Assignment 4

Chris Potts, Ling 230b: Advanced semantics and pragmatics, Fall 2022

Distributed Oct 25; due Nov 1

Rules and regulations

For this assignment, please do **any two** of the following five problems. Each problem has technical components that need to be worked out, but they are all somewhat open-ended as well. I am expecting the resulting answers to be something like little squibs, where you work through an analysis and weigh its pros and cons. I am also expecting the write-ups to be exploratory and inconclusive, though I am of course open to receiving airtight arguments for a particular position. We will talk about all these problems in class, to try to get a feel for the phenomena and the nature of different solutions.

1 Binding from subject position

Consider sentences like *Every girl rode her bike*, where the subject quantifier binds the pronoun *her*. How do the theories of QR and Cooper Storage capture this binding relationship?

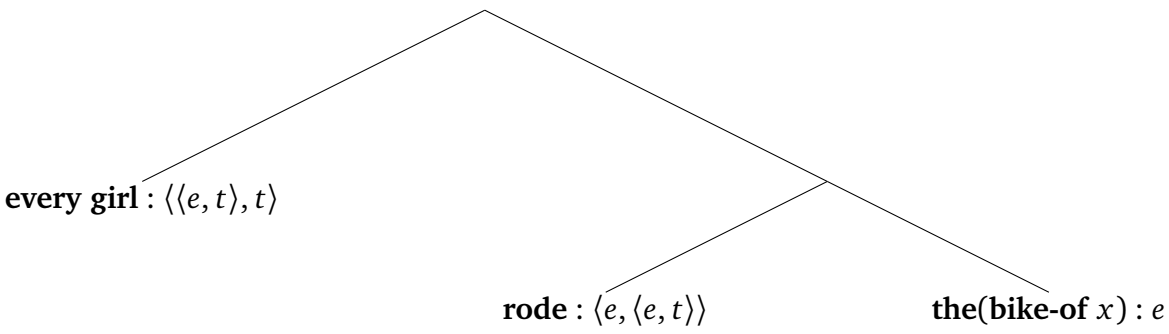
We'll assume this very rudimentary theory of phrases like *her bike*:

(1) $\textbf{bike-of} = \lambda y\,(\lambda z\,(\textbf{own}\ z\ y) \wedge (\textbf{bike}\ z))$

(2) $[\![\textbf{the}]\!]^{\mathbf{M},g}$ = the $T \in D_{\langle\langle e,t\rangle,e\rangle}$ such that, for all $f \in D_{\langle e,t\rangle}$, $T(f)$ is defined iff $|\{x : f(x)=\mathtt{T}\}| = 1$. Where defined, $T(f)$ = an entity $d \in D_e$ such that $f(d) = \mathtt{T}$.

(3) $g : [x \mapsto ☺, y \mapsto ☺, z \mapsto ☺]$

And here's an interpretable tree. For QR, we can move things around. For Cooper Storage, we can add stores and manipulate them.



2 Split readings

Negative determiners can appear to split apart from their associated phrases:

(4) The company need fire no employees.

a. $\neq$ the company is obligated to fire no employees (de dicto)

b. = there are no employees x such that the company is obligated to fire x (de re)

c. = it is not the case that the company is obligated to fire employees (split)

The first is blocked because *need* has to have a negation scoping over it. Compare with *must*. To see the difference between the de re and split readings, suppose there is no particular employee that the company has to fire (as would be the case, for example, if one of them had been found guilty of a crime), but that the company does have to make a layoff. Then the de re reading is true but the split reading is false. On the other hand, the split reading entails the de re reading: if the company can get away with no firings, then there is no particular person it is obliged to fire.

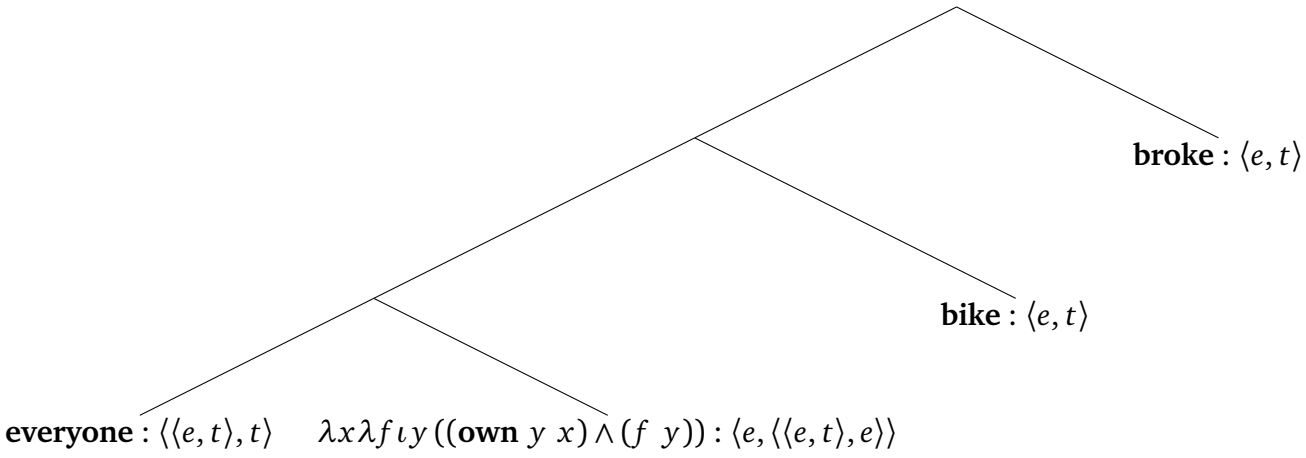
How should we account for these readings?

3 Possessive quantifiers

Work out a basic semantics for sentences like *Everyone's bike broke* using the basic theory of the possessive in (5), quantifier raising or Cooper Storage, and the following initial structure. (If you work this out, see if your account also allows for binding, as in *everyone's bike embarrassed her*.)

(5) **'s** $= \lambda x \lambda f \iota y\,((\textbf{own}\ y\ x) \wedge (f\ y)) : \langle e, \langle \langle e, t\rangle, e\rangle\rangle$

Where $[\![\iota x \varphi]\!]^{\mathbf{M},g}$ = the unique $d \in D_e$ such that $[\![\varphi]\!]^{\mathbf{M},g[x\mapsto d]}$ if there is one, else undefined



4 Coordinated quantifiers

The sentences in (6) share a reading that we might represent as

$$((\textbf{every student})\ \textbf{clap}) \wedge ((\textbf{every teacher})\ \textbf{clap})$$

What compositional challenge does this pose assuming the constituent structure indicated by square brackets?

(6) a. [[Every student] and [every teacher]] clapped.

b. [Every [student and teacher]] clapped.

5 Choice function indefinites

First, provide a full semantic representation for *Sandy saw a puppy* on which *a* is interpreted as a variable C over choice functions, where C is existentially bound at the root-level. Second, give an informal argument that, where $\|\textbf{puppy}\|^{\mathbf{M}}$ is the characteristic function of a *non-empty* set, this choice-function analysis is equivalent to the interpretation derived by treating *a* as a quantificational determiner (and doing QR, Cooper Storage, or the like).