Introduction to Cognitive Science  
Summer 2014

Cognitive Science 110, and Psychology 130  
When: M,W,F 1-3:15  
Where: TBD  
Office hours: directly following class Mon. and Fri.  
Materials:  
1) Readings available on classes V2: https://classesv2.yale.edu/portal/  
2) Textbook  
   Title: Cognitive Science  
   Author: Bermúdez, José Luis  
   Publisher: Cambridge University Press  

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Welcome to Introduction to Cognitive Science! Cognitive Science takes on the lofty endeavor of figuring out “how the mind works” This course will show that cognitive science uses many avenues of exploration (from philosophy to neuroscience) and levels of investigation (from overt behavior to cellular reactions). Cognitive science is known for its interdisciplinary nature, drawing on the areas of computer science, linguistics, philosophy, neuroscience, psychology and more. In this course we will explore topics of decision-making, perception, reasoning, innate abilities, morality (including some political science), attraction and more. Hopefully, by the end of the course you will have an understanding of cognitive science, and potentially, some personal insight into how your own mind works.

Course Requirements
The bulk of the class work will consist of active participation, predicated on the expectation that you are reading the assigned text and articles outside of class. The textbook reading is to ensure that you leave this class with a good understanding of the history and scope of cognitive science. On the other hand, lectures will be primarily based on interesting empirical research on more specific topics. Therefore, reading of the text and the empirical articles is mandatory and both will be included on exams.

Class Preparation (Reading) and Participation Grade (40%)  
Students should be prepared by completing the reading prior to the beginning of each class. They should also be sure to attend class and participate in the discussions. There will be thoughtful reading responses due for most readings. This is done to help you to integrate the material, and to be sure that you keep up on your reading. We will have in class
exercises that will combine with the class preparation for this portion of your grade. Classes are long and we will take a break most days.

**In-Class Exams (60%, 2 exams x 30% each)**
Two in-class exams will be given, namely, one midterm and one final. Exams will evaluate knowledge gathered from the book, the lectures, and the papers presented in class. Exams will be short-answer and multiple choice.

For the Yale College Policy on Academic Dishonesty, please refer to:
http://yalecollege.yale.edu/content/cheating-plagiarism-and-documentation
Class Schedule
(This is preliminary - some readings will be excerpts, some may be removed, and some may be gone over in class - but not a reading assignment)

Week 1
1.1 (7/7) Welcome, Introduction, & Methodologies in Cognitive Science
No Reading for this class

1.2 (7/9) Foundations of Cognitive Science
Read:
1. Chapter One, Pgs. 3-28 (History)

1.3 (7/11) Interplay of Cognition and Experiential Sense
Read:
1. Chapter Two, Pgs. 29-58 (Interdisciplinary Nature)
In Class: Optical & Auditory “Illusions”

Week 2
2.1 (7/14) Examples of Neural Architecture and Vision
Read:
1. Chapter Three, Pgs. 59-85 (The Brain)
In Class: Visual System and Attention

2.2 (7/16) Nature and Nurture
Read:
1. Chapter Four, Pgs. 86-115 (Integration)
2. Bouchard (2008), selection from “Genes and Human Psychological Traits”
3. Sugita (2008), "Face Perception in Monkeys Reared with No Exposure to Faces”
In Class: Nature and Nurture

2.3 (7/18) Evolution and Consciousness
Read:
1. Chapter Five, Pgs. 117-141 (Integration)
2. Churchland (1988), Chapter 2 of Matter and Consciousness (2nd Ed.)
In Class: Your Brain on Love: Biological Drives, Mate Preferences, Pheromones, and the Three Neural “Love Pathways”

**Week 3**

**3.1 (7/21) MIDTERM EXAM**

**3.2 (7/23) Mental Circuitry**
Read: 1. Pinker (1997), selection from “Standard Equipment”
Choose one of the following to read and comment on in the discussion board (V2):
   3. Freedberg (20047), “Motion, Emotion, and Empathy in Esthetic Experience”
In Class: Fieldtrip to Yale Art Gallery

**3.3 (7/25) Comparative and Infant Cognition**
   3. Hare (2005), “Human-like Social Skills in Dogs?”
In Class: The Cognitive Life of Babies (dogs, and scrub jays...)

**Week 4**

**4.1 (7/28) Modularity and “Mental Organs”**
Read: 1. Chapter Eight, Pgs. 215- 245 (Neural Networks- Information Processing)
In Class: Two Topics: 1)Modularity and 2) “Neuro-morality”

**4.2 (7/30) Language!**
Read: 1. Chapter Nine, Pgs. 246- 283 (Neural Networks-Language)
   2. Pinker (1994), chapters 4 - 5 of The Language Instinct
In Class: Two Topics: Linguistics in cognitive science. Organization of information in memory.


4.3 (8/1) Neural Structures - Perception

Read: 1. Chapter Eleven, Pgs. 325-361 (Brain Mapping)

In Class: Neural systems; Face processing and sensory processing

Week 5

5.1 (8/4) Social Understanding and Connection

Read: 1. Chapter Twelve, Pgs. 363-409 (Mindreading)
      5. Hickok (2010), “(Mis) Understanding mirror neurons”

In Class: Neural Correlates of Social Connection and Disconnection

5.2 (8/6) Going Forward and Review for Exam


In Class: Review Session

5.3 (8/8) FINAL EXAM (Cumulative)