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### Short Answers - Lesson 8

2. Amnesia is the loss of long-term memory resulting from physical or psychological trauma or disease. Anterograde amnesia is most commonly caused by a concussion or a traumatic brain injury. It consists of the inability to form new episodic or semantic memories from the time of the injury forward. Studies suggest that the brain can still process some implicit procedural memories. The hippocampus is normally affected, stopping the passage of new information being transferred from short-term to long-term storage; a process called memory consolidation. Anterograde Amnesia also occurs as a result of age-related brain degenerative diseases such as Alzheimer's. People suffering from this disease, at least in the early stages, are able to remember their past but have no recollection of what they did most recently. This loss of memory can also be caused by an aneurysm or a virus such as encephalitis. A good example of anterograde amnesia is illustrated in this week's video: "Clive Wearing: Living Without Memory." by Worth Publishers.

Retrograde amnesia refers to the inability to retrieve episodic memories preceding a severe brain injury event. Some people wake up from head trauma, and do not have any recollection of their past lives; they don't know who they are and cannot recognize family members. The thriller, "Before I go to sleep," illustrates this type of amnesia.

6. Arousal theory branded by Christianson in 1992 proposes that strong emotions trigger the formation of strong emotions whereas weaker emotional experiences form weaker memories.

This is due to the fact that specific neurotransmitters are involved in the process of memory and serve to reinforce or strengthen the memories' formation and retention. For example, at times of stress, the brain secretes glutamate, which is believed to reinforce the memory of the stressful event in the brain. This is illustrated by the flashbulb memory phenomenon involving highly unusual, remarkable events with which a strong emotion is associated; they are vividly remembered long after they have happened. For example, in the case of a traumatic event such as 9/11, people were able to remember not only the event but also their personal circumstances in relation to the event, for example, their location, what they were doing that day, and how they reacted. These highly unique and highly emotionally charged events stay in the mind for many years, although studies show that the accuracy of the events tends to decrease with time.

17. Recalling, recognition, and relearning are three ways of retrieving information from long-term memory storage. Recalling consists in retrieving information from memory that was previously studied and stored. For example, as a music student, I need to learn by heart a number of musical pieces to perform at my recitals. At the time of my recital, I have to "recall" the information about the song, i.e. the lyrics, the melody, duration of the notes, dynamics, etc. Recognition refers to identifying a certain item after having come across it before. For example, if I am listening to a random opera musical selection and the aria "O Mio Babbino Caro" suddenly comes on, I "recognize" it because I studied it previously and I know exactly the title of the song; I can also anticipate the words and the melody. As for re-learning, it is self-explanatory. Some things we learned a long time ago fade away in our memories because we have not revisited them for a long time. For example, if I am going for an audition and I want to use a song that I learned and memorized a few years ago, I would probably need to "relearn" it or go through it a few times in order to remember all the words, melody, and instrumental breaks; with

the passage of time, it is very likely that I would have forgotten some of the words and details of the song that need refreshing. Re-learning normally takes a shorter amount of time than learning something new for the first time because some of it can be recalled from previous learning.

18. An acrostic mnemonic device is a memory enhancement device that helps you to remember and recall information by forming a phrase using the first letters of every word in a series or group of related items. I use a lot of mnemonic devices in my daily life, particularly when preparing for exams, or when acquiring new information that is relevant to everyday life. It simplifies the learning process and makes it easy to recall when necessary. An acrostic mnemonic phrase for the four cardinal points could be: “Notice White Eagle Soar.”

25. It is said that our memories form our identity. They are an integral part of who we are. Memories are the recollection of our life experiences, good and bad, and they shape us. We can learn from both good and bad experiences, and they form and strengthen our character. I think it is important to learn to overcome trauma in a resourceful way that can teach us how to deal with similar future trauma more effectively or avoid it altogether. I think inventing a pill that erases bad memories would be an easy way out of dealing with and overcoming every pain of life because when you delete a memory, you also delete all the learning and maturing that would have taken place in the process of learning to overcome it. The pill would also stop us from helping other people to overcome their trauma because, without the memory, we wouldn't be able to tell our story. In addition, there is also a benefit in overcoming our painful memories and trauma- we become more empathetic, humble, and sensitive to other people's suffering. I think resorting to a magic pill would just dehumanize us, desensitize us, and possibly turn us into “happy robots” dependent on a pill, unable to deal with the ups and downs of life. I can see how the use of this magic pill would be heavily commercialized, marketed, and pushed by “big

pharma.” Its use would probably be generalized to erase not only serious trauma but people’s slightest little painful memory in life. This pill would probably create a lot of addicts which like alcohol and drugs, would be used to numb the pain. I think learning to process and overcome trauma held in our memories is a useful and necessary part of life; the idea of erasing it just by taking a pill seems not only unethical but also, for the most part, a disservice to humanity.