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Driver boredom: Its individual difference predictors and behavioural effects



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ABSTRACT

Driver boredom has received little research attention in efforts to develop understanding of driver behaviour and further road safety. This study aimed to develop understanding of relationships between individual differences and driver boredom as well as between driver boredom and driver behaviour. A self-report questionnaire was developed and used to gather data pertaining to individual differences, driver boredom, and driver behaviour. The sample comprised 1550 male and female drivers aged between 17 and 65+ years. The results of this study show that people who are younger, less conscientious, and less enthusiastic about driving are more likely to pose a high threat to road safety because they are more likely to suffer driver boredom. Those more enthusiastic about driving seem less likely to suffer driver boredom due to their being more engaged in the driving task. Further research should be conducted to test whether engagement in the driving task and levels of perceived stimulation therein explain relations between driver enthusiasm and driver boredom. If this is the case, intervention programmes could be developed and tested in order to encourage engagement in the driving task and so limit driver boredom.

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1. Introduction

The relationship between driver behaviour and trait boredom has received some attention in the driver behaviour literature. For example, [Dahlen, Martin, Ragan, and Kuhlman \(2005\)](#) tested relations between facets of boredom proneness and measures of driver behaviour using data from a sample of 224 male and female students at an American university. Their results suggest that those more likely to suffer boredom in general due to needs for high levels of variety are more likely to have reported loss of control whilst driving, near misses, aggressive driving, and risky driving. Existing research thus suggests by implication that driver boredom, a state of under-arousal attributed to an inadequately stimulating driving environment ([Mikulas & Vodanovich, 1993](#)), might compromise road safety.

Research is consistent with the notion of driver boredom being likely to compromise road safety. Theories of optimal arousal ([Hebb, 1955](#); [Yerkes & Dodson, 1908](#)) and optimal experience ([Csikszentmihalyi, 2002](#)) claim that boredom is associated with reduced task performance. In addition, research shows that high boredom is associated with low performance. For example, [Wallace, Vodanovich, and Restino \(2003\)](#) found that 48 out of 50 relations between facets of boredom proneness and cognitive failure or sleepiness amongst samples of American military personnel and undergraduates were positive and that 25 of those relations were statistically significant. Similarly, [Watt and Hargis \(2010\)](#) found that total boredom proneness related negatively to job performance amongst a sample of healthcare employees. According to [Fisher \(1993\)](#),

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people are likely to cope with boredom by refocusing attention on the boring task; seeking additional stimulation within the task; and by adopting subsidiary thoughts and behaviours. In support of this idea, [Nett, Goetz, and Daniels \(2010\)](#) found that people are likely to cope with boredom using approach and avoidance strategies. Approach strategies are akin to what Fisher referred to as refocusing attention on the task and seeking additional stimulation within the task whilst avoidance strategies are akin to what she referred to as subsidiary behaviours. The use of avoidance strategies to cope with driver boredom is likely to manifest as driver distraction ([Nett et al. \(2010\)](#)). Driver distraction itself poses a threat to road safety ([Regan, Hallett, & Gordon, 2011](#)). Driver boredom is thus likely to compromise road safety via driver distraction and reduced task performance.

[Conrad \(1997\)](#) claimed that boredom is in the eye of the beholder, and that what may be boring to one person may be fascinating to another. Consistent with this, the literature suggests that individual differences including age, sex, driving experience, and personality are likely to affect driver arousal. Men seem more likely than women to need high levels of stimulation from the driving task due to their being less sensitive to stimulation and more prone to tire of stable environmental surroundings ([Ellis, 2011](#)). Younger people seem more likely than older people to need high levels of stimulation from the driving task due to adolescence and ageing ([Arnett, 1995; Martin, Carlson, & Buskist, 2007](#)). Experienced drivers seem more likely than their inexperienced counterparts to need high levels of stimulation from the driving task, as they are likely to have developed higher skill levels ([Csikszentmihalyi, 2002](#)). Conscientious people, described as being careful, seem more likely than their opposites, careless people, to perceive high levels of stimulation in the driving task ([McCrae & Costa, 1987](#)). Likewise, neurotic people, described as being worrying, seem more likely than their calm opposites to perceive high levels of stimulation in the driving task ([McCrae & Costa, 1987](#)). People who are younger, with more driving experience, male, less conscientious, and less neurotic may thus be more likely to suffer under-arousal and boredom whilst driving.

Driver enthusiasm may also affect levels of driver arousal and boredom. People who are more enthusiastic about a particular task appear more likely to engage in the task ([Conrad, 1997](#)). They also appear likely to have more complex knowledge and schema relating to the task ([Fisher, 1993; Loukidou, Loan-Clarke, & Daniels, 2009](#)). This suggests that people who are more enthusiastic about driving are more likely to derive high levels of stimulation from the driving task and less likely to suffer under-arousal and boredom whilst driving.

Two papers based on data gathered in the study reported here have been published. First, [Heslop, Harvey, Thorpe, and Mulley \(2010\)](#) reported reduction of 49 items measuring driver enthusiasm, boredom, anxiety, and behaviour using principal components analysis and varimax rotation. They also reported testing of relationships between the four factors extracted, demographic variables (age and sex), and self-reported speed on four road types. Second, [Harvey, Heslop, and Thorpe \(2011\)](#) reported classification of participants into four driver types based on a two-step cluster analysis of data relating to the 49 items referred to above. Furthermore, they reported testing of differences in demographic and personality measures as well as in measures of self-reported speed and crash history by driver type.

The two previously published papers centred on data gathered in the study reported here had limitations. They failed to test independent relationships between individual difference predictors and driver boredom using valid measures of driver enthusiasm and driver boredom. In addition, they failed to test independent relationships between driver boredom and driver behaviour using valid measures of driver boredom, driver distraction, and driver error-proneness. Furthermore, they failed to explore whether driver boredom in part explains relationships between individual difference predictors and facets of driver behaviour. This paper builds on the two previously published papers referred to above in several ways. First, this paper reports the testing of independent individual difference effects on driver boredom using valid measures of driver enthusiasm and driver boredom. Second, this paper reports the testing of independent driver boredom effects on measures of driver behaviour using valid measures of driver boredom, driver distraction, and driver error-proneness. Third, this paper explores whether driver boredom in part explains relationships between individual differences and facets of driver behaviour.

The main aims of the study reported here are threefold. The study aimed to develop understanding of relationships between individual differences and driver boredom; develop understanding of relationships between driver boredom and driver behaviour as related to road safety; and develop understanding of whether driver boredom in part explains relationships between individual differences and driver behaviour as related to road safety.

Following on from the discussion above, several relationships are expected. Driver boredom is expected to relate negatively to age, conscientiousness, neuroticism, and driver enthusiasm, and to relate positively to sex (male), and driving experience (H1). Driver boredom is also expected to relate positively to driver distraction, driver error proneness, speeding penalty history, at-fault crash history, and self-reported speed (H2). Last, (H3) driver boredom is expected to in part explain relationships between individual difference predictors (age; sex; driving experience; driver enthusiasm; conscientiousness, neuroticism) and driver behaviour (driver distraction; driver error-proneness; self-reported speed; speeding penalty history; at-fault crash history).

2. Method

2.1. Participants

Participants were recruited using opportunity sampling. Cover letters told members of the sample that the study was being conducted in order to develop understanding of driver boredom. Participants consented to take part in the study

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