

Effects of Different Interruptions While Driving for Field Independent and Dependent Individuals

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Abstract

Driver inattention imposes a serious effect on the driving task. This study examined how a variety of interruptions impair the driving task of car drivers. An experiment was conducted in which drivers were exposed to various interruptions to determine their effects on driving performance. A driving simulator was used for the experiment. The main goal of the study is to identify critical interruptions, determine the highest risk among these interruptions for each cognitive style then to develop the design of an in-car collision warning system concerning the most critical interruption identified, which can accommodate car drivers safely and effectively. Three factors were taken into consideration: cognitive styles (field dependents and independents), interruptions and driving performance. Results showed that there is a three-way interaction between these factors. A field dependent cognitive style tends to be more reactive to interruptions. Thus, this group suffered poorer driving performance. Reading text messages produced the highest risk among the interruptions for field dependents. It is suggested that the generated design of the audio-tactile Forward Collision Warning (FCW) system in this study must be implemented to lessen the circumstances of using cellular phones while driving.

Keywords

Field dependents, reading text, lane departures, audio-tactile