look! Kaatje is still not heard sing a song
(even without government)

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1 Introduction

• **main topic**: revisit the empirical puzzle analysed by *Bennis and Hoekstra (1989)* in a government-free world

  (1) *Kaatje werd een liedje gehoord/horen zingen.*
  Kaatje became a song heard/hear sing
  INTENDED: ‘Kaatje was heard singing a song.’

• **main gist of our analysis**: perception verbs in Dutch are functional in their ECM-use (cf. also *Wurmbrand (2001)*): they spell out the head of a vP-layer that dominates VoiceP. As a result, they can embed, but not be embedded by passive.

• **broader topic**: trace the grammaticalization path of perception verbs in (dialects of) Dutch

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2 The central data

**central observation:** perception verbs cannot be passivized when they take a (bare infinitival) verbal complement

(2) *Kaatje was heard sing a song.

**note:**

- there is no general ban on passivizing verbs of perception

(3) a. The moon was seen rising over the mountain.
   b. This song was never heard on the radio before.
   c. It was felt that a positive decision would be appropriate.

- there is no general ban on passivizing ECM-verbs

(4) a. I believe Kaatje to have sung a song.
    b. Kaatje was believed to have sung a song.
(5) a. I made John angry.
    b. John was made angry.

→ the same constellation of facts holds for Dutch:

- no passivization of perception verbs when they select a non-finite verbal complement

(6) *Kaatje werd een liedje gehoord/horen zingen.
    Kaatje became a song heard/hear sing
    INTENDED: ‘Kaatje was heard singing a song.’

- no general ban on passivizing perception verbs

(7) Zijn stem werd luid en duidelijk gehoord.
    his voice became loud and clear heard
    ‘His voice was heard loud and clear.’

3 The analysis of **Bennis and Hoekstra (1989)**

**Bennis and Hoekstra (1989):** these data patterns follow from the general theory of Tense and T-chains:

1. **T-linking:** A verb must be identified by Tense, i.e. they must form a T-chain
2. A T-chain is of the form (Tense, P₁, ..., Pₙ, V), where each link antecedent-governs the next link
3. T-chains can be established through movement (Dutch) or via percolation (English)
4. The temporal anchoring of embedded clauses is dependent on that of the matrix clause through T-chain composition

(8) *Hij werd op de plaats van de misdaad gezien.
    he became on the scene of the crime seen
    ‘He was seen at the scene of the crime.’

**note:**

- no general ban on passivizing ECM-verbs

(9) a. *Ik vind Jan vervelend.
    I find Jan annoying
    ‘I find Jan annoying.’
    b. Jan wordt vervelend gevonden.
    Jan becomes annoying found
    ‘Jan is considered annoying.’
(10) Jan werd verondersteld naar huis te gaan.
    Jan was supposed to home to go
    ‘John was supposed to go home.’
governing \( T \), then \( C_1 \) and \( C_2 \) can be composed iff some link of \( C_1 \) is a sister to some link of \( C_2 \).

\[ \rightarrow \text{this theory accounts for the basic facts in the following way:} \]

\( \text{(12)} \) *Kaatje werd een liedje gehoord zingen. \]
\[
\begin{align*}
\text{Kaatje became a song hear sing} \\
\text{INTENDED: 'Kaatje was heard singing a song.'}
\end{align*}
\]

\bullet the infinitival complement of \textit{horen} ‘to hear’ is an AgrP; it contains no Tense-domain. T-linking requires that the embedded verb undergoes Verb Raising, but the participial form \textit{gehoord} ‘heard’ is (by stipulation) not a possible T-link \( \Rightarrow \) T-linking is violated

\( \text{(13)} \) *Kaatje werd een liedje horen zingen. \\
\[
\begin{align*}
\text{Kaatje became a song hear sing} \\
\text{INTENDED: 'Kaatje was heard singing a song.'}
\end{align*}
\]

\bullet the infinitival complement of \textit{horen} ‘to hear’ is an AgrP; it contains no Tense-domain. T-linking requires that the embedded verb undergoes Verb Raising; the infinitival form \textit{horen} ‘hear’ is a possible T-link, but deletion of the participial morphology amounts to irreversible deletion in the case of passive (as opposed to perfective) participles, since the passive participial morphology is the bearer of the external theta-role (Roberts 1987)

\( \text{(14)} \) \textit{Jan wordt vervelend gevonden.} \\
\text{Jan becomes annoying found} \\
\text{'Jan is considered annoying.'}

\bullet the complement of \textit{vinden} ‘to find’ contains no verb \( \Rightarrow \) T-linking is not required and passivisation can apply freely

\( \text{(15)} \) \textit{Jan werd verondersteld naar huis te gaan.} \\
\text{Jan was supposed to home to go} \\
\text{'John was supposed to go home.'}

\bullet the complement of \textit{verondersteld} is a TP \( \Rightarrow \) T-linking takes place independently in both the matrix and the embedded clause, and T-chain composition via Extrapolation circumvents the problematic passive participle

\textbf{shortcomings of the Bennis and Hoekstra (1989)-account:}

1. it crucially relies on outdated and since replaced theoretical machinery: government, the existence of AgrP, the structural configuration whereby TP dominates AgrP, etc.

2. there is no account of why Dutch participles are not possible T-links (or why in English perfective participles are, but passive ones are not possible T-links)

3. it is unclear why participles cannot be intermediate T-links, but they can be the foot of a T-chain (which is technically also a T-link):

\( \text{(16)} \) \textit{De man wordt geholpen.} \\
\text{the man becomes helped} \\
\text{‘The man is being helped.’}

\( \text{(17)} \) \textit{De man heeft gelachen} \\
\text{the man has laughed} \\
\text{‘The man has laughed.’}
4 Wurmbrand (2001)’s alternative

Wurmbrand (2001): there are three types of restructuring predicates:

<table>
<thead>
<tr>
<th>Merge position</th>
<th>IPP</th>
<th>Extraposition</th>
<th>thematic properties</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>lexical</td>
<td>V</td>
<td>✓</td>
<td>yes</td>
<td>try</td>
</tr>
<tr>
<td>semi-functional</td>
<td>v/Asp</td>
<td>✓</td>
<td>yes</td>
<td>let</td>
</tr>
<tr>
<td>functional</td>
<td>Aux/Mod</td>
<td>✓</td>
<td>no</td>
<td>have</td>
</tr>
</tbody>
</table>

Table 1: Wurmbrand (2001:145)’s three types of restructuring predicates

→ perception verbs are semi-functional, i.e. they spell out \( v \) → this also accounts for the following facts (Wurmbrand 2001:217ff):

- they cannot be passivised, nor can they embed a passive

(21) *Hans sah ihn Muscheln essen kommen.
Hans saw him mussels eat come
INTENDED: ‘Hans saw him come eat mussels.’ (German)

(22) *Der Peter wurde den Kuchen essen gesehen.
the Peter became the cake eat seen
INTENDED: ‘Somebody saw Peter eat the cake.’ (German)

(23) *Hans sah den Kuchen gegessen werden.
Hans saw the cake eaten become
INTENDED: ‘Hans saw the cake being eaten.’ (German)

shortcomings of the Wurmbrand (2001) account:

1. Dutch and German perception verbs differ in their (lack of) compatibility with other restructuring predicates (see next section)
2. Wurmbrand’s account of the B&H-puzzle remains fairly implicit
3. the link between perception verbs and the \( vP/AspP \)-domain remains stipulative

5 Refining Wurmbrand (2001)’s analysis: perception verbs in Dutch

starting point for our analysis: compatibility of perception verbs with other restructuring predicates in Dutch

- treebank data: based on the Discussion lists-subcorpus (4,395,094 sentences) of the Dutch SoNaR-corpus ([Oostdijk et al. 2013]; all data extracted via GrETEL ([Augustinus et al. 2012]})
starting point for our analysis: perception verbs and causative verbs are in complementary distribution:

\[(24)\]
\[\begin{array}{ll}
\text{perfective auxiliaries} & >1000 \\
\text{modals} & 441 \\
\text{causative verbs} & 1 \\
\text{motion verbs} & 65 \\
\text{posture verbs} & 0 \\
\text{passive} & 0 \\
\end{array}\]

Table 2: Corpus frequencies of combinations of Dutch perception verbs with other restructuring predicates

\[\begin{array}{ll}
\text{embedding} & \text{embedded under} \\
\text{a perception verb} & \text{a perception verb} \\
\end{array}\]

\[\text{starting point} \text{ for our analysis: perception verbs and causative verbs are in complementary distribution:}\]

\[(24)\]
\[\begin{array}{ll}
\text{a. } *\text{Ik zie Jan Piet met Marie doen praten.} & \\
\text{I see Jan Piet with Marie do talk} & \\
\text{INTENDED: ‘I see how Jan is making Piet talk to Marie.’} & \\
\text{b. } *\text{Ik doe Jan Piet met Marie zien praten.} & \\
\text{I do Jan Piet with Marie see talk} & \\
\text{INTENDED: ‘I’m making Jan watch how Piet talks to Marie.’} & \\
\end{array}\]

\[\rightarrow\text{we assume that causative and perception verbs spell out the same head, i.e. } v^{\text{perc/caus}}\]

\[\text{Pylkkänen (2000:431): there is a close link between perception and causation:}\]

\[(25)\]
\[\begin{array}{ll}
\text{a. } \text{Mikko inhoa- } hyttyi-ä. & \\
\text{Mikko.NOM findDisgusting-3SG mosquitoes-PAR} & \\
\text{‘Mikko finds mosquitoes disgusting (now or in general).’} & \\
\end{array}\]

\[\text{b. } \text{Hyttyset inha-tta-vat } \text{Mikko-a.} & \\
\text{mosquitoes.NOM findDisgusting-CAUS-3PL Mikko-PAR} & \\
\text{‘Mosquitoes disgust Mikko (now)’} & \\
\text{“the semantic import of the causative morpheme is to introduce a causing eventuality which gets interpreted as the perception of the Theme by the Experiencer. This perception eventuality seems to be what is responsible for the stage-level interpretation of the causative” (Pylkkänen 2000:432) } & \\
\text{three exceptions in our data:}\]

\[\text{• perception embedding causation}\]

\[(26)\]
\[\begin{array}{ll}
\text{Ik zie eerlijk gezeid niet direct de armen de revolutie} & \\
\text{I see honestly said not direct the poor the revolution} & \\
\text{doen beginnen.} & \\
\text{do start} & \\
\text{‘To be honest, I can’t picture the poor starting the revolution.’} & \\
\end{array}\]

\[(27)\]
\[\begin{array}{ll}
\text{Ik zie me nog niet een Bengaalse tijger laten los lopen.} & \\
\text{I see me yet not a Bengal tiger let loose run} & \\
\text{‘I can’t imagine myself letting loose a Bengal tiger.’} & \\
\end{array}\]

\[\rightarrow\text{the verb zien ‘see’ is used in a more metaphorical sense here (‘imagine, picture’) and as a result possibly occupies a different (higher) structural position}\]

\[\text{• causation embedding perception}\]

\[(28)\]
\[\begin{array}{ll}
\text{Dan zal ik je mijn maag laten horen knorren.} & \\
\text{then will I you my stomach let hear grunt} & \\
\text{‘Then I will let you listen to my stomach growl.’} & \\
\end{array}\]

\[\rightarrow\text{unclear what exactly to make of this; note that minor variations of this example tend to sound much worse}\]
Kaatje is still not heard sing a song

as for the other restructuring verbs:

• perfective auxiliaries and modals clearly dominate $v_{perc/caus}P$:

(29)  a. Ik heb Jan zien lachen.  
      I have Jan see laugh  
      ‘I saw Jan laugh.’

b. *Ik zie Jan gelachen hebben.  
      I see Jan laughed have  
      INTENDED: ‘I see that Jan has laughed.’

(30)  a. Ik moet Jan zien lachen.  
      I must Jan see laugh  
      ‘I have to see Jan laugh.’

b. *Ik zie Jan moeten lachen.  
      I see Jan must laugh  
      INTENDED: ‘I see that Jan has to laugh.’

• posture verbs and the passive auxiliary are clearly dominated by $v_{perc/caus}P$:

(31)  a. Ik zie Jan staan lachen.  
      I see Jan stand laugh  
      ‘I see Jan laughing.’

b. *Ik sta Jan te zien lachen.  
      I stand Jan to see laugh  
      INTENDED: ‘I’m seeing John laugh.’

(32)  a. Ik zie Jan geslagen worden.  
      I see Jan beaten become  
      ‘I see that Jan is being beaten.’

b. *Jan wordt zien/gezien zingen.  
      Jan becomes see/seen sing  
      INTENDED: ‘Jan is being seen singing.’

• motion verbs are dominated by $v_{perc/caus}P$; in all but one of the 65

examples featuring a motion verb embedding a perception verb, it is in
fact the future auxiliary gaan ‘will, going to’

(33)  Ik zie dat arme kind aan elke deur al gaan bellen.  
      I see that poor child on every door already go ring  
      ‘I can see that poor child go and ring every doorbell.’

(34)  Ge gaat mij niet snel op hakken zien lopen.  
      you go me not fast on heels see walk  
      ‘You’re not going to see me walking on heels any time soon.’

→ this yields the following clause structure for Dutch:

(35)  Mod$P$
    
    Mod$P$
    TP
    have/be
    Mod$P$
    $v_{perc/caus}P$
    must/can
    $v_{perc/caus}P$
    see/hear
    Asp$motionP$
    see/hear
    Asp$motionP$
    Asp$progP$
    go/come
    Asp$progP$
    sit/stand
    VoiceP
    Voice
    VP
    ACT/PASS
    V
our analysis of the B&H-puzzle: perception verbs with verbal complements cannot be passivized because they spell out a functional head in the extended projection of the lexical verb. This not only explains their incompatibility with passive, but also the fact that they can themselves embed a passivized predicate.

accounting for the remaining data:

(36) *Kaatje werd een liedje gehoord/koren zingen.
Kaatje became a song heard/hear sing
INTENDED: ‘Kaatje was heard singing a song.’

→ we implement this intuition by embedding the perception verb and the lexical verb under the same TP

→ this also predicts that the lexical verb cannot a temporal specification independent of that of the perception verb (de Geest (1972))

(39) *Ik zie Frank gisteren het gras gemaaid hebben.
I see Frank yesterday the grass mown have

→ and it predicts that temporal adverbs scope over both the perception event and the event expressed by the lexical verb (de Geest (1972)):

(40) Ik zag Frank gisteren het gras maaien.
I saw Frank yesterday the grass mow
‘I saw Frank mow the grass yesterday.’

→ the temporal adverb gisteren ‘yesterday’, which is arguably merged in the TP domain, has scope over both the seeing event and the mowing event, leading to the interpretation where the seeing and the mowing both necessarily took place yesterday.

6 Tracing the grammaticalization path even higher: inflected imperatives

so far we have argued that Dutch verbs of perception and causation can be either lexical (and spell out V/a root) or semi-functional (and spell out v)

in this section we argue that these verbs can also be purely functional in (dialects of) Dutch, in which case they spell out a left-peripheral head in the CP-domain

→ ECM-verbs in Dutch dialects can show up in three imperative(-like) contexts:

regular imperatives:

(41) Hoor die meeuwen es een kabaal maken!
hear those seagulls PRT a racket make
‘Listen to those seagulls make noise!’ (Dutch (dialects))
inflected imperatives:

(42) *Hoor-e* die *meeuwen es een kabaal maken.*
hear-PL those seagulls PRT a racket make
‘Listen to those seagulls make noise.’ (Rotterdam Dutch)

(43) *Hoor*(-e) die *meeuw es een kabaal maken.*
hear-PL that seagull PRT a racket make
‘Listen to that seagull make noise.’ (Rotterdam Dutch)

imperatives as discourse markers:

(44) Die *meeuwen maken een kabaal, hoor.*
those seagulls make a racket hear
‘Those seagulls sure make a lot of noise!’ (Dutch (dialects))

→ inflected imperatives occupy an intermediate position between the other two constructions with respect to a number of criteria typically associated with grammaticalisation (cf. Abney (1987), Hopper and Trangtll (1993), Benjamin (2010), Waltereit and Detges (2007) and see van Craenenbroeck and van Koppen (2013) for the full set of examples):

e.g. bleached meaning: regular imperatives and inflected imperatives retain the basic lexical meaning of the verb >> in imperatives used as discourse markers, the lexical meaning is lost

regular imperatives:

(45) #*Kijk die koeien es gek doen zonder te kijken.*
look-PL those cows PRT crazy do without to look
‘Look at those cows go crazy without looking!’

(46) #*Kijk die studenten op Ibiza es gek doen!*
look those students on Ibiza PRT crazy do
‘Look at those students on Ibiza go crazy!’
[context: speaker is not able to see the students in Ibiza]

inflected imperatives:

(47) #*Kijk-e die koeien es gek doen zonder te kijken.*
look-PL those cows PRT crazy do without to look
‘Look at those cows go crazy without looking.’

(48) #*Kijk-e die studenten op Ibiza es gek doen.*
look-PL those students on Ibiza PRT crazy do
‘Look at those students on Ibiza go crazy.’
[context: speaker is not able to see the students in Ibiza]

however: inflected imperatives cannot be modified by adjuncts related to the ECM-verb:

(49) *Kijk/ #* Kijk-e die koeien door de verrkeijker es gek doen.*
look / look-PL those cows through the binocular PRT crazy do
‘Look through the binoculars at those cows go crazy.’

imperatives as discourse markers:

(50) *Kijk, je mag niet kijken.*
look you may not look
‘Look, you can’t look.’

(51) *Kijk, die studenten op Ibiza doen gek.*
look those students on Ibiza PRT crazy do
‘Look, those students on Ibiza are going crazy.’
[context: speaker is not able to see the students in Ibiza]

data summary:

<table>
<thead>
<tr>
<th></th>
<th>regular imperative</th>
<th>inflected imperative</th>
<th>imperative as discourse marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>phonological reduction</td>
<td>−</td>
<td>−</td>
<td>+</td>
</tr>
<tr>
<td>bleached meaning</td>
<td>−</td>
<td>+/−</td>
<td>+</td>
</tr>
<tr>
<td>argument structure</td>
<td>+</td>
<td>+/−</td>
<td>−</td>
</tr>
<tr>
<td>closed class</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>morphological defectiveness</td>
<td>−</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
**proposal:** the three imperative(-like) contexts in which ECM-verbs appear in Dutch dialects reflect three possible Merge positions for these verbs:

- the regular imperative is merged in $v$ (see above) and raises to $C$
- the inflected imperative is merged directly in $C$
- the imperative used as a discourse marker is merged in a functional head higher than $C$ (see also Haegeman (2010))

**this derives:**

- the lexical properties of the regular imperative (full argument structure, full morphological paradigm, open class, ...)
- the fully functional properties of the imperative used as discourse marker (no argument structure, no morphological paradigm, closed class, no lexical meaning, ...)
- the intermediate status of inflected imperatives: on the hand, they impose an agentivity restriction on the ‘embedded’ subject, on the other, they are merged directly in a functional head (morphological deficiency, closed class, no argument structure)

### 7 Four Merge positions for Dutch perception verbs

**note:** we have identified four possible syntactic configurations for perception verbs in Dutch (dialects):

- **main verb**

(52)  
$Ik$ hoor $de$ hond.  
I hear the dog  
‘I hear the dog.’

- **$v_{perc/caus}$**

(53)  
$Ik$ hoor $de$ hond blaffen.  
I hear the dog bark  
‘I hear the dog bark.’

- **inflected imperative**

(54)  
$Hoor$-$e$ die honden es blaffem.  
hear-pl those dogs PRT bark  
‘Listen to those dogs bark.’  (Rotterdam Dutch)

- **discourse marker**

(55)  
$Die$ honden blaffen, hoor.  
those dogs bark hear  
‘Those dogs bark, you know.’

(56)
prediction #1: these four types of perception verbs should show different compatibility patterns with restructuring verbs:

(57) a. discourse marker > perfective auxiliaries & modals > causative > motion > posture > passive > main verb
b. inflected imperative > perfective auxiliaries & modals > causative > motion > posture > passive > main verb
c. perfective auxiliaries & modals > vperc/caus/causative > motion > posture > passive > main verb
d. perfective auxiliaries & modals > causative > motion > posture > passive > main verb

→ these are indeed the patterns we find, e.g.

(58) De hond heeft geblaft, hoor.
the dog has barked hear
‘The dog has barked, you know.’ (disc. marker > perfect)

(59) Kijke die honden es moeten rennen!
look-pl those dogs PRT must run
‘Look at those dogs having to run!’ (infl.imp. > modal)

(60) De honden worden gehoord.
the dogs become heard
‘The dogs are being heard.’ (passive > main)

prediction #2: these four types of perception verbs should be mutually compatible:

→ this is indeed what we find, e.g.

(61) Kijke die boere die koeie es zien springen!
look-pl those farmers those cows PRT see jump
‘Look at those farmers watching those cows jump!’ (infl.imp. + vperc/caus)

8 Conclusion

This talk has focused on the central puzzle discussed in Bennis and Hoekstra (1989), i.e. the impossibility of perception verbs to passivize when they take a verbal complement:

(62) Ik zie hem zijn dochter zien.
I see him his daughter see
‘I see him see his daughter.’ (vperc/caus + main)

(63) Ik hoor hem, hoor.
I hear him hear
‘I hear him, you know.’ (disc. particle + main)

We have argued the following:

• perception verbs are (semi-)functional when they take a verbal complement
• in particular, that they spell out the v-head that is also used in causative structures
• perception verbs fit into an articulated structure of the verbal functional sequence in Dutch
• this semi-functional use of perception and causative verbs fits into a more general grammaticalisation pattern in which these verbs can also spell out clause-peripheral functional heads
Kaatje is still not heard sing a song

References


