Lilia Sanchez

Laboratory 5- Visual/Auditory Reaction Times

September 12, 2023

PURPOSE: THE PURPOSE OF THIS EXPERIMENT WAS TO MEASURE AND RECORD VISUAL/AUDIO REACTION TIMES

PROCEDURE:

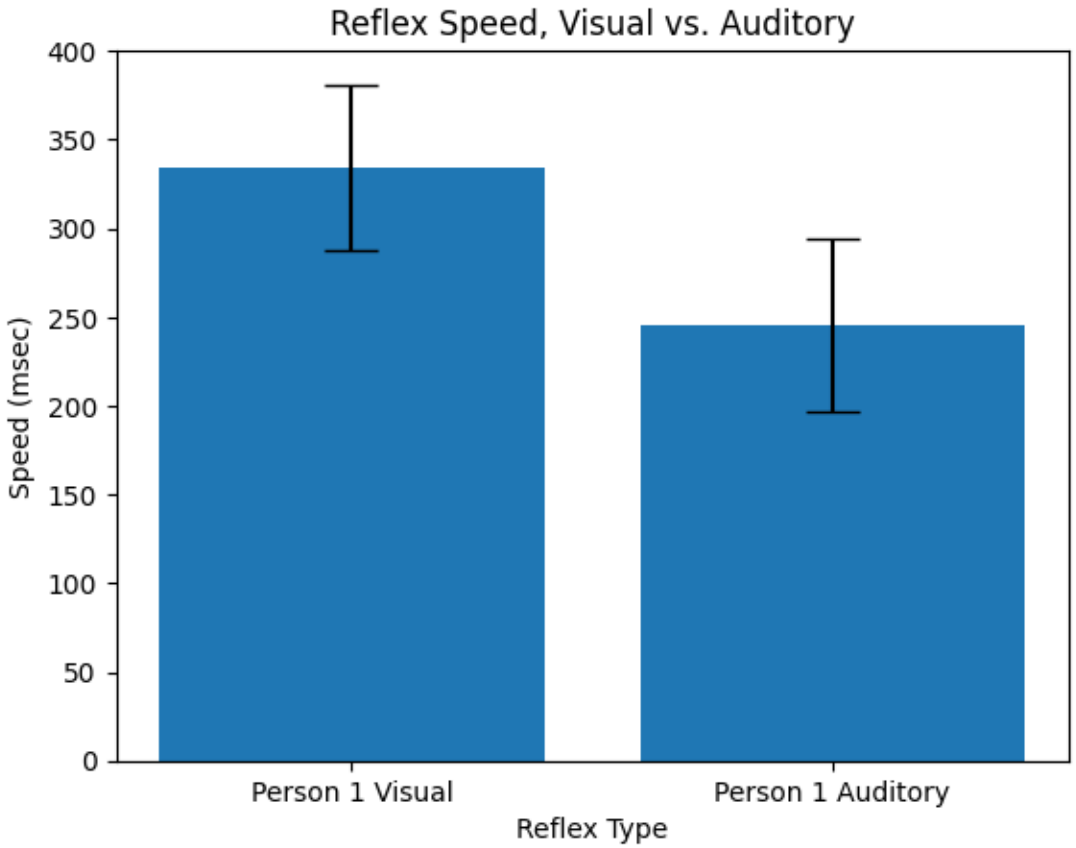
IN ORDER TO MEASURE/RECORD AUDIO AND VISUAL REACTION TIMES, WE UTILIZED HUMAN BENCHMARK.COM FOR VISUAL AND PLAYBACK.FM FOR AUDIO:

https://humanbenchmark.com/tests/reactiontime- **VISUAL**

What is Your Reaction Speed to Sound? | Playback.fm- **AUDIO**

I HAD THE PARTICIPANT COMPLETE 10 AUDIO AND 10 VISUAL REACTIONS TO CREATE TECHINICAL REPLICATES AND THEN CHARTED MY RESULTS.

RESULTS:



Lilia Sanchez

Laboratory 5- Visual/Auditory Reaction Times

September 12, 2023

DISCUSSION:

THE ERROR BARS REFLECT A MEAN VISUAL RESULT OF 334.53 WHILE THE AUDIO RESULT REFLECT A MEAN OF 245.2667 (M)SECONDS. PERSON 1 HAD A STANDARD DEVIATION OF 46 (M)SECONDS IN THEIR VISUAL REACTION. THIS SEEMS TO HAVE A SIGNIFICANT VARIATION. IN REVIEWING AUDIO RESULTS, THE STANDARD DEVIATION WAS NOTED TO BE 48(M) SECONDS WHICH ALSO HAS A SIGNIFICANT VARIATION. THIS SEEMS TO BE CONSISTENT WITH HOW THE INDIVIDUAL PROCESSES INFORMATION AND REACTS TO INFORMATION RECEIVED.

CONCLUSION:

THE PURPOSE OF THIS EXPERIMENT WAS TO MEASURE THE VISUAL AND AUDITORY REACTION TIMES TO BETTER UNDERSTAND THE CENTRAL NERVOUS SYSTEM AND HOW ACTION POTENTIALS TRAVEL THROUGH THE SOMATIC NERVOUS SYSTEM FROM DIFFERENT PARTS OF THE BRAIN.

MY FINDINGS ARE AS FOLLOWS:

- THE RATE OF THE ACTION POTENTIAL MOVING THROUGH THE BRAIN HAS MANY VARYING FACTORS THAT DETERMINE THE RESPONSE TIME. THOSE FACTORS INCLUDE:
- WHERE THE INFORMATION IS COMING FROM- AUDIO, VISUAL, SMELL, TASTE, AND TOUCH. SENSORY RECEPTORS CAN BE GROUPED AS CHEMORECEPTORS, PHOTORECEPTORS, THERMORECEPTORS, AND MECHANORECEPTORS, OR NOCICEPTORS.
- AS THE INFORMATION IS RECEIVED THROUGH THE AUTONOMIC AND SOMATIC NERVOUS SYSTEM WORKING TOGETHER, EACH SENSORY RECEPTOR RESPONDS TO A PARTICULAR MODALITY OF STIMULUS BY

CAUSING THE PRODUCTION OF ACTION POTENTIALS IN A SENSORY NUERON. THESE IMPULSES ARE CONDUCTED TO PARTS OF THE BRAIN THAT PROVIDE THE PROPER INTERPRETATIONS OF THE SENSORY INFORMATION WHEN THAT SPECIFIC NEURAL PATHWAY IS ACTIVATED.

- FOR AUDITORY- THE PARTICIPANT RESULTS REFLECT A QUICKER RESPONSE TIME THAN THE VISUAL EXAM. I BELIEVE THIS RESPONSE IS TIED TO THE PREGANGLIONIC NUERONS AND HOW THE NUEROTRANSMITTER IS RELEASED AND THE NATURE OF THE CHOLINERGIC RECEPTOR- NICOTINIC VS MUSCARINIC. NICOTINIC ACH RECEPTORS ARE LIGAND GATED ION CHANNELS AND ARE ALWAYS EXCITATORY. MUSCARINIC ACH RECEPTORS ARE COUPLED TO G-PROTEINS WHICH CAN OPEN OR CLOSE DIFFERENT MEMBRANE CHANNELS AND ACTIVATE DIFFERENT MEMBRANE ENZYMES. AS A RESULT, THEIR EFFECTS CAN BE EITHER EXCITIATORY OR INHIBITORY. I BELIEVE THIS TO BE THE PRIMARY SOURCE OF HOW THE VELOCITY OF A REACTION TIME EVOLVES FROM VISUAL AND AUDIO INFORMATION.
- IN REVIEW OF THESE RESULTS, I BELIEVE THE PARTICIPANT TO HAVE A BETTER AUDIO REACTION TIME VS VISUAL RESPONSE BECAUSE THE AUDIO STIMULI REQUIRES LESS PROCESSING AND REACHES THE CEREBRAL CORTEX FASTER THAN THE VISUAL STIMULUS.