

## Editorial Comments on Memory Development

Sowmya Uttam\*

Department of Pharmacy, Jawaharlal Nehru Technological University, Telangana, India

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### Editorial Note

Memory refers to the processes that are used to acquire, store, retain, and later retrieve information. There are three major processes involved in memory: encoding, storage, and retrieval.

Human memory involves the ability to both preserve and recover information we have learned or experienced. As we all know, however, this is not a flawless process. Sometimes we forget or misremember things. Sometimes things are not properly encoded in memory in the first place.

Memory problems can range from minor annoyances like forgetting where you left your car keys to major diseases, like Alzheimer's and other kinds of dementia, that affect the quality of life and the ability to function. The study of human memory has been a subject of science and philosophy for thousands of years and has become one of the major topics of interest within cognitive psychology.

### The Memory Process

#### Stages of memory

**Encoding (or registration):** The process of receiving, processing, and combining information. Encoding allows information from the outside world to reach our senses in the forms of chemical and physical stimuli. In this first stage we must change the information so that we may put the memory into the encoding process.

**Storage:** the creation of a permanent record of the encoded information. Storage is the second memory stage or process in which we maintain information over periods of time.

**Retrieval (or recall, or recognition):** the calling back of stored information in response to some cue for use in a process or activity. The third process is the retrieval of information that we have stored. We must locate it and return it to our consciousness. Some retrieval attempts may be effortless due to the type of information.

Problems can occur at any stage of the process, leading to anything from forgetfulness to amnesia. Distraction can prevent us from encoding information initially; information might not be stored properly, or might not move from short-term to long-term storage; and/or we might not be able to retrieve the information once it's stored.

#### Types of memories

- Sensory memory.
- Short-term memory.
- Long-term memory.

The three main forms of memory storage are sensory memory, short-term memory, and long-term memory. Sensory memory is not consciously controlled; it allows individuals to retain impressions of sensory information after the original stimulus has ceased.

#### Sensory Memory

Sensory memory is the earliest stage of memory. During this stage, sensory information from the environment is stored for a very brief period of time, generally for no longer than a half-second for visual information and 3 or 4 seconds for auditory information. We attend to only certain aspects of this sensory memory, allowing some of this information to pass into the next stage: short-term memory.

#### Short-Term Memory

Short-term memory, also known as active memory, is the information we are currently aware of or thinking about. In Freudian psychology, this memory would be referred to as the conscious mind. Paying attention to sensory memories generates information in short-term memory.

While many of our short-term memories are quickly forgotten, attending to this information allows it to continue to the next stage: long-term memory. Most of the information stored in active memory will be kept for approximately 20 to 30 seconds.

The term "short-term memory" is often used interchangeably with "working memory," which refers to the processes that are used to temporarily store, organize, and manipulate information.

#### Long-Term Memory

Long-term memory refers to the continuing storage of information. In Freudian psychology, long-term memory would be called the preconscious and unconscious. This information is largely outside of our awareness but can be called into working memory to be used when needed. Some of this information is fairly easy to recall, while other memories are much more difficult to access."

### \*Correspondence to:

Sowmya Uttam

Department of Pharmacy

Jawaharlal Nehru Technological University

Telangana

India

E-mail: [uttamsowmya11@gmail.com](mailto:uttamsowmya11@gmail.com)