

Most of my life I thought that I had a horrible memory. I forgot to do almost everything people told me to do and forgot to turn my homework in. At some point last year I started to figure out that my memory wasn't as bad as I was led to believe, and I realized that there were things I could actually remember better than others. When starting this project I decided that I wanted to learn exactly how memory works, hoping that having a better understanding would help me learn more about how my own memory works.

A human's memory relies on the brain's ability to store, retain, and recall sensory information on a daily basis. A memory begins with the perception of stimuli, be it from sight, touch, taste, or smell. This is called "sensory memory." If the perception of this information is significant enough it will be stored in our short-term memory and eventually, depending on the emotion that stimulus evokes, maybe our long-term memory. The limbic system is a broad term for the structures of the brain involved in the creation of memories and includes the hypothalamus, thalamus, hippocampus, and amygdala.

Sensory memory involves the hypothalamus and thalamus. These two structures process sensory information from the sensory receptors and connect to areas of the cerebral cortex involved with perception and movement with other parts of the brain. After you have perceived an item it can be passed into short-term memory by a process of selectively concentrating on one aspect of the environment while ignoring other things.

The hippocampus is located in the temporal lobe of the brain and interprets sensory input, as well as storing and processing spatial information. During everyday life, the hippocampus is constantly sifting through sensory information and deciding what should be stored and what is meaningless. If this information is significant enough it will be stored in the short-term memory. A seven-digit phone number happens to be about the maximum amount of information an average person's short-term memory can hold. A person can restart this process by repeating the information back to themselves. The amygdala and hippocampus are responsible for transferring memories from short-term to long-term. The storing capacity of the hippocampus is limited, so it tries to transfer information as quickly as possible from short-term to long-term memory. This is done by nerve cells firing signals at a certain frequency, which occurs during sleep or while at rest.¹

Memories about a person's past experiences are stored in the amygdala. In order to feel certain emotional responses (and feel them in others) you must have a functioning amygdala. The amygdala is responsible for autobiographical memory, attention, and emotional processes. If a person undergoes a traumatic event, that memory will be stored in the amygdala. Then, if the person were to reflect on the event, it would evoke an emotional response.²

The brain can hold large amounts of information for an indefinite amount of time. However, every time a memory is recalled, it is recreated; every time you think about your first memory it might be easier to remember but that is because you just recreated that memory from your past recollection of it. This doesn't mean that the recreated memory isn't true, but it has changed from when it was first implanted in your brain. This is interesting because our perception of the world is based almost entirely off of our memories of past experiences.

Since I was a little kid I have always had a bad memory; by that, I mean I would forget the things that my parents told me to do but could remember silly little facts or things that I

¹ " Short Term Memory." - *Simply Psychology*. N.p., n.d. Web. 12 Nov. 2013.

² "Long Term Memory." - *Simply Psychology*. N.p., n.d. Web. 12 Nov. 2013.

didn't really need to know (like, one drop of super glue can hold 70 pounds). I would even forget where I put my shoes. After almost every play-date I went to I would be missing a toy or article of clothing. After a while, I learned to create systems so that I could force myself to remember my things. I would set my shoes in a spot by the door or in my friend's room where I would remember them and put my socks inside so I wouldn't lose them either. When I started school I would forget to bring my work home; even if I *did* put my work in my backpack, it would get lost with all the other assignments that never got turned in. I worked with my mom and teachers to help me keep track of my work but could never quite stick to the plans they set out for me. As I got older my parents could help me less and less and the amount of schoolwork that got done or turned in became almost none. This continued all through middle school and I almost didn't make it out of eighth grade. When I got to high school I finally realized that I *did* actually need to do well in school, and that I needed to come up with better ways to remind myself to complete and turn in my work. It was hard to create a system that worked—there were thirty-plus kids in all of my classes, and I had no help from teachers in reminding me what the homework was for each night. It took me until sophomore year to figure out a way to stay organized and remember to do my work. I recognized that the only way for me to see all the work I needed to do for the night was to use one binder that I put the assignments from all my classes in; when I went to do my homework each night I would see the work from other classes that I might have otherwise forgotten about.

After setting up a system to remember the things I needed to do for school, I started to notice more and more that I still needed to do something about how much I was forgetting to do what my parents were telling me. It became even more apparent when I got my license and had more responsibility for helping my parents out by running errands or getting to places when I needed to. I still haven't come up with anything that has really worked, but I have developed anxiety about forgetting to do something, which has made me constantly double and triple check myself to see if I have done everything I need to do. Unfortunately this isn't very effective and most of the time I'm in my head trying to remember all that I need to do for that day, and I often miss out on any new information that I need to know.

This project has been a perfect way for me to work on understanding the way my brain works and to work on coming up with an effective system for remembering everything that I need to in my everyday life. To help me grasp how my short-term memory works, I devised a system of working in a sketchbook. Each day I would draw a picture in my book, and then the next day I would go back and write a few words about what I thought was going through my mind when I drew it. As it turns out, this is more than just a good way for me to learn about how my memory works. I understand now that the problem is not always that I forget what I was just told, but that I'm often not really listening in the first place, which makes me unable to even *have* a memory of getting an assignment or needing to do something. Drawing and writing in the books has forced me to be more present in social situations, which in turn helps me to remember more about what is being said. The books also got me into the habit of doing something everyday, which I've always had trouble with without being pushed into it by my parents.

Knowing what I know now about memory and ways for me to get into the habit of doing things on a daily basis, I feel a lot more confident about moving forward in my life. If I continue to utilize some sort of note-taking method throughout the day I feel that I will be able to start to lower the amount of anxiety I feel every day. I've also come to recognize that by getting into the habit of writing things down when I feel like I need to remember them, I am forgetting things less and don't always need to look back at what I wrote down because I remember it better; this

is very helpful. I think that these books are a first step for me in coming up with an effective system for remembering the things I need to do, and doing them. I'm looking forward to going back home and being able to use, and build on the system of using, these books to help with school and everyday life.