Tutorial ‘Introduction to Semantic Theory’ (No. 4)

Lecture 1&2

Zeqi Zhao

Session 1

November 1, 2019

First thing first…

My name: Zeqi Zhao (Don´t worry, I will tell you how to pronounce it)

My major: Master of English Philology (with the foucs on semantics)

Just call me Zeqi

What about you guys?

Why do we need tutorials?

- To go through the materials from the lecture/ lab class in detail
- A chance to clarify the questions you have in mind and

  ask questions because we have a relatively smaller group
- Practice, practice and practice!
- to discuss the assignments and prepare for the exams together
- …

Organisational issues

Lecture

Mon. 12–2pm; ZHG 008

Lab classes (**mandatory attendance!**)

- Mon. 6–8pm; VG 3.101 (Nina Haslinger, nina.haslinger@uni-goettingen.de)
- Tue. 12–2pm; VG 4.102 (Steiner-Mayr, clemens.steiner-mayr1@uni-goettingen.de)
- Tue. 2–4pm; ZESS AP 26 (Sascha Alexeyenko, sascha.alexeyenko@uni-goettingen.de)
- Wed. 2–4pm; Waldweg Hochhaus 9.102 (Alexeyenko)
- Thu. 10am–12pm; VG 3.107 (Steiner-Mayr)

Organisational issues

As students, it is important to go to the office hours:

- Alexeyenko: SEP 0.259, Thu. 2-3pm
- Haslinger: SEP 0.250, Thu. 12–1pm
- Steiner-Mayr: SEP 0.252, Thu. 12–1pm

As for the tutors, there is no office hour. However, feel free to contact me to set up an appointment:

zeqi.zhao@stud.uni-goettingen.de

Organisational issues (important!)

- **10 Assignments:** *3*10 points*

  One week: Monday – the next Monday

  Put into the mailbox in front of room SEP 0.249

  Staple the sheets

  Please, write **your name** and **your lab class number/teacher** on top of the first page.

  Otherwise, they are count as not handed in!

- **2 exams:** *70 points*

  mid-term exam (no registration is required): *35 points*

  Final exam (You only need to register for the final exam on FlexNow): *35 points*

About the assignments and grade

The assignments are ungraded but will be **corrected**.

Only one standard:

Show me you have made your effort.

For the assignment questions simply left unanswered, points will be *deducted.*

You can **skip one assignment** without losing points.

Any questions?

Now let´s get started!

Understanding semantics: The meaning of *meaning*

How do we communicate?

An utterance is perceived →

A syntactic representation is formed →

A meaning is constructed

(1) Chomsky smokes. √

Chomsky *skomes* ?

What went wrong?

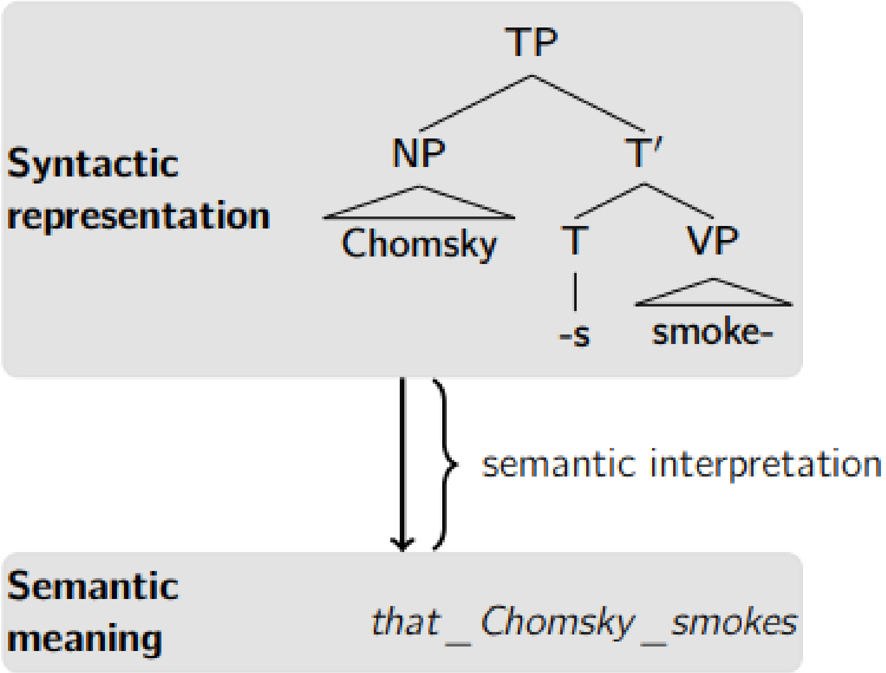
The scope of our semantic theory

Speakers of a given language must :

- agree, at least most of the time, about what each word means (**mental lexicon**).
- acquire a set of rules for combining vocabulary items into well-formed sentences (**syntax**)

Together, we have a shared system of rules that allows hearers to correctly interpret what speakers intend to communicate.

The scope of our semantic theory



To understand the semantic interpretation procedure we need to know:

- What syntactic representations are. This the theory of syntax provides.
- **What a meaning consists of.**

The scope of our semantic theory

<u>Truth-conditional semantics</u> (Grice)

Knowing the meaning of an expression consists in knowing **the conditions under which it is true.**

Our concern: **Reference** and **truth values** in relation of the world/reality.

(2) a. I'm a student *and* I love semantics. b. I'm a student *but* I love semantics.

Same **truth-conditional meaning**, different **utterance meaning**.

Semantics vs. pragmatics

Semantics: The study of the *inherent/ "default"* meaning of words and sentences.

This is called the ***lexical meaning***.

Pragmatics: The study of those aspects of meaning that ***derive from the way in which the words and sentences are used in discourse***.

(2) a. I'm a student *and* I love semantics.

c. I'm a student *and* I "love" semantics (Irony).

Sentence relations: Entailment

A entails B iff whenever A is true, B is true.

Lexical entailments: A lexical meaning “contained in” a lexical meaning.

(3) a. Snowball is a dog.

b. Snowball is an animal.

Contradictory test: (3a) entails (3b) because (3c) is contradictory.

Redundancy test: (3a) entails (3b) because (3c) is redundant.

(3) c. # Snowball is a dog, but it is not the case that Snowball is an animal.

d. # Snowball is a dog and an animal.

Excersice 1: Entailment

Is there an entailment relation between the following sentences?

(4) a. John assassinated the Mayor. b. John killed the Mayor.

(5) a. Snowball is a cat. b. Snowball is a pet.

(6) a. John took my bicycle b. John stole my bicycle.

(7) a. John is a bachelor. b. John is unmarried.

(8) <u>a. Not everyone drove fast cars.</u> <u>b. Some people drove slow cars.</u>

Solutions

(4): (4a) entails (4b), but not the other way around. *# John assassinated the Mayor, but it is not the case that John killed the Mayor* is contradictory.

(5): *There is no entailment.* *Snowball is a cat and also a pet* is not redundant.

(6): (6b) entails (6a), but not the other way around. *# John stole my bicycle, but it is not the case that John took my bicycle* is contradictory.

(7): (7a) entails (7b) only when we interpret the word ‘bachelor’ as ‘a man who has never married’. If we adopt its another meaning, namly ‘a student with an undergraduate academic degree’, there is no entailment at all.

(8): There is no entailment. *Some people drove slow cars, in fact, all of them do* is fine.

Scalar implicatures

Indefinte DPs give rise to scalar implicatures. They are cancelable and thus not entailed:

(8) b. Some people drove slow cars.

$\rightsquigarrow$ a. Not everyone drove fast cars.

Cancelation: Some people drove slow cars, in fact, all of them do.

Not everyone drove fast cars, in fact, none does.

Why sets and function?

The goal of our semantic theory: To understand **the compositional nature of meaning.** What does this mean?

We need to construct formal rule systems which **model/replicate the abilities of speakers to combine word meanings.**

Go back to our first sentence. How to describe its meaning?

(1) Chomsky smokes.

Tools such as **sets** and **function** are perfect here because our description of the meaning to be in very explicit terms.

Meaning is referential/denotational

(1) Chomsky smokes.

According to our intuation, a speaker has to do at least the following things when (1) is uttered:

Step 1: To identify the denotation of an expression.

Step 2: To determine the truth values of sentence.

[[Chomsky]] = Chomsky	proper name denotes individual
[[smoke]] = {x : x smokes}	intransitive verb denotes set of individuals

Explaining the formalities

- *[[ ]]*: Interpretation function. We use this to define lexical items in the lexicon.

“[[Chomsky]] = Chomsky” reads as “the proper name Chomsky denotes an individual Chomsky.”

- *{x: x smokes}* (“curly brackets): We use these to represent **set** and **set-membership.**

Defining sets

- via listing: A := {a, b, c}

‘Let A be that set whose elements are a, b, c, and nothing else.’

- Abstraction: A := {x : x is a president}

‘Let A be that set such that for all x ∈ A it holds that x is a president’

Basic concepts in set theory: Check list

Set: An **unordered** collection of **distinct** object.

{a,b} {b,a}

{a,a} {Zeqi, Zeqi} (We don't usually list the same member more than once)

Members/elements: These **distinct** objects in a set.

The formula “$x \in B$” can be read as: “x is a member (or element) of set B”.

Empty set: Set without members, Ø/{}.

A tip for understanding sets

Try to imagine a set as a bag.

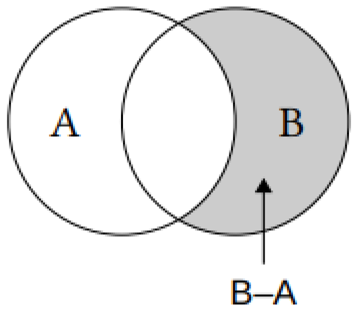
You can put whatever you want in the bag.

Empty set can be seen as an empty bag. Even though there is no object inside, the bag still exists.

Basic concepts in set theory: Check list

Set relations:

- <u>Equivalence</u> A = B, iff A and B have exactly the same elements.
- <u>Subset</u> $A \subseteq B$, iff all members of A are members of B.
- <u>Proper Subset</u> $A \subset B$, iff A is a subset of B but not equivalent to B
- <u>Intersection</u> $A \cap B$, is the set C with exactly those elements which are shared by A and B.
- <u>Overlap and disjointness</u> A and B overlap iff $A \cap B \neq \emptyset$ A and B are disjoint if $A \cap B = \emptyset$
- <u>Union</u> $A \cup B$, the C with all the members of A and B and nothing else.
- <u>Complement</u> The complement of A relative to B, B–A



Important:

Please make sure to go through all the excersises about set theory in **the lab class slides**.

Excersise 2: Basic concepts of set theory

(9) True or false?

{Ø} = Ø

(10) Is this a set?

{Orwell's novel 1984, Noam Chomsky, ¾, Sally McConnell-Ginet's breakfast muffin on 4-Sept-1988}

(11) How many members does the following set have?

{a,b,c,b,a}

(12) True or false?

{Chomsky} = Chomsky

Solutions

(9): False. {Ø} is a set that cotains only one member which is an empty set. Ø is only an empty set.

(10): This is a set. A set does not necessarily always contains things with the same nature. It is up to us to define what we want in a set.

(11): 3 distinct members.

(12): False. A set that contains *Chomsky* does not equal *Chomsky*.

Excersise 3: Set relations

(13) True or false?

a. $\{a\} = \{b\}$

b. $\{x: x=a\} = \{a\}$

c. $\{x: x \text{ is green}\}=\{y: y \text{ is green}\}$

d. $\{x: x \text{ likes } a\} = \{y: y \text{ likes } b\}$

e. $\{x : x \in \{y : y \in B\}\} = B$

f. $\{x : \{y : y \text{ likes } x\} = \emptyset\} = \{x : \{x : x \text{ likes } x\} = \emptyset\}$

(14) True or false?

a. $\{a,b,c\} \subseteq \{a,b,c\}$

b. $A \subset A$

c. If $A \subseteq B$ and $B \subseteq A$, then $A=B$

d. For every set S, $\emptyset \subseteq S$

Solutions

(13) a. True only when a=b. Otherwise it is false.

b. True. {x: x=a} can be read as ‘a set such that for all x it holds that x=a’. In other word, the set . {x: x=a} contains only one member a.

c. True. Both sides are the set that contains all elements that is green.

d. Only true when a=b.

e. True. {x : x ∈ {y : y ∈ B}} = {x : x ∈B} = B

f. False. {x : {y : y likes x} = Ø} is a set that contains all x that nobody likes x.

{x : {x : x likes x} = Ø} is a set that contains all x that don´t like themselves.