

SUPERLATIVE QUANTIFIERS AND THE DYNAMICS OF CONTEXT DEPENDENCE

The sentence in (1) is ambiguous:

(1) John climbed the highest mountain.

Following Szabolcsi (1986), Heim (1985), Farkas and Kiss (2000), and Sharvit and Stateva (2002), we call the two readings of (1) the **absolute reading** and the **comparative reading**. In the first reading (1) is interpreted as ‘John climbed a mountain higher than any other mountain’, and in the second as ‘John climbed a higher mountain than anybody else climbed’. In this paper, it is claimed that there is no ambiguity in the interpretation of superlatives. The two readings are a by-product of the context dependent nature of superlative definite descriptions. Following Groenendijk, Stokhof and Veltman (1995) and Heim (1996), superlatives are treated as definite determiners inherently restricted by a context set C (Westerståhl 1985; von Stechow 1994), as in (2).

(2) $\llbracket \textit{the highest mountain} \rrbracket = \lambda C \lambda P. x \in C \exists d [\textit{mountain}(x) \wedge \textit{high}(d)(x) \wedge P(x) \wedge \neg \exists y \neq x \in C [\textit{mountain}(y) \wedge \textit{high}(d)(y) \wedge P(y)]]$

The determination of the composition of the context set is conditioned by three factors operating at the semantics/pragmatics interface: (i) the dynamic semantics of connectives (Chierchia 1995), (ii) presupposition accommodation (Groenendijk, Stokhof and Veltman 1995) and (iii) focus (Szabolcsi 1986). These factors interact with the dynamics of context sets in discourse as they restrict the definite determiner and the superlative operator. A proposal along this lines makes unnecessary treating the definite determiner heading superlative descriptions as a covert indefinite (as Sharvit and Stateva 2002 do). Consider (3):

(3a) When John was in France, he climbed the highest mountain.

(3b) I bought thirty books last month. I shouldn’t have bought the most expensive one.

In (3a) the context set C of the description *the highest mountain* has to be $\lambda x [\textit{In_France}(x)]$, since the dynamic semantics of conditionals requires that all discourse updates incorporating the propositional content of the consequent (“nuclear scope”) have to satisfy the conditions introduced by the antecedent clause (“restrictor”). Similarly, in (3b) by the semantics of dynamic conjunction, the value of C is $\lambda x [\textit{book}(x) \wedge \textit{last_month}(\textit{buy}(x)(I))]$. This is not sufficient: the presupposition that the books are not equally expensive has to be accommodated after processing the second sentence in order to get a felicitous discourse.

In focus structures, the context set is determined by the focus value/presuppositional skeleton (Rooth 1992; Kratzer 1991) of the remnant of the sentence where the focus marked constituent occurs after the operation of Quantifier Raising (QR) has applied to the superlative description —cf. Heim 1996, 2000 (cf. also Farkas and Kiss 2000 for an alternative analysis without syntactic movement). First, the focus value A of the relevant subexpression α is calculated after QR; and then the context set C is given as $\lambda x \exists y [A(y)]$, where the type of the variable y is the type of the members of A .

Consider the contrast between (4) and (5):

(4) \textit{John}_F climbed the highest mountain.

(5) John climbed the highest mountain yesterday $_F$.

In (4) after QR the focus value of *John_F climbed* x is $\lambda z [\textit{climb}(x)(z) \wedge z \in \textit{ALT}(j)]$, where $\textit{ALT}(j)$ is the set of contextually relevant alternatives to the individual John in the model. The context set restricting the superlative definite description is, after λ -reduction, $\lambda x \exists y [\textit{climb}(x)(y) \wedge$

$y \in ALT(j)$], i.e. the set of entities that any individual under consideration climbed. When the temporal adverb *yesterday* in (5) is focused, a “comparative” interpretation arises in which the context set is the set of mountains that were climbed in the period under consideration (the set of alternatives to *yesterday*). In this case the focus value of *John climbed x yesterday_F* has to be calculated, which is $\lambda M[M(\textit{climb}(x)(j)) \wedge M \in ALT(\textit{yesterday})]$, where M is a modifier variable. The context set restricting the superlative definite description is $C = \lambda x \exists M[M(\textit{climb}(x)(j)) \wedge M \in ALT(\textit{yesterday})]$, which gives us the intended reading.

Szabolcsi (1986) also observes that in existential-*there* constructions only the comparative reading is allowed, as shown by the contrast in (6).

(6a) *Yesterday there were the fewest guests.

(6b) There were the fewest guests yesterday_F.

Existential sentences obligatorily introduce non-dependent or free discourse referents (Kamp and Reyle 1993). As a consequence, the context set of the description is empty in (6a) and the description fails to refer—the intersection of the denotation of the descriptive part with the empty set is always empty. In (6b), the content of the context set is provided not by the previous discourse but by accommodation of the content of *there were x yesterday_F* as above, yielding the context set $C = \lambda x \exists M[M(\textit{Thing}(x)) \wedge M \in ALT(\textit{yesterday})]$, i.e. the set of individuals under consideration in $ALT(\textit{yesterday})$.

This analysis of superlative quantifiers is extended to deal with a variety of related structures: superlatives in embedded contexts, in the scope of intensional verbs, and in questions. In the latter case, the nature of the embedding verb and of the domain associated with the *wh*-word trigger interpretive variation. A difference can be detected between *believe*-type verbs and *say*-type verbs. The former give rise to two comparative readings whereas the latter only have one. Following Davidson (1968), it can be assumed that the complements of the verbs of the second type are not structured (they would stand for *that*-demonstratives) whereas the first type of verbs embed propositional complements that are syntactically structured. Then, the calculation of the context set does not have access to the embedding verb *say*.

Similarly, *why*- and *how*-questions lack comparative readings based on the *wh*-word. The sentence *Why did you read the longest book?* lacks the comparative reading ‘For what reason did you read a book longer than the books you read for any other reason?’. The only comparative reading possible is ‘For what reason did you read a book longer than any other book?’. In general, a context set cannot be formed taking as a basis the set of alternatives in MANNER or REASON. Szabolcsi and Zwarts (1993) claim that the set of manners and reasons has the structure of a join semi-lattice. Therefore, it is not closed under complements or meets. Yet the computation of the set of alternatives requires precisely taking into consideration the complement of a certain entity.

In summary, the integration of dynamic processes with the semantics of definites and comparatives/superlatives allows for a reexamination of the different readings of superlatives and a uniform dynamic account.

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