Myths and Misconceptions of Memory

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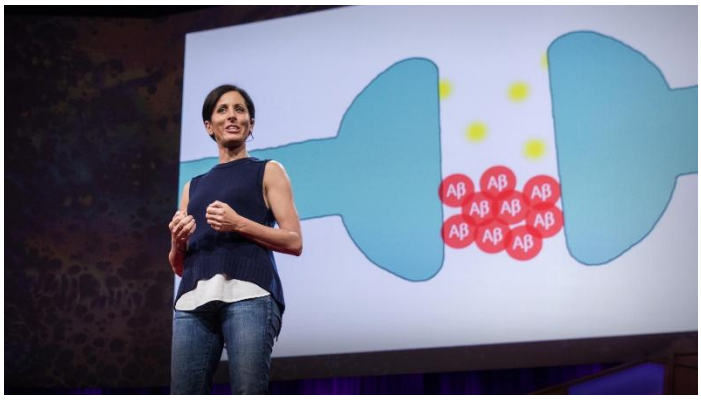
Boom! You just witnessed a car crash. How fast was the first car going when it contacted the other? How fast was it going when it smashed into the other car? What about when it hit the other car? This may sound repetitive asking the same question over and over, but chances are you wouldn't answer each question the same. You may think that you have a good memory—one unaffected by a simple verb change—but your memory isn't nearly as accurate as you think it is. There are many myths and misconceptions surrounding memory. Many people think that memory is constantly rolling like a video camera, recording every moment as it happens. They may also believe in photographic memory, where certain people are able to recall the still frame of any moment in their life. Most people think that when they forget something, that memory fades away and is lost completely from their memory. Many students find that cramming for a test is a great option because the knowledge will be fresh in your mind. These students may also find that they are very good at multitasking with social media, and they don't think that it has an impact on their memory. While all these conclusions seem logical, they are not the truth of memory. Memory is hardly like a video camera, and there is little evidence to show that it can be photographic. Even though we forget many things, those memories are never truly lost. And, unfortunately, cramming is not the best way to remember things, and multitasking certainly does have an effect on young adult memories. Overall, even if you think your memory is iron-clad, it isn't nearly as good as you think it is.

Some people think that your memory is constantly rolling, like a video camera. They may get frustrated when they forget someone's name, where they left their car keys, or even why they walked into a different room. While these instances can be frustrating, they are not any reason to be alarmed or feel like your brain is malfunctioning. In a virtual TED Talk,

neuroscientist and author Lisa Genova (2021) discusses how we shouldn't be alarmed by these small forgetful moments. She says, "Your memory is not a video camera recording a constant stream of every sight and sound you're exposed to" (1:49). She continues, "The number one reason for forgetting [...] is lack of attention" (2:59). This goes against the common belief that your mind is rolling at all times, like a video camera recording your life. Imagine how overwhelming that would be to notice every creak in your house, never be able to drown out a ticking sound in the background, remember every time you do a monotonous task. While it feels inconvenient to forget these things when you *do* need to remember them, the benefits outweigh these few instances. And you don't need to feel bad when you have an error in memory or constantly must use google to look up the name of an actor that's on the tip of your tongue. Genova (2021) says that these instances are "Frustrating, but not a cause for diagnosis, panic or shame. Most of what we forget is just a normal part of being human" (7:09). Memory is imperfect, so you don't have to feel worried when your brain makes small mistakes.



Genova giving a TED Talk related to Alzheimer's
Source: (TED, 2017)

When you do have these forgetful moments, you may wish that you have a photographic memory. Photographic memory is a big hit in pop culture. I remember reading the *Cam Jansen* book series in elementary school, where she would solve mysteries using her photographic memory. Since then, shows like "Suits" have been popularized, with the main character using his photographic memory to remember entire law books. While this ability would be the envy of

anybody, unfortunately there is little evidence that photographic memory, as commonly depicted, is real. In a blog post on Communicating Psychological Science, Tyler Gagner (2023) discusses how even the people with the most profound memories don't remember things like a photograph. He mentions how "the winner of the Memory Olympics [...] still had to keep sticky notes to remember the things she had to do" (para. 3). If even the world's greatest memory champion can't remember everyday things, how couldn't someone with "photographic" memory beat them by just looking at pages of numbers. Genova mentions a similar instance in her TED video, where a man who could memorize over 100,000 digits of pi would forget his wife's birthday (Genova, 2021, 0:56). Obviously these two memory experts do not have photographic memory, so how are they not getting beat by someone who does? Why don't we hear about these people with photographic memory in real life? Even though photographic memory doesn't exactly exist, some may argue that what is known as "eidetic memory" is close to what people consider photographic. Scholar Annette Kujawski Taylor (2013) states, "In eidetic memory, a person has an almost faithful mental image snapshot or photograph of an event in their memory" (p. 1099). This may seem like photographic memory, or even better, but there are a couple key words to take away. For one, the supposedly perfect recognition of an image in photographic memory is not the same as an "almost faithful" image. This means although eidetic memory is better than average at recalling pictures, it is still subject to the same

Finalists in the 17th USA Memory Championships
Source: (Cole, 2014)

inconsistencies that occur in our everyday memories. Even eidetic memory comes with some skepticism. Eidetic memory is mostly found in children, and there are no reliably proven cases of eidetic memory in adults. Even if eidetic memory was proven, it still wouldn't match up with what people consider photographic memory, and according to Scientific American (2013), "...a true photographic memory [...] has never been proved to exist."

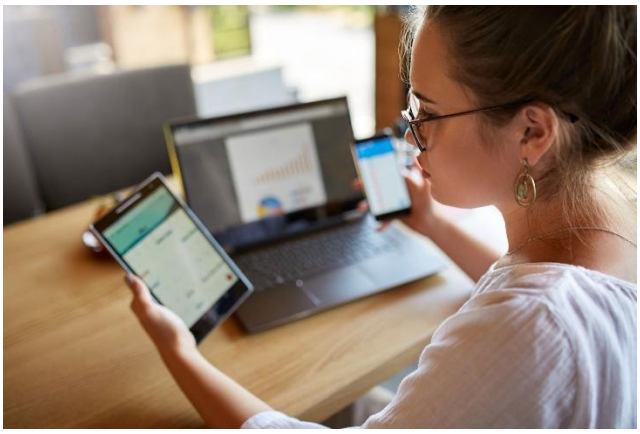
So, if even photographic memory isn't real, that must mean that there are plenty of things we completely forget. Do our brains just erase this information? While you might think that your brain would get clogged up if nothing from our long-term memory was ever "thrown away," many of our long-term memories are never completely forgotten. Otterbein University psychology professor Robert Kraft (2025) discusses the common myth that memories fade over time. He says, "With encoding and storage, human memory is remarkable—taking in and representing information from the world, with no discernible limit." Kraft mentions how our brain does not actually have a memory limit. We can take in thousands of pieces of information and vivid memories, and they will always have their place in our memory. Then how do we forget? Forgetting is a problem with retrieval, rather than the encoding and storage of the information. Kraft (2025) continues, "It's retrieval that sets limits. Even as retrieval pathways become overgrown and inaccessible with disuse, the memory representations themselves remain vivid and detailed." This is shocking to many people—that thousands of your memories are up in storage, just unable to be accessed due to disuse of the pathways. For example, think of your 6th birthday party. You probably don't remember much, if anything at all, but that pathway is still there. Now, if you look at pictures from the party or are reminded of the cool toy you got, that pathway may be able to be accessed once again, and soon you'll start

remembering other facts like the little games you played with your friends. Or maybe you had an amazing 6th birthday party, one you talk about with your friends still to this day. Then, that pathway will be easily retrieved because of its frequent use. So next time you forget something important, be rest assured that the information is in fact in your memory, just unable to be accessed.

So, what is the best way to retrieve those much-needed memories during a test? Some people think cramming is the best way. We've all been there: Staying up late into the night or early morning studying flashcards or writing an essay. Many students know that this is bad practice because of the loss of sleep, but what if sleep wasn't a factor? It seems logical that cramming less than 24 hours before a test would be beneficial so that the pathways are fresh in your brain. Cramming has become so common that the University of Texas at Dallas's student newspaper found that only 2% of students do not cram for any classes, and 16% of students cram for every class (UTD Mercury, 2020). Despite the convenience of cramming, it is very inefficient compared to spacing your study time. John Dobson, a Georgia Southern University professor, ran an experiment that tested student recall of immunology and reproductive physiology concepts. The highest scores were achieved by reviewing the material a day after learning the concepts, followed by a practice of expanding retrieval (Dobson, 2012). A group that did their final material review eight days before the test still scored significantly lower than the expanding retrieval group, despite this group doing their final review two weeks before the test (Dobson, 2012). These findings show that proximity of reviewing for a test is not always the most relevant indicator for test performance. More importantly, the spacing of the study time is what contributes to better test performance. If you want the greatest retention of test material,

reviewing the day after learning, followed by a couple days later, and then increasing increments after that will be your best bet to do well. This idea of expanding retrieval has led to the "2357 method," where you review material 2 days, 3 days, 5 days, and 7 days after learning to have the best retention. These ideas are great, but, in practice, students have busy lives and are often unable to stick to such a strict review schedule. But if they can remember the principles of spaced studying and focus on expanding retrieval as a general principle, rather than an exact science, they will see much better results than basic cramming.

While cramming for tests has been around a long time for students, media multitasking is much newer. Many of today's teens and young adults think that they are good at multitasking. We have grown up around phones, so we are more used to using them and multitasking with them than anyone else. Many of these young adults may think that multitasking doesn't impact their memory. Unfortunately, engaging with multiple screens has shown to have negative effects on attention and memory. According to writer Bret Stetka (2020), "engaging with multiple forms of digital [...] media simultaneously [...] may impair attention in young adults, worsening their ability to later recall specific situations" (para. 2). High amounts of media multitasking can even have physical effects outside of memory lapses, such as a decreased pupil diameter exhibited by heavy media multitaskers (Stetka, 2020). These findings are significant because they show a new link between memory and everyday lifestyle choices. There have been other discoveries about lifestyle choices affecting memory, such as



Young adult demonstrating media multitasking
Source: (Getty Images, 2018)

exercise decreasing your chances of dementia, but this finding is entirely new. I find this alarming because of how normal multitasking is in our world, even being praised. Many people find it impressive and convenient to be able to complete a task while talking on the phone or watching a movie. Multitasking has gotten so out of hand that I will even see AI-powered websites that will read your textbook out over a satisfying video so that you don't get bored. Even though most people don't see multitasking as a reason for alarm, it can have serious effects. Without change, we may be doomed to a world where people's attentions are only fit for minute-long videos.

Love it or hate it, we use memory every day and in every moment. Because so much about memory is unknown, people are often quick to draw conclusions and spread information, even if that information doesn't turn out to be factual. Memory isn't like a video camera—recording every moment in perfect detail. It certainly isn't photographic. Memory is more of a puzzle, constantly piecing together the bits of information that it knows so that it can make a whole picture. Although we often forget things, those memories are never truly gone. And students can make better use of their memory by spacing their studying and decreasing multitasking. Personally, I have struggled with my memory my entire life. My average water bottle lifespan is about 6 months because I am constantly forgetting it in places. Sometimes when I am telling an interesting story, someone will interrupt me to remind me that I've already told them the story before. And I have forgotten to bring my backpack to class an alarming number of times. Writing this essay has helped me to realize that I shouldn't be alarmed by these small memory mishaps. I have also learned new techniques to strengthen my memory, such as the "2357" method. Most of all, I've learned that memory is unpredictable and hard to

understand. Your brain is a maze that your memory is trying to navigate. Sometimes it may find the right path, and sometimes it may come out a little bit wonky. Now, 2000 words about memory later, do you remember the first word of this essay?

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