

A Summary of What We've Learned This Term

(1) General Practice of Formal Semantics

- a. How a system can productively ('compositionally') derive the T-conditions ('asserted content') of a declarative sentence.
- b. How such a system might also provide a means of predicting/computing the 'presuppositions' of a declarative sentence.
- c. Various key skills in the development and use of such a system
 - How to deduce lexical entries from (i) hypothesized T-conditions for a sentence containing the lexical item, and (ii) assumptions regarding the meanings of the other lexical items in the sentence.
 - How to employ various formalisms commonly used by semanticists (e.g. the lambda notation for functions).

(2) Basic Rules of Semantic Composition

You've learned what the following rules are, and how they can be used to compositionally derive the semantic values of complex phrases of natural language.

- a. Function Application
- b. Predicate Modification
- c. Predicate Abstraction
- d. Traces and Pronouns
- e. Intensional Function Application

(3) The Semantic Types of Many Basic Expressions of English

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| a. | Proper Names: | e | $\langle et, t \rangle$ |
| b. | Main Clauses: | t | |
| c. | NPs, VPs, APs: | $\langle et \rangle$ | |
| d. | Transitive Vs: | $\langle e \langle et \rangle \rangle$ | |
| e. | Ditransitive Vs: | $\langle e \langle e \langle et \rangle \rangle \rangle$ | |
| f. | Copular Vs: | $\langle et, et \rangle$ | $\langle \langle e \langle et \rangle \rangle \rangle$ |
| g. | Conjunction/Disjunction: | $\langle t \langle tt \rangle \rangle$ | $\langle \langle et, \langle et, et \rangle \rangle ; \langle e \langle e, t \rangle \rangle ; etc. \rangle$ |
| h. | Negation: | $\langle tt \rangle$ | $\langle \langle et, et \rangle \rangle$ |
| i. | Relative Clauses: | $\langle et \rangle$ | |
| j. | Definite Article: | $\langle et, e \rangle$ | |
| k. | Plural Suffix: | $\langle et, et \rangle$ | |
| l. | Quant. Determiners: | $\langle et, \langle et, t \rangle \rangle$ | |
| m. | Quantificational DPs: | $\langle et, t \rangle$ | |
| n. | Propositional Attitude Vs.: | $\langle st \langle et \rangle \rangle$ | |

(4) **Type Shifting Rules**

You've learned about rules that can 'shift' the semantic type of a lexical item. You've learned about the role they can play in the theory of natural language semantics, as well as how to write such a rule yourself.

(5) **Modularity of Semantic Explanation**

- a. Syntactically well-formed structures might be perceived as 'deviant' because the semantic system cannot assign them a meaning.
- b. Syntactically ill-formed structures might be interpretable by the semantic system. Nevertheless, they are perceived as 'deviant' due to their syntactic ill-formedness.

(6) **Semantic Vacuity via Identity Functions**

We developed a theory of what it means for an expression to be 'semantically vacuous' or 'semantically empty'. Under this account, a 'semantically vacuous' item simply denotes an identity function (rather than being in some sense 'invisible' to semantic interpretation).

(7) **Presupposition via Partial Functions**

We developed a very basic theory of presupposition, where presuppositions can arise due to a lexical item placing certain comparatively stringent conditions on the lexical items it can semantically combine with.

- a. [[the]] can only take as argument *<et>*-functions that are true of exactly 1 thing.
- b. [[every]] can only take as argument *<et>*-functions that are true of at least 1 thing.

(8) **Context Modeled as 'Superscripts'**

We developed a basic means of modeling the way that context can affect semantic interpretation.

- a. Various linguistically relevant properties (or 'parameters') of the context are indicated via superscripts on the semantic valuation function [[.]]
- b. Some key parameters we've used so far:
 - (i) *g* The Variable Assignment
 - (ii) *C* The Contextual Restriction for Determiners
 - (iii) *w* The Possible World of Evaluation

In addition to the very general issues above, we've also learned some rather specific things about particular grammatical structures of English.

(9) **Pronouns and Pronominal Gender**

- a. We've developed a semantics for both referential and bound pronouns.
- b. We've developed a semantics for the gender features on pronouns, which captures the way in which pronominal gender limits the possible reference of a pronoun.
- c. We've noted the predictions that our theory of pronominal gender makes regarding cases where pronouns are bound, and we've noted an environment where those predictions fail to hold.

(10) **Semantics of Movement Structures**

Having assumed a syntactic framework that includes 'movement rules', we've developed a means for semantically interpreting the output of such rules. This semantics allows us to interpret all the following constructions.

- a. Relative clauses *(The man who Mary likes)*
- b. Topicalization *(Frank, Mary likes)*
- c. Quant. DPs in Non-Subject Position *(Mary likes every boy)*

If you go on in semantics, you will find that the semantics we've developed in class is also sufficient for interpreting such 'iconic' movement structures as wh-questions and passive/raising.

(11) **Semantics for Quantificational DPs**

We developed a semantics for quantificational determiners such as *some*, *every* and *no*, as well as the DPs which they head. This particular result is of some historical significance:

- a. Quantificational DPs posed the greatest difficulties to medieval logicians.
- b. The formal treatment of natural quantifiers by Montague is one of the 'birthplaces' of modern, formal semantics.

(12) **Semantics of Plural Number Morphology**

We developed a semantics for plural number morphology (on NPs), and saw how it requires certain adjustments to our theory of quantificational determiners.

(13) **Formal Properties of Quantificational Ds and DPs**

- a. We noted the ways in which the 'monotonicity' properties of quantificational Ds might be tied to the distribution of 'negative polarity items.'
- b. We noted the ways in which the presuppositions of quantificational Ds might be tied to their ability to appear in existential constructions.

(14) **Quantificational DPs in Non-Subject Position**

- a. We noted the analytic problem raised by quantificational DPs that do not occupy subject position.
- b. We learned of two general families of solutions to this problem:
 - (i) Accounts that posit ‘covert’ (silent, invisible) movement of the DP
 - (ii) Accounts that ‘shift’ the semantic type of the DP (or the V)
- c. We learned of the problems that each type of account faces.

Interestingly, it was *these* sorts of sentences – where quantificational DPs do not occupy subject position – that posed the greatest problem to medieval logicians. It is interesting to note, then, that there remains to be found a completely ‘satisfactory’ analysis of them.

(15) **Intensions as Semantic Objects**

- a. We noted the existence of environments where it seems the semantic value of an expression should be its *intension* rather than its *extension* (e.g. propositional attitude verbs like ‘believes’).
- b. We augmented our formal semantic system so that it could both model and manipulate these so-called ‘intensions’.