# Road safety advertising

- Encouraging road users to adopt safer attitudes and behaviour can significantly reduce transport-related injury and mortality¹.
- Determining message content to motivate appropriate action and audience uptake are two key factors<sup>4</sup>.



State of the Road A Fact Sheet of the Centre for Accident Research & Road Safety - Queensland (CARRS-Q)

### THE FACTS

- Road safety advertising constitutes a large portion of Australian governments' annual expenditure on road safety initiatives<sup>1</sup>.
- The broad aim of road safety advertising is to encourage safer road user behaviours<sup>2</sup>.
- Road safety advertising messages usually target risky driver behaviours that are major contributors to road crashes, including speeding, drink driving, distracted driving, driving while tired, and driving without a seatbelt<sup>2</sup>.
- When advertising campaigns and enforcement are combined, they have the potential to reduce crash rates more than enforcement alone or advertising alone<sup>1</sup>.

### THE PERSUASIVE PROCESS

### Designing road safety advertisements

A number of message-related and individual-based characteristics influence advertising message effectiveness.

# Message-related characteristics<sup>1</sup> Response efficacy

 Research<sup>5,6</sup> has consistently shown that providing strategies is crucial in enhancing a message's effectiveness or persuasiveness. For example, encouraging drivers to monitor their speed is a strategy to avoid speeding.

### Threat relevance

 The extent to which the threat is relevant to the audience, and their vulnerability to the threat, influences message effectiveness. Depending on the issue and the target audience, different messages emphasise different negative consequences, for example, legal sanctions (fines, licence loss), physical injury or death, social ostracism, or guilt or remorse from causing injury or death to another party.

### Type of emotional appeal

 There has been a long-standing reliance upon negative, fear-based appeals in road safety advertising. Research<sup>5,6</sup>, however, suggests that more positive emotion-based messages such as those incorporating humour may be relatively more effective for males than females, and vice versa for negative, fear-based appeals.

# Individual-based characteristics<sup>1</sup>

Young males are an important target of road safety advertising as they are more likely to be involved in road trauma. While road safety has tended to rely upon physical threats of injury and death, research<sup>7</sup> suggests that such appeals may not influence young males, who may be more influenced by positive appeals (e.g., humour-based). Evidence also suggests that social threats (e.g., licence loss and the social stigma attached to it) may be more effective for young male drivers.

# Evaluating advertising messages

- Message effectiveness is often measured in terms of attitudinal or intentional change and, in some instances, the degree of behavioural change achieved. Typically, message effectiveness is determined by the degree to which individuals report an intention to adopt a message's recommendations¹.
- The effectiveness of road safety advertising messages may be measured in a number of ways:
  - Laboratory screening: after viewing an advertisement, participants may be asked questions relating to their recall of the message, its emotional impact, as well as their self-reported attitudes, intentions, and behaviour both pre- and post-message exposure.

- Neurocognitive methods (e.g., ERP)<sup>9</sup>: assess brain activity, and, in particular, changes in specific parts of the brain (e.g., medial prefrontal cortex) that are associated with behaviour change and message effectiveness.
- In-vehicle devices<sup>10</sup> and driving simulators: assess changes in driving behaviour pre- and post-message exposure.
- Crash statistics: e.g., reductions coinciding with a campaign's implementation.
- Message rejection assessment: i.e., extent to which individuals become defensive to or avoid a message<sup>6,11</sup>.
- The persuasive effects of different types of emotion-based approaches may vary over time and thus evaluation at varying time intervals post-exposure is recommended<sup>1,11</sup>.

Road safety advertising represents an important component within the array of strategies implemented in the attempt to minimise road trauma

### **CARRS-Q WORK IN THIS AREA**

 The Step approach to Message Design and Testing (SatMDT)<sup>1,12</sup> is a comprehensive 4-step framework to guide the development and evaluation of road safety messages. The framework, developed by CARRS-Q, is based on social psychological theory, and includes rigorous scientific methodology in each step. *Figure 1* shows an abridged version of the framework. The

- framework was designed to be applied in full; however, it is also possible to apply various steps of the framework, depending on the research objectives.
- Investigating the persuasive effects of positive emotional appeal types<sup>5</sup>.
- The importance of response efficacy in the persuasive process<sup>6</sup>.
- Effective advertising approaches for highrisk road users (e.g., young drivers)<sup>14</sup>.
- The role of neurocognitive measures (e.g., ERP) in assessing the persuasive impact of
- messages<sup>9,10</sup>.
- Examining the role of the third-person effect, gender, and age<sup>15</sup> in message persuasiveness.

STEP 1 Pre-existing individual characteristics		STEP 2 Message-related characteristics	Methodology Step 2 Message Exposure	STEP 3 Individual responses	Methodology Step 3 Concept testing and Message checks	STEP 4 Message outcome	
Identify Elicit		Focus & Content		Emotional & Cognitive		Acceptance & Rejection	
Gender / Age Salient beliefs  + +  Extent & Strategies for avoiding behaviour (response efficacy)	Methodology Step 1 Pilot work	Focus of Message: Challenge perceived benefits  And/Or  Highlight perceived disadvantages  Key content: • Emotional appeal type (e.g., far-based, humour based) • Modelling of behaviour • Strategies		Emotional responses (anticipate emotion elicited?) + Cognitive responses (e.g., perceptions of response efficacy, involvement)		Intentions to adopt message and/or denial, defensive avoidance reactions	Persuasive effects measured over time

Figure 1: The Step approach to Message Design and Testing (SatMDT)12

### **REFERENCES**

- Lewis, I., Watson, B. & White, K. (2009). What do we really know about designing and evaluating road safety advertising?: Current knowledge and future challenges. Proceedings of 2009 Australasian Road Safety Research Policing and Education and the 2009 Intelligent Speed Adaption (ISA) Conference. Roads and Traffic Authority, New South Wales, Australia, pp. 733-746.
- Lewis, I., Watson, B., White, K. M., & Nandavar, S. (2021). Road safety advertising: what we currently know and where to from here. In: Vickerman, Roger (eds) *International Encyclopedia of Transportation*, 7, 165-170.
- Elliott, B. (1993). Road safety mass media campaigns: A meta-analysis. Elliott & Shanahan Research, Federal Office of Road Safety.
- Donovan, R., Jalleh, G., & Henley, N. (1999). Executing effective road safety advertising: Are big production budgets necessary? Accident Analysis and Prevention, 31, 243–252
- Lewis, I., Watson, B., & White, K. (2013). Extending the explanatory utility of the EPPM beyond fear-based persuasion. *Health Communication*, 28(1), 84-98.
- Lewis, I. M., Watson, B. C., & White, K. M. (2010) Response efficacy: the key to minimizing rejection and maximizing acceptance of emotion-based anti-speeding messages. Accident Analysis and Prevention, 42(2), 459-467.

- Gauld, C.S., Lewis, I.M., White, K.M., Watson, B.C., Rose, C.R., & Fleiter, J.J., (2020). Gender differences in the effectiveness of public education messages aimed at smartphone use among young drivers. *Traffic Injury Prevention*, 21(2), 127-132.
- Lewis, I., Kaye, S-A., Nandavar, S., Briant, O., Murray, C. (2020). Beliefs influencing intended use of private and shared CAVS. Accepted for the 2020 International Conference of Transport and Traffic Psychology (ICTTP), Gothenburg, Sweden (conference did not occur in 2020 due to COVID).
- Kaye, S., White, M. J., & Lewis, I. M. (2017) The use of neurocognitive methods in assessing health communication messages: A systematic review. *Journal of Health Psychology*, 22(12), 1534-1551.
- Kaye, S., Lewis, I., Algie, J. & White, M. J. (2016) Young drivers' responses to anti-speeding advertisements: Comparison of self-report and objective measures of persuasive processing and outcomes. *Traffic Injury Prevention*, 17(4), pp. 352-358.
- 11. Lewis, I., Watson, B. & White, K. M. (2008). Predicting the acceptance and rejection of emotion-based anti-speeding messages: The role of attitudinal beliefs and personal involvement. In Andrson, R (Ed.) Proceedings of Australasian Road Safety Research, Policing and Education Conference: Safer Roads, Safer Speeds, Safer People, Safer Vehicles, Road

- Safety 2008 Conference, CD Rom, 246-259.
- Lewis, I., Watson, B. & White, K. M. (2016). The Step approach to Message Design and Testing (SatMDT): A conceptual framework to guide the development and evaluation of persuasive health messages. *Accident Analysis* and Prevention, 97, 309-314.
- 13. Lewis, I., Watson, B., White, K. M., Elliott, B., Cockfield, S. & Thompson, J. (2014). The feasibility of the Step approach to Message Design and Testing (SatMDT) for devising and testing the persuasive impact of emotion-based road safety messages. In Centers for Disease Control & Prevention 2014 National Conference on Health Communication, Marketing, & Media, 19-21 August 2014, (unpublished).
- Lewis, I., White, K. M., Ho, B., Elliott, B. & Watson, B. (2017). Insights into targeting young male drivers with antispeeding advertising: An application of the Step approach to Message Design and Testing (SatMDT). Accident Analysis and Prevention, 103, 129-142.
- Lewis, I., Watson, B., & Tay, R. (2007). Examining the
  effectiveness of physical threats in road safety advertising:
  The role of the third-person effect, gender, and age.
  Transportation Research Part F: Traffic Psychology and
  Behaviour, 10(1), 48-60.



T +61 7 3138 4944 carrsq@qut.edu.au @carrs\_q





