Angelo John Christian Surio

Physiology 125

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Electroencephalography and Reaction Time

Purpose

The purpose of this experiment is to identify the EEG patterns and know the following amplitudes and frequencies. It is also to see how different factors can affect the reaction time of the human brain.

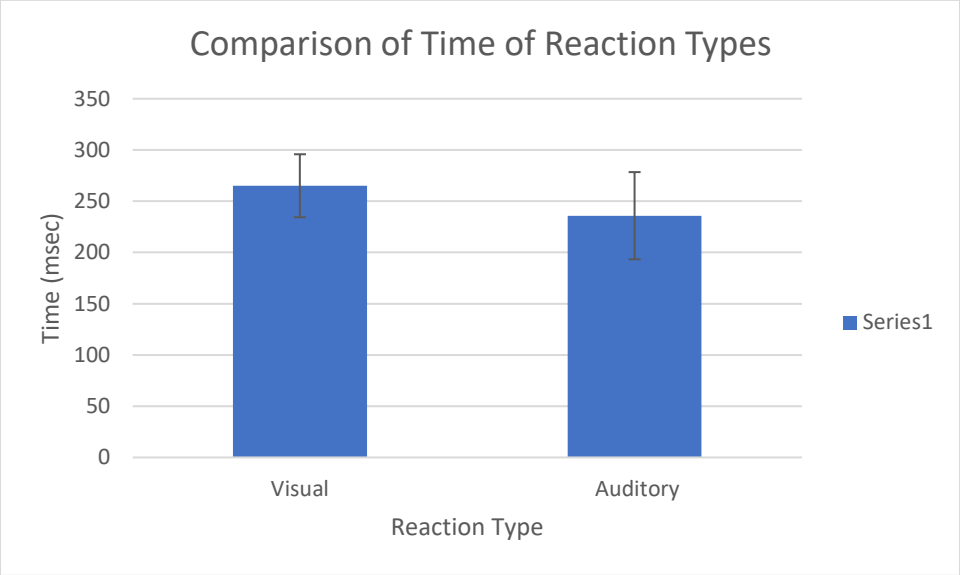
Procedures

To make this experiment possible a device was used to measure the reaction time. The IWX/214 unit was plugged in and connected to a laptop by USB cable. A software called LabScribe4 was used to see the waves needed to see the reaction time precisely. Some settings have been set up for the application to work properly. For the first part of the experiment, one person needs to click the button quietly and once the green line jumps up the other person needs to hit the enter button on the laptop. The enter key was clicked 2 times to get the right reaction time. Ten trials were made for part A. For part B, all the settings were the same, but the only difference was one person needs to click the button next to their partner's ear and after hearing the "click" the other person needs to hit the enter button. The steps were repeated 10 times to analyze the data.

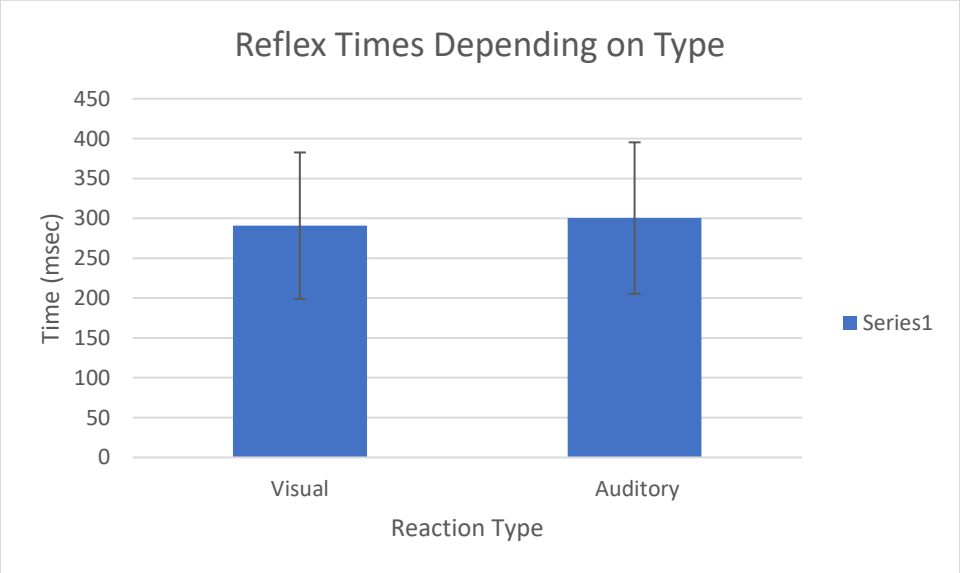
Results

Just like other experiments, results are expected to happen and made sure that everything was recorded during the process.

The Average of the Person's Reaction Times



The Average of other People's Reaction Times



Discussion

Based on the first graph, the visual got the highest time gathering an average of 265.1 m/sec while the auditory has an average of 235.9 m/sec. This means to say that for the person who conducted the experiment, hearing the object click got them their fastest reflex times. A lot of factors may fall into action why auditory has the lowest time. It might be because the person was really focused on the sound because the person can only rely on their hearing. For the error bars, the value was 0.095345 therefore it is considered as not significant. For the second graph, 10 people were tasked to do the same experiments and there were the average results. The 2nd graph got some different results from the 1st graph. For this one, the average for visual was 290.7 while for the auditory, the average value was 300.35. The results gathered from the 1st graph were different than the other people who did the experiment. For most people, their reflexes were fastest when they were able to see than just by hearing it.

Conclusion

In conclusion, every one of us has different reaction times and reflex to certain circumstances. Based on the first graph, for them, their reflex is fastest when they are able to hear the clicking of the button instead of seeing it. What is interesting is the average of the 10 people who did the experiment. Based on the results, most people' reaction times are faster when they are able to see what is happening at the moment rather than just hearing it. Using the EEG helped us to gather these results and to see how certain things can affect our reaction time and reflex.