BCS 561: Speech Perception and Recognition

Spring 2006

Instructor: Richard Aslin

Wednesdays 1:15 - 3:15 PM
Meliora 418

Course Description

Provides an overview of the theories and empirical findings on human speech perception and recognition. Topics include an overview of phonetics, categorical perception, speech perception by nonhumans and by human infants, perception of nonnative speech sounds, intermodal perception of speech, and the interaction between speech perception and production. Additional topics include talker, rate, and dialect variability, perception of sine-wave and noise-vocoded speech, gradient effects in consonant perception, cochlear implants and plasticity, brain correlates of speech perception (fMRI, MEG, ERP), and automatic speech recognition.

Schedule of topics and list of readings

February 1: Historical perspective on speech perception

Readings:


February 8: Categorical perception and gradiency

Readings:


Optional readings:


February 15: Motor and gesture theories

Readings:


Optional readings:


February 22: Speech perception by non-humans

Readings:


Kuhl, P. K. (1986). Theoretical contributions of tests on animals to the special-mechanisms debate in speech. Experimental Biology, 45, 233-265. [Skip pp. 253-265]


**Optional Readings:**


**March 1: Speech perception by infants**

**Readings:**


**Optional Readings:**


**March 8: Brain mechanisms of speech perception**

**Readings:**


**Optional Readings:**


**March 22: Cue reliability and trading relations**

**Readings:**


**Optional Readings:**


**March 29: Effects of indexical variables (talker, rate, dialect) on speech perception**

**Readings:**


**Optional Readings:**


**April 5: Perception of non-speech signals (Remez guest speaker)**

**Readings:**


**Optional Readings:**


**April 12: Levels of analysis and processing of speech signals**

**Readings:**


Salverda, A. Dahan, D, Tanenhaus, M., Crosswhite K., Masharov, M., & McDonough, J. (under review). Effects of prosodically-modulated sub-phonetic variation on lexical neighborhoods.


**Optional Readings:**


**April 19: Speech perception via cochlear implants and adaptive plasticity**

**Readings:**


**Optional Readings:**


**April 26: Automatic speech recognition devices**

**Readings:**


**Optional Reading:**