

Decomposing Attitude Verbs

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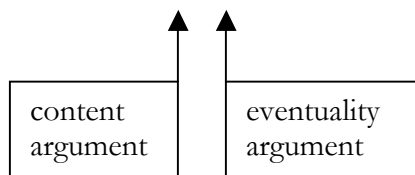
Honoring Anita Mittwoch on her 80th birthday at The Hebrew University of Jerusalem

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1. The plot

The talk will explore the hypothesis that the roots of attitude verbs and verba dicendi (or verbs of communication) have two arguments, an eventuality argument¹ and an individual argument referring to the content of the attitude or report.

(1) $\lambda x \lambda s$. believe (x) (s).



I will assume (without explicitly argue for it here) that the verb's external argument is not an argument of the verb root itself, but is introduced by a separate head in a neo-Davidsonian way. The content argument can be saturated by DPs denoting the kinds of things that can be believed or reported:

- (2)
- a. I believe this story.
 - b. He told me those lies.
 - c. I am not assuming anything.
 - d. I suspected this all along.

¹. If cognate objects are related to a Davidsonian event position, then cognate objects in Hebrew show “that *i*-level predicates also have this position”. Mittwoch (1998), 314. Verbs like *believe*, then, should have a Davidsonian argument.

2. Some points I won't have time to discuss, but which are still controversial

- Does neo-Davidsonian argument association happen at logical-conceptual structure or in the syntax? If it happens in the syntax, then 'valency' is at least in part syntactically constructed.
- If the external argument is always neo-Davidsonian, why not the internal argument? Why this asymmetry?

3. The main potential stumbling block

- The proposal in (1) implies that the roots of verbs like *believe* do no longer introduce what has always seemed to be the crucial piece for the semantics of belief ascriptions: a set of doxastic alternatives, or rather a set of doxastic alternatives for the believer. In other words, the job of introducing doxastic alternatives must now come from the embedded sentence, or, as it were, from the complementizer *that*.
- Plan: Present a semantics for attitude verbs without decomposition first. Then decompose.

4. A standard semantics for attitude verbs

doxastic
alternatives for x

$$(3) \quad [[\textit{believe}]] = \lambda p \lambda x \lambda w. \overbrace{\forall w' [\text{DOX}_x(w)(w') \rightarrow p(w')]}^{\text{doxastic alternatives for x}}$$

5. Decomposing *believe*

- (4) The verb *believe* has an internal argument referring to the kinds of things that can be believed, but no external argument

$$[[\textit{believe}]] = \lambda x \lambda s \lambda w. \textit{believe}(x)(s)(w)$$

- (5) A possessive *v*

$$[[[\textit{pos}]]] = \lambda x \lambda s \lambda w. \textit{possessor}(x)(s)(w)$$

- What is the semantics of *that*-clauses now? How can we account for the fact that the doxastic alternatives depend on the believer?

6. Logophoric complementizers: one in a family of complementizers

- (6) Logophoric complementizer

$$[[\textit{that}_I]] =$$

$$\lambda p \lambda x. \forall w' [\textit{compatible}(x)(w') \rightarrow p(w')]$$

- Logophoric complementizers have content arguments.

- (7) Lucy believes that there are ghosts.

- (8) Combining *believe* & CP via Restrict (Chung & Ladusaw (2004))

$$\lambda x \lambda s \lambda w. \textit{believe}(x)(s)(w) \quad \oplus$$

$$\lambda x. \forall w' [\textit{compatible}(x)(w') \rightarrow \exists y \textit{ghosts}(y)(w')] =$$

$$\lambda x \lambda s \lambda w. [\textit{believe}(x)(s)(w) \ \& \ \forall w' [\textit{compatible}(x)(w') \rightarrow \exists y \textit{ghosts}(y)(w')]]$$

- (9) $\lambda w. \exists x \exists s [\textit{believe}(x)(s)(w) \ \& \ \textit{possessor}(\textit{Lucy})(s)(w) \ \& \ \forall w' [\textit{compatible}(x)(w') \rightarrow \exists y \textit{ghosts}(y)(w')]]$

7. Unifying three constructions

(10) Lucy believes that there are ghosts.

- Verb and CP combine via Restrict. The direct object argument of the verb is restricted, but not saturated.

(11) Lucy's belief was that there are ghosts.

- The mode of composition is Predication. The property expressed by the CP is applied to the denotation of the subject, which could be $\iota x \exists s [\text{belief}(x)(s)(w_0)]$ & $\text{possessor}(\text{Lucy})(s)(w_0)$.

(12) Lucy's belief that there are ghosts is not completely unjustified.

- Same mode of composition as in the verbal case. Existential Closure of the eventuality argument produces a standard NP denotation.

(13) Same behavior (from list 3 of Higgins (1973), 242 f.):

announce(ment), answer, assert(ion), assume/assumption, claim, comment, complain(t), conclude/conclusion, expect(ation), guess, hope, infer(ence), indicate/indication, infer/inference, judge/judgment, know/knowledge, object(ion), predict(ion), presume/presumption, pretend/pretence, promise, prophesy/prophesy, propose/proposal, reason(ing), report, rule/ruling, sense, speculate/speculation, state(ment), stipulate/stipulation, suppose/supposition, suspect/suspicion, think/thought, threat(en), understand(ing), worry.

9. More action for complementizers

(14) Factive complementizer

$[[\text{that}_F]] = \lambda p \lambda e. \text{exemplifies } (p)(e) \text{ or } \lambda p. \iota e \text{ exemplifies } (p)(e)$

(15) Trivial complementizer

$$[[that_T]] = \lambda p. p$$

10. Trying to explain the Higgins facts (Higgins 1973)

(16) a. John's anger that he was not chosen...

b. * John's anger was that he was not chosen.

c. John's anger (about the fact) that he was not chosen....

- Anger is not a state that has content. Nor can it be identified with the fact or the proposition that he was not chosen. Nor is it a state that exemplifies the proposition that he was chosen.

(17) a. The result was that he suddenly disappeared.

b. * The result that he suddenly disappeared ...

- The fact that he suddenly disappeared can be a result. But a result can't have information content. However, a result could be an event that exemplifies the proposition that he suddenly disappeared.

(18) a. The fact that he suddenly disappeared

b. * The cause that he suddenly disappeared

c. * The mystery that he suddenly disappeared

d. * The event that he suddenly disappeared

e. * The folly that he suddenly disappeared.

- Maybe factive *that* is really *the fact that*.

(19) a. The probability that she will return is low.

b. * The probability is that she will return.

c. The probability (of the proposition) that she will return is low.

- A probability isn't a proposition nor an event.

To sum up: There is more action in complementizers than their appearance might suggest.

Appendix: *de se* interpretations

- What a standard (eventless) account of logophoric and attitude verbs might look like:

$$(20) \quad [[\textit{believe } \alpha]]^{\mathbf{g}, \mathbf{c}, \mathbf{o}} = \lambda x \lambda w. \overbrace{\forall x' \forall w'}^{\text{doxastic alternatives}} [\text{DOX}(w, x)(w', x') \rightarrow [[\alpha]]^{\mathbf{g}, \mathbf{c}, \mathbf{x}'}(w')]$$

- Doxastic alternatives are centered worlds, pairs consisting of an individual and a possible world.
- Special logophoric parameter *o* specifying an individual; Buring (2005), p. 64.
- Via the origo parameter, a believer's individual doxastic alternatives can be 'plugged in' directly as values for *de se* pronouns. No property analysis is necessary for *de se* interpretations ("We are used to interpret all tensed, (or CP) clauses equally as propositions", Reinhart (1990)).

$$(21) \quad [[[\textit{se}]]]^{\mathbf{g}, \mathbf{c}, \mathbf{o}} = \mathbf{o}$$

(23) Decomposing *believe*

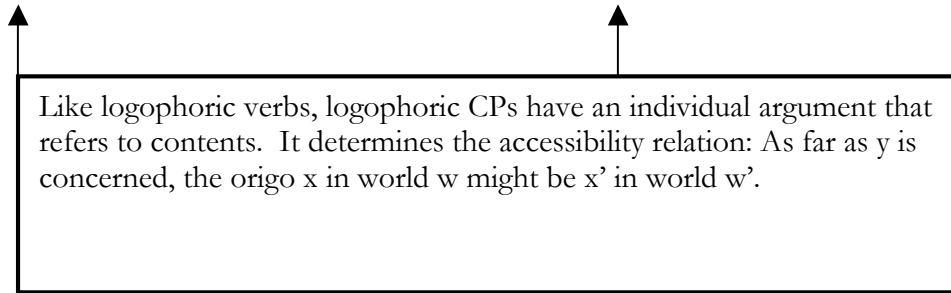
$$[[believe]]^{g,c,o} = \lambda x \lambda e \lambda w. believe(x)(e)(w)$$

(24) Logophoric complementizer

Where $[[\alpha]]^{g,c,o}$ is of type $\langle st \rangle$: $[[that_L \alpha]]^{g,c,o} =$

$$\lambda y \lambda e \lambda w. \exists x [x = \iota z \text{ origo}(z)(e)(w) \ \& \ \forall x' \forall w' [Acc_y(x, w)(x', w') \rightarrow [[\alpha]]^{g,c,x'}(w')]]$$

(25) $\lambda y \lambda e \lambda w. \exists x [x = \iota z \text{ origo}(z)(e)(w) \ \& \ \forall x' \forall w' [Acc_y(x, w)(x', w') \rightarrow [[\alpha]]^{g,c,x'}(w')]]$



Partial list of references

- Mittwoch, Anita (1977). How to refer to one's own words. *Journal of Linguistics* 13, 177-189.
- Mittwoch, Anita (1998). Cognate objects as reflections of Davidsonian Event Arguments. In Susan Rothstein (ed.) *Events and Grammar*. Dordrecht (Kluwer), 309-332.