Close enough to feel it – the effect of following distance on ratings of risk, task difficulty, effort and comfort

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Abstract

That driver's have subjective impressions of variables such as risk, task difficulty, effort and comfort that impact their driving is often a vital part of theories of driver behaviour. What is not clear is if drivers are constantly monitoring these variables or if they only enter an individual's awareness at certain points during the driving task. During simulated driving a threshold-like awareness of risk, task difficulty, effort and comfort has been previously found for speed; with drivers only expressing the experience of significant increases in these subjective variables once a certain speed was exceeded. This study seeks to examine if this same threshold relationship occurs with varied following distances. Participants were required to follow a car at 50 km/h over several different following distances, ranging from 0.5 to 4.0 seconds. Ratings of risk, task difficulty, effort and comfort were collected after each drive and analysed. In addition, participants were required to drive on both the right and left hand sides of the road, in order to examine the effect of familiarity. The results suggest a threshold like awareness of risk, task difficulty, effort and comfort with following distance. In that the participant's ratings of the variables assessed were generally low and stable, or absent until a certain following distance was reached and then began to increase once this threshold was exceeded. This trend was consistent for driving on both sides of the road. In addition, ratings of feeling of risk, task difficulty, and effort were strongly correlated with each other.

Introduction

Variables such as risk, task difficulty, effort and comfort have all been suggested to play a role in driver decision making. Risk in particular has received a lot of attention, with the risk of being involved in a crash being suggested as the central controlling variable in several theories. Notably, Risk Homeostasis Theory (Wilde, 1976), Zero-Risk Theory (Näätänen & Summala, 1974), the Driving Intensity model (Peltzman, 1975) and Risk Avoidance theory (Fuller, 1984) have all relied on drivers, at some level, paying attention to the risk of being involved in an accident. More recently theories such as Risk Allostasis Theory (Fuller, 2008) and the Monitor Model (Vaa, Glad, & Sagberg, 2000; Vaa, 2003; Vaa, 2007) have suggested that it is a feeling of risk that may be important, - a feeling that may or

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