Two types of superlative modifiers: The case of at N's ADJest

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Core claims

Expressions of the shapes at N's ADJest (individual superlative modifiers) and at the ADJest (alternative superlative modifiers) are both semantically and syntactically distinct. I present a novel analysis of the semantics of the latter.

• at the fastest is an alternatives-introducing Degree Phrase modifier (see e.g. Coppock 2016; I abstract away from intensionality in this case):

[at the fastest] = $\{\lambda d. y_d | y \in C \land \forall x_d' \in C. d \neq x' \to d > x' \land \partial (d \in \textbf{Dom}(\textbf{fast})) \land \partial (x' \in \textbf{Dom}(\textbf{fast}))\}$ Takes a degree argument d, returns a set of alternatives in C of which d is the highest-ranked, presupposing d and its alternatives are on the scale of fast

• at Mary's fastest is a locative PP that saturates the intensional argument slot of an expression (Deo et al. 2013)

[(at) Mary's fastest] = $\iota i. \forall i'. i' \not\subseteq i. \rightarrow \max(\lambda d. \mathsf{fast}(d)(\mathsf{mary}(i))) > \max(\lambda d. \mathsf{fast}(d)(\mathsf{mary}(i')))$ The (maximal) interval at which Mary is faster than at any other interval

Alternative superlative modifiers are generally **interpreted epistemically**; individual superlative modifiers quantify (indirectly) over **stages of the possessor**

The superlative in individual superlative modifiers is nominalized: a relational noun (cf. Corver & Matushansky 2006)

Characterizing individual superlative modifiers

- Some naturally occurring examples (all natural examples are prefixed with n):
- (1) n [DPCapitalism at its worst] is still much better than [DPcommunism at its best]! (**DP-modifier**)
- (2) ⁿ Austen [VPis at her greatest] when she [VPis at her most impersonal] ... (primary predicative PP)
- (3) n 'Gaga: Five Foot Two' shows the star at her most vulnerable. (depictive PP)
- (4) n At its tallest, the aqueduct reaches a height of 93.5 feet. (Sentential modifier)
- Individual superlative modifiers don't necessarily refer to temporal intervals; (5) quantifies over spatial intervals (contra Corver & Matushansky 2006).
- They can even refer to subsets/parts of a plural possessor:
- (5) n it's easy to forget that B.A.P are at their oldest twenty-five, and at their youngest just nineteen!
- In contrast, alternative superlative modifiers cannot appear predicatively, or in any sentence without a DegP:
- (6) * John is at the fastest now. (cf. \checkmark John is at his fastest now.)
- (7) * The room will fit this table at the longest. (from Coppock 2016; cf. \sqrt{The} room will fit this table at its longest.)
- Individual superlative modifiers measure stages of **the possessor** on the scale referred to by the superlative: it can't freely associate e.g. with focus or refer to events.
- (8) John mostly likes rare animals. #At his most common, he likes sea turtles. (cf. $\sqrt{The most common he likes is sea turtles.}$)
- (9) # Mary goes to the gym once a week at her rarest.
- Although it's not obvious, **the possessor does not need to be locally bound**; an independent DP can serve as the possessor (10), or the possessor can corefer with a prior discourse antecedent (11).
- (10) ⁿ At the show's best, we see Veronica clearly as a flawed character even though she is also the viewer's moral guide.
- (11) ⁿ Since the function of shame in society is to act as a sanction against violating important social norms, it leaves one feeling alone. At its worst you can feel totally isolated in your badness ...
- Rather than claiming that the possessor argument must be locally bound (Corver & Matushansky 2006), I assume that a
 particular pragmatic relationship must hold.
- In particular, there seems to be a strong **inference of relevance or causality**: in (11), it is *because* shame is at its worst that you feel isolated in your badness. In (10), it is because the show is at its best that we see Veronica as a flawed character.

Evidence for intensionality: parallels with degree achievements

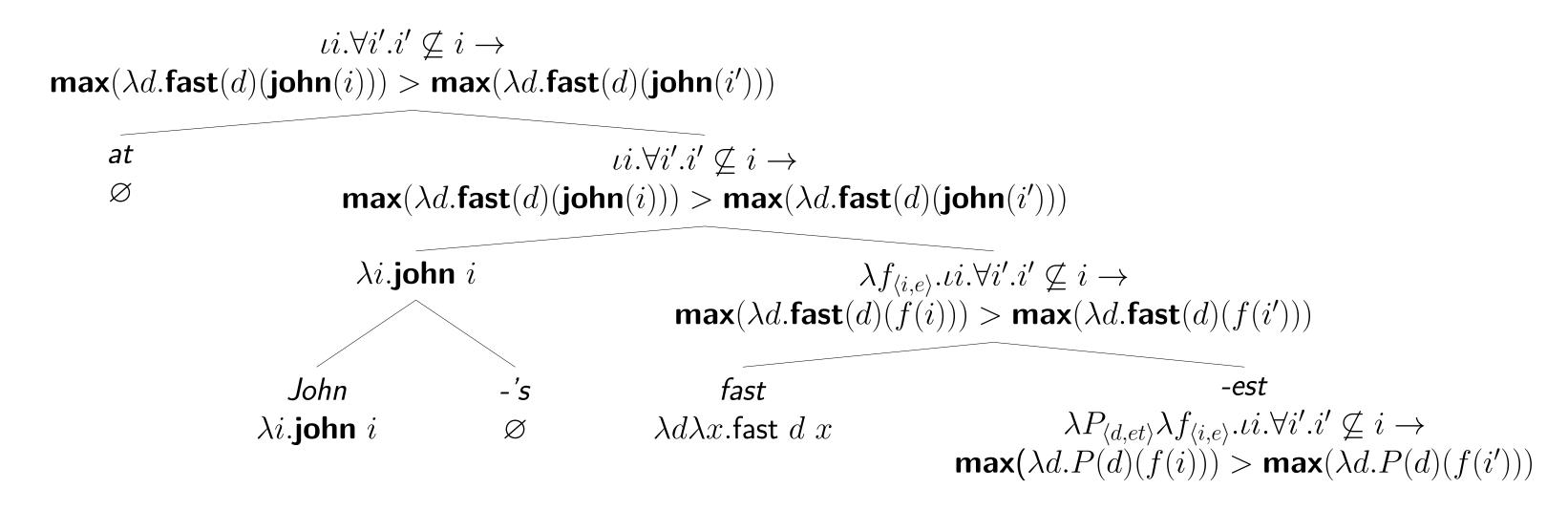
• Deo et al. (2013): **Degree-achievement** verbs receive different interpretations depending on the nature of the contextually determined intensional domain of the nominal (time, space, etc.)

Reading	Degree-achievement	Individual SM
Spatial	The road narrows at the end.	At its narrowest, the road is 1m across.
Abstract	The script weakens toward the end.	At its weakest, the plot plods.
Kind	When the economy flourishes, hemlines rise.	Hemlines are at their highest when the economy flourishes.
Functional	Fish ears grow with increased CO2.	Fish ears are at their longest with a concentration of 1500ppm.

- These different readings correspond to different types of intensional domains for the nominals. **Individual superlative** modifiers are intensionally sensitive: their meaning depends on the identity of the domain.
- The domain must be linearly ordered (i.e., an axis, see Gawron 2009). E.g. on the spatial interpretation, the domain is a linearly ordered set of spatial points at which the width of the road is measured.
 - I use i as a variable for for domain types; in practice, this will be resolved by linguistic or pragmatic context, and different domains have different semantic types. (e.g. τ for times, σ for spatial points, e for entities.)

A semantics for individual superlative modifiers

Derivation of at John's fastest; the -'s is semantically vacuous, as the nominalized fastest is a relational noun (Barker 2011, Peters and Westerstahl 2013).



- (12) [John at his fastest] \equiv [John]([at his fastest]) \equiv john($\iota i. \forall i'. i' \not\subseteq i \rightarrow \max(\lambda d. \mathsf{fast}(d)(\mathsf{john}(i))) > \max(\lambda d. \mathsf{fast}(d)(\mathsf{john}(i')))$
 - This denotes, in a roundabout way, the entity in the range of **john** that is faster than any other entity in the range of **john**.
 - The same happens with expressions of type $\langle i, t \rangle$ (untensed sentence-meanings), since the abstracted i variable is in the argument of an individual concept:
- (13) The aqueduct₁ reaches a height of 93.5 feet $\|(\|at\|)\|$ its₁ highest $\|(at\|)\|$

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\label{eq:reach} \begin{split} \text{reach}(93.5\text{-feet})(\text{the.aqueduct}(\iota i. \forall i'. i' \not\subseteq i \rightarrow \\ (\max(\lambda d. \text{high}(d)(\text{the.aqueduct}(i))) > \\ \max(\lambda d. \text{high}(d)(\text{the.aqueduct}(i'))))) \end{split}
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- For predicative individual superlative modifiers, we need the copula (or, alternatively, a type-shifter) to give us a $\langle i, t \rangle$ -type meaning, because composing [John] and [fastest] results in an e-type expression: [be] = $\lambda i \lambda f_{\langle i,e \rangle} \lambda j. f(j) = f(i)$
- (14) ([be])([at his_1 fastest])([John_1]) $\equiv \lambda j.$ john(j) = john $(\iota i. \forall i'. i' \not\subseteq i \rightarrow \max(\lambda d. \mathsf{fast}(d)(\mathsf{john}(i))) > \max(\lambda d. \mathsf{fast}(d)(\mathsf{john}(i')))$
 - This is true of an interval just in case **john** maps it to the fastest individual in its range. This interval is resolved by e.g. tense in an anaphoric theory of tense (Deo et al. 2013, Partee 1984). Since the denotation of *John's fastest* is the same type as at *John's fastest*, this correctly predicts the synonymy/acceptability of *John is his fastest*.
- In (5), B.A.P must be a function from entities (members of the group ordered by age) to themselves.

Selected References