DISPLACED MORPHOLOGY IN DUTCH: VARIATION IN NON-FINITE VERB CLUSTERS

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(1) a. Ik vind dat iedereen moet₁ kunnen₂ zwemmen₃. (✓123)
   ‘I think everyone should be able to swim.’
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(1) a. Ik vind dat iedereen MUST$_1$ CAN$_2$ SWIM$_3$.  
   I find that everyone must-INF can-INF swim-INF  
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(1) a. Ik vind dat iedereen MUST$_1$ CAN$_2$ SWIM$_3$. $(✓123)$
    I find that everyone must-INF can-INF swim-INF
    ‘I think everyone should be able to swim.’

    b. Ik vind dat iedereen MUST$_1$ SWIM$_3$ CAN$_2$. $(✓132)$
    c. Ik vind dat iedereen SWIM$_3$ MUST$_1$ CAN$_2$. $(✓312)$
    d. Ik vind dat iedereen SWIM$_3$ CAN$_2$ MUST$_1$. $(✓321)$
    e. *Ik vind dat iedereen CAN$_2$ SWIM$_3$ MUST$_1$. $(*231)$
    f. *Ik vind dat iedereen CAN$_2$ MUST$_1$ SWIM$_3$. $(*213)$

(Barbiers et al. 2008)

Note: no semantic effect
However, (morpho)syntactic variation in non-finite clusters have so far not been investigated in much detail.
**Introduction**

However, (morpho)syntactic variation in non-finite clusters have so far not been investigated in much detail.

In non-finite clusters, an extra factor that might cause variation is the placement of the infinitival marker *te* ‘to’
Introduction

Te needs to appear on different verbs in the cluster depending on the selection requirements of those verbs.
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**On V1:** (2) *Ze zegt veel boodschappen te hebben*$_1$ *moeten*$_2$ *doen*$_3$.

She says many groceries to have. must. do.

‘She says that she had to do a lot of groceries.’
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**On V1:** (2) *Ze zegt* veel boodschappen *te hebben*$_1$ *moeten*$_2$ *doen*$_3$.  
She says many groceries to have. must. do.  
‘She says that she had to do a lot of groceries.’

**On V2:** (3) *Ze zal* vandaag niet veel boodschappen *hoeven*$_1$ *te gaan*$_2$ *doen*$_3$.  
She will today not many groceries have. to. to go. do.  
‘She won’t have to do a lot of groceries today.’
Te needs to appear on different verbs in the cluster depending on the selection requirements of those verbs

**On V1:** (2) Ze zegt veel boodschappen te hebben\(_1\) moeten\(_2\) doen\(_3\).

She says many groceries to have.\(\text{INF}\) must.\(\text{INF}\) do.\(\text{INF}\)

‘She says that she had to do a lot of groceries.’

**On V2:** (3) Ze zal vandaag niet veel boodschappen hoeven\(_1\) te gaan\(_2\) doen\(_3\).

She will today not many groceries have.\(\text{INF}\) to go.\(\text{INF}\) do.\(\text{INF}\)

‘She won’t have to do a lot of groceries today.’

**On V3:** (4) Ze zal morgen lang op de bus moeten\(_1\) zitten\(_2\) te wachten\(_3\).

She will tomorrow long on the bus must.\(\text{INF}\) sit.\(\text{INF}\) to wait.\(\text{INF}\)

‘She will have to wait for the bus for a long time tomorrow.’
In German, the infinitival marker zu ‘to’ can sometimes appear on a different verb than is required by selection in non-descending cluster orders (Salzmann 2013, 2016):
In German, the infinitival marker *zu* ‘to’ can sometimes appear on a different verb than is required by selection in non-descending cluster orders (Salzmann 2013, 2016):

(5) a. … ohne das Buch lesen\textsubscript{3} gekönnt\textsubscript{2} zu haben\textsubscript{1}.
   without the book read\textsubscript{INF} can\textsubscript{PTCP} to have\textsubscript{INF}

   ‘…without having been able to read the book.’

   

b. … ohne das Buch haben\textsubscript{1} lesen\textsubscript{3} zu können\textsubscript{2}.
   without the book have\textsubscript{INF} read\textsubscript{INF} to can\textsubscript{INF}

   ‘…without having been able to read the book.’

(Salzmann 2016: 406)

→ In both examples, the complementizer *ohne* selects a *zu*-infinitive: *zu haben*. In (5b), *zu* doesn’t appear on V1 *haben*, but on V2 *können*
**Introduction**

Starting point of this talk: hypothesis that the placement of *te* in non-finite three-verb clusters can also vary in different varieties of Dutch

(6) Ze zegt veel boodschappen *te* hebben₁ *te* moeten₂ *te* doen₃.
   she says.FIN many groceries INF to have.INF to must.INF to do.INF
   ‘She says that she had to do a lot of groceries.’
**Introduction**

Starting point of this talk: hypothesis that the placement of *te* in non-finite three-verb clusters can also vary in different varieties of Dutch.

(6) Ze zegt veel boodschappen *te* hebben<sub>1</sub> *te* moeten<sub>2</sub> *te* doen<sub>3</sub>.  

she says.FIN many groceries to have.INF to must.INF to do.INF  

‘She says that she had to do a lot of groceries.’

Topic of this talk: variation in *te*-placement in Dutch non-finite three-verb clusters in 123-order.
Methodology

2. Results
   2.1 Te-drop
   2.2 Te-raising
   2.3 Te-lowering
   2.4 Correlation te-raising and te-lowering

3. Analysis
   3.1 Prerequisites for the analysis
   3.2 Analysis of te-drop
   3.3 Analysis of te-raising
   3.4 Towards an analysis te-lowering

4. Conclusion
1. **Methodology**
1.1 Design

Three types of clusters
1.1 Design

Three types of clusters

Cluster type I. $te$-V1-V2-V3

- selection requirements dictate that $te$ should appear on V1

Anne zegt op haar comfortabele stoel $te$ willen 1 blijven 2 zitten 3. Anne says on her comfortable chair to want. INF remain. INF sit. INF

‘Anne says she wants to remain seated on her comfortable chair.’
1.1 Design

Cluster type II. V1-te-V2-V3

- selection requirements dictate that te should appear on V2

*Koen zal vanwege de winterstop vandaag niet hoeven te gaan voetballen.*  
Due to the winter break, Koen doesn’t need to go play football today.
Cluster type III. V1-V2-\textit{te}-V3

- selection requirements dictate that \textit{te} should appear on V3

Peter zal vanwege de nieuwe dienstregeling binnenkort nog langer op de trein \textit{moeten}_1 \textit{zitten}_2 \textit{te wachten}_3.

‘Because of the new schedule, Peter will soon have to wait even longer for the train.’
1.1 Design

7 different versions of all cluster types

1. te-V1-V2-V3
2. V1-te-V2-V3
3. V1-V2-te-V3
4. V1-V2-V3
5. te-V1-te-V2-V3
6. te-V1-V2-te-V3
7. V1-te-V2-te-V3

28 test items, 32 filler items, 5 practice items
1.1 Design

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6. te-V1-V2-te-V3
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28 test items, 32 filler items, 5 practice items
1.2 Task & Participants

Task

- Grammaticality judgment task, using a 5-point Likert scale
- Online written questionnaire, test items presented in randomized order
1.2 Task & Participants

Task

• Grammaticality judgment task, using a 5-point Likert scale

• Online written questionnaire, test items presented in randomized order

Participants

• 459 included speakers (Mean age: 56 (SD 12.5); 250 female)
1.2 Task & Participants

Map 1. Locations of the included participants
2. Results
2. RESULTS

Map 2. Difference map
linguistic differences mapped
onto geographical space
2.1 Results: Te-drop
2.1 Te-drop

Te-drop: te does not appear in the cluster, whereas selection requirements dictate it should
## 2.1 Te-drop

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2.1 *Te*-drop

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Table 1. Frequency overview *te*-drop in all three types of clusters
2.1 *TE*-DROP

The results show the following pattern: the lower the verb *te* should appear on, the more optional it becomes (even to the point of it being necessarily absent)

```
  V1  ------------       V2  ------------       V3

*te* needs to be present --------------------------------------- *te* needs to be absent
```
2.2 Results: Te-raising
2.2 Te-raising

*Te-raising*: *te* appears on a higher verb in the verb cluster than selection requirements dictate it should appear on
2.2 Te-raising

Theoretical options for te-raising per cluster type

Cluster type I te-V1-V2-V3: no te-raising possible; te is already in the highest position of the cluster

Cluster type II V1-te-V2-V3: one te-raising option:

\[
\text{te} \ V1 \ \text{te} \ V2 \ V3
\]

Cluster type III V1-V2-te-V3: two te-raising options:

\[
\text{te} \ V1 \ V2 \ \text{te} \ V3 \ \text{or} \ V1 \ \text{te} \ V2 \ \text{te} \ V3
\]
2.2 *Te*-raising

*Te*-raising results:
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- V1-*te*-V2-V3 cluster: 185 speakers allow *te*-raising
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*Te*-raising results:

- V1-*te*-V2-V3 cluster: 185 speakers allow *te*-raising

- V1-V2-*te*-V3 cluster: 25 speakers allow *te*-raising to V2; 21 speakers allow *te*-raising to V1
2.2 *Te*-raising

*Te*-raising results:

- V1-*te*-V2-V3 cluster: 185 speakers allow *te*-raising

- V1-V2-*te*-V3 cluster: 25 speakers allow *te*-raising to V2; 21 speakers allow *te*-raising to V1

- For *te*-raising, the following implicational relation holds:

  **IF** *te*-raising **THEN ALSO** *te* in situ
2.3 Results: $T_e$-lowering
2.3 *Te-lowering*

*Te-lowering*: *te* appears on a lower verb in the verb cluster than selection requirements dictate it should appear on.
2.3 Te-lowering

Theoretical options for te-lowering per cluster type

Cluster type I te-V1-V2-V3: two te-lowering options:

- $\text{te} \ V1 \ te \ V2 \ V3$ or $\text{te} \ V1 \ V2 \ te \ V3$

Cluster type II V1-te-V2-V3: one te-lowering option:

- V1 $\text{te} \ V2 \ te \ V3$

Cluster type III V1-V2-te-V3: no te-lowering possible; te is already in the lowest position of the cluster
2.3 $Te$-lowering

$Te$-lowering results:
2.3 *Te*-lowering

*Te*-lowering results:

- *te*-V1-V2-V3 cluster: 59 speakers allow *te*-lowering to V2; 17 speakers allow *te*-lowering to V1
2.3 *Te*-lowering

*Te*-lowering results:

- *te*-V1-V2-V3 cluster: 59 speakers allow *te*-lowering to V2; 17 speakers allow *te*-lowering to V1

- V1-*te*-V2-V3 cluster: 40 speakers allow *te*-lowering
2.3 *Te*-lowering

*Te*-lowering results:

- *te*-V1-V2-V3 cluster: 59 speakers allow *te*-lowering to V2; 17 speakers allow *te*-lowering to V1

- V1-*te*-V2-V3 cluster: 40 speakers allow *te*-lowering

- The following implicational relation holds:

  IF *te*-lowering THEN ALSO *te* in situ
2.4 Correlation Te-lowering and te-raising
2.4 Correlation *Te*-lowering and *Te*-raising

Are *te*-raising and *te*-lowering correlated; are they two instances of the same mechanism or not?
Are *te*-raising and *te*-lowering **correlated**; are they two instances of the **same** mechanism or not?

→ **No**: not all speakers who accept *te*-raising also accept *te*-lowering or vice versa.
2.4 Correlation Te-lowering and Te-raising

In other words, it is not the case that speakers who allow (A) also allow (B), nor that speakers who allow (B) also allow (A).

(A) te V1 te V2 V3

(B) te V1 te V2 V3
In other words, it is not the case that speakers who allow (A) also allow (B), nor that speakers who allow (B) also allow (A).

\[(A) \text{ te V1 te V2 V3} \quad \rightarrow \quad (B) \text{ te V1 te V2 V3} \]

- Two different mechanisms
- In addition, (B) is much more common than (A)
3. Analysis
3. **Analysis**

Three main findings:
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I. The deeper the *te*-verb is embedded, the more optional *te* becomes (even up to the point of it being necessarily absent)
3. Analysis

Three main findings:

I. The deeper the *te*-verb is embedded, the more optional *te* becomes (even up to the point of it being necessarily absent)

II. *Te*-raising is not the same mechanism as *te*-lowering. The former is much more frequent than the latter.
Three main findings:

I. The deeper the \textit{te}-verb is embedded, the more optional \textit{te} becomes (even up to the point of it being necessarily absent)

II. \textit{Te}-raising is not the same mechanism as \textit{te}-lowering. The former is much more frequent than the latter

III. Both mechanism are optional/secondary. The following implicational relation holds:

\textbf{IF} \textit{te}-raising/\textit{te}-lowering \textbf{THEN ALSO} \textit{te} in situ
3. **Analysis**

I will argue that:
3. Analysis

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- non-finite three-verb clusters are cases of *functional restructuring* (Cinque 2001; in line with Wurmbrand 2001, 2004, 2016; IJbema 2001), in which V1 and V2 occupy a position in the functional sequence (Fseq) of lexical V3
I will argue that:

- non-finite three-verb clusters are cases of functional restructuring (Cinque 2001; in line with Wurmbrand 2001, 2004, 2016; IJbema 2001), in which V1 and V2 occupy a position in the functional sequence (Fseq) of lexical V3

- The lexical/functional verb dichotomy is too sharp, and that there are also ‘quasi-functional’ verbs (Cardinaletti & Shlonsky 2004)
3.1 Prerequisites for the Analysis
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Functional restructuring (mono-clausal approach): a restructuring verb is a functional head (Cinque 2001, 2003, 2004), which combines with the restructuring infinitive; the restructuring infinitive is the main predicate of the clause.
3.1 Prerequisites for the analysis

Cinque (2001) argues that the modal, aspectual and motion verbs that appear in restructuring constructions correspond to the functional heads in (7)

(7) Mood_{Speech Act} > Mood_{Evaluative} > Mood_{Evidential} > Mood_{Epistemic} > T(Past) > T(Future) > Mood_{Irrealis} > Mod_{Necessity} > Mod_{Possibility} > Asp_{Habitual} > Asp_{Repetitive(I)} > Asp_{Frequentative(I)} > Asp_{Celerative(I)} > Mod_{Volitional} > Mod_{Obligation} > Mod_{Ability/Permission} > Asp_{Celerative(I)} > T(Anterior) > Asp_{Terminative} > Asp_{Continuative} > Asp_{Perfect} > Asp_{Retrospective} > Asp_{Proximative} > Asp_{Durative} > Asp_{Generic/progressive} > Asp_{Prospective} > Asp_{SgCompletive(I)} > Asp_{PlCompletive} > Voice Asp_{Celerative(II)} > Asp_{SgCompletive(II)} > Asp_{Repetitive(II)} > Asp_{Frequentative(II)} > Asp_{SgCompletive(II)}
3.1 PREREQUISITES FOR THE ANALYSIS

Restructuring effects I: certain phenomena such as clitic climbing, which are normally clause-bound, appear to be able to span two clauses when the matrix verb is a modal, an aspectual or a motion verb, and the complement is non-finite (Cinque 2001).
3.1 Prerequisites for the Analysis

Restructuring effects I: certain phenomena such as clitic climbing, which are normally clause-bound, appear to be able to span two clauses when the matrix verb is a modal, an aspectual or a motion verb, and the complement is non-finite (Cinque 2001).

(8) <Lo> volevo [vedere <lo> subito].
    him I.wanted see-INF him immediately
    ‘I wanted to see him immediately.’

(9) <*Lo> detesto [vedere <lo> in quello stato].
    him I.detest see-INF him in that state
    ‘I hate to see him in that state.’
3.1 Prerequisites for the Analysis

Restructuring effects II: auxiliary switch. A modal verb such as volere ‘want’ which selects the auxiliary avere ‘have’, appears with the auxiliary essere ‘be’, when the lexical verb normally selects this auxiliary (10) (Cardinaletti & Shlonsky 2004). This is impossible in non-restructuring contexts (11).
3.1 Prerequisites for the analysis

Restructuring effects II: auxiliary switch. A modal verb such as volere ‘want’ which selects the auxiliary avere ‘have’, appears with the auxiliary essere ‘be’, when the lexical verb normally selects this auxiliary (10) (Cardinaletti & Shlonsky 2004). This is impossible in non-restructuring contexts (11).

(10) <Ci> sarei voluto andare con Maria.
     there I.would-be wanted go.INF. with Maria
     ‘I would have liked to go there with Maria.’

(11) Avrei /*Sarei detestato andarci con Maria.
     I.would-have/I.would-be detested go.INF.there with Maria
     ‘I would have hated to go there with Maria.’
Empirical support for analyzing Dutch non-finite clusters as functional restructuring:
3.1 Prerequisites for the analysis

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I. Auxiliary switch in Dutch non-finite verb clusters, in analogy to auxiliary switch in Italian
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Empirical support for analyzing Dutch non-finite clusters as functional restructuring:

I. Auxiliary switch in Dutch non-finite verb clusters, in analogy to auxiliary switch in Italian

II. Degraded inflection of the modal/aspectual verb: IPP in Dutch and lack of infinival –e in Italian
3.1 Prerequisites for the Analysis

**Auxiliary switch**

Dutch non-finite verb clusters involving a modal or aspectual verb (i.e. restructuring verb) show auxiliary switch (Van der Horst 1998; 2008; Haeselyn et al. 1997; Draye & Van der Horst 2006; Coussé & Van de Velde 2014; Van Eynde et al. 2016 amongst others)
3.1 Prerequisites for the analysis

**Auxiliary switch**

Dutch non-finite verb clusters involving a modal or aspectual verb (i.e. restructuring verb) show auxiliary switch (Van der Horst 1998; 2008; Haeselyn et al. 1997; Draye & Van der Horst 2006; Coussé & Van de Velde 2014; Van Eynde et al. 2016 amongst others)

(12) Hij *is/heeft dat gewild.
    He is/has that wanted.
    ‘He has wanted that.’

(13) Dat hij geen VLD-voorzitter is willen worden.
    that he no VLD-chairman is wanted become
    ‘That he didn’t want to become a VLD chairman.’

(Van Eynde et al 2016: 20)
3.1 Prerequisites for the Analysis

Degraded inflection on the modal/aspectual verb

Both in Dutch and in Italian, modal/aspectual verbs shows degraded inflection in a functional restructuring contexts:
3.1 Prerequisites for the analysis

Degraded inflection on the modal/aspectual verb

Both in Dutch and in Italian, modal/aspectual verbs show degraded inflection in a functional restructuring context:

Italian infinitival –e inflection:

(14) Ci vorrei poter(*e) andare con Maria. Italian there I.would-want be-able-INF go-INF with Maria ‘I would like to be able to go there with Maria.’ (Cardinaletti & Shlonsky 2004: 529)
3.1 Prerequisites for the analysis

Degraded inflection on the modal/aspectual verb

In Dutch, modals in non-restructuring contexts (i.e. used as lexical verb) (15) appear embedded under an auxiliary in their regular participle form, but in restructuring contexts they appear without the ge- prefix (16) (see Zwart 2007)
3.1 Prerequisites for the Analysis

Degraded inflection on the modal/aspectual verb

In Dutch, modals in non-restructuring contexts (i.e. used as lexical verb) (15) appear embedded under an auxiliary in their regular participle form, but in restructuring contexts they appear without the *ge-* prefix (16) (see Zwart 2007)

(15) Hij heeft haar ge-zien.
   He has her GE-seen
   ‘He has seen her.’

(16) Dat hij haar heeft (*ge-*)zien lopen.
   that he her has GE-seen walk.INF
   ‘That he has seen her walk by.’
3.2 Analysis of TE-Drop
3.2 Analysis of *te*-drop

I assume that *te* is generated in T (in line with Bennis & Hoekstra 1989; Den Besten & Broekhuis 1989; Rutten 1991 amongst others)
3.2 Analysis of Te-drop

Evidence for te being generated in T:

Verbs like ‘leren’ to learn and ‘helpen’ to help can select either a bare infinitive or a te-infinitive. Only when they select a te-infinitive can the matrix verb and the complement both be modified by conflicting temporal adverbs:

    Today learn.FIN I him tomorrow work.INF

    b. Vandaag leer ik hem morgen te werken.
    Today learn.FIN I him tomorrow to work.INF

    ‘Today I learn him he should work tomorrow.’
3.2 Analysis of *te*-drop

Cluster type I *te*-V1-V2-V3

Anne *zegt* op haar comfortabele stoel *te willen*₁ *blijven*₂ *zitten*₃.<br>
Anne says *on her* comfortable *chair to want. INF remain. INF sit. INF<br>
‘Anne says she wants to remain seated on her comfortable chair.’
3.2 Analysis of Te-drop

Cluster type I te-V1-V2-V3

Anne zegt op haar comfortabele stoel te willen blijven zitten.

Anne says on her comfortable chair to want remain sit.

‘Anne says she wants to remain seated on her comfortable chair.’

(18) Mood Speech Act > Mood Evaluative > Mood Evidential > Mod Epistemic > T(Past) >
T(Future) te > Mood Irrealis > Mod Possibility > Asp Habitual >
Asp Repetitive(I) > Asp Frequentative(I) > Asp Celerative(I) > Mod Volitional willen >
Mod Obligation > Mod Ability/Permission > Asp Celerative(I) > T(Anterior) > Asp Terminative bumper>
Asp Continuative > Asp Perfect > Asp Retrospective > Asp Proximative > Asp Durative blijven>
Asp Generic/progressive > Asp Prospective > Asp SgCompletive(I) > Asp PlCompletive > Voice
Asp Celerative(II) > Asp SgCompletive(II) > Asp Repetitive(II) > Asp Frequentative(II) >
Asp SgCompletive(II) … V0 zitten
3.2 Analysis of te-drop

Cluster type II V1-te-V2-V3

‘Koen zal vanwege de winterstop vandaag niet hoeven te gaan voetballen’
Koen will because of the winter break today not need to go play football.

‘Due to the winter break, Koen doesn’t need to go play football today.’
3.2 Analysis of *te*-drop

Cluster type II $V1$-$te$-$V2$-$V3$

‘Koen zal vanwege de winterstop vandaag niet *hoeven * te gaan voetballen’
Koen will because of the winter break today not need to go play football.
‘Due to the winter break, Koen doesn’t need to go play football today.’

(19) $\text{Mood}_{\text{Speech Act}} > \text{Mood}_{\text{Evaluative}} > \text{Mood}_{\text{Evidential}} > \text{Mod}_{\text{Epistemic}} > T(\text{Past}) > T(\text{Future}) > \text{Mood}_{\text{Irrealis}} > \text{Mod}_{\text{Necessity}} > \text{Mood}_{\text{Possibility}} > \text{Mod}_{\text{Habitual}} > \text{Asp}_{\text{Repetitive(I)}} > \text{Asp}_{\text{Frequentative(I)}} > \text{Asp}_{\text{Celerative(I)}} > \text{Mod}_{\text{Volitional}} > \text{Mod}_{\text{Obligation}} > \text{Mod}_{\text{Ability/Permission}} > \text{Asp}_{\text{Celerative(I)}} > T(\text{Anterior}) > \text{Asp}_{\text{Terminative}} > \text{Asp}_{\text{Continuative}} > \text{Asp}_{\text{Perfect}} > \text{Asp}_{\text{Retrospective}} > \text{Asp}_{\text{Proximative}} > \text{Asp}_{\text{Durative}} > \text{Asp}_{\text{Generic/progressive}} > \text{Asp}_{\text{Prospective}} > \text{Asp}_{\text{Celerative(II)}} > \text{Asp}_{\text{SgCompletive(II)}} > \text{Asp}_{\text{PlCompletive}} > \text{Voice} \text{ Asp}_{\text{Celerative(II)}} > \text{Asp}_{\text{SgCompletive(II)}} \ldots$

$V^0$ *voetballen*
3.2 Analysis of te-drop

Cluster type III V1-V2-te-V3

‘Peter zal vanwege de nieuwe dienstregeling binnenkort nog langer

op de trein moeten zitten te wachten’

‘Because of the new schedule, Peter will soon have to wait even longer for the train.’
3.2 Analysis of **TE-drop**

**Cluster type III V1-V2-te-V3**

‘Peter zal vanwege de nieuwe dienstregeling binnenkort nog langer op de trein *moeten* *zitten* *te* wachten’

on the train must-INF sit-INF to wait-INF

‘Because of the new schedule, Peter will soon have to wait even longer for the train.’

(20) \( T(\text{Future}) > \text{Mood}^{\text{Speech Act}} > \text{Mood}^{\text{Irrealis}} > \text{Mod}^{\text{Necessity}} > \text{Mod}^{\text{Possibility}} > \text{Asp}^{\text{Habitual}} > \text{Asp}^{\text{Repetitive(I)}} > \text{Asp}^{\text{Permission}} > \text{Asp}^{\text{Frequentative(I)}} > \text{Asp}^{\text{Celerative(I)}} > \text{Asp}^{\text{Terminative}} > \text{Asp}^{\text{Obligation}} > \text{Asp}^{\text{Continuative}} > \text{Asp}^{\text{Perfect}} > \text{Asp}^{\text{Ability/Permission}} > \text{Asp}^{\text{SgCompletive(I)}} > \text{Asp}^{\text{Celerative(II)}} > \text{Asp}^{\text{PlCompletive}} > \text{Voice Asp} > \text{Asp}^{\text{Generic/progressive}} > \text{Asp}^{\text{SgCompletive(II)}} \ldots \)

\( V^0 \) *wachten*
## 3.2 Analysis of *te*-drop

**Recall:** *te*-drop was only attested in V1-*te*-V2-V3 and V1-V2-*te*-V3 clusters

<table>
<thead>
<tr>
<th></th>
<th><em>Te</em> cannot be dropped</th>
<th><em>Te</em>-drop is optional</th>
<th><em>Te</em> needs to be dropped</th>
<th>All versions of the test item are rejected</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>te</em>-V1-V2-V3</td>
<td>451</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>V1-<em>te</em>-V2-V3</td>
<td>190</td>
<td>189</td>
<td>19</td>
<td>62</td>
</tr>
<tr>
<td>V1-V2-<em>te</em>-V3</td>
<td>20</td>
<td>152</td>
<td>223</td>
<td>64</td>
</tr>
</tbody>
</table>

Table 1. Frequency overview *te*-drop in all three types of clusters
3.2 Analysis of *te-drop*

Cardinaletti & Shlonsky (2004): functional/lexical verb dichotomy is too sharp
Cardinaletti & Shlonsky (2004): functional/lexical verb dichotomy is too sharp

there are also ‘quasi-functional’ verbs, having less structure than lexical verbs but more than functional verbs
3.2 Analysis of TE-drop

These quasi-functional verbs do allow clitic climbing, but do not allow auxiliary switch (21).
3.2 Analysis of te-drop

These quasi-functional verbs do allow clitic climbing, but do not allow auxiliary switch (21).

(21) *sono/ho voluti far(e) andare a prendere a Maria.  
    Them I.am/I.have wanted make go to fetch a Maria  
    ‘I wanted to make Maria go and fetch them.’  
    (Cardinaletti & Shlonsky 2004: 544)
3.2 Analysis of te-drop

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    (Cardinaletti & Shlonsky 2004: 544)

→ As can also be seen in (21), the infinitive-final –e on the quasi-functional verb is optional
### 3.2 Analysis of TE-drop

Cardinaletti & Shlonsky (2004: 546) propose the following typology:

<table>
<thead>
<tr>
<th></th>
<th>Functional verbs</th>
<th>Quasi-functional verbs</th>
<th>Lexical verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biclausal structure</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Blocks clitic climbing</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Determines auxiliary selection</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Infinitive-final [e]</td>
<td>-</td>
<td>-/+</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 2. Typology of Italian functional, quasi-functional and lexical verbs
3.2 Analysis of TE-drop

Optionality of *te* with ‘hoeven’ in the V1-*te*-V2-V3 cluster and progressive ‘zitten’ in the V1-V2-*te*-V3 structure:
3.2 Analysis of *te*-drop

Optionality of *te* with ‘hoeven’ in the V1-*te*-V2-V3 cluster and progressive ‘zitten’ in the V1-V2-*te*-V3 structure:

(i) *Hoeven* ‘need to’ and progressive *zitten* ‘to sit’ are quasi-functional verbs, which can host a *te* in their complement but are not full lexical verbs (have modal/aspectual semantics; show degraded inflection (IPP effect))
3.2 Analysis of *te*-drop

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(i) *Hoeven* ‘need to’ and progressive *zitten* ‘to sit’ are quasi-functional verbs, which can host a *te* in their complement but are not full lexical verbs (have modal/aspectual semantics; show degraded inflection (IPP effect))

(ii) Diachronically, these verbs are losing their ability to select a *te*-infinitive (Van Pottelberge 2002; Van de Velde 2014, to appear)
3.2 Analysis of te-drop

Optionality of *te* with ‘hoeven’ in the V1-<i>te</i>-V2-V3 cluster and progressive ‘zitten’ in the V1-V2-<i>te</i>-V3 structure:

(i) *Hoeven* ‘need to’ and progressive *zitten* ‘to sit’ are quasi-functional verbs, which can host a *te* in their complement but are not full lexical verbs (have modal/aspectual semantics; show degraded inflection (IPP effect))

(ii) Diachronically, these verbs are losing their ability to select a *te*-infinitive (Van Pottelberge 2002; Van de Velde 2014, to appear)

→ These verbs are developing from quasi-functional into functional verbs
As these verbs are developing from quasi-functional into functional verbs, we predict to see three types of speakers; those for whom:
3.2 Analysis of te-drop

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1) Hoeven ‘need to’ is quasi-functional = te cannot be drop
3.2 Analysis of te-drop

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1) *Hoeven* ‘need to’ is quasi-functional = *te* cannot be drop

2) *Hoeven* ‘need to’ can both be quasi-functional and functional = *te*-drop is optional
3.2 Analysis of *te*-drop

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3) *Hoeven* ‘need to’ is functional = *te* needs to be dropped
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3) *Hoeven ‘need to’* is functional = *te* needs to be dropped

→ Idem for progressive *zitten ‘to sit’*
### 3.2 Analysis of Te-drop

These predictions are born out:

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Table 1. Frequency overview \(te\)-drop in all three types of clusters
3.3 Analysis of te-raising
I propose that te-raising is a case of clitic climbing:
3.3 Analysis of *te*-raising

I propose that *te*-raising is a case of clitic climbing:

(22) `<Lo> volevo [vedere <lo> subito]`  
    him I.wanted see.INF him immediately  
    ‘I wanted to see him immediately.’
3.3 Analysis of \textit{te-raising}

I propose that \textit{te-raising} is a case of clitic climbing:

(22) \texttt{<lo> volevo [vedere \textit{lo} subito]} \\
\begin{tabular}{ll}
  & clitic climbing \\
\end{tabular} \\
\begin{tabular}{ll}
  him & I.wanted see.INF him immediately \\
\end{tabular} \\
‘I wanted to see him immediately.’

\textbf{V1-\textit{te}-V2-V3 cluster type:}

(23) \texttt{\ldots niet \textit{te} hoeven \textit{te} gaan voetballen} \\
\begin{tabular}{ll}
  & \textit{te-raising} \\
\end{tabular} \\
\begin{tabular}{ll}
  not to have.to.INF to go.INF play.football \\
\end{tabular} \\
‘\ldots not having to go play football.’

Implicational relation: IF \textit{te-raising} THEN ALSO \textit{te} in situ
3.3 Analysis of te-raising

V1-V2-te-V3 cluster type:

(24) … <te> moeten <te> zitten <te> wachten
  to must.INF to sit.INF to wait.INF
  ‘… having to wait.’

The implicational relation:
  IF te-raising THEN ALSO te in situ
3.3 Analysis of TE-raising

V1-V2-te-V3 cluster type:

(24) ... <te> moeten <te> zitten <te> wachten
     to  must.INF to  sit.INF to  wait.INF
     ‘... having to wait.’

The implicational relation:
IF te-raising THEN ALSO te in situ

Te-raising in this cluster is less frequent because progressive zitten ‘to sit’ has already developed further into a functional verb than ‘hoeven’ of the V1-te-V2-V3 cluster type (Van de Velde to appear)
### 3.3 Analysis of *te*-raising

Typology of Dutch verbs in non-finite verb clusters:

<table>
<thead>
<tr>
<th></th>
<th>Functional verbs</th>
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<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Blocks <em>te</em>-drop</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Determines auxiliary selection*</td>
<td>-</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Full inflection (no IPP effect)</td>
<td>-</td>
<td>-</td>
<td>+</td>
</tr>
</tbody>
</table>

*Preliminary: systematic investigation in future research

Table 3. Typology of Dutch verbs in non-finite verb clusters
3.4 Towards an analysis of TE-lowering
3.4 Towards an analysis of *te*-lowering

Recall: *te*-lowering

- finite verb in verb second position selects a *te*-infinitive, i.e. *te* should appear on V1
- A subgroup of speakers accept *te*-lowering onto V2, or even V3

Anne zegt op haar comfortabele stoel *<te> willen*₁ *<te> blijven*₂ *<te> zitten*₃.

Anne says on her comfortable chair to want.INF to remain.INF to sit.INF

‘Anne says she wants to remain seated on her comfortable chair.’
3.4 Towards an analysis of *te*-lowering

*Te*-lowering shows interesting similarities to Germanic parasitic participles (Den Dikken & Hoekstra 1997; Wiklund 2005, 2007; Vogel 2009; Wurmbrand 2010, 2012)
3.4 Towards an analysis of Te-lowering

*Te*-lowering shows interesting similarities to Germanic parasitic participles (Den Dikken & Hoekstra 1997; Wiklund 2005, 2007; Vogel 2009; Wurmbrand 2010, 2012)

Parasitic participles: participles selected by a modal, which can normally only combine with an infinitival complement

(25) Hy soe it *dien*₃/*dwaan*₃ *wollen*₂ *ha*₁ Frisian
    he would it do.PRT do.INF want.PRT have.INF
    ‘He would have liked to do it.’

(Den Dikken & Hoekstra 1997: 1058)
### 3.4 Towards an Analysis of *te*-lowering

Parasitic participles exhibit the following properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Parasitic participles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only in functional restructuring contexts</td>
<td>+</td>
</tr>
<tr>
<td>Need appropriate licensing head (an auxiliary)</td>
<td>+</td>
</tr>
<tr>
<td>Optional</td>
<td>+</td>
</tr>
<tr>
<td>Semantics is vacuous</td>
<td>+</td>
</tr>
</tbody>
</table>

Table 4. Properties of parasitic participles and *te*-lowering
### 3.4 Towards an Analysis of *te*-lowering

Properties of parasitic participles and *te*-lowering:

<table>
<thead>
<tr>
<th></th>
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<th><em>Te</em>-lowering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only in functional restructuring contexts</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Need appropriate licensing head</td>
<td>+ (an auxiliary)</td>
<td>+ (a higher verb selecting a <em>te</em>-infinitive)</td>
</tr>
<tr>
<td>Optional</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Semantics is vacuous</td>
<td>+</td>
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</tr>
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</table>

Table 4. Properties of parasitic participles and *te*-lowering
3.4 TOWARDS AN ANALYSIS OF TE-LOWERING

Wurmbrand’s (2010, 2012) analysis of parasitic participles:
3.4 Towards an analysis of te-lowering

Wurmbrand's (2010, 2012) analysis of parasitic participles:

- Reverse Agree, downwards valuation;
- the licensing head V1 – a perfective auxiliary- Agrees with a $uT$ feature on both V2 and V3, valuing it as $uT$:Perfective;
- both V2 and V3 are spelled out as a participle;
- Only possible in restructuring contexts because no other projections intervene.
3.4 Towards an analysis of *te*-lowering

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3.4 Towards an analysis of \textit{Te}-lowering

\textit{Te}-lowering:
3.4 Towards an analysis of te-lowering

Te-lowering:

• Reverse Agree, downwards valuation;
• the licensing head V1 – a higher verb selecting te-infinitive can Agree with any of the infinitival verbs, because no other projections intervene;
• Agrees with a feature [F] which is valued for [-finiteness] for example, which is spelled out as te
3.4 Towards an analysis of **te-lowering**

*Te-lowering:*

- Reverse Agree, downwards valuation;
- the licensing head V1 – a higher verb selecting *te*-infinitive can Agree with any of the infinitival verbs, because no other projections intervene;
- Agrees with a feature [F] which is valued for [-finiteness] for example, which is spelled out as *te*

**Prediction:** *te* in a *te*-V1-V2-V3 cluster should be able to occur on more than one of the non-finite verbs in the cluster (Multiple Agree)
3.4 Towards an analysis of te-lowering

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3.4 Towards an analysis of te-lowering

**Prediction:** *te* in a *te-V1-V2-V3* cluster should be able to occur on more than one of the non-finite verbs in the cluster (Multiple Agree)

→ Data show that *te*-doubling is indeed possible: in the *te-V1-V2-V3* cluster type:

<table>
<thead>
<tr>
<th>Test item:</th>
<th>Attested</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>te-V1-te-V2-V3</em></td>
<td>✓</td>
</tr>
<tr>
<td><em>te-V1-V2-te-V3</em></td>
<td>✓</td>
</tr>
<tr>
<td><em>V1-te-V2-te-V3</em></td>
<td>✓</td>
</tr>
</tbody>
</table>

Table. 5 *te*-doubling in the *te-V1-V2-V3* cluster type
3.4 Towards an analysis of *te*-lowering

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<td><em>te</em>-V1-<em>te</em>-V2-V3</td>
<td>✓</td>
</tr>
<tr>
<td><em>te</em>-V1-<em>V2</em>-<em>te</em>-V3</td>
<td>✓</td>
</tr>
<tr>
<td>V1-<em>te</em>-V2-<em>te</em>-V3</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 5: *te*-doubling in the *te*-V1-V2-V3 cluster type

→ *Te*-tripling not tested in this study: topic for future research
4. Conclusion
4. Conclusion

New data on variation in *te*-placement Dutch non-finite verb clusters
4. Conclusion

New data on variation in *te*-placement Dutch non-finite verb clusters

- *Te* can be dropped, raised or lowered
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- *Te* can be dropped, raised or lowered

Analysis: Dutch non-finite verb clusters are cases of functional restructuring
4. Conclusion

New data on variation in te-placement Dutch non-finite verb clusters
  • *Te* can be dropped, raised or lowered

Analysis: Dutch non-finite verb clusters are cases of functional restructuring
  • *Te*-drop depends on the verb selecting the *te*-infinitive being a quasi-functional or functional verb;
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New data on variation in te-placement Dutch non-finite verb clusters

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New data on variation in *te*-placement Dutch non-finite verb clusters
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Analysis: Dutch non-finite verb clusters are cases of functional restructuring
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• *Te*-raising is clitic climbing;
• Direction analysis *te*-lowering: Multiple Agree, *te* as spell out of a feature [F] valued for [-finiteness]
4. Conclusion

Topics for future research:
4. **Conclusion**

**Topics for future research:**

- *Te-tripling;*
4. Conclusion

Topics for future research:

- Te-tripling;
- Interaction auxiliary switch/te-drop;
4. Conclusion

Topics for future research:

• *Te-* tripling;

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• *Te-* drop, *te-* raising/lowering with other verbs which show regional variation: *beginnen* ‘to begin’, *durven* ‘to dare’, *proberen* ‘to try’ et cetera;
4. Conclusion

Topics for future research:

- Te-tripling;

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- Te-drop, te-raising/lowering with other verbs which show regional variation: *beginnen* ‘to begin’, *durven* ‘to dare’, *proberen* ‘to try’ et cetera;

- Interaction of te-drop, te-raising/lowering and different cluster orders (132, 213, 231, 312, 321 orders)
THANK YOU

CONTACT: cora.pots@kuleuven.be
MORE INFO: www.crissp.be