

EXP 4680: Cognitive Psychology

Christine Ruva, Ph.D.  
Fall 2012

## EXAM 2 REVIEW

- **NOTE:** You are responsible for all material covered in my lectures, on my handouts, and in your textbook (assigned readings). This outline is meant to serve as a general overview of what will be on the exam, but it is not intended to represent all of the material that you are responsible for.
- I strongly suggest that you either complete the practice exam questions that are on your text's web site.

## CHAPTER 5: LONG-TERM MEMORY

- **Information Processing model**
  - Computer analogy
  - Processes: encoding, storage, & retrieval
  - Structure: sensory, STM, LTM
  - Evidence for 3-separate stores vs. continuum theory.
    - **Rundus' Research:** serial position effect (recency & primacy)
    - **Kintsch & Buschke (1969)**
- **Code Of LTM:** semantic
  - Kintsch and Buschke
- **Tulvings Model of Long Term Memory:** procedural, semantic/declarative & episodic memory.
  - **Research supporting 3 separate types of LTM:** neuroscience, dissociations
- **Depth of Processing Approach:** Levels of Processing ( Craik & Lockhart, 1972; Craik & Tulving 1975) & Incidental Learning Procedure (Hyde & Jenkins, 1969, 1973)
  - Explanation of: Distinctiveness, elaboration.
- **implicit and explicit memory:**
  - **Dissociations between:** anesthesia effects, brain imaging studies, amnesiacs, divided attention tasks, age, etc. What are dissociations?
  - **Ways of measuring:** Mere exposure effect, degraded word or picture,
- **Face recognition**
- **Encoding Specificity:** Godden & Baddely (1975), state dependent memory, mood congruence, context effects.

- **Determinants of Accuracy of LTM:**
  - **Mood and Memory:** Pollyanna Principle, Mood congruence, mood state dependence
  - **Types of Rehearsal:** maintenance vs. elaborative rehearsal.
  - Self-referencing effect
  - Outshining hypothesis
- **Flashbulb Memories**
- **Theories of forgetting:** trace and interference theories.
- **Very long term memory** expertise and memory
- **Expertise:** task specific, what does it involve, how explained.

## **CHAPTER 7: MENTAL IMAGERY**

- ◆ **2 Kinds Of Symbolic Representations:** Analogical Code & Propositional Code
- ◆ **Evidence For Similarity Between Mental Imagery And Perception (Analog Code)**
  - **Mental Rotation:** Shepard & Metzler's (1971) Classic Study on Mental Rotation.
  - **Imagery And Size:** Stephen Kosslyn's Elephant & rabbit experiment (1975); Kosslyn's Mental Map Experiments, Criticism of methodology, Experimenter Expectancy.
  - **Symbolic Distance Effect:** Margaret Intons-Peterson (1992) Auditory imagery experiment, Pavio's Clock Study (1975)
- ◆ **Propositional Representation:** Pylyshyn's view, mental images are epiphenomenal, Chambers & Reisberg's ambiguous figure experiment (1985), other ambiguous figure experiments.
- ◆ **How Much Picture In The Head Resemble Real World Vision?**
  - **Differences Between Imagery And Perception:** Brain areas that are activated, rods and cones, blurry peripheral vision, occipital lobe, benefits to studying imagery via physiology (hint experimenter expectancy).
  - **Similarity in brain stimulation/activation?** Brain areas activated
  - **Kerr's study (1983):** in which he asked congenitally blind Ss to use imagery.
  - Forming visual images can either interfere with or facilitate seeing. Facilitation effect, Picture-superiority effect

- ◆ **Cognitive Maps**: heuristics and types of errors we make, analog and propositional codes
- ◆ **Verbal Overshadowing**:
- ◆ **Eyewitness Identification**: Relevance to this real world problem, effect of delay on this effect, release from overshadowing
  - **Melcher & Schooler (1996)**: wine expert vs. wine novice study -- implications
- ◆ **Source/Reality Monitoring**:
  - definitions, examples of
  - Developmental research
  - Imagery and False Memories: Hyman & Pentland (1996)
- ◆ **Body imagery of women with anorexia nervosa**

## CHAPTER 8: GENERAL KNOWLEDGE

- ◆ **Early Theories Of Learning & Memory**:
  - Epistemology
  - Aristotle (384-322 BC): First Associationist, Empiricism, Laws of Association (Law of similarity, Law of contiguity, Law of contrast, Law of frequency)
- ◆ **Semantic Memory, Category, & Concept**: know definitions of each and relevant theories from your text.
- ◆ **Feature Comparison Model**: Sentence Verification Technique, 1- OR 2-Stage Decision Process, Typicality effect, defining and characteristic features, problems/criticisms of model.
- ◆ **Prototype Theories**: Major Assumption, categories have a graded structure, Evidence for & Characteristics of Prototypes, typicality effect, norms, prototypes as reference points, priming, Conceptual Hierarchies In Prototype Theory (i.e., Superordinate, Basic Level, Subordinate Level), differences between novices and experts in their use of conceptual categories, evaluation of theory, family resemblance, games.
  - **Exemplar Approach**: How different from prototype approach. How it explains categories & concepts. Research discussed in the chapter on this approach.
- ◆ **Network Models**:
- ◆ **Collins & Loftus (1975)**: nodes, links, activation, spread of activation, sentence verification task, intersection, typicality effect.
- ◆ **SAM – Search of Associative Memory**: how does it explain the recency effect and context/encoding specificity effects
- ◆ **Anderson's Act Theory**: working memory, declarative network/memory, propositions, major assumption of Anderson's theory (activation divides up, activation summates, activation varies in strength, activation takes place in the separate working memory buffer), the mind is unitary and his model explains all of cognition.

◆ **Parallel Distributed Processing Model:**

- PDP McClelland & Rumelhart (1986)
- Similarities & Differences Between PDPs and Network Models
- Spontaneous Generalizations
- Default Assignments:
- General Characteristics of PDP Models
- Graceful Degradation: Tip-of-the-tongue phenomenon
- **Evaluation Of Theory**

## CHAPTERS 4 & 9: LANGUAGE COMPREHENSION & SPEECH PERCEPTION

- **Principles of Human Language:** displacement of time & space, generative, productive, arbitrary.
- **Levels of Language:** Syntax, semantics, phonology, morphology, pragmatics.
  - Why is language leveled & what does it give us? Generative & productive nature of language, sentences that are novel or appropriate.
- **Problem of Lack of Invariance of Speech:** Why speech perception is a problem?
  - Coarticulation, speaker characteristics, speech rate.
- **Segmentation & classification problems:**
  - Methods used for studying classification problems: ambiguous sentences.
  - Syntactic structure/phrase structure, parsing, transformational grammar (surface & deep structure)
- **How do we overcome the problems of lack of invariance, segmentation, and classification?**
  - Context effects, top-down processing, expectancies, knowledge, McGurk effect, phonemic restoration effect (Warren & associates), common ground.
- **Pragmatics:** Definition of and examples of pragmatics. Given-new strategy, common ground, conversational maxims (Grice, 1975).
- Reading and working memory
- **Teaching reading to children:** whole-language/word approach vs. phonics approach
- **Discovering the meaning of an unfamiliar word during reading:** direct access hypothesis, indirect access hypothesis, phonologically mediated hypothesis, and the dual route hypothesis.