

## Cognitive Psychology

Melissa McCracken got a navy blue phone when she was little. She was trying to pick a ringtone when the song “Cheater” by Michael Jackson came on. “Yes this song is perfect, it’s orange, it will match my blue phone perfectly,” she said. Melissa McCracken’s friend looked confused and asked what she was talking about. She then went on to explain what complementary colors were because she truly believed everyone could see sound. She later found out she has a neurological condition called synesthesia that causes this. Cognitive psychology is more of a neuroscience than a psychology. In the beginning, cognitive psychology, being a science, was dominated by behaviorism. It broke free from behaviorism in the mid to late 20th century and since then has defined itself as a branch of psychology. After the break from behaviorism, more and more people began to study cognitive psychology, so, as anything would, it evolved, and continues to evolve today. There are around 5 basic divisions within cognitive psychology: memory, sensation, perception, attention, and metacognition.

Cognitive psychology became an established branch of psychology in the mid to late 20th century. Philosophers have had ideas about psychology and cognition for centuries. As John Kihlstrom explains in his paper “Cognitive Psychology Overview,” Plato suggested that “the mind is the seat of our mental processes.” Rene Descartes said that we are born with a set of innate ideas that are connected to mind-body dualism. John Locke said the mind is a blank slate when we are born, and we develop

from experience. Locke and Descartes' views became a philosophical debate of empiricism versus rationalism. These are often applied in our daily life or in subjects because they lean either to the empiricist side or rationalist side. B.F. Skinner and John B. Watson started the behavioral program in 1913 and it dominated for over 50 years. Behaviorism is concerned with observable stimulus-response behaviors and says all behaviors are learned through environmental interaction. They did experiments on animals and their behaviors and counted it for people. Because of the quality of these experiments, it began to be widely rejected. The cognitive revolution was a counter-revolution against behaviorism. It was introduced by a new high-speed computer that had a model based on how humans think so it was used to study cognition (Kihlstrom 2).

There are two kinds of memory: short and long term (Wikipedia 5). Short term memory, otherwise known as working memory, stores things temporarily before they go to long term or get forgotten. It generally stores things for about two minutes and the capacity is around seven, depending on the person. Ebbinghaus did an experiment and found that we normally remember the beginning and end of a list rather than the middle, this is called the serial effect. Long term memory has 3 subdivisions. Procedural memory is normally subconscious and is used to remember activities and routines. Semantic memory is used to remember the names of objects and the way they look (Kihlstrom 5). Steiner explains in his first lecture on "Psychology in the Light of Anthroposophy," that episodic memory requires the most conscious thought and is for autobiographical events and "everything tempered in nature."

Sensation and perception work as a pair. According to Dr Kihlstrom cognitive psychology follows John Locke's empirical view, which means most of our knowledge is acquired through senses. A sensory cell is a cell that detects things within our senses. The appearance of a sensory cell changes the reaction to what it sees. For example, if we see a blue chair, our blue sensory cells will react differently than our orange ones. Perception is how we process the things we sense. Sometimes bias or expectation can change our perception (Kihlstrom 3). For instance if you have ever seen someone who looked like a person you don't like, but is an entirely different person, but you still for some reason don't like them, that is perception bias at work.

Attention is one of the processes in which cognitive and behavioral psychology overlap. Robert Sternberg, in his book Cognitive Psychology, explains that there are two major systems: exogenous control and endogenous control. Exogenous control orients our movements. Endogenous control allows us to focus on thought. The concept of divided attention is key when dealing with attention in cognition (wikipedia 4). Early studies showed that someone wearing headphones can still pay attention to a conversation they are having. When doing this, you gather knowledge and understanding of the conversation while also being aware of the music that's playing. This is known as the cocktail party effect because if you're socializing at a cocktail party it allows you to focus on the person you're talking to and not the other things that are happening.

The dictionary defines metacognition as “awareness and understanding of one's own thought processes” or “cognition about cognition.” Jesse Martin, in his article “Metacognition and Empathy,” says that metacognition helps us to self evaluate and

regulate. It is very important for kids' learning. One's metacognitive skills can vary, but the better they are, the easier time they have. If you have ever experienced the phenomenon *deja vu*, it is because of metacognition.

Cognitive psychology has evolved since its beginning. David Kahneman's dual-process theory deals with how thoughts arise in two ways. There is intuition, which is fast and automatic with usually strong emotional bonds. Then, there is reasoning which is slow and thought-through. One of my mentors, Kirstin, explained that Cognitive-behavioral therapy is one of the dominating approaches to cognitive therapy today. It is the practice approach to problem-solving. You identify the problem, then change habits to solve it.

For my project I volunteered at Ben's Bells because kindness is important. Ben's bells is an organization dedicated to spreading kindness. They started because Jeannette Maré's son died. She took the pain she was feeling and put it into helping the community and spreading kindness by making and painting clay wind chimes. She put them around her neighborhood with kind messages for people to find and pass on. Today Ben's Bells is still spreading kindness. Kindness is important because it brings meaning to our lives and happiness to the lives of others.

For my artistic component, I recreated a painting done by someone with synesthesia. Her name is Melissa McCracken. In her lecture "Synesthesia and what it has taught me" she describes synesthesia as being "the neurological condition in which the brain is cross-wired and one sensory or cognitive pathway leads to the automatic and involuntary response of another sensory and cognitive pathway." It causes people to see

sounds and taste colors. She decided to paint what she heard. It began as a way to show her friends and family what she saw but more and more people became interested and she has now made a career out of it. I recreated a painting she did of the song “Imagine” by John Lennon. It has dark blues and yellows and bright splashes of white and red. She is still painting today and helping the community to understand what synesthesia is through art.

I did my project on cognitive psychology because I am fascinated by people, but it ended up being about the way they think and process things that happen neurologically rather than their experiences in the world. I did end up learning a lot about how we process and retrieve information which was interesting. Our mental processes are very important for how we function and it would be hard to live without them.

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