Cognitive Psychology (363)
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Test 1 - Study Guide

Module I: History
- o Information processing approach
    - ▪ Input-processing-output
- o Empiricism
- o Associationism
- o Role of sensation in learning
- o Helmholtz measures speed of neural impulse
- o Wundt's reaction time studies (chronometer)
- o William James and Functionalism
- o Gestalt
- o Ebbinghaus, Father of Memory
- o Watson, Skinner, Pavlov, and Behaviorism
    - ▪ Empiricism!
    - ▪ Methodology
- o Tolman's "Cognitive maps in rats and men"
- o Clustering in recall (Bousfield)
- o Miller's magic number 7 ± 1
- o Signal vs. Noise
- o Representation + Process
- o Top-Down vs. Bottom-Up processing
- o Cognitive Science

Module II: Attention
- o Focus vs. Monitoring
- o Fate of unattended information?
- o Bottleneck theories
    - ▪ Broadbent's Y-tube Analogy (flap)
- o Cherry's shadowing experiment
- o Mowbray: text comprehension listening and reading two different stories
- o Cocktail party phenomenon (Moray)
- o Role of semantic content (Grey & Wedderburn, 1959)
- o Treisman's shadowing studies
- o Early vs. Late selection Theories
- o Role of working memory (MacKay)
- o Capacity model (Kahneman)
- o Automatic vs. Controlled processing
- o Automatic vs. Strategic Tasks
- o Reading (Stroop)
- o Skill acquisition (see book)
- o Serial vs. Parallel search in proofreading
- o Benefits and pitfalls of automaticity
- o Priming (Neely)
- o Reason's Slips of action
    - ▪ Open-loop vs. Closed-loop

Module III: Perception
- o Constructed vs. Directed
- o Top-Down vs. Bottom-Up Processing
- o Introspectionism (Wundt)
- o Eye tracking data
- o Template Theory
  - ▪ Pattern Variation
- o Feature Theory
- o Biderman's Recognition by Components Theory (see book)
- o Illusory Conjunctions
- o Pritchard's feature decay/adaptation
- o Hubel & Wiesel
- o Treisman's Feature Integration Theory
  - ▪ Serial vs. parallel search
  - ▪ pop-out phenomenon
  - ▪ Role of attention (reaction times)
  - ▪ Context
- o Gestalt principles
- o Categorical Perception
- o Phonemic Restoration Effect (Warren, 1970)
- o Word Superiority Effect (Reicher, 1969)
- o Blindsight
- o Subliminal Perception
  - ▪ Objective vs. Subjective Threshold
- o Face Recognition
  - ▪ Bruce & Young's Model (1986)
    - • Structural Encoding, Expression Analysis, Directed Visual Processing, Face Recognition Person Identity Nodes, Name Recognition Nodes.

Module IV: Representations (Schemata)
- o Dual Codes (verbal vs. acoustic)
- o What is a schema? (see book)
  - ▪ Characteristics
  - ▪ Default Knowledge
  - ▪ How are they formed?
    - • Developmental
  - ▪ What do they do?
- o Balloon passage (Bransford & Johnson, 1973)
- o What is a script?
- o Psychological reality of schemas (Bower, Black & Turner, 1979)
- o Letter confusions (Conrad, 1964)
- o Tip-of-the-Tongue (see book)
- o Spoonerisms & Malopropisms
- o Text comprehension
  - ▪ Verbatim vs. Gist
  - ▪ Sentence representations (*John caught/ate the mouse*)
  - ▪ Bridging Inferences
  - ▪ Role of schemas in inferencing (Listerine)
  - ▪ Rumelhart's Story Grammar
    - • Situational vs. Text Models

Module V: Representations (Visuospatial/Imagery)
- o Picture Memory
- o Paivio's Dual Code (verbal vs. imaginal)
- o Concrete vs. Abstract words
- o Selective Interference (Brooks, 1968)
- o Mental Rotation (Shepard & Metzler, 1971)
- o Feature Judgments (Kosslyn, 1976)
- o Symbolic Distance Effect (Kosslyn, Ball, & Reiser, 1978; Moyer, 1973)
  - ▪ Generality?
  - ▪ Demand characteristic?
- o Analog vs. Propositional (Pylyshyn, 1973)
- o Face Task (see book)
- o Neuroimaging Evidence (Roland & Friberg, 1985; Farah et al., 1984; 1988)
- o What vs. Where system

Module VI: Representations (Categories)
- o Importance of categories
- o Cognitive Economy
- o Broadness vs. Inferrential Power
- o Function of categories (Bruner, Goodnow, & Austin, 1956)
- o Vertical Aspects of Categories: Superordinate, Basic, Subordinate levels
  - ▪ Preferred level of abstraction
  - ▪ Converging Operations for Basic Level
    - • Appearance: Shape similarity (Rosch et al., 1976)
    - • Motor programs
    - • Communication: Labeling & Verification
    - • Development: Child lexicon, grouping
    - • Language: Early Differentiation, Zipf's Law, ASL
- o Horizontal Aspects of Categories
- o Classical View
  - ▪ Necessary & Sufficient
- o Disjunctive categories (e.g., strike)
- o Sapir-Whorf (Whorfian) Hypothesis
- o Codability affects memorability (Brown & Lennenberg, 1954)
- o Order of color terms is regular (Berlin & Kay, 1969)
- o Focal vs. Non-Focal Colors (Rosch, early 1970s)
- o Category boundaries
- o Typicality & Family Resemblance
  - ▪ Converging Operations for Typicality
    - ▪ RTs to category judgments
    - ▪ Naming & Identification
    - ▪ Priming
    - ▪ Word Frequency
- o Barsalou's ad-hoc or goal-directed categories
  - ▪ Ideals