

The effects of texting and driving on hazard perception and the adoption of driver response strategies

Rondell Burge

Faculty: Alex Chaparro

Department of Psychology, Wichita State University

Hazard perception has received little attention compared to measures of vehicular control in studies exploring the effects of texting on driving performance, despite being a more direct measure of crash risk. Twenty participants (10 male; 10 female) were recruited to drive in a simulator, specifically designed to measure situational awareness, while text messaging in order to assess hazard detection performance. Two text message conditions were used to compare interference at early vs. late stages of information processing. Signal Detection Theory (SDT) analysis revealed the adoption of a more liberal response criterion (B'') (i.e. increased false alarms and decreased misses) when text messaging interfered at an early stage but not at a late stage of processing ($F(2,38) = 3.76, p < .05$). Furthermore, reaction time and text errors increased when interference occurred at a later stage ($F(2,38) = 29.90, p < .001$ and $F(1,19) = 5.869, p < .05$, respectively). These findings suggest that the impact of text messaging on the detection of driving hazard depends in part, on the stage (late vs. early) of information processing, particularly in the adoption of response strategies.