

# Adverbial superlatives and temporal questions

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Jos Tellings, Utrecht University – j.tellings@gmail.com

Jacobse: Je hebt er twee in je klauwen,  
en op z'n MAXIMUMST heb ik er drie!  
Hoe ken je dan 'zes' zeggen, van Es?  
Dat ken toch niet!

(van Kooten & de Bie; [edu.nl/4ethh](http://edu.nl/4ethh))

## 1 Introduction

- Dutch has bare superlatives (Matushansky 2008; see Tellings 2019a for an analysis of the differences between (1a) and (1b)).

- (1) a. Deze vaas is de duurste vaas die ik heb.  
'This vase is the most expensive one (vase) I have'
- b. Deze vaas is het duurste wat ik heb.  
'This vase is the most expensive thing I have'

- Bare superlatives can also be used adverbially (cf. Matushansky 2008: §10.2):

- (2) a. Jan loopt **het snelst**.  
'Jan is the fastest walker'
- b. Jan loopt **op z'n snelst**.  
'Jan is walking as fast as he can'

- Today, I will look at adverbial superlatives that refer to times:

- (3) a. Marie was **voor het eerst** in Amsterdam in 2003. [voor-type]  
'Mary was in Amsterdam for the first time in 2003'
- b. Jan heeft **voor de laatste keer** zijn lezing gegeven over *wh*-movement. [voor-type]  
'Jan gave a talk about *wh*-movement for the last time'
- c. Linda gaat **op z'n vroegst** in juli op vakantie. [possessive type]<sup>1</sup>  
'Linda will go on holiday in July, at the earliest'
- d. Linda arriveerde **het laatst / als laatste**. [simple type]  
'Linda was the last to arrive'

I will refer to these constructions as **temporal superlatives** for ease of reference.

- I will be concerned with the use of temporal superlatives in declarative sentences as well as in (temporal) questions.

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<sup>1</sup>*Op z'n vroegst/laatst* literally translates as 'at his earliest/latest'. Coppock (2016: 473n) makes note of English possessive superlatives such as *at his fastest* etc. The Dutch possessive superlative (see also (2b)) is clearly used in a different way, and I'm not sure if (i-b) is acceptable:

- (i) a. He was 200 pounds at his heaviest.
- b. ?Hij woog 90 kg op z'n zwaarst.

## 2 Three different readings

### ① Modal reading

- The possessive type temporal superlative has a **modal reading**:

- (4) Het boek wordt op z'n vroegst gepubliceerd \*(in 2021). (Broekhuis 2013: 221)  
 'The book will be published, at the earliest, in 2021'  
 = the earliest possible publication time is 2021

The modal reading can be identified as the 'uncertainty'/variation<sup>2</sup> reading familiar from the modifiers *at least* and *at most*, on which a large literature exists (see Coppock 2016 and references there). It has more recently been noted that these special properties are shared with other superlative expressions, leading to attempts to derive these properties from the semantics of the superlative morpheme (Penka 2010; Solt 2011; Coppock 2016).

- The modal reading is also found in non-temporal possessive superlatives, as in (2b), repeated below:

- (5) Jan loopt op z'n snelst.  
 Jan walks at his fastest  
 'Jan is walking as fast as he can'

### ② Multiple events reading

- The *voor*-type superlatives have a **multiple events** reading:

- (6) Jan las voor het laatst een boek in 2010.  
 'The last time John read a book was in 2010'

This implies that there were several book-reading events by John, and asserts that the most recent of those was in 2010.

- The multiplicity inference is confirmed by the behavior with 'unique' events:

- (7) a. #Mijn kat is voor het laatst doodgegaan in 2008.  
 '2008 was the last time my cat died'  
 ↗ my cat died several times
- b. Jan trouwde voor het laatst in 2010.  
 '2010 was the last time John got married'  
 ↗ John married more than once

<sup>2</sup>As for the variation reading, Coppock (2016: 479) gives the following example (citing Nouwen 2010):

- (i) Computers of this kind have **at most** 2GB of memory.

The variation reading is also possible for *op z'n laatst*, as the following corpus example shows:

- (ii) Twaalf koren zingen muziek van componisten die **op z'n laatst** rond 1600 geboren zijn. [OpenSONAR]  
 'Twelve choirs sing music of composers that were born around 1600 at the latest'

- Proviso: with *eerst* there is not necessarily an inference of multiplicity.

- (8) a. Ik ga morgen voor het eerst een appeltaart bakken.  
'I am going to bake an apple pie tomorrow for the first time'  
[no suggestion of multiple (planned) baking events]
- b. Ik heb in 2001 voor het eerst een appeltaart gebakken.  
'In 2001 I baked an apple pie for the first time'  
↪ suggests multiple baking events (?)

### ③ Individual comparison reading

- The simple expressions *het eerst/laatst* involve comparison of individuals:

- (9) Jan las het boek **het laatst**. / Jan las het boek **als laatste**.  
'John was the last to read the book'  
= John's reading was later than all other (relevant) people's reading

This is a very different reading from 'Jan las het boek voor het laatst', which means that it was the last time that Jan read the book.

- **Penka (2010)** makes similar remarks for German:

- (10) a. Peter kam **am spätesten/frühesten**.  
'Peter was the last to arrive' [individual comparison reading]
- b. Peter kam **spätestens/frühestens** um 6 Uhr.  
'Peter arrived at 6 o'clock at the latest' [modal reading]

### Summary

1.	voor het eerst/laatst	[bare superlative, <i>voor</i> -PP]	multiple events reading
2.	voor de eerste/laatste keer	[full superlative, <i>voor</i> -PP]	multiple events reading
3.	op z'n vroegst/laatst <sup>a</sup>	[bare superlative, <i>op z'n</i> ]	modal reading
4.	het eerst/laatst <sup>b</sup>	[bare superlative, DP]	individual comparison reading

<sup>a</sup> in Belgian varieties: *ten vroegste, ten laatste*.

See <https://taaladvies.net/taal/advies/vraag/1078/ten-vroegste-op-zijn-vroegst/>.

<sup>b</sup> Although they have a somewhat different distribution, this type appears to have the same reading as *als eerste/laatste*, but I will not analyze the *als*-form any further.

Table 1. Types of Dutch temporal superlatives and their readings

### Semantic analysis

- **Penka (2010)** uses a standard (Heim-style) definition of the superlative applied to times:

- (11)  $\llbracket\text{-est}\rrbracket(C)(R_{\langle d, \langle i, t \rangle \rangle})(t_i)$  is defined iff: (Penka 2010: 3)
1.  $t \in C$
  2.  $\forall t' [t' \in C \rightarrow \exists d [R(d)(t')]]$
  3.  $\exists t' [t' \in C \ \& \ t' \neq t]$

When defined  $\llbracket\text{-est}\rrbracket(C)(R)(t) = 1$  iff  $\exists d [R(d)(t) \ \& \ \forall t' [t' \in C \ \& \ t' \neq t \rightarrow \neg R(d)(t')]]$ .

**Penka** shows that when this is applied to the gradable predicate  $\lambda d \lambda t (\exists t' [t' < s^* \ \& \ t' \geq d \ \& \ t' = t \ \& \ P(t')])$  (e.g. “there is a past time  $t$  at which I was in Amsterdam and  $t$  is  $d$ -late”), presuppositions 2 and 3 of (11) require that there are multiple times at which  $P$  happened. This is undesirable for the modal reading, but in fact what we want for the multiple events reading.

- The inference of multiple events with the *voor*-type temporal superlatives comes from the presupposition that the comparison class  $C$  has more than one element. It is thus similar to the case in which from ‘Mary is the tallest girl’ one infers that there are several girls.
- In order to derive the modal reading, **Penka** assumes a covert modal operator is introduced (cf. **Nouwen 2010; Solt 2011**). **Coppock (2016)** instead assumes that the uncertainty/variation readings come from an Inquisitive Semantics-style set of alternatives which is introduced by ‘at’ in ‘6 o’clock at the latest’. We can assume that in Dutch, *op z’n* plays a similar role.

(12) [ [[*op z’n*] vroeg-EST] [in 2021] ]  
 dit boek wordt gepubliceerd in {2021, 2022, 2023}  
 $\rightsquigarrow$  uncertainty/variation

- **Coppock (2016)** suggests that the **type** of inference (uncertainty, variation, ...) is determined by context, the operator ‘at’ just provides the inquisitive alternatives needed to derive it. However, Dutch data suggest that the type of inference and comparison class is in fact encoded in the preposition.

Preposition	Inference	Comparison class type
<i>op z’n</i>	modal reading (uncertainty/variation)	times
<i>voor</i>	inference of multiple events	times
- (DP)	inference of multiple individuals	individuals

There is more to say about the formal consequences of applying a **Coppock**-style analysis to the Dutch data, but I’ll leave it aside for now for reasons of space.

### 3 Syntactic properties

- In declarative sentences, temporal superlatives typically combine with a temporal adverbial.<sup>3</sup> With the possessive type, the adverbial is obligatory, (13c):

- (13) a. Ik was voor het laatst in Amsterdam in 2010.  
 ‘I was in Amsterdam for the last time in 2010’
- b. Ik las voor het eerst een boek in 2010.  
 ‘I read a book for the first time in 2010’ (first  $>$   $\exists$ )
- c. Dit boek wordt op z’n vroegst gepubliceerd \*(in 2021).  
 ‘This book will be published in 2021 at the earliest’

- Without a temporal adverbial, the *voor*-type expressions can appear with a deictic (‘now’) reading (14a,b) or a temporal anaphora reading (14c):

<sup>3</sup>*Eerst*, but not *laatst*, can also combine with durational adverbials:

- (i) a. voor het eerst in dagen/weken/twee jaar tijd ‘for the first time in days/weeks/two years’  
 b. \*voor het laatst in dagen/jaren/twee jaar tijd

- (14) a. Ik heb voor het eerst een boek gelezen!  
'I read a book for the first time (now)' (first > ∃)
- b. Ik ga voor het laatst naar tennisles.  
'I am going to tennis training for the last time (now)'  
= I won't be going again
- c. Het was 2003. [...] Ik was voor het eerst in Amsterdam.  
'It was 2003. [...] I was in Amsterdam for the first time.'
- Claim: the possessive and *voor*-type temporal superlatives form a unit with the temporal adverbial (compare Broekhuis's (2013: 211) claim that the superlative "modifies" the temporal expression in a case like (13c)). The simple type temporal superlative (recall (3d)) does not associate with an adverbial.
  - Indeed, in the analyses mentioned above (Penka 2010: *frühestens um 6 Uhr*; Solt 2011: *11 at the latest*; Coppock 2016: *one year at the longest*), despite formal differences, the temporal adverbial functions as the subject of the superlative predication. Semantically, they thus serve as an argument of  $\llbracket\text{-est}\rrbracket$ , while syntactically they look like a modifier.
  - This is further supported by fragment answers:
 

(15) Q: Wanneer ben je (allemaal) in Amsterdam geweest?  
'When have you been in Amsterdam?'

A: Voor het eerst in 2010.  
'For the first time in 2010'
  - A temporal adverbial associating with a *voor*-type superlative enjoys positional freedom, but for a possessive type superlative it is more constrained:
 

(16) a.  $\langle$ in 2010 las $\rangle$  ik las  $\langle$ in 2010 $\rangle$  voor het laatst  $\langle$ in 2010 $\rangle$  een boek  $\langle$ in 2010 $\rangle$ .

b.  $\langle$ ?in 2021 wordt $\rangle$  dit boek wordt  $\langle$ ?in 2021 $\rangle$  op z'n vroegst  $\langle$ ✓in 2021 $\rangle$  gepubliceerd  $\langle$ ✓in 2021 $\rangle$ .

Side note on *sinds* 'since'

I will not be concerned here with the combination of the *voor*-superlatives and *sinds* 'since', as it seems to be a very different combination than the ones discussed above. I note that *eerst*, but not *laatst*, can combine with a *sinds*-clause:

- (i) Ik was voor het eerst sinds 2010 (weer) in Amsterdam.  
'For the first time since 2010, I was in Amsterdam (again)'

Here the *since*-clause restricts the domain of quantification for the superlative; for example (i) does not entail *Ik was sinds 2010 in Amsterdam* 'I have been in Amsterdam since 2010'. Moreover, the *since*-clause does not have the positional freedom that the phrases in (16) above have.

When the combination is used in a question, only the echo question (ii-c) is possible:

- (ii) a. Wanneer was je voor het eerst in Amsterdam?  
#Sinds 2010.
- b. #Sinds wanneer was je voor het eerst in Amsterdam?
- c. Voor het eerst sinds wanneer was je (weer) in Amsterdam?

See also Iatridou (2014), von Stechow and Iatridou (2019), and ongoing work by Martijn van der

Klis (2019) for more on *since*.

## 4 Questions

### 4.1 Temporal questions and the definiteness constraint

- Temporal superlatives of the *voor*-type and possessive type may also appear in temporal questions (see Tellings 2019b for more on temporal questions):

(17) a. **Wanneer** ben je **voor het laatst** in Amsterdam geweest?  
‘What was the most recent time you were in Amsterdam?’

b. **Wanneer** mag ik deze opdracht **op z’n laatst** inleveren?  
‘When can I submit this assignment, at the latest?’

- The simple type superlative is less good in temporal questions, which is not surprising given that it compares individuals rather than times.<sup>4</sup>

(18) a. Linda vond het antwoord op de vraag het eerst.  
‘Linda was the first to find the answer to the question’

b. ?Wanneer vond Linda het antwoord op de vraag het eerst?

- Claim: the combination ‘wanneer ... voor het eerst/laatst’ forms a complex temporal question operator that asks about a definite event (so, it is a more targeted question than bare ‘wanneer’).
- First, note that the *wh*-word takes the place of the associating temporal adverbial (recall (13)). This suggests a displacement account for temporal questions.

(19) Wanneer<sub>*i*</sub> mag ik deze opdracht [ [[op z’n] laatst] *t<sub>i</sub>* ] inleveren? (= (17b))

- A second argument comes from the observation that adverbial questions with *how* and *when* disallow indefinite event descriptions in their scope. I will refer to this as the **definiteness constraint**.

(20) a. ??Hoe heb je een cake gebakken? [definiteness constraint]  
‘How did you bake a cake?’<sup>5</sup>

b. ✓Hoe heb je deze cake gebakken?  
‘How did you bake this cake?’

(21) a. ??Wanneer heb je een boek gelezen? [definiteness constraint]  
‘When did you read a book?’

b. ✓Wanneer heb je dat boek gelezen?  
‘When did you read that book?’

<sup>4</sup>You do find occasional examples with the past/perfect tense such as ‘Wanneer heb je het laatst ‘nee’ gezegd?’ [www] and ‘Wanneer hebt u het laatst gehuild?’ [OpenSONAR]. These seem to have the *voor*-type interpretation.

<sup>5</sup>A generic *how*-question (with present tense) is fine with an indefinite: ‘How does one bake a cake?’.

Side note on *how*-questions

There is more to say on *how*-questions, see Sæbø (2016). In Sæbø's terms, (20b) is a method question. In relation to the definiteness constraint, note the contrast in (i):

- (i) a. John baked a cake by following a recipe.  
 b. #How did John bake a cake?  
 By following a recipe.

I observe that the definiteness constraint also holds for other types of *how*-questions discussed by Sæbø:

- (ii) Q: How was the/\*a road? (cf. Sæbø's (3))  
 A: Bumpy.

- The definiteness constraint does not hold for *why*-questions:

- (22) Waarom heb je een cake gebakken? [no definiteness constraint]  
 'Why did you bake a cake?'

- Crucially, temporal questions modified by *voor*-type superlatives are not subject to the definiteness constraint:

- (23) a. ??Wanneer heb je een boek gelezen? =(21a); [definiteness constraint]  
 b. ✓ Wanneer heb je voor het laatst een boek gelezen? [no definiteness constraint]

This supports the view that 'wanneer ...voor het laatst' is a different question operator than 'wanneer', because they behave differently with respect to the definiteness constraint.

#### 4.2 *How, since, when*

- I borrowed the term '(in)definite event description' from Iatridou (2014), who observes the following contrast for *since*-clauses (p. 232n):

- (24) a. It has now been five years since the storm/the London Olympics/etc.  
 b. %It has been five years since a storm/since a concert by Bruce Springsteen.

- She claims that *since* "grammaticalizes a singular definite event description" (p. 228). Indeed, a temporal superlative can rescue a *since*-clause with a non-unique event:

- (25) John got married three times in St. Patrick's. (Iatridou 2014: 229)  
 It has been 10 years since he got married #(for the first/second/last time).

As a descriptive generalization, we find that both *how*-questions and *since*-clauses require a unique (definite) event description.

- A similar distribution holds for temporal questions: plain *when*-questions are incompatible with indefinite event descriptions (*how*: (20a), *since*: (24b), *when*: (23a)), but can be rescued by temporal superlatives (*since*: (25), *when*: (23b)).
- Claim: *how*, *since*, and *when* combine with a unique/definite event, and are incompatible with a *set* of events (such as generated by an indefinite). The more targeted superlative temporal question is compatible with a *set*/multitude of events (cf. presupposition 3 of [-est]), as it picks out the first/last item from it.

- Prediction: superlative temporal questions are incompatible with unique events.

(26) #Wanneer is je kat voor het laatst doodgegaan?  
 ‘When did your cat die for the last time?’

- Prediction: temporal questions modified by possessive type superlatives are subject the definiteness constraint (in contrast to the *voor*-type ones), since the modal reading only involves a single (actual) event.

(27) a. #Wanneer wordt een boek op z’n vroegst gepubliceerd? [definiteness constraint]  
 ‘When will a book be published at the earliest?’

b. Wanneer wordt dit boek op z’n vroegst gepubliceerd?  
 ‘When will this book be published at the earliest?’

- This is not the end of the story, as there is a complication with *when*-questions: tense plays a role in *when*-questions. Tellings (2019b) reports that, to the extent that present perfect *when*-questions are acceptable in English, speakers report an intuition that they come with an implication of multiple events. There is thus a difference between present perfect and simple past *when*-questions in terms of event multiplicity:

(28) When were you in America?  
 Last month.

(29) When have you been in America? (Tellings 2019b: 26)

a. #Last month. [single time answer]

b. ✓ In 2003, 2004, 2006, and 2009. [multiple times answer]

The Dutch tense facts are very different, since the present perfect (*voltooid tegenwoordige tijd*) is the default choice of tense for *wanneer*-questions.

How the facts in (28)/(29) can be related to the observations made above that *when* appears to have a preference for unique events, I leave for future work.

## 5 Conclusion

- There has been little work on adverbial superlatives in Dutch, but the results presented here relate to topics for which there is a lot of literature (modified numerals, *at most*, *at least*). The data discussed in this handout indicate that it is the material that embeds the superlative (in a PP or DP) that is crucial for the interpretation of that superlative.
- An investigation of the use of temporal superlatives in questions provides insights into temporal and adverbial questions in general.

Future work / work-in-progress:

- A compositional semantic analysis of the three readings, and how it relates to the existing Inquisitive Semantics-style analysis of Coppock (2016).
- The precise nature of the definiteness constraint on adverbial questions is not quite clear yet, and needs to be formalized.
- As remarked at the end of section 4.2, the research needs to be integrated with findings about the distribution of tense in temporal questions (Tellings 2019b).



## Appendix

The OpenSONAR corpus finds 2845 possessive adverbial superlatives (manually corrected, I removed the common idiomatic combination *op z'n zachtst gezegd* from this count). The following four adjectives are most common:

	zijn/z'n	haar/d'r	Total	
op POSS best	1320	142	1462	51.4%
op POSS vroegst	403	2	405	14.2%
op POSS mooist	161	39	200	7.0%
op POSS hoogst	129	1	130	4.6%
all other adjectives	576	71	647	22,8%

Table 2. Adverbially used possessive superlatives in OpenSONAR

- Notably, there were only 17 instances of *op POSS laatst*.
- It seems that only predicative constructions agree in gender (*Marie was op haar best*), and the temporal ones always have masculine *z'n/zijn*.

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