Appendix: The semantic interpretation system

Hamblin Functional Application

If α is a branching node with daughters β and γ, and $[[\beta]]^{w,g} \in D_{\beta}$ and $[[\gamma]]^{w,g} \in D_{<\beta\beta>}$,then $[[\alpha]]^{w,g} = \{a \in D_{\beta}: \exists b \exists c [b \in [[\beta]]^{w,g} \& c \in [[\gamma]]^{w,g} \& a = c(b)]\}$.

Sentential quantifiers[1]

For $[[\alpha]]^{w,g} \in D_{<st>}$:

(i) $[[\Box\alpha]]^{w,g} = \{ \lambda w'. \forall p [p \in [[\alpha]]^{w,g} \& p(w') = 1] \}$

(ii) $[[\Diamond\alpha]]^{w,g} = \{ \lambda w'. \exists p [p \in [[\alpha]]^{w,g} \& p(w') = 1] \}$

(iii) $[[\text{Neg } \alpha]]^{w,g} = \{ \lambda w'. \neg\forall p [p \in [[\alpha]]^{w,g} \& p(w') = 1] \}$

(iv) $[[Q\alpha]]^{w,g} = [[\alpha]]^{w,g}$ or (Groenendijk & Stokhof 1984)

$[[Q\alpha]]^{w,g} = \{ \lambda w'. \exists p [p \in [[\alpha]]^{w,g} \& [p(w) = 1 \& p(w') = 1]] \}$

Generalized quantifiers

For $[[\alpha]]^{w,g} \in D_{e}$:

(i) $[[\Box\alpha]]^{w,g} = \{ \lambda P \lambda w'. \forall a [a \in [[\alpha]]^{w,g} \& P(a)(w') = 1] \}$

(ii) $[[\Diamond\alpha]]^{w,g} = \{ \lambda P \lambda w'. \exists a [a \in [[\alpha]]^{w,g} \& P(a)(w') = 1] \}$ Etc.

Predicate Abstraction

If α is a branching node whose daughters are an index i and β, where $[[\beta]]^{w,g} \in D_{\beta}$, then $[[\alpha]]^{w,g} = \{f: f \in D_{<e\beta>} \& \forall a [f(a) \in [[\beta]]^{w,g[a/i]}]\}$[2].

Pronouns and traces

For any index i, $[[i]]^{w,g} = \{ g(i) \}$.

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[1]. There should be a choice for the world index with respect to which α is to be evaluated in (i) to (iv), an important issue that I will neglect.

[2]. There is a question about the correctness of the definition for Predicate Abstraction. It does not quite deliver the expected set of functions. As far as I can see, however, no wrong predictions are actually made, as long as we only use the definition for generating propositional alternatives. Predicate modification operations within a Hamblin semantics present another interesting issue that I have to neglect here.

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