Formal Semantics: an Introduction

Dag Westerståhl
Stockholm University
dag.westerstahl@philosophy.su.se

A course at Beijing Normal University
October 21 – November 1, 2013

Description: The course gives a first introduction to the aims, methods, and results of formal semantics, also called model-theoretic or truth-conditional semantics. The aim is to familiarize the student with the idea of a compositional semantics, the basic tools currently used in this enterprise, some main insights obtained, as well as some challenges remaining. I will focus on the extensional part of semantics, leaving a quick overview of the treatment of intensional phenomena to the end.

Literature: We will use Heim and Kratzer's [1] as a textbook, supplemented with a number of papers (see below). In addition, lecture notes will deal with certain topics. [1] presents one approach to formal semantics (based on the notion of Logic Form); we sometimes contrast its treatment of various linguistic phenomena with that of other current approaches.

Prerequisites: Some acquaintance with the language of first-order logic, and with basic concepts of sets and functions. Otherwise, no specific background in philosophy, linguistics, or logic is required: we start at an elementary level and introduce the tools needed as we go along.

Plan: The following plan is preliminary, and subject to possible change. Some further literature may be added as well. In addition to the seven lectures described below, there will be exercise classes led by Dr. Fengkui Ju.

21/10 *Introduction*: Overview of formal semantics starting from Frege and Russell—in particular Russell's account of definite descriptions and other noun phrases in 'On denoting' [6]—via the generative paradigm in linguistics to Montague's (and others') work in the late 60's, and beyond; see [4].

23/10 *Compositionality*: History, background, formulation, and discussion of the idea of compositional semantics, using [3]. In particular, the idea of semantic composition as function application, and the notion of direct compositionality (Jacobson).

25/10 The rest of the course discusses *selected issues in formal semantics*, using [1] as textbook. In parallel, we (sometimes) contrast Heim and Kratzer's account with Montague's original approach and (often) with recent accounts in terms of type-shifting rules, as in [5] and [2].

To begin: first examples; syntactic categories; syntax trees; interpretations; types; lambda notation and lambda calculus. ([1], chs. 1–4; notes)

28/10 Assertion/presupposition/implicature. The definite article. Relative clauses. Variables. ([1], ch. 5; notes)

30/10 Noun phrases and generalized quantifiers. ([1], ch. 6; [7])

1/11:1 Quantification and grammar, in particular: coordination; quantified phrases in object position; binding and anaphora (if there is time). ([1], ch. 7 ff.; [2]; [5])

1/11:2 Possible worlds semantics for intensional verbs, attitude verbs, tense, modality, etc. Kaplan style semantics for context-dependence. ([1], ch. 11; notes)

Literature

[1] Irene Heim and Angelika Kratzer. *Semantics in Generative Grammar*. Blackwell Publishing, Oxford, 1998.

[2] Pauline Jacobson. The syntax/semantics interface: compositionality issues. In Nick Bezhanishvili and et al., editors, *Logic, Language, and Computation: 8th International Tbilisi Symposium*, pages 249–270. Springer (LNCS), Berlin, 2011.

[3] Peter Pagin and Dag Westerståhl. Compositionality I: Definitions and variants. *Philosophy Compass*, 5(3):250–264, 2010.

[4] Barbara Partee. Formal semantics: origins, issues, early impact. In B. Partee, M. Glanzberg, and J. Skilters, editors, *The Baltic International Yearbook of Cognition, Logic and Communication, Volume 6*, pages 1–52. New Prairie Press, Lawrence, KS, 2011.

[5] Barbara Partee and Mats Rooth. Generalized conjunction and type ambiguity. In R. Bäuerle, C. Schwarze, and A. von Stechow, editors, *Meaning, Use, and Interpretation of Language*, pages 361–383. de Gruyter, Berlin, 1983. Also in B. Partee and P. Portner (eds.), *Formal Semantics: The Essential Readings*, ch. 14, Blackwell, 2002 (online 2008).

[6] Bertrand Russell. On denoting. *Mind*, 14:479–493, 1905. Reprinted in *Essays in Analysis*, Allen and Unwin, London, 1973.

[7] Dag Westerståhl. Generalized quantifiers: linguistics meets model theory. In Maria Aloni and Paul Dekker, editors, *Cambridge Handbook of Formal Semantics*. Cambridge University Press, 2013. To appear.