Introduction to Introduction to Linguistics

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Introduction to Linguistics
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Lecture #1

Language: the view from the 17th century

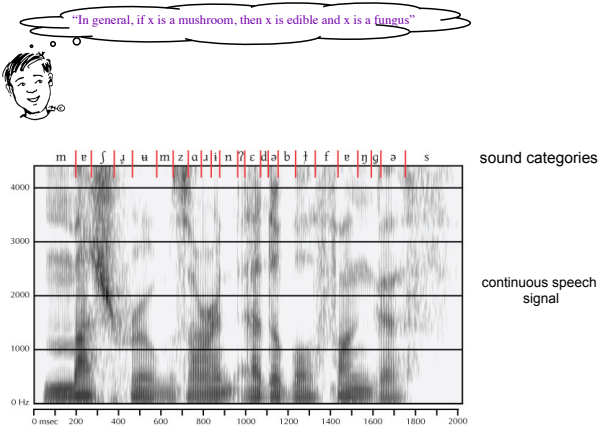
It is quite remarkable that there are no men so dull-witted or stupid — and this includes even madmen — that they are incapable of arranging various words together and forming an utterance from them in order to make their thoughts understood; whereas there is no other animal, however perfect and well endowed it may be, that can do the same. [...] This does not happen because [other animals] lack the necessary organs, for we see that magpies and parrots can utter words as we do, and yet they cannot speak as we do: that is, they cannot show that they are thinking what they are saying. *R. Descartes, "Discourse on the Method" (1637)*

The goal of linguistics as cognitive science

A "complete" understanding of how sound (/sign/etc) relates to meaning, both

- in terms of the speaker's knowledge of sound-meaning mappings, that is the state their mind is in by virtue of having acquired a natural language; (competence)
- in terms of using that knowledge in myriad linguistic tasks, like uncovering meaning from sound in real-time comprehension, executing the motor commands necessary to externalize meaning in language production, etc. (performance)

From sound to meaning



"mushrooms are an edible fungus"

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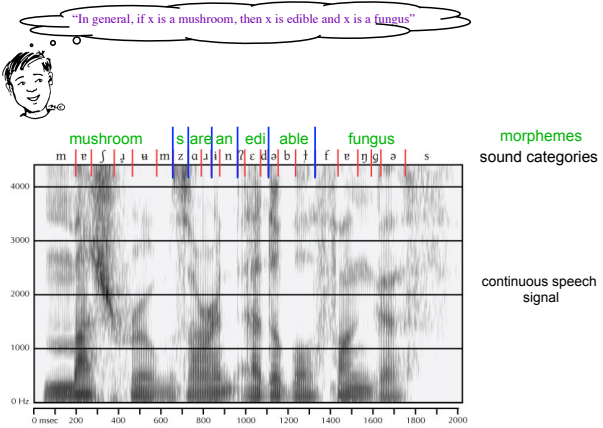

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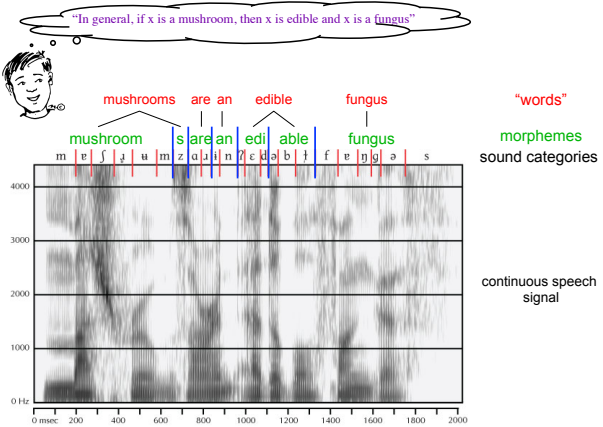

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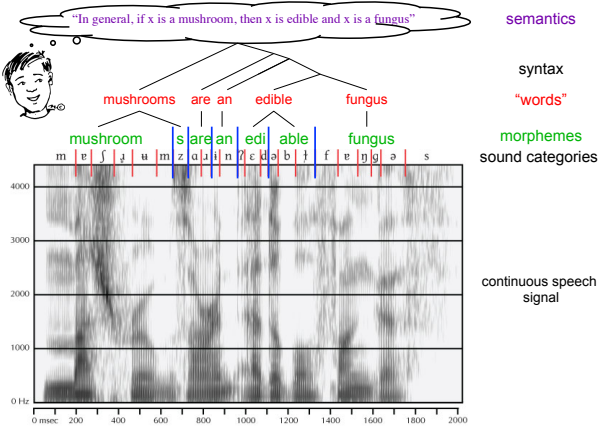

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Language in society

- Languages display variation that is constrained by human factors — socio-political relationships, contact between communities, ...
- Many synchronic facts about language can only be explained with resort to social and historical factors

Some English words

Animal	Meat from animal
pig	pork
cow	beef
lamb	mutton

- Utterances contain elements of (purely?) social meaning

Challenges of language as a social construct

How do we *define* a language (e.g. French)

Regional (dialectal) variation, individual variability, prescriptive aspects of language use, vernacular language, slang, ...

- Reminiscent of the notion of species in biology

Language vs. dialect

"A language is a dialect with an army and a navy." (M. Weinreich)

Infinity with finite means

1. Il fait beau.

- We can produce and understand new sentences with no conscious effort (most of time. . .)
- Sentences can have arbitrary length, but our cognitive resources are of necessity finite — so we must have an internalized finite system that is able to generate (in principle) infinitely many linguistic representations.
- We want to characterize our internal knowledge of a language in terms of a finite set of combinatory rules.

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Prescription vs. description — infixation in English

- The rules we're interested in are not prescriptive rules — even slang phenomena are governed by rules and principles.
  1. fantastic ⇒ fan-fucking-tastic
  2. absolutely ⇒ abso-fucking-lutely
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- What's the generalization?
- (And what do you make of *ba-fucking-nana vs. ?ban-fucking-dana?)

Phonological competence — an example from English

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Right individual sounds, wrong relative locations

The last sound in “hang” cannot occur word initially

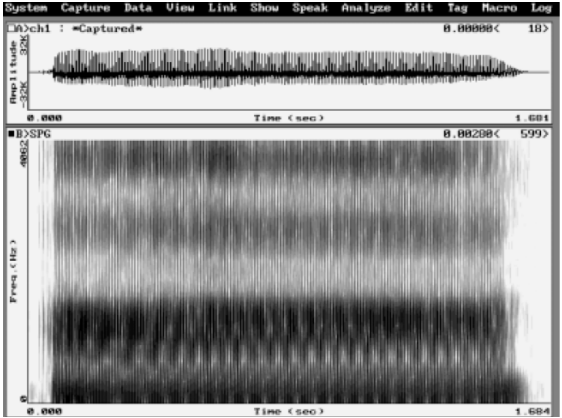
*ngap

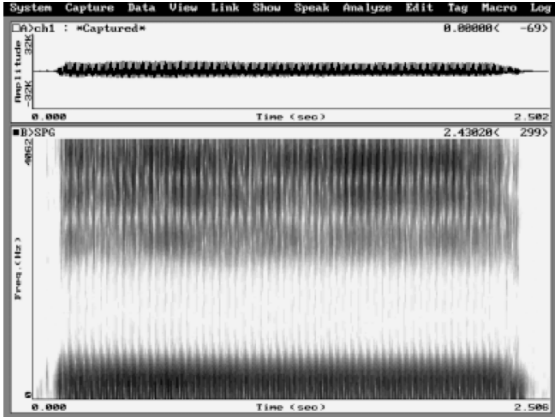
The first sound in “hang” cannot occur word finally

*pah

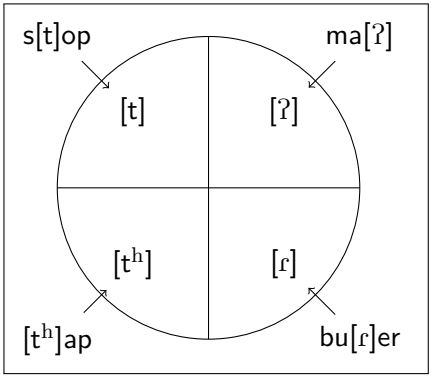
A spectrogram

[a] as in “château” vs. [i] as in “kilo”





Allophonic variation — fun with /t/



- The figure refers to the words stop, mat, tap, and butter.
- There is a sense in which the same sound appears in all of these words.
- . . . but there's also a sense in which a different sound occurs in each word.

The internal structure of sentences

- Sentences aren't just strings of words, but are made up of constituents.

1. Les enfants ont mangé des burgers et des frites.
2. Qu'est-ce que les enfants ont mangé ∅ ?
3. *Qu'est-ce que les enfants ont mangé ∅ et des frites ?
4. *Qu'est-ce que les enfants ont mangé des burgers et ∅ ?

- In (1), the phrase [des burgers et des frites] forms a constituent: it must move as a unit and cannot be broken up.

Syntax affects everything

- Focus on the possibility of *liaison* before the words for "Italian" and "German"

1. Les tables italiennes sont plus solides que les tables allemandes.
2. Ce fabricant de tables italien est plus sympathique que le fabricant de tables allemand.
3. Ce fabricant de tables italiennes est plus sympathique que le fabricant de tables allemandes.
4. Les fabricantes de tables italiennes sont plus sympathiques que les fabricantes de tables allemandes.

- What is the generalization about when *liaison* is possible/impossible?

Building syntactic structures

Building syntactic structures

Fat

Building syntactic structures

Fat cats

Building syntactic structures

Fat cats eat

Building syntactic structures

Fat cats eat accumulates.

Building syntactic structures

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- Garden-path sentences pull you toward a certain structure (parsing) but then violate your expectations and force you to revise the structure you were considering.
- We can observe properties of how humans process sentences by conducting behavioral experiments with such sentences.

Meanings in the mind

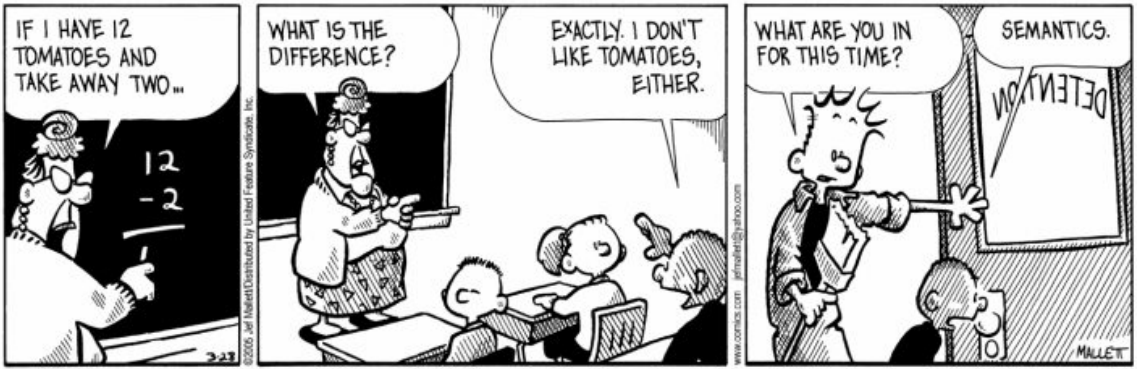
- "I understand the meaning of sentence X" suggests that there is something in my mind that corresponds to the meaning of sentence X.
- In most contemporary traditions in cognitive science, we say that humans generate mental representations of the meanings of sentences.

Semantics as a theory of what mental representations look like and how we arrive at them when interpreting linguistic utterances.

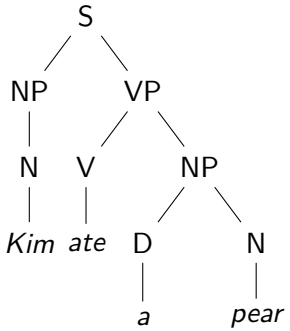
Two tasks in semantics

John wiped the floor clean with a broom.

1. What is the meaning of this sentence? What kinds of objects are meanings?
2. How do sentences come by the meanings that they have?



Syntax and compositionality



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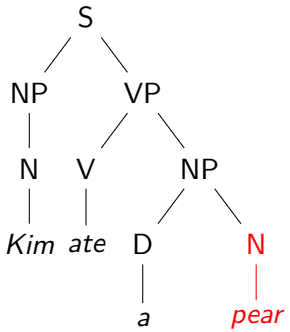

⟦pear⟧

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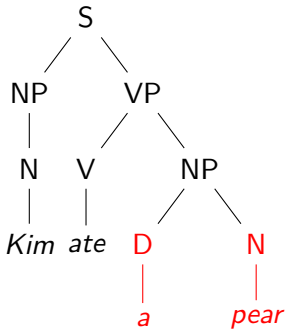

⟦a⟧ ⟦pear⟧

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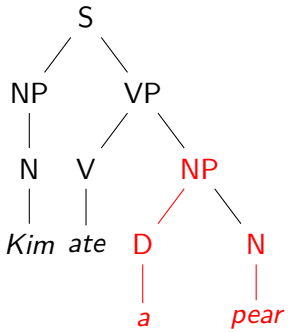

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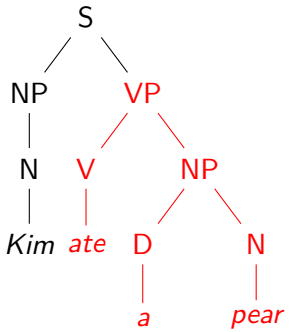

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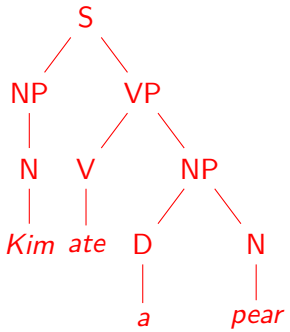

⟦Kim ate a pear⟧

Negative polarity

First observation

Every natural language seems to contain one or more lexical items that are sensitive to whether the context in which they occur exhibits negative or positive polarity

1. *John talked to anyone.
2. John didn't talk to anyone.
3. *Every boy talked to anyone.
4. No boy talked to anyone.
5. *Jean a fait le moindre effort.
6. Jean n'a pas fait le moindre effort.
7. *Tous les élèves ont fait le moindre effort.
8. Aucun élève n'a fait le moindre effort.

What's a context?

- The facts are subtle! Mere presence of a negative item is not enough to license a negative polarity item, and sometimes an NPI is licensed without the obvious presence of a negative item.

1. *Every boy talked to anyone.
2. Every boy who talked to anyone was pleased.
3. If John talked to anyone, then he must have been pleased.

Finding the context

Consider the sentence with an empty slot in place of the negative polarity item. That is the context that needs to be "negative" in order to license an NPI.

Positive polarity

1. *John saw anyone.
2. John didn't see anyone.
3. John saw someone.
4. *John didn't see someone.
   (OK $\exists > \neg$, * $\neg > \exists$)
5. John likes Mahler somewhat.
6. *John doesn't like Mahler somewhat.

First observation

Some items have positive polarity: they are unacceptable in negative contexts.

Further reading

General and accessible enough

- *The Language Instinct* (Pinker 1994) is still a joy to read as a general introduction to linguistics, despite being dated on many topics.
- The first couple of chapters of *Knowledge of Language* (Chomsky 1986) are primary but layman-friendly Chomsky readings on language as a mental object and related issues.

Specialist articles, prolly best left for later

- McCarthy (1982) wrote a classic on expletive (e.g. "fucking") infixation in English. This article isn't too hard, but it'll be most readable after our phonology lecture.
- Szabolcsi (2004) gives a careful description of the intricate facts about positive polarity, and connects them insightfully to negative polarity. The linguistic description is self-contained, but the analysis requires that you puzzle out some facts about additive and anti-morphic functions. You can simply look these notions up on Wikipedia as they appear in the article.

References

- Chomsky, Noam (1986). *Knowledge of Language: Its Nature, Origin, and Use*. Praeger Special Studies.
- McCarthy, John J. (1982). "Prosodic structure and expletive infixation." In: *Language* 58.3, pp. 574–590. DOI: 10.2307/413849.
- Pinker, Steven (1994). *The Language Instinct: How the mind creates language*. William Morrow and Company. ISBN: 0-688-12141-1.
- Szabolcsi, Anna (2004). "Negative polarity — positive polarity." In: *Natural Language and Linguistic Theory* 22, pp. 409–452. DOI: 10.1023/B:NALA.0000015791.00288.43.