

Semantic Theory 2014 – Exercise Sheet 8

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Exercises are due on Tuesday, June 24, 10:15 a.m.

8.1 Event semantics and modifier attachment

Sentence (1) is syntactically ambiguous between the two readings indicated in (1a) and (1b), due to the notorious “modifier attachment ambiguity”. The syntactic ambiguity induces a semantic ambiguity.

(1a) [S [S [S *Mary* [VP *call-* [NP *a friend*]]]] [PP *in Munich*]] PAST]

(1b) [S [S *Mary* [VP *call-* [NP *a* [N' *friend* [PP *in Munich*]]]]]] PAST]

(a) Give informal paraphrases of the two readings. Represent the readings of the formulas as predicate-logic formulas, using an event-semantic analysis of the verb *call*: $call'$: $\langle e, \langle e, \langle e, t \rangle \rangle \rangle$ (as in last Tuesday's lecture).

(b) Derive semantic representations for (1a) and (1b) compositionally, and simplify using beta-reduction. Assume the following translations for the lexical expressions in (1):

$Mary \Rightarrow mary'$: e

$Munich \Rightarrow munich'$: e

$call- \Rightarrow \lambda Q \lambda x \lambda e [Q(\lambda y. call*(y)(x)(e))]: \langle \langle \langle e, t \rangle, t \rangle, \langle e, \langle e, t \rangle \rangle \rangle$

$friend \Rightarrow friend'$: $\langle e, t \rangle$

$in \Rightarrow \lambda z \lambda F \lambda v [in'(z)(v) \wedge F(v)]: \langle e, \langle \langle e, t \rangle, \langle e, t \rangle \rangle \rangle$

$PAST \Rightarrow \lambda E [\exists e (E(e) \wedge e < e_u)]: \langle \langle e, t \rangle, t \rangle$

For simplicity, we assume that the subject of *call* and the internal argument of the preposition are type e expressions (denoting standard objects). The indefinite article should be translated as usual. The λ -variables F and v in the translation of the preposition are of the general kind, ranging over standard predicates/entities as well as event predicates/entities.

8.2 Type-raised subjects in event semantics

As discussed some weeks ago, the simple representation of transitive verbs as two-place first-order relations $\langle e, \langle e,t \rangle \rangle$ leads to a type conflict, which can be resolved by a type-raised analysis of the verb (type $\langle \langle \langle e,t \rangle, t \rangle, \langle e,t \rangle \rangle$). Introduction of an additional event argument causes a similar problem already for the subject position of intransitive verbs (and more generally for the subject position of any event-denoting verb): Instead of $\lambda x[\text{walk}'(x)]: \langle e,t \rangle$, we have $\lambda x \lambda e[\text{walk}'(x)(e)]: \langle e, \langle e,t \rangle \rangle$, which cannot combine with the $\langle \langle e,t \rangle, t \rangle$ subject.

(a) Do the same trick with the subject position of *walk*, as we did it before with the object position of transitive verbs: type-raise the subject argument. Hint: Formally, this works precisely the same way as for the type-raised (“event-free”) analysis of transitive verbs.

(b) Give a type-raised representation for the event-denoting variant of the transitive verb *call*. Hint: The representation will look similar to the translation of the (“event-free”) type-raised analysis of the ditransitive *give*.

(c) Use the modified semantics of *walk* and *call* to compositionally derive the meaning of Sentence (2) and (3). Assume that the underlying syntactic structures are (2') and (3'), respectively.

(2) *Bill walks*

(2') $[S [S \textit{Bill} [_{VP} \textit{walk-}]] \textit{PRES}]$

(3) *Mary calls a friend*

(3') $[S [S \textit{Mary} [_{VP} \textit{call-} [_{NP} \textit{a friend}]]]] \textit{PRES}]$