

Cognitive Psychology: Test 1

Chapter 1

Introduction

- **Cognition:** (mental activity) describes the acquisition, storage, transformation, and use of knowledge
- **Cognitive psychology:** 2 meanings-
 - 1) A synonym for "cognition" so it refers to the variety of mental activities we do
 - 2) Refers to a particular theoretical approach to psychology
- **Cognitive approach:** a theoretical orientation that emphasizes peoples though processes and their knowledge.

A brief history of cogitative psychology

- **Empirical evidence:** scientific evidence obtained by careful observation and experimentation
- **Wilhelm Wundt:** the founder of psychology
 - Proposed that psychology should study mental processes by using introspection
 - **Introspection:** carefully trained observers systematically analyze their own sensations and report them as objectively as possible under standardized conditions.
- **Early memory researchers:**
 - **Hermann Ebbinghaus:** the first person to scientifically study human memory
 - Researched used nonsense syllables.
 - **Mary Whiton Calkins:** reported a memory phenomenon called the recency effect.
 - **Recency effect:** refers to the observation that our recall is especially accurate for the final items in a series of stimuli.
 - Emphasized that psychologists should study how real people use their cognitive processes in the real world, as opposed to in a psychology laboratory.
- **William James**
 - Prefers to theorize about our everyday psychological experiences.
 - **Wrote: Principles of Psychology**
 - Provides clear, detailed descriptions about peoples everyday experiences.
 - Emphasizes that the human mind id active and inquiring.
 - Foreshadows numerous cognitive topics: perceptions, attention, memory, understanding, reasoning, and the tip-of-the-tongue phenomenon.
- **Behaviorism**
 - **Behaviorism:** psychology must focus on objective, observable reactions to stimuli in the environment, rather than introspection.
 - **John B Watson:** the most prominent early behaviorism in the US.

- Watson and other behaviorists:
 - Emphasized observable behavior
 - Typically studied animals.
 - Argued that researchers could not objectively study mental representations, such as an image, idea, or thought.
 - Emphasized the importance of the operational definition
 - **Operational definition:** a precise definition that specifies exactly how a concept is to be measured.
- The Gestalt Approach
 - **Gestalt Psychology:** emphasizes that we humans have basic tendencies to actively organize what we see; furthermore the whole is greater than the sum of it's parts.
 - **Gestalt:** overall quality that transcends the individual elements.
 - Emphasizes the importance of insight in problem solving.
 - Example: when you are trying to solve a problem, the parts of the problem may initially seem unrelated to each other, however with a sudden flash of insight, the parts fit together into a solution.
- Frederic Bartlett
 - Conducted his research on human memory.
 - *Wrote Remembering: An Experimental and Social Study*
 - Considered one of the most influential books in cognitive psychology.
 - Rejected carefully controlled research and instead used meaningful materials such as lengthy stories.
 - Discovered that people made systematic errors while trying to recall these stories.
 - He proposed that human memory is an active, constructive process in which we interpret and transform the information we encounter.
 - Emphasized schema-based approach to memory.
- The Emergence of Modern Cognitive Psychology
 - The birth of cognitive psychology: 1956
 - 1956: researchers published numerous influential books and articles of attention, memory, language, concept formation, and problem solving.
 - Sometimes called the "cognitive revolution"
 - Factors Contributing to the Rise of Cognitive Psychology
 - Psychologists were becoming increasingly disappointed with the behaviorist outlook that had dominated U.S. psychology in previous decades.
 - New developments in linguistics increased psychology's dissatisfaction with behaviorism
 - Noam Chomsky - emphasized that the structure of language was too complex to be examined in behaviorists terms
 - Research in human memory began to blossom

- Further disenchanted psychologists with behaviorists approach.
- Research on children's thought processes became an influential force (developmental psychology)
 - Jean Piaget
 - Children actively explore their world in order to understand important concepts
 - Children's cognitive strategies change as they mature
 - By the mid-1970's the cognitive approach had replaced the behavioral approach as the dominant theory in psychological research.
- The Information-Processing Approach
 - A new theoretical approach that began in the 1960's.
 - **Information-processing approach**: argued that (a) our mental processes are similar to the operations of a computer, and (b) information progresses through our cognitive system in a series of stages, one at a time.
 - Richard Atkinson and Richard Shiffrin developed an information-processing model:
 - **The Atkinson-Shiffrin model of memory**: proposed that memory invokes a sequence of separate steps; in each step, information is transferred from one storage area to another.
- The Current Status of Cognitive Psychology
 - One common complaint, in the world of cognitive psychology, concerns the issue of ecological validity
 - **Ecological validity**: a principle of research design in which the research use conditions that are similar to the natural setting where the results will be applied.

Cognitive Neuroscience Techniques

- **Cognitive neuroscience**: combines the research techniques of cognitive psychology with various methods for assessing the structure and function of the brain.
 - In recent decades, researchers have examined which structures in the brain are activated when people perform a variety of cognitive tasks.
- **Social cognitive neuroscience**: psychology now uses neuroscience techniques to explore the kind of processes that we use in our interactions with other people.
- Brain Lesions
 - **Brain lesions**: refers to the destruction of an area in the brain, most often by strokes, tumors, blows to the head, and accidents.
 - The study of brain lesions has definitely helped us to understand the organization of the brain
 - However, these results are often difficult to interpret.
- Positron Emission Tomography