



# ENCYCLOPEDIA OF PSYCHOLOGY

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**COGNITION.** The word "cognitive" comes from the Latin word "cognare," which means "to know." Hence, cognitive psychology is the study of the behavior of knowing or thought. Although experimental psychologists have long studied issues relevant to this topic, this area gained considerable impetus during the late 1950s and early 1960s when psychologists (along with linguists, computer scientists, and neuroscientists) began providing empirical evidence and theoretical models that support the distinctions among qualitatively distinct mental operations. For example, all memories are not the same, that is, short-term memories seem to be qualitatively distinct from long-term memories.

In order to carve out a niche for this burgeoning area of research, Neisser (1967) defined cognitive psychology as the study of all processes by which "a sensory input is transformed, reduced, elaborated, stored, recovered, and used." One might argue that such a definition may be too inclusive, because all processes that are involved from the input of a stimulus to some response by the individual are under the auspices of this definition. In fact, there are now thriving fields such as social cognition, cognitive development, and cognitive neuroscience that illustrate the extension of the cognitive perspective into historically distinct areas of experimental psychology. Moreover, because there is no clear specification that cognition need only involve humans, there is a subfield of experimental psychology referred to as animal cognition. But surely, once one takes this step, then one might question the utility of the label, if indeed all experimental psychologists are at some level cognitive psychologists.

Instead of specifying the processes that cognitive psychologists are interested in, one might specify the (a) major content areas, (b) theoretical assumptions, and (c) modes of study. Regarding content areas, cognitive psychologists have been interested in the study of all processes by which objects are recognized, attended, remembered, imagined, and linguistically elaborated. These basic processes also feed into higher-order decision making and complex problem-solving behavior. Although each of these areas involves a rich and unique set of experimental findings and theoretical developments, the last three decades of research have also indicated that there is considerable overlap across content areas. For example, in developing models of memory, cognitive psychologists must also be sensitive to developments in the area of attention, and vice versa.

Turning to the theoretical assumptions, most cognitive theories still have some resemblance to information processing models, in which earlier stimulus encoding operations lead to (and interact with) more elaborate processes, which eventually lead to some response execution. The stimulus could either be externally presented (such as a picture or a word) or internally generated (such as in a visual image of a picture or an object represented by a word). The first wave of theoretical models developed in cognitive psychology were in large part metaphorical models, e.g., boxes in flow charts reflecting memory stores. However, recent advances in cognitive neuroscience and in computational modeling have produced a second wave of theories that show the promise of being more neurally plausible and computationally specific.

Turning to the method of research, cognitive psychologists rely most heavily on the experimental method in which data are most often gathered in laboratories. Researchers investigate the influence of some independent variable, while controlling for possible extraneous nuisance variables, on a well-characterized dependent measure. Measures of accuracy, response bias, verbal report, and response latency are often the primary dependent measures. In mathematically tractable models, simulations sometimes provide insights into underlying processes. Finally, recent advances in brain imaging now afford researchers an opportunity to measure neural activity (reflected in blood flow changes in areas of the brain or evoked electrical potentials) while individuals are engaged in a cognitive experiment.

In sum, the experimental study of mental processes has extended into a number of diverse fields of psychology along with other disciplines. Although this extension has taken place, cognitive psychology can be defined by a set of targeted areas of study, types of theoretical approaches, and methods of experimental study.

### Bibliography

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