

Comparative Superlatives in Relative Clauses

In this talk I discuss a case where the comparison class for a superlative requires a binding relation for its interpretation. I present two reasonable semantic analyses of the relevant reading of the clause, and discuss the advantages and shortcomings of each. I build on Heim's (1999) analysis of the comparative reading of the superlative as in (1), where C is a context variable standing for the comparison class of individuals for the superlative.

It has been generally assumed that restrictive relative clauses always exhibit intersective modification. (2), on one reading, seems to be an exception to this rule. It has an absolute superlative reading where it entails that I met the (unique) man who climbed Mt. Everest. But it also has a comparative superlative reading where it entails that I met the man who climbed a mountain higher than any mountain any other man climbed. This could be true, for instance, if no man has ever climbed Mt. Everest, but one man has climbed K2, and no other man has climbed K2 or any mountain higher, and this is the man I met. To further show that this reading is available, consider (3). (3) can be true in a situation where the biggest tomato that any man ate was 5 pounds, but the biggest tomato any woman ever ate was 7 pounds.

To show that this is not simply a case of varying the comparison class with context, quantification (4a) and focus-sensitivity (4b) can range over the contexts in question. (4a) has a reading where each coach has a different set of players, each set having a player who played a better game than any other player in that set played. (4b) has a reading which presupposes that there are other relevant individuals (e.g. women) such that one of them climbed the highest mountain of the women, and possibly a higher mountain than the man I met climbed.

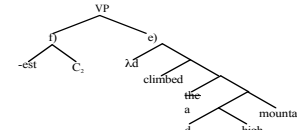
The first analysis I discuss is that the comparison class variable can be bound by the head noun. One way to implement this is via the head raising analysis of a relative clause (Bhatt 2002, others) (5). (I append binder abstracts for the interpretation of moved constituents as in Heim and Kratzer (1998).) Here, the head noun has raised from its argument position, and its trace binds the context variable, C, which correctly refers to the set of men. Thus the relative clause is subjunctive, not intersective; it denotes a function which maps the head noun, the set of men in this case, to the (singleton) set of men who climbed a higher mountain than any other man climbed. This seems to be the result that we want.

However, the head noun is probably not the only comparison class available. Consider the following situation. The school board of a state holds a contest to reward the student who can bake the biggest cake of all students in the state. The individual schools hold local contests first. In this situation, the most natural comparison class for the superlative in (6) is the set of students in each finalist's respective school, not the set of relevant children in the state or in general. So it seems that the comparison class of the superlative varies with quantification independently of the head noun.

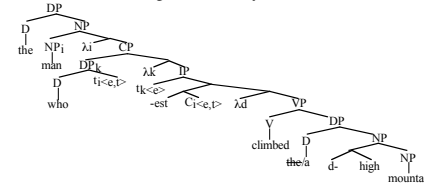
This leads us to a different analysis. I posit a function from individuals to comparison classes, whose argument is bound by the trace of the wh-operator (7). The function's value will be determined by the context, and will often, but not always, end up mapping an individual to the same value as the head noun. In the case of (7), for example, the C' function will map each individual to the set of students in its respective school. Note that in this analysis, the relative clause is not nonintersective any more. The apparent subsectivity results from some cases of C'(x) which happen to coincide with the head noun.

I further discuss the possibility that one or both of these analyses predict a subject/object asymmetry for comparative superlatives in relative clauses. Both analyses involve variable binding, and weak crossover violations might be predicted for object relatives, since the bound variable, the comparison class, if it is in a subject position, will occur between the initial location of the wh-position, the object position, and its surface location, spec-CP. A relevant example is (8a), in a situation where at many mathematics departments around the country, math professors are being haunted in their dreams by numbers, and no two mathematicians are haunted by the same number. There seems to be variation among speakers as to whether it contrasts with a subject relative (8c), but it seems to be better than a clear case of weak crossover (8b).

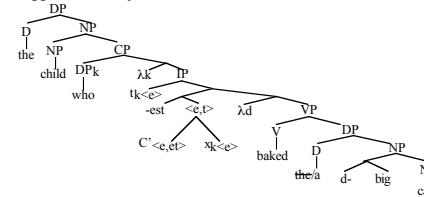
- (1) a) John [_{VP} climbed the highest mountain.]
 b) VP = $\lambda x. \lambda d [x \text{ climbed a } d\text{-high mountain} \ \& \ \neg y [C(y) \ \& \ y \text{ climbed a } d\text{-high mountain} \ \& \ y \neq x]]$



- (2) I met the man who climbed the highest mountain.
 (3) The man who ate the biggest tomato is dating the woman who ate the biggest tomato.
 (4) a) Every coach_k praised the player of his_k who played the best game.
 b) I only met the MAN who climbed the highest mountain.
 (5) Semantics for CP: $\lambda P \langle e, t \rangle. \lambda x \langle e \rangle. P(x) \ \& \ \lambda z [z \text{ is a mountain} \ \& \ x \text{ climbed } z \ \& \ \neg y [P(y) \ \& \ _o [o \text{ is a mountain} \ \& \ o \text{ is higher than } z \ \& \ y \text{ climbed } o]]]$



- (6) Every child who baked the biggest cake will compete in the finals.
 (7) Semantics for CP: $\lambda x \langle e \rangle. \lambda z [z \text{ is a cake} \ \& \ x \text{ baked } z \ \& \ \neg y [[C'(x)](y) \ \& \ _o [o \text{ is a cake} \ \& \ o \text{ is bigger than } z \ \& \ y \text{ baked } o]]]$



- (8) a) Every dean_k consoled the mathematician at his_k college who the biggest number haunted.
 b) *Every dean_k consoled the mathematician at his_k college who his biggest fear haunted.
 c) (cf.) Every dean_k consoled the mathematician at his_k college who thought of the biggest number.

Bhatt, Rajesh. 2002. 'The Head Raising Analysis of Relative Clauses: Evidence From Adjectival Modification'. *Natural Language Semantics* 10: 43-90.
 Heim, Irene 1999. *Notes on Superlatives*. Ms, MIT.
 Heim, Irene and Angelika Kratzer. 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
 Szabolcsi, Anna. 1986. 'Comparative Superlatives'. *MIT Working Papers in Linguistics* 8, MIT, Cambridge, Massachusetts, pp. 245-265.