Semantics

FSEM CORE S119: Language as Human Nature
Fall 2025
Prof. Forrest Davis

October 28, 2025

Warm-up

1. It's spooky season. Discuss with your neighbor whether ghosts exist.

2. Consider the sentence *The king of Canada is bald*

   - What does it mean?
   - Does it refer to anything?

Logistics

- Registration is coming up relatively soon. Please start looking over the current course offerings for the spring.

Learning Objectives

- Identify core meaning relationships between words

- Identify core meaning relationships between and involving sentences

- Build intuitions for meaningful cross-linguistic variation

Summary: We survey some basic aspects of the study of semantics, like the meaning relations between words and sentences. Along the way we discuss broader mechanisms in meaning (like quantifier movement) and meaningful vs. non-meaningful cross-linguistic variation.

Motivation for Semantics

SEMANTICS IS THE STUDY of meaning. We often separate out **lexical** meaning, which is the meaning of words, from more systematic aspects of meaning. Like syntax, meaning has basic units (which are words or grammatical heads) and rules for **composing** the meaning of phrases.

Basic Meaning Relations

WORDS BEAR MANY relations with other words. For example, words can be phonologically similar, like *knight* and *night* which sound the same (i.e., they are **homophones**. They can be morphological related, like *kick* and *kicked* which have the same root, and syntactically related like *devour* and *see* which are both verbs which select NPs as complements (i.e., they are both transitive).

Some basic meaning relations include:

- **Hyponymy**: A word X is a hyponym of a word Y if the meaning of X is always contained in the meaning of Y

- **Synonymy**: A word X is a synonym of a word Y if the meanings are (approximately) the same

- **Antonymy**: A word X is a antonym of a word Y if the meaning of X is the opposite of Y (in some sense)

Practice Problems

1. Give three distinct examples of hyponyms

2. Give three distinct examples of synonyms

3. Give three distinct examples of antonym

Deeper Meaning Types

THERE ARE TWO BASIC distinctions in meaning that go by a variety of names in linguistics and adjacent fields like philosophy.

- **Intension** (or sense or connotation): The function for determining the reference of a word/phrase (or the mental concepts associated with a meaning)

- **Extension** (or reference or denotation): The value of the intensional function or the referent in the world that the meaning refers to

This section draws on Prof. Norvin Richard's Introduction to Linguistics Material taught at MIT.

> **Question**
>
> Are both of these sentences grammatical? What aspect of mean-
> ing do you think distinguishes these sentences?
>
> 1. *The temperature is rising*
>
> 2. *45 degrees is rising*

Compositional Meaning

PHRASES AND SENTENCES have a meaning that is composed from
the meaning of their subparts. This is called the **Principle of Com-
positionality**, and it is a deep and elusive component of human
language.

While phrases are composed from their subparts to build a more
complex/specific meaning, as with *green* and *plants* combine into
green plants to mean the intersection of green things and plant things.
The meaning of a sentence has a special status. This meaning is
called the **propositional** meaning and a sentence conveys a **propo-
sition**. Propositions have truth values, meaning they have a true or
false relationship with things in or about the world.

We won't dig deeply into the mechanisms behind this composo-
tional capacity. But let's not that it bears some relationship with
syntax (though not always transparently) and the mechanisms used
in syntax. Consider for example,

<div align="center">Someone loves everyone</div>

Sentential Meaning Relations

AS WITH WORDS, SENTENCES bear meaning relations. The core rela-
tions are:

- **Entailment**: A sentence X entails a sentence Y if whenever X is
  true, Y is true

- **Equivalence**: A sentence X is equivalent to a sentence Y if X en-
  tails Y and Y entails X

- **Contradiction**: A sentence X contradicts a sentence Y if X entails
  that Y is false and Y entails that X is false

- **Presupposition**: A presupposition is an underlying assumption
  that must be satisfied in order for a sentence to make sense

Practice Problems

1. Give two pairs of sentences with an entailment relationship

2. Give two pairs of sentences with an equivalence relationship

3. Give two pairs of sentences with a contradiction relationship

4. Give two examples of presuppositions

Cross-Linguistic Meaning Variation and Culture

MANY POPULAR SCIENCE-ISH outlets, as well as folk science beliefs, claim that the fact languages differ in the amount of words used to express some concept says something special about the culture associated with a language or the ability of speakers to hold certain thoughts.

This section draws on the 7th edition of Contemporary Linguistics.

One famous example of this is supposed number of words for 'snow' in Inuktitut. Some claim there are thousands. In fact, there are not. One dictionary, cited in Contemporary Linguistics (7ed) cites only 4:

aput	'snow on the ground'
qana	'falling snow'
piqsirpoq	'drifting snow'
qimuqsuq	'snow drift'

Table 1: Words for 'snow' in Inuktitut

English also has at least 5: *snow, slush, blizzard, sleet, powder*.

While culture could and does influence the words in a language, the relationship is more complex than something like 'many words in a language for a concept means that that concept is culturally relevant to current speakers'. Consider the following words for light in English:

glimmer	glisten	gleam
glow	glitter	flicker
shimmer	shine	flare
glare	flash	sparkle

We have many many words for light in English, however, it is hard to imagine that English speakers, either: (i) inhabit a culture that particularly reveres light in a way different than other cultures,

or (ii) perceive light in some way different than speakers of other languages.

Conceptual Structure in the Lexicon: Motion Verbs

This is critically not to say that languages do not vary in interesting ways that help us understand how meaning is organized in the mind. For example, all languages have words that describe motion through space. In English, there are many verbs that express both the concept of motion and the manner in which the motion occurs in the same verb:

  The rock *rolled* down the hill
  The puck *slid* across the ice
  She *limped* through the house
  The smoke *swirled* through the opening

Table 2: Same English verbs that express both motion and manner (i.e., that an object moved and did so in some particular way)

   Surprisingly, languages like Italian, Spanish, and French, generally don't do this. For example, 'to roll' in French is *rouler*.

(1)   a.   *La   bouteille a   roulé dans la   caverne.
             'The bottle   rolled into   the cave.'
        b.   La   bouteille est   entée dans la   caverne en
             'The bottle   entered the   cave, rolling.'
             roulant.

French does, however, combine the concept of movement and direction of the movement's path (down, up, back, across, out, etc.).

L'enfant	monte	l'escalier
The child	goes up	the stairs
L'enfant	descend	l'escalier
The child	goes down	the stairs
Les passagers	retournent	à l'aéroport
The passengers	go back	to the aiport
Le bateau	traverse	l'océan
The ship	goes across	the ocean
L'ours	sort	de la caverne
The bear	comes out	of the cave

Table 3: Some French verbs combining motion and path

   Some languages combine the type of thing moving and motion together in one verb, like Atsugewi, which is a now extinct Palaihnihan language spoken by the Atsugewi people whose last speaker, Medie Webster, died in 1988.

Note English has borrowed verbs, largely from French, that convey these meanings combining path and motion.

   We learn facts about both cognition and language from these contrasts:

lup	for movement of a small, shiny, spherical object (a hailstone)
t	for movement of a smallish, flat object that can be attached to another (a stamp, a clothing patch, a shingle)
caq	for movement of a slimy, lumpish object (a toad)
swal	for movement of a limp linear object, suspended by one end (a shirt on a clothesline)
qput	for movement of loose, dry dirt
staq	for movement of runny, unpleasant material (manure, guts, chewed gum)

- The concept of motion is associated with concepts like PATH, MANNER OF MOVEMENT, MOVING THING

Table 4: Sample Atsugewi verb roots that express both motion and thing thing moving

- Languages differ systematically in how these concepts are distributed across or within words
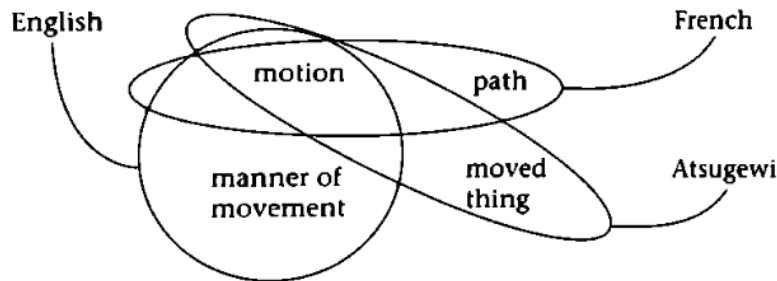

Figure 1: Ways the conceptual space of motion is divided by languages

Before Next Class

- Pre-class Quiz and reading