

Semantics

What is Semantics?

- ▶ A subfield of linguistics that studies linguistic meaning and how expressions convey meanings.
- ▶ What is the relationship of linguistic meanings to the language user?
- ▶ What is the relationship of linguistic meanings to the external world?
- ▶ Lexical semantics: the meanings of words and other lexical expressions, including the meaning relationships among them
- ▶ Compositional semantics: phrasal meanings and how phrasal meanings are assembled
- ▶ A finite number of words with their meanings and other linguistic properties stored in the mental lexicon
- ▶ An infinite number of sentences and other phrasal expressions, whose meanings cannot be stored or memorized
- ▶ Speakers need to figure out the meaning of a sentence based on the meanings of the lexical expressions in it and the way in which these expressions are combined with one another

Sense and reference

- ▶ Sense: some kind of mental representation of its meaning, or some kind of concept
 - Cat: four-legged, furry, related to panthers, allergy-causing felines
- ▶ Reference: the particular entities in the world to which some expression refers, its relationship to the world
 - Garfield, Felix, Fluffy
- ▶ To know the reference of some expression, it is necessary to know its sense.
- ▶ Knowing the sense of some expression does not guarantee that you will be able to pick out its referents.
 - Diamond, lychee
 - Unicorn, the queen of the United States
- ▶ It is possible for multiple distinct expressions with different sense to pick out the same referent; they do not have to be packaged into the same mental representation
 - The most populous country in the world / the country that hosted the 2008 Olympics → China
 - Barak Obama / the 44th president of the United States

Lexical Semantics: The Meanings of Words

Word Senses

- ▶ What exactly does it mean for words to mean something?
- ▶ Dictionary-Style Definitions
- ▶ Even if we envision an imaginary idealized dictionary that changes with the times, lists all the words in a language at a given time, and provides a verbal definition of each according to speaker's use of that word, we run into problems
 - ▶ Understanding the meaning of a word would involve understanding the meanings of the words used in its definition; circular
 - ▶ Divine as 'being or having the nature of deity; deity as 'divinity'
 - ▶ Pride as 'the quality of state of being proud; proud as 'feeling or showing pride'
 - ▶ The, of, to, etc?
 - ▶ a dictionary-style entry doesn't explain the meaning of a word or phrase in terms of something more basic; it just gives paraphrases

► Mental Image Definitions:

- Mona Lisa, finger nail

► Problems

- Different people's mental images may be very different from each other without the words' meanings varying very much from individual to individual, e.g. lecture (student/teacher); food (pet store owner, gourmet chef, your little brother)
- The mental image you form when you hear a word out of the blue is far from being all that the word is able to mean to you. e.g. mother (your mother); Mother Teresa, the elephant's mother
- The default mental image associated with a word tends to be of a typical or ideal example of the kind of thing the word represents: a prototype; words can be used to signify a wide range of ideas. e.g. bird (ostrich, penguin)
- many words simply have no clear mental images attached to them. e.g. forget, aspect, reciprocity, useful

► Usage-Based Definitions

- We indisputably know when we know a word is when it is suitable to use that word in order to convey a particular meaning or grammatical relationship. E.g. blanket

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Meaning Relationships: Hyponymy

Hyponymy: a word X is a hyponym of a word Y if the set that is the reference of X is always included in the set that is the reference of Y. When some set X is included in a set Y, we also say that X is a subset of Y. e.g. dog vs poodle

Visual representation of the hyponymous relation between *poodle* and *dog*

the set that is the reference of poodle

a subset of the set that is

the reference of dog:

poodles are dogs; not all dogs are poodle

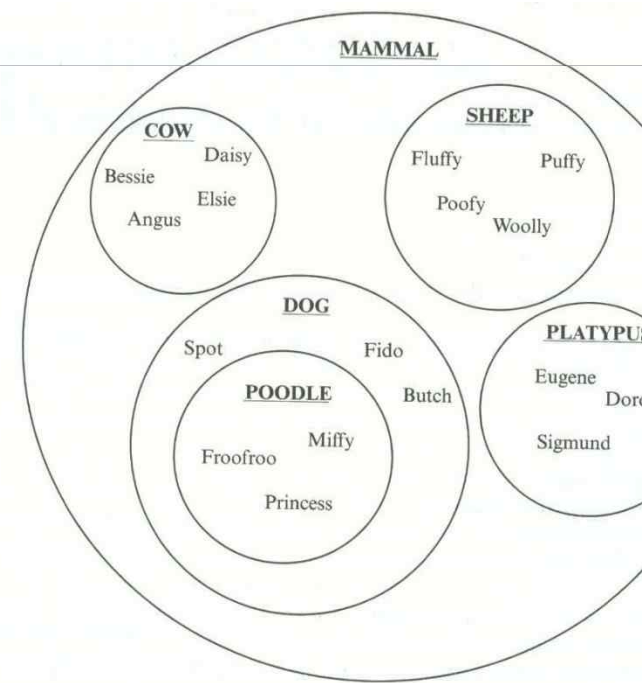
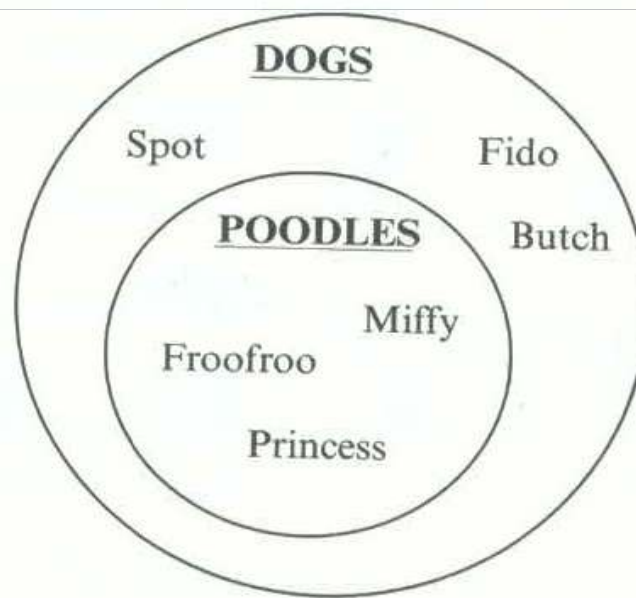
dog is a hypernym of poodle

dog mammal vertebrate animal

sister terms: two words are sister terms

the reference is on the same level in the

hierarchy



Meaning Relationships: Synonymy

- ▶ synonymy: Two words are synonymous if they have exactly the same reference
- ▶ couch/sofa, quick/rapid, groundhog/woodchuck
- ▶ The set that is the reference of groundhog is exactly the same set as the one that is the reference of woodchuck
- ▶ The senses of the words in these pairs may differ
 - It is possible for some one to know what woodchucks are without knowing what groundhogs are, so their sense are not eh same thing.
 - Quick and rapid may have different senses, but the set of quick things in the world is probably the same as the set of rapid things

Meaning Relationships: Antonymy

► Complementary antonyms: Two words X and Y are complementary antonyms if there is nothing in the world that is a part of both X's reference and Y's reference ; if stating that something is X generally implies tat it isn't Y, then X and Y form a complementary pair

(6) Complementary antonyms

- a. married/ unmarried
- b. existent/ nonexistent
- c. alive/ dead
- d. win/ lose

► Gradable antonyms: everything must be one or the other or neither; saying “not X” does not imply “and therefore Y.”

(7) Gradable antonyms

- a. wet/dry
- b. easy/ hard
- c. old/ young
- d. love. hate

- ▶ There are words to describe states in between the two extremes
 - damp, middle-aged
- ▶ It is possible to ask about the extent of a gradable antonym

(8) a. How old is he?

b. How hard was the test?

c. How alive is he?

d. How nonexistent is that unicorn?

- ▶ Reverses: pairs of words that suggest some kind of movement, where one word in the pair suggests movement that “undoes” the movement suggested by the other.

(9) Reverses

a. right/left

b. inside/ outside

c. put together/ take apart

d. expand/ contract

e. ascent/ descent

- ▶ Converses: tow opposing points of view: for one member of the pair to have reference, the other must as well

(10) Converses

a. lend/borrow

b. send/receive

c. employer/ employee

d. over/ under

Compositional Semantics: The Meanings of Sentences

► 6.3.1 Propositions and Truth Values

- (1) China is the most populous country in the world.
- (2) Luxembourg is the most populous country in the world.
- (3) The Queen of England is sleeping.
- (4) Sometime in the future, another world war will occur.

► 6.3.2 Relationships between Propositions

(5) a. All dogs bark.
b. Sally's dog barks.

(6) a. No dogs bark.
b. Sally's dog doesn't bark.

(7) a. Barack Obama is the 44th president of the United States.
b. China is the most populous country in the world.

(8) a. Ian owns a Ford Focus.

b. Ian owns a car.

(9) a. Ian has a wife.

b. Ian is married.

(10) a. Ian has visited Spain.

b. Ian has visited Europe.

(11) a. Ian has a female sibling.

b. Ian has a sister.

(12) a. No dogs bark.
b. All dogs bark.

(13) a. George Washington is alive.
b. George Washington is dead.

(14) a. Ian has a wife.
b. Ian is not married.

6.4 Compositional Semantics: Putting Meanings Together

▶ 6.4.1 The Principle of Compositionality

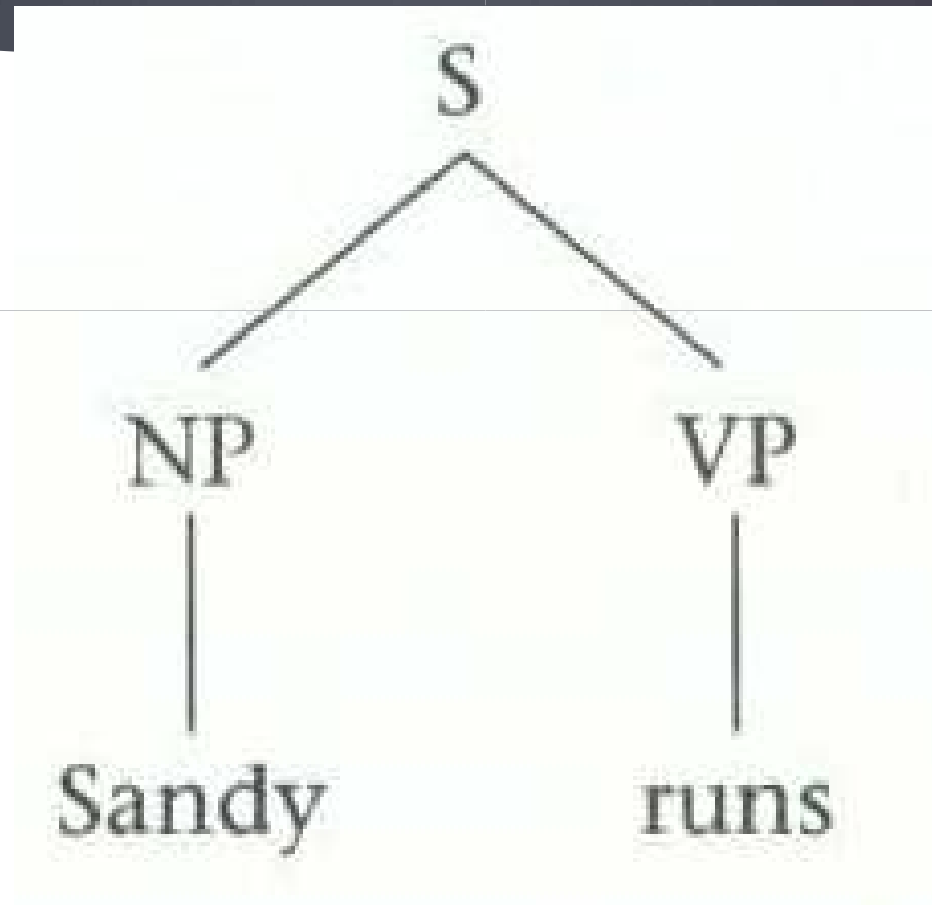
(1) a. Sally loves Polly.

b. Polly loves Sally.

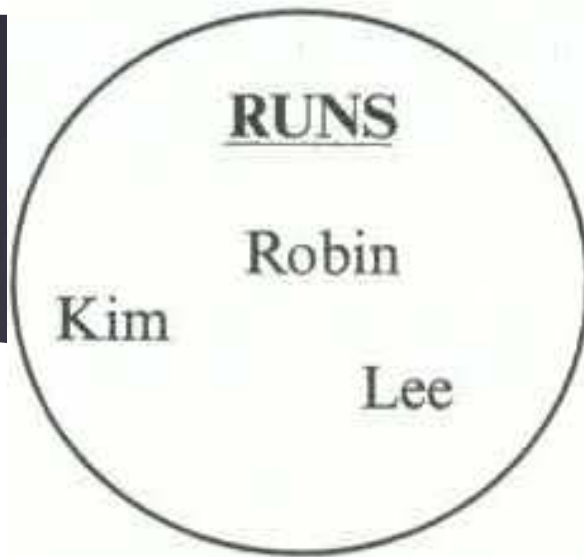
(2) a. I stuffed my apron full of cheese and frantically ran away from the dairy snatchers.

b. It seems unlikely that this book will spontaneously combust while you are reading it,
but nonetheless it is theoretically possible that this might happen.

c. The platypus is enjoying a bubble bath.



(4)



Sandy

Michael

(5)



Kim

Michael

(6) a. Sandy's dog barks.

truth conditions: true just in case the individual that Sandy's dog refers to is
in the set of all barkers

b. The 44th president of the United States eats apples.

truth conditions: true just in case Barack Obama is in the set of all apple-eaters

► 6.4.3 Combining the Meanings of Adjectives and Nouns

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(7)

