Assignment 5

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

Distributed Nov 1; due Nov 8

1 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*.

1.1 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:

(1) $[\![\lambda w\ (\textbf{an inexpensive\_dress}_{w}(\lambda x\ (\textbf{m wants}_{w}(\lambda w'\ (\textbf{m buy}_{w'}\ x)))))]\!]^{\mathbf{M},g} =$

(2) $[\![\lambda w\ (\textbf{m wants}_{w}(\lambda w'\ (\textbf{m buy}_{w'}\ \textbf{an inexpensive\_dress}_{w})))]\!]^{\mathbf{M},g} =$

1.2 Wide-scope, opaque readings

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

(3) 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?)

2 Individual concepts [2 points]

Assume that the phrase *the governor of California* denotes a function in $D_{\langle s,e\rangle}$. Informally:

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

To make this concrete, assume also that $D_s = \{\odot_b, \odot_n\}$, where $\odot_n$ is the actual world, and that $[\![\textbf{the-CA-gov}]\!]^{\mathbf{M},g}(\odot_b) = $ Jerry Brown and $[\![\textbf{the-CA-gov}]\!]^{\mathbf{M},g}(\odot_n) = $ Gavin Newsom. Now suppose that Sandy believes the governor of California is Jerry Brown. Suppose also that Sandy is listening to Gavin Newsom (the actual governor of California) talk on the radio. Provide a logical translation of (4) that comes out true in this scenario in $\odot_n$, and one where it comes out false in this scenario in $\odot_n$. Give the truth conditions associated with your translation, using Dox as it is defined in the 'Introduction to intensionality' handout.

(4) Sandy 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.

3 Ordering sources [2 points]

Assume $D_s = \{\odot_1, \odot_2, \odot_3, \odot_4\}$, with a modal base $B =$

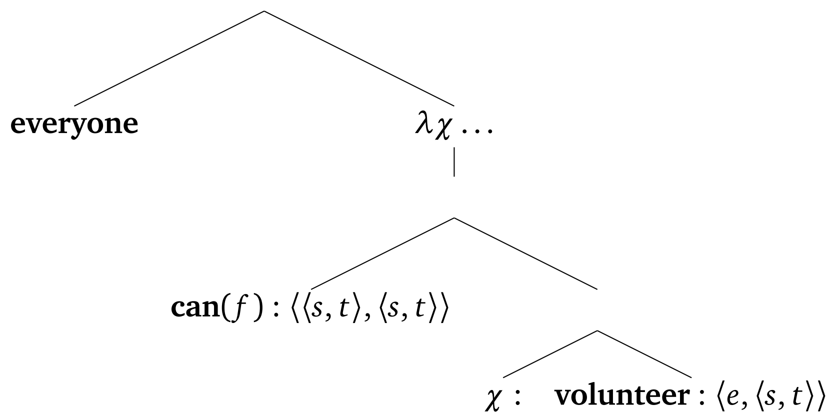
(5)
$$\begin{aligned}
B(\odot_1) &= \left\{[\![(\textbf{criminal j})]\!]^{\mathbf{M},g}\right\}\\
B(\odot_2) &= \left\{[\![(\textbf{criminal j})]\!]^{\mathbf{M},g}\right\}\\
B(\odot_3) &= \left\{[\![\neg(\textbf{criminal j})]\!]^{\mathbf{M},g}\right\}\\
B(\odot_4) &= \left\{[\![\neg(\textbf{criminal j})]\!]^{\mathbf{M},g}, [\![(\textbf{jailed j})]\!]^{\mathbf{M},g}\right\}
\end{aligned}$$

where $[\![(\textbf{criminal j})]\!]^{\mathbf{M},g} = \{\odot_1, \odot_2\}$ and $[\![(\textbf{jailed j})]\!]^{\mathbf{M},g} = \{\odot_1, \odot_3\}$. The ordering source X is such that, for all worlds $\odot$, $X(\odot)$ 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 $\odot_4$?

4 Scope-taking again [2 points]

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

(6)



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

(7) $$\|\textbf{volunteer}\|^{\mathbf{M}} = \begin{bmatrix} a & \mapsto & \begin{bmatrix} \odot_1 & \mapsto & \mathtt{T} \\ \odot_2 & \mapsto & \mathtt{F} \\ \odot_3 & \mapsto & \mathtt{T} \end{bmatrix} \\ \\ b & \mapsto & \begin{bmatrix} \odot_1 & \mapsto & \mathtt{F} \\ \odot_2 & \mapsto & \mathtt{T} \\ \odot_3 & \mapsto & \mathtt{T} \end{bmatrix} \end{bmatrix}$$

Using the meaning for **can** in (8) and the conversational background $g(f) = B$ in (9), 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.

(8) $$\textbf{can} = \lambda f\ \lambda p\ \lambda w\Big(\exists w'\Big(\Big(\bigcap (f\ w)\ w'\Big) \wedge (p\ w')\Big)\Big)$$

(9) $$\begin{aligned} B(\odot_1) &= \{\{\odot_1, \odot_2\}, \{\odot_1, \odot_2, \odot_3\}\} \\ B(\odot_2) &= \{\{\odot_2, \odot_3\}, \{\odot_1, \odot_2, \odot_3\}\} \\ B(\odot_3) &= \{\{\odot_1\}, \{\odot_1, \odot_2\}, \{\odot_1, \odot_3\}, \{\odot_1, \odot_2, \odot_3\}\} \end{aligned}$$

[1] Assume $\|\bigcap\|^{\mathbf{M}} = \bigcap$ as defined on the handout; this is a bit sloppy, but I think it's okay.

5 Comparative possibility [2 points]

Kratzer (1981) suggests the following:

(10) $[\![\varphi \textbf{ as likely as } \psi]\!]^{\mathbf{M},f,g}(@)$ iff for all $\odot \in f(@)$ such that $[\![\psi]\!]^{\mathbf{M},f,g}(\odot)$
there is a world $\odot' \in f(@)$ such that $\odot' \leqslant_{g(@)} \odot$ and $[\![\varphi]\!]^{\mathbf{M},f,g}(\odot')$

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

Kratzer, Angelika. 1981. The notional category of modality. In Hans-Jürgen Eikmeyer & Hannes Rieser (eds.), *Words, worlds, and contexts*, 38–74. Berlin: Walter de Gruyter.

Lassiter, Daniel. 2015. Epistemic comparison, models of uncertainty, and the disjunction puzzle. *Journal of Semantics* 32(4). 649–684. doi:10.1093/jos/ffu008.

Szabó, Zoltán. 2010. Specific, yet opaque. In Maria Aloni, Harald Bastiaanse, Tikitu de Jager & Katrin Schulz (eds.), *Logic, language, and meaning: 17th Amsterdam Colloquium revised selected papers* Lecture Notes in Computer Science, 32–41. Springer Berlin / Heidelberg.