

## Dutch posture verbs in basic locative constructions – are they functional or lexical elements?

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Verbs describing human postures have extended uses in many languages (Newman 2002; Ameka and Levinson 2007). In Dutch, the posture verbs *stand*, *sit*, *lie*, and *hang* have several extended uses, such as an obligatory use in locative constructions with inanimate subjects:

- (1) De sleutels liggen/\*zijn op tafel  
The keys lie/ \*are on table  
'The keys are on the table'

In this extended use, posture verbs seem more like grammaticalized functional elements than like lexical theta-assigning verbs. Their posture meaning is difficult to pinpoint, and seems to classify the relationship between Figure and Ground (see p.3). In the analysis of Hoekstra and Mulder (1990), posture verbs don't assign a theta role to their inanimate subjects; rather, the location is a small clause complement of the posture verb, and the inanimate NP receives its theta role from the location in the small clause, before moving up to the posture verb subject position. Furthermore, posture verbs are closed-class: only these four posture verbs can be used in these constructions. Intuitively, these properties beg the question: are posture verbs, in their use in locational constructions with inanimate subjects, actually more like functional elements than like lexical verbs?

This talk investigates processing of Dutch posture verbs in the visual world paradigm, to see if they behave more like lexical or like functional elements in a reference resolution task.

We know that in the visual world paradigm, selectional restrictions on lexical verbs trigger predictive looks towards a target referent matching the restrictions (Altmann and Kamide 1999): a verb like *eat* will direct looks to a matching referent *cake* before the word *cake* is heard. This is a robust finding across many languages, and even two-year-olds already show it (Hintz et al. 2017, Mani and Huettig 2012).

We also know that selectional restrictions on the verb are able to suppress looks to a phonological competitor that does not match the restrictions, while the target word is being heard (Dahan and Tanenhaus 2004).

The functional property of grammatical gender on determiners (*de* vs. *het*) is less robust in directing looks: while grammatical gender can suppress phonological cohort activation (Dahan et al. 2000), it does not seem to generate predictive looks as robustly as lexical verbs do (Brouwer et al. 2017, Loerts et al. 2013).

In this talk, I use this difference between lexical and functional elements as a litmus test to gain more understanding about what kinds of animals posture verbs are: lexical or functional. Twenty participants performed a truth-value judgment task in the visual world paradigm while their eye movements were tracked; they all saw 36 trials (3 conditions x 12 items) in the 'verb' conditions, as well as in the 'grammatical gender' conditions (see (2) and (3) on p.2). 67 fillers were included, of which 24 had a 'no' response. The trials were presented in a different pseudorandomized order for each participant: the same picture never appeared twice in a row, and items in the same condition never followed each other.

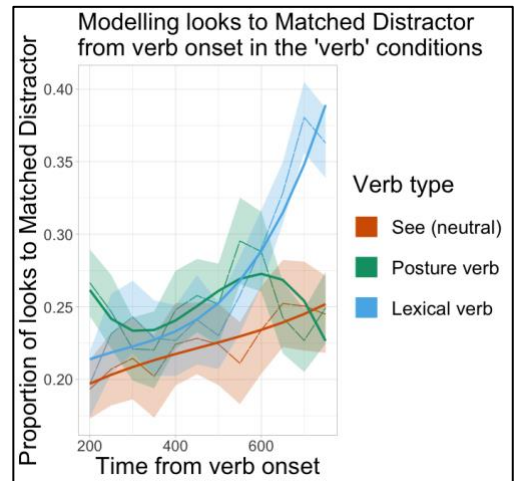
The data were analyzed using Growth Curve Analysis (Mirman 2014). The windows of analysis were 200-800ms after verb onset to determine (differences between conditions in) predictive looks to the matched distractor; and 200-800ms after target noun onset to evaluate suppression of looks to the phonological competitor. Unlike lexical verbs, posture verbs do not generate predictive looks; and posture verbs do suppress looks to the phonological competitor, not as well as lexical verbs do, but better than grammatical gender does.

Potential confounds and the role of frequency will be discussed, leading to the conclusion that Dutch posture verbs are either truly functional elements, or semi-lexical, but certainly not fully lexical.

## Materials and graphs

Example stimulus and graphs for the **'verb' conditions**.

- target: *plas* 'puddle'
- matched distractor: *diamant* 'diamond' (lies and sparkles)
- phonological competitor (cohort): *plant* 'plant' (does not lie or sparkle)
- mismatched distractor: *taart* 'cake' (does not lie or sparkle)



### (2) a. 'see' neutral condition

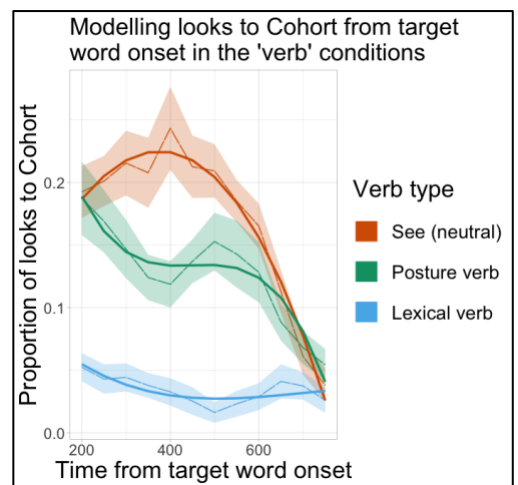
Zie je een plas in het veld?  
See you a puddle in the field?  
'Do you see a puddle in the field?'

### b. posture verb condition

Ligt er een plas in het veld?  
Lies there a puddle in the field?  
'Is there a puddle lying in the field?'

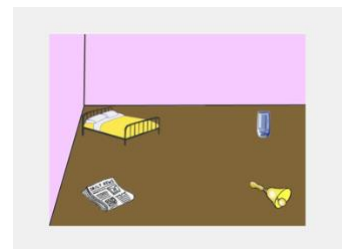
### c. lexical verb condition

Glinstert er een plas in het veld?  
Sparkles there a puddle in the field?  
'Is there a puddle sparkling in the field?'



Example stimulus and graph for the **'grammatical gender' conditions**.

- target: *bed* 'bed'
- matched distractor: *glas* 'glass' (stands, neuter gender)
- phonological competitor (cohort): *bel* 'bell' (does not stand, common gender)
- mismatched distractor: *krant* 'newspaper' (does not stand, common gender)



### (3) a. 'een' neutral condition

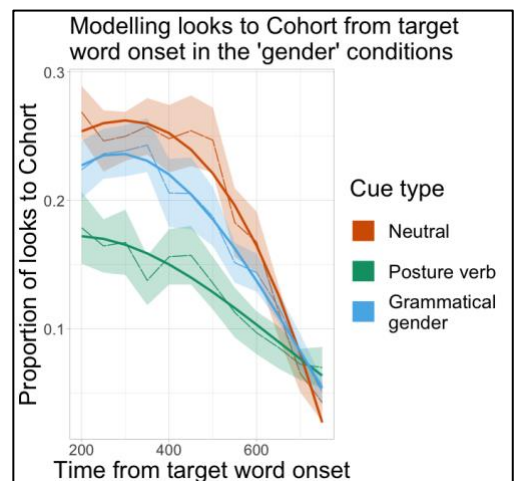
Zie je een bed in de kamer?  
See you a bed in the room?  
'Do you see a bed in the room?'

### b. posture verb condition

Staat er een bed in de kamer?  
Stands there a bed in the room?  
'Is there a bed standing in the room?'

### c. 'de/het' grammatical gender condition

Zie je het bed in de kamer?  
See you the-neuter bed in the room?  
'Do you see the bed in the room?'



(no significant differences between 'grammatical gender' conditions 200-800ms after verb onset)

## Language background: extended uses of Dutch posture verbs

In Dutch, one does not use a copula in a basic locative construction with an inanimate subject:

- (4) De sleutels liggen/\*zijn op tafel  
The keys lie /\*are on table  
'The keys are on the table'

Instead, one of the following four posture verbs must be used: *staan* 'stand', *zitten* 'sit', *liggen* 'lie', or *hangen* 'hang'. Out of these four verbs, a choice has to be made for the correct one:

- (5) De sleutels liggen/\*hangen/\*staan/\*zitten op tafel  
The keys lie /\*hang /\*stand/\*sit on table  
'The keys are on the table'

It is difficult for non-native speakers to learn which verb to use (Lemmens and Perrez 2012), and actually native speakers struggle to specify exactly what meaning the posture verbs encode, as well; for some insights into what factors come into play, see Van den Toorn (1975) and Lemmens (2002).

It is not the properties of the subject alone that determine the choice of posture verb; rather, these verbs seem to encode the relationship between the Figure and the Ground:

- (6) Het boek **staat** in de kast  
The book stands in the bookcase  
'The book is in the bookcase (in an upright, vertical orientation)'
- (7) Het boek **ligt** in de kast  
The book lies in the bookcase  
'The book is in the bookcase (in a horizontal orientation)'
- (8) Het boek **zit** in de doos  
The book sits in the box  
'The book is in the box (contained; can be in any orientation)'

Less relevant to this talk, but for completeness' sake: Dutch posture verbs can also be used as progressive-marking auxiliaries, and in this use, they clearly are functional elements:

- (9) Ik zit te wachten  
I sit to wait  
'I am waiting' (don't have to be in a sitting position for this to be true)

## References

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