

Cognitivist Overview

Cognitivist Psychology, and the affiliated disciplines that make up 'Cognitive Science': linguistics, computer science, philosophy and neuroscience, owe an intellectual and cultural debt to behaviorism. While many in the cognitivist community see themselves in the tradition of William James, John Dewey and the 'Chicago school,' most cognitivists were trained as behaviorists. They do not differ with behaviorists with respect to the metaphysical thesis that the mind is physical. They differ on the basic object of study of psychology: the cognitivists hold that psychology is the study of the mind, not just behavior.

Theoretically, cognitivism marries information theory of computer science to psychology and neurobiology. It sees mental states and processes as informational states and processes which are realized in the computational 'hardware' of the brain. Thus, a proper explanation of psychology should not only describe the behavior of the organism, it should also explain the informational algorithm that drives that behavior, and the neurobiological states that implement the algorithm.

You are neutral on the issue of the definition of mental illness, but be ready to oppose any definition that is clearly behaviorist or psychoanalytic in nature.

George Miller, PhD

Your Biography

You are George Miller, PhD, Professor of Psychology at MIT, founder of cognitive psychology and (with Noam Chomsky (MIT-Linguistics), Herbert Simon and Newell (Carnegie Mellon – Computer Science)) cognitive science.

You were born in 1920 in Charleston, West Virginia, where you lived until you enrolled in George Washington University in 1937. You transferred to the University of Alabama in 1938, where you completed your BA and were appointed Instructor of Psychology in 1941. You started Graduate school at Harvard in 1943.

While at Harvard, you joined the Psycho-Acoustical Laboratory where you worked on speech communication over static on radios. At that time you met and befriended a brilliant young linguist named Noam Chomsky.

You were elected to the position of Vice President of the APA in 1970, and take the role of President for the meeting of the APA in 1971, the first year of game play. You were 50 at the time of your election, which is young by professional standards.

You made your research 'name' with your famous paper "The magic number seven plus or minus two" (Miller, 1956). It is a must-read for all psychologists today. In 1960, you published *Plans and the structure of behavior*, which sets out your vision of psychology as a cognitive science

(Miller, 1960). In fact, you founded the Center for Cognitive Studies at Harvard in 1960.

You are also a student of the history of Psychology. In 1958, you were approached by the historian of Psychology E.G. Boring, whose tomes *A History of Experimental Psychology* and *Sensation and Perception in the History of Experimental Psychology* adorn the desks of many psychologists and philosophers. You were brought to the project by Boring himself, who had been scheduled to produce an update to his histories, but was unable to do so. At the time, you had been planning a new set of introductory psych courses at Harvard at the time, so you thought that this might be an opportunity for sympathetic research.

You took a leave of absence for the academic year 1958-1959 and spent the time at the Center for Advanced Study in Behavioral Sciences at Stanford. When you returned to Harvard, you worked with your colleague Jerome S. Bruner to create an introductory course titled “Psychological Conceptions of Man.” By 1961, you had finished the book which was published as *Psychology: The Science of Mentality* (Miller, 1962).

Game Objectives

Promote your vision of cognitive psychology as an alternative to behaviorism. You should actively work to funnel funding to projects that attempt to make inferences about underlying mental mechanisms, and away from those that deny the existence of such mechanisms (i.e. radical behaviorists).

As a student of the history of psychology, you are also very keen to place yourself in the narrative arc of psychology –which means that you will keep a close eye on those who are characterizing historical figures in inaccurate ways, or ignoring historical achievements that are often forgotten. Both the behaviorists and the psychoanalysts have a tendency to dismiss aspects of the history of psychology as 'non-scientific.' You are not so sure.

There is much in the work done by early experimentalists like William James that anticipates your work. And while you're wary of being labeled an 'introspectivist' and dismissed as a neo-Wundtian,¹ it is important to point out that cognitivism has historical antecedents, and it may be behaviorism that is the historical anomaly. Watson and Pavlov are clearly important psychologists, but the history of psychology has not always been behavioristic, and you are keen to ensure that it is not portrayed as such.

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Game Strategy

Your position as first president gives you great power, but also great responsibility. Your first speech sets the tone of the entire game, not just the first session. So while there will be a great temptation to spend your time beating up behaviorism and promoting cognitivism, you should work hard to reconcile the warring factions. You are the first president from the cognitivist side – the behaviorists are worried that your election signifies a massive shift in the kind of research that will be valued and funded. You need to allay those worries, and work for understanding of the mind, not petty disciplinary politics.

Much can be done towards this end by maintaining a good, highly visible working relationship with your elected successor Anthony Bandura. Remember that like him, you were ‘raised’ a behaviorist. The people in that faction are your friends and colleagues. What’s more, some commentators have pointed out that Bandura’s theory of ‘social learning’ in the bobo doll experiment can be interpreted to support a cognitivist position, rather than a behaviorist one. If you changed your mind, perhaps Bandura can as well? The same holds for Evelyn Hooker, who was schooled in the 'Tolman' tradition of behaviorism.

Specific Assignments

You chair the Board of Directors during the first APA.

You will open the game with a presidential address based on George Miller's actual speech “Psychology as a means of promoting human welfare.”

Look up Miller’s actual presidential speech (Miller, 1969). You’ll notice that it is actually *not* about the conflict between behaviorism and cognitivism. It is about what the psychological community can agree upon, not about what you disagree. Take a cue from the actual history here, and follow in his lead.

In the first week, the gamemaster will introduce a 'mental rotation' experiment based in Shepard & Metzler 1971. You should be prepared to present the data – if your class is using the online psychology laboratory, report your classes' data. If not, report the data from the original.

Advocate for the role of psychology in social issues, supporting both Chomsky and others in their efforts.

When Bieber and Socarides submit their report on sexual deviation in 1972, you should reject it as assuming too strict a Freudian perspective.

Fission: Found the Cognitive Science Society with Noam Chomsky and David Marr (if he is a character).

Must Read

Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on our capacity for processing information. *Psychological Review*, 63, 81-97.

Miller, G. A. (1960). *Plans and the structure of behavior*. New York,: Holt.

Miller, G. A. (1962). *Psychology, the science of mental life* ([1st ed.]). New York,: Harper & Row.

Miller, G. A. (1969). Psychology as a means of promoting human welfare. *American Psychologist*, 24(12), 1063-1075.

Shepard, R. N. & Metzler, J. (1971) “Mental Rotation of Three-Dimensional Objects” *Science* 171(3972) p. 701-703

¹ See the history of the definitions of 'psychology' in the gamebook.