

Cognitive Psychology Test 1

Chapter 1

- Research
 - Looking/ understanding the relationship between variables
- Variable
 - Anything that varies
 - Ex. Shoe size, memory
- Hypothesis
 - Particular claim about the relationship between variables
- Theory
 - Fact based framework for describing a phenomenon
- Descartes
 - Idea of dualism
 - The mind and body as separate but interactive machines
 - Mind and body debate
 - "I think therefore I am"
 - This was evidence of the mind's existence
 - We are all born with innate ideas
- John Locke
 - Thought that at birth the mind was a blank slate or *tabula rasa*
 - Basically we start with nothing and learn everything through experience
 - Maintained that we were born without innate ideas, and that knowledge is instead determined only by experience derived from sense perception
 - Argued that the "associations of ideas" that one makes when young are more important than those made later because they are the foundation of the self
- Wilhelm Wundt
 - Opened the first laboratory
 - Faculty of Psychology in the University of Leipzig in 1879
 - Established the first Psychological Journal in 1881
 - Was the first to apply the scientific method to the field
 - Considered to be the father of experimental psychology
- Introspection (Structuralism)
 - Structuralists
 - Analyze consciousness into its basic elements and study how these were related
 - Elements would include ideas like sensations, emotions and images
 - Introspection
 - Careful, systematic self-observation of one's own conscious experience
- Forgetting Curve
 - Shows that over time you forget info but it isn't in a linear degree
 - Information is lost quickly and then it evens off
- Ebbinghaus

- Used the CVC for stimuli because other words would have triggered prior knowledge
 - Wanted to control for prior knowledge
- Natural Selection of the Mind
 - Psychology split into two main schools: structuralism vs. functionalism
 - Functionalism
 - Based on the work of Charles Darwin and his theory of natural selection
 - Structuralism
 - Focused not so much on why but what the experience is and what the mechanisms are
 - **Problem:** Doesn't get at why
 - Natural Selection
 - Heritable characteristics that provide an organism with a competitive advantage are more likely to be passed on to the next generation
 - Thus less advantageous characteristics become extinct over generations
- Gestalt Psychology
 - The belief that consciousness and behavior must be studied as a whole rather than in separate disciplines
- Operant conditioning
 - Using reinforcement or punishment to change behavior
- Three Components of Connectionism
 1. Neurological plausibility—the models are clearly closer to brain function than are traditional rule-based models
 2. Parallel constraint satisfaction—different sources of activation can converge on the representation
 3. Graceful degradation—when the model is damaged, performance slows
- Psychology tests first used for
 - Immigrants
 - WW1 WW2 to assign people specific sections in the military
- Cognitive Revolution
 - Happened because a lot of cognitive processes weren't explained by behaviorism
- Skinner argument about free will
 - All of our decisions of free will aren't actually free will we are probed by the stimulus of the environment
- William James
 - Functionalism
 - Idea that psychology should focus on the function or purpose of consciousness rather than its structure
 - Focuses on the WHY
 - Functionalism became popular with the publication of his work *Principles of Psychology*

- The work became the standard text for psychological departments and is still required reading in many university programs
- What James started
 - Rebelled against artificiality and narrowness of the Wundtian position
 - Introspection does not show elements exist independently of the observer: to think otherwise is the psychologists' fallacy
 - Simple sensations do not exist in consciousness experience; they are inferred
 - Mental life is a unity

Chapter 2

- Perception
 - The process of organizing and interpreting information, enabling us to recognize meaningful objects and events
- Object Recognition
 - Iconic Memory
 - Memory of visual stimuli, very brief
 - Visual buffer for information
 - Feature-Analysis Theory
 - Identify objects based on stored list of distinctive features
 - Support of Feature-Analysis Theory
 - Eleanor Gibson's research
 - Time required to decide if two letters are different
 - Recognizing letters and numbers on envelopes
 - Letters with many shared features are identified faster
 - Hubel and Wiesel
 - Measure response of single neuron to simple visual stimulus
 - Retinal region and orientation activated specific neurons
 - We are born with feature detectors
 - Problems with Feature-Analysis Theory
 - Complex shapes in nature
 - How do you recognize a horse?
 - Relationship between features
 - Head, mane, hooves?
 - Distortion of features with movement
 - What if the horse moves?
 - Recognition-by-Components Theory
 - Combining geons to form meaningful objects
 - Explains how we can identify complex objects
- Top-Down Processing
 - Emphasizes concepts, expectations, memory
 - Strong when stimulus is registered for just a fraction of a second
 - Also strong when stimuli are incomplete or ambiguous
 - Context helps us recognize letters of the alphabet during reading
 - We don't read letter-by-letter
- Bottom-Up Processing