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Compositional Semantics
Heinrich Heine University
Winter Semester 2011/12

Problem Set 10: Quantifier Raising

Reading: Heim and Kratzer (1998), ch. 7

Exercises

1. What is the problem of quantifiers in object position? What are the two main approaches to solving it?

2. Heim and Kratzer note that on the *in situ* approach to the problem of quantifiers in object position, only one of the readings of *Everybody offended somebody* is generated. Which reading is it? Show how this reading is derived, using either *everybody*$_1$ or *everybody*$_2$, depending on which works, and *somebody*$_1$ or *somebody*$_2$, depending on which works.

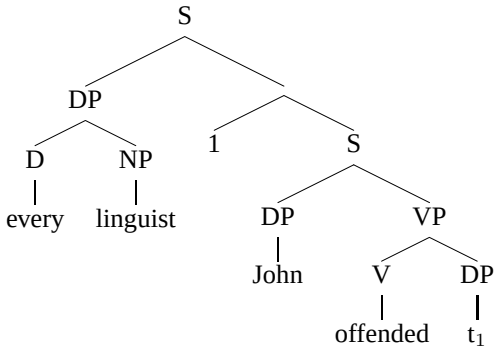
   $[\![\text{everybody}_1]\!]$ = λf $\in$ D$_{\langle e,t\rangle}$. for all persons x $\in$ D, f(x) = 1
   $[\![\text{everybody}_2]\!]$ = λf $\in$ D$_{\langle e,\langle e,t\rangle\rangle}$. [λx $\in$ D . for all persons y $\in$ D, f(y)(x) = 1]
   $[\![\text{somebody}_1]\!]$ = λf $\in$ D$_{\langle e,t\rangle}$. there is some person x $\in$ D such that f(x) = 1
   $[\![\text{somebody}_2]\!]$ = λf $\in$ D$_{\langle e,\langle e,t\rangle\rangle}$. [λx $\in$ D . there is some person y $\in$ D such that f(y)(x) = 1]

3. Extra credit: Give a lexical entry for *everybody* and/or *somebody* that gives us the missing reading.

4. Extra credit: Give a lexical entry for *everybody* that can be used *in situ* with ternary relations and show how it works with *Ann introduced everybody to Maria* as analyzed syntactically in (5) on the January 18th handout.

5. Using the new Predicate Abstraction rule[1] along with the other rules summarized on the handout from January 11th, analyze the truth conditions of this tree:

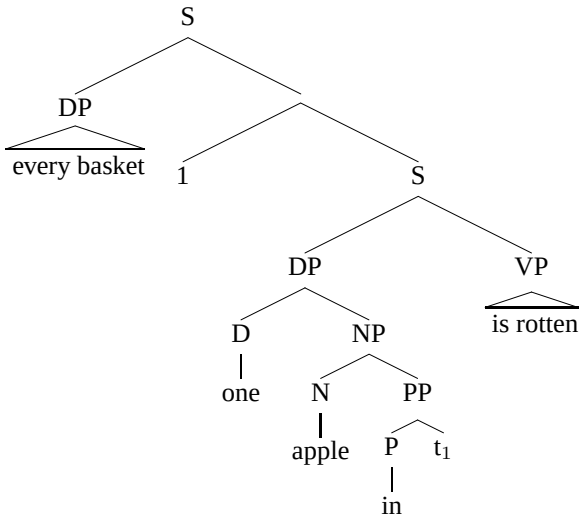
   (1)



[1] **Predicate Abstraction**: Let α be a branching node with daughters β and γ, where β dominates only a numerical index i. Then for any variable assignment a, $[\![\alpha]\!]^a$ =λx $\in$ D . $[\![\gamma]\!]^{a^{x/i}}$

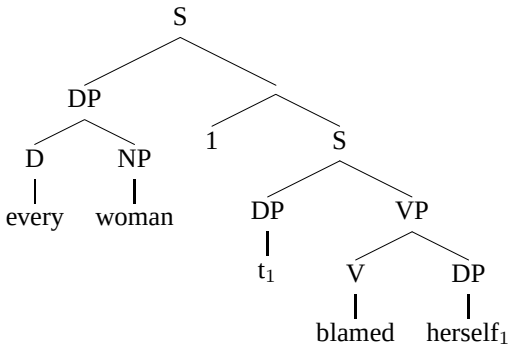
6. One argument in favor of the QR approach is that it gives correct truth conditions for examples like *One apple in every basket is rotten.* Show that this is correct by analyzing the truth conditions of (2).

(2)



7. Another argument in favor of the QR approach is that it deals well with pronouns that are bound by quantifiers, as in *Every woman blamed herself.* Using Predicate Abstraction and the Traces and Pronouns Rule, show how the truth conditions of (3) can be derived.

(3)



8. Why are bound pronouns a challenge for the *in situ* approach?