

Introduction to Dynamic Semantics

Oslo || September 15, 2006: 10:00 a.m. – 12:00 p.m. & 1:00 p.m. – 3:00 p.m.
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Description:

This seminar is an introduction to dynamic approaches to natural language semantics. Static approaches basically equate the meaning of a sentence with its truth conditions, i.e. the circumstances in which a sentence is true or false. Dynamic approaches have a finer-grained conception of meaning: the meaning of a sentence is its context change potential, i.e. the way in which it changes/updates a (discourse) context.

The fact that natural language interpretation is context *dependent* is explicitly investigated in both kinds of approaches, e.g. in an out-of-the-blue utterance of *A house-elf injured Hermione*, the time of the injury is contextually determined.

But only dynamic approaches systematically investigate how the interpretation of a natural language expression *changes* the context, i.e. it *creates* a new context out of the old one and thus affects how subsequent expressions are interpreted, e.g. we can further elaborate on the injury situation described above with the sentence *But he didn't mean to*, where the pronoun *he* is interpreted as referring to the previously mentioned house-elf.

The basic tenets of dynamic semantics were first formulated within the frameworks of Discourse Representation Theory (DRT) [3] and File Change Semantics (FCS) [2]. In this seminar, we will focus on a more recent formalization, namely Dynamic Predicate Logic (DPL) [1].

There are three reasons for this: (i) DPL syntax is just the syntax of classical first-order logic – and the familiarity with the syntax allows us to focus on and fully appreciate the novelty of the semantics; (ii) DPL enables us to interpret natural language discourse in a compositional way down to the sentence/clause level; (iii) as Compositional DRT [4] shows, it is fairly straightforward to reformulate DPL in classical type logic and thereby introduce compositionality at the sub-sentential/sub-clausal level in the tradition of Montague semantics.

We will introduce DPL, show how it captures 'donkey' anaphora (e.g. *Every farmer who owns a donkey beats it* or *If a farmer owns a donkey, he beats it*) and, if time allows, we will look at its type-logical re-formulation in Compositional DRT.

In parallel to the formal component, the empirical and theoretical advantages and drawbacks of dynamic semantics, as well as its philosophical repercussions, will come under scrutiny. We will try within the allotted time to compare some dynamic and static analyses of 'donkey' anaphora and inter-sentential anaphora and also discuss some of the broader issues raised by the new understanding of meaning as 'context-change potential'.

The only presupposed background is a passing acquaintance with first-order logic.

Background reading:

[1] Groenendijk, J. & M. Stokhof 1991. Dynamic Predicate Logic, in *Linguistics and Philosophy* 14, 39-100.

– available at: <http://staff.science.uva.nl/~stokhof/papers/dpl.pdf>

[2] Heim, I. 1983. File Change Semantics and the Familiarity Theory of Definiteness, in *Meaning, Use and Interpretation of Language*, R. Bäuerle, C. Schwartze & A. von Stechow (eds.), De Gruyter, Berlin, 164-189.

– available at: <http://www.id.cbs.dk/~dh/esslli2003/classnotes/heim83.pdf>

[3] Kamp, H. 1981. A theory of truth and semantic representation, in *Formal Methods in the Study of Language*, Part 1, J. Groenendijk, T. Janssen & M. Stokhof (eds.), Mathematical Center, Amsterdam, 277-322.

– available at: <http://www.id.cbs.dk/~dh/esslli2003/classnotes/kamp81.pdf>

[4] Muskens, R. 1996. Combining Montague Semantics and Discourse Representation, in *Linguistics and Philosophy* 19, 143–186.

– available at: <http://semanticsarchive.net/Archive/mYxMTQ2N/combining.pdf>

First-order logic online:

– http://en.wikibooks.org/wiki/Computer_Science:Logic/First-Order_Logic

– http://en.wikibooks.org/wiki/Formal_Logic/Predicate_Logic

– <http://plato.stanford.edu/entries/logic-classical/>

– <http://euclid.trentu.ca/math/sb/pcml/pcml-16.pdf>

Two related ESSLLI courses:

– <http://www.id.cbs.dk/~dh/esslli2003/classnotes/>

– <http://www.macs.hw.ac.uk/esslli05/giveabs.php?17>