

Lexical relations

Stefan Th. Gries
Department of Linguistics
UC Santa Barbara & JLU Giessen

Situating lexical relations

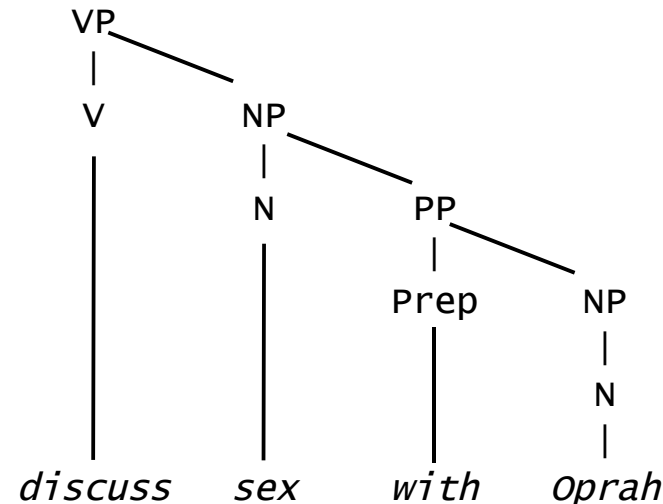
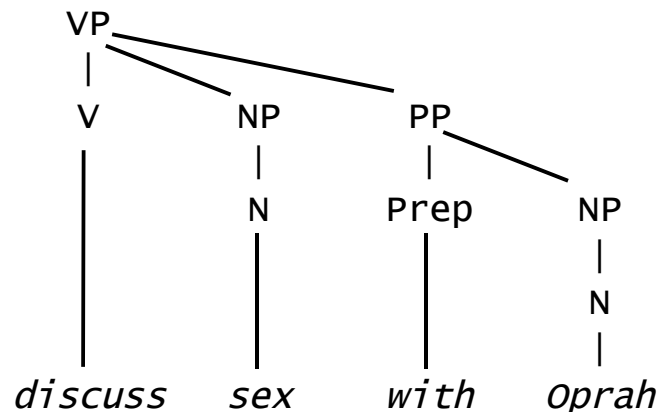
- We talked about what *meaning* is or means
 - word vs. sentence meaning
 - today, we will talk about word meaning (largely)
 - definition vs. reference/denotation vs. sense vs. use
 - today, we will talk about sense
 - linguistic vs. encyclopedic meaning
 - today, we will talk about linguistic meaning (largely)
 - different kinds of knowledge
 - today, we will talk about semantic knowledge
- we talked about how to approach meaning
 - denotationally vs. representationally vs. truth-conditionally vs. structuralist
 - today, we will talk about structuralist approaches
- the central idea will be that lexical items enter into various relations within a **network-like lexicon**

Kinds of ambiguity: intro

- A word/sentence is ambiguous if it has 2+ senses / 2+ paraphrases that are not synonyms/ paraphrases of each other
- note: what synonymy is for words, paraphrase is for sentences
 - *old men and women*
 - *they passed the port at midnight*
 - *the chicken is ready to eat*
 - *visiting relatives can be boring*
 - *he saw the man with the telescope*
 - *the captain corrected the list*
 - *we saw her duck*
 - *discuss sex with Oprah*

Kinds of ambiguity: intro

- A word/sentence is ambiguous if ...
 - *old men and women*: syntactic ambiguity
 - *they passed the port at midnight*: lexical ambiguity
 - *the chicken is ready to eat*: synt. ambiguity
 - *visiting relatives can be boring*: synt. ambiguity
 - *he saw the man with the telescope*: lex./synt. ambiguity
 - *the captain corrected the list*: lex. ambiguity
 - *we saw her duck*: lex./synt. ambiguity
 - *discuss sex with Oprah*: synt. ambiguity



Kinds of ambiguity: homonymy

- **Homonymy** refers to the extreme 'lexical relation' between senses of a lexical item: its absence
 - same POS, same spelling
 - *mug*: 'drinking vessel' vs. 'gullible person'
 - *hooker*: 'a commercial fishing boat' vs. 'prostitute'
 - *race*: 'ethnic group' vs. 'competition'
 - *pupil*: 'student' vs. 'iris' (both from Latin *pupus* 'child')
 - *bank*: 'river bank' vs. 'financial institution' (from Old Icelandic vs. from Italian)
 - same POS, different spelling
 - *ring* (verb) vs. *wring* (verb)
 - different POS, same spelling
 - *long*: 'yearn' (verb) vs. 'not short' (adj.)
 - *sack*: 'let go' (verb) vs. 'container' (noun)
 - *fast*: 'speedy' (adj.) vs. 'firm/fixed' (adv.) vs. 'abstain from food' (verb) vs. 'sthg that fastens' (noun)
 - different POS, different spelling
 - *ring* (noun) vs. *wring* (verb)

Kinds of ambiguity: polysemy

- **Polysemy** refers to the lexical relation of similar/related senses of a lexical item
 - *plain*: 'easy' vs. 'undecorated'
 - both senses share the synonym *simple*
 - both senses share a paraphrase 'devoid of complexity'
 - *mouth*: 'of a river' vs. 'of a person'
 - an opening from the interior of a solid mass
 - a place at the end of some longish narrow channel
 - *neck*: 'of a bottle' vs. 'of a person'
 - tubular structure on top of a solid entity through which things pass that leave/enter the entity
 - the tubular structure has a smaller diameter than the solid entity to whose top it is attached
 - *hook*: 'curved piece of metal' vs. 'attraction' vs. 'type of golf shot'
 - (1) and (2): something that holds things in place
 - (1) and (3): shape

Kinds of ambiguity: polysemy

- Senses of *in*
 - the water in the vase
 - the pear in the bowl
 - the bird in the tree
 - the bird in the field
 - the crack in the vase
 - the crack in the surface
 - the chair in the corner
 - the nail in the box
 - the muscles in his leg
 - the block in the box
 - the gap in the border
- relevant dimensions
 - containment
 - contact
 - scope of extension
 - ...

(Near) Synonymy

- Strict definition: **synonymy** refers the relation of sameness of senses of lexical items
- loose definition: **synonymy** refers the relation of great similarity of senses of lexical items
- referential operationalization: A is synonymous with B if every referent of A is also a referent of B and vice versa
- truth-conditional definition: A is synonymous with B if any grammatical declarative sentence S containing A has equivalent truth-conditions to another sentence T, which is identical to S except that A is replaced by B
 - *car vs. automobile; couch vs. sofa*
 - *lawyer vs. attorney; toilet vs. lavatory*
 - *large vs. big; little vs. small vs. tiny*
 - *sleeping vs. asleep*

(Near) Synonymy

- This sameness of meaning need not hold in all contexts: *my big sister* vs. *my large sister*
- along which dimensions do (near) synonyms differ?
 - **dialect**
 - *autumn* vs. *fall*
 - *flat* vs. *apartment*
 - **style**
 - *obstinate* vs. *stubborn*
 - *gentleman* vs. *chap*
 - *child* vs. *kid*
 - **emotive/affection**
 - *statesman* vs. *politician*
 - **collocational**
 - *rancid butter/*eggs* vs. *addled *butter/eggs*
 - **combination(s) of the above**
 - *film* (artsy) vs. *movie* (normal colloquial) vs. *flick* (informal) vs. *motion picture* (industry-related)

Hyponymy

- **Hyponymy** refers to the lexical relation of a subordinate term to a superordinate term (*kind of*)
 - *toast, boil, fry, grill, roast, bake, microwave, ...* are **hyponyms** of *cook*, or
 - *cook* is a **hyperonym** of *toast, boil, ...*
 - *blue, red, yellow, ...* are hyponyms of *color*
 - in feature-speak: A is a hyponym of B if all features (= necessary condition) of B are part of the definition of A
 - hyponymy is a **transitive relation**
 - if A is a hyperonym of B and B is a hyperonym of C, then A is a hyperonym of C
 - of course, hyponyms are language-specific
 - in English, a dolphin is not a fish but a mammal
 - in Tuvaluan, a dolphin is a fish

Meronymy

- **Meronymy** refers to the lexical relation of a part to a whole to which the part belongs (*part of*)
 - *cover* and *page*, ... are meronyms of *book*
 - *wheel* and *engine*, ... are meronyms of *car*
 - *mouth*, *cheek*, *nose*, *eye*, ... are meronyms of *face*
 - *second*, *minute*, *hour*, *day*, *week*, *month*, *year*, *century*, *millenium*, ...
 - meronymy is not a transitive relation
 - if A is a meronym of B and B is a meronym of C, then A can, but need not be, a meronym of C
 - nails - finger - hand
 - *pane - window - room

Antonymy

- **Antonymy** refers to the lexical relation of oppositeness of meaning (sometimes referred to as **incompatibility**)
- A and B are incompatibles if a sentence of the form 'X is A' can be found which entails a parallel sentence of the form 'X is not B'
- however, usually one restricts one's attention to incompatibles that are co-hyponyms (the fact that *affix* and *volcano* are incompatibles is irrelevant)
- usually that means antonyms/incompatibles share all but one feature of meaning
- kinds of antonyms/incompatibles
 - binary
 - gradable
 - incompatibles (as a hyponym of antonym/incompatibles)
 - converses

Antonymy

- Kinds of antonyms/incompatibles
 - binary antonyms
 - *dead vs. alive*
 - *top vs. bottom*
 - gradable antonyms
 - *hot vs. cold*
 - *tall vs. short*
 - *clever vs. stupid*
 - note: diagnostic *very*
 - note: sometimes, different senses of a word are highlighted by the *very*-test, e.g. with *British*
 - note: one member of these is usually unmarked: *how high is the hill? how tall is the boy? how fast is the car?*

Antonymy

- Antonymy refers to the lexical relation of oppositeness of meaning
 - incompatibles
 - *solid, gas, liquids*
 - *spring, summer, fall, winter*
 - *clubs, spades, hearts, diamonds*
 - *earth, air, fire, water*
 - *north, south, east, west*
 - *weekdays, plants, metals, colors, ...*
 - converse: relations between entities from alternative viewpoints
 - *buy vs. sell*
 - *own vs. belong to*
 - *above vs. below*
 - *employer vs. employee*

Antonymy

- Interestingly, 'antonyms' can be 'synonymous'
 - a good scare = a bad scare
 - *fat chance* = *slim chance*
 - *flammable* = *inflammable*
 - *valuable* = *invaluable*
- interestingly, a word can take on an opposite meaning
 - *perfect* vs. *a perfectly good bike*
 - *rent to X* vs. *rent from X*

Problems

- Problems of much of lexical semantics: what is a word anyway?
 - something semantic? the **symbolic linguistic counterpart of a single concept**?
 - no: in Nootka, a word can mean 'I have been accustomed to eat twenty round objects while engaged in doing so'
 - Bloomfield: **minimum free form** (which can be isolated in actual speech)
 - what about *a*, *the*, *my*? (which do not occur in isolation)
 - Lyons: **within-word cohesion > between-word cohesion**
 - the₁ boy₂ s₃ walk₄ ed₅ slow₆ ly₇ up₈ the₉ hill₁₀
 - slow₆ ly₇ the₁ boy₂ s₃ walk₄ ed₅ slow₆ ly₇ up₈ the₉ hill₁₀
 - up₈ the₉ hill₁₀ slow₆ ly₇ walk₄ ed₅ the₁ boy₂ s₃
 - *s₃ boy₂ the₁
 - but *the* still behaves like a bound morpheme ...
 - additional problem of grammatical definition: multi-word words: *to pick up*, *to put up with*, *hat gemacht*, ...

Problems

- Problems of much of lexical semantics in general and of *-nyms* in particular: what is a sense anyway?
- two ways in which the effective semantic contribution of a word form may vary
 - modulation
 - promotion/demotion
 - a *nurse* attended to us (♀=expected; ♂=unexpected)
 - a *pregnant nurse* attended to us (♀=canonical; ♂=demoted)
 - oh, look at the *butter* ('liquid' = possible, maybe unexpected)
 - he *poured butter* into the dish ('liquid' = canonical)
 - highlighting/backgrounding
 - the car needs *servicing* vs. the car needs *washing*
 - contextual selection

Problems

- Two ways in which the effective semantic contribution of a word form may vary
 - modulation
 - contextual selection
 - we looked at an indirect test: the **sense relations test**
 - *Guy struck the **match*** (synonym: *lucifer*)
 - *The **match** was a draw* (synonym: *contest*) → ambiguity
 - *The room was painted in **light** colors* (antonym: *dark*)
 - *He ran a **light** teaching load* (antonym: *heavy*) → ambiguity
 - **paronymy** (the relation between a word (base) and a form derived from it (the paronym))
 - *The **race** was won by Steve Davis* (paronyms: *to race*, *racing*)
 - *They are a war-like **race*** (*to race* and *racing* are not paronyms) → ambiguity
 - none of these tests is watertight: for example, both a **thin** soup and a **thin** tree-trunk have *thick* as antonyms

Problems

- Two ways in which the effective semantic contribution of a word form may vary
 - modulation
 - contextual selection
 - can one assert one sense and deny another?
 - *Is the subject of this poem a monarch?*
 - *Yes, it is a king*
 - *?No, it is a queen* → generality
 - *Has John changed his position?*
 - *Yes, he's now sitting next to the chairman*
 - *No, he still supports the death penalty* → ambiguity
 - *Did John make it to the bank?*
 - *Yes, he's a strong swimmer*
 - *No, he was arrested before he approached the building* → ambiguity
 - we looked at the *do so* test, here's a coordination variation:
 - *John and his driver licence expired last Thursday* → zeugma

XXX XXX
XXX XXX
XXX XXX
XXX XXX

XXX

XXX

- XXX
 - XXX
 - XXX
 - XXX