False Memory is an easy concept to grasp. A False memory is when people remember events differently from the way they happened or, remember events that never happened at all. This can occur for a large number of reasons. But can we prevent it all? Its scary to think that the same memories that define us are subject to alteration, so how can we stop it? Some scientists believe there are some ways we can reduce incidence of false memories, but their results are minimally effective at best. We like to believe that our memories are static recollections of moments frozen in time, but in reality memory in a more fluid process. In fact the “experience of remembering 'overwrites' the memory, so each time an event is brought to mind it is really a recollection of the last time we remembered it. Hence, memories gradually change over the years, until eventually they might bear very little resemblance to the original event”\(^1\). Now this isn't always a bad thing, its important to be able to analyze our memories to realize that somethings can't be true about them, or even to adjust how we feel about them so that we can get over memories that cause us guilt, many of your memories will distort over time and you will create false memories as well, and there's nothing practical you can do about it.

Some have shown that there are some ways to reduce incidence rate of false memory. Recently a study was preformed to see if subjects could avoid false memories in the DRM paradigm test (in which subjects study lists of related words and often remember a word that was not presented on the list) by warning them about the effect the test usually has and by repeating the trail\(^2\). They also tested age, dividing participants in two groups, young adults (18-27) and old adults (51-84), and the speed of reading as variables. They found that with the warning both groups were able to substantially reduce the occurrence of remembering wrong words. However by no means does that mean that no false memories were formed. For the older test subjects even when the words were read slowly the lowest rate of recalled false words was 14%. In the young group though the rate of incidence for falsely

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remembered, though at a high 25% during the first trail, dropped rapidly and for the most part remained below 10%. However it shouldn't be that surprising that younger people have better memories, its pretty common knowledge. The biggest problem with this study is that life will not provide you with a warning before your memory is distorted. No one is going to warn you about false memory syndrome before telling you a lie, or trying to make you remember something that might have happened many years ago. Nor are you really going to have the true information presented to you followed by a set of lies. The two will almost always be interwoven and you won't always be aware that you should be looking for one.

Another study tried to reduce incidence rate of false memories in the same DRM test with magnetic pulse stimulation to try and subdue the part of the brain responsible for conceptual memory. The idea coming from the fact that people with autism are much less susceptible to false memory syndrome, this is attributed to their more logical and less categorical nature, because they aren't trying to adjust their memories to fit what they already know. They found that they were able to reduce incidence rate by 36% by inducing the less conceptual state in people. Now the first thing to realize is how impractical it would be to induce this state when ever you felt you needed to remember something. Maybe somewhere in the far future they can hook something up to your brain to shut down conceptual memory when you need too, but that still doesn't make it a good idea. Conceptual memory helps us relate situations to each other and help us decided how to feel about whats happening. Without conceptual memory we can't really link events to each other, and therefore patterns can never develop. Even if there was a way to perfect this method, the trade-off it requires makes it highly unfavorable.

The two above studies have one problematic thing in common. A problem that minimal research will show apply's to a vast majority of all studies trying to reduce incidence rate of false memory syndrome, they all test false memory in the DRM paradigm. Some might claim they discovered a new method to “beat” the paradigm and others try slightly modifying the paradigm. Now the paradigm is a

good starting point in a few ways, but the memories formed during the experiments are far from the complexity and depth of real memories and recalled false memories. Everyday memories are much more complicated and have many more individual x-factors, each of which are subject to manipulation as well as distortion. Until they can figure out a way to apply their studies to more realistic tests, it seems like they're only teaching us tricks to do better on tests. On the flip side there is a wide variety of studies on methods of creating false memories, many of which create false memories with a complexity and depth that mirror real memories.

For example in a recent study on the effect advertising can have on false memory creation researchers Priyali Rajagopal and Nicole Votolato Montgomery found that “that a single exposure to a high-imagery ad elicits attitudes that are similar to real product experience in terms of their confidence ..., accessibility ..., predictive ability ..., and favorability.” This shows us how easy it is to form complex false memories, one's that we not only have full confidence in, but that can also can affect our lives in a very real way. On top of this one of the things that makes this form of induction for false memories so hard to prevent, is that it's the starting goal of advertisements to begin with. If advertisers can make you believe that you've not only used but enjoyed their product as your hearing about it for the first time, then they've pretty much got you hook line and sinker. Therefore advertisers often try and produce advertisements in such a manner as to create false memories.

One of the biggest problems with trying to prevent false memories is the sheer frequency of the threat itself. Because you constantly forming new long term memories, as well as constantly reliving old long term memories, your brain is continuously exposing itself to false memory syndrome. Any method to noticeably reduce the incidence rate of false memory syndrome would have to be constant. Also we have no evidence that false memories can be corrected retroactively. We can realize that there false, weather by having someone tell us what actually happened or by realize that the memory couldn't

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have happened or couldn't have ever been formed. As strange as that sounds it's possible to create false memories from a time that you couldn't possibly remember anything. For instance, Nicholas Spanos preformed a study in which “participants were administered either an hypnotic or non-hypnotic regression procedure aimed at retrieving day-after-birth memories.” The idea was that prior to the regression procedure it was suggested that the participant had exceptional hand eye coordination due to a mobile that was hung above their bed at the hospital where they were born. During your first few days of life your hypothalamus, which is responsible for converting short term memories into long term memories is nowhere near well developed enough to create a long term memory that would be retained into maturity. The results are surprising “The idea that the non-hypnotic method was more effective is terrifying. What it means is that detailed and realistic false memories can be formed just by being asked to imagine something that never happened. The implications of this are made all the more scary when you realize how often therapists use imagination exercises in their cessions; “surveys of clinical psychologists reveal that 11% instruct their clients to 'let the imagination run wild' and 22% tell their clients to 'give free rein to the imagination.'” This is practically an exercise in testing false memory syndrome. While not every client will develop false memories, this leaves them all very vulnerable to their onset.

False memories can easily be formed when someone tells you something happened that never occurred “Corroboration of an event by another person can be a powerful technique for instilling a false memory” She cites a study in which innocent participants were accused of damaging a computer, they denied these claims until a third party claimed to see them damaging the computer, this caused many participants to confess and even create fake details that supported the false claims. Now this effect isn't

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6 Loftus, Elizabeth F. "Creating False Memories." Scientific American. 277. no. 3 (September 1997): 70-75.
7 Ibid
8 Ibid
always detrimental. For example a parent might remember something from their son or daughters early childhood that has been forgotten by the child. They could constantly retell the story at family gatherings or over dinner, until by virtue of hearing it so many times the story has become 2nd nature to their child, and is seamlessly incorporated into their memory. This is made all the more difficult to prevent because its not entirely in your control. Once the corroborating party has spoken your brain could already be trying to distort your memories to fit this new explanation.

In conclusion, at this point in time its impossible to prevent false memory syndrome. There are some methods that might be able to reduce their rate of occurrence, but these methods are both impractical and improperly tested. On top of that there are a large number of ways to cause people to form very complex false memories, methods that are already being used by advertisements and even psychologists. If one were going to even begin attempting to properly prevent false memory syndrome they'd have to be able to change the very nature of your memory, and that's not necessarily a good thing.

The brain book is a well recognized text and reference book, and there is a big consensus that not only do our memories change over time, but that they are slightly distorted with each remembrance.


The study comes from a well received journal, the head of the research team Jason M. Watson is a professor of psychology and research scientist, also the study is used to be refuted, while the facts and figures remain important, there's no need for consensus on a faulty theory.


Neuroscience Letters is a member of the Neuroscience Peer Review Consortium (NPRC) which is an established network of peer reviewers on the subject of neuroscience. The journal itself also outlines a thorough review process, meaning that the article must be comprehensive and well put together. While there isn't enough research of this topic for there to be consensus like the above article it was added to be refuted.


The Journal of Consumer Research is a well respected peer reviewed journal also with an extensive review process, the study is cohesive and involves proper use of controls, unfortunately though it came out very recently so there hasn't been time for responses to it to come forward, the studies speak for themselves though.


Nicholas Spanos was a Professor of Psychology and Director of the Laboratory for Experimental Hypnosis at Carleton University for 19 years. He's also one of the leading researchers in the area of hypnosis and is semi-frequently cited in other papers.

Loftus, Elizabeth F. "Creating False Memories." Scientific American. 277. no. 3 (September 1997): 70-75.

Elizabeth F Loftus is a leading figure in the research of false memory syndrome, as well as a leading figure in psychology researcher, she has received numerous rewards and honorary degree for her work in the field of false memories and is frequently called upon as a expert witness.