

The Influence of Demographics, Lifestyle and External Events on Cognitive and Motor tasks

Sebastian D'Amario, Assel Al-Bayati, Raphael Gastrock, Bernard Marius 't Hart, Lauren E. Sergio, Denise Y.P. Henriques

To better understand the effect an individual's experiences and demographics have on daily tasks, we created a battery. This allowed us to investigate cognitive-motor function when exposed to the conditions of visuomotor and visuospatial tasks. We have measured performance on (1) the Go/No-Go task, which can examine inhibition and impulse control. Sensitivity and reaction times to the task conditions of 80% "GO" and 20% "NO-GO" trials were examined. We found that video-game players (N=35) have shorter hit reaction times than non-players (N=63). Also, performing a regression on age in the Go/No-Go task revealed a positive correlation to hit RT, with a small amount of variance accounted for. (2) The mirror reversal task which looked at performance on cognitively demanding tasks. We had 30° and 60° radially displayed targets which were deviated 120° and 60° respectfully. We measured movement time and path length and found that males (N=27) had shorter MT than females (N=78), and video-game players (N=25) had shorter MT than non-players (N=59). For path length, we found those with a concussion history (N=8) had a shorter PL (or more direct reaches) to the target than those with no concussion history (N=97). (3) Lastly, a serial visual search task which measures selective attention. We had 3 set sizes (6,12,18), each containing target-present and target-absent conditions. We found an interaction between set size for the video-gaming and sex variables in both the TP/TA conditions for RT. Our findings suggest that demographics and external events contribute to task performance.