Why do we forget?

Luke Brooks-Shesler
LukeBS@gmail.com

April 8, 2018

Good morning. Thank you for coming today and thank you for the opportunity to deliver this message. The theme of today's message is "why do we forget." It's probably safe to say that forgetting is something that we do way more often than we'd like. Forgetting can be a source of endless frustration. We get mad at ourselves for forgetting. We feel embarrassed or ashamed for forgetting. We are afraid that people will mock us for forgetting. You can almost hear them thinking, *"Oh, he's getting old."* Or *"She's starting to lose it."* People get mad at us for forgetting, and *we* get mad at people for forgetting. We hurt people if we forget things that are important to them, like their birthdays, or their anniversaries, or how they want us to load the dishwasher. And we also feel helpless for forgetting. We don't want to forget. But we forget anyway and there is nothing we can do.

If forgetting makes us mad at ourselves, and makes people mad at us, and hurts people's feelings, and causes many other complications and inconveniences in our lives, then *why* do we forget in the first place? By now, shouldn't humans have evolved enough so that we never forget? At the very least, shouldn't we have developed some sort of technology that won't let us forget?

Unfortunately, the answers to the last two questions are no and no. No matter how much you worry about forgetting, no matter how many steps you take to prevent yourself from forgetting, no matter how many electronic gizmos you decorate your body and your homes with, you will still forget. Let's accept that we will forget many more things from now until the end of our days. We can relieve ourselves of the burden of trying to never forget anything. We are much better off if we try to understand how our brains work and *why* we forget. Then we can make a conscious decision about how we will respond in those inevitable moments when we forget, and we can also forgive ourselves.

In order to understand why we forget, we need to understand how memory works. The basic understanding of how memory works is called the modal model of memory. This model was developed in 1968 and there have been advancements and refinements ever since. However, the modal model of memory still describes the basic principles of memory.

Memory has three main parts: sensory memory, short-term memory, and long-term memory. Information enters sensory memory first. This is the information that we detect with our senses, such as sight, sound, taste, smell, and touch. This information passes from sensory memory to short-term memory, which can hold a small amount of information for about 30 seconds. If we focus on and rehearse this information, it enters long-term memory. When we need that piece of information, we retrieve it from long-term memory and place it in short-term memory so that it is available for us to use. *Voila!* That is how memory works.

The critical thing about memory is that memory is a *process* rather than a single fixed *thing*. Information enters our brains and travels around to different parts of our brains, until, at some point down the road, we decide that we want to use that information. Unfortunately, information can get lost along its journey inside our brains. When we try to retrieve that information, it might be missing. Not only that, but when information is missing we often create imaginary memories of things that never happened, so that we can fill in the gaps in our memory. That creates a bit of a Catch-22. We forget because the information is missing, but we also forget because we remember things that never happened.

Memory is a huge and diverse area of research within psychology, so we can only scratch the *surface* of this topic this morning. But today we will talk about sensory memory and about some things that interfere with memory.

The graphic on the cover of today's order of service is a sparkler, one of those sparkly things that you light up on the 4th of July and that is fun to wave around. One of the coolest things about a sparkler is that when you wave it around, it leaves a trail of light in it's wake. If you wave a sparkler in a circle, you can see a big illuminated circle hanging in the air for a split second. Or you can spell out the letters of your name by quickly tracing the letters in the air.

Information about the sparkler enters our brains through sensory memory. We can think of sensory memory as the interface between humans and the world. Our bodies are equipped with all kinds of sensors that collect external data and pass along those raw data to our brains for further processing. This is information about what we see, what we hear, taste, smell, touch – all of that stuff. Most of the time, sensory memory is correct, but once in a while sensory memory passes along information that is wrong.

Even though we *see* the sparkler's trail of light, the trail of light does not actually exist. There are no drops of light dangling in the air. Rather, the trail of light is a creation of your mind. Psychologists refer to this as *persistence of vision*. Your mind continues to *perceive* the sparkler's light for a fraction of a second after it is gone. You might "remember" seeing a trail of light, but in reality, there was no trail of light. It never happened.

At the most basic physiological level, humans are disposed to see things that are not there. Once in a while, our senses pass along incorrect information to our brains. In these instances, we are destined to remember incorrectly, and therefore to forget. In a way, this is liberating. There is absolutely nothing that we can do about this because this is how we are programmed. So let's accept it.

Sensory memory can sometimes pass along bad information to our brains, and there are other psychological processes that can also interfere with memory. Today's Thought for Contemplation is the poem entitled "The Mermaid" by William Butler Yeats, which is on the front page of your order of service. As the title suggests, this poem involves a mermaid. Let's assume that mermaid brains and human brains work in exactly the same way. Assuming that is correct, this poem shows how three different psychological processes might have interfered with the mermaid's memory. Here is the poem:

A mermaid found a swimming lad,
Picked him for her own,
Pressed her body to his body,
Laughed; and plunging down
Forgot in cruel happiness
That even lovers drown.

What a tragic poem! It started off optimistically, but it had a rather discouraging end. The mermaid in this poem killed her lover because she forgot that humans can't breathe underwater. How is it possible that she forgot that humans can't breathe underwater? That seems like a rather basic piece of information. But the mermaid forgot, and she drowned her lover by accident. Thankfully most memory lapses do not yield such tragic results.

In this poem, there are three psychological processes that might have caused the mermaid to forget.

The first process has to do with emotions and what is called our "field of attention." Our attention becomes narrower as our emotions become more intense. The mermaid was swept up in the moment and her passion consumed her attention. Her field of attention became so narrow that she forgot that people can't breathe underwater.

We can relate to this idea that emotions cause us to forget. Think of a time when you were in a tense conversation or in a heated debate with someone. Right after the conversation, you might think to yourself, "Oh, I wish I'd brought up this one point." Or, "Oh, I wish I'd said this or that." But you didn't say it because you were caught up in your emotions, and you forgot.

Or think of a time when you were arguing with someone you love, like your partner, or parent, or child, or friend. In the heat of the moment you might be angry at the person, and you might screw up and say something that you regret later. You regret it later because in the heat of the moment you forgot how much you love that person and how sad you would be without that person. When clearer heads prevail, when we have had time to calm down, we remember what is important, because our field of attention expands and we see the big picture.

The second psychological process that might have caused the mermaid to forget is called proactive interference. Proactive interference occurs when stuff that we already know interferes with us learning new stuff. We don't know much about the mermaid's relationship track record, but let's assume that the mermaid has spent her entire life interacting with other mermaids and mermen until she meets the lad, who is described in the poem. This lad might be familiar to the mermaid in almost every single way, except for that one minor detail that he can't breathe underwater. The mermaid forgets this because she has taken for granted her entire life that everyone she knows can breathe underwater.

In our lives, one event follows the next, which follows the next, which follows the next, and so on. Life can become a bit of a blur because, let's face it, our lives are not usually all that different from one day to the next.

Because so many of our life experiences are similar to life experiences that we have already had, we experience proactive interference all the time. For example, let's say that we have been taking the same route from point A to point B for the last year, but then we discover a *faster* route. We are so accustomed to the old route that we might miss our turn onto the new route about five times in a row before we remember, "Ok, here is where we have to turn," and we finally get the new route right.

Or we might wake up one morning and say on a whim, "You know what, I'm going to get a haircut." And we go all the way to the barber shop only to discover that the barber shop is closed because it happens to be a Monday. We are so used to most businesses being open on Mondays that we forgot one of the most fundamental and inexplicable rules of the cosmos: barber shops tend to be closed on Mondays.

Or let's say that someone gets a new email address. It can take us a *long* time before we remember to use their new email address because we are so used to the old email address. We forget, and we forget because stuff that we know interferes with us learning *new* stuff.

The third process that might have caused the mermaid to forget that people can't breathe underwater is called a schema. A schema is simply our knowledge about a situation and what is supposed to happen in that situation. Perhaps the mermaid was simply doing what mermaids do in a romantic situation, which is plunge underwater. By her standards, she wasn't doing anything unusual. In fact, by her standards she was doing something that was completely normal for her. But what was normal for her was not at all normal for the lad. She forgot that people can't breathe underwater.

A schema clash can occur when two cultures collide. For example, Germans and Austrians have a rather rigid schema when it comes to beer drinking. When it comes to beer drinking, Germans and Austrians have two rules, which must never be violated. First, you wait until everyone gets their beer before you take your first sip. Second, you establish eye contact and say "Prost" to everyone in your beer drinking circle before you take your first sip. In the United States, beer drinking is more of a free-for-all. You can pretty much sip your beer whenever you want without violating any social norms. However, it takes a long time for an American in Germany or Austria to remember to wait until everyone gets their beer, and to establish eye contact and say prost before taking their first sip. Americans always forget, not because they intend to be impolite, but because they have a much different beer drinking schema.

We also have a schema for romantic relationships, household responsibilities, parenting, food, finances, and many more aspects of life. A schema is simply what we know about a situation and what we expect to happen in that situation. When a situation unfolds differently than how we expect, then we have to in a way "unlearn" what we knew, and in that unlearning, we forget what we are supposed to do.

To wrap things up a bit, we go through our lives constantly bombarded with sights, sounds, thoughts, and emotions. Information enters through our senses, our sensory memory passes along that information to our short-term memory, and sometimes that information is incorrect. We try to figure out which information is important, and which information is irrelevant. We try to add

new information to our long-term memory, but sometimes what we already know makes it harder for us to learn. With everything that is going on in our brains, no wonder we forget. In fact, it is a wonder that we remember as much as we do. But to forget is human. It is the way that we are programmed. Rather than fighting it, let's accept that forgetting is a fact of life.

We live in the light of the sparkler trail where light appears to dangle in the air. We navigate our lives with thoughts, perceptions, and feelings based on how we see the world and on the amalgamation of our life experiences. Our senses and the knowledge that we have accrued throughout our lives, are sometimes the reason that we forget or that we remember something incorrectly. That is ok, and that is human. We live in the light of the sparkler trail. And isn't that light beautiful.