

Forgetting

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Forgetting (retention loss) refers to apparent loss of information already encoded and stored in an individual's long term memory. It is a spontaneous or gradual process in which old memories are unable to be recalled from memory storage. Problems with remembering, learning and retaining new information are a few of the most common complaints of older adults.^[1] Memory performance is usually related to the active functioning of three stages. These three stages are encoding, storage and retrieval.^[1] Many different factors influence the actual process of forgetting. An example of one of these factors could be the amount of time the new information is stored in the memory. Events involved with forgetting can happen either before or after the actual memory process. The amount of time the information is stored in the memory, depending on the minutes hours or even days, can increase or decrease depending on how well the information is encoded.^[2] It is subject to delicately balanced optimization that ensures that relevant memories are recalled. Forgetting can be reduced by repetition and/or more elaborate cognitive processing of information. Emotional states are just one of the many factors that have been found to effect this process of forgetting.^[2] As a disorder or in more severe cases this may be described as amnesia.

Forgetting functions (amount remembered as a function of time since an event was first experienced) have been extensively analyzed. The most recent evidence suggests that a power function provides the closest mathematical fit to the forgetting function.^[3]

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Summary

Failing to retrieve an event does not mean that this specific event has been forever forgotten. This could just mean the information was not encoded well. Research has shown that there are a few health behaviors that to some extent can prevent forgetting from happening so often.^[4] One of the simplest ways to keep the brain healthy and prevent forgetting is to stay active and exercise. Staying active is important because overall it keeps the body healthy. When the body is healthy the brain is healthy and less inflamed as well.^[4] Older adults who were more active were found to have had less episodes of forgetting compared to those older adults who were less active. A healthy diet can also contribute to a healthier brain and aging process which in turn results in less frequent forgetting.^[4] Reviewing information in ways that involve active retrieval seems to slow the rate of forgetting. Paul Connerton stated that there are seven types of forgetting, which are repressive erasure, prescriptive forgetting, formation of new identity, structural amnesia, annulment, planned obsolescence, and humiliated silence.^[5]

History

One to study the mechanisms of forgetting was the German psychologist Hermann Ebbinghaus. Using himself as the sole subject in his experiment, he memorized lists of three letter nonsense syllable words—two consonants and one vowel in the middle. He then measured his own capacity to relearn a given list of words after a variety of given time period. He found that forgetting occurs in a systematic manner, beginning rapidly and then leveling off. Although his methods were primitive, his basic premises have held true today and have been reaffirmed by more methodologically sound methods.^[citation needed] The Ebbinghaus *forgetting curve* is the name of his results which he plotted out and made 2 conclusions. The first being that much of what we forget is lost soon after it is originally learned. The second being that the amount of forgetting eventually levels off.^[6]

Seven Types of Forgetting

According to Paul Connerton,^[7] a sociologist and a scholar at the University of Cambridge, there are seven types of forgetting. He argues that 'forgetting' is not necessarily a failing, but it is a combination of actions that lead to one term - forgetting. The seven types of forgetting, in his view, are:

Repressive Erasure

This is the type used by government or states to remove the image or an event from someone's mind by completely getting rid of every artifact that reminds anyone of the image or the event. It does not need to only be used by government or states, but can be used by anyone to remove all memories from people of a certain event.

Prescriptive Forgetting

This type of forgetting is an act of state. It does not depend on one person's forgetting, but acts as a collective forgetting, where all members of a party decide on forgetting a specific memory in order to continue to function more efficiently. An example of prescriptive forgetting is when the entire student body forgets an event of breaking

and entering into the school to continue to have a sense of a safer atmosphere during school time.

Forgetting That Is Constitutive In The Formation Of A New Identity

This type refers to the idea of forgetting the past identity in order to continue to live with a new one. For example, if a person has discovered to be a homosexual, they can use this type of forgetting to their advantage in order to limit their confusion as they will have no recollection of their past heterosexual lifestyle. This type of forgetting can be used to discard memories of past identity that serve no real purpose within the context of new identity.

Structural Amnesia

This type states that a person only remembers those people who are socially important. This was discovered by John Barnes in his writings of genealogy.

Forgetting as Annulment

This type of forgetting results from a surplus of information, where useless information is discarded.

Forgetting As Planned Obsolescence

This type of forgetting happens when a product or any type of good has a limited functionality and is not meant to last long, and so, the product keeps being bought by customers who use planned obsolescence forgetfulness. For example, buying a microwave that lasts only two months, and when it is not functioning anymore, going out to get the same microwave which lasts two months, forgetting its previous failure.

Forgetting As Humiliated Silence

Humiliated silence takes place when a mishap occurs, resulting in embarrassment that is favoured to be forgotten.

Theories of forgetting

The four main theories of forgetting apparent in the study of psychology are as follows:

Cue-dependent forgetting

Cue-dependent forgetting (also, context-dependent forgetting) or retrieval failure, is the failure to recall a memory due to missing stimuli or cues that were present at the time the memory was encoded. Encoding is the first step in creating and remembering a memory. How well something has been encoded in the memory can be measured by completing specific tests of retrieval. Examples of these tests would be explicit ones like cued recall or implicit tests like word fragment completion.^[8] Cue-dependent forgetting is one of five cognitive psychology theories of forgetting. This theory states that a memory is sometimes temporarily forgotten purely because it cannot be retrieved, but the proper cue can bring it to mind. A good metaphor for this is searching for a book in a library without the reference number, title, author or even subject. The information still exists, but without these cues retrieval is unlikely. Furthermore, a good retrieval cue must be consistent with the original encoding of the

information. If the sound of the word is emphasized during the encoding process, the cue that should be used should also put emphasis on the phonetic quality of the word. Information is available however, just not readily available without these cues. Depending on the age of a person, retrieval cues and skills may not work as well. This is usually common in older adults but that is not always the case. When information is encoded into the memory and retrieved with a technique called spaced retrieval, this helps older adults retrieve the events stored in the memory better.^[1] There is also evidence from different studies that show age related changes in memory.^[8] These specific studies have shown that episodic memory performance does in fact decline with age and have made known that older adults produce vivid rates of forgetting when two items are combined and not encoded.^[1]

Trace decay

Trace decay theory explains memories that are stored in both short term and long term memory system. According to this theory, short term memory (STM) can only retain information for a limited amount of time, around 15 to 30 seconds unless it is rehearsed. If it is not rehearsed, the information will start to gradually fade away and decay. Donald Hebb proposed that incoming information causes a series of neurons to create a neurological memory trace in the brain which would result in change in the morphological and/or chemical changes in the brain and would fade with time. Repeated firing causes a structural change in the synapses. Rehearsal of repeated firing maintains the memory in STM until a structural change is made. Therefore, forgetting happens as a result of automatic fading of the memory trace in brain. This theory states that the events between learning and recall have no effects on recall; the important factor that affects is the duration that the information has been retained. Hence, as longer time passes more of traces are subject to decay and as a result the information is forgotten. One major problem about this theory is that in real-life situation, the time between encoding a piece of information and recalling it, is going to be filled with all different kinds of events that might happen to the individual. Therefore, it is difficult to conclude that forgetting is a result of only the time duration.

Organic causes

Forgetting that occurs through physiological damage or dilapidation to the brain are referred to as organic causes of forgetting. These theories encompass the loss of information already retained in long term memory or the inability to encode new information again. Examples include Alzheimer's, Amnesia, Dementia, consolidation theory and the gradual slowing down of the central nervous system due to aging.

Interference theories

Interference theory refers to the idea that when the learning of something new causes forgetting of older material on the basis of competition between the two. In nature, the interfering items are said to originate from an over stimulating environment. Interference theory exists in three branches: Proactive, Retroactive and Output. Retroactive and Proactive inhibition each referring in contrast to the other. Retroactive interference is when new information (memories) interferes with older information. On the other hand, proactive interference is when old information interferes with the retrieval of new information.^[9] Output Interference occurs when the initial act of recalling specific information interferes with the retrieval of the original information. This theory shows an astonishing contradiction: an extremely intelligent individual is expected to forget more hastily than one who has a slow mentality. For this reason, an intelligent individual has stored up more memory in his mind which will cause interferences and impair their ability to recall specific information.^[10]

Decay theory

Decay theory states that when something new is learned, a neurochemical, physical "memory trace" is formed in the brain and over time this trace tends to disintegrate, unless it is occasionally used. Decay theory states the reason we eventually forget something or an event is because the memory of it fades with time. If we do not attempt to look back at an event, the greater the interval time between the time when the event from happening and the time when we try to remember, the memory will start to fade. Time is the greatest impact in remembering an event.^[11]

Definitions and controversy

Forgetting can have very different causes than simply removal of stored content. Forgetting can mean access problems, availability problems, or can have other reasons such as amnesia caused by an accident.

A debatable yet popular concept is "trace decay", which can occur in both short and long-term memory. This theory, applicable mostly to short-term memory, is supposedly contradicted by the fact that one is able to ride a bike even after not having done so for decades. "Flashbulb memories" are another piece of seemingly contradicting evidence. It is believed that certain memories "trace decay" while others don't.^[*citation needed*] Sleep is believed to play a key role in halting trace decay,^[*citation needed*] although the exact mechanism of this is unknown.

See also

- Amnesia
- Cue-dependent forgetting
- Experience curve effects
- Educational psychology
- Memory
- Pseudodementia
- Repressed memory
- Tip of the tongue

References

1. [^]^{*a b c d*} Maddox, G. B., Balota, D. A., Coane, J. H., & Duchek, J. M. (2011). *The role of forgetting rate in producing a benefit of expanded over equal spaced retrieval in young and older adults*. *Psychology And Aging*, 26(3), 661-670.
2. [^]^{*a b*} Sangha, S., Scheibenstock, A., Martens, K., Varshney, N., Cooke, R., & Lukowiak, K. (2005). *Impairing forgetting by preventing new learning and memory*. *Behavioral Neuroscience*, 119(3), 787-796.
3. [^] http://www.psychology.iastate.edu/~shacarp/Wixted_Carpenter_2007.pdf
4. [^]^{*a b c*} Szabo, A. N., McAuley, E., Erickson, K. I., Voss, M., Prakash, R. S., Mailey, E. L., & ... Kramer, A. F. (2011). *Cardiorespiratory fitness, hippocampal volume, and frequency of forgetting in older adults*. *Neuropsychology*,25(5), 545-553.
5. [^] Paul Connerton. (2008) "Seven Types of Forgetting".pg. 59-71
6. [^] Hockenbury, Sandra. (2010)
7. [^] Connerton, Paul. *Seven types of forgetting*.

8. ^a ^b Craik, F. M., & Rose, N. S. (2011). Memory encoding and aging: A neurocognitive perspective. *Neuroscience And Biobehavioral Reviews*
9. ^a Underwood, B.J. (1957). 'Interference and forgetting' in *Psychological Review*
10. ^a Underwood B.J. (1964). *Forgetting* [1] (<http://www.ncbi.nlm.nih.gov/myaccess.library.utoronto.ca/pmc/articles/PMC1922558/pdf/canmedaj01041-0039.pdf>) , *Canadian Medical Association Journal*. 90: p.794.
11. ^a "The Decay Theory of Forgetting" (<http://www.psychologyandsociety.com/Decaytheory.html>) .
<http://www.psychologyandsociety.com/Decaytheory.html>.
 - Wixted, J. (2004), "The psychology and neuroscience of forgetting." (http://wayback.archive.org/web/*/http://psy.ucsd.edu/~jwixted/Reprints/AnnualReview.pdf) , *Annual Review of Psychology*, **55**, pp. 235–269,
http://wayback.archive.org/web/*/http://psy.ucsd.edu/~jwixted/Reprints/AnnualReview.pdf

5. McLeod, S. A. (2008). Simply Psychology; . Retrieved 19 February 2012, from Simply Psychology (<http://www.simplypsychology.org/forgetting.html>)

External links

- The End of Forgetting (http://cle.ens-lyon.fr/79834309/0/fiche___pagelibre/&RH=CDL_ANG100100) An article by Jeffrey Rosen
- Forgetting: High School Psychology (<http://scienceaid.co.uk/psychology/cognition/forgetting.html>)
- Causes of Forgetting & Learning (<http://www.educationguideonline.net/forgetting-and-learning/>)

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