Keywords Lectures 1, 2, 3

Lecture 1. Basic ideas of formal semantics

Formal semantics
The predicate calculus (PC) as a formal language
Syntax, semantics: what these terms mean in logic
Interpretation of an expression α in a model M relative to an assignment *g*: $|| \alpha ||^{M,g}$
Modifying an assignment function: g[d/*x*]
The Principle of Compositionality
Model-theoretic semantics[1]

Lecture 2. Model-theoretic semantics, lambdas, and NP semantics

Lexical ambiguity vs. structural ambiguity
Lambdas, the lambda-calculus, lambda-abstraction
Lambda-conversion
Types
    Types *e, t.* Functional types <a,b> or a $\rightarrow$ b.
Functional application
Semantics for natural language by direct model-theoretic interpretation, or via translation into an intermediate logical language [more on this in lecture 3]
Montague's semantics for noun phrases like *John, every student, a student, the king.*

Lecture 3. A Fragment of English. More applications of the lambda calculus.

"Fragment"
Syntactic categories and semantic types
Direct model-theoretic interpretation vs. interpretation via translation into IL
Syntactic and semantic rules. Abbreviated notations.
Type-driven translation.
Principles of type-driven translation: function-argument application, predicate conjunction (= predicate modification), identity.
Type multiplicity, type shifting
NPs as generalized quantifiers
Three types for NPs: referential, predicative, quantificational
Lexicon in Montague grammar: semantics of logical words
Three types for determiners corresponding to three types for NPs
Relative clauses, semantics of
Quantifying in
Conjunction: sentential and phrasal
Negation: sentential, phrasal and lexical

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[1] Note: most formal semantics *is* model-theoretic, but it is possible in principle to have formal semantics that is not model-theoretic, if it is formal and explicitly provides truth-conditions for sentences, but not relative to models. Non-model-theoretic approaches are advocated by Donald Davidson, and by Larson, Richard, and Gabriel Segal. 1995. *Knowledge of Meaning: An Introduction to Semantic Theory*. Cambridge, MA: MIT Press.