

Study Guide Chapter One

Five foundations of Cognitive Psychology:

1. Philosophy
 - a. Contributions: Behavior is a product of the mind
 - b. Lacking: Scientific approach
 - c. Laws of Association—mind is organized meaningfully into learned associations
2. Physiology
 - a. Contributions: Scientific approach, sensory organs
 - b. Lacking: Interpretation of senses
3. Psychophysics
 - a. Contributions: idea of subjective interpretation/perception
 - b. Lacking: Questioning HOW it happened
 - c. Unconscious Inference— the mind interprets/ perception is not reality
4. Structuralism
 - a. Contributions: Psychology/ conscious experiences
 - b. Lacking: Science
 - c. Three aspects—
 - i. Sensation- information drawn from stimuli
 - ii. Feelings- emotions activated from stimuli
 - iii. Images- mental representations that seem sensory
 - d. Introspection
5. Behaviorism
 - a. Contributions: Scientific approach to psychology
 - b. Lacking: Idea of brain use
 - c. 3 aspects of scientific study—observable, measurable, repeatable
 - d. “Black Box”— the mind is a black box that exists but doesn’t cause behavior
 - e. Stimulus, response, reinforcement

Ebbinghaus’ Method

- Tested meaningless strings of letters for memory
- Established core principles of memory
- Savings—fewer trials to relearn something learned
- Forgetting curve

Bartlett’s Method

- Memory is reconstructive with omissions and additions
- Schemata—stored structures for past events that guide reconstruction
- War of Ghost’s example
- Contributions:
 - Behavior as result of mental processes
 - Reconstruction

- o External vs. internal validity

Gestalt Psychology

- Whole is greater than sum of the parts

Evidence against Behaviorism

- Learning without responding (t-maze)
- Learning without reinforcement (larger maze)
- Latent learning= learning without reinforcement
- Cognitive Map (3-path mazes)

Information processing

- Computer metaphor
 - o Input: calculate math problem
 - o Processing: Central unit processing information
 - o Output: gives an answer

Connectionism's criticism of computer metaphor

- Serial vs. parallel= can do multiple things at once instead of in order
- Invariance (writing styles a a a a)

Nervous System

- Neuron Anatomy
- Hebb's Principle—2 neurons that talk together more gain stronger connectivity
- 3 regions of the brain—Hindbrain, midbrain, forebrain
- 4 lobes of the brain:
 - o occipital—primary visual cortex
 - o temporal—primary auditory cortex
 - o parietal lobe— somatosensory (touch)
 - o frontal lobe—motor cortex and prefrontal cortex
- Two hemispheres—lateralization
 - o Split brain study

Traumatic Brain Injury

- Broca's area— understand speech, unable to produce
- Wernicke's area—speech production insensible, speech comprehension impaired
- EEG—measures electrical activity in brain
- CT— localize damage from tumor or lesion
- fMRI—measures blood flow in brain, gives function and structure
- TMS— temporary brain lesion

Study Guide Chapter Two

Part 1: Perception

Perception

- Psychological
- Post-transduction
- Brain's organization and interpretation
- Efficiency not accuracy: evolutionary influence

Sensation

- Light waves, sound waves, physical pressure, etc.
- Transduction- physical stimulus to electrochemical signal
- Receptors
- Physiological

Perceptions w/out Sensations

- Hallucination
- Extrasensory perception
- Precognition
- Isolation tank
- Sensory Deprivation

Sensation w/out Perception

- Face-blindness (prosopagnosia)
- Color-blindness (achromatopsia)
- Word blindness (agnosic alexia)

Perceptual Processing

- Top down—interpretation influenced by expectations, knowledge, context
- Bottom-up:
 - Stimulus driven
 - No mental influence
 - Sensation directly causes perception
- Organization
 - Proximity—images near each other are grouped together
 - Similarity — similar objects are grouped together
 - Good Continuation—lines flow naturally in a single direction
 - Closure— fill in partially complete contours
 - Common Fate — group elements moving in the same direction or at same speed

Muller-Lyer Illusion

- Perceive 3D object but its 2D
- Convex angle seem further/longer <—>
- Concave angle seem nearer/shorter >—<

Global Precedence

- Whole comes before parts
- Global —whole perceived object
- Local— parts that make up the object
- Study:
 - Images: consistent, neutral, conflicting