1 Glass’s generalization

Glass (2018) observes that (1) entails both (1a) and (1b), whereas the comparable distributive entailment does not go through for (2).

(1) Box A and Box B are fragile.
   a. ⇒ Box A is fragile
   b. ⇒ Box B is fragile

(2) Box A and Box B are heavy.
   a. ↛ Box A is heavy
   b. ↛ Box B is heavy

Use our theory of relative gradable adjectives to develop an account of these facts. To facilitate the discussion, assume that your semantic model contains plural entities: if \( a \in D_e \) and \( b \in D_e \), then \( a \oplus b \in D_e \). The crucial analytic move is then to argue that not all open scales are alike when it comes to measuring entities in \( D_e \) (see also Lassiter 2011:§2).

2 Comparatives and intensional indices

Russell (1905) observes that (3) is ambiguous between the sensible reading (3a) and the contradictory reading (3b).

(3) Kim believes her boat is larger than it is.
   a. The size that Kim believes her boat is is greater than the size that it actually is.
   b. Kim believes that the size of her boat is larger than the size of her boat.

Provide a complete semantic parsetree for one of these readings and explain what needs to be done to it to make it deliver the other reading. (If it’s easier for you, you can of course include both trees and discuss their crucial differences.) Notes:

- This analysis involves intensionalizing our usual measure functions (new type \( \langle e, \langle s, d \rangle \rangle \)).
- The type of the expression on the root node in both cases should be \( \langle s, t \rangle \).
- As in the ‘Introduction to intensionality’ handout, you can use \( \varphi_w \) to fill the innermost world argument to \( \varphi \). You’ll then want to bind these world variables at some point in the tree.
• Feel free to ignore the anaphora between Kim and her and between her boat and it. That is, you can act as though the sentence was ‘Kim thought Kim’s boat was larger than Kim’s boat is’. This will reduce the number of distracting variables and other operations.

• Kim’s boat can be translated as bk : e. This notational simplification will further help shine a light on the terms of interest.

• Take the time to argue that, in the theory we’re using, max(λd(m a) ⩾ d) = (m a). This will allow a further useful simplification of the representations as you get closer to the root.

3 Specific–opaque readings [2 points]

Section 2 of ‘Introduction to intensionality’ discusses transparent and opaque readings, in which we get different meanings depending on how the world variables are bound. There is another dimension to this: the existential could undergo QR or similar so that it scopes over want.

3.1 Wide vs. narrow scope

First, calculate the denotations for the following examples in the semantic model on the handout, give an informal description of how these two readings differ, and note any lawful entailment relations between them:

(4) \[\lambda w (\text{an inexpensive}_d \text{ress}_w (\lambda x (m \text{ wants}_w (\lambda w' (\text{buy}_w' x))))))\] M,g =

(5) \[\lambda w (m \text{ wants}_w (\lambda w' (m \text{ buy}_w' \text{ an inexpensive}_d \text{ress}_w)))\] M,g =

3.2 Wide-scope, opaque readings

Szabó (2010) argues that wide-scope, opaque readings exist, based on examples like this one:

(6) Mary is in a good mood. While strolling through town, she saw a lovely winter coat in a shop window. She could see the price tag peeking out from behind one of the sleeves, and it said $5. Unbenownst to Mary, part of the tag was not visible; the actual price of the coat was $500.

Mary wants to buy an inexpensive coat.

It is actually quite expensive, though.

Assume Szabó is correct that these readings are possible. What challenge do they pose? (In what sense are we predicting that they are not possible?)
4 Individual concepts

Assume that the phrase the governor of California denotes a function in $D_{(s,e)}$. Informally:

$\text{[the-CA-gov]}^{M,g} = \text{the function } I \text{ such that, for all } \otimes \in D_s, I(\otimes) = \text{the governor of California in } \otimes$

To make this concrete, assume also that $D_s = \{\otimes_{2005}, \otimes_{2018}\}$, where $\otimes_{2018}$ is the actual world, and that $\text{[the-CA-gov]}^{M,g}(\otimes_{2005}) = \text{Arnold Schwarzenegger}$ and $\text{[the-CA-gov]}^{M,g}(\otimes_{2018}) = \text{Jerry Brown}$. Now suppose that John believes the governor of California is Arnold Schwarzenegger. Suppose also that John is listening to Jerry Brown (the actual governor of California) talk on the radio. Provide a logical translation of (7) that comes out true in this scenario in $\otimes_{2018}$, and one where it comes out false in this scenario in $\otimes_{2018}$. Give the truth conditions associated with your translation, using Dox as it is defined in the ‘Introduction to intensionality’ handout.

(7) John believes that the governor of California is talking.

Notes:

- You needn’t provide the full compositional analysis, though you are welcome to do that.
- You needn’t worry about whether, as an empirical matter, the sentence has both readings. We’ll discuss the empirical part of this in class.

5 Ordering sources

Assume $D_s = \{\otimes_1, \otimes_2, \otimes_3, \otimes_4\}$, with a modal base $B =$

(8) $B(\otimes_1) = \{[\text{[criminal j]}^{M,g}]\}$
$B(\otimes_2) = \{[\text{[criminal j]}^{M,g}]\}$
$B(\otimes_3) = \{[\neg(\text{criminal j})]^{M,g}\}$
$B(\otimes_4) = \{[\neg(\text{criminal j})]^{M,g}, [\text{[jailed j]}^{M,g}]\}$

where $[\text{[criminal j]}]^{M,g} = \{\otimes_1, \otimes_2\}$ and $[\text{[jailed j]}]^{M,g} = \{\otimes_1, \otimes_3\}$. The ordering source $X$ is such that, for all worlds $\otimes$, $X(\otimes)$ is the set containing (i) the proposition that $x$ is in jail iff $x$ committed a crime and (ii) the proposition that John is not a criminal. What set of worlds does John must be jailed identify in this scenario (relative to $B$ and $X$)? What is unusual about $\otimes_4$?
6 Scope-taking again

Assume that subjects are associated with a variable $\chi$ inside the VP. When that variable is of type $e$, they scope above the VP. When that variable is of type $\langle e, s, t \rangle$, they scope below it.

(9)

```
everyone \lambda \chi \ldots
can(f) : \langle s, t \rangle
\chi : \text{volunteer} : \langle e, s, t \rangle
```

Assume everyone is analyzed as $\lambda P \lambda w(\forall x(P x w)) : \langle e, \langle s, t \rangle \rangle$, and volunteer : $\langle e, s, t \rangle$ has the following denotation (the domain of entities is $D_e = \{a, b\}$):

(10) $\|\text{volunteer}\|^M = [
\begin{array}{c}
a \mapsto \left[ \begin{array}{c}
\odot_1 \mapsto T \\
\odot_2 \mapsto F \\
\odot_3 \mapsto T 
\end{array} \right] \\
b \mapsto \left[ \begin{array}{c}
\odot_1 \mapsto F \\
\odot_2 \mapsto T \\
\odot_3 \mapsto T 
\end{array} \right]
\end{array}
$

Using the meaning for can in (11) and the conversational background $g(f) = B$ in (12), determine which propositions are expressed by the two scope orderings derivable with the LF sketched above.\(^1\)
Submit descriptions of these propositions and how you arrived at them.

(11) $\text{can} = \lambda f \lambda P \lambda w(\exists w'(\langle f, w' \rangle \wedge (P w')))$

(12) 

- $B(\odot_1) = \{\{\odot_1, \odot_2\}, \{\odot_1, \odot_2, \odot_3\}\}$
- $B(\odot_2) = \{\{\odot_2, \odot_3\}, \{\odot_1, \odot_2, \odot_3\}\}$
- $B(\odot_3) = \{\{\odot_1\}, \{\odot_1, \odot_2\}, \{\odot_1, \odot_3\}, \{\odot_1, \odot_2, \odot_3\}\}$

\(^1\)Assume $\|\cap\|^M = \cap$ as defined on the handout; this is a bit sloppy, but I think it’s okay.
7 Comparative possibility

Kratzer (1981) suggests the following:

(13) \([\varphi \text{ as likely as } \psi]^{M,f,g,w} \text{ iff for all } w \in f(w) \text{ such that } [\psi]^{M,f,g}(w)\]
there is a world \(w' \in f(w)\) such that \(w' \leq g(w)\) \(w\) and \([\varphi]^{M,f,g}(w')\)

Suppose the modal base in the world of evaluation \(@\) consists of worlds in which John and his two sisters Ali and Betty each bought exactly one raffle ticket. The ordering source \(g\) at \(@\) contains just the three mutually exclusive propositions that Ali wins, that Betty wins, and that John wins. What does the above semantics say about the meanings of John wins is as likely as Ali wins and John wins is as likely as one of his sisters wins? (These sentences are a bit awkward; just trying to avoid the distractions of nominalizing.) For discussion, see Lassiter 2015.

References


