Homework #5

Please **type** your answers, including trees. As ever, I encourage you to work in groups, but please write up your own answers. **General note**: for the purposes of this assignment, you may ignore *v*P-internal subjects.

1 Extraposition & binding reconstruction

- Extraposed relative clauses can be bound into, as in (1). Assuming a static semantics, give an LF that derives this reading, and a top-down calculation of its truth conditions. (Hint: assume the extraposed relative clause is base-generated inside of the subject DP. You may also assume that *time* is type $e \to e$).

  (1) No linguist$_i$ went who valued her$_i$ time.

  Bonus (not required): what obstacles are there for an LF in which *no linguist* directly binds *her*?

- We've seen a way to derive an *every boy* > *someone* reading for (2) that uses semantic reconstruction and higher-order traces.[1] Does this strategy extend to cases of *binding reconstruction* like (3)? Why or why not? (NB: for the purposes of this problem, assume that *every boy* cannot QR over *his mother*.)

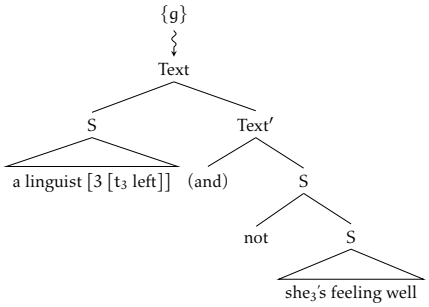
  (2) Someone$_i$ seems to every boy [t$_i$ to be a genius].

  (3) [His$_j$ mother]$_i$ seems to every boy$_j$ [t$_i$ to be a genius].

2 Cross-sentential dynamic binding by indefinites

- Give a dynamic-semantics analysis of *a linguist$_3$ left; she$_3$'s not feeling well*.

  ▷ Assume the structure below, with an initial context $\{g\}$. You may also assume the linguists are $\{A, B, C\}$, the individuals who left are $\{B, C, D\}$, and the individuals who feel well are $\{A, C, D\}$.



  ▷ Use the following meanings as your starting point:

$$[\![\text{a linguist } [3\ [t_3 \text{ left}]]]\!] = \lambda G.\ \{g[3 \to x] : g \in G \wedge \textsc{ling}\ x \wedge \textsc{left}\ x\}$$
$$[\![\text{and}]\!] = \lambda R.\ \lambda L.\ \lambda G.\ R\ (L\ G)$$
$$[\![\text{not}]\!] = \lambda p.\ \lambda G.\ \{g : g \in G \wedge p\ \{g\} = \varnothing\}$$
$$[\![\text{she}_3\text{'s feeling well}]\!] = \lambda G.\ \{g : g \in G \wedge \textsc{feeling-well}\ (g\ 3)\}$$

  ▷ You may find it helpful to note that, for any g, $[\![\text{she}_3 \text{ was feeling well}]\!]\ \{g\} = \varnothing$ iff $\neg\textsc{feeling-well}\ (g\ 3)$.

[1] For those of you with less background in syntax, the rough idea is that (2) is derived from a deep structure that's closer to *it seems to every boy that someone is a genius*. While it is true that reconstruction isn't necessary for deriving *every boy* > *someone* (simply QR *every boy*!), it *is* necessary for deriving a certain interpretation on which the indefinite is interpreted *non-specifically*, i.e. with *seems* > *someone*.

3 Working with dynamic semantics

- In dynamic semantics, negation is *externally static*: though a sentence S may contribute new discourse referents, the corresponding negated sentence 'not S' never does. What does this tell you about how a dynamic-binding analysis of (4) will have to look? How about cases like (5)?

  (4) I don't care for Donald$_i$. He$_i$'s kind of a blowhard.

  (5) I haven't heard that if Mary$_i$ is generous, I'll get a car for my birthday. But she$_i$ is pretty rich.

- Our static semantics required a rule for Predicate Modification (PM) built on boolean (i.e., static) conjunction (or a silent type-shifter with the same upshot), as in (6). Can you construct an argument that PM should be made dynamic? How would a dynamic PM rule look?

  (6) $[\![\alpha\ \beta]\!]^g = \lambda x.\, [\![\alpha]\!]^g\, x \wedge [\![\beta]\!]^g\, x$, when defined

- Bonus (not required). The dynamic treatment of sentences with indefinites is non-quantificational, as shown by the denotation given above for $[\![$a linguist [3 [t_3 left]]$]\!]$. But it's possible to recover the standard static meaning by defining a function $\exists$ with the type in (7). This *closure* operator is a function from a CCP (i.e., a function from a set of assignments into an updated set of assignments) into a simple set of assignments — recall that a static sentence meaning can be equivalently thought of as an assignment-relative truth-value, or as a set of assignments.

  (7) $((a \to t) \to a \to t) \to a \to t$

  Specify a value for $\exists$, and show what it gives when applied to the CCP $[\![$a linguist [3 [t_3 left]]$]\!]$.

- Bonus (not required). We have seen that existential quantifiers may be contributed by covert operators that quantify over choice functions and events. Our treatments of these operators have been static. Give dynamic entries for existential closure over events and existential closure over choice functions, ones which introduce discourse referents for events and choice functions, respectively. Can you think of any empirical arguments in favor of these dynamified versions?