

Introduction

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Roadmap

1 Welcome

2 Introduction to Semantics

3 Where is the meaning?

4 Administrivia



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Welcome!

- In this course we will introduce you to the study of grammar and meaning
 - ▶ Syntax
 - How words differ from each other
 - How they can be combined to make larger structures
 - ▶ Semantics and Pragmatics
 - How meaning is built up from words and phrases
 - How meaning depends on context
- We will ground the analysis with real examples from the Sherlock Holmes stories and the War with the Newts
 - ▶ I try to make this as enjoyable as possible



Overview

- The course is co-taught by Joanna Ut-Seong Sio (Syntax)
- The timetable is available in Moodle.
- Most weeks you will have a lecture and a tutorial (no tutorial on the first and last weeks)
- Assessment
 - ▶ Satisfactorily complete ALL tutorial sets (40 marks) and attend 80% of the tutorials. Students will discuss and complete the problem sets with the tutors during tutorials and hand them in at the next tutorial.
 - ▶ Do the assigned readings to make sure you understand the content of the course
 - ▶ Two quizzes (60 marks, 30 marks each). Students must obtain 20 marks out of 30 marks for each test to pass the course.
 - ▶ People doing 5UJ2 get an extra small project (TBA).



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Textbook and Readings

- Syntax: Carnie (2012) *Syntax A Generative Introduction*, 3rd Edition. Wiley-Blackwell.
- Semantics: Saeed, John (2015) *Semantics*. 4rd Edition. Wiley-Blackwell.
- If you want to know more about semantics I recommend
 - ▶ Paul Kroeger (2022) *Analyzing meaning: An introduction to semantics and pragmatics*. 3rd edition. Language Science Press.
[DOI: 10.5281](#) (Open Source)
 - ▶ Lyons, John (1977) *Semantics*. Cambridge University Press



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- Language is under-specified

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What is Semantics

- Very broadly, semantics is the study of meaning
 - ▶ Word meaning
 - ▶ Sentence meaning
 - ▶ Contextual meaning (pragmatics)
- Why do we want to study meaning?
 - ▶ It underlies our understanding of the world
 - ▶ It is fundamental to our thinking, but we don't consciously know what we are doing
- What kind of knowledge does it take for a speaker to produce language and for a hearer to comprehend language?



Layers of Linguistic Analysis

- 1 Phonetics & Phonology
- 2 Morphology
- 3 Syntax
- 4 **Semantics**
- 5 Pragmatics
- 6 Stylistics



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Do people share a common conceptual system? I

- What is a *high school*?
- What color is *blue*?
- What does *verb* mean?
- What is *carrot cake*?
- What color are *traffic lights*?



Do people share a common conceptual system? II

*Japanese traffic lights are green (as required by international agreements). However they are typically called 青い *aoi* “blue”, the same word as the color of the sky. Historically this color historically covered both green and blue “grue”, with 緑 *midori* “green” being a later addition. For this reason, the Japanese government decided in 1973 to change the color of the go light to the bluest possible hue of green!*

The Japanese traffic light blues: Stop on red, go on what?



Word Meaning and Sentence Meaning

- We store information about words in our **mental lexicon**
 - ▶ It is still unclear what exactly a word is!
- Words can be combined to form an infinite number of expressions
 - ▶ This building up of meaning is referred to as **composition**
 - ▶ If the meaning of the whole can be deduced from the parts then it is **compositional**



Reference and Sense

- Words **refer** to things in the world (like **unicorns**)
- The meaning of a word across different contexts is often referred to as its **sense**
 - ▶ Same word can refer to different things
 - English: *I put my money in the bank*
 - English: *I fell asleep at the river bank*
 - ▶ Same basic concept can have different boundaries
 - French: *mouton* “sheep/mutton”
 - English: *sheep* vs *mutton*
 - Japanese: *hato* “dove/pigeon”
 - English: *dove* vs *pigeon*



Representing meaning

- One of our goals will be to represent meaning
- There are various ways to do this
 - ▶ Syntactic trees
 - ▶ Logical forms
 - ▶ Thesauri and Ontologies
 - ▶ Translation
 - ▶ Paraphrasing

Can you think of others?

- At the end of this course you should be able to use these to describe many aspects of word meaning



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Further Reading

- Introduction What does it mean to mean?
 - ▶ Saeed: § 1



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Language is normally under-specified

We get **words**:

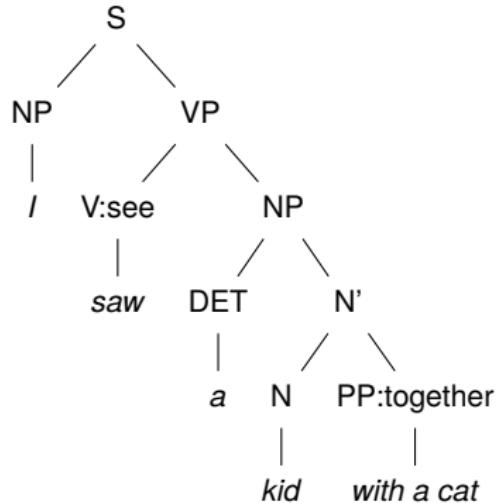
I saw a kid with a cat.

We want **meaning**:



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I saw a kid with a cat₁



see(I, kid: past); with(kid, cat)

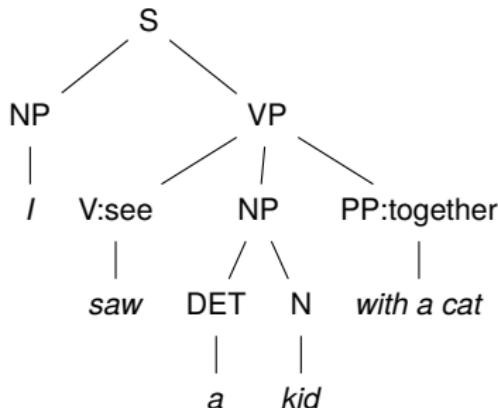
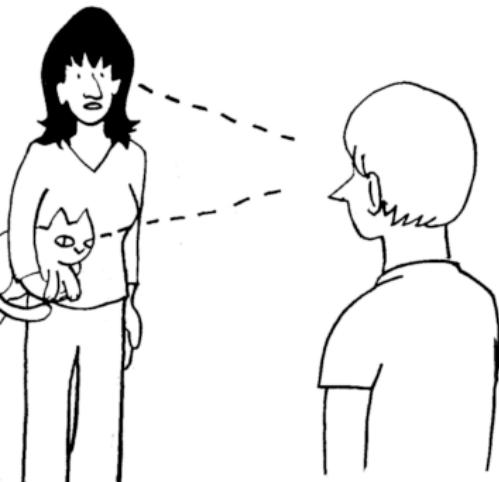
see ⊂ perceive

kid ~ child

with ⊂ together



I saw a kid with a cat₂



see(I, kid: past) with(I, cat)

see ⊂ perceive

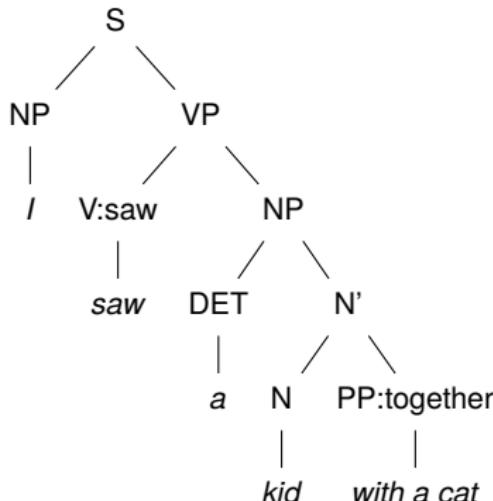
kid ~ child

with ⊂ together



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I saw a kid with a cat₃



saw(I, kid: pres); with(kid, cat)

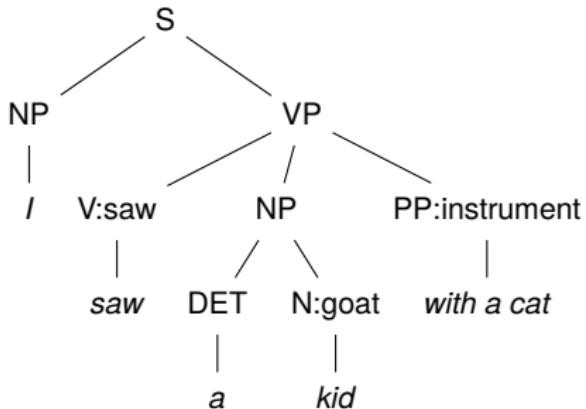
saw ⊂ cut

kid ~ child

with ⊂ together



I saw a kid with a cat₄



saw(I, kid: present) with(I, cat)

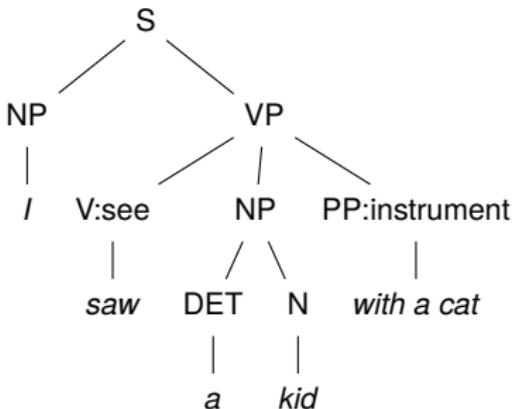
saw ⊂ cut

kid ~ young goat

with ⊂ together



I saw a kid with a cat₅



see(I, kid: past) with(I, cat)

see ⊂ perceive

kid ~ child

with ⊂ instrumental



We can also use translations I

- (1) 我 看到了 一个 抱着 猫 的 孩子
wǒ kàndàole yīgè bàozhe māo de háizi.
I saw one holding cat 's child
I did see a child holding a cat
- (2) 我 抱着 猫 看到了 一个 孩子
wǒ bàozhe māo kàndàole yīgè háizi
I holding cat saw one child
I holding a cat did see a child
- (3) 我 鋸 一个 孩子 和 他/她 的 猫
wǒ jù yīgè háizi hé tā/tā de māo
I saw one child and he/she 's cat
I saw (cut with a saw) a child and their cat



We can also use translations II

(4) 我 和 一 只 猫 鋸 一 只 小 山 羊
wǒ hé yīzhǐ māo jù yīzhǐ xiǎo shānyáng

I and one cat saw (cut with a saw)
I and a cat saw a young goat

(5) 我 用 一 只 猫 看 到 了 一 个 孩 子
wǒ yòng yīzhǐ māo kàndàole yīgè háizi

I use one cat saw one child
Using a cat, I did see a child

Paraphrase Try to paraphrase — reword in English or translate to another language
aim to be unambiguous, even if slightly disfluent

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Referential or Representational?

One view of meaning is to define it in terms of how it constrains reality.

- Picture the worlds in which these sentences are true:

(6) *I patted the dog.*

(7) *I did not pat the dog.*

Assuming that they were uttered at the same time, they are incompatible because they cannot refer to the same situation: the **referential** view.

But we can represent the same reality in different ways:

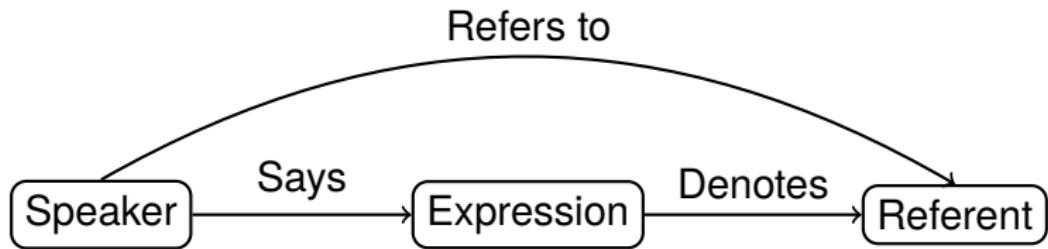
(8) *Ich habe Hunger* “I have hunger”

(9) *I am hungry*

Representational theories are interested in how we represent reality, and how our representations are influenced by conceptual structures conventionalized in language.



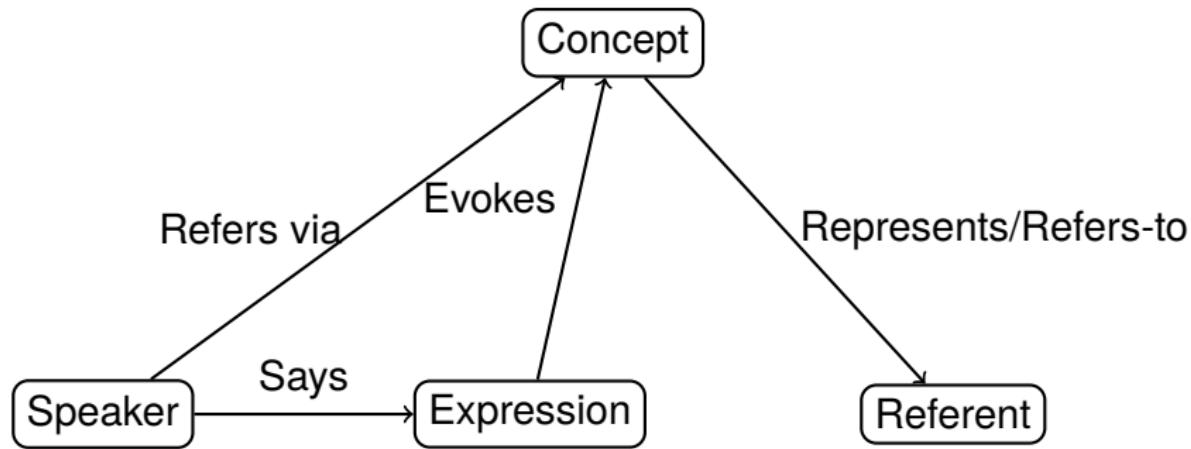
Referential View



The **referential view** is focused on direct relationships between expressions (words, sentences) and things in the world (realist view).



Representational View



The **representational view** is focused on how relationships between expressions (words, sentences) and things in the world are mediated by the mind (cognitive linguistics). This gives a more complex, but richer model.



Referring vs Non-Referring

- **Referring expressions** are expressions that identify entities in the world (typically **nominals**)

(10) *cat, ano kiro kaban* “that yellow bag”

(11) *London Bridge, Xiao Ming*

- **Non-referring expressions** don't have referential properties

(12) *maybe, if, is, but*

- Not all nominals refer

(13) *That is an ugly dog*

(14) *If only I had a dog*

- And, of course, all this is made more confusing if we model the fictional world and our interpretation of it as separate from the characters' interpretations, ...



Further Reading

- Introduction What does it mean to mean?
 - ▶ Saeed: § 2



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Administrivia

Coordinator Francis Bond <bond@ieee.org, francis.bond@upol.cz>

Course details are all online



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Extra Credit

- If you submit a correction that gets accepted for one of the resources we use then it shows good mastery of the material
 - ▶ you can get 1-5% extra credit (depending on the size/difficulty)
Mark $n \propto 10^{n-1}$ lines of code/documentation
 - ▶ You can't go over 100%
- A correction can involve
 - ▶ fixing an error in transcription or annotation
 - spelling error
 - wrong sense
 - error in the dictionary
 - ▶ making the documentation easy to read
 - ▶ pointing out an error in a translation / finding a new translation
 - ▶ coming up with a good example of a phenomenon



Student Responsibilities

By remaining in this class, the student agrees to:

- ① Make a genuine effort to learn and engage.
- ② Read messages and participate.
- ③ Do assignments on time.
- ④ Attend regularly.
- ⑤ Seek help early, not last minute.
- ⑥ Treat peers respectfully.



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Attendance

- ① You are expected to attend all classes.
- ② Be on time - lateness is disruptive to your own and others' learning.
- ③ Valid reasons for missing class include the following:
 - ① A medical emergency (including mental health emergencies)
 - ② A family emergency (death, birth, natural disaster, etc).
- ④ There will be significant material covered in class that is not in your readings. You cannot expect to do well without coming to class.
- ⑤ If you miss a class, it is your responsibility to get the notes, any handouts you missed, schedule changes, etc. from a classmate.



Remediation and Academic Integrity

- ① No late work will be accepted, except in the case of a documented excuse.
- ② For planned, justified, absences on class days or days on which assignments are due, advance notice must be provided.
- ③ Cheating will not be tolerated. Violations, including plagiarism, will be seriously dealt with, and could result in **a failing grade for the entire course.**
- ④ Refer to the University Honour Code
- ⑤ As always, use your common sense and conscience.



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The winning strategy

- Read the textbook before class (and after again, if necessary)
- Work together: make study groups
- Tasks: Discuss as much as you want, annotate your own answers
- Tutorials: Discuss as much as you want, write your own answers
- Treat LLMs as though they were a human — you can discuss the answer with them, but they should not give you the entire answer
- Ask questions ... early and often!



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References I

Yehoshua Bar-Hillel. 1954. Indexical expressions. *Mind*, 63:359–379.



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Glossary of Key Terms (English–Czech) I

English	Čestina
Q	otázka (Q)
analysis	analýza
autonomous	autonomní
collocation	kolokace
communication	komunikace
composition	kompozice
compositional	kompoziční
concordance	konkordance
connotation	konotace
context	kontext
corpus	korpus
deictic	deikticky
deixis	deixe



Glossary of Key Terms (English–Czech) II

denotation	denotace
discourse	diskurz
distal	distální
expression	výraz
gender	(gramatický) rod
honorification	honorifika
idiom	úsloví
inclusion	inkluze
lexical	lexikální
meaning	význam
medial	mediální
mental lexicon	mentální lexikon
metaphor	metafora
nominals	nominální výrazy
non-referring expressions	nereferenční výrazy
number	číslo



Glossary of Key Terms (English–Czech) III

person	(gramatická) osoba
phrase	slovní spojení
power	moc
pragmatics	pragmatika
proximal	proximální
refer	odkazovat
reference	reference
referential	referenční
referential view	referenční pohled
referring expressions	referenční výrazy
representational	reprezentační
representational view	reprezentační pohled
semantics	sémantika
sense	význam (smysl)
sentence meaning	význam věty
sentiment	sentiment



Glossary of Key Terms (English–Czech) IV

social status	společenský status
solidarity	solidarita
spatial location	prostorová lokalizace
temporal location	časová lokalizace
textual deixis	textová deixe
utterance	výpověď'
word meaning (sense)	slovní význam



Glossary of Key Terms (English–Czech) V



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