Semantics and Pragmatics 1 Fall 2011
Assignment 4 Due October 25

Relative and comparative adjectives

In class on Thursday, we discussed the analysis of so-called "relative" adjectives like *large*. These adjectives are interesting because the information they contribute to the truth conditions when they appear as noun modifiers appears to vary depending on the meaning of the noun they modify:

(1) a. Bert is a large flea.
b. Sterling is a tall boy.
c. Boston is an old American city.

One way to account for this behavior is to assume that these adjectives are lexically type $\langle\langle e,t\rangle,\langle e,t\rangle\rangle$, and have denotations along the lines of:

(2) a. $[\![large]\!] = [\lambda f_{\langle e,t\rangle}[\lambda x.f(x) = 1 \textit{ and x's size} \succ \textit{avg-size}(f)]]$
b. $[\![tall]\!] = [\lambda f_{\langle e,t\rangle}[\lambda x.f(x) = 1 \textit{ and x's height} \succ \textit{avg-height}(f)]]$
c. $[\![old]\!] = [\lambda f_{\langle e,t\rangle}[\lambda x.f(x) = 1 \textit{ and x's age} \succ \textit{avg-age}(f)]]$

I have abbreviated the representations here to make them more perspicuous, but they should be understood in the way we discussed in class; in particular, *avg-size*(f), *avg-height*(f), *avg-age*(f) etc. are shorthand for "the average of the sizes (heights, ages, ...) of the xs such that $f(x) = 1$".

On this view, the denotations of *large flea* and *large spider* are as shown in (3a-b).

(3) a. $[\![large]\!]([\![flea]\!]) = [\lambda x.x \textit{ is a flea and x's size} \succ \textit{avg-size}(\lambda y.y \textit{ is a flea})]$
b. $[\![large]\!]([\![spider]\!]) = [\lambda x.x \textit{ is a spider x's size} \succ \textit{avg-size}(\lambda y.y \textit{ is a spider})]$

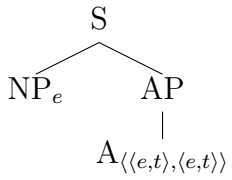
The crucial difference between (3a) and (3b) (other than the fact that the former only holds of fleas and later only of spiders) is in the calculation of the "threshold" introduced by the adjective: if the average size of spiders is greater than the average size of fleas, (3b) will require the things it is true of to be larger than the things that (3a) is true of (and vice versa if the average sizes happened to be the other way around). It is this relation to a threshold (in size, height, age, ...) based on an average for the noun class that makes these adjectives relative.

A. As we saw in class, an immediate challege for this analysis is the fact that these adjectives can also be used predicatively:

(4) a. Bert is large.
b. Sterling is tall.
c. Boston is old.

The adjectives in these sentences are arguably still understood in a "relative" way (though you might want to think about whether the predicative use is as relative as the modifier use), but there is no (overt) noun in the sentence for them to combine with, so we (incorrectly) predict a type-mismatch if the structure is as in (5). (For the purpose of this assignment, let us continue to ignore occurrences of the verb *be*.)

(5)



Your job in this part of the assignment is to come up with a proposal for how to resolve the apparent type-mismatch and assign sentences like those in (4) appropriate truth conditions. Your starting point should be the hypothesis that the basic meaning of relative adjectives is as shown in (2). However, you are free to make any new proposals or modifications that you want in order to account for the facts; just make sure to show how these proposals interact with the initial meanings in (2).

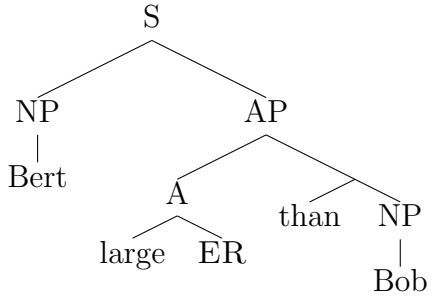
Support your claims with derivations and additional data as appropriate, and explore any new predictions that your analysis makes.

B. A second distinguishing feature of relative adjectives (in addition to their relativity) is that they have comparative forms:

(6) a. Bert is larger than Bob.
b. Sterling is taller than Julian.
c. Boston is older than New York.

Assume that the syntactic structure of comparative constructions like these (at the relevant level of representation — the one that the semantics "sees") are as shown in (7), where ER stands for the comparative morpheme, which I am treating as an affix.[1]

(7)



[1]We can assume for the purpose of this assignment that the phonological component ensures its correct pronunciation in the surface form as either a suffix (*larger, taller*, etc.) or an independent, pre-adjectival morpheme (*more interesting*, *more expensive*, ...) depending on the phonological properties of the adjectival root. This is essentially true.

Your task is to propose a meaning for ER that turns the basic meaning of the adjective into a meaning that correctly captures the truth conditions of comparatives like the ones in (6). For the purpose of this assignment, you may assume that *than* is meaningless (i.e., that it denotes the identity function $\lambda x.x$), though you are also free to develop an analysis in which it plays an important role in the composition if you think that is the right way to go. You should also only consider comparatives that have structures like those in (6), i.e. that are of the form NP_1 *(be) Aer/more A than* NP_2. There are many other types of comparatives, each with their own unique properties, so I just want you to focus on simple cases like these for now.

Show that your analysis is correct by going through the derivation of crucial examples, and also show that that your analysis allows us to account for the following important fact: the examples in (6) do not entail the examples in (4) (nor the other way around, of course). (7a-c) can all be true at the same time that the corresponding sentences in (4) are false.

C. Does the analysis you gave for the examples in (6), which contain comparatives in predicate position, extend to the examples in (8), which contain comparatives in modifier position?

(8) a. Bert is a larger flea than Bob.
b. Sterling is a taller boy that Julian.
c. Boston is an older American city than New York.

If not, modify it so that it does, and again show that your analysis gets the entailments right: (8a-c) do not entail the corresponding examples in (1).

D. Consider the following examples. (9a) implies that Sophie is a boy (and so sounds a bit weird); (9b) carries no such entailment.

(9) a. #Sterling is a taller boy than Sophie.
b. Sterling is a boy taller than Sophie.

What are the implications of this contrast?