Cognitive Psychology

Cognitive psychology is an important component in the field of psychology that is focused on highlighting mental processes such as memory, perception, language, decision-making, and problem-solving. The development of cognitive psychology is characterized by key milestones, as behavioral observation remains critical, providing significant information about how the mind works.

Key Milestones in Cognitive Psychology

a) The Cognitive Revolution (1950s–1960s)

The Cognitive Revolutions mark one of the most important milestones in the development of cognitive psychology which helped in shifting the focus of the behaviorist on observable behaviors to stressing on internal mental processes. According to Sartori & Orrù (2023), in the early 20th century, psychology was majorly dominated by behaviorism, a concept that was criticized by many for being overly restrictive. However, the development in neuroscience, linguistics, and artificial intelligence around the 1950s challenged this shift. For instance, Noam Chomsky criticized B.F. Skinner's *Verbal Behavior,* by highlighting the inadequacy of behaviorism in explaining complex linguistic phenomena such as generative and syntax grammar (Kristjánsson & Egeth, 2020).

b) The Advent of Information Processing Models (1950s)

The adoption of the information processing metaphor, which likens the mind of a human to a computer is also another milestone. In this model, the emphasis was put on the cognitive processes involving storing, encoding, and retrieving data. In his influential paper known as "The Magical Number Seven, Plus or Minus Two," George A. Miller illustrated

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how the human memory has a limited capacity, helping to highlight the systematic nature of cognitive operations (Kristjánsson & Egeth, 2020). The approach of information processing was instrumental in providing a structured framework, empowering researchers to break down complex mental processes into pieces that can be easily managed.

c) Establishment of Cognitive Psychology as a Formal Discipline (1967)

In 1967, Ulric Neisser published an article entitled *Cognitive Psychology* that marked the formal introduction of cognitive psychology as a field on its own. In the article, Neisser offered a synthesis of research from areas such as memory, perception, and problem-solving, developing a wholesome framework for the study of cognition (Sartori & Orrù, 2023). His work stressed the significance of incorporating real-world applications and laboratory experimentation, grounding the status of cognitive psychology as the pillar of psychological research.

d) Advancements in Cognitive Neuroscience (1980s–Present)

The field of cognitive psychology has been significantly transformed by the integration of neuroscience. Eysenck & Keane (2020) note that the use of technological advancements such as electroencephalography (EEG) and functional magnetic resonance imaging (fMRI) have enabled researchers to make observations on the activities of the brain during cognitive tasks. Cognitive neuroscience has been used to bridge psychology and biology, providing details on memory, attention, and decision-making by aligning activities of the brain with cognitive functions.

The Importance of Behavioral Observation in Cognitive Psychology

Even in the face of the increasing use of neuroscience and computational modeling, behavioral observation has remained a key method. It includes the systemic study of how

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people respond to stimuli, offering observable evidence of mental processes. One key significance of behavioral observation in cognitive psychology is that it helps in linking mental processes to measurable behaviors. For instance, reaction time experiments have been used to elucidate the speed of information processing and decision-making. The Stroop test, which is used to evaluate cognitive interference, depends on behavioral data in understanding control and attention (Niv, 2021). Such experiments are essential in offering vital information on complex cognitive functions.

Another importance as highlighted by Galotti (2020) includes the significance of behavioral observation in understanding cognitive development and differences in individuals. As an illustration, Jean Piaget in his work on child development heavily relied on making observations on the problem-solving behaviors of different children. Based on these observations, he identified stages like sensorimotor, preoperational, concrete operational, and formal operational. Lastly, behavioral observation has been applied in real-world situations, like studies on eye-tracking that unfold how individuals allocate their attention when driving, reading, or shopping. These insights have been explored to assist in designing educational tools and user-friendly interfaces. Eysenck & Keane (2020) posit that such practical applications link the theory in research to everyday use, promoting the relevance of cognitive psychology.

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