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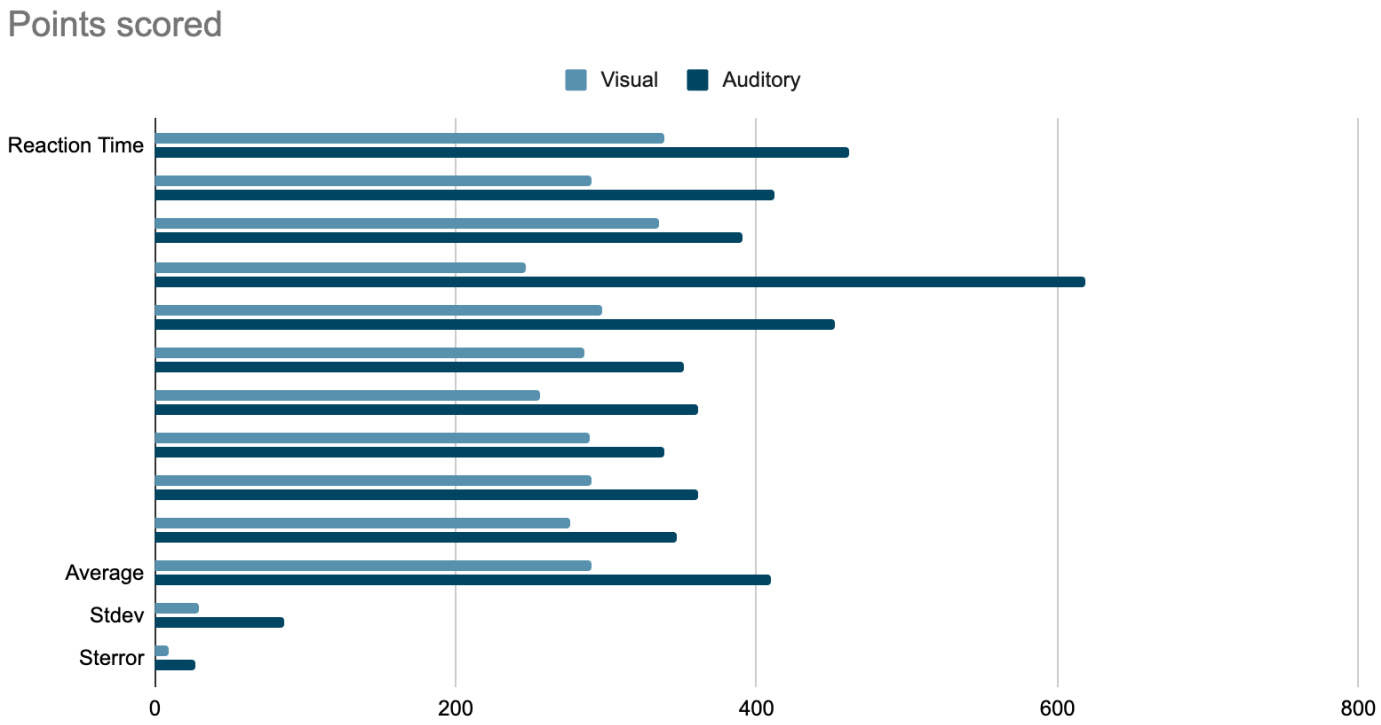
Laboratory 5-Electroencephalography & Reaction Time

Tuesday Lab

Purpose- It is important for our bodies to respond to various sensory inputs in order for our bodies to function properly, which involve both voluntary and involuntary movements and reflexes. The monosynaptic reflexes involve one sensory neuron, one synapse and one motor neuron. They are dependent on the action potential velocities of the neurons and the short time delay that occurs at synapses. The polysynaptic reflexes, because of additional neurons and multiple synapses, require even more time to complete. The purpose of the experiments was to show the concepts of action potential velocities and synaptic delays in both visual and auditory reflexes, as well as the major diversity in reaction times found in the population.

Procedures- There were 3 different procedures in laboratory 5 due to doing the visual lab in person and online. In the in person lab for visual reaction time we first made sure that the IWX-214 unit was plugged in and that it was connected to the laptop. We then plugged in the EM-100 Event Marker into the channel 3 socket on the IWX-214. We turned on the laptop and opened the Labscribe3 program and “Hardware found IWX214:2008-1-24” should pop up and you are to hit “OK”. After you're on the program click on settings, then go to the drop down menu and click on human nerve it should lead you to another tab called auditory-visualreflexes. We then got with our lab partners, typed their name and visual next to it and hit record. One of the lab partners is to click the clicker every 5-10 seconds and the other is to hit the spacebar when they see the little box going by. Do this step about 10 times and then stop recording, then hit record again and let it go for about 20 seconds, switch roles with your partner and have them do it another 10 times. After we finished recording both of our results we were then to go through and place the two red lines on the start of the box and at the line where you pressed the spacebar and record how many milliseconds your reaction time was. In the online visual reaction experiment we were to press down when the red light turned green and record the results of that for 10 times in milliseconds. In the online auditory reaction experiment we were to press down right when we heard the sound begin and record the results of that for 10 times in milliseconds.

Results- Visual and auditory reaction time results:



Discussion- Laboratory five was a very interesting experiment because it was cool to see how fast my reaction time was for both visual and auditory. From the results of the experiments I can see that my visual reaction time was a lot faster than my auditory reaction time. I had done both the experiment in person and online with the links, I felt like doing the experiment online was a lot easier to understand and quicker. I did notice that my results for the visual reaction time was faster in the lab in person rather than the lab online, but I used the results of the online lab because of the fact it was easier to calculate. After looking at the group results I saw a variety of reaction times, there were some that were on average faster than others, and there were a few I saw had a lot slower reaction time than others. It is really interesting to see the variety of results and I feel it would've been even more interesting if we had put our ages on the results in the groups, to see if the brain with age will give you slower reaction times.

Conclusion- In the experiment done in laboratory five the results showed our reaction times to visual and auditory movements and sounds in milliseconds. The results from the experiment showed that my reaction time for visual movements is a bit faster than my reaction time for sounds. It is important for our bodies to be able to respond to sensory inputs like visuals and sound, so doing this lab was important to figure out if our reaction times are on average to the population's reaction times. In conclusion, the experiment showed why our action potential velocities and synaptic delays in visual and auditory reactions are so important.