1 Copular constructions

For each of the following analyses of *be*, provide a semantic parsetree for the sentence *Superman is Clark Kent* using any combination of Partee’s type-shifters, assuming that *Superman* and *Clark Kent* both translate as expressions of type *e*.

i. \((\lambda x \lambda y \ (x = y)) : \langle e, \langle e, t \rangle \rangle\)

ii. \((\lambda f \lambda y \ (f \ y)) : \langle \langle e, t \rangle, \langle e, t \rangle \rangle\)

iii. \((\lambda y \lambda f \ (f \ y)) : \langle e, \langle \langle e, t \rangle, t \rangle \rangle\)

iv. the type-shifter *BE*: \(\langle \langle e, t \rangle, \langle e, t \rangle \rangle\)

2 Determiners and type-shifters

The following Japanese sentence is ambiguous between definite and indefinite interpretations of its subject. (The subject is also ambiguous between singular and plural, but let’s set that aside.)

\[
\text{Hime wa kirei.} \\
\text{princess TOPIC pretty} \\
\text{‘The/A princess is pretty.’}
\]

Partee suggests that we might relate such ambiguities to type-shifting and the absence of an overt determiner. Your tasks:

i. Show that Partee’s type-shifters can derive both of the above readings.

ii. Assess the extent to which it also follows, from your account and assumptions like those of fragment 1, that *a princess* in English cannot be interpreted as definite.

3 Adverbial types

On assignment 1, you defined a method for going from negation of type \(\langle t, t \rangle\) to negations in any conjoinable type \(\langle \sigma, \tau \rangle\). This question probes that operation a little more deeply:

i. Write down a general type-shifter \(T\) for moving from sentential adverbs (type \(\langle t, t \rangle\)) to VP adverbs (type \(\langle \langle e, t \rangle, \langle e, t \rangle \rangle\)). Your type-shifter \(T\) should be such that, for any expressions \(\alpha : \langle t, t \rangle\), \(f : \langle e, t \rangle\), and \(x : e\),

\[\alpha (f \ x)) = (((T \alpha f) x)\]
ii. Extra credit [up to 1 point]: Can the reverse be done? That is, can one define a general type-shifter $T$ from $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$ down to $\langle t, t \rangle$ such that, for any expressions $\alpha : \langle \langle e, t \rangle, \langle e, t \rangle \rangle$, $f : \langle e, t \rangle$, and $x : e$,

$$(\alpha f) x = ((T \alpha)(f x))$$

Either define such a type-shifter or show that no such type-shifter exists.

4 Scope islands and Cooper Storage [2 points]

Barker (2015:§1.6) reports that “tensed clauses are generally thought to be scope islands for universal quantifiers”. Provide a way of capturing this constraint in the context of Cooper Storage. You should assume that you have free access to features in the syntax (this seems clearly to be a syntax–semantics interface constraint). It’s fine to state this as a constraint on derivations, but it’s even better to redefine the Cooper Storage system so that it follows as a theorem.

5 Choice function indefinites [2 points]

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 $\|\text{puppy}\|^M$ 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).

6 Continuization intuitions [2 points]

This question is based in an interactive worksheet:

http://web.stanford.edu/class/linguist230b/assignments/ling230b-assign02.html

The steps are basic. The goal is to give you a feel for what continuized grammars are like. Your answer can be just a sequence of expressions pasted out of the interactive tutorial.

7 A question from you [2 points]

Articulate your own question about any aspect of Barker 2015 and answer it. As before, aim for a question that encourages further reflection on the material, leading to new and deeper insights for someone who answers it.

References