Neuro-Anatomy and Neuro-Physiology Write-Up

In our class with Ms. Merryweather, we’ve been learning the basics of neuro-anatomy and neuro-physiology through interesting presentations and activities, such as, brain sculpting, prezi presentations, group activities, questioning and more! We’ve learned that the brain is composed of primarily two broad classes of cells: Neurons and Glial cells. Our brain contains about 100 billion neurons, they relay messages about what you’re thinking, feeling, or doing by transmitting electrical impulses (information) to other nerve cells, muscle cells, or gland cells. Neurons send these impulses (signals) through synapses, which function to transfer electrical activity from one cell to another. However, they wouldn’t be able to nearly do the things they are capable of without the help of Glial cells. There are trillions of these support cells in the brain. They transport nutrients, clean brain debris, and digest parts of dead neurons. There are three types of Glial cells, Oligodendrocytes, Microglia and Astrocytes. The Oligodendrocytes provide support and wrap tightly around axons to form the “myelin sheath.” These cells speed up electrical impulses. An electrical impulse would travel 30 times slower without the Oligodendrocytes. The Microglia are immune cells found only in the brain that can detect damaged and unhealthy neurons, eating viruses and bacteria. The Astrocytes hold neurons in place, additionally; they supply nutrients and digest parts of dead neurons. There has been research that shows that astrocytes can actually communicate with neurons, modifying electrical signals they send and receive. Thus, meaning that they are much more involved in the processing of information, and the signaling at the synapse.

Furthermore, we’ve learned about the 4 extremely important lobes that have their respective functions. The Frontal Lobe, The Occipital Lobe, The Partial Lobe and the Temporal Lobe. The Frontal Lobe is involved in impulse control, motor function, judgement, memory, language, problem solving, initiation, spontaneity, and social and sexual behaviour. The Parietal Lobes have two regions, the first involves perception and sensation and the second region is involved with primarily the visual system. The Occipital lobe is responsible for processing visual information from the eyes. It makes sense of visual information so we can understand it. The Temporal Lobe plays an important role in organizing sensory input, auditory perception language and speech production, plus, memory association and formation.

We were tasked to think about if there possibly was a reason why the hippocampus and the amygdala were close together. The amygdala is the integrative center for emotions, emotional behavior and motivation. The hippocampus is associated with memory. I believe that the memories from the hippocampus influence the amygdala response, and that is why they are close together.
In an article written by Elizabeth A. Phelphs, *JULIUS SILVER PROFESSOR OF PSYCHOLOGY AND NEURAL SCIENCE*  
*NEW YORK UNIVERSITY  
DEPARTMENT OF PSYCHOLOGY*

She stated that "The hippocampal complex, by forming episodic representations of the emotional significance and interpretation of events, can influence the amygdala response when emotional stimuli are encountered."

**Citations... I don’t know how to make a proper bibliography 😞**

http://psych.nyu.edu/phelpslab/whoweare.html  
http://webspace.ship.edu/cgboer/limbicsystem.html  
http://www.ncbi.nlm.nih.gov/books/NBK10869/  
http://learn.genetics.utah.edu/content/addiction/braincells/  
http://www.dummies.com/how-to/content/examining-the-brains-four-lobes-frontal-parietal-t.html  

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**Commented [B10]:** This doesn’t need to be included, but the year does. If the paper was written in 2012, it would be like this:

In an article written by Elizabeth Phelphs (2012), she stated that “the hippocampal...etc”

**Commented [B11]:** Great addition of research! It just needs an extension, like what is the purpose of this influence? My theory is that fearful responses are important ones to remember, because they affect our survival.

**Commented [B12]:** Great job including your sources! If there are different ways to cite information throughout the text, and to create a reference list (bibliography). Purdue Owl is a fantastic resource for learning how to do it: https://owl.english.purdue.edu/owl/section/2/  

As you are thinking of going into the sciences, I would recommend learning APA, as that is the style predominantly used in sciences.  
https://owl.english.purdue.edu/owl/section/2/10/  

MLA is predominately used in English, and Chicago in history. Let me know if you have any questions about referencing!