What is meaning

• Natural signification
  – smoke means fire
  – the silence means they have murdered each other
  – Inductive reasoning – reasoning about causes.
  – Effect “means” cause
  – Means = implies = signifies
  – Deductive example:
    * Adopting a child means a lifetime of responsibility
  – The seen “means” the unseen, reliable indicator
  – reliable indicator broader than causality:
    * I just saw geese flying south. That means ice cream sales are about to fall way off.
  – Signification, sign, value
  – Natural versus conventional: source of reliability of indicator

• Signification and communication
  – Birdbrain example
  – Sign is utterance, value is thought
  – Connection: thought caused utterance
  – Hearer infers thought (value) from utterance (sign), side effect is transfer of thought (communication)
  – “she is cheerful” means SHE IS CHEERFUL
  – my utterance “she is a bird” did not mean SHE IS A BIRD, it mean SHE IS CHEERFUL
• Conventional signification
  – “cat” means, “neko” means
  – Establishing a conventional association
  – “domestic feline” invokes CAT, then we bind “cat” to CAT
  – “cat” invokes CAT, then we bind “neko” to CAT
  – Use and mention:
    * Odd: “the word ‘neko’ means the word ‘cat’ ”
    * Rather: “the word ‘neko’ means the same thing as the word ‘cat’ ”
  – Paraphrase

• Representation
  – That is a cat
  – Connection to the world.
  – Use perceptual system to identify the correct concept
  – But also: concept (and word) represent object
  – Word signifies object (via concept) when object is not present

• Concepts
  – The pattern of neuronal connections in my brain representing cat don’t look like yours
  – Can a silicon-based life form have the concept of “cat”?  
  – If we can communicate, we must “share” a concept – in what sense?
  – Not how the idea looks in my brain, but how it behaves
  – We have the same concept if we agree about what is a cat and what is not
  – Even if we can cut up the world of perception and rearrange it in arbitrary ways
    * virtual reality, Spock’s brain
    * possible worlds
  – Treat CAT as a cat detector
  – What matters is not how it computes, but what function it computes
  – Mental representation of concept = cat detector
  – Redefine concept CAT to be what all mental representations have in common
  – Set of objects (real and imaginary) that are cats

• Semantic compositionality
Mental rep of sentence meaning is situation-detector (assembled on the fly)
Given a fixed situation (the actual situation), value is true or false
A model represents the entirety of the actual situation

Rule-by-rule translation

• Handout 1–9
  • Set-theoretic structures
    – Characteristic function: interchangeability of sets and functions
    – Lambda abstraction
  • Model
    – Valid = tautology
    – Contradiction
    – logically equivalent
    – logical consequence

• Variables and quantification
  – Handout 10–11
  • Co-reference:
    – John shaved himself, John shaved him
    – Every NP is assigned an index
    – An index is like a variable: pronominal referent assignment assigns individuals to indices

• Quantifier raising
  – Handout 12
  • Generalized quantifiers
    – all, some
    – two, at least two
    – most, only

• Davidsonian events
  – the little dog barked at midnight for an hour in the kitchen under the table . . .

• Object relatives
  – Handout 13

• Wh-questions
Inference, query

- Handout 9: Skolemization and Prolog