Transportation Research Part F: Traffic Psychology and Behaviour, Volume 42, Part 2, October 2016, Pp. 233–235
DOI: 10.1016/j.trf.2016.09.012

Editorial – Advances in Driving Anger

1. Background

Driving anger is the most widely studied emotion in the driving context and one of the more commonly studied topics in traffic and transportation psychology. Anger has a substantial impact on driving behaviour and is both a cause and a consequence of numerous negative driving outcomes. Over the years, what we have come to know about driving anger has developed in proportion to the increase in quality of research dedicated to this topic. The idea behind this special issue is to provide a forum in which to better understand driving anger: to highlight what has been learned about driving anger over the past quarter century and to stimulate new research for the next decade.

2. Contributions

This Special Issue (SI) on "Advances in Driving Anger" is comprised of 16 articles which come from many different countries (Australia, Canada, China, Israel, Romania, Serbia, Spain, Turkey, UK, & USA) and have utilised different methodological approaches and themes from within the driving anger domain.

The Driving Anger domain really came into focus as an important safety issue with research by Deffenbacher and colleagues when they developed the first validated scale in the area - the Driving Anger Scale (DAS) (Deffenbacher et al., 1994). As the DAS recently passed the grand old age of 20 the SI opens with a comprehensive review of the research using the DAS over this time (Deffenbacher, Stephens, & Sullman, 2016). The DAS may be just over 20 years old, but there are still debates relating to the factor structure of the scale. For example, Sârbescu (2016) report that the shared variance of the DAS items were such that a two factor model was more appropriate than the original six factors (Deffenbacher et al., 1996). The DAS was also validated amongst professional bus drivers in China and revised to be a four factor, 19-item scale (Zhongxiang et al., 2016).

This SI is also comprised of a number of studies which have investigated the relationship between various personality factors and driving anger (Bumgarner, Webb & Dula, 2016; Hennessy, 2016; Gras, Font-Mayolas, Patiño, Baltasar, Planes & Sullman, 2016; Kovácsova, Lajunen & Rošková, 2016; Taubman–Ben-Ari, Kaplan, Lotan and Prato, 2016; Zhongxiang et al., 2016). Firstly, there were several studies which examined personality traits thought to be associated with higher levels of driving anger. Narcissism clearly has relevance for many aspects of behaviour on the road, including driving anger. Hennessy (2016) examines whether driving anger differs among Narcissistic Subtypes. Type A Behavioural Pattern was also found to influence driving anger (Zhongxiang et al., 2016). The role played by rumination in aggressive driving behaviour is also studied (Suhr, 2016), along with impulsivity (Kovácsova, Lajunen & Rošková, 2016). Several researchers have raised the prospect of common method variance as accounting for the significant relationships found between personality traits, driving anger and safety critical events, as one of the major causes of common method variance (CMV) is obtaining measures of both the independent and dependent variables from the same source (e.g., the same questionnaire). Therefore, one way of controlling for CMV is by collecting data on the variables being examined at different times and/or different methods. This process was undertaken by Taubman–Ben-Ari, Kaplan, Lotan and Prato (2016) who measured personality traits close to licensure, while risky driving and driving-related variables were measured 9–12 months later. Using this approach they again highlight the importance of trait and driving anger in the prediction of young male drivers' risky behaviour and also identify the importance of the parental role in ameliorating these risky tendencies.

In contrast to the research which has identified personality characteristics which are related to higher levels of driving anger and aggression, there has been relatively little research investigating

Published by Elsevier. This is the Author Accepted Manuscript issued with:
Creative Commons Attribution Non-Commercial No Derivatives License (CC:BY:NC:ND 3.0).
The final published version (version of record) is available online at 10.1016/j.trf.2016.09.012
Please refer to any applicable publisher terms of use.

factors which protect drivers from experiencing or expressing driving anger. The current SI has three articles which explore this issue. The first of these (Gras, Font-Mayolas, Patiño, Baltasar, Planes & Sullman, 2016) found that Resilience was positively related to the Adaptive/Constructive form of anger expression and also provided support for a Spanish version of the short Driving Anger Expression Inventory (DAX). The second personality trait of forgiveness was found to have negative relationships with driving anger, the expression of driving anger and aggressive driving (Bumgarner, Webb & Dula, 2016; Kovácsova et al., 2016). Therefore, perhaps interventions to enhance resilience and forgiveness may provide a fruitful avenue for future interventions aimed at reducing driving anger, aggressive expression of anger and aggressive driving.

Due in part to the burgeoning research within the area, the SI contains two meta-analyses. The first attempts to develop a contextual model of driving anger (Demir, Demir & Özkan, 2016). Demir et al. found significant relationships between driving anger and the personality traits of impulsiveness, normlessness, and narcissism. They also report driving anger to have significant associations with both anger expression (i.e. physical aggression, verbal aggression) and aberrant driver behaviours, in particular the violations subscale. The second meta-analysis reports on the driver anger literature in relation to aggressive driving outcomes (Bogdan, Măirean, & Havârneanu, 2016). They emphasize that anger does, in fact, increase aggressive driving but the nature of the relationship depends upon whether trait anger or driver anger is used, and also differs across types of aggression, with the strongest relationship existing for verbal forms of aggression. In light of this, several articles in the SI focus on the role of driving anger in driving aggression outcomes.

The relationship between driving anger and crash involvement has been the subject of much research and contention. The present SI contributes to this body of evidence supporting the importance of driving anger as a substantial contributor to driver risk. Using simulator research, Herrero-Fernández (2016) reported differences between high-anger and low-anger drivers, with high anger drivers being more psychologically aroused, driving faster and having more collisions in the simulated environment. These findings complement those of a second simulator study which found that drivers in an angry state tended to drive faster, keep shorter following distances and not to respond properly to risky situations (Zhang, Chan, Ba, & Zhang, 2016). Interestingly anger appears to result in changes in visual scanning patterns, with angry drivers scanned a narrower area, similar to the effect of stress on visual scanning patterns.

Although there is a substantial body of cross-sectional surveys which have found relationships between anger and safety critical events, such as collisions or fines, there is much less evidence at the population level. In this issue Wickens, Mann, Ialomiteanu and Stoduto (2016) analysed recent population-level data in order to assess the impact of driver aggression on collision risk. Taking into consideration several potential confounders, they found that those with minor or serious driver aggression had increased odds of collision involvement, compared with drivers without aggression. They also likened the magnitude of the effect of aggression to that of driving after substance use.

The issue of road rage or driving anger has also been found to be a common topic for social media. Stephens, Trawley, and Ohtsuka (2016) report on a content analysis of Tweets related to road rage and found that the bulk were related to anger over another driver's inappropriate actions. Worryingly they also found many drivers tweeting or posting visual images while driving. They also raise the interesting possibility of using social media as a forum within which to treat driving anger.

Finally, the SI ends with an article evaluating the efficacy of different approaches to resolving the driving anger problem and anger based driver aggression, including cognitive approaches, relaxation, behaviour-based and mixed interventions (Deffenbacher, 2016). Deffenbacher concludes by providing directions for future research on helping angry drivers.

References

Bumgarner, D.J., Webb, J.R., & Dula, C.S. (2016). Forgiveness and Adverse Driving Outcomes within the Past Five Years: Driving Anger, Driving Anger Expression, and Aggressive Driving Behaviors as Mediators. Transportation Research Part F.

Deffenbacher J.L. (2016). A Review of Interventions for the Reduction of Driving Anger. Transportation Research Part F.

Deffenbacher, J. L., Oetting, E. R., & Lynch, R. S. (1994). Development of a driving anger scale. Psychological reports, 74(1), 83-91.

Deffenbacher, J.L., Stephens, A.N., & Sullman, M.J.M. (2016). Driving anger as a psychological construct: Twenty years of research using the Driving Anger Scale. Transportation Research Part F.

Demir, B., Demir, S., & Özkan, T. (2016). The Contextual Model of Driving Anger: A Meta-Analysis. Transportation Research Part F.

Gras, M.E., Font-Mayolas, S., Patino, J., Baltasar, A., Planes, M., & Sullman, M.J.M. (2016). Resilience and the expression of anger while driving. Transportation Research Part F.

Hennessy, D. A. (2016). Are Narcissists Really Angrier Drivers? An Examination of State Driving Anger among Narcissistic Subtypes. Transportation Research Part F.

Herrero-Fernández, D. (2016). Psychophysiological, subjective and behavioral differences between high and low anger drivers in a simulation task. Transportation Research Part F.

Kovácsova, N., Lajunen, T. & Eva Rošková, E. (2016). Aggression on the road: Relationships between dysfunctional impulsivity, forgiveness, negative emotions, and aggressive driving. Transportation Research Part F.

Suhr, K.A. (2016). Mulling Over Anger: Indirect and Conditional Indirect Effects of Thought Content and Trait Rumination on Aggressive Driving. Transportation Research Part F.

Stephens, A.N. Trawley, S.L. & Ohtsuka, K. (2016). Venting anger in cyberspace: Self-entitlement versus self-preservation in #roadrage tweets. Transportation Research Part F.

Sârbescu, P. (2016). Driving Anger Scale: How reliable are subscale scores? A bifactor model analysis. Transportation Research Part F.

Smaranda Raluca Bogdan, Cornelia Măirean, Corneliu-Eugen Havârneanu (2016). A meta-analysis of the association between anger and aggressive driving. Transportation Research Part F.

Taubman–Ben-Ari, T., Kaplan, S., Lotan, T., & Prato, C.G. (2016). The combined contribution of personality, family traits, and reckless driving intentions to young men's risky driving: What role does anger play? Transportation Research Part F.

Wickens, C.M. Mann, R.E. Ialomiteanu, A.R. & Stoduto, G. (2016). Do driver anger and aggression contribute to the odds of a crash? A population-level analysis Transportation Research Part F.

Zhang, T., Chan, A. H., Ba, Y., & Zhang, W. (2016). Situational Driving Anger, Driving Performance and Allocation of Visual Attention. Transportation Research Part F: Traffic Psychology and Behaviour

Zhongxiang, F., Z. Lei, Y., Liu, H., Kumfer, W., Zhang, W., Wang, K., & Lu, S. (2016). Driving Anger in China: A Case Study on Professional Drivers. Transportation Research Part F.

Guest Editors

Mark Sullman*,
Driving Research Group, School of Aerospace, Transport & Manufacturing, Cranfield University, UK
Email Address: M.Sullman@cranfield.ac.uk

* Corresponding author
Dwight Hennessy,
Department of Psychology, Buffalo State College, USA
Email Address: Hennesda@buffalostate.edu



https://dspace.org/

Advances in Driving Anger

Sullman, Mark J. M.; Hennessy, D.

2016-10-01
Elsevier
http://dx.doi.org/10.1016/j.trf.2016.09.012
Sullman M, Hennessy D, Advances in driving anger, Transportation Research Part F: Traffic Psychology and Behaviour, Volume 42, Part 2, October 2016, Pages 233–235.

Downloaded from a DSpace repository. https://dspace.org/