Appendix: The semantic interpretation system

Hamblin Functional Application

If □ is a branching node with daughters □ and □ and \([□]^{w\cdot} \not\in D_{\approx}\) and
\([□]^{w\cdot} \not\in D_{\approx}\), then \([□]^{w\cdot} = \{a □ D_{\approx}\ □ b □ □ b □ □ \} \ & □ □ □ □ □ □ □ a = c(b)\}.

Sentential quantifiers

For \([□]^{w\cdot} \not\in D_{\approx}\):
(i) \([□]^{w\cdot} = \{w'. □ p □ □ p(w') = 1\} \}
(ii) \([□]^{w\cdot} = \{w'. p □ □ p(w') = 1\} \}
(iii) \([□]^{w\cdot} = \{w'. □ p □ □ p(w') = 1\} \}
(iv) \([□]^{w\cdot} = \{w'. □ p □ □ p(w') = 1\} \}

Generalized quantifiers

For \([□]^{w\cdot} \not\in D_{\approx}\):
(i) \([□]^{w\cdot} = \{p(w'). □ a □ □ a = p(w')\} \}
(ii) \([□]^{w\cdot} = \{p(w'). □ a □ □ a = p(w')\} \}

Predicate Abstraction

If □ is a branching node whose daughters are an index i and □, where \([□]^{w\cdot} \not\in D_{\approx}\), then \([□]^{w\cdot} = \{f: f □ D_{\approx}\ & □ a □ f(a) □ □ f(a) □ □ □ \}^2\}.

Pronouns and traces

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

References


1. There should be a choice for the world index with respect to which □ 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.


