

in American psychology was the computer metaphor adopted for conceptualizing cognition.

The birth of computers after World War II provided a concrete way of thinking about learning and a consistent framework for interpreting early work on memory, perception, and learning. Stimuli became inputs; behavior became outputs. And what happened in between was conceived of as information processing. Today, what is known as cognitive information processing (CIP) is in reality an integration of views developed from a variety of perspectives.

Like the traditional cognitive view, the CIP model portrays the mind possessing a structure consisting of components for processing (storing, retrieving, transforming, using) information and procedures for using the components. Like the behavioral view, the CIP model holds that learning consists partially of the formation of associations. (Andre & Phye, 1986, p. 3)

Overview of the Information-Processing System

According to the cognitive information processing view, the human learner is conceived to be a processor of information in much the same way a computer is. When learning occurs, information is input from the environment, processed and stored in memory, and output in the form of some learned capability. Adherents of the CIP model, like behaviorists, seek to explain how the environment modifies human behavior. But unlike behaviorists, they assume an intervening variable between environment and behavior. That variable is the information processing system of the learner.

Most models of information processing can be traced to Atkinson and Shiffrin (1968), who proposed a multistore, multistage theory of memory. That is, from the time information is received by the processing system, it undergoes a series of transformations until it can be permanently stored in memory. This flow of information, as it is generally conceived, is shown in Figure 3.1. Displayed in the figure are the three basic stages of the proposed memory system—sensory memory, short-term memory, and long-term memory—along with the processes assumed to be responsible for transferring information from one stage to the next. Let us briefly consider what these stages are and how they are believed to function.

The Stages of Information Processing

Sensory memory represents the first stage of information processing. Associated with the senses (vision, hearing, etc.), it functions to hold information in memory very briefly, just long enough for the information to be processed further. For example, imagine yourself in a dark, unfamiliar room. You strike a