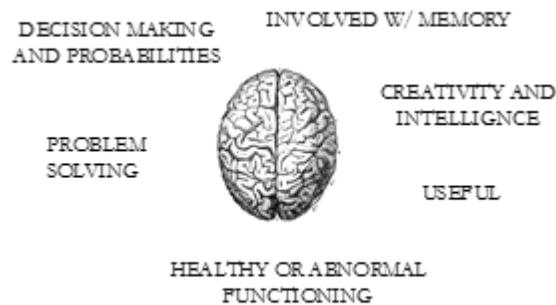


CHAPTER ONE: INTRODUCTION

Cognitive Psychology – The branch of psychology concerned with the scientific study of the mind.



DEF. COGNITION

The mind creates and controls mental functions such as perception, attention, memory, emotion, language, deciding, thinking and reasoning.

DEF. OPERATION AND FUNCTIONING

The mind is a system that creates

representations of the world so that we can act within it to achieve our goals.

EARLY WORK IN COGNITIVE PSYCHOLOGY

Franciscus Donders (1868) – First cognitive psychology experiment.

- Determining how long it takes for a person to decide (reaction time).
- **Simple Reaction Time** – Pushing a button as rapidly as possible when they saw a light go on.
- **Choice Reaction Time** – Two lights and asking his subjects to push the left button when they saw the left light go on, same with the right.
- Presenting the stimulus (the light) causes a mental response (perception) which leads to a behavioral response (pushing a button).
- Concluded that the decision process took one-tenth of a second.

Mental responses cannot be measured directly, but must be inferred from behaviour.

Wilhelm Wundt (1879) – Founded first laboratory of scientific psychology.

- **Structuralism** – Our overall experience is determined by combining basic elements of experience that structuralists called sensations (wanted to create a periodic table of the mind which would include all the basic sensations involved in creating experience).
- **Analytic Introspection** – A technique in which trained subjects described their experiences and thought processes in response to stimuli.
 - One of the major forces that caused psychology to reject the study of mental processes was the negative reaction to this notion.

Hermann Ebbinghaus (1885/1913) – Determining the nature of memory and forgetting – specifically, how rapidly information that is learned is lost over time.

- Used himself as subject. He repeated lists of 13 nonsense syllables one at a time at a constant rate. He used nonsense syllables so that his memory would not be influenced by the meaning of a particular word.

- **Savings** – To determine how much is forgotten after a particular delay: Savings = (original time to learn the list) – (time to relearn the list after the delay). Longer delays result in smaller savings, thus forgetting.
- **Savings curve** – (Plot of percent savings versus time) - memory drops rapidly for the first two days after the initial learning and then levels off.
 - Demonstrates that memory can be quantified.

William James (1890) – Taught Harvard's first psychology course and made a textbook.

- Observations about the operation of his own mind.

John Watson (1904) – Founded Behaviourism – Little Albert.

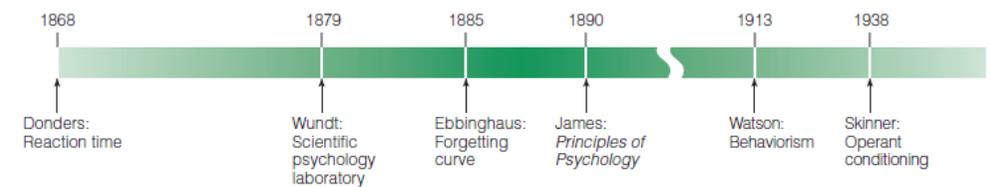
- **Classical Conditioning** – How pairing one stimulus with another, previously neutral stimulus causes changes in the response to the neutral stimulus.
- Classical conditioning to argue that behaviour can be analysed without any reference to the mind.

B. F. Skinner (1931) – Operant Conditioning.

- **Operation Conditioning** – Focuses on how behaviour is strengthened by the presentation of positive reinforcers, such as food or social approval (or withdrawal of negative reinforcers).
- Argued that children learn language through operant conditioning. Children imitate speech that they hear, and repeat correct speech because it is rewarded.
 - Noam Chomsky (1959) saw language development as being determined not by imitation or reinforcement, but by inborn biological program that holds across cultures.

Edward Tolman (1918/1954) – He used behaviour to infer mental processes.

- Placed a rat in a maze, putting food in separate areas around the maze to see what the rat would remember/where to turn.
- **Cognitive Map** – A conception within the rat's mind of the maze's layout.



THE REBIRTH OF THE STUDY OF THE MIND

Cognitive Revolution – A shift in psychology from the behaviourist's stimulus-response relationships to an approach whose main thrust was to understand the operation of the mind.