

Antecedents of cognitive psychology essay sample

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“ Cognitive psychology is a modern approach to the study of [processes by which people come to understand the world- such processes as memory, learning, comprehending language, problem solving, and creativity. Cognitive psychology has been influenced by developments in language, computer science, and of course, earlier work in philosophy and psychology”
– Hayes (cited by Lundin)

This definition of Hayes emphasizes the notion that cognitive psychology gives significance to the study of higher mental processes. According to Lichtenstein, among the appealing aspects of cognitive psychology is that it corresponds quite well to the common sense psychology of the layperson. If a student is asked to give definition to psychology without prior introductory course about the course, a statement of “ psychology is the study of the mind” will be usually given. As what Neisser said, “ Cognitive psychology refers to all the processes by which the sensory input is transformed, reduced, elaborated, stored, recovered and used.”

Antecedents of Cognitive Psychology

British Empiricism: Locke, Berkeley, and Hume

John Locke (1632-1704)

He proposed the theory of knowledge in which he suggested an explanation of how we came to know the world. In his Essay Concerning Human Understanding, he attacked the notion of innate ideas, but rather claimed that all the ideas of human came from experience. He is convinced that human mind can execute two things and that are to receive experiences

from the outside world (through sensation) and to reflect upon them (reflection). These two, sensation and reflection, are the fountain of knowledge, from where ideas do spring. His notion for reflection was his attempt to explain higher mental processes, such as thinking and reasoning. The source of all idea is sensation, yet these ideas gathered through sensation can be acted on and rearranged by the operations of the mind, they could be transformed into an almost endless variety of ideas through reflection. Also, he claimed that through association, experiences combine together to form complex ideas.

George Berkeley (1685 – 1753)

Meanwhile, George Berkeley agreed with Locke that human knowledge is based only in ideas but vehemently disagreed with Locke's contention that all ideas are derived from the interactions with the empirical world. He maintained a position that there is no physical world, and contended that familiar objects such as tables and chairs are only ideas in the minds of the perceiver, and as a result cannot exist without being perceived. As he famously put it, to be is to be perceived. All things come into existence when they are perceived, and therefore reality consists of our perceptions and nothing more. He believes that God is the source of our perception and everything we see.

David Hume (1711-1776)

He maintained that cognition is consisted only of impressions (all our more lively perceptions when we hear or see or feel or love or hate or desire or will), ideas (the fainter perceptions of which we are conscious when we

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reflect on our impressions.), and combinations of these arranged by the laws of association. He claimed that ideas could be associated by resemblance (similarity), contiguity in time or place (togetherness), and cause and effect, which later on was reduced to contiguity (one thing follows another). The law of resemblance states that one's thoughts run easily from one idea to other similar ideas, such as when thinking of one friend stimulates the recollection of other friends. The law of contiguity states that when one thinks of an object, there is a tendency to recall other objects that were experienced at the same time and place as the object being pondered, such as when remembering a gift stimulates thoughts of the giver. The law of cause and effect states that when we think of an outcome (effect), we tend to also think of the events that typically precede that outcome, such as when we see lightning and consequently think of thunder. Like other empiricists that preceded him, he believed that the contents of the mind are from experience. He also agreed with Berkeley that human never experienced the physical directly and can have only perception of it. He did not deny the existence of physical reality, but he denied the possibility of knowing it directly.

Nativism: Immanuel Kant

Immanuel Kant (1724-1804) is much concerned about the operations of the mind. Though he believed in the existence of the mind, he held a different view from the empiricists when it comes to the nature and function of the mind. He set out to prove that Hume was wrong by claiming that some truths were certain and were not based on subjective experience alone. Kant argued that the very ingredients which are necessary for even thinking in

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terms of a causal relationship could not be derived from experience and therefore must exist a priori, or independent of experience. Though he did not deny the importance of sensory data, he thought that the mind must add something to that data before knowledge could be attained; that something was provided by a priori (innate) categories of thought (unity, totality, time, space, cause and effect, reality, quantity, quality, negation, possibility-impossibility, and existence-nonexistence). Kant claimed that the subjective experiences of human has been modified by the pure concepts of the mind and is therefore more meaningful than it would otherwise have been.

Structuralism

Cognitive psychology took its next step towards development on the late nineteenth and early twentieth century. When Wundt established the first dedicated psychology laboratory in Leipzig in 1879, he finally escaped from philosophy to establish a new experimental science of psychology. He took consciousness to be the proper subject matter of psychology. Wundt and his follower, Titchener, were convinced that conscious experience was the legitimate subject matter of psychology. There are two aspects of structuralism which proved to be significant for the cognitive psychology. First is that they emphasized perception as the way we know, partially, the real world. Wundt believed that psychology should be concerned with how people experience the world.

Today, cognitive psychologists deem perception as an aspect which is very significant to the mental functions. Second, Wundt adopted introspection as a research method, as he was convinced that psychologists must be able to

make observation of their own experiences. This method maintains the stand that mental content must be studied. Introspection is an attempt to analyze the contents of the mind or consciousness. Though the cognitive psychologists of today are not relying on introspection, they remain in harmony with the stand that some kind of methodology is needed to study cognition. Accordingly, cognitive psychologists are far more than the armchair philosophers who are just speculating about the nature of mental processes.

Gestalt Psychology

The concept of introspection, caused a number of intellectual reactions. In Europe, the gestalt psychologists argued that the contents of consciousness cannot be analysed into simple component sensation. They claimed that perception should be studied as a whole and not divided into parts of analysis. For most instances, the way the mind works is natural or native. They claimed that mental processes are explained by the laws of perceptual organization. Gestalt psychology's significant contribution to cognitive psychology is that perceptions are cognition, or way of knowing the world. They placed emphasis on closure, insight and set, which are significant principles in explaining how the mind works.

Early Cognitive Behaviorism

By the 1930s, Tolman introduced the concept of cognitive maps by which animals and humans were able to learn. Unlike other behaviorists, Tolman is not an S-R psychologist as he believed that animals learned through signs or expectations or what leads to what. Hence when this process is already

taking place, a cognitive map is set up in the brain as a way of explaining the learning process. He placed emphasis on these processes which takes place between the environment (or stimuli) and behavior. The cognitive psychologists today are giving due importance to what takes place between the input (environment) and the output (resulting behavior). Tolman asserted that behavior is the end result, yet he also relied on the intervening cognition that led to behavior.

World War II and the Beginnings of Contemporary Cognitive Psychology

When the human factors research began during the World War II current interest in cognitive psychology began. This subject matter, Human factors, deals with the human-machine interactions, especially towards the improvement of human's skills. Since new technology began to develop during the war, it required improvements in layout and designs of instrumentation that man has to deal with and it marked the rise of this area of psychology.

The problem of design layout is more observed in the field of aviation.

Broadbent, noted that certain aircraft instruments were monitored more carefully than the others, and all those many information were in need to be attended by the pilot. Giving adequate attention to all those gauges requires substantial amount of time.

Broadbent's observation brought him to realize that man does not passively wait for stimuli to impinge upon them but would actively seek for it. Next, he observed that human information processing seemed similar to machine control mechanism. Just the same as machine mechanism responds to a

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particular type of informative, so likewise the human information processing system operates as a collection of such mechanisms. For a particular human being, the main problem would be the allocation of attention which is needed to direct the information processing of such mental events.

It led psychologists' interests to computer. They realized that knowledge can be represented and organized by man, but through computer knowledge can be represented in greater variety of ways. Computer can simulate and mimic knowledge, which is also a cognitive event.

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