The effects of travel information presentation on driver behaviour

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Abstract

The aim of this study was to investigate the effects of providing travel information to drivers about a traffic jam ahead and a potential detour or short-cut. Two groups of participants, native and non-native Dutch speakers were requested to drive in a driving simulator under both calm and dense traffic conditions. Travel-information was presented by means of three systems; nomadic systems such as SMS and PDA, and via the simulator mock-up vehicle's audio system. Conclusions with regard to usability are that SMS was evaluated worse than the other two systems, and native participants believed any information-providing system to be less useful than non-native participants did. With regard to cognitive processing, SMS caused more subjective (i.e. experienced) workload than the other two systems. Participants remembered more of the information when traffic was dense and natives remembered more than non-natives. With regard to performance and safety, driving performance was better when traffic was calm, as compared to dense traffic; however, compensation was shown by lowering driving speed in the latter condition. After participants were provided with travel information, their driving performance with respect to the consequences of distraction differed between systems. The auditory information provision system generated the best driving performance; the other two systems required the participants to look away from the road (too) long compromising safety, while reading an SMS took longer than scanning a PDA.

Introduction

In modern society, 24 hours a day, 7 days a week, a host of information is available. Numerous messages of all kinds are distributed through telephones, computers, televisions, radios, for instance about travel opportunities. Transport companies and related business are starting to realize the feasibility and the financial benefits of providing travelers with information to make adequate choices while traveling. With the right resources and an adequate synchrony, it is technically possible to create a