

Empirically Motivated Logical Representations in Lexical Semantics

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ILLC

Project Description

- Logic & Language project, with an experimental flavour.
- The right project if you are interested in the meaning of natural language words & like to combine analytic thinking with empirical research.
- **Goals:**
 - (i) To get acquainted with current research in lexical semantics, in particular with issues related to the semantics of predicates, focusing on gradable adjectives, multidimensional adjectives and nouns, antonyms, and vague predicates.
 - (ii) To develop skills to formulate research hypotheses that can be supported empirically, with quantitative evidence.

Some puzzles concerning gradable adjectives...

- For some pairs of antonyms, the negation of one form entails the assertion of the other – but for some pairs this is not the case:

(1) x is not **open** $\models x$ is **closed**

(2) x is not **large** $\not\models x$ is **small**

- Some antonyms exhibit different entailment patterns in equative constructions:

(3) x is as **tall** as y $\not\models x$ is **tall** & $\not\models y$ is **tall**

(4) x is as **short** as y $\models x$ is **short** & $\models y$ is **short**

- Some antonyms exhibit different entailment patterns in the comparative form:

(5) x is **taller/shorter** than y

$\not\models x$ is **tall/short** & $\not\models y$ is **tall/short**

(6) x is **wetter** than y $\models x$ is **wet**

(7) x is **drier** than x $\models y$ is not **dry**

Some puzzles concerning gradable adjectives...

- Some gradable adjectives are multidimensional:

(8) x is **healthy**, except for blood pressure

(9) x is **tall**, except for ... ?

- But not all multidimensional adjectives seem to have the same distribution:

(10) x is **sick**, ??except for blood pressure

(11) almost **healthy** / ??**sick**

Research Methodology

What we would like you to find out during this project is:

- What kind of **formal tools** can we use to model the semantics of predicates so as to account for the observed contrasts?
- How can we inform our **theoretical claims** with **quantitative evidence** from language use?
- Empirical evidence from usage in naturally occurring language (in collected corpora or the Web) allows us to go beyond our linguistic intuitions and to better estimate the space of grammatical possibility.
 - what empirical resources are available?
 - what tools can be used to explore these resources?
 - what kind of quantitative/statistical analyses can be employed?

Organisation & Assessment

- **First part:** Introduction to the main theoretical issues and to the empirical methodology. This will involve readings, lectures, discussions, and/or presentations of (parts of) papers.
- **Second part:** Individual research projects, involving for instance
 - an extension of an existing or original semantic proposal;
 - an empirical study providing evidence supporting or refuting an existing or original proposal;
 - an experiment design, describing the hypothesis, the thinking behind the hypothesis, the testing methodology, and the expected outcome given the hypothesis. - ...
- **Assessment:** Participation in the discussions of the readings and a final report of the research project to be submitted in February.

Practicalities

- Have a look at the website, it will be updated regularly:
<http://staff.science.uva.nl/~raquel/teaching/MScProject2010.html>
- Email us if you have questions:
raquel.fernandez@uva.nl / galitadar@gmail.com
- Register before the deadline!
Let us know by **15 December 2009** – the final shape of the course will depend on the number of students registered.