

Semantic Theory 2012, Exercise 4

1 Event Semantics and Modifier Attachment

- (1) *Mary called a friend in Munich*
- (1a) $[_S [_S [_S \text{Mary} [_{VP} \text{called} [_{NP} \text{a friend}]]]] [_{PP} \text{in Munich}]]] \text{PAST}$
- (1b) $[_S [_S \text{Mary} [_{VP} \text{called} [_{NP} \text{a} [_{N'} \text{friend} [_{PP} \text{in Munich}]]]]]]] \text{PAST}$

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

- (a) Represent the readings of the formulas as predicate-logic formulas, using an event-semantic analysis of the verb *call*, as it has been introduced in the lecture, and give informal paraphrases of the two readings.
- (b) Derive semantic representations for (1a) and (1b) compositionally, and simplify using beta-reduction. Assume the following translations for the lexical expressions in (1):

$\text{Mary} \Rightarrow \text{mary}' : e$
 $\text{Munich} \Rightarrow \text{munich}' : e$
 $\text{called} \Rightarrow \lambda Q \lambda x \lambda y \lambda e [Q(\lambda y. \text{call}^*(y)(x)(e))]: (((e,t),t), (e,(e,t)))$
 $\text{friend} \Rightarrow \text{friend}' : (e,t)$
 $\text{in} \Rightarrow \lambda z \lambda F \lambda v [\text{in}'(z)(v) \wedge F(v)]: (e, ((e,t), (e,t)))$
 $\text{PAST} \Rightarrow \lambda E [\exists e (E(e) \wedge e < e_u)]: ((e,t),t)$

The translation of *called* is in the type-raised format introduced in the sentence semantics part of the course. The indefinite article is to be translated as usual. The λ -variables F and v in the translation of the preposition are meant to match standard predicates/entities as well as event predicates/entities.

2 Type-raised Subject in Event Semantics

As you know, the simple representation of transitive verbs (type $(e,(e,t))$) leads to a type conflict, and must be replaced by a type-raised analysis (type $((e,t),t)$), which is given for “called” in Exercise 2 above. In event semantics, we get a similar problem for the subject position of all verbs: The type for *walk* changes from (e,t) to $(e,(e,t))$, and a quantified NP of type $((e,t),t)$ is not directly applicable.

- (a) Give representations with type-raised subject positions for intransitive *walk* and transitive *call*.
- (b) Apply the modified semantics of *walk* to compositionally derive the meaning of Sentence (2) with syntactic representation (2a).

- (2) *Bill is walking*
 (2a) [S [S Bill [VP walk]] PRES]

3 Events in argument position

Consider Sentence (1) with syntactic analysis (2):

- (1) *John saw a boy play in the street*
 (2) [S [S John [VP saw [S [S [S [NP a boy] [VP play]] [PP in the-street]] INF]]] PAST]

- (a) Give an intuitively plausible Davidsonian representation for (1) (compare the corresponding example on the slides).
- (b) Derive the representation of (b) compositionally. Assume the following types for translations of the words and operators:

John: $((e,t),t)$
saw: $((((e,t),t),(((e,t),t),(e,t)))$
a, boy: as usual
play: $((((e,t),t),(e,t)))$
in: $(e,((e,t),(e,t)))$
the-street: e
INF: $((e,t),((e,t),t))$
PAST: $((e,t),t)$

Give translations for these lexical expressions. You will find some of them in the slides or in previous exercises. INF translates to $\lambda E \lambda E' [\exists e (E(e) \wedge E'(e))]$. The semantics of the infinitive operator takes an event predicate and returns an indefinite event description. – Then use function application and beta-reduction.