01:615:201
Introduction to Linguistic Theory

Adam Szczegielniak

Wrap up
Human language

• Organ in the brain
  – Does not have to be localized
  – Think skin, circulatory system

• Acquired not learned
  – Critical period
  – Poverty of stimulus
  – Phases in acquisition

• Species specific
Modules - phonology

• Phonology
  – Minimal pairs give us phonemes – smallest units of meaning
  – Allophones derived from predicable context
    • Morphological context
    • Phonological context
  – Crucial notion of alternation
Modules- morphology

- Morphology
  - Smallest element with constant meaning – a morpheme
  - A morpheme can have different forms provided the environment is identifiable
  - Environment can be phonological
  - Morphological, its own output
  - Syntactic?
Modules - Syntax

• Syntax
• Computation of sentence form and connection to meaning
  – Words and phrases used as units of syntax: phrases
  – Non-linear structure of sentences
  – Movement connects different expressions at level of theta role assignment
Modules - Semantics

• Semantics
  – Computation of truth values of propositions
    • entailment
  – Computation of predicates
  – Constrained by syntax
  – Discourse maxims
    • Implicature
  – Denotation and the real world
    • Tenuous connection
Acquisition

- Language acquisition is part of cognitive development that is not fully equivalent to conscious learning
- Stages
  - Babbling
  - One word, etc.
- No negative data
- Poverty of stimulus
- Species oriented
- Corrections have minimal impact
- Everyone succeeds!
Processing

- Differentiate use from knowledge
- Real time behavior utilizing language knowledge
- Constrained by:
  - Memory, attention
  - Physical capabilities of input mechanisms
  - Strategies: Minimal Attachment vs Late Closure
- Top down sometimes bottom up
Aphasia

- Aphasia
  - Language disorders
  - Specific behavioral impairments
  - Correlated with brain regions

- Might be an argument for modularity but not have to

- Definitely an argument for dissociation knowledge from processing
Networks

- Computer science
  - Computer modeling of language behavior
  - Not necessarily a model of what humans do
  - Need to assume one algorithm hypothesis
- Neural net training is behaviorism
  - S->R
  - Not what children do
- Baysian enhanced Markov probability counting gets you as far as you can, still need linguistic structure.
- But neural nets can mimic aphasia