Ling115: Semantics I

The Empirical Domain of Semantics

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2. Semantic knowledge
3. Implication relations
4. Other semantic relations and properties
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1. Grammar
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Grammar 1/3

• In modern linguistics, a grammar is viewed as a set of abstract devices, rule systems and principles that serve to characterize the well-formed sentences of a language.

(1) I ate lunch with him. ⇒ well-formed, grammatical

(2) * Lunch with ate I him. ⇒ ill-formed, ungrammatical

Cf. a formal language like html:

<meta name="description" content="Die Webseite von Prof. Maribel Romero an der Uni Konstanz.">
Grammar 2/3

• **Descriptive grammar** vs. prescriptive grammar:

(1) John doesn’t wanna eat.

• **Grammaticality** vs. processing difficulty:

(2) The mouse the cat the kid likes caught escaped.

  The mouse                           escaped.
  The mouse the cat                    caught escaped.
  The mouse the cat the kid likes      caught escaped.
Grammars of natural languages are psychologically real, they are in our minds, they are part of our cognitive systems.

Linguistic competence ≠ Linguistic performance
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Semantic knowledge 1/5

• The meaning of a complex expression does not only depend on its lexical units but also on the way these are combined syntactically and phonologically.

(1) a. The panic among the visitors caused a stampede.
   b. A stampede caused the panic among the visitors.

(2) a. I only gave ANNA a book.  ➞ “Nur Anna”
   b. I only gave Anna a BOOK.  ➞ “Nur ein Buch”
Semantic knowledge 2/5

SEMANTICS

LEXICAL
Simple units
• Features
• Semantic fields
• Characterization in terms of Model Theory
• etc.

COMPOSITIONAL
Complex units
• Procedure to derive the meaning of complex units from that of simple units.
Semantic knowledge is **productive**: we understand the meaning of new sentences that we have not heard before.

(1) I saw a pink whale in the parking lot.

Cf. adding two numbers you have not added before:

(2) $1437,952 + 21,84$
Semantic knowledge 4/5

• Knowledge of the meaning of the lexical units and of the combination procedure is by and large unconscious (as opposed to that in arithmetic operations).

• Example 1: German ja

(1) Joventut de Badalona hat ja den ULEB Pokal gewonnen.
Semantic knowledge 5/5

- Example 2: weil and denn

QUESTION: Compare the meaning of (a) and (b):

(1) a. Die Straße ist sehr naß, denn es hat viel geregnet.
   b. Die Straße ist sehr naß, weil es viel geregnet hat.

(2) a. Es hat viel geregnet, denn die Straße ist sehr naß.
   b. Es hat viel geregnet, weil die Straße sehr naß ist.
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Implication relations 1/2

• We often have the intuition that a sentence or utterance A _implies_ (=conveys or suggests) a piece of information B.

• The different implication relations can be classified on two axes:

  1) The _origin / licensing_ of the implication:
     Whether B follows from the literal meaning of A alone or whether extra reasoning is involved.

  2) The _discourse status_ of the implication:
     Whether A presents B as newly asserted information or as already assumed in the conversation.
## Implication relations 2/2

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Entailment 1/2

• $A$ entails $B =_{\text{def}}$
  
  = whenever $A$ is true, $B$ is true as well.
  
  = a situation describable by $A$ must also be a situation describable by $B$
  
  = saying “$A$ and not $B$” is a contradiction

• Notation: $A \implies B$
Entailment 2/2

(1) Lee kissed Kim passionately. ⇒ Lee kissed Kim.
(2) Lee kissed Kim passionately. ⁄⇒ Lee kissed Kim many times
(3) Lee kissed Kim passionately. ⇒ Kim was kissed.

QUESTION: Does entailment hold for these pairs?
(4) Today is sunny. Today is warm.
(5) After Hans painted the walls, Hans painted the walls.

Pete installed the cabinets.
(6) Nirit has four portable chairs. Nirit has exactly four portable chairs.

FOR TUTORIUM: Pairs on page 24.
Conversational Implicature

- A *conversationally implicates* B = \(_{\text{def}}\) 
  = A does not entail B, but B is part of what the utterer of A meant.
Conversational Implicature 2/7

• Tests to distinguish conversational implicatures from entailments:
  If A conversationally implicates B, then
  – There are contexts in which A is uttered but B is not conveyed.
  – B is defeasible, that is, saying “A and not B” is not contradictory
  – B is reinforceable, that is, saying “A and B” is not redundant.

• Notation: \( A \rightarrow B \)
Conversational Implicature 3/7

(1) Nirit has four portable chairs. ?⇒
?
⇒
Nirit has exactly four portable chairs.

(2) Nirit has four portable chairs. ?⇒
?
⇒
Nirit has portable chairs.
Conversational Implicature 4/7

• First test:

(1) Utterance context 1:
A: What camping equipment do you guys have?  
S: I have two tents, Rosa has a burner and Nirit has four portable chairs.

(2) Utterance context 2:
A: Oh, no! Four more guests are coming and I don’t have enough chairs.  
S: Why don’t you ask Nirit? She has lots of camping equipment. I’m sure she has four portable chairs.
Conversational Implicature

• Second test: Defeasibility

(1) Of course Nirit has four portable chairs! In fact, she has six.

(1) Of course Nirit has four portable chairs! # In fact, she has zero / none.
Third test: Reinforcement

(1) Nirit has four portable chairs and no more than that.

(2) Nirit has four portable chairs # and (some) portable chairs.
Conversational Implicature 7/7

(1) Nirit has four portable chairs.  

Nirit has exactly four portable chairs.

(2) Nirit has four portable chairs.  

Nirit has portable chairs.
## Implication relations

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Presupposition 1/3

• A presupposes $B =_{\text{def}}$
  $= \text{in uttering } A, B \text{ is taken for granted}$
  $= \text{asserting, negating, questioning}$
  $\text{and hypothesizing about } A \text{ all imply } B.$

• Some presupposition triggers: the, regret, cleft-constructions (it is X who...), etc.
Presupposition 2/3

(1) Joan regrets getting her PhD in Ling.
(2) Joan doesn’t regret getting her PhD in Ling.
(3) Does Joan regret getting her PhD in Ling?
(4) If Joan regrets getting her PhD in Ling, then she should go back to graduate school.

(1), (2), (3) and (4) all presuppose:

(5) Joan got her PhD in Ling.
QUESTION: Consider (1) and its implications (a)-(c). Which of these implications are presuppositions and which are entailments?

(1) Whoever discovered the elliptical shape of planetary orbits died in misery.

a. Someone discovered the elliptical shape of planetary orbits.
b. Planetary orbits have an elliptical shape.
c. Someone died in misery.
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Anaphoric relations

• Coreference:
  – Optional: \( \text{Theresa}_i \) thinks \( \text{she}_{i/k} \) will win.
  – Mandatory: \( \text{Theresa}_i \) likes herself \( _{i/*k} \).
  – Impossible: Behind \( \text{Theresa}_i \), \( \text{she}_{i/k} \) heard Mario.

• Binding by quantifiers:
  Every \( \text{girl}_i \) thinks \( \text{she}_i \) will win.
Ambiguity, vagueness, deixis

- **Ambiguity:**
  - *Lexical:* There’s a mouse on the desk.
  - *Syntactic:* Competent women and men hold all the good jobs in this firm.
  - *“Scope”:* Every student admires a professor.

- **Vagueness:** I saw many bears.

- **Deixis:** I, here, today.
Synonymy and Contradiction

• Synonymy
  A and B are synonymous = \(def\)
  whenever A is true, B is true, and vice-versa.
  
  (1) women = ladies
  (2) The police searched Sarah. =
      Sarah was searched by the police.

• Contradiction
  A and B are contradictory = \(def\)
  whenever A is true, B is false, and
  whenever B is false, A is true.
Anomaly

• When selectional restrictions are violated, we have semantic anomaly:
  (1) The square root of Milly’s desk drinks humanity.
  (2) Colorless green ideas sleep furiously.