Abstract

Previous research established that humans perform better in action-based stimulus tasks compared to action inhibition-based tasks. However, there is limited research examining whether reaction time impacts performance on action inhibition-based, particularly stop-signal tasks. To explore this relationship, 121 adults ages 18-50 completed two tasks—a reaction time task and a stop-signal task. Participants completed 400 trials of the reaction time task during which they were instructed to press a button every time a stimulus appeared on the screen. Average reaction time was calculated from this task. Participants then completed 272 trials of the stop-signal task where they were told to press a button as quickly as possible when a stimulus appeared on the screen but to stop themselves from pressing that button when they heard a stop-signal, which was a beep tone. Total number of unsuccessful stops from this task were used to measure stop-signal performance. Using the mean reaction time from task 1, participants were divided into two groups: fast responders and slow responders. An Independent Samples T-Test revealed no significant difference in stop-signal performance between fast and slow responders (p=.149). Similarly, there was no significant correlation between reaction time and stop signal performance; however, there may be an indication of a slight trend (p=.08). These findings do not suggest that reaction time promotes accuracy in action inhibition tasks, but more research must be done in larger samples. Future analyses will probe whether brain function impacts the relationship between reaction time and stop-signal performance.