

How do false memories form?



Abstract

This paper explores how we are able to form memories that we believe are true when in reality they are not; these memories are called false memories. Memories are part of our daily life and can be both positive and negative. Our memories usually come from things that are triggering, usually emotionally, in everyday life. False memories can be formed because of severe trauma or simply because someone suggested something as they spoke. Subtle cues can easily steer our memories in the wrong direction. This paper examines how false memories are created and how one can get another to believe something about their past that may not be true.

How Do False Memories Form?

A Review of the Literature

Benjamin Straube (2012) mentioned that memory, just like perception, is a constructive process that is subject to distortion and error. Memory systems can be distinguished in what information they process and how they operate. These systems are differently prone to false memories. There are two types of declarative memory, semantic and episodic. Semantic memory is the basic knowledge of things and facts while episodic memory is the recollection of personal facts. Episodic memory requires the participation of brain systems in addition to those that support semantic memory, mainly the frontal lobes (Benjamin Straube, 2012). The episodic memory system is more prone to creating false memories than the semantic memory system. Two aspects of episodic memory should be remembered, the sentence content

and the body orientation. Human memory is based on current mental state, emotion, and prior knowledge.

This literature review considers how false memories form by responding to the following questions:

1. What is episodic memory and how is it processed?
2. What is a false memory?
3. Can true inferences produce false memories?
4. Can eyewitness testimonies be unintentionally fabricated?
5. Can we avoid creating false memories?

What is Episodic Memory and How is it Processed?

Episodic memory is a neurocognitive system that enables human beings to remember their personal past experiences. It includes what event had happened, when the event had happened, and where the event had happened. Episodic memory is possibly unique to humans and is much more vulnerable than other memory systems (Tulving, 2002). Through subjective time, it makes mental time travel possible. For one to go from present experiences to past experiences. Episodic memory lies in the conjunction of three concepts- self, auto-noetic (to be able to mentally place yourself in a period of time) awareness, and subjectively sensed time (Tulving, 2002). Episodic memory relies on the outcome of tasks. There is no strict determination of how it is tested and is a hypothetical memory system. This memory system is neither directly linked retaining information or to specific mental experiences; although it is systematically related to retrieving and retaining information and a particular mental experience. An episodic

memory is linked to the past like no other memory system is. Episodic memory is most likely confused with autobiographical memory.

Autobiographical memory involves episodic but also relies on semantic memory. For example, although you know the when and where you were born, you have no recollection of the birth process itself.

The first step in forming an episodic memory is a process called encoding. Each time you form a memory, your brain goes through the process of encoding to retain the information. The process of encoding is when your information is being registered. Encoding is extremely dependent on whether or not how involved in the event you are. If you are distracted, the retrieval of the information will not last. Another step is consolidation, which is like searing it into your long-term memory and making the remembrance of the event stronger. The more neurons you are able to get to fire together the stronger your personal memory is. The final process of episodic memory is recollection. Recollection is when you retrieve the information that you have stored. Sometimes a recollection of a memory can become instantaneous or it may need a trigger including an image or a smell.

What is a False Memory?

A false memory is a mental experience that is mistakenly taken to be a veridical representation of an event from one's personal past, a fabricated or distorted recollection of an event. People often think of their memory as a video recorder, recording and documenting every event perfectly and with accuracy. In reality, memory is prone to fallacy. People tend to be so confident that their memories are accurate, but this confidence is not a

guarantee that the memory is correct. A false memory can be extremely minor such as thinking you saw your keys in the living room when in fact they were in the kitchen. They can also be major such as thinking you were sexually abused as a child. It is not about forgetting or mixing up details of things that we experienced; it is about remembering things that we never experienced in the first place. Many factors can influence false memories; this includes misinformation and misattribution of the original source of the information. Existing knowledge and other memories could interfere with information of a new memory causing the recollection of that event to be completely false. Elizabeth Loftus, a memory researcher, demonstrated through her research that it is possible to induce false memories through suggestion. She has also shown that these memories can become stronger over time. As time goes on, memories become distorted and things begin to change. In some cases, the original memory may be changed in order to incorporate new information or experiences. We are all familiar with forgetting a memory here and there, however many people do not know how common a false memory actually is. People are remarkably susceptible to suggestion, which can create memories of events and things that didn't really happen to us. " Researchers have found that false memories are one of the leading causes of false convictions, usually through the false identification of a suspect or false recollections during police interrogations" (Cherry, 2014). One of the most convincing types of evidence to a jury is someone who is so confident with their memory and the fact that they saw a specific person do something when they could be completely wrong. A simple suggestion could implicate a false memory. During a Wells and Bradfield experiment, participants viewed security tape footage with a <https://assignbuster.com/how-do-false-memories-form/>

gunman in view for eight seconds. With the photos presented to them afterwards, everyone had chosen a suspect in the photos. However, the actual gunman's photo was not present in the lineup. Although the participants were told prior to looking at the photos that the suspect may not be there, they believed he must be because they are given photos to identify the suspect. When a weapon is present during the event, the victim is more concentrated on victims and the weapon, and less on the perpetrator. This makes it nearly impossible to identify the correct suspect at a later time. Fallible eyewitness testimony is responsible for the single greatest cause of wrongful convictions; 75% of them are overturned by DNA.

Can True Inferences cause False Memories?

Memory can be influenced by inferences that people make based on experiences and knowledge. Pragmatic inferences are based on knowledge created through experiences. It usually includes information that is implied by or is consistent with the to-be-remembered information but was not explicitly stated. Schemas and Scripts are also a part of everyday life. Schemas are based on the actual, physical environment while scripts are based on the actions associated with the environment; conception of sequence of actions that usually occurs during a particular experience. For example, a movie theatre would have the schema of a candy counter with popcorn, a certain color, smell of popcorn, the ushers going up and down the aisle. Whereas the script for a movie theatre would be the buying of the tickets, going up and buying popcorn while roaming the dark theatre looking for a seat and feeling the sticky floors. Memory can include information that is not actually experienced but inferred because it is expected and

consistent with the schema. The constructive nature of memory can lead to errors known as false memories. Because you can actually imagine yourself in a particular setting without have to actually experience a moment in time can lead to a false implication that you have done something you never have before. The advantages of having constructive memory is that it allows us to “ fill in the blanks” when needed, it also makes it known that cognition is creative. Because cognition is creative, we can understand language, solve problems, and make decisions. However, there are disadvantages to having constructive memory. The disadvantages include: making errors, and attributing the source of the information. For example, the information you know will be correct, but it is possible that you make an error in the source that you heard it from.

Can we Avoid Creating False Memories?

It is nearly impossible to live without false memories. Like most things in the brain, we're not 100% sure about how memory works. Sure, we know the basics, but as you go more in depth there is still so much we need to discover. There are many instances where someone will recall a memory and that memory is never 100% accurate. That information may be correct, but maybe not the source; or vice versa. In one study, Roediger and McDermott (1995) decided to ask the question “ Can subjects avoid creating false memories if they are forewarned about this memory illusion?” (Gallo & Roberts, 1997). This test was composed of studied words, semantically related non-studied words, and unrelated non-studied words. One group was not informed of the false recognition effect, a second was urged to minimize all false alarms, and the third was forewarned about the effect. When those

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who were not informed were compared with those that had a warning, the ones who received a warning reduced their false alarm rate. However, this did not completely eliminate the false recognition effect. All of the groups had errors when reading back the words.

We are unable to eliminate false memory completely. Although someone may believe that their memory is high and are confident and convinced that something happened even when it didn't, will always happen. It is nearly impossible to cancel out false memories. Memory is one of the main things in our brain that is so flexible; it can easily be contorted and molded.

Conclusion

False memories can form in a number of ways. There can be many errors due to familiarity or suggestion. There also can be the case of when you see someone else's memories as your own. An error due to familiarity is when a participant has seen something before so it is believed to be true. Errors due to suggestion could be as slight as asking a participant "Do you remember when...?" False memories are able to form from just about anything. While registering one thing, something that is physically close to it could be encoded accidentally in which a new memory is formed. Memory is tricky; it can lead to conversations that never have existed or an experience that has never happened. False memories are impossible to avoid and hard to forget.

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