Meghan Callaghan

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General Principles Journal

*September 12, 2010*

**Principle 1:** Memory plays a significant factor in cognition. Without the function of memory, knowledge cannot be built upon or call upon when needed. For example, when I study for test I am memorizing facts and ideas so that when I'm taking the test I will be able to go within my "memory storage house" and call out the ideas I need to answer the questions in the test. Another example for why memory plays an important factor in cognition is that memory allows us to make connections between different aspects of life. With our memory function, we can remember names of people, facts and places, and unique characteristics of events. When we meet a new person and hear his or her name, our memory recalls everyone else who share that same name. Yet, how does memory work? Why am I able to remember some things and not other things? Does memory work different in each person? Are there strategies or learning techniques that people can use to develop a better memory, one with a stronger retention. It is difficult to digest that our memory fades and that for the most part, it appears we do not have control when our memories weaken.

**Principle: 2** Slightly obvious, the human brain is a complex organism, containing multiple parts that work together to produce how we live out normal functions. Each part in the brain independently functions on it's own, but connects with other parts depending upon the job at hand. For example, the brain is like an ensemble line, where we start with one part, something gets added to the product and then something elese, and at the of line with the multiple parts you have the end product. Reisberg speaks of the complexity of the brain when he illustrates the brain functioning of people with Capgras syndrome. With Capgras, the brain's amygdala does not produce the appropriate emotional response when faced with factual information. The parts of the brain are not in synch with each other. Reading chapter 2, I realize how little I know about how the brain works. It’s an amazing organism with a very delicate nature. I’m interested to learn more brain abnormalities that are connected with gene patterns. I’ve lost both grandfathers to dementia and Alzheimer’s and in this class I would like to study how brain abnormalities and/or diseases can be prevented or treated once diagnosed.

*September 26, 2010- Chapter 4*

**Principle 1**: While a person is paying attention there are two on-going present streams, the attended channel and the unattended channel. When we choose to pay attention to one thing it is through the attended channel, however when we hear or think of something else, our attention switches over to the unattended channel. Thus, people are selective with in paying attention to things.

**Example:** When I’m at a party and I’m talking with a couple of friends, I’m intentional listening to my friends speak. However, at the same time, I overhear someone mention they are from Hanford, California and since I’m also from Hanford, CA, my attention switches gears and I’m now listening, not to my friends, but the other conversation.

**Example:** Right now as I’m writing this principle, my attention is focusing on writing. Yet as I keep on thinking my mind begins to go off target and starts to think about everything I have to do at work tomorrow and then I begin to smell what is cooking downstairs and I realize I’m hungry. All of these unattended thoughts get in the way with my attended priority of finishing this principle.

**Reflection:** It is a little ironic that while reading the chapter about attention, my own attention was everywhere else. And I feel this behavior is particularly typical for most students, especially ones with attention disorders. Besides antibiotics are there strategies or techniques that students can use in controlling their attentions? Reisberg says that we need to think of paying attention as an achievement. I agree. When I was finally able to concentrate on reading this chapter I felt accomplished. Maybe we need to recognize students for the amount of effort, we as educators make them put into paying attention.

**Principle 2:** People can do two things at the same time, only when the two things do not involve the same task. Tasks include, auditory, visual, speech, and spatial. The less similar the tasks are with each other, the more likelihood the person will not use all their mental recourses in trying to do the two things at once.

**Example:** Some people enjoy listening to music while reading or writing. These two tasks have very different tasks. Listening to music is an auditory task, while writing and reading is a visual task. Therefore there isn’t interference in the functions of the tasks of listening and reading.

**Example:** In talking about this principle, Reisberg explains why talking on the phone while driving proves to be more difficult on a person’s mental resources. He likens the problem to that both of these tasks, visual and spatial in driving, auditory and speech in talking have a limited amount of resources. When the two tasks are interfering with each other they are using up their supply of resources and thus auto accidents are more likely to happen.

**Reflection:** Does everyone have the same limit in their mind’s mental resources? I know there are people out there, who don’t get into accidents while driving and talking. Is there any connection between our mental resources and intelligence? I would like to think not, but I’m not sure. In fact, what is the connection between cognitive psychology and intelligence?

*October 3, 2010- Chapter 5*

**Principle 1**: One of the distinct differences between the LTM and working memory lies in the fact that to use the LTM, a person has to hunt for the knowledge they want to recall. With the working memories the information stays active in the mind, ready to be at use any point. However, there is a shelf life in how long and how much can be stored within the working memory.

**Example:** Reisberg gives an example of how the short-term memory works when he describes a person reading the sentences in the chapter. People store the words of the sentence in the working memory, so then we are able to connect and understand the sentence once we come to the end.

**Example:** As an English major in college, I was tested on my understanding of the different concepts and themes within the books I was reading. The tests I took were designed to make me agree or disagree with a statement. My LTM was at use during these tests. I was recalling the different anaylsis and connections I made when I read the book, which usually took place a few weeks before the test.

**Reflection:** I’m realizing my working memory is very limited. When I give myself tests to recall words, most of the time I can only remember 4-5 words; same is true with numbers. Yet, in college I flourished when I had to use critical and analytical thinking. I know that each memory functions differently, but I wonder if one is better than the other in terms of intelligence? Reisberg skirts around how each is functionally different, but I wonder as educators if I should be trying to instill techniques that favor LTM over working-memory.

**Principle 2:** Attention to memory aids how well a person will retain information. Yet intentionality to the information does not make a difference in retention. You can plan to learn a subject or not plan to learn the subject, but when attention is active the information will be retained.

**Example:** Reisberg give an example of this principle when he brings up the composite experiment that many cognitive psychologists conducted (Hyde and Jenkins to Slamecka and Graf, etc). This experiment illustrated that intentionality to learning made no difference in retaining knowledge. The only factor that contributing to retaining the information was the processing levels. When someone deeply makes meaning of the information presented then retention is gained. Intentionality or incidental learning makes no difference.

*October 10, 2010- Chapter 7*

**Principle 1**: Memory connections have two faces. One face helps our memories in recalling and storing information, but the other face causes errors to occur when recalling information, due to the different schemas, interference of multiple memories intruding on to each other, being exposed false memories, as well as a variety of other reason. It appears people cannot stop the memory errors from occurring.

**Example:** During final exams, students are cramming so much information into their memories that a couple things could happen in this process. The information does not make its way to Long-Term memory due to the weakness of the memory connection and in understanding the information. Additionally, since a variety of information is being crammed in to the mind, interference happens. New information disrupts the old information.

**Example:** Reisberg gives an example of eyewitness testimonies in criminal cases when talking about how false memories can cause memory errors. People who have witnessed crimes are trying to make sense out of the situation. Reisberg says they either add or subtract information from the situation in order to make it appear normal. At the end, people end of remembering the elements they created in order to make the scene appear right over factual information.

**Reflection:** I’m surprised by how often errors occur in our memories. It is almost fatalistic to think that we can’t do much about the errors in the first place. I wonder if people who are now diagnosed with dementia or Alzheimer have had a stronger reoccurrence of memory errors prior to their diagnoses?

**Principle 2:** Emotions help people to remember past events. When emotion is a factor in memories the targeted event is clearly stored and recall, as well as the emotions are relived when retrieving the event.

**Example:** Victims of trauma relive the traumatic events regularly in their lives. Reisberg explains this is because trauma victims have extra-vivid and long-lived recollections of the event. Some victims have too much memory of the event, while others have forgotten.

**Example:** This summer I took a group of college students to Senegal. They experienced a serial of emotional events, due to being out their comfort zones, seeing extreme poverty, and building quick close friendships. Four months have past since the trip and these students can still recall specific details of the trip due to the emotions that are now connected to their trip memories.

**Reflection:** Reading that our emotions help in recalling memories reinforces why service learning aids the retention of classroom knowledge, or at least it how when done properly can help students in testing assumptions and ideas, which could lead to emotional “ah ha” moments. These experiences can then act as triggers when needing to recall information for tests and other forms of assessment.

*October 26, 2010- Chapter 8&9*

**Principle 1**: Like the principle of priming, hints and context reinstatement help us in activating nodes, which allow us to retrieve the knowledge we are seeking. When we can’t remember something point blank the hint or context reinforces or acts as a triggers, which helps to connect the knowledge we desire from a different node.

**Example:** In the game of *Taboo*, one person has a card and is trying to get his teammates to reach the word on the card. This person though can’t say certain words, which are usually the most directly related to the word. Therefore, his teammates hear the hints, which hopefully activate the right links between the nodes that are firing. The target word, or node thus has multiple sources to receive activation.

**Example:** Reisberg gives us an example of context reinstatement when he describes someone learning material underwater and associating certain thoughts when underwater, which are linked with the learning materials. When tested on the material learned, it would be easier to activate the material, if underwater again as the nodes association with being underwater would link up to the learned material.

**Reflection:** I’m trying to think if cross-water puzzles would also work as an example of hints? Possibly. All of this is becoming more and more fascinating to me. This principle has great application for teaching. Teaching the material in a variety of contexts, so that strong and various links can be made within our mind. Or by having student teach each other the material, so that they are hearing the material in new ways, acting as hints.

**Principle 2:** People use prototypes in judging if something fits into a category. We compared the prototype of the category to other things that might be trying to be in the category as well.

**Example:** When I’m at the mall buying jeans, I have a prototype, ideal picture, of jeans working in my mind. Every pair of jeans I see, might or might not match my ideal for what I view as jeans. For me jeans that have patches or stripes of color don’t match my prototype of jeans. But a dark demin pair of jeans with pocket matches my prototype.

**Example:** At a community college, I see there are many expectations for the prototype of college student. The traditional college student is 18 years old, but at a community college the average age is 26. This makes the boundaries of the category college student fuzzy.

**Reflection:** Prototypes are troubling to me. I feel Reisberg remained superficial in the sense that most prototypes, the ideal for the category, could be derived from stereotypes, cultural values, society, or a multiple of things. Can people change their prototypes over time? Are we stuck to just one image of what is or isn’t for that specific category.

*November 7, 2010- Chpt 14*

**Principle 1**: Heuristics provide problem solvers with the navigating tools for working through their problem. They give step-by-step procedures for how to work through a problem.

**Example:** The hill-climbing heuristic tells problems solvers to always be heading in the direction of your goal. Reisberg describes it as though you are hiking in the mountains and you come to a fork in the trial; under this heuristic you always choose to go up, towards the top of the mountain.However, sometimes in problem solving it is best to remove yourself from the situation in order to get a new perspective on the problem, thus maybe climbing downhill for a while.

**Example:** Under the means-end analysis heuristic problem solvers compare their current state to where they want to end up, their goal. If a chef was given a problem of creating a dish with chicken, he would first decide what he wanted to do with the chicken and then he would see what he had to do from his present state, chunking out what he had to do.

**Reflection:** I’m a big fan of using means-end in problem solving. My first CCT course was Problem-based Learning and as a team we used the technique of subproblems all the time. We felt successful when we accomplished the sub problem and it provided a realistic approach to working through a problem.

**Principle 2:** Creative thinking helps in problem solving. Creative thinking strategies include the use of analogies, imagery, metaphors and thinking outside of the box.

**Example:** The nine-dot exercise requires problem solvers to think outside of the box. Reisberg says that 12 out of 15 were unable to solve the problem, even with hint instructions. For this exercise problem solvers literally have to think and draw their lines outside of the nine-dot box.

**Example:** A math teacher is giving her class math problems, however the students are having difficulty with the problems. She decides to put the problem into a real life scenario, which provides the students a context for solving the problem. The real life metaphor allows the students to pick a part the problem, as they understand now the different parts.

**Reflection:** I have found these creative thinking strategies are extremely helpful in solving problems. I find they are most useful in advising students. I’m able to put things into new light by using creative problem solving; merely I’m showing them how to think outside of the box.

*November 30, 2010- Chapter 12*

**Principle 1**: People are influenced to make judgments based off what they have been exposed to within their lives. The media plays heavily in influencing people. These influences can lead people to making errors in judgment and/or confirm prior knowledge. It also comes from people’s use of the availability heuristic.

**Example:** Reisberg describes a study where participants were asked whether homicides or diabetes cause more deaths. Participants said that homicides cause more deaths, as it is what makes the news and appears on the television and in print. Yet, diabetes cause more deaths yet does not appear in media. Through media outlets people are frequency exposed to information, which can sometimes be correct or wrong.

**Example:** Not fully related to the overexposure of the media, but Reisberg describes that physicians miss diagnosing rare diseases due to the availability heuristic, where they are not spending the appropriate amount of effort in making a decision or treatment on a patient.

**Reflection:** This is troubling because we are not training people to be critical of what they see on the television and more importantly in watching the news. Most news shows today are biased and concerned only with the agenda they want to push. Knowing that people base decisions and judgments off of the information they are most frequently exposed to, it can become worrisome if they only get their information from one source.

**Principle 2:** Judgment made by human can contain several errors and thus can be unreliable in making decision. The errors come from some of the heuristics mentioned by Reisberg.

**Example:** One heuristic is covariation. This is when we associate an attribute to a person based off a stereotype we have about the person’s identity. Reisberg gives the example of illusion covariation when he says, “the racist illusion that being lazy ‘covaries’ with being black. Most of the time these covariation matches produce appropriate judgments, but in the example from Reisberg, the match can be dangerous for society.

**Example:** The repesentativeness heuristic is heavily relied on by people, but can cause problem, as people draw conclusions too quickly from small samples of evidence. In examining information people tend to connect or trust information, most people tend not to review the patterns within the evidence and how it leads to the conclusions made. If the evidence is from too small of pool, then the information can be biased in one way.

**Reflection:** It was difficult to read this chapter. I was not left with a lot of hope that we as people can rid or minds of using the heuristics that cause the most errors in making judgments. I was glad to see Reisberg describe how we can train our minds to stop and think more critically before making judgments, but it seems like a lot of conscious active work to prime our minds to regularly use “system 2” over “system 1.”

*December 5, 2010 Chapter 13*

**Principle 1**: Errors are easy to be seen within logic principles. Most errors come from the observation that people will agree more with a solution, when it confirms with their beliefs, even if the solution is obviously not the appropriate conclusion. It is true that people will reject good reasoning if the conclusion leads to things already thought to be false by that person’s beliefs.

**Example:** Evolution is a known scientific theory believed by many people and held as a good argument when discussing natural selection and the process of animal development. Yet for some their beliefs will influence them to not agree with the idea of evolution, which makes their logic off-putting.

**Example:** Reisberg gives an example of logical errors when he gives a problem using a categorical syllogism. He says, “All plumbers are mortals, and all sadists are mortals. Therefore all plumbers must be sadist” (414). Using logical reasoning, we should find error in the conclusion, since not all plumbers are sadists.

**Reflection:** Values influence a person’s belief and it’s shocking when those beliefs contradict sound reasoning. It becomes more disturbing when people can only see how their beliefs either confirm or disaffirm an argument and they can’t see any other points within the argument.

**Principle 2:** How a decision is framed makes a difference in how one comes to making their decision. People tend to contradict their decision making when positive language is juxtaposed next to negative language.

**Example:** Reisberg gives many examples of this principle. The one dealing with the Asian disease where two arguments are suggested is first presented with positive imagery “people will be saved” to people. Most choose program A, which is less risky and confirms saving the lives of people. Then when presented with negative imagery “people will die” more people choose Program B. Program B is a more risky decision. Changing the language or “framing” the question differently illustrates how people contradict their decision making from one way to the next.

**Example:** As a college advisor, I help reframe the decisions my students are making. Most of the time, they set up the situation in a negative context, such as “if I don’t take this specific class at this exact time, then I won’t be able to do this and that.” I reframe the situation from them, where I spin alternative suggestions using a more positive language. I will say something like “you can choose to take this class, where you will then be able to do this and that and then next the other class later.”

**Reflection:** I’m not hugely surprised by this principle. It makes sense. If the argument is framed one way people will respond, and if it is framed another way people could respond another way. If anything, this tells us that when making decision, we need to reframe the decision in multiple ways, so that we can see all the affects our decisions will have on people.

*December 12, 2010 Chapter 15*

**Principle 1**: The unconscious mind supports the conscious mind. Even when I think I’m consciously making the decisions on my own, my unconscious mind is helping me with the process of coming to the conclusion.

**Example:** In class towards the beginning, we were give a paragraph to read, where the letters within the words were outplace, but yet we were still able to produce the words and form the sentences. This shows that our cognitive unconscious was filling the blanks for us, so that we can consciously come to the right word and sentence.

**Example:** The Nisbett and Schacter electric shocks experiment illustrates this example through the participants’ perception of the pill and the pain. The participants were given the pill, which was placebo, were able to tell themselves that the pains from the shocks were actually from the pill. All of this was unconscious. The participants were unaware of how they placed the pain they felt on the pill over the shocks.

**Reflection:** In some ways this is somewhat comforting. I’m not relying on my own intelligence to get me to the conclusion, but rather my mind is working out the steps for me. Yet because there is such a heavy reliance on the unconscious mind, when the mind stops working, due to dementia, old age or other diseases like Korsakoff’s syndrome, I see now how the person does become severely handicapped in what they can mentally process.

**Principle 2:** Even though our cognitive unconscious processes on it’s own making it inflexible when something out of the ordinary comes into play, our unconscious can do multiple things are the same time. When enough practice is given to a task, our unconscious can proceed, allowing our attention to be on something else.

**Example:** When I was a young girl, maybe 5 or so my parents taught me how to ride a bike. At first, it was a little tricking. I had to keep my balance, focus on the road, and pedal with my feet all at the same time. Yet after a few weeks, my body got the routine down and I was able to ride smoothly. My unconscious mind no longer had to pay attention to all three things, but is able to smoothly move through all the functions and pay attention to new things that come along with riding, such as watching out for other cars and bikes.

**Example:** Reisberg gives an example of this principle when he talks about “autopilot.” Autopilot is when start doing something that has been practiced and does not take attention to do, such as knitting. When I knit, I am free to do other things that allow my thoughts to focus on something else. Such as, I can watch TV and knit or talk with my friends and knit at the same time. This cognitive unconscious function has huge advantages in being productive and efficient in daily tasks.

**Reflection:** It’s quite amazing what the unconscious mind can do and where it’s limitation exist. Knowing the limitations, is it possible to set up systems to combat those limitations? Does everyone have the same limits and advantages, or does it look slightly different per person?