 2009),
- (e) compare Germanic languages with other languages (cf. Lin 2011 for Chinese).

## Primary sources

CGN – *Corpus Gesproken Nederlands* (<http://lands.let.kun.nl/cgn/>)

IDS – COSMAS II (<https://cosmas2.ids-mannheim.de/cosmas2-web/>)

*Der Spiegel* – a weekly newspaper (Nr. 36; 5/9/2011)

Süskind, Patrick (1986): *Das Parfum. Die Geschichte eines Mörders*. Zürich: Diogenes Verlag.

Süskind, Patrick (1987): *Perfume. The Story of a Murderer*. Translated by John E. Woods. London: Penguin Books.

Süskind, Patrick (1994): *Het Parfum. De geschiedenis van een moordenaar*. Vertaald door Ronald Jonkers. Amsterdam: Ooievaar Pockethouse.

Wagenaar, Bonne (2009): *Organisatie van binnenuit*. Assen: Van Gorcum

## References

- ABRAHAM, Werner (2001): Modals: toward explaining the “epistemic non-finiteness gap”, in: *Modalität und Modalverben im Deutschen* ed. by R. Müller & M. Reis. (Linguistische Berichte Sonderheft 9). Hamburg: Helmut Buske, 7-36.
- ABRAHAM, Werner (2002): Modal verbs: Epistemics in German and English, in: *Modality and its Interaction with the Verbal System* ed. by S. Barbiers, F. Beukema & W. van der Wurff. (Linguistik Aktuell/ Linguistics Today 47). Amsterdam: John Benjamins, 19-50.
- ABRAHAM, Werner (2009): Methodological considerations on grammar variation. The right periphery as an OV/VO deciding parameter more so than the left periphery: Gradience in the verb cluster, in: *Describing and Modelling Variation in Grammar* ed. by A. Dufter, J. Fleischer & G. Seiler. (Trends in Linguistics. Studies and Monographs 204). Berlin: de Gruyter, 21-58.
- BARBIERS, Sjef (1995): *The Syntax of Interpretation*. (HIL Dissertations 14). The Hague: Holland Academic Graphics.
- BATTISTELLA, Edwin (1995): The syntax of double modal constructions, in: *Linguistica Atlantica* 17:19–44.
- BESTEN, Hans den (1983): On the Interaction of Root Transformations and Lexical Deletive Rule, in: *On the Formal Syntax of the Westgermania. Papers from the 3rd Groningen Grammar Talks, Groningen, January 1981* ed. by Werner Abraham. (Linguistik Aktuell/Linguistics Today 3). Amsterdam: John Benjamins, pp. 47-131.
- BOOGAART, Ronney (2009): Semantics and pragmatics in construction grammar: The case of modal verbs, in: *Contexts and Constructions* ed. by Alexander Bergs & Gabriele Diewald. (Constructional Approaches to Language 9). Amsterdam: John Benjamins, pp. 213-241.
- BUTLER, Jonny (2003): A minimalist treatment of modality, in: *Lingua* 113: 967-996.
- BUTLER, Jonny (2004): *Phase Structure, Phrase Structure, and Quantification*. PhD thesis, University of York.
- BUTLER, Jonny (2006): The structure of modality and temporality (or, towards deriving something like a Cinque Hierarchy), in: *Linguistic Variation Yearbook* 6: 161-201.
- CHOMSKY, Noam (2001): Derivation by Phase, in: *Ken Hale. A Life in Language* ed. by Michael Kenstowicz. (Current Studies in Linguistics Series 36). Cambridge, Mass.: MIT, 1-52.
- CHOMSKY, Noam (2008): On Phases, in: *Foundational Issues in Linguistic Theory. Essays in Honor of Jean-Roger Vergnaud* ed. by R. Freidin, C. Otero & M.-L. Zabizaretta. (Current Studies in Linguistics Series 45). Cambridge, Mass.: MIT, 133-166.
- CINQUE, Guglielmo (1999): *Adverbs and Functional Heads. A cross-linguistic perspective*. (Oxford Studies in Comparative Syntax). Oxford: Oxford University Press.
- CONDORAVDI, Cleo (2001): Temporal interpretation of modals: Modals for the present and for the past, in: *Stanford Papers on Semantics* ed. by D. Beaver, S. Kaufmann, B. Clark & L. Casillas. Stanford: CSLI Publications, 1-30.
- DAVIDSEN-NIELSEN, Niels (1990): *Tensed and mood in English. A comparison with Danish*. (Topics in English Linguistics 1). Berlin: de Gruyter.
- DI PAOLO, Marianna (1989): Double modals as single lexical items, in: *American Speech* 64: 195-224.
- EIDE, Kristin Melum (2003): Tense and modals, in: *Proceedings of the conference “sub7 – Sinn und Bedeutung”* ed. by Matthias Weisgerber. Konstanz, pp. 120-135.
- EIDE, Kristin Melum (2005): *Norwegian Modals*. (Studies in Generative Grammar 74). Berlin: de Gruyter.
- EIDE, Kristin Melum (2011): Modals and the present perfect, in: *In the mood for mood* ed. by Tanja Mortelmans, Jesse Mortelmans & Walter de Mulder. (Cahiers Chronos 23). Amsterdam: Rodopi, pp. 1-20.
- ELSMAN, Minta & Stanley Dubinsky (2009): Double modal syntactic patterns as single modal interactions, in: *University of Pennsylvania Working Papers in Linguistics* 15: 75-83.
- ERB, Christine Marie (2001): *Finite Auxiliaries in German*. PhD thesis, Tilburg.
- FAGAN, Sarah (2001): Epistemic modality and tense in German, in: *Journal of Germanic Linguistics* 13.3: 197-230.
- FOOLEN, Ad & Helen de Hoop (2009): Conflicting constraints on the interpretation of modal auxiliaries, in: *Cross-linguistic Semantics of Tense, Aspect, and Modality* ed. by Lotte Hogeweg, Helen de Hoop & Andrej Malchukov. (Linguistik Aktuell/ Linguistics Today 148). Amsterdam: John Benjamins, pp. 303-316.
- HAIDER, Hubert (2009): *The Syntax of German*. (Cambridge Syntax Guides). Cambridge: Cambridge University Press.
- HANSEN, Björn (2004): Modals and the boundaries of grammaticalization. The case of Russian, Polish, and Serbian-Croatian, in: *What makes Grammaticalization? (A look from its fringes and its components)* ed. by Walter Bisang, Nikolaus Himmelmann & Björn Wiemer. (Trends in Linguistics. Studies and Monographs 158). Berlin: de Gruyter, pp. 245-270.
- HASTY, J. Daniel (2011): We might should oughta take a second look at this: A syntactic re-analysis of double modals in Southern United States English. Ms., Michigan State University.



- HETLAND, Jorunn & Heinz Vater (2008): Zur Syntax der Modalverben im Deutschen und Norwegischen, in: *Modalität und Grammatikalisierung* ed. by Ole Letnes. (Fokus 34). Trier: WVT, pp. 91-116.
- JĘDRZEJOWSKI, Łukasz (2011): Epistemische Modalverben als nicht-finite Komplemente, in: *Geschichte und Typologie der Sprachsysteme* ed. by Michail L. Kotin & Elizaveta G. Kotorova. Heidelberg: Universitätsverlag Winter, pp. 229-238.
- KISSINE, Mikhaïl (2008): Why *will* is not a modal, in: *Natural Language Semantics* 16: 129-155.
- KRATZER, Angelika (1977): What 'must' and 'can' must and can mean?, in: *Linguistics and Philosophy* 1: 337-355.
- KRATZER, Angelika (1981): The notional category of modality, in: *Word, Worlds, and Contexts: New Approaches in Word Semantics* ed. by H. J. Eikmeyer & H. Rieser. (Research in Text Theory 6). Berlin: de Gruyter, 7-36.
- KRATZER, Angelika (1991): Modality, in: *Semantics: an International Handbook of Contemporary Research* ed. by A. von Stechow & D. Wunderlich. Berlin: de Gruyter, 639-650.
- KRATZER, Angelika (2012): *Modals and Conditionals. New and revised perspectives.* (Oxford Studies in Theoretical Linguistics 36). Oxford: Oxford University Press.
- LIN, Jonah T.-H. (2011): Multiple-modal constructions in Mandarin Chinese and their finiteness properties, in: *Journal of Linguistics* 48: 151-186.
- MACHÉ, Jakob (2012): Exploring the Theory of Mind interface, in: *Modality and Theory of Mind Elements across Languages* ed. by Werner Abraham & Elisabeth Leiss. (Trends in Linguistics. Studies and Monographs 243). Berlin: de Gruyter, pp. 109-146.
- MACHÉ, Jakob (2013): *How modifiers become epistemic.* Manuscript, FU Berlin, 385 pp.
- MONTGOMERY, Michael B. & Stephen J. Nagle (1993): Double modals in Scotland and the Southern United States: Trans-Atlantic inheritance or independent development?, in: *Folia Linguistica Historica* 14: 91-107.
- MORTELMANS, Tanja / Kasper Boye & Johan van der Auwera (2009): Modals in the Germanic languages, in: NAGLE, Stephen (1994): The English Double Modal Conspiracy, in: *Diachronica* 11: 199-212.
- NAUZE, Fabrice Dominique (2008): *Modality in Typological Perspective.* PhD thesis, Universiteit van Amsterdam.
- NORDSTRÖM, Jackie (2010): *Modality and Subordinators.* (Studies in Language Companion Series 116). Amsterdam: John Benjamins.
- REIS, Marga (2001): *Bilden Modalverben im Deutschen eine syntaktische Klasse?*, in: *Modalität und Modalverben im Deutschen* ed. by Reimar Müller & Marga Reis. Hamburg: Helmut Buske, pp. 287-318.
- REIS, Marga & Wolfgang Sternefeld (2004): Review article of Wurmbrand (2001), in: *Linguistics* 42: 469-508.
- ROBERTS, Ian (1985): Agreement Parameters and the Development of English Modal Auxiliaries, in: *Natural Language and Linguistic Theory* 3: 21-58.
- SVENSSON, Gudrun (2005): The origin and development of *lår*, a modal epistemic in Swedish, in: *Historical Linguistics 2003. Selected papers from the 16th International Conference on Historical Linguistics, Copenhagen, 11-15 August 2003* ed. by Michael Fortescue, Eva Skafte Jensen, Jens Erik Mogensen and Lene Schøsler. (Current Issues in Linguistic Theory 257). Amsterdam: John Benjamins, pp. 257-277.
- THRAÏNSSON, Höskuldur & Sten Vikner (1995): Modals and double modals in the Scandinavian languages, in: *Working Papers in Scandinavian Syntax* 55: 51-88.
- VATER, Heinz (1975): 'werden' als Modalverb, in: *Aspekte der Modalität* ed. by Heinz Vater & Joseph Calbert. (Studien zur deutschen Grammatik 1). Tübingen: Narr, pp. 71-148.
- VATER, Heinz (2010): 'Möchten' als Modalverb, in: *Modalität / Temporalität in kontrastiver und typologischer Sicht* ed. by Andrzej Kątny & Anna Socka. (Danziger Beiträge zur Germanistik 30). Frankfurt a.M.: Peter Lang, pp. 99-112.
- WURMBRAND, Susanne (2001): *Infinitives: Restructuring and clause structure.* (Studies in Generative Grammar 55). Berlin: de Gruyter.
- ZAGONA, Karen (2007): On the syntactic features of epistemic and root modals, in: *Coreference, Modality, and Focus. Studies on the syntax-semantics interface* ed. by Luis Eguren & Olga Fernández-Soriano. (Linguistik Aktuell/ Linguistics Today 111). Amsterdam: John Benjamins, pp. 221-236.
- ZAGONA, Karen (2008): Phasing in Modals: Phases and the Epistemic/Root Distinction, in: *Time and Modality* ed. by J. Guéron & J. Lecarme. (Studies in Natural Language and Linguistic Theory 75). Berlin: Springer, 273-291.
- ZWART, Jan-Wouter (2011): *The Syntax of Dutch.* (Cambridge Syntax Guides). Cambridge: Cambridge University Press.