Possessed bare superlatives make reference to individual concepts

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1. Introduction

This paper presents an analysis for a particular use of superlatives in English, which I refer to as possessive superlative modifiers. These expressions consist of a possessed bare superlative embedded under the locative preposition at; some characteristic examples are given in (1). Throughout this paper, naturally occurring examples are prefaced with "n.

(1) a. "n When the Church tirelessly listens, heals, reconciles, she is at her most luminous.  
   b. "n Cat with animated mouth, painted wood and burl handle is 5" high and 2" at its widest. [Description of a collectible item]  
   c. "n The number of members is impressive, especially considering that Soviet military men are now over forty years old at their youngest.  
   d. "n The best example to see Bruce [Lee] at his fastest is in Enter the Dragon.

The construction is quite productive, admitting both periphrastic superlatives (e.g. at his most vulnerable) and inflectional superlatives (at his happiest). Although it is particularly common to encounter expressions like This is {jazz/football/ice cream} at its best!, possessive superlative modifiers can occur with any gradable adjective in a number of syntactic environments.

Possessive superlative modifiers have a distinctively locative flavor; typically, they provide a location or a time relative to which some proposition holds. In the sentences in (1), these are spatial Take (2) as an example:

(2) The river is 800 feet across at its widest.

Example (2) expresses that the river is 800 feet across at a particular location. Its widest seems to be intensional: it picks out whichever location where the river is maximally wide, and it can be replaced with a coextensive locative expression without changing the truth value of the sentence. For instance, if the point at which the river is maximally wide is its mouth, then (2) can be paraphrased as The river is 800 feet across at its mouth.

The aim of this paper is twofold: first, to clarify the range of interpretations possessive superlative modifiers can receive in English; and second, to provide a compositional

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semantics for the phenomenon. The proposal starts from the intuition that possessive superlative modifiers are intensional locatives. Following the generalized individual concept framework of Deo et al. (2013), I assume that DPs like the river denote functions from intervals of some contextually determined ordered domain to individuals (e.g., from intervals in space to the river at that interval). The positive proposal is that a possessive superlative modifier denotes an interval of this domain, and in the composition of the sentence, is provided as an argument to the denotation of the DP.

The paper is structured as follows: Section 2 discusses the syntactic and semantic properties of possessive superlative modifiers. Section 3 discusses the existing analysis of Corver and Matushansky (2006), pointing out some issues that remain outstanding. Section 3 presents the positive proposal, which is in the spirit of Corver and Matushansky (2006), but accounts for certain phenomena that are challenging for their analysis. Section 4 is a brief conclusion.

2. The phenomenon

The name possessive superlative modifier is inspired by the rich literature on superlative modifiers, especially the contribution of Coppock (2016). Typically, superlative modifier is used to refer to the expressions at least and at most; Coppock extends this term to cover expressions like at the fastest and at the earliest, which she argues are semantically parallel. For clarity, we’ll refer to Coppock’s constructions (at the fastest et al.) as definite superlative modifiers, although this terminology is not present in the literature.

A nave hypothesis might be that the possessive superlative modifier at John’s fastest should be analyzed as structurally identical to at the fastest; they appear to differ only in which lexical item appears as the determiner. This is a common intuition: both Coppock (2016) (in a footnote) and Corver and Matushansky (2006) speculate that these two types of superlative modifiers are only minimally different.

And indeed, in some contexts, definite and possessive superlative modifiers can be freely interchanged, although the truth conditions of the resulting sentences are different:

(3) a. John ran ten miles per hour at the fastest. (Definite SM)
b. John ran ten miles per hour at his fastest. (Possessive SM)

But a closer look shows that, in addition to their semantic differences, there are important syntactic differences between these two types of constructions. Possessive superlative modifiers are happy to adjoin to expressions of a number of different syntactic types, like most locative PPs (Ernst 2002), and thus appear in a much wider range of environments than definite superlative modifiers do. They seem to be able to adjoin more or less freely to DPs, VPs, and sentences, as well as appearing predicatively. In this way they behave identically to other locative PPs like in the room:

(4) a. "[Capitalism at its worst] is still much better than [communism at its best]!"
b. "[We got some chuckles at the traffic lights when he [sang at his loudest]."
c. "[Austen [is at her greatest] when she [is at her most impersonal] ..."
d. "[‘Gaga: Five Foot Two’ shows [the star at her most vulnerable]."
e. "[At its tallest], the aqueduct reaches a height of 93.5 feet.

This freedom of modification contrasts with the definite superlative modifiers discussed in Coppock (2016); she notes that those are infelicitous when they appear in a sentence without an overt degree phrase. This requirement already is problematic for possessive superlative modifiers; most of the examples in (4) don’t involve any overt degree phrase. The following examples show the infelicity of definite superlative modifiers without degree phrases:
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(5) a. ✓ This room can fit a ten-foot table at the widest.
   b. # This room can fit that table at the widest.

(6) a. ✓ John ran ten miles per hour at the fastest.
   b. # John ran around the block at the fastest.

A second motivation for treating possessive and definite superlative modifiers differently comes from movement. Possessive superlative modifiers can be *it*-clefted as in (7), but definite superlative modifiers cannot.

(7) a. John ran ten miles per hour at his fastest.
   b. ✓ It was at his fastest that John ran ten miles per hour.

(8) a. John ran ten miles per hour at the fastest.
   b. * It’s at the fastest that John ran ten miles per hour.

One interesting property of possessive superlative modifiers is that only in predicative position they can appear appear as bare DPs, without the preposition at.

(9) a. ✓ Austen [is her greatest] when she [is her most impersonal].
   b. * Her greatest, Austen shines.
   c. * Austen her greatest shines.

DPs in English cannot be modifiers, so the ungrammaticality of (9b–c) is unsurprising. But the grammaticality of (9a) suggests that *at her greatest* must have the same meaning as *her greatest*, so that they can both appear predicatively with no difference in meaning.

Semantically, definite superlative modifiers are well known to imply (or implicate) speaker ignorance with respect to the value of some degree (Geurts and Nouwen 2007, Coppock and Brochhagen 2013). Most of the literature on this topic surrounds *at least* and *at most*, but other definite superlative modifiers yield the same effect. Possessive superlative modifiers give rise to no such implicature, as we see in (10).

(10) a. The car was going 60 mph at the fastest. (Definite SM)
   b. The car was going 60 mph at its fastest. (Possessive SM)

Example (10b) actually entails that the car was going 60 mph (at some point or other). In this respect, these two types of superlative modifiers are very different. A sentence containing a possessive superlative modifier entails the truth of the same sentence minus the superlative modifier; that is, possessive superlative modifiers appear to be veridical. In contrast, a sentence with a definite superlative modifier is nonveridical: the truth of (10a) neither entails or precludes that the car was going 60 mph.

This contrast comes about because possessive superlative modifiers, rather that specifying an upper bound on possibilities for some value, seem to name a point of evaluation at which the sentence they modify is true. In (10b), the possessive superlative modifier specifies that it is when it was moving maximally fast that the car was going 60 mph. Naturally, if the car went 60 mph while it was going maximally fast, then the car went 60 mph.

Possessive superlative modifiers must operate on what Gawron (2005) calls an axis of measurement: a set of objects ordered by their degree of some property (for instance, points in space ordered south to north). In (10b), the axis of measurement is time: the speed of the car is assessed at different points in time, and *the car’s fastest* denotes the interval of that axis at which the car is going fastest.

This axis is often, but not necessarily, time. As Deo et al. (2013) observe for degree-achievement verbs, there is a great degree of flexibility in the domain type of nominals involved in value-difference expressions. The following examples in (11) show some non-temporal interpretations for possessive superlative modifiers, using the terminology of Deo et al.:
At its narrowest, the road is just 1m across. (Spatial extent reading)

At its weakest, the plot positively plods. (Abstract extent reading)

The pay gap is at its widest for middle-aged women. (Functional reading)

In none of the sentences in (11) does the possessor’s degree of the relevant property vary with respect to time. Instead, it varies with respect to some other axis: namely, points in space, points in the plot, and ages of women, respectively. An analysis of possessive superlative modifiers, then, must account for the possibility of all of these reading types.

Crucially, possessive superlative modifiers are not able to associate with properties whose values vary with respect to something other than an axis of measurement. For an example, consider pleased. One can be pleased with different entities to different degrees, seemingly much like how a car can have different speeds at different times. So given the previous discussion, we might then expect that at Mary’s most pleased could refer to the person that Mary is most pleased with, or perhaps to the maximal degree of pleasure she feels toward something. But in fact this sort of reading is ruled out:

At her most pleased, Mary is pleased with Alice.

Example (12) cannot possibly mean Mary is more pleased with Alice than with anyone else. This is because at her most pleased must refer to some interval of an axis: for instance, the part of the temporal axis where Mary is most pleased. The set of people who Mary is pleased to some degree with don’t constitute an axis; they aren’t linearly ordered in any natural way. This also explains the infelicity of sentences like (13), where the possessive superlative modifier is predicative:

Mary is at her most pleased with Alice.

Example (13) does have an available reading on which Mary is more pleased with Alice now than she ever has been before. Importantly, this is a meaning on which the possessive superlative modifier associates with an axis of measurement (viz. time). Example (13) is marked with a # because it lacks the same interpretation that (12) lacks: that Mary is more pleased with Alice than with anyone else.

One last important semantic property of possessive superlative modifiers is that they obligatorily refer to axial intervals along which the possessor maximally instantiates some property. Possessive superlative modifiers cannot quantify over properties of other non-possessor discourse referents in the sentence (14a) or over events (14b):

Mary mostly likes rare animals. #At her most common, she likes sea turtles.

The second sentence of (14a) only has a reading on which Mary’s degree of commonness, whatever that might mean, varies with respect to some axis (most saliently, time). As commonness is a property of kinds, not individuals, this sentence is odd. The same holds for (14b): this sentence entails that Mary has varying degrees of rareness along some axis, which is not the intended interpretation.

3. Previous approaches

Corver and Matushansky (2006) is concerned primarily with the syntactic behavior of superlative modifiers (both possessive and definite) in English and Dutch. In Dutch as in English, both possessive and definite superlative modifiers appear under the preposition at. They assume, as is argued in Matushansky (2008), that superlatives always require a head noun, even if silent. In the case of possessive superlative modifiers, the phonologically null head noun for the superlative is relational, and has a meaning corresponding to stage:
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(15) Alice found herself at her loneliest $\emptyset_{stage}$.

For Corver and Mutshansky, Alice’s loneliest $\emptyset_{stage}$ has the following interpretation:

(16) $[\text{Alice’s loneliest } \emptyset_{stage}] = th.h$ is a stage of $a \land \forall h'.h'$ is a stage of $a \rightarrow h = h' \lor \max(\lambda d. \text{lonely}(d)(h)) > \max(\lambda d. \text{lonely}(d)(h'))$

That is, the possessive superlative modifier refers to a unique stage (in sense of Carlson 1977) of the individual Alice: the stage of Alice that is lonelier than any other. Although this is intuitive, it doesn’t quite pan out: in the sense of Carlson (1977), stages are objects that bear stage-level properties, and Alice’s loneliest certainly cannot do so, as we see in (17a). We want Alice’s loneliest to denote a time, rather than a stage of an individual; the expression that refers to a stage of Alice is Alice at her loneliest, as in (17b).

(17) a. * Alice’s loneliest was wallowing at home.
   b. ✓ Alice at her loneliest was wallowing at home.

Another issue regards distribution. Corver and Matushansky claim that possessive superlative modifiers only appear as primary or secondary predicates, i.e. in predicative position, or else as modifiers to a nominal. But this, at least for English, is not quite right. We have already seen multiple examples where the possessive superlative modifier does not modify a noun or appear predicatively:

(18) a. At the show’s best, we see Veronica clearly as a flawed character . . .
   b. At its worst you can feel totally isolated in your badness . . .

The possessive superlative modifiers in these sentences can’t be construed as primary or secondary predicates: what would be the subject of predication doesn’t even appear overtly in the sentence. In cases like these, it’s clear that the possessive SM is acting as an adverbial, not as a nominal modifier. On the axial-interval analysis argued for in the present paper, the meaning of a nominal will end up applying to a possessive superlative modifier, thereby fixing the point at which the nominal is evaluated; but there isn’t any prior syntactic restriction on what the PP can attach to.

(19) * John’s fastest ran 10 miles per hour.
(20) ✓ John at his fastest ran 10 miles per hour.

These two issues are related: ideally, we want an analysis on which a possessive superlative modifier is semantically like any other locative PP. But this is difficult to square with an analysis on which they denote a stage of an individual, rather than a location or a time, like the usual complements of locative at. And if a possessive superlative modifier is a locative PP, it should appear in all the syntactic environments that locative PPs do; it shouldn’t be restricted to performing nominal modification only.

One last outstanding issue is that, as we have seen, possessive SMs don’t necessarily refer to times; in principle they can refer to intervals of any axis, temporal or otherwise. For instance, they can refer to intervals in space:

(21) The aqueduct is 93.5 feet at its highest.

This is admittedly less of a problem for Corver and Matushansky (2006); it simply points to the need for a more general approach than is offered by a theory of temporal stages. That is, the analysis must be flexible enough to account for cases where the domain of quantification of the superlative is intervals of an arbitrary axis, rather than only account for temporal stages. This is especially evident when we consider what Deo et al. (2013) refer to as ‘functional readings’:
The gender [pay] gap is at its greatest for women aged between their late 30s and mid-40s.

Here, the relevant axis is an ordering of pay gaps by by the age of women that have them. The sentence (22) expresses that this gap is greatest at the interval corresponding to women between their late 30s and mid-40s. It’s clear that In cases like these, an analysis in terms of temporal stages or spatial parts will be insufficient: what is needed is an approach that allows nominals to provide one of any number of domain-types for the superlative to quantify over.

The proposal of the following section retains many of the core insights of that presented in [Corver and Matushansky] (2006), especially that superlatives (indirectly) quantify over stages or parts of the possessor. However, it is strictly more general: it predicts that possessive superlative modifiers can appear anywhere a locative PP adjunct can, and it doesn’t predict that their interpretation is necessarily temporal.

4. A semantics for possessive superlative modifiers

The present analysis uses the generalized individual concept (gic) analysis of [Deo et al.] (2013) as a starting point. On this approach, DPs denote gics: functions from intervals of some contextually resolved axial domain to individuals. Axes are ordered sets of objects: for instance, temporal or spatial points, or individuals ordered by height. The domain type of a gic is strongly dependent on pragmatic and linguistic context: temporal modifiers like at 5 o’clock will support a temporal interpretation, and so on.

For a concrete example, consider the DP the Rhine. It can receive a temporal interpretation, one on which it is construed as a function from temporal intervals to the Rhine at that time, as in (23a) (τ being the type of temporal intervals). Alternatively, it might receive a spatial interpretation, on which it is construed as a function from spatial intervals to the ‘slice’ of the Rhine there (23b).

(23) a. [the Rhine_τ] : τ → e ≡ λi_τ. rhine(i)
    b. [the Rhine_σ] : σ → e ≡ λi_σ. rhine(i)

In general, these interpretations and more will be available for a DP, at least in principle. For explanatory ease, throughout I will use i as a variable for an arbitrary domain type.

For [Deo et al.] (2013), this approach to DP-meanings helps account for the apparent polysemy of degree-achievement verbs such as widen, which also allow for a variety of domain types. The present analysis extends this insight to possessive superlative modifiers. The analysis is straightforward: the superlative adjective in a possessive superlative modifier is a relational noun, and it relates a gic possessor to the unique interval that maps to an individual that maximally instantiates the relevant property.

The denotation for the possessive superlative modifier -est is very similar to the standard denotation of superlatives (as in Szabolcsi 2012[Coppock 2016], Morzycki 2015). The standard meaning of widest in (24) is a function that quantifies over individuals y in a comparison class C. It denotes a property that uniquely holds of exactly one x in C, namely the property of being wider than every other y. C is sometimes taken to be contextually retrieved, and in other analyses taken to be an argument position saturated by the complement noun of the superlative (e.g. Matushansky 2008).

(24) [widest] : e → t ≡
    λx.∀y ∈ C. y ≠ x → max(λ_d.wide(d)(x)) > max(λ_d.wide(d)(y))

The analysis for nominalizing -est is structurally similar, but there are a few desiderata for a theory of possessive superlative modifiers in particular.
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First, our denotation for -est should universally quantify over intervals rather than individuals. Nominalizing -est turns an adjective meaning into a relation between gics and some particular interval in their domain. In Corver and Matushansky (2006), a similar idea is implemented by positing a silent nominal complement to the superlative adjective, a relational noun denoting a stage of the possessor; then the superlative quantifies over these stages. Here, I assume that -est turns the adjective into a relational noun directly, and therefore introduces quantification over intervals.

The motivation for building the relational noun into the superlative morpheme, rather than positing a silent nominal complement à la Corver & Matushansky, is that the distribution of such a silent nominal would have to be restricted entirely to superlatives. Crucially, both bare and comparative adjectives lack interpretations that mirror possessive superlative modifiers:

(25) a. * John ran ten miles per hour at his fast.
    b. * John ran ten miles per hour at his faster.

The sentences in (25) are ungrammatical even with a supportive context (e.g., for (25b), one in which John ran just two races). If the relational meaning of possessive superlative modifiers is due to the presence of a silent relational noun, it’s not clear how the sentences in (25) could be ruled out in a principled way. But if the superlative morpheme is a nominalizer itself, then the data in (25) is unsurprising.

Second, our denotation will contain an interval-based analogue to the comparison class \( C \), the free variable \( c_i \). This \( c \) denotes the larger contextually retrieved interval that \( i \) and all the \( i' \) are subsets of. The motivation for this comes from the observation that possessive superlative modifiers can have their domain restricted by temporal anaphora (Partee 1984):

(26) John ran a marathon last week. At his fastest, he ran an 8-minute mile.

In (26), the possessive superlative modifier in the second sentence is intuitively restricted only to when John was running a marathon. That asserts that when John was fastest during the marathon, he ran an 8-minute mile: it doesn’t quantify over absolutely every temporal stage of John. We can also see this same domain restriction in spatial readings of possessive superlative modifiers:

(27) The Rhine passes through the Netherlands. At its widest, it’s 450 m across.

Analogously to (26), the superlative modifier in (27) is restricted to that part of the Rhine that passes through the Netherlands. That is, there is a reading on which the second sentence is not true if the Rhine is 450 m across at its widest in Germany, but never surpasses 300 m in the Netherlands.

Third, the restrictor of the universal quantifier in the meaning of nominalizing -est checks for non-subsethood, rather than inequality. This is a consequence of the shift from quantifying over individuals to quantifying over intervals. If the Rhine is 450 m across for 1 km, then each subset of that 1 km also has a width of 450 m; we want at the Rhine’s widest to pick out the maximal interval with the greatest width.

Fourth, and finally, the denotation should return a relation between an individual and a unique interval, rather than a set of intervals. (Note that (widestdenote2) denotes a set of individuals, rather than a single individual.) This is in some sense a free choice; we could have had (29) return a property of intervals (type \( i \rightarrow t \)), and then argued that the possessive morpheme in e.g. the Rhine’s widest introduces definiteness.

Taken together, we want a denotation similar to the standard meaning of a superlative, but whose domain is intervals in the domain of a gic, rather than individuals inside some comparison class, and which (after taking a gradable predicate as its argument) returns a relation between a gic and a unique interval.
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(28) \([-\text{est}_{\text{nom}}]\) : \((d \rightarrow \text{et}) \rightarrow (i \rightarrow i) \equiv \\
\lambda G_{d \rightarrow \text{et}} \lambda f_{i.e}, ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
\max(\lambda .d.G(d)(f(i))) > \max(\lambda .d.G(d)(f(i')))\)

We can compose this with the denotation of a gradable adjective to get a nominalized relational superlative, shown in (29). Here I assume that gradable adjectives denote relations between degrees and entities, but this is not a crucial decision. Periphrastic superlative (e.g. most brutal) work the same way.

(29) \([-\text{widest}_{\text{nom}}]\) : \(i \rightarrow i \equiv \\
\lambda f_{i.e}, ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
\max(\lambda .d.\text{wide}(d)(\text{rhine}(i))) > \max(\lambda .d.\text{wide}(d)(\text{rhine}(i')))\)

The semantic value of a nominalized superlative on this analysis is similar to what we might propose for the relational noun heyday. Roughly speaking, the meaning of the noun heyday is a function from a temporal individual concept to the unique temporal interval where it is most popular. (Jazz’s heyday means that period of time when jazz was most popular.) Widest_{nom}, similarly, is a function from a gic to the unique interval (spatial, temporal, or otherwise) where it is maximally wide.

The superlative that appears in possessive superlative modifiers is a relational noun. I assume that the Saxon genitive -'s is semantically vacuous, because the possessum is a relational noun, which provides its own relation to its possessor (Barker 2010). Similarly, I assume that at contributes no semantic content and serves only a syntactic role. Thus the next step of the derivation of at the Rhine’s widest is saturating the gic argument of the superlative, yielding an interval-denoting expression; the full derivation is given in (31).

(30) \([-\text{widest}]([\text{the Rhine’s}]) \) : \(i \equiv ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
\max(\lambda .d.\text{wide}(d)(\text{rhine}(i))) > \max(\lambda .d.\text{wide}(d)(\text{rhine}(i')))\)

(31)

\[
\begin{align*}
ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
& \quad \max(\lambda .d.\text{wide}(d)(\text{rhine}(i))) > \max(\lambda .d.\text{wide}(d)(\text{rhine}(i'))) \\
& \quad \lambda f_{i.e}, ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
& \quad \max(\lambda .d.\text{wide}(d)(f(i))) > \max(\lambda .d.\text{wide}(d)(f(i'))) \\
& \quad \lambda i.\text{rhine}(i) \\
& \quad \lambda f.i \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
& \quad \max(\lambda .d.\text{wide}(d)(f(i))) > \max(\lambda .d.\text{wide}(d)(f(i')))
\end{align*}
\]

At the Rhine’s widest thus denotes the interval in either space or time which the gic rhine maps to the widest entity in its range. Since this expression is of type \(i\), it can serve as the interval argument of a gic. This is the core of the present analysis: the Rhine’s widest denotes a spatial or temporal interval of evaluation, just like other locative PPs. If we plug the meaning of at the Rhine’s widest into the gic rhine, we get back an individual-denoting expression:

(32) \([-\text{The Rhine}_1 \text{ at its widest}]\) \(\equiv \\
[-\text{The Rhine}](\text{at the Rhine’s widest}) \) : \(e \equiv \\
rhine(ti \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \\
\max(\lambda .d.\text{wide}(d)(\text{rhine}(i))) > \max(\lambda .d.\text{wide}(d)(\text{rhine}(i')))\)
This denotes, in a roundabout way, the entity in the range of the gic \textbf{rhine} that is wider than any other entity in that set.

The meaning of an untensed sentence is an expression of type \( i \to t \), a property of intervals, so the possessive superlative modifier can be a sentential adjunct as well. The \( i \)-type abstracted variable will always be in the argument of a gic, so possessive superlative modifiers appearing as sentential adjuncts will have the same meaning as when they appear as DP adjuncts:

\[(33)\] a. \[
\llbracket \text{The aqueduct reaches 93.5 feet} \rrbracket : \sigma \to t \equiv \lambda i. \text{reach}(93.5\,ft)(\text{the.aqueduct}(i))
\]

b. \[
\llbracket \text{The aqueduct\textsubscript{1} reaches 93.5 feet at its\textsubscript{1} highest} \rrbracket \equiv \llbracket \text{at the aqueduct's highest} \rrbracket : t \equiv \text{reach}(93.5\,ft)(\text{the.aqueduct}(t_i \subseteq c_\sigma, \forall i'.i' \subseteq c_\sigma \land i' \not\subseteq i \rightarrow \max(\lambda d. \text{high}(d)(\text{the.aqueduct}(i))) > \max(\lambda d. \text{high}(d)(\text{the.aqueduct}(i'))))
\]

In order for possessive superlative modifiers to appear predicatively, we need to assume a special semantics for the copula (or a type-shifter that applies to the superlative modifier). \textit{At its widest} is type \( i \), and \textit{the Rhine} is type \( i \rightarrow e \), so composing them directly will give us the same meaning as \textit{the Rhine at its widest}, an entity. The easiest way to do this is for \textit{be} to shift \textit{at the Rhine’s widest} to the type \( i e \rightarrow i t \):

\[(34)\] \[\llbracket \text{be}_i \rrbracket : i \to (i e \to i t) \equiv \lambda i. \lambda f.e \lambda j.f(j) = f(i)\]

The denotation in \((34)\) takes an interval \( i \) and then turns it into a function that wants a gic \( f \), returning the intervals \( j \) at which \( f(j) \) is the same individual as \( f(i) \). This accounts for predicative occurrences like \textit{The Rhine is at its widest}:

\[(35)\] a. \[
\llbracket \text{be}_i \rrbracket ([\text{at the Rhine’s widest}]) : i e \rightarrow i t \equiv \lambda f.e \lambda j.f(j) = f(i) \llbracket i \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \max(\lambda d. \text{wide}(d)(\text{rhine}(i))) > \max(\lambda d. \text{wide}(d)(\text{rhine}(i'))))
\]

b. \[
\llbracket \text{be at the Rhine’s widest} ([\text{the Rhine}]) : i \to t \equiv \lambda j. \text{rhine}(j) = \text{rhine}(i) \llbracket i \subseteq c_i, \forall i'.i' \subseteq c_i \land i' \not\subseteq i \rightarrow \max(\lambda d. \text{wide}(d)(\text{rhine}(i))) > \max(\lambda d. \text{wide}(d)(\text{rhine}(i'))))
\]

This comes out true for a temporal gic just in case the Rhine at the interval specified by tense is the same entity as the Rhine when it is maximally wide. On the spatial interpretation, the interval argument can e.g. be saturated by an interval-denoting expression like \textit{indexical here}:

\[(36)\] \[\llbracket \text{The Rhine is at its widest here} \rrbracket : t \equiv \text{rhine}(\text{here}_\sigma) = \text{rhine}(\llbracket i \subseteq c_\sigma, \forall i'.i' \subseteq c_\sigma \land i' \not\subseteq i \rightarrow \max(\lambda d. \text{wide}(d)(\text{rhine}(i))) > \max(\lambda d. \text{wide}(d)(\text{rhine}(i'))))\]

That is, that the Rhine here is the same spatial ‘slice’ of the Rhine as the Rhine at its widest point.

5. Conclusion

This paper has presented an analysis of possessive superlative modifiers, expressions of the shape \textit{at N’s ADJest}. Contra the limited previous work on the phenomenon, I conclude

\footnote{Note that the \( i \) type is a placeholder for domain types; this expression will refer to the Rhine either at its widest point in space or its widest point in time, depending on whether \( i \) is resolved as \( \sigma \) or \( \tau \).}
that possessive superlative modifiers are a class of locatives entirely distinct from definite superlative modifiers, expressions of the shape at the ADJest.

This analysis takes as a starting point previous work in [Corver and Matushansky (2006)](#corver2006) and accounts for certain issues which that work left unresolved. The apparently polysemy of possessive superlative modifiers with respect to the type of their domain of quantification is captured by the gic analysis of [Deo et al. (2013)](#deo2013). On this analysis, at John’s fastest denotes a time, but John at his fastest denotes an individual; this accounts for the unavailability of certain sentences with his fastest as a subject.

We have seen evidence that possessive superlative modifiers are intensional: they make reference to intervals in the domain of their possessors, construed as generalized individual concepts. The kinds of domain types that possessive superlative modifiers can utilize are varied and context-dependent.

I have argued that the superlative part of a possessive superlative modifier is a relational noun; it relates its possessor to the interval at which the possessor maximally instantiates the property expressed by the gradable predicate. This analysis neatly rules out possible modifiers like *at his faster.

More broadly, this analysis supports the generalized individual concept analysis of nominals: as we have seen, possessive superlative modifiers quantify over intervals in the domain of gics, but not over other sets of objects. The gic approach provides a conceptually simple way to model the possible meanings of possessive superlative modifiers.

**References**


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