Cognitive and Linguistic Sciences (CG) 1, Sem. I, 2007-08
Approaches to the Mind: Introduction to Cognitive Science

Required Texts
- Readings available on WebCT6

WEBCT6
Go to https://mycourses.brown.edu to log in.
Your short ID is a field in the Electronic Address Book (EAB);
find your name: http://www.brown.edu/cgi-local/webph
Your password the first time is your SIS #

Check the calendar on WEBCT6 for scheduling of topics, readings, and class lectures during the semester.

Syllabus
I. Introduction
   What is cognitive science?
   Theoretical issues
   Methodological issues
   Modularity
      Cognitive architecture


II. Cognitive Architecture Systems: Higher level vision
   Object recognition
      Visual search
      Object representation
   Visual Processing Streams – What & Where
      The binding problem
      Neglect
   Mental Imagery
   Category specificity: Are faces special?

Readings
- WebCT reading:
III. Concepts and Categories
   Meaning in the Brain
      Category specificity for objects
      The link between perception and language
   Representation of Categories
      Formal definitions
      Probabilistic theories
      Prototypes and exemplars

Readings
   • Kellogg, ch. 7, pp. 183-193; reread pp.194-211.
   • WebCT reading:

IV. Cognitive Architecture Systems: Language
   Theory of language
      Levels of representation
   Language processing
      Sound structure
      Categorical perception
      Lexical processing
      Sentence processing
   Neural basis of language
   Sensory-motor integration

Readings
   • Kellogg, ch. 2, pp. 53-61; ch. 8, pp. 213-243.
   • WebCT reading:
Kellogg, ch. 3, pp. 63-84; reread 44-45, 84-91.

WebCT reading:

memory and amnesia:

Hunt/Ellis, ch.4, pp. 111-138; ch.5, 139-173; ch. 6, 174-201; ch. 7, pp.202-231.

WebCT reading:

VI. Modeling: Computation and Representation
Modeling the Mind
Reasoning and decision making
Models as tools
Cognitivism: The Mind as Computer
Information processing and symbolic representation
Artificial Intelligence
Connectionism: Neural Modeling
Parallel Distributed Processing (PDP)
Models of the mind and networks in the brain

Readings

Kellogg, ch.10, pp.279-309 (skim).

WEBCT Reading:

VII. Nature/Nurture
Critical periods
Bird song
Child language acquisition

Readings

WEBCT Reading:
-- review Kurson, R. *Crashing Through*, excerpts in vision folder.
VIII. Big ideas
   Emotion
   Evolution
   Theory of mind
   Consciousness

Readings
Emotion
   • Kellogg, pp. 13-14; 299-300.

Evolution
   • WEBCT Readings:

Theory of Mind
   • WEBCT Readings:
       Cognitive Science, 6, 517-523.

Consciousness
   • WebCT Reading:
       Mapping the Theoretical Landscape. Trends in Cognitive Science, 2000, 4,
       372-382.
     -- Churchland, P. Self-representation in nervous systems. Science, 296,
       308-310.

COURSE REQUIREMENTS
   Exercises
   Exercise 1 due in class: Friday, Sept. 28
   Exercise 2 due in class: Friday, Oct. 12
   Exercise 3 due in class: Friday, Oct. 26
   Paper topic due in class: Monday, Nov. 5
   paper (10 pages) due: Monday Dec. 3 by 5 pm
   final: Saturday, December 15 @ 2 pm

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