

Assignment

Introduction and Semantics

Problem 1

Questions:

- What is natural language?
- What is the difference between tokens and types?
- What is computational linguistics?
- What is a text corpus?
- What is Heaps' law?
- What is the paradigmatic axis?
- What is the syntagmatic axis?
- What is onomatopoeia?
- What is a light verb or "Stützverb"?
- What is a lemma?
- Why are traditional lexicons difficult to use in computational linguistics?
- What is knowledge engineering?
- What is Cyc(orp)?

Problem 2

Give examples for the following and explain the examples.

- The semiotic triangle for a specific word: which aspect of the word does each of three vertices correspond to?
- Polysemy
- Ambiguity
- Cohyponymy
- Meronymy

- Holonymy
- Troponymy
- Antonymy
- Synonymy
- Hypernymy
- Homonymy
- Homophony
- Homography

Problem 3

For each of the expressions set in italics below, give one argument why it is a word and one why it is not a word.

- *rotes Tuch*
- *finn an*
- *An- und Verkauf*
- *Rindfleischetikettierungsüberwachungsaufgabenübertragungsgesetz*

Problem 3

In feature semantics, a word is represented as a vector of features / attributes. For each of the following pairs, give a prominent feature / attribute for which the two members of the pair have different values.

- woman – girl
- woman – man
- palace – house
- pig – pork

Problem

Which word is defined by the following definition? Explain.

someone X said something to someone else Y
this someone knew that it was not true
this someone said it because he/she wanted this other someone to think
that it was true
people think that it is bad if someone does something like this

Problem

Rank the expressions in italics in the following five sentences according to compositionality: 1 (most compositional), 2, 3, 4, 5 (least compositional).

Rank the expressions in italics in the following five sentences according to conventionality: A (most conventional), B, C, D, E (least conventional).

Indicate ties by equations, e.g., 3=4.

Justify your ranking.

- Dieser *Mantel* ist *braun*.
- Seine *Hautfarbe* ist *weiß*.
- Er *hat nicht alle Tassen im Schrank*.
- *Der Ausstieg befindet sich in Fahrtrichtung links*.
- Er *nimmt eine einzigartige Position ein*.