Cog -LING (CG) 113
Formal Semantics
Sem. I, 2006

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Readings: Texts:

Both texts are available at the Brown bookstore.

Additional Readings:
• A packet of xeroxed notes will be made available as the course progresses.
• A few additional short papers may be assigned.

Course Requirements:
(1) Regular homework exercises (approximately weekly). Although these will not be formally graded, they are required and are an integral part of the course. There is no way to learn the material without doing them. Hence, failure to hand in the homeworks on a more or less regular basis will be heavily factored into the final grade.
(2) Take home midterm; tentatively due Oct. 26.
(3) Take home final.
(4) An expository project or - for those who are more advanced - a term paper. (For most students I will expect only the expository project.) The expository project will be to read one or a few related papers on some topic, work through and understand it, and understand how it fits in with the material covered in class, and write a summary demonstrating this understanding. Scholarly papers in formal semantics can be quite technical, so if you can work through one or a few of these by the end of the course you will know that you have accomplished quite a bit.

Prerequisites:
Ideally, a student taking this course should have some background in syntax or at least some idea of what linguistic theory is about, and some rudimentary background either in linguistic semantics or at least in set theory and logic. However, I am flexible: someone who has some but not all of these should see me. Probably you will be fine, but you might need to do some supplementary reading at the beginning to fill in some of the gaps.

Anyone who has none of the above prerequisites should not be in the course.
Outline and Readings (dates are tentative)

Part I: Developing the Basic Tools

I. Introductory
   A. Goals of semantic theory
   B. Puzzles in natural language semantics

2. Basic concepts and basic tools
   A. Model-theoretic semantics
   B. Notion of possible worlds
   C. An elementary theory of semantic types
      DWP, Chapter 1 and pp. 14-30
      HK, Chapter 1 and pp. 13-26

3. 1st order logic and natural language
   A. Problems: the compositionality issue
   B. The syntax/semantics interface:
      Direct Compositionality vs. Syntax Feeds Semantics
      Consult different assumptions in DWP through p. 30 and
      HK through p. 26

4. Expanding the toolbox: fancying up the types
   A. Currying the meaning of transitive verbs
   B. An elementary semantics for and
      DWP pp. 30-55
      HK, pp. 26-34
      HK, pp. 43-49

5. Variables, assignment functions, and the λ-calculus
   A. What variables mean: the use of assignment functions
   B. Variables over higher types
   C. The semantics of λ-abstraction
      DWP, Chapters 3 & 4
      HK, pp. 43-49
Part II: Applications to Natural Language Constructions, with special emphasis on the syntax/semantics interface and the compositionality issues

Background reading: HK Chapter 4
Additional reading to look over as you go: DWP, Ch. 7, through p. 215
NOTE: the trick here is to try to get an overall feeling for the Montague style treatment of the relevant phenomena, without worrying about getting a handle on Montague’s precise implementation which is laid out in DWP. Therefore, get what you can out of this discussion.

Course notes will be handed out here to show more “modern” treatments of these phenomena within Direct Compositionality theories.

6. Quantifiers in subject position: the theory of generalized quantifiers Oct. 5 - 12
   A. Generalized quantifiers and the syntax/semantics fit
   B. The distribution of negative polarity items
   C. But why this distribution? Pragmatics and semantics

   HK, Chapter 6

7. Pronouns and variable-binding (first pass) Oct. 17-26
   A. The semantics of variable-binding
   B. Binders out vs. the Derived VP Rule
   C. Weak Crossover
   D. Bound and free pronouns; “sloppy identity”; and interactions with ellipsis

8. The semantics of focus, and strict/sloppy readings with focus Oct. 26

9 The syntax and semantics of relative clauses Oct. 31-Nov. 2
   Traces and variable-binding vs. Direct Interpretation with function composition
   HK, Chapter 5

10. Quantifiers in non-subject position, quantifier scopes, and the LF Debate Nov. 2-14
    A. Quantifier scopes, and models of the syntax/semantics interface
       • Strong Direct Compositionality and Type-Shifting
       • Weak Direct Compositionality (Quantifying-In; Montague)
       • LF Based Approaches (Quantifier Lowering/Raising)
    B. Variable-Binding
       DWP, Ch. 7 through p. 202
       HK, Chapters 7-8
    C. Antecedent Contained Deletion

11. More on type-shifting and Generalized Conjunction Nov. 16
    A. Partee and Rooth Approach
       • Type Lifting generalized
• Argument Position lifting
  • Generalizations of Hendriks for scopes
B. Generalized (Boolean) conjunction

Part III: Intensionality (times and worlds)

12. Intensionality: a brief look Nov. 21-30
   A. Tense
   B. Modals and possible worlds
   C. Compositionality in an intensional system
      Intensional Logic
      Representing meanings with variables over worlds and times

      DWP Chs. 5 & 6
      HK, Chapter 12

Part IV: Further Applications and Issues

13. Functional questions, other functional constructions, Dec. 5-7
    and variable free semantics
    A. Functional questions (and other functional constructions)
    B. Paycheck Pronouns (and connection to functional constructions)
    C. Variable-free approach

    HK, Chapters 9 & 11