Course Syllabus

Thinking

Psychology 264
Winter 2018

Keith Holyoak

Meeting times: Tu Th 2-3:15pm Franz 6461

Instructor: Keith Holyoak
6613 Franz Hall, 206-1646, holyoak@lifesci.ucla.edu
Office hours: Tues 3:30-4:30 and by appointment

Purpose of Course: The intent is to develop understanding of major approaches to thinking, with emphasis on inductive and deductive reasoning, categorization, analogy, decision making, and problem solving. The course will examine a broad range of theoretical approaches to cognition, including rule-based systems, neural-network models, and Bayesian approaches. The various theories will be related to empirical studies of human thinking and its neural substrate.

The readings will be largely drawn from chapters in a handbook (bold items on Course Outline):


All readings will be posted on class website.

Course Requirements: There will be two in-class exams on lecture, discussion, and reading material, and also a term paper. Students are to choose a paper topic by the 6th week; the topic must be approved by the instructor. The paper is due end of 10th week. Students will also be asked to submit 1-2 discussion questions in advance of each class, and take the lead in organizing discussion for (roughly) two class sessions. Grading will be based 30% on each of the two in-class exams, 10% on contributions to discussion, and 30% on the paper.
Tentative Course Outline

A. The Nature of Human Thinking

Week 1
Jan 9  What is “thinking”?

Jan 11  Mental representation

Holyoak & Morrison, Ch. 1
Chater & Oaksford, Ch. 2

Markman, Ch. 4
Marr (1982)
Chalmers (1995)
Searle (1999)

B. Inductive Reasoning

Week 2
Jan 16  Similarity

Jan 18  Concepts and categories

Goldstone & Son, Ch. 10
Murphy & Hoffman (2012)

Week 3
Jan 23  Bayesian approach to induction

Jan 25  Causal learning

Griffiths et al., Ch. 3
Cheng & Beuhner, Ch. 12
Waldmann et al. (2006)

Week 4
Jan 30  Analogy and relational reasoning

Feb 1  Computational and neural approaches

Holyoak, Ch. 13
Doumas & Hummel, Ch. 5
Morrison & Knowlton, Ch. 6

C. Deductive Reasoning

Week 5
Feb 6  Dual process theories

Feb 8  Mental models

Evans, Ch 8
Johnson-Laird, Ch. 9

Week 6
Feb 13  Relevance and context

Feb 15  MIDTERM EXAM #1

Skovgaard-Olsen et al. (2016)
Week 7  
C. Judgment and Decision Making and Beyond

Feb 20  Decision making  

   paper topic due

Feb 22  Heuristic judgment and rationality

Week 8
Feb 27  Moral judgment

Mar 1  Moral judgment (con’t)

Week 9
Mar 6  Language and culture

D. Problem Solving and Creativity

Mar 8  Problem solving and scientific thinking

Week 10
Mar 13  Creativity, insight, and genius

Mar 15  MIDTERM EXAM #2

Mar 19 (Monday)  PAPERS DUE!
Bibliography (Individual Papers)


