

Word Meaning

LING 130

Fall 2005

James Pustejovsky



Thanks to Richard Wright, U. Washington, for use of some slides

The study of words

- What does a word mean?
- To what extent is it a *linguistic* matter?
- To what extent is it a matter of *world knowledge*?

Lexical semantics

- = meanings of morphemes and words
 - semantics overlaps with morphology
- Some meaning relations
 - Synonymy
 - Ambiguity
 - Antonymy
 - Hyponymy and hypernymy

Synonymy

- If A is synonymous with B,
 - A and B mean the same thing, A can be paraphrased by B
- Synonymous words
 - postpone = put off
 - vomit = throw up
 - couch = sofa

Ambiguity

- A linguistic expression is ambiguous if it supports two or more possible interpretations.
 - Scope
 - Syntactic (structural)
 - Lexical

Scope Ambiguity

- Everyone in Boston is following one baseball team.
 - There is one baseball team that everyone in Boston is following (e.g., **Red Sox**)
 - Everyone in Boston is following one team or another (e.g., **Red Sox**, **Yankees**, **Tigers**, **Cardinals**)

Syntactic Ambiguity

- [[Competent women] and men] have all the good jobs in the company.
- [Competent [women and men]] have all the good jobs in the company.

Lexical Ambiguity

- Arises when a single word is associated with more than one meaning.
- *You should have seen the **bull** we got from the Pope.*
 - Papal communication
 - Male cow
 - nonsense

Lexical and Syntactic Ambiguity

- Mary claims that John saw **her** duck.
- John claims that Mary saw **his/him** duck.

Lexical Ambiguity

- Polysemy vs. homophony
- Polysemous morpheme
 - meaning₁
 - e.g. hard
 - "difficult"
 - meaning₂
 - "durable, solid"
- Single lexical entry

Homophony

- Homophones
 - morpheme₁
 - meaning₁
 - e.g. pass ('I'm going to pass')
 - 'abstain'
 - morpheme₂
 - meaning₂
 - 'succeed'
- Distinct lexical entries

Puns and Zeugmas

Ambiguous words used in different senses in parallel syntactic construction.

• 'water': 'pour water into', 'dilute with water'

Dave watered the plants, and Rose, the drinks.

• 'suggest': 'advise verbally', 'indicate'

The fuel indicator and Mary suggest we get some gas.

Synonymy

- Semantic equivalence. Synonyms can be substituted for each other without affecting a sentence's truth value.
 - Youth/adolescent
 - Automobile/car
 - Remember/recall
 - Purchase/buy

Antonymy

- If A is an antonym of B, then A means the opposite of B
 - Non-gradable antonymy (complementarity)
 - Gradable antonymy (contrary)

Synonymy Problems

- A big house = a large house
- A big sister ≠ a large sister

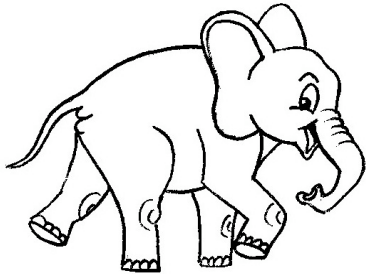
Non-gradable antonymy

- e.g. 'married' vs. 'single'
 - if 'married' then 'not single' and
 - if 'single' then 'not married'
- 'dead' vs. 'alive'
- 'over' vs. 'under'

Gradable antonymy

Gradable pairs (typically adjectives)

- meanings are relatively subjective
- may depend on context
- e.g. 'big' vs. 'small'



Dumbo, a small elephant

Gradable antonyms

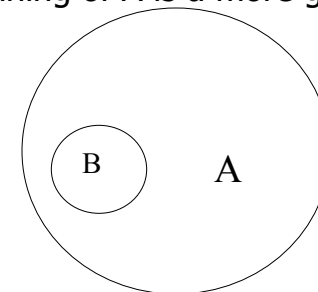
- Tall vs. short, cute vs. ugly, etc.
- Meanings can be further modified
 - Comparative and superlative forms
 - 'tallest', 'cuter', etc.
 - Modify with 'quite', 'very', etc.
 - 'really cute'

More on antonymy

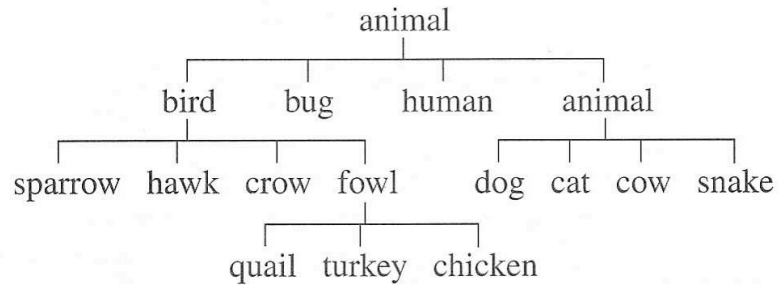
- Gradable/nongradable distinction often blurred by language users. Nongradable antonyms:
 - 'half dead', 'barely alive', 'more dead than alive', 'quite pregnant'
- Antonyms often not in equal use:
 - 'How heavy is it?' (not: 'How light is it?')
 - 'How tall is he?' (not: 'How short is he?')
 - 'Marital status' (not: 'Single status')

Hyponymy and hypernymy

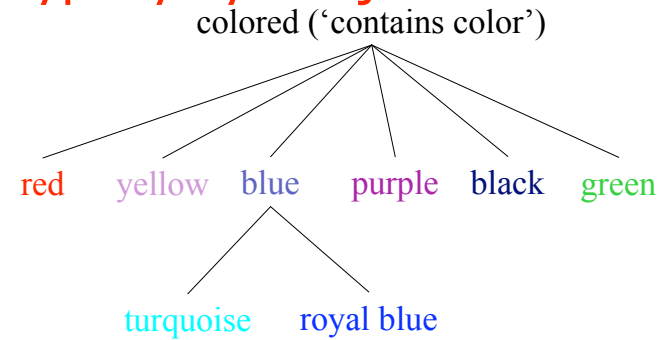
- If B is a hyponym of A, then
 - the meaning of B is a special case of A
- If A is a hypernym of B, then
 - the meaning of A is a more general instance of B



Hyponyms: nouns



Hyponymy: adjectives



Hyponymy: verbs

<i>hyponym</i>	<i>hypernym</i>
dance	move
slice	cut
drive	motate

Productive ways of forming hyponyms

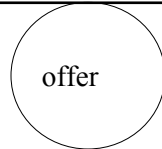
<i>strategy</i>		<i>hyponym</i>
<i>adjectival/sentential modification</i>	car flower	Japanese car the flower I picked last night
<i>compounding</i>	pickle rage	dill pickle road rage
<i>adverbial modification</i>	interesting	incredibly interesting

Caveats re adjectival modification

- Anti-intersection adjectives (require negation of noun with which they combine):

	<i>is not a hyponym of:</i>
fake \$100 bill	\$100 bill
the <u>former</u> president	the president (i.e. current)
phony offer	offer

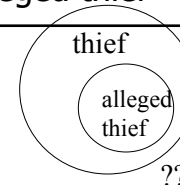
phony offer



Caveats re adjectival modification

- 'Non-intersection' adjectives:

	<i>is not necessarily a hyponym of:</i>
possible solution	solution
alleged thief	thief



alleged thief

??

Caveat re compounding

- Exocentric compounds:

	is not a hyponym of:	instead hyponym of:
boombox	box	sound system
station wagon	wagon	car
soap opera	opera	TV show

Encoding of kinship concepts

- 'parent's sibling'
- Other possible concepts:
 - sex: not specified, male, female
 - side of family: not specified, maternal, paternal
- 3 x 3 = 9 possible distinct concepts

'parent's sibling'

	<i>sex of parent's sibling</i>	<i>side of family</i>
1	not specified	not specified
2	not specified	maternal
3	not specified	paternal
4	female	not specified
5	female	maternal
6	female	paternal
7	male	not specified
8	male	maternal
9	male	paternal

		English	Witsuwit'en	Sahaptin
1	'parent's sibling'	--	--	--
2	'mother's sibling'	--	--	--
3	'father's sibling'	--	--	--
4	'parent's sister'	aunt	--	--
5	'mother's sister'	--	-aq'j?-eq'j	paXa@X
6	'father's sister'	--	-pits	piSiS
7	'parent's brother'	uncle	--	--
8	'mother's brother'	--	- 'z?E	káka
9	'father's brother'	--	-t ^h aj	m [^] Xa

Lexical semantics summary

- Relations between meanings of lexical items
 - Synonymy, antonymy, ambiguity (polysemy, homophony), hyponymy
- Cross-linguistic variation in meanings encoded by morphemes