

MAXIMISING THE ROAD SAFETY IMPACT OF ADVERTISING

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1. A BRIEF STATEMENT OF THE ISSUE

All jurisdictions have a longstanding involvement in public education (mass advertising) as a road safety countermeasure, and are frequently called upon to increase their involvement in response to emerging road safety issues. The effectiveness of advertising as a road safety countermeasure remains problematic, however.

The purpose of this paper is to draw together the available evidence about the effectiveness of mass advertising, particularly in reducing crash rates. It also deals with the following sub-issues:

- road safety issues amenable to advertising effort
- issues considered to be beyond the influence of advertising
- characteristics of an effective advertising campaign
- the additional support needed for effective advertising campaigns
- the means to evaluate the impact of advertising.

2. CURRENT POLICIES AND PRACTICES IN AUSTRALASIAN JURISDICTIONS

In Australia and New Zealand, paid advertising is widely used as a component of road safety campaigns, particularly when attempting to reduce illegal behaviours such as drink driving, speeding and non-use of seat belts. A review found that these were also common themes of 265 evaluated road safety campaigns.¹

Most of the mass-media budget for road safety advertising is spent on television, with other media in a supporting role. There is relatively greater use of radio and billboards for fatigue campaigns, however.

The responsibility for road safety advertising differs among the jurisdictions. In some, the road authority assumes the major responsibility for funding and implementation, in others the injury insurer has this responsibility (as in Victoria) and, in others, funding responsibilities are shared between the road authority and the injury insurer (as in New South Wales). The Australian Transport Safety Bureau (as the former Federal Office of Road Safety) has previously conducted national campaigns, often but not always related to rural road safety issues.

Road safety advertising campaigns have been regularly conducted and evaluated in all Australasian jurisdictions in the past. Arguably the Victorian Transport Accident Commission (TAC) has been the largest spender, having conducted over 60 separate campaigns since 1989, targeting speeding, drink driving, fatigue and the vulnerability of young/novice drivers – with other issues including seat belt wearing, pedestrians, motorcyclists and older driver safety. As is the case for many other jurisdictions' campaigns, TAC's advertising programs have included a strong evaluation strand, measuring program effectiveness in terms of both audience response and road trauma reduction.

3. A REVIEW OF THE RESEARCH

Mass-media advertising campaigns require substantial resources that could otherwise be used for other road safety initiatives. Therefore it is crucial to know the extent to which they are effective and/or how they can be made more effective. Unfortunately, few programs are adequately evaluated^{1,2,3,4} and when evaluated, the results are not always accessible for research.¹

Advertising campaigns can aim to increase knowledge and/or awareness, change attitudes and/or change behaviour. To be meaningful, evaluations need to relate to the campaigns' stated aims. Many evaluations, even of campaigns that ostensibly aim to change behaviour, only measure audience response measures such as recall of the advertisement and its message. As well as relating to the stated aims, evaluations also need to assess road trauma reductions if benefit:cost ratios are to be calculated to allow comparisons with other road safety initiatives.

Most campaigns are more successful in conveying information and changing attitudes than in altering behaviour.^{3,5} Campaigns that are undertaken in support of an enforcement program generally have a larger influence on behaviour than those which do not.^{1,2,6}

It has been noted that, while education by itself has not generally resulted in significant changes in the behaviours targeted, education of the public and advocacy groups has often helped to enact necessary legislation, transmit knowledge about the provisions and penalties of laws in ways that increase their deterrent effect, and generate public support for law enforcement programs.³

3.1. Effects on crash rates

An early study presented a meta-analysis of 157 effect measures from 87 campaigns (mainly in English-speaking countries) over about 20 years.² The mean effect size across all campaign measures (awareness, knowledge, behaviour change etc.) was 7.6 per cent. This fell to 6.1 per cent when awareness improvements were excluded. The average effect was greater for awareness than attitudes and least for behavioural intentions.

In an international review of evaluated road safety media campaigns, it was reported that 31 international studies gave an average 8.5 per cent reduction in accidents during the campaign period and 12 international studies gave an average 14.8 per cent reduction measured after the campaign¹. However, they stressed that these results should be attributed to all components of the road safety campaign (including any enforcement and legislation aspects) and not only to the media campaign itself. Larger effects were found for small campaigns on a local scale and in cities, compared with provincial and national campaigns.

The meta-analysis also indicated larger accident reductions for speed campaigns than for alcohol campaigns (16.9 per cent versus 6.9 per cent). However, this may reflect the finding that larger effects were observed when the baseline level of accidents was higher (a finding also reported elsewhere²). Further, larger percentage reductions may be expected in Australia – “the Australian evaluations are associated with very special long-term campaigns... Such campaigns are hardly typical of the campaigns in most European countries and the United States” (p.88).¹

A series of analyses has been conducted considering the effects of different road safety initiatives, including TAC advertising, on casualty crashes in Victoria.⁶ One study found that, for both drink driving and speeding, the number of casualty crashes reduced as a function of the monthly levels of TAC advertising related to those behaviours.⁶

Table 1 quantifies the contribution of the major factors influencing road trauma trends in Victoria, 1989-96. Speed and concentration publicity contributed five to seven per cent of the 26-41 per cent reduction in serious casualty crashes from 1989. The combination of drink-driving enforcement and publicity (which could not be separated) contributed nine to ten per cent to the reduction in serious casualty crashes.

Table 1. Estimated reductions in serious casualty crashes attributable to various sources, Victoria, 1990-96⁷.

	Victorian road toll reductions (per cent)						
	1990	1991	1992	1993	1994	1995	1996
Contribution of speed camera traffic infringement notices	10	11	11	11	11	11	11
Contribution of speed and concentration publicity	5	7	7	7	6	7	6
Contribution of drink-driving program	9	9	10	10	10	10	10
Contribution of above road safety programs (1)	22	25	25	25	25	25	25
Contribution of increased unemployment	2	12	15	16	14	10	10
Contribution of reduced alcohol sales	3	6	7	9	8	9	10
Contribution of Accident Blackspot treatments	2	2	3	5	-	-	-
Reduction in serious casualty crashes from 1989	26	38	41	43	41	39	40

The analyses undertaken by Cameron and his colleagues in their series of studies^{6,7,9} employed sophisticated mathematical modelling techniques. These techniques were needed to disentangle the effects of other concurrent initiatives and other changes that could also have affected casualty crashes. However, the resultant complexity means that the analyses are not straightforward, and some other researchers have questioned the appropriateness of the models used and conclusions drawn.^{8,9}

3.2. Characteristics of effective campaigns

A meta-analysis of largely United States research concluded that more effective highway safety campaigns³:

- use multiple media
- combine mass media with community, small group, and individual activities, supported by an existing community structure

- carefully target or segment the audience that the campaign is intended to reach
- involve repetition of a single message
- emphasise the negative consequences of current behaviour, if aiming at developing preventative behaviour (arousing fear has been moderately successful in this regard, if coupled with mechanisms for reducing the anxiety that is created)
- emphasise current rewards rather than the avoidance of distant negative consequences
- involve in their design and operation, key power figures and groups in mass media organisations, in government and non-governmental bodies
- are timed appropriately (when introduced, what else is happening at the time, etc)
- use formative evaluation techniques to appraise and improve the campaigns during planning and while they are in operation
- set fairly modest, attainable goals in terms of behavioural change
- use commercial marketing and social marketing strategies
- use educational measures in entertainment contexts
- address the larger social-structural and environmental factors impinging on highway safety problems that the campaigns are attempting to counter
- are coordinated with direct service delivery components (e.g. hotline numbers for information or counselling), so that immediate follow-through can take place if behaviour change begins to occur
- segment the campaign audience by psychographic variables based on attitudes, values and beliefs, rather than demographics
- direct messages also to people linked to targeted individuals (e.g. peers and parents)
- choose their positive role models for social learning carefully, as these individuals may become negative role models through their personal actions (e.g. be found to drink drive)
- involve other campaign activities, rather than public service announcements alone
- use the news media as a means of increasing the prominence of the issue and message
- go in tandem with an aggressive enforcement strategy
- address the existing knowledge and beliefs of target audiences that are impeding adoption of desired behaviours
- communicate incentives or benefits for adopting desired behaviours that build on the existing motives, needs and values of target audiences
- focus target audiences' attention on immediate, high-probability consequences of safe driving behaviours
- use pre-testing to ensure that campaign messages have the expected effects on target audiences.

3.3. Role of medium, content and budget

3.3.1. Choice of medium

For a road safety advertising campaign to be effective, the type of medium should be matched to the duration of the required or expected effect. Television and brochures are suitable for long and intermediate term effects but not for immediate effects. For immediate effects, radio or billboard advertising seem to be the preferred options. Radio and billboards offer the opportunity to engage in the appropriate behaviour immediately, e.g. by moderating their speed or stopping to have a rest break. It has been claimed that “for seat-belt use, radio and billboards appear to serve the same saliency and reminder function as aisle displays for products in supermarkets” (p.50).³

3.3.2. Message content and production budget

Most road safety advertising in Australia and New Zealand uses threat appeals, where “non-compliance with the desired road behaviours is shown to result in or increase the likelihood of negative consequences occurring, or where compliance with the desired road behaviours averts or minimises the likelihood of negative consequences”.⁵ It has been noted that very few road safety advertisements use incentive appeals that depict positive consequences resulting from compliance with safe road behaviours.⁵

In a review of road safety and public health advertising, it was concluded that the effectiveness of different message contents would vary in response to the target audience, but that there was little evidence regarding the different executional approaches given the same message content.¹⁰ However, it has been noted that the confounding of message content and executional factors (largely production budget) is a problem inherent in studies using real-world advertisements.⁵

The findings that the *level* of TAC advertising was related to the level of reduction in road trauma⁵ have been (mis)interpreted as evidence that the *content* was effective.¹¹ It has been speculated that less costly advertisements might have produced a similar level of reduction in road trauma, if supported by the media budgets and levels of enforcement activities typical of Victoria.⁴ Some research attempts notwithstanding, this issue remains open.

3.3.3. Amount of advertising

The amount of advertising exposure (or media weight or Target Audience Ratings Points) is a measure of the “dose” of an advertising campaign. It is likely that there is a minimum amount of exposure necessary to have some effect, but there is little clear information about what that dose should be. The work of Cameron and his colleagues⁶ suggests that the crash reductions associated with advertising-plus-enforcement increase with the “dose”, but many campaigns are currently conducted at far lower levels than those that were analysed by these authors. It may be that lower amounts of advertising are adequate to increase knowledge and awareness, with higher doses required to change attitudes or behaviour, but this has not yet been satisfactorily determined.

3.4. Whether all road safety issues are amenable to influence by advertising

Whether a given road safety issue is amenable to influence by advertising effort depends in part upon the aim of the advertising – whether to increase knowledge, change attitudes or change behaviour. For most road safety issues, well-designed and implemented advertising should be successful in increasing awareness or knowledge of that issue in a relatively short period of time. Depending on how firmly current attitudes are held, advertising should be able to change attitudes of at least some members of the community in the longer-term. Road safety issues involving behaviours for which enforcement of compliance is possible, are likely to benefit more from road safety advertising (combined with enforcement) than behaviours for which enforcement of compliance is not possible (e.g. fatigue or inattention.)⁶

3.5. Additional support needed for effective advertising campaigns

A United States review³ identified the following types of support that make advertising campaigns more effective:

- combination with community, small group and individual activities, supported by an existing community structure
- coordination with direct service delivery components (e.g. hotline numbers for information or counselling), so that immediate follow-through can take place if behaviour change begins to occur
- involvement of other campaign activities, rather than public service announcements alone
- use of the news media as a means of increasing the prominence given to the issue
- partnership with an aggressive enforcement strategy.

In addition, websites are increasingly being used to provide supporting material, particularly for advertising campaigns that attempt to increase knowledge or public awareness.

Enforcement is an important support for advertising campaigns and, reciprocally, advertising can support enforcement activities. One school of thought maintains that mass-media support works primarily through increasing the perceived risk of detection and punishment. Another school of thought maintains that advertising produces behaviour change by changing beliefs and attitudes regarding the morality or social norms relating to the undesired behaviour.^{10,12,13} It should be noted that, while linking road safety advertising with enforcement has mutual benefits, it makes it more difficult to separate the effects of advertising and enforcement.

It is common for jurisdictions to sponsor sporting, recreational and cultural organizations and activities to reinforce their advertising programs and key messages. The following statement from Victoria's TAC summarises this strategy: "sponsorship helps make key road safety and behavioural messages more highly visible and relevant in many areas of the community's social, sporting and cultural life" (p.4).¹⁴

4. POLITICAL, SOCIAL AND OTHER FACTORS

Institutional responsibilities within a jurisdiction may influence which agency has responsibility for road safety advertising, the extent of resources expended on this form of road safety initiative, and the types of road safety issues targeted.

Road safety advertising is presented within the context of other advertising that may contradict road safety messages (including car advertising promoting speed). There is concern about the extent to which these contradictory messages may be reducing the effectiveness of road safety advertising, but no empirical evidence has been collected.

The ability to practise the road safety behaviours promoted by advertising may be restricted by characteristics of the individual or of their community. For example, advertising to decrease drink driving may not be as effective in rural areas if there are no other transport alternatives to driving. Similarly, the success of educational programs to reduce driver fatigue is likely to be constrained by the limited ability of fatigued drivers to judge the level of risk at which they are operating and the incentives for (particularly professional) drivers to continue driving.¹⁵ The same constraints may apply to campaigns to reduce speeding, when drivers are speeding as part of work-related driving. In order to maximise their effectiveness, advertising campaigns need to address and acknowledge the broader social framework within which they are to be implemented.

5. CONCLUSIONS

It is important to maximise the effectiveness of mass-media advertising campaigns because they are expensive and can take resources away from other road safety initiatives. Unfortunately, many evaluations only measure audience response and therefore do not allow benefit:cost ratios to be calculated and compared with those of other road safety initiatives. Most campaigns are more successful in conveying information and changing attitudes than in altering behaviour, with enforcement support being associated with larger behaviour changes. Education of the public and advocacy groups can help to enact necessary legislation, transmit knowledge about the provisions and penalties of laws in ways that increase their deterrent effect, and generate public support for law enforcement programs (provided enforcement is ongoing).

An international review of road safety media campaigns found average crash reductions of between eight per cent and 14 per cent, but these effects related to the campaign as a whole (including enforcement, where used), rather than the media campaign alone. Generally, measured crash reductions are smaller than measured improvements in awareness and attitudes.

The effects of threat appeal, production budget and media budget are difficult to separate in the Australian context. There is, however, a need for road safety advertising to be able to stand out from the background of programming and other, sometimes conflicting, messages.

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