

Memory Processes

by Sophia Tutorial



WHAT'S COVERED

This lesson is going to cover the process information goes through to become a memory by examining:

1. Memory
2. Memory Formation
 - a. Sensory Memory
 - b. Stages

1. Memory

One of the most important aspects of human psychology is memory, or the way the mind acquires, encodes, stores, and later uses information. This is a process that is behind all of the higher-level mental processes that we use.

🔗 **EXAMPLE** For instance, you can't form opinions about other people if you don't remember who they are or what kind of prior experiences you've had with them.

As important as memory is, knowledge about how memory actually works is somewhat limited. It is known that there are certain brain structures involved with forming memories:

- *The hippocampus.* This is a structure that is located inside the brain as part of the limbic system, and it helps in the formation and organization of new memories.
- *Neurons.* When a person learns, new connections are created between neurons. There are new dendrites and axons that branch together and create those connections.
- *The cerebral cortex.* There are certain areas of the cerebral cortex, the wrinkled outer layer of the brain, that are responsible for certain types of memory.

There isn't one specific area in the brain that is devoted entirely to memory, but again, exact studies about memory can be somewhat difficult considering the nature of memory and how it works. The biological study of memory is a bit more limited.

2. Memory Formation

Despite these challenges, information about the process of memory and all the different steps that occur to form new kinds of memory are known. In the process of forming new memories, a person starts with all of the sensory information that is constantly occurring around them like sights, sounds, smells, tastes, and touch. Most of this is not paid attention to because there is too much going on to take it all in at once.

2a. Sensory Memory

This sensory information goes into our **sensory memory**. This is a brief, normally unconscious, copy of the sensory information occurring all around, within the brain. Most of this information is discarded, but some is retained for later use.

Now, there are different kinds of sensory memory:

- **Iconic memory:** Any visual or sight information taken in
- **Echoic memory:** Any auditory or hearing information that is absorbed. Most of this is unconscious and lasts for only a few seconds.



TERMS TO KNOW

Sensory Memory

Brief, normally unconscious copies of sensory information around us, which can either be discarded or remembered for later use

Iconic memory

Visual/sight sensory memory

Echoic Memory

Auditory/hearing sensory memory

2b. Stages

Once information passes from our sensory memory, there are three basic steps that this information undergoes in order to create a new memory:

1. **Encoding.** This is where the brain processes this sensory information into a form that can be remembered.
2. **Storage.** Next, the brain retains that information for later use. That information is kept in the brain as either short-term or long-term memory.
3. **Retrieval.** This is the last stage, in which a person retrieves that information from storage for use.

IN CONTEXT

Suppose you are walking down the street on your way to work one day. As you walk through the crowd, you see all sorts of people around you.

Information about them--their clothes, their faces, etc.--is being taken in by your sensory memory, but most of it is forgotten because it is not considered important. Only when something grabs your

attention will the information make its way to the encoding stage.

Suddenly you see a clown walking through the crowd. This might divert your attention enough to take that information and encode it as part of your general memory.

You would attach some bit of information to the sensory information, like the thought, “It is very strange to see a clown walking down the street on a Tuesday.” This is when that information would move to the storage stage.

Finally, that information would go to the third stage of the general memory, when you retrieve the information to tell your coworker later that day.



TERMS TO KNOW

Encoding

The first stage of forming a memory, where the brain processes the sensory information into a form that can be remembered

Storage

The second stage, in which the brain holds on to and retains the information for later use

Retrieval

The third stage, in which the person remembers the information that was stored, or they retrieve the information from storage



SUMMARY

Memory is one of the most important parts of psychology because much of a person’s higher functions are based on it. Knowledge about how memory works is somewhat limited; while some of the physical structures associated with memory are known, it is a difficult aspect of psychology to study.

There is, however, some understanding of the **stages of memory formation**. Information starts by entering our sensory memory. Most of this is unconscious, and much of this information is discarded. If something is important, it enters the encoding part of the process. It is then stored in either short-term or long-term memory. The final stage of memory formation is the retrieval of the information.

Good luck!

Source: This work is adapted from Sophia Author Erick Taggart.



TERMS TO KNOW

Echoic memory

Auditory/hearing sensory memory.

Encoding

The first stage of forming a memory, where the brain processes the sensory information into a form that can be remembered.

Iconic memory

Visual/sight sensory memory.

Retrieval

The third stage, in which the person remembers the information that was stored, or they retrieve the information from storage.

Sensory Memory

Brief, normally unconscious copies of sensory information around us, which can either be discarded or remembered for later use.

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The second stage, in which the brain holds on to and retains the information for later use.