

Cognitive Bases of Behavior  
Study Questions III  
November 25, 2008

- 1) Be familiar with the following concepts from the Gestalt approach to problem-solving: problem restructuring, functional fixedness, insight, 'productive' vs. 'reproductive' problem-solving.
- 2) Define and understand the following ideas from Newell & Simon's problem-space theory: initial knowledge state, goal knowledge state, mental operator, algorithm, heuristic, means-end analysis. Be familiar with the way that problem-space theory would describe behavior on the Tower of Hanoi or missionary-cannibals problem.
- 3) What are the major strengths and weaknesses of problem-space theory?
- 4) What are the essential features of analogic reasoning? Use Holyoak's radiation/military problem to illustrate your major points.
- 6) What are the four major forms of conditional reasoning? Give an example of each, using the following statement: "If the patient is suicidal, then they will respond to antidepressants" as a guide. Be prepared to comment on the relevance of this concept for clinical decision making in real-life clinical situations.
- 7) What is subjective utility theory? What are its merits? What are its limitations? What is prospect theory? What are its merits? What are its limitations? Be able to discuss the manner in which anticipated losses v. gains influences decision making.
- 8) Be familiar with the concepts of "satisficing", "sunk cost effect", "status quo effect", and "endowment effect".
- 9) What role do heuristics play in decision making? Describe the major heuristics that appear to govern everyday decision making. Be sure to understand the availability heuristic, the frequency heuristic, the representativeness heuristic, and framing effects and how they influence decision making in diverse situations.
- 10) It can be argued that the many real-life problems faced by society cannot be fully addressed by cognitive research in problem solving, since most available research deals with problems that are reasonably well-defined and pertain to issues about which much is known. Comment on these arguments.
- 11) Be prepared to define and understand the following concepts from Bower's network theory: mood-state-dependent recall, mood congruity, thought congruity, mood intensity effects.
- 12) What are the essential features of Lang's bioinformational model of emotions? What are the three response systems of emotion?

13) What are the differences between a dimensional model of emotion and one which focuses on discrete emotions?

14) What is the von Restorff effect? What is “weapon focus?” What are the main findings in the “dot probe” and “emotional Stroop” tasks?

15) What is the current state of the research on the effects of anxiety on cognitive performance? What is the current state of research on the effects of depression and cognitive performance?

16) What implications do LeDoux’s theory of direct thalamic-amygdala projections have for cognitive views of emotion?

17) What are the essential differences between the James-Lange, Cannon-Bard, and two-factor theories of emotion?

18) Cite two pieces of evidence that the two cerebral hemispheres have different emotional “tones” or valences.

19) Many studies have shown that the right (language-nondominant) cerebral hemisphere plays a critical role in perceiving and interpreting emotional signals such as facial expression and tone of voice. Be familiar with Bowers’ cognitive model of the cortical affect processing system (slide 70 in the emotion lecture) as a means for understanding deficits in this area. For example, if I have a patient who cannot recognize emotion in faces, but is perfectly fine in recognizing emotional prosody in voices, what part of the model would be affected? If a patient could understand, but not spontaneously produce, emotional prosody, what part of the model would be involved?

18) You have just completed a course in cognitive bases of behavior. You are not a cognitive psychologist, but you know, based on your appreciation of interdisciplinary contributions to all phenomena, that you have much to learn from your cognitive colleagues. What is the most interesting thing you have learned in this course? What have you learned that you can apply most directly to your clinical work?