The Role of, and Key Considerations for, Advertising Campaigns and Educational Awareness Workshops within the Work-Related Road Safety Context

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Abstract

Australian and international evidence suggests that, in the work-related driving context, road crashes account for a substantial number of occupational incidents. In the attempt to reduce injury and improve safety, organisations may implement an array of strategies and interventions ranging from policy development and implementation, vehicle selection and incident monitoring through to education and awareness-raising. This conceptual paper discusses aspects relating to the latter collection of interventions and, in particular, the role, and some key considerations with respect to the content and dissemination, of advertising campaigns and educational awareness workshops.

In relation to advertising campaigns, this paper discusses how some of the overarching principles associated with advertising in the broader general community road safety strategy also apply within the work-related road safety context. Specifically, advertising campaigns/materials should be viewed as a key component within a dedicated organisational approach to road (driver) safety. This dedicated approach would need to comprise of a number, and varied array, of strategies. In addition, the content of, and medium/s (e.g., posters) by which to deliver such advertising campaigns, cannot be addressed by a one-size-fits all approach but, rather, requires careful consideration of the needs as well as characteristics of specific organisations and their driver fleet. The paper provides a summary of some key considerations when devising an advertising campaign, including the nature of campaign/message content as well as the processes by which to devise and refine such content.

In relation to driver education awareness workshops, this paper outlines the key considerations for delivering a series of workshops specifically aimed at occupational driving within the organisational context. A case study approach will be utilised to demonstrate the manner in which educational awareness workshops can compliment successful advertising campaigns promoting safer work related driving through better risk management practice. Research underpinning the development of driver behaviour modification tools incorporated within the workshops will also be discussed along with the mechanisms utilised to encourage improvements in driver monitoring and behaviour.

In an effort to assist organisations with their continual search for cost-effective approaches which may, ultimately, contribute to improvements in driver behaviour and safety, the current paper offers some clear and practical suggestions in relation to the development and dissemination of two types of interventions, advertising campaigns and education awareness workshops.

Keywords: work-related road safety; advertising messages and campaigns; driver education awareness workshops

Introduction

The Work-Related Road Safety Context

Work related crashes are the most common cause of work-related death, injury and reduced productivity in the industrialised world (Wheatley, 1997). Consequently, fleet safety or work related road safety is an area within road safety that is gaining increased attention due to the substantial physical, emotional, and economic costs to the community that are associated with work related road crashes. For instance, research has demonstrated that work-related drivers on average report a higher level of crash involvement compared to personal car drivers (Downs, Keigan, Maycock, & Grayson, 1999; Lynn & Lockwood, 1998) and road crashes are the most common form of work related fatalities (Haworth et al., 2000). Furthermore, earlier research suggests that work related road crash injuries are also approximately twice as likely to result in death or permanent disability as other workplace injuries (Wheatley, 1997) and the average time lost due to injury is greater than any other workplace claim (Stewart-Bogle, 1999). In Australia, Work-related Traumatic Injury Fatality figures indicate that over the last seven years two thirds of workers killed at work was the result of motor vehicle incidents (Safe Work Australia, 2012). In addition, according to Safe Work Australia (2012) work fatalities involving motor vehicles as the primary mechanism of injury clearly accounts for the highest proportion of fatalities (46%) with the next highest mechanism of injury consisting of being hit by moving objects (12%) and falls from heights (11%). Figure 1 shows that during the period 2003-04 to 2009-10 vehicle incidents were the primary mechanism of almost half (46%) of all worker fatalities during that period.
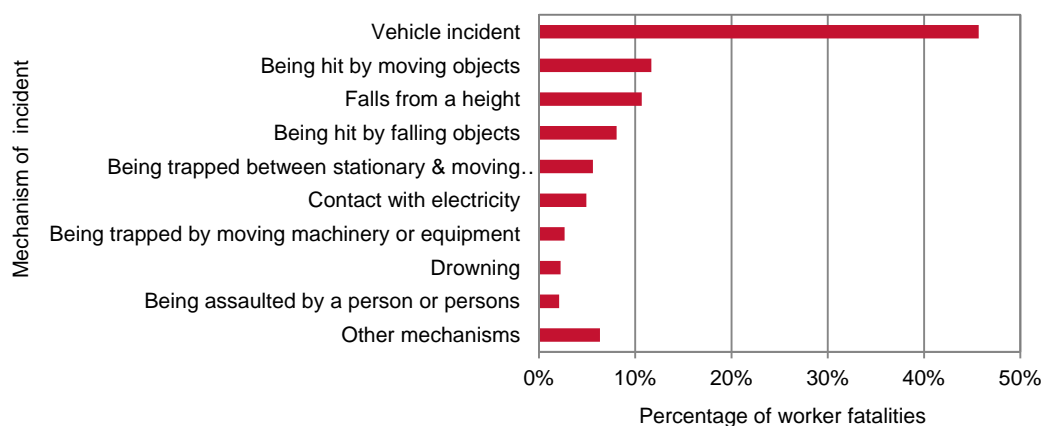

Figure 1:   Worker fatalities: Proportion by mechanism of incident, Australia, 2003–04 to 2009–10 combined (Safe Work Australia, 2012).

It has been estimated that in Australia approximately 75% of all locally produced passenger vehicles are purchased as fleet vehicles and more than half of all new vehicle registrations annually consist of fleet vehicles (AFMA, 2008). Unfortunately from a safety perspective, work related road safety within organisations has often been embedded within the fleet management domain which traditionally, has been primarily concerned with the asset management of vehicles within fleets. Furthermore, organisations primarily concerned with asset management take on a reactive approach, with organisational work related road safety intervention strategies being utilised as a "silver bullet" and implemented as a single countermeasure, in an adhoc manner, with a view to addressing all fleet safety related issues. In other words, organisations in attempting to address their work related road safety concerns take an overly simplistic view of the problem and endeavour to find one single strategy that they can implement, to solve all their work related road safety issues. Unfortunately, this strategy is set up to fail from the start, as work related road safety is a complex issue including many factors incorporating interactions between the driver, vehicle, and organisation operating within the broader context of the environment. A further

shortcoming of this "one size fits all" intervention approach process is that any intervention implemented fails to address the underlying complexities of behavioural, organisational and situational factors that influence work related driving behaviour and consequently will only provide at best a short term solution. In order to improve their work related road safety organisations need to implement a multidimensional organisational approach of risk management incorporating all processes associated with work related vehicle use (Davey et al., 2008; Rowland et al., 2005; Rowland et al., 2006; Wishart & Davey, 2004).

Despite the legal obligations and trauma associated with motor vehicles used for work purposes, many organisations often lack the necessary risk management frameworks and processes central to minimising work related road safety risk (Rowland et al., 2005; Rowland et al., 2006; Wishart & Davey, 2004). Work related road safety needs to be acknowledged within the organisational context as a complex puzzle comprising many different components or pieces. If only one piece of the puzzle is targeted or obtained the complete picture is never achieved and in the case of work related road safety never comprehensively addressed (see Figure 2). Furthermore many organisations also fail to actively and holistically promote work related road safety. For instance, in many organisations there exists posters and informative material regarding manual handling, office ergonomics, skin cancer and general health issues along with established training programs promoting and educating staff in safe work procedures. In contrast, these same organisations offer very little in the way of similar mechanisms directed toward promoting and improving vehicle safety (Wishart et al., 2011).
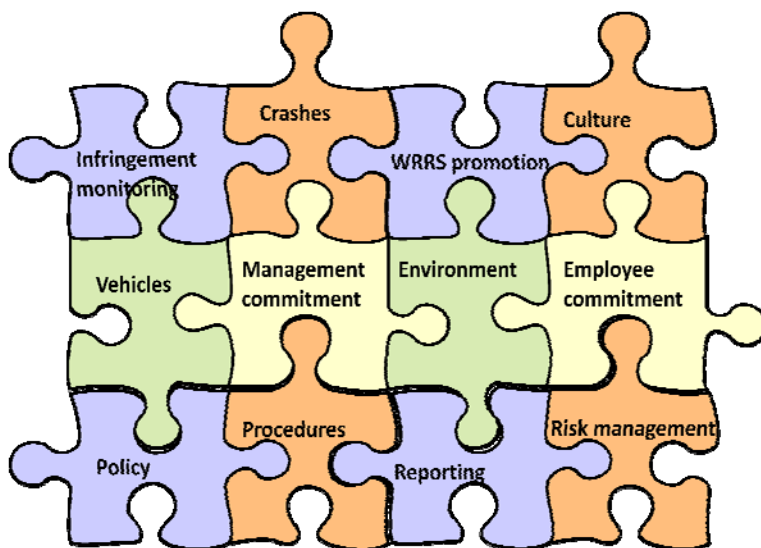

Figure 2. Work-related road safety - a complex puzzle.

Recent case study research results (Wishart et al., 2011) relating to work-related road safety communication and promotional strategies demonstrated that across five participating organisations there was a lack of prioritising or highlighting dangers and risks associated with driving to the same level of consideration as other workplace hazards. In these cases if organisations are to decrease the frequency of vehicle related events, it is suggested that they will need to establish a higher level of importance to promoting safer work related driving. Therefore, to help address this tendency, this conceptual paper discusses aspects relating to education and awareness-raising intervention strategies and, in particular, the role, and some key considerations with respect to the content and dissemination, of advertising campaigns and educational awareness workshops.

Important note about the role of theory

Theory has been shown to offer notable benefits both for the design and the evaluation of interventions (Elliott, 1993; Maibach & Parrot, 1995). Campaign design and evaluation is much more difficult in the absence of clearly defined and thus operationalisable and measurable constructs (Elliott, 1993; Maibach

& Parrot, 1995). Importantly, evidence has shown that theoretically-informed interventions are typically more effective than those devised in the absence of a guiding framework (see Elliott, 1993 for a review of evidence relating to road safety mass media campaigns). Given the important role played by theory, for both of the interventions to be discussed herein, advertising initiatives and educational awareness workshops, theoretical frameworks and constructs underpinning such interventions will be identified and reviewed in relation to each intervention-type. The paper begins with a review of the available evidence regarding the role and effectiveness of advertising countermeasures in road safety, followed by a review of available theoretical frameworks to aid message/campaign design and evaluation. Latter sections of the paper then discuss aspects relating to the role and effectiveness of educational and awareness raising workshops.

Road safety advertising campaigns

The role and effectiveness of advertising countermeasures in road safety: The indirect VS direct view

In order to understand what advertising interventions may do for improving road safety within an organisation, it is important to commence with a review of the available evidence regarding the indirect and direct views of road safety advertising's role and effectiveness more broadly. The general consensus from road safety evaluations conducted in Australia, and elsewhere is that mass media campaigns can be effective in reducing road trauma; however, the caveat is typically added that it is difficult to separate out the effects of specific interventions (Newstead, 2006). Others in the road safety field have argued that the debate regarding whether or not advertising can be effective has really shifted to a debate about what type of advertising (e.g., which type of emotion-based appeal is most persuasive for whom) is more or less effective (Donovan et al., 1999, p. 244). This latter view is the one most likely to further the investigation, and ultimately identification, of more effective persuasive approaches so holds particular promise for advancing evidence in the field. Arguably, irrespective of the view of advertising's role that one adopts, both views offer some important insight. For instance, drawing upon the available evidence it would suggest that, within the organisational context, consistent with the indirect view, advertising campaigns/materials should be viewed as a key component within a dedicated organisational approach to road (driver) safety. This dedicated approach would need to comprise of a number, and varied array, of strategies. Further, the advertising interventions that are adopted, if they are to be (directly) persuasive, they need to be devised in accordance with consideration of persuasive principles and available evidence.

Developing advertising campaign content

    Theory. The value of adopting a sound guiding framework when devising and evaluating a road safety intervention has been noted previously and should represent a consideration early in the campaign development. When devising advertising content, social psychological theories of attitude-behaviour correspondence and health behaviour change as well as persuasion, offer particular promise. For instance, theories including the Theory of Planned Behaviour (TPB; Ajzen, 1991) and the Extended Parallel Process Model (EPPM; Witte, 1992) provide much guidance; the former framework highlights the importance of establishing salient beliefs underpinning a particular behaviour (e.g., speeding, mobile phone use while driving) while the latter framework, the EPPM, identifies key components likely to enhance the persuasiveness of fear-based messages and even emotion-based appeals more generally, the latter having been demonstrated in more recent work (Lewis, Watson, & White, 2012). The current paper will discuss these two particular frameworks further and while it is acknowledged that there are various other frameworks in the social psychological literature that may also assist/be relevant in relation to message and campaign design, it is beyond the scope of the current paper to provide an exhaustive review of such frameworks (for further discussion, see, for example, Slater, 1999).

The TPB, a beliefs-based model, posits that the most proximal determinants of behaviour are intentions. Intentions, in turn, are determined by the three constructs of, attitudes, subjective norm, and perceived behavioural control (PBC). Attitudes refers to how favourably (or unfavourably) an individual regards a particular behaviour. Subjective norm refers to the extent to which individuals perceive that important others will likely approve or disapprove of their engagement in a behaviour. The third construct, PBC relates to the extent o control that an individual believes they have over whether or not they engage in the behaviour (Ajzen, 1991). Importantly, the TPB also posits that each of these constructs is underpinned by behavioural, normative, and control beliefs (Ajzen, 1991). Specifically, an individual's attitude is underpinned by their (behavioural) beliefs about the advantages and disadvantages of performing the target behaviour; subjective norm is underpinned by the normative beliefs an individual holds about the extent to which important others would approve or disapprove of them engaging in the behaviour; and PBC is underpinned by control beliefs which relate to an individual's beliefs concerning the likelihood that internal and external factors could prevent or facilitate them performing the behaviour.

The TPB has been applied extensively and shown to aid the understanding of a wide range of health and social behaviours, including traffic violations (e.g., Horvath, Lewis, & Watson, 2012a,b; Rozario, Lewis, & White, 2010).The utility of this framework in aiding suggestions regarding potential message content (see Horvath et al., 2012b; Tunnicliff et al., 2011) as well as guiding the actual development of advertising and mass media interventions (and other interventions more generally) has also been supported. For instance, in relation to the development of mass media campaigns, the Scottish "Foolsspeed" anti-speeding campaign (Stead, MacKintosh, Tagg, & Eadie, 2002) sought to avoid the use of graphic, fear-based messages and devised messages in accordance with each of the TPB's constructs of attitudes, subjective norm, and PBC. The results provided some validation for using this approach (the theoretical and belief-based underpinning to message development) in that individuals were found to consider the messages memorable, had understood them, and reported positive changes in their attitudes towards speeding. Similarly, a recent safe driving leadership intervention, devised for a fleet of community care nurses, and which included a series of campaign messages, included a focus on challenging salient beliefs in regards to speeding (Lewis & Newnam, 2011). A preliminary, qualitative investigation of the outcomes of the intervention supported the effectiveness of the intervention in reducing self-reported speeding and promoting greater insight into one's behaviour on the road. Collectively, such findings provide support for assessing underlying beliefs in relation to particular (intended target) behaviour for the purposes of informing advertising message content. Despite the importance of identifying salient beliefs, in terms of understanding key motivations underpinning a behaviour which may be emphasised and/or challenged, it is important to note, however, that the TPB was not designed for the specific purpose of guiding the development of health messages' content. Thus, the framework does not offer clear guidelines regarding the development of message content (Slater, 1999; Rossiter, Donovan, & Jones, 2000). As a consequence, other theories may be used in conjunction with the TPB as has been the case in other interventions (e.g., Quine et al., 2001 who utilised both the TPB in addition to the Elaboration Likelihood Model of persuasion in the design and subsequent evaluation of an intervention they devised to increase helmet use among school age cyclists). Indeed, the view espoused by a number of researchers in the field of persuasion has been to view the frameworks that exist as complementary rather than competing (Slater, 1999; see also Armitage & Conner, 2000; Witte, 1995) and thus researchers and practitioners of health persuasion should acknowledge and draw upon the relative strengths and weaknesses of the different frameworks.

The EPPM was devised initially to explain instances where fear-based persuasion succeeds or fails. As noted previously, recent evidence has suggested that this framework has assisted in understanding key constructs enhancing the persuasiveness of emotion-based messages (which address serious health topics, such as road safety) more generally (Lewis et al., 2012; Lewis et al., 2010). This framework posits that an individual's response to a threat-based message involves two distinct cognitive appraisals (Witte, 1992).

The first appraisal, threat appraisal, relates to the degree to which the message is perceived as threatening (i.e., how susceptible an individual believes they are to the threat and how severe the consequences would be should the threat occur). If the individual perceives that they are personally vulnerable and the threat is severe, a second appraisal, coping appraisal, occurs whereby the individual considers whether the message provides effective and useful strategies (i.e., termed 'response efficacy'), and whether they believe that they possess the ability to enact such strategies (i.e., termed 'message self-efficacy') to help avoid/reduce the threat (Witte, 1992). In other words, the extent to which an individual feels fearful in response to the message's threat (as a result of the first appraisal), determines whether they are motivated to continue processing the message. In turn, the coping appraisal determines the nature of an individual's response to a message and whether they initiate adaptive (danger control) or maladaptive (fear control) processes which correspond to message acceptance and message rejection respectively (Witte, 1992). Empirical evidence based on the EPPM has provided support for all of its key constructs (susceptibility, severity, response efficacy, and message self efficacy) (Witte & Allen, 2000). In particular, the provision of strategies (or response efficacy) has been shown to be important to maximising acceptance and minimising rejection of emotion-based health messages (Lewis et al., 2010). Thus, if one wishes to persuade it is important to ensure inclusion of relevant and useful strategies and that members of the intended target audience regard such strategies as strategies they can successful use/enact. Similarly, in relation to the threat appraisal component, it is important to ascertain the most appropriate and relevant type of threat for members of the target audience to the extent that doing so will likely heighten perceptions of personal vulnerability (relevance) and enhance subsequent persuasion. While road safety advertising more broadly has relied heavily upon physical threats (i.e., the depiction of an individual engaging in unsafe/illegal driving behaviours which is coupled with an aversive outcome such as a crash), threats may also be social, psychological, or financial in nature (Donovan & Henley, 1997). It is individual's perceptions of these constructs which ultimately determines whether or not they function as intended. Thus, clearly identifying the intended target audience and the beliefs that would likely be considered relevant to them is important to enhancing persuasion.

Intended target audience. To enhance the perceived relevance and extent to which individuals feel personally involved with the campaign, it is important to acknowledge that "one size does not fit all" (Lewis et al., 2007). Thus, ideally, a particular campaign should be purposefully designed to address particular issues/concerns and targeting a particular audience (members of an organisation). Although there potentially may be some aspects of overlap across organisational contexts, to enhance likely persuasiveness, it is recommended that campaigns be purposefully designed. Empirical evidence has demonstrated that even whether or not an individual is male or female influences the extent to which different types of emotion-based messages are able to persuade (Goldenbeld et al., 2008; Lewis et al., 2007, 2008). Specifically, in regards to key aspects to consider and address, the type of emotion-based appeal is an important consideration with evidence suggesting that, although a longstanding and commonly used approach in road safety advertising campaigns more broadly, fear-based approaches appear to be relatively less effective (persuasive) for males than females (Lewis et al., 2007). Evidence also suggests that the choice of whether to adopt a negative or positive advertising approach may be influenced by the current baseline compliance with a behaviour and, specifically, where compliance is relatively low (below 40%) than negative approaches may be more effective whereas if compliance is relatively high (above 40%) than positive approaches which function to reinforce the enacting of the appropriate behaviour may be more relevant and effective (Elliott, 1993). As such, it is important to identify such issues as: (i) what is the issue/problem (e.g., speeding, mobile phone use)?; (ii) who is the intended target audience?; (iii) what is the level of compliance with the behaviour currently?; (iv) what strategies should/can individuals use to reduce the problem (reduce/avoid the threat?) and do individuals feel that they can successfully enact such strategies? The figure shown below highlights the persuasive process and outcomes and, in particular, highlights the extent to which individuals' pre-existing

characteristics as well as perceptions in response to a particular messages/campaigns, function in the persuasive process. Messages/campaigns, to enhance their effectiveness, need to be devise
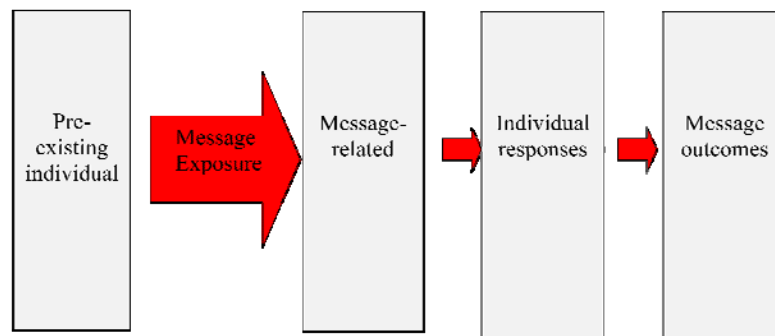

Figure 3. Conceptual framework of the persuasive process (adapted from Lewis et al., 2009).

The importance of pilot work and pre-testing

The importance of clearly identifying the intended target audience foreshadows the need to conduct thorough pilot work with members of the target audience. This work needs to ascertain such aspects as what are the key salient beliefs influencing a particular behaviour and what strategies represent feasible and useful strategies to promote as the means to avoid/reduce engaging in a particular behaviour. As an example, drivers engaging in speeding behaviour may represent an on-going problem within a particular organisation. Through pilot work, it may be revealed that drivers know that speeding is wrong; however, time-pressures lead them to feel a need to try and 'make time up on the road'. Given this belief represents a salient belief underpinning speeding behaviour (i.e., that speeding makes up time in an employee's time-pressured day), a message which recognises or at least is sensitive to such time-pressures and which focuses on promoting/emphasising other aspects of why drivers may want to comply with the speed limit, may be particularly beneficial. For instance, in a fleet of community-care nurses, while pilot work revealed feelings of time-pressures with the job, the nature of the nurses' work highlighted a social and community responsibility to take care of others, including members of the community. Thus, it was determined that a campaign would need to acknowledge that there are time-pressures but, to focus on promoting/emphasising the motivations to want to ensure community members' safety (for further information about this campaign's development including preliminary findings, see Lewis & Newnam, 2011). Briefly, where there are beliefs encouraging a (problem) behaviour, then as much as possible, these beliefs need to be minimised and challenged; alternatively, where there are motivations which discourage a behaviour, then these beliefs need to be emphasised and promoted (see Horvath et al., 2012b; Lewis et al., under review).

Only after thorough pilot work, should message/campaign concepts be devised. Then, once devised and prior to dissemination, pre-testing work is required to assess the extent to which the messages/campaign are functioning as intended in terms of the responses it is evoking from individuals (as highlighted in Figure 1). Evidence suggests that advertising campaigns which have undergone thorough pre-testing are more effective than those campaigns which have not undergone such pre-testing (Elliott, 1993). For such pilot work and pre-testing, qualitative methods are of particular importance. Qualitative methods, which include individual interviews and group discussions (or even free/open-ended responding in a survey) will offer valuable insight into the underpinning influences of individuals' (of the intended target audience) (Ben-Ari et al., 2000; Donovan et al., 1995). Feedback received from such pre-testing should be incorporated wherever possible into revised versions of the materials. At the conclusion of such pre-testing, the messages/campaign may be disseminated; however, choosing the method of dissemination is also an important consideration especially in light of changes in communication strategies in recent years.

Dissemination of the message/campaign

In 1993, in his meta-analysis of road safety mass media campaigns, Elliott identified a number of mediums including; TV, radio, newspapers/magazines, billboards, and pamphlets[1]. Elliott's (1993) meta-analysis reported that TV was associated with the greatest effect (size) but, as Elliott notes, given the potentially broader reach of TV relative to other media, this finding was perhaps not that surprising. Two decades later, the advent of electronic communication and social media has introduced many additional means of disseminating messages (Murray & Lewis, 2011). Thus, an additional challenge for advertising researchers and practitioners is not only devising the content but, also identifying the best and most appropriate means of disseminating the message so that it has greatest potential of reaching and being seen/heard by members of the intended audience. Evidence suggests that, despite early indications of its broad reach, television now may not be the wide reaching medium particularly when attempting to reach specific demographics, such as younger persons (L2 Think Tank, 2011; see also Murray & Lewis, 2011 for a review regarding the use of social media in road safety advertising).

In the work-related road safety context, similar diversity exists in relation to the numerous and varied potential methods (or mediums, channels) by which to disseminate the advertising messages/campaigns. These methods include (and, not limited to), posters, stickers (for use both within vehicles and offices), electronic signature taglines, even DVD's of road safety messages. The choice of media may influence perceptions of organisational commitment to a particular initiative; for instance, posters displayed about an organisation (in conjunction with other road safety initiatives) and DVD's of road safety messages disseminated by managers to individual drivers, will help to build a belief in the value placed upon road (and driver) safety within an organisation (see Lewis & Newnam, 2011).

Of relevance to the current paper, is the extent to which advertising initiatives may be used in conjunction with education and awareness raising workshops within industry organisations. The development of education and awareness raising workshops differ from the typical driver training programs currently being utilised across industry. The next section explores the development and use of specifically developed work-related road safety education and awareness raising workshops.

Education and awareness raising workshops

Historically within industry organisations, training and education programs targeted solely the driving skills and abilities of work-related drivers (Davey et al., 2008). In addition, driver training was generally implemented in reaction to an increase in vehicle-related incidents and was utilised as the only strategy to improve organisational work-related road safety, however with limited effectiveness (Davey et al., 2008). Therefore, previous skills-based driver training provided little impetus for proactive changes in work-related road safety within industry organisations, especially over time.

Developing workshop content

  Theory. In regard to change processes within organisations, Lewin's 3 stage model of change (Lewin, 1952) provides an excellent framework to guide organisational change. Basically the model has three phases or stages 'Unfreeze, transition, freeze" which are particular stages that according to Lewin need to be undertaken in order to create change within an organisational context. The first stage "unfreeze" involves changing the status quo by reducing forces and challenging the current mindset. It usually involves presenting the problem and getting people to recognise the need for change and embark upon seeking new solutions. The "transition" stage involves developing new behaviours, attitudes and values utilising organisational structure along with development processes and techniques. The final stage "freeze" is a process crystallizing the change and adapting ownership of the new concepts or processes.

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[1] Elliott (1993) also included a "other (e.g., PR)" category as a type of message media.

This process involves reinforcing the new behaviours attitudes and values. In response to Lewin's 3 stage model, a novel work-related road safety educational workshop was developed and targeted toward both organisational management and staff. The workshops aims to "unfreeze" the current mindset of drivers in relation to work-related road safety by changing the status quo and guide and assist participants (drivers) through the "transition" stage.

The *"CARRS-Q Work Related Road Safety Program: The challenge to change"* workshop was designed as an interactive workshop encouraging participants to examine their own driving behaviour and safety assumptions. The workshop explores some of the myths associated with work related road safety and provides an opportunity for participants to reflect on current work related road safety within their own organisation. This workshop concludes with "challenging participants to change" their own work related driving and become safer road users. It also provides participants with the necessary tools to continue to monitor and improve their own driving safety by encouraging them to adopt safer road user behaviours. Therefore, in respect to Lewin's 3 stage model of change, the challenge to change workshops aim to challenge and change drivers' current beliefs, attitudes and behaviours in relation to work-related driving. The workshop also provides participants with the knowledge, skills and abilities, as well as, the tools to not only change their current mindset but also to assist their transition toward changing their own driving behaviours.

Included within the challenge to change workshops a self-reflective *Driving Diary* is utilised as an additional proactive and practical tool to assist and provide motivation for participants' (work-related drivers) to change their own driving behaviours. The concept of the driving diary evolved from a larger body of research aimed at work-related road safety and the associated issues experienced by work-related drivers (Rowland et al., 2008). From this research, it became evident that a number of additional more contemporary issues such as work pressures and multi-tasking (e.g., mobile phone use) were directly impacting upon the safety of drivers (Freeman et al., 2007, Rowland et al., 2008a). In contrast, the research also revealed that traditional factors do not accurately account for a high proportion of the predictability of crashes (Freeman et al., 2007) or offences incurring demerit point loss (Freeman et al., 2007, Rowland et al., 2008a) in the Australian fleet setting. Therefore, the driving diary's purpose was to provide drivers with information about contemporary safe driving behaviours and strategies to overcome bad habits, which will ultimately encourage behavioural change. Generally, the driving diary aims to not only improve driver safety but also to empower and motivate drivers to maintain changes so that they are less likely to fall back into inappropriate driving habits and behaviours (Rowland et al., 2008). Designed as a brief intervention, the driving diary only requires drivers to spend a short period of time each day (for ten days) to complete the daily program requirements. Importantly, one of the primary aims is to identify when and where high risk driving behaviours occur and what feelings and emotions are associated with the event. By engaging in this process it is anticipated that participants will gain a greater level of understanding regarding their driving habits and high risk times, which will ultimately help them improve their own driving behaviour (Rowland et al., 2008). Table 1 highlights an example of the driving diary and typical responses to the task.

	Behaviour	Where	When	What happened	How do you feel	What could I have done differently
DAY 1	Speeding	On Highway	6.00pm	I was speeding on the way home	Annoyed, frustrated and tired	Slowed down and thought of arriving safely
DAY 1	Cut drivers off	City	2.00pm	Rushing to next client and was late	Stressed	Phoned ahead and advised of new arrival time/ review schedule

Table 1. Driving Diary Example (Wishart et al., 2007)

It is anticipated that creating change within work-related driving environments will not necessarily be a linear process, but may involve relapse and recycling before termination of unwanted behaviours is achieved. Taken together, it is anticipated that challenge to change workshops including the driving diary program will provide information that helps individuals think about their driving and give them a rationale for changing unsafe behaviour and implementing safe driving behaviour. This program is not deigned to be a "silver bullet" but rather utilised as part of a multi-dimensional and proactive course of initiatives designed to specifically target and promote work-related road safety within the organisation.

Concluding comments

This conceptual paper has offered insight into the role and key considerations regarding the content and dissemination, of advertising campaigns and educational awareness workshops. The paper has highlighted the value of theoretically-driven approaches to intervention design, which in turn will assist with the evaluation of such interventions. Further, practical information has been offered regarding the content of (as well as dissemination) of advertising related materials and awareness raising workshops. In recognising the need to view work related road safety as a complex puzzle influenced by various factors and interactions between the driver, vehicle, organisation, and even the broader environmental context, the strategies discussed represent methods of equipping work-related drivers with the knowledge and tools to proactively change their own safe driving behaviours.

References

AFMA (2008). Review of the automotive industry 2008, submission by the Australasian Fleet Managers Association to the Australian Government. http://www.afma.net.au/

Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Armitage, C. J., & Conner, M. (2000). Social cognition models and health behaviour: A structured review. *Psychology & Health, 15*, 173-189.

Ben-Ari, O. T., Florian, V., & Mikulincer, M. (2000). Does a threat appeal moderate reckless driving? A terror management theory perspective. *Accident Analysis and Prevention, 32*(1), 1-10.

Davey, J., Freeman, J., Wishart, D., & Rowland, B. (2008). Developing and implementing fleet safety interventions to reduce harm: Where to from here?. *In Proceedings International Symposium on Safety Science and Technology* VII, Beijing, China.

Donovan, R. & Henley, N. (1997). Negative outcomes, threats and threat appeals: Widening the conceptual framework for the study of fear and other emotions in social marketing communications. *Social Marketing Quarterly, Fall*, 56-67.

Donovan, R. J., Henley, N., Jalleh, G. & Slater, C. (1995). *Road safety advertising: An empirical study and literature review*. Canberra: Federal Office of Road Safety.

Donovan, R. J., Jalleh, G., & Henley, N. C. (1999). Executing effective road safety advertising: Are big budgets necessary? *Accident Analysis and Prevention, 31*(3), 243-252.

Downs, C., Keigan, M., Maycock, G. & Grayson, G. (1999). The safety of fleet car drivers: A review (TRL Report 390). Crowthorne, Berkshire: Transport Research Laboratory.

Elliott, B. (1993). *Road safety mass media campaigns: A meta-analysis*. Elliott & Shanahan Research, Federal Office of Road Safety.

Freeman, J., Davey, J., & Wishart, D. (2007). A study of contemporary modifications to the Manchester Drivers Behaviour Questionnaire for organizational fleet settings. *Paper to be presented at the Third International Driver Behaviour and Training Conference, Dublin.*

Goldenbeld, C., Twisk, D., & Houwing, S. (2008). Effects of persuasive communication and group discussions on acceptability of anti-speeding policies for male and female drivers. *Transportation Research Part F: Traffic Psychology and Behaviour, 11*(3), 207–220.

Haworth, N., Tingvall, C. & Kowadlo, N. (2000). Review of best practice fleet safety initiatives in the corporate and/or business environment (Report No. 166). Melbourne: Monash University Accident Research Centre, www.general.monash.edu.au/MUARC/rptsum/ es166.htm

Horvath, C., Lewis, I., & Watson, B. (2012a). Peer passenger identity and passenger pressure on young drivers' speeding intentions. *Transportation Research Part F: Traffic Psychology & Behaviour, 15,* 52-64.

Horvath, C., Lewis, I., & Watson, B. (2012b). The beliefs which motivate young male and female drivers to speed: A comparison of low and high intenders. *Accident Analysis & Prevention, 45,* 334-341.

Job, R. F. S. 1988. Effective and ineffective use of fear in health promotion campaigns. *American Journal of Public Health, 78*, 163-167.

L2 Think Tank (2011). "*Facebook and Social Statistics*" - Presentation slides provided by BCM Brisbane, 22nd February 2011.

Lewin, K. (1952). Group decision and social change. In G. E. Swanson, T. M. Newcomb, & E. L. Hartley (Eds.), *Readings in social psychology* (pp. 459-473). New York: Holt

Lewis, I., & Newnam, S. (2011). The development of an intervention to improve the safety of community care nurses while driving and a qualitative investigation of its preliminary effects. *Safety Science, 49,* 1321-1330.

Lewis I., Watson B., & White K. M. 2009. What do we really know about designing and evaluating road safety advertising?: Current knowledge and future challenges. *Proceedings of the 2009 Road Safety Research Policing and Education Conference*. Sydney.

Lewis, I., Watson, B., & White, K. M. (in press/2012). Extending the explanatory utility of the EPPM beyond fear-based persuasion. *Health Communication.*

Lewis, I., Watson, B., & 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.

Lewis, I., Watson, B., & White, K. M. (2008). An examination of message-relevant affect in road safety messages: Should road safety advertisements aim to make us feel good or bad? *Transportation Research Part F: Traffic Psychology and Behaviour, 11,* 403-417.

Lewis, I., Watson, B., & White, K. M. (under review). The beliefs that influence young males to speed and strategies to slow them down: Informing the content of anti-speeding messages

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,* 48-60.

Lynn, P. and Lockwood, C. (1998). The accident liability of company car drivers (TRL Report 317). Crowthorne, Berkshire: Transport Research Laboratory.

Maibach, E., & Parrott, R. L. (1995). *Designing health messages: Approaches from communication theory and public health practice*. Thousand Oaks, CA: Sage.

Murray, C., & Lewis, I. (2011) Is there an App for that?: Social media uses for road safety. *Proceedings of 2012 Australasian College of Road Safety National Conference*. Melbourne. 1st – 2nd September.

Newstead, S. (2006). Presentation given to the 2006 Queensland Road Safety Summit. In Transcript of Proceedings, 22 February. Brisbane, Australia.

Quine, L., Rutter, D. R., & Arnold, L. (2001). Persuading school-age cyclists to use safety helmets: Effectiveness of an intervention based on the theory of planned behaviour. *British Journal of Health Psychology, 6*(4), 327-345.

Rossiter, J. R., Donovan, R. J., & Jones, S. C. (2000). Applying the Rossiter-Percy model to social marketing communications. Paper presented at Australian New Zealand Marketing Academy Conference, Brisbane, Australia.

Rowland, B., Davey, J., Freeman, J. & Wishart, D. (2008). Development of a proactive brief road safety intervention for industry: identifying issues associated with implementation. *Proceedings of the High Risk Road Users Conference,* Parliament House, Brisbane.

Rowland, B.D., Davey, J.D., Freeman, J.E., & Wishart, D.E. (2008a). *Work-related road safety risk assessment: Utilisation of self-report surveys to predict organisational risk.* In: Australasian Road Safety Research, Policing and Education Conference 2008, 9-12 November 2008, Adelaide, SA.

Rowland, B., Wishart, D., & Davey, J. (2005). Occupational fleet safety research: A case study approach. In *Proceedings 13th Annual Occupational Health and Safety Conference (Visions, 2005)*, Cairns, Qld.

Rowland, B., Watson, B., & Wishart, D. (2006) Integration of work related fleet safety within a Workplace Health and Safety Management System: A case study approach. Paper presented at Australasian Road Safety Research Policing and Education Conference Gold Coast.

Rozario, M., Lewis, I., & White, K. M. (2010). An examination of the factors that influence drivers' willingness to use hand-held mobile phones. *Transportation Research Part F: Traffic Psychology and Behaviour, 13*(6), *365-376.*

Safe Work Australia (2012) Work-related Traumatic Injury Fatalities, Australia 2009–10. Canberra ACT.

Slater, M. D. (1999). Integrating application of media effects, persuasion, and behavior change theories to communication campaigns: A stages-of-change framework. *Health Communication, 11*(4), 335-354.

Stead, M., MacKintosh, A. M., Tagg, S., & Eadie, D. (2002). *Changing speeding behaviour in Scotland: An evaluation of the 'foolsspeed' campaign* (Transport Research Series Research Report). Retrieved from http://www.scotland.gov.uk/Publications/2002/10/15695/12380

Stewart-Bogle, J.C. (1999). Road Safety in the Workplace. The likely savings of a more extensive road safety training campaign for employees. Paper presented at the Insurance Commission of Western Australia Conference in Road Safety 'Green Light for the Future'. www.transport.wa.gov.au/roadsafety/Facts/papers/contents.html

Tunnicliff, D., Watson, B., White, K. M., Lewis, I., & Wishart, D. (2011). The social context of motorcycle riding and the key determinants influencing rider behaviour: A qualitative investigation. *Traffic Injury Prevention*, *12*(4), 363-376.

Wheatley K. (1997) An overview of issues in work-related driving. In Staysafe 36: Drivers as workers, vehicles as workplaces: Issues in fleet management. (Report No. 9/51). Ninth report of the Joint Standing Committee on Road Safety of the 51st Parliament. Sydney: Parliament of New SouthWales.

Wishart, D., & Davey, J., (2004) A research based case study approach to the development of fleet safety interventions in large vehicle fleets. Paper presented at Safety in Action Conference, Melbourne.

Wishart, D., Rowland, B., Freeman, J., & Davey, J. (2011) Driving for work : a series of organisational audit results. In *Australasian College of Road Safety National Conference (ACRS 2011)*, 1-2 September 2011, Melbourne Convention and Exhibition Centre, Melbourne, VIC.

Wishart, D., Davey, J., Freeman, J., & Rowland, B. (2007). *Creating Behavioural Change Through a Driving Diary: Designing and Implementing a Theory Based Brief Intervention to Improve Fleet Safety.* Paper presented at 3rd International Road Safety Conference, Perth, WA.

Witte, K. (1992). Putting the fear back into fear appeals: The extended parallel process model. *Communication Monographs, 59*, 329-349.

Witte, K. M. (1995). Fishing for success: Using the Persuasive Health Message Framework to generate effective campaign messages. In E. Maibach & R. L. Parrott (Eds.), *Designing Health Messages: Approaches from communication theory and public health practice* (pp. 145-166). Buckingham: Sage.

Witte, K., & Allen, M. (2000). A meta-analysis of fear appeals: Implications for effective public health campaigns. *Health Education and Behaviour, 27*(5), 608-632.