



Sensory Memory ^[1]

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When information is brought in and retained by the senses, this is what is known as sensory memory. The effects are extremely short term with this information forgotten within a few seconds. It is also known as the first level of memory.

An example of this form of memory is when a person sees an object briefly before it disappears. Once the object is gone, it is still retained in the memory for a very short period of time. The two most studied types of sensory memory are iconic memory (visual) and echoic memory (sound).

Iconic Memory

Sensory memory actually refers to memories of all senses while iconic memory relates to the memory of sight only. Various experiments have shown that once an image is viewed, the brain scarcely has time to process it and the visual memory is stored for less than half a second.

George Sperling

The idea of iconic memory came about because of George Sperling's experiments in the 1960s. He used a tachistoscope to show letters to his test subjects. There were 12 letters in all, arranged in a box shape of three rows of four. The tachistoscope was created in 1859 and was designed to improve people's reading speed or enhance memory.

It displays images on a screen for less than a second. Sperling used this device to see how many letters his subjects could read during the brief flash of the projector. He found that on average, the test subjects could read three to four letters during his experiment.

Following on from this, Sperling conducted the same experiment but with one significant change. He added sound to the images one quarter of a second after the appearance of the letters. He used high, medium and low tones and asked his subjects to read letters from the top, middle and bottom rows according to the tone they heard.

The common response was for the subjects to read three or four letters from a row after they heard the tone. Sperling concluded that his subjects saw a memory of the letters for a quarter of a second and were able to read from this image once they heard the various sounds. Ulric Neisser came up with the phrase 'iconic memory' in 1967.

Echoic Memory

With echoic memory, it is possible to remember sounds for up to four seconds after last hearing them. As this only lasts a short period of time, it is known as a type of sensory memory.

An example of echoic memory is asking a test subject to remember a series of numbers someone was reciting immediately after the sequence was stopped. If the subject responds immediately, the possibility of remembering all the numbers is high. However, should the subject wait a few seconds, the memory of the numbers will fade because echoic memory only lasts a few seconds.

Sensory memory is often confused with short term memory but there is a significant difference. Sensory memory cannot be controlled and lasts only a few seconds at most whereas short term memories can last for approximately 20-30 seconds.

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