

HS Semantic perspectives
SS 2003

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Semantic perspectives: introduction

Three perspectives on semantics

A The lexical approach, semantics emerges as a structural property of syntax;
 à selectional restrictions for constituents
 • example: thematic roles

B The conceptual approach, meaning is equated with conceptualization,
 à environment is largely responsible
 • example: metaphors

C The logical/formal approach, semantics is equivalent to relations between expressions and what they are "about"
 à relation among items in language or between language and reality
 • example: inferences, truth values

Problems in semantic research across A - C

- 1. Comprehension:** novel sentences are understood
 à meanings of smaller parts are combined to meanings of larger wholes
 • meaning of expression: function of meaning of its parts and how they are combined
- 2. Ambiguity:** one form, more than one meaning/
 representation; all semantic theory is supposed to reflect syntactic/structural or lexical ambiguity
- 3. Anomaly:** syntactically well-formed but semantically anomalous constructs (*Green ideas...*)
- 4. Entailment:** A entails B if B is true in every possible state of affairs where A is true (human inference)

Problems in semantic research across A - C

- 5. Context:** utterances are in context of other expressions and in the context of a situation in which partners have beliefs/intentions

Classic central issues in semantics:

- a. non-psychologistic view:** meanings are abstract, "in reality" (Frege, Carnap)
- b. psychologistic view:** meanings are "in the head" (Fodor, Lakoff, Jackendoff)
 • therefore: Do meanings refer to objects or concepts? Is semantics a branch of mathematics or psychology?
 Jackendoff: this is E-semantics vs. I-semantics
 E-semantics: studied by philosophy
 I-semantics: studied by cognitive linguistics

Modern central issues in semantics

- c. integration view** (cf. Putnam)
 • model-theoretic vs. representational approach
 linguists: semantics is a level of representation analogous to lexical or phonological level
 psychologists: a "language of thought" exists
- d. AI research view:** semantics is equated with knowledge representation, cf. semantic networks
 à Most views are compatible in:

the computational theory of mind

Modern central issues in semantics

- e. natural language metaphysics**
 many humans conceive of the world as *something*
 • can be naive; universals in it exist (cf. color terms)
- f. semantic atomism:** Are meanings atomic?
 Hints at the problem of defining words with other words
 • Attempts to define a set of semantic primitives, (cf. NSM, Wierzbicka)
- g. meaning and use:** meaning can primarily depend on speaker's intentions
 therefore: sentence meaning can be unequal to speaker's meaning (cf. Pragmatics)

Lexical semantics: introduction

Critical semantic features of words (= lexemes) lead to different perspectives on their use, cf.

*John met Sue on/in Tuesday. John met Sue in/on the morning. John met Sue in/on March. John met Sue (*in/on) last night. John met Sue at/in/on ten o'clock.*

- world knowledge perspective: *March, Tuesday, the morning* select particular portions of time, of varying lengths
- syntactical perspective: no explanation to the fact that intervals of time are selected by specific PPs
à choice of preposition is a linguistic convention

Determining lexical semantic structure = considering regularities in the interaction between syntactic structure and word meaning

Jackendoff's Conceptual semantics perspective

Necessity of representing lexical semantic information of lexical semantic structures

à Jackendoff develops a representation for conceptual structure

1. semantic entities reflect human world knowledge
2. alternations in the linguistic context in which particular words (mainly VP + PP) used to identify generalizations over relations between alternate uses of lexical items
3. components of the lexical representation: are assigned a consistent semantics, can be combined in constrained ways

Lexical semantics: form of lexical decomposition is necessary to capture generalizations about the relationship between syntactic form and intended meaning

Decomposing meaning: a debate

Lexical semantic view: considers it impossible to decompose meaning into conditions for identifying semantic entities words correspond to (Verspoor)
Cognitive semantic view: conceptual primitives can be found through in-depth analysis (Wierzbicka)

Jackendoff on semantic decomposition: word meanings must have internal structure, due to the creativity of language use

- decomposition of word meaning into smaller semantic elements: allows specification of a generative, compositional system
- constrains the way the elements can be related
- constrains the way in which sentences can be constructed

The core of conceptual semantics

Concepts can be generated mentally on a basis of a finite set of primitives and combining principles

- lexical concepts: NOT lists of instances, instead: finite schemas

Jackendoff proposes an ontology:

An ontology is a specification of conceptualizations. (Gruber 1993). Ontologies describe the relationships of constituents or communities of constituents and provide the building blocks of conceptual representations.

- conceptual semantics: related to cognitive semantics, both deal with encoding of spatial concepts and their extension to other conceptual fields
- but: conceptual semantics insists on autonomous syntax level and on formal representation

An ontology of conceptual representations

Jackendoff's ontological categories (9):

Thing, Event, State, Action, Place,
Path, Property, Manner, Amount

- ontological categories permit the formation of Wh-question except State (contrast with Events)

- | | |
|-------------------------------|----------|
| 1. What did you buy? | Thing |
| 2. What happened next? | Event |
| 3. What did you do? | Action |
| 4. Where is my car? | Place |
| 5. Where did they go? | Path |
| 6. What was she like? | Property |
| 7. How did you cook the eggs? | Manner |
| 8. How long was the snake? | Amount |

cf. *John ran toward the house; John and the house* are Things, the PP *toward the house* is a Path, the entire sentence is an Event

Semantic capacity and cognition

Semantics as a bridge between theory of language and theory of other cognitive capacities (perception, motor)

- no justification of semantic capacity independent of cognition

• to study semantics = to study cognitive psychology
Cognitive psychology: adopts terminology of "functional architecture" without physical structures

Conceptual semantics goal: description what humans need to know to have competence
Jackendoff: meanings to be expressed by formal semantic structures, related to syntactic structures via correspondence rules of well-formedness

Gestalt principles in semantic theory

Wertheimer 1923: salient configurations (x x x x x)
 = perceptual principle of spatial proximity allows grouping of objects

à identical with temporal proximity: allows grouping of events (sound, flashes)

• proximity is not essential for grouping, cf. similarity (x x o o o)

à elements are grouped according to an internal feature

• grouping is weaker when disparity is smaller

à Jackendoff: a level of a mental representation exists that generalizes ACROSS sensory modalities

• proximity and similarity: can overlap and reinforce or weaken the judgment

Processes of conceptualization

- governed by principles like figure/ground
 - connects "frame"-approach with gestalt principles
 - Fillmore: frame grammar in lexical semantics
- Fillmore's classic example: "commercial event" frame

BUY involves *buyer, seller, goods, money*

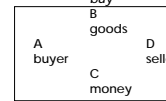


Fig. adapted from Ungerer/Schmid 1997:207

- advantage: single frame can account for various clause patterns
- to be applied to related words (*sell, cost, charge...*)

Frames in lexical semantics

Fillmore's frame notion: any system of linguistic choices e.g. collections of words, choices of grammatical rules or linguistic categories - that can get associated with prototypical instances of scenes
 à view shifted towards a mainly cognitive interpretation

Frames: specific unified frameworks of knowledge or coherent schematizations of experience

Fillmore/Atkins 1992: Frames are cognitive structures, knowledge of which is presupposed for the concepts encoded by the words

à frames, originally linguistic, have cognitive reinterpretation

- every sentence evokes a cognitive perspective

Talmy's Event frames

Motion event: can be without actual motion
 cf. static use of prepositions as an elaboration of their dynamic nature

- other parameters: cause-factor of a motion event
- Talmy defines 6 elements: figure, motion, path, ground, manner, cause

Event frame: set of conceptual elements and relationships that are evoked together or co-evoked each other; incidental elements or weakly evoked elements are outside the event frame

- can have different degrees of prominence

(1) *Bleriot flew across the Channel from Les baraques to Dover.*
 ground "real" setting, less prominent

(2) *Bleriot flew across the Channel*
 figure motion path ground

Event frame phenomena

Motion event paths: open, closed, fictive

a.) open: *out of the plane, into the house*

b.) closed: has different type of windowing (*get milk*)

c.) fictive motion event: *My bike is across the street from the bakery*

Causal-chain event frames: different degrees of causation exist apart from causative (*drop*) vs. non-causative (*fall*)

• events can be caused by other events without agents (*The vase broke*)

• events can be unintentionally caused etc.

• a gradient of causality, often as sub-events
 cf. *The boat sank/ The enemy sank the boat*

Language-specific event framing: Conflation

Conflation features in English:

1. figure rendered as subject (*Bleriot*)
2. path and ground: adverbials (*across...*)
3. motion and manner: verbs (*fly*)

Conflation features in Spanish:

1. figure rendered as subject (*Bleriot*)
2. path is rendered as verb (*traversar*) à *traversa...en avion* instead of *volar (fly)*
3. manner is rendered as adverbial (*en avión*)

Conflation: process of lexicalization in which certain parameters of an event/proposition are merged;
 = parametric variation within motion verbs

A language-specific conflation sketch

conflated:	Germanic motion + manner to fly	Romance motion + path traversar
separate:	path to Prague	manner en avión

Continuum of conflation effects:
German English Spanish

<i>fahren</i> <i>hinausgehen</i>	<i>drive/go by car</i> <i>go out/leave</i>	<i>ir en coche</i> <i>salir</i>
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German speakers [...] tend to orient to some marking of boundedness. [...] English, by contrast has gone in a different historical direction among the Germanic languages, grammaticizing the progressive. [...] we find that [...] English-speaking narratives tend to mark durativity more than termination in their descriptions. (Slobin 1997:81)

Temporality of events

- telicity / atelicity transition:
analogy of mass noun / count noun transition
analogy of spatial resolution / temporal resolution

- melding; count noun as mass noun (*much brain*)
- discretizing; mass noun as count noun (*a water*).

mass noun <i>He drank beer</i> telic <i>He drank a glass of beer.</i>	count noun <i>He drank a beer</i> atelic <i>He drank of a glas of beer</i>
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Aspect vs. aktionsart

- implement grammatical dichotomy
- fundamental opposition
perfective / imperfective vs. terminative / durative
- aspects determine logical roles (outer perspective, cf. Comrie)
- aktionsarten determine temporal structure of the verb (inner perspective, cf. Bybee)
- telicity vs. atelicity (cf. Parsons)

- activity (*to run, to push a cart*)
- accomplishment (*to run a mile, to draw a circle*)
- achievement (*to win a race, to reach the summit*)
- state (*to love somebody, to hate something*)

Telicity/atelicity of events

- telicity combines with quantity

atelic + quantified	→ telic	(<i>to draw a circle</i>)
atelic + unquantified	→ atelic	(<i>to drink beer</i>)
telic + quantified	→ telic	(<i>to splint trunks</i>)
telic + unquantified	→ atelic	(<i>to splint wood</i>)

- English and German differ in regard to directionality
ankommen, verstecken - arrive, hide

Seven basic types of aktionsarten 1

- telic, no extension
(*to flash, blitzen*)
- atelic, no right border
(*to start, starten*)
- telic, no left border
(*to arrive, ankommen*)

Seven basic types of aktionsarten 2

- telic, left and right borders
(*to read a novel, einen Roman lesen*)
- telic-iterative internal borders
(*to shake off, abschütteln*)
- atelic-iterative internal borders
(*to shake, schütteln*)
- telically neutral, no borders
(*to be, sein*)

The problem of metaphors: Introduction

Use of metaphors: to designate one entity in order to designate another

- a. nominal metaphors: *Bertie is a dolphin*
 - b. predicative metaphors: *The dog flew over the field*
 - c. sentential metaphors: *Our troops fought bravely*
 - linking of nominal/predicative metaphors:
 - d. *Mary's car is a bullet*
 - e. *Mary flew home in her car*
- d + e: prototypical attributes selected for transfer (*bullet*: fast, flying objects, *to fly* for fast motion)
à prototypical members of categories used as metaphors
- Two theories on the use of metaphors:
 1. pragmatic theory of metaphor (Searle)
 2. cognitive theory of metaphor (Lakoff, Langacker)

The pragmatic theory of metaphor

Processing from literal to intended meaning

- literal meaning is computed first, if incompatibility à literal meaning is rejected
 - only when literal meaning makes no sense a metaphorical meaning is derived
- Problem 1: metaphors are ignored whenever a literal meaning applies

Simile vs. Metaphor discussion:

- metaphor: *X is a Y* simile: *X is like a Y*
- Problem 2: it took less time to comprehend
My lawyer is a shark – than *My lawyer is like a shark*.
- Problem 3: literal meaning can make sense (*The dog flew across the street*)

Function of metaphors: assertive function

Class inclusion assertion (Glucksberg 2001): entity used metaphorically for its hyperonym

- dual reference function, cf. *Cambodia was Vietnam's Vietnam* (1st reference: nation, 2nd reference: disastrous military campaign)
- metaphor as name-giving device for unnamed occurrences, cf. *Watergate* for: "political affair involving corruption"

Attributive assertion: goes beyond aspect of comparison to attribute salient properties of (attribute = Greek = transfer) one entity to another

My job is a jail
à *job* receives semantic categorization rules like *jail*

The cognitive theory of metaphor

Cognitive linguistics: metaphors impose systematic correspondences between different cognitive skills

- are acquired early
- experiences can change mode, cf. *bright sound, loud colors, soft moonlight, dark cough*
- metaphor seen as direct reflection of underlying conceptual structures

Metaphors allow us to understand our selves and our world in ways that no other modes of thought can (Lakoff/Turner)

Problem 1: metaphors are determined by culture

- domain - mapping can be culture-specific
- depends on selection
- connectionist interpretation: experienced properties of reality allow efficient mental access

Cognitive semantics: Introduction

Main concern: how sentences and utterances generate meaning

- based on experience, perception, conceptualization; conceptual tool: metaphor established in 1960, turn with Lakoff and Johnson 1987

They state that speech and understanding, i.e. higher order mental processing; have a basic metaphorical character grounded in basic level schemata which are embodied (Rosenbaum/Garfield)

embodied: conceptual structures are based on bodily experience, therefore: core of our conceptual systems is grounded in perceptions, body movement, and experience of a physical and social character (Lakoff 1987)

Prototypicality revisited: Usage of prepositions

P: closed lexical class, basic meaning: spatial

- function: to mark a configurational relationship between entities (locational, directional)

to hid in a box (space)
to meet in 1990 (time)
to have fun in working (abstract)
The park is pretty with the trees in bloom
He was yelled at by the cop
I agree with you
to outrun the competitors
the downfall of Macbeth
the fallout of Chernobyl
She was outed by the newspaper

à wide semantic potential and syntactic distribution
core node of network: prototype = central reference point
• spatial uses are in the center

- semantic networks: capture different senses of a lexical item
à Do networks exhibit isomorphism with mental structures?

Lakoff: prototypical usage for *over*: *The plane flew over*
no landmark / ground; for *over*, motion is more prototypical than static location

Problems of semantic definability

Idea of semantic atomism: all meanings are decomposable into "atomic concepts" drawn from a fixed, universal set

- idea goes back to Leibniz
- problems up to today: establishing this set
 - à semantic research is essentially decomposition
- most systematic framework for analysis of natural language: Wierzbicka
- proposes a metalanguage capable of representing meanings of emotion words in terms of limited numbers of semantic primitives
 - à scriptlike understanding of semantic items are represented as a string of propositions forming prototypic event schemas

Semantic primitives: attempt at defining meaning

Paradox of defining words: needs something to be defined (definiendum) and something to define it with (definiens)

- sets of definiens: supposed to be indefinibilia
- Wierzbicka's basic assumption: lexicon of any language to be divided into 2 parts
 1. small set of words/morphemes regarded indefinable
 2. large set of words definable
- rule: 1. defines 2.
- words in 1. can be listed: list is language-specific but realizes in its own way the innate "alphabet of thought"
 - à 1. is universal although different languages use different labels

Semantic primitives: specification

Therefore: number of indefinables is equal in all languages

- cross-linguistically the labels can be matched
- they are semantically equivalent and therefore true linguistic universals
- current list: 30 from originally 14 entries
I, you, someone (who), something (What), this, the same, two, all, think, says, know, want, feel, do, happen, good, bad, big, small, can(?), place (where), time (when), after, under, kind of, part of, like (how), because, if (imagine), more, very, no (I don't want)
- elements have own, language-independent syntax (e.g. nominals go with verbals and determiners)
 - à this models a language of thought
- meaning = a configuration of semantic primitives

Semantic primitives: usage and examples

Primitives enable words to be compared with intuitively related words

- à makes symmetries between words obvious

- cf. difference *ask / order / complain*
- ask:* (I say): I want you to do it
- order:* (I say): I want you to do it
(I think): you have to do it because of this
- complain:* (I say): something bad is happening to me
I feel something bad because of this
- boundaries: sometimes fuzzy but fuzziness can and should be predicted by a well-researched definition