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The Application of Social Marketing in Reducing Road Traffic Accidents among Young Male Drivers: An Investigation Using Physical Fear Threat Appeals

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Abstract

There were 338 road fatalities on Irish roads in 2007. Research in 2007 by the Road Safety Authority in Ireland states that young male drivers (17 – 25 years) are seven times more likely to be killed on Irish roads than other road users. The car driver fatality rate was found to be approximately 10 times higher for young male drivers than for female drivers in 2000. Young male drivers in particular demonstrate a high proclivity for risky driving behaviours. These risky behaviours include drink driving, speeding, drug-driving and engaging in aggressive driving. Speed is the single largest contributing factor to road deaths in Ireland. Approximately 40% of fatal accidents are caused by excessive or inappropriate speed. This study focuses on how dangerous driving behaviours may be addressed through social marketing. This study analyses the appropriate level of fear that needs to be induced in order to change young male driving behaviour.

Keywords: Young male driver, Speed, Drink driving, Social marketing, Physical fear appeals

Background

Road safety is a vital public concern and one that affects each of us every day. We all have a social responsibility to ensure safety on our roads. The system of penalty points was introduced in Ireland in 2003 and this saw the lowest figure killed on Irish roads since 1964 (336 deaths in 2003). Figure 1 shows the dramatic improvement in fatal collisions in Ireland between 1972 and 2004. In 1973, there were over 600 people killed on Irish roads, 30 years later in 2003, this figure had dramatically declined to 336. Experience in 2007 shows that, keeping road deaths down remains a constant battle, but road deaths still managed to decline with 338 deaths in 2007, from 365 in 2006. This represents a significant improvement given the increasing volumes of traffic on Irish roads. In 1977, there were 748 000 registered vehicles on Irish roads - this had increased to 1.94 million in 2003 (NRA, 2004). The system of penalty points shows that driver behaviour can be changed. Road fatality figures fell to 338 fatalities on Irish roads in 2007 (Note 1). While fatality figures have been the primary focus of the media, many more people are injured on Irish roads. In 2006, there were 28,417 Garda (Note 2)-recorded traffic collisions resulting in 8 575 persons injured on Irish roads. If road statistics from 1961 - 2002 are examined it is found that, on average, for every life lost on Irish roads another 20 people are injured. Some of these injuries are severe, life altering injuries (RSA, 2007).

The EU has set itself a target to half the number of road deaths by 2010. Translating this EU objective into an Irish context by 2010 necessitates a 50% reduction in the 411 fatalities on Irish roads in 2001. Therefore, if Ireland is to achieve this objective it should have no more than 206 road fatalities per annum by 2010. This objective represents a massive challenge for road safety authorities. Figure 2 shows the road fatality trends from 2001 to 2005. Using 2001 as the starting base, the best performing countries have been Luxembourg, France, Sweden, the Netherlands, Belgium and Portugal. Ireland is ranked seventh in the EU for road fatalities. In 2001, the road fatality rate here was 108 per million. The UK had the lowest rate at 60, while Greece had the highest at 180 (European Transport Safety Council, 2006).

Speed is the single largest factor contributing to road deaths in Ireland. More than 40% of fatal accidents are caused by excessive or inappropriate speed. The higher the impact speed, the greater the likelihood of serious and fatal injury. For car occupants in a collision, with an impact speed of 80 km/h (50mph), the likelihood of death is about 20 times that at an impact speed of 30km/h (20mph). A 50km/h (30mph) impact is equivalent to dropping a car from the top of a two storey building. A 100km/h (60mph) impact is equivalent to dropping 11 storeys and a 150km/h (80mph) crash is equivalent to 30 storeys. Research and international experience show that the frequency

and severity of road crashes tend to decrease with reductions in average speed. A 1km/h decrease in average speed results typically in a 3% decrease in road crash frequency (NRA, 2004).

1. Young male drivers as a cause of concern

Young drivers are generally regarded as a high risk road user group. They are more frequently involved in traffic accidents when compared to older drivers (Laapotti et al, 2001; Bjørnskau, 2000). Drivers under 25 years of age account for 27% of driver fatalities in the OECD (Note 3), despite representing only 10% of the population in these thirty countries (JTRC, 2006). In 2000, 34% of Irish road fatalities and 26% of all injury accidents were represented by young people aged between 16-25 years, despite these drivers representing only a small fraction of the Irish driving community. Young drivers' high involvement in road accidents can be attributed to a host of factors. These factors stem from social, physiological, psychological, cognitive and behavioural components which predispose young drivers to high road accident rates.

Figure 3 demonstrates the disproportionate number of young passengers killed in Ireland in 2003. This passenger fatality trend is longitudinal in nature and appears not only in Ireland but in road safety statistics worldwide. Teenagers and young males in particular have a high proclivity for risky behaviour, exemplified by drinking and driving, speeding, neglecting seat belts, risk taking while driving and night time driving. Recent research by the Road Safety Authority (2007) in Ireland states that young male drivers (17 – 25 years) are seven times more likely to be killed on Irish roads than other road users. Shope et al (1996) suggests that inexperience and risk taking are two factors that are strongly associated with young driver collisions.

Vernick et al (1999) found that the most important factor when evaluating driver risk is not driving skill but rather driver judgement. Driver judgement is often associated with age and experience. Benda and Hoyos (1983) investigated hazard perception among drivers. They found that inexperienced drivers utilised simple models which focused on individual variables. Inexperienced drivers typically only considered individual factors such as the weather and road layout etc. when appraising risk. However, more experienced drivers demonstrated a greater appreciation of the real risks present by taking a more holistic view of a driving situation. Young drivers tended to compartmentalise the risks and generally failed to appreciate the dangers involved.

The sensation seeking scale, first developed by Zuckerman (1979), has been used extensively in road safety research. Sensation seeking is seen as a personality trait of individuals who indulge in thrill seeking. According to Zuckerman (1994), sensation seeking is a trait that sees people accepting a variety of different possible risks in order to seek out and experience exciting and intense new sensations and events. The term sensation seeking refers to individual differences in optimal levels of arousal and stimulation, manifested as a character dimension.

Jonah et al (2001) conducted a study to explore the relationship between sensation seeking and risky or aggressive driving. High sensation seekers were found to be more prone to aggressive driving than low sensation seekers. Seatbelt wearing rates were lower among high sensation seekers than low sensation seekers. Crash involvement and traffic violations were found to be higher for high sensation seekers than for low sensation seekers. High sensation seekers were also found to be more likely to drink and drive in a number of situations. These results concurred with earlier work done by Jonah (1997) which explored the personality traits of risky drivers. This research found a strong correlation between individuals who displayed sensation seeking tendencies and those who were prone to risky driving.

Table 1 highlights the stark gender divide in terms of EU road fatalities between the sexes. The data in table 1 relate to 2002 but similar results are evidenced each year. In 2002, males account for 76% of all road fatalities in Ireland, with Ireland having one of the highest rates of road fatality levels among 16-25 year olds. Despite having a very high male fatality rate, Ireland has the lowest male fatality figure of the 14 EU countries but has the highest female fatality rate. Interestingly, Ireland has the lowest road fatality figure among 41-60 year olds. The data finds that male road users are between three and six times more likely to be killed than female road users (SafetyNet, 2004).

It is estimated that male drivers between 17 - 20 years of age have an average of 440 injury accidents per 100 million kilometres driven. This far exceeds the average injury accident rate of 106 injury accidents per 100 million kilometres for all male drivers. Young female drivers exhibit an injury accident rate of 240 injury accidents per 100 million kilometres. However female drivers as a whole only exhibit a rate of 100 injury accidents per 100 million kilometres driven (Forsyth, 1992a; Forsyth, 1992b). This statistical research demonstrates that young drivers are more likely to be involved in an injury accident than older drivers. It also highlights the fact that younger women drivers appear to be safer drivers than younger male drivers. In essence, this shows that young male drivers are the most accident prone drivers on the roads. The same trend is evident in Ireland as illustrated in table 1.

Young driver accidents tend to be more severe than accidents not involving young drivers, in terms of both the injuries sustained and the mortality rates involved. In 2000, the fatality rate (the number of drivers killed per

100,000 people) was much higher for those aged 18 - 24 years than for any other age cohort (NRA, 2000). A gender bias was also clearly evident. Male road user deaths occur predominantly among car users who accounted for 62% of Irish road deaths in 2004 (NRA, 2004). In 2000, young drivers accounted for 37% of all car drivers killed and 18% of car drivers injured despite representing only a small fraction of the driving community. Young driver accidents accounted for 26% of all injury accidents on Irish roads in 2000. The car driver fatality rate was approximately 10 times higher for young male drivers than for female drivers (NRA, 2000).

Drink driving is also an area of concern. The Garda estimate that alcohol is the primary causal factor in 25% of all Irish road collisions and accounts for roughly 33% of fatal collisions in Ireland (An Garda Siochana, 2005). However the National Safety Council estimate that alcohol accounts for 40% of road deaths and at least 30% of all road accidents in Ireland each year (DOHC, 2004). A review of surveys from various EU countries concluded that at any given time, between 1% and 3% of drivers are under the influence of alcohol while driving on EU roads (ETSC, 1995). These drink drivers account for 40% of all road fatalities in the EU. The research also suggests that in countries where anti drink driving enforcement is low, a reduction of up to 15% in road fatalities is achievable through increased anti drink driving enforcement activities. If Random Breath Testing levels were increased throughout the EU to the current EU average (1 breath test per 16 inhabitants) between 2 000 and 2 500 lives could be saved per year (ETSC, 1995).

Crash risk and mortality rates can be measured in risk curves. Risk curves are generally steeper for serious and fatal crashes, for single-vehicle crashes, for drink drivers and for young people (Zador, 1991; Jonah, 1986; Mayhew et al, 1981). Figure 4 demonstrates the relationship between age and the corresponding risks associated with varying BAC (Note 4) levels. Young people are most at risk after the consumption of alcohol due to their susceptibility to its intoxicating effects. This is chiefly due to biochemical considerations which find young people possessing a lower alcohol tolerance than older drivers. A variety of other factors such as muscle mass, speed of alcohol consumption, if the person has eaten prior to drinking, etc also dictate the level of intoxication. According to research by Zador et al (2000) cited by Bedford et al (2006), drivers over 35 years of age are 11.4 times more likely to be fatally injured in a crash when their blood alcohol levels ranged from 80mg/100ml (Irish legal limit) to 100mg/100ml. However for young drivers aged between 16 - 20 years, the relative risk of a fatal crash increases by 51.9 times when their BAC level is within the 80mg/100ml to 100mg/100ml BAC range.

According to Fuller (2005) high risk drivers represent 14% of the Irish driving population. Within this subgroup, 90% of the drivers are young male drivers. The mean age of these high risk drivers was found to be 26 years of age. From a road safety perspective the "high risk driver" group pose a number of problems for Irish road safety. High risk drivers are problematic because their driving behaviour is derived from their attitude. Unlike emotions, which are transitory in nature, attitudes prove more difficult to alter. Even if a change in attitude is achieved, behavioural change is by no means assured. Begg and Langley (2001) indicate that young drivers tend to "mature out" of risky driver behaviours at around 24 years of age. This trend could possibly be attributed to improved hazard recognition and better driver skills gained through driving experience.

2. Social Marketing/Communications Theoretical Framework

The second half of the 20th Century witnessed the determined application of managerial techniques to social problems. In the field of marketing, a forceful argument was presented to the effect that the "marketing concept" – the successful postwar operating philosophy that emphasised the formation of marketing programmes based on perceived consumer needs, could be extended well beyond for-profit business organisations. A major offshoot of the "broadening" argument was the emergence of the concept of "social marketing" (Kotler and Zaltman, 1971). Social marketing refers to the application of basic marketing principles to the design and implementation of programmes and information campaigns that advance social causes such as alcohol misuse, drug prevention, traffic safety, etc.

Walsh et al (1993) used social marketing programmes to address the issues of excessive drinking, unhealthy diet, lack of exercise, or the use of tobacco, etc. Social marketing programmes have been designed to address a whole host of issues including alcohol and other drug problems on college campuses (Zimmerman, 1997) and traffic safety among broader communities (Hastings and Elliott, 1993).

The use of fear appeals is perhaps the most common tactic for social marketing, with threats of physical harm including injury and death used more frequently than social threats. One common problem with fear appeals aimed at young males aged 17-25 years is that they underestimate their own risk of injury (be that from excess drinking, smoking, drug use, unprotected sex or dangerous driving).

Grosvenor et al (1999) state that as with adults, adolescents' perceived certainty of punishment appears to be more of a deterrent for drinking and driving than perceived severity of punishment. They found no deterrent effect of

perceived severity of punishment on drinking and driving, suggesting that deterrence-based countermeasures should focus on increasing the likelihood of punishment for drinking and driving rather than increasing penalties.

Having evaluated the pros and cons of various channels of communication, Cameron and Harrison (1998) concluded that television is widely considered by experts to be the most persuasive medium for road safety campaigns. Television was found to be the most effective medium for conveying emotion. Research by Anderson (1978), Griep (1970) and Robertson et al (1972) has provided evidence to suggest that generic road safety campaigns are of limited benefit. Despite possibly increasing awareness levels, these types of road safety campaigns have proved an inefficient means of instigating behaviour change. Donovan et al (1995) contend that the specific demographics of the target audience should determine the campaign style and execution. They suggest that targeting the core motives of the intended audience is vital when producing an effective road safety advert. They also found that serious road safety adverts were more persuasive than those which tried to incorporate humour into their design. Furthermore, while an optimum level of threat could not be determined, the research did indicate that drama based adverts were more effective than lecture-style adverts. Following a review of PSA (Note 5)s, Dejong and Atkins (1995) concluded that PSAs targeting young people should portray adolescents of their own age (peers) in the advert. The PSA should also avoid any didactic undertones and instead focus on the social consequences of non compliance in safe driving.

Delhomme (1999) also indicated that road safety campaigns performed best when married with enforcement activities and undertaken in the presence of strong legislation. Under such conditions major reductions in both the number of collisions and the crash severity of accidents were found to materialise. While the effects of legislation alone could not be measured, the data did suggest that its impact was nominal unless supported by credible levels of enforcement. Delaney et al (2004) also found that legislation acting as the sole support for a media campaign is of little benefit. However, in its absence road safety campaigns have been found to be ineffective. Publicity campaigns in the US were found to be of little benefit in promoting seatbelt use until legislation made seatbelt wearing legally compulsory (Foss, 1989; Williams et al, 1987).

3. Methodology

This study focuses on young male Irish drivers and their attitudes towards speed, seat belt wearing, dangerous driving and drink-driving. Its main question is:

(1) Can social marketing have a role in reducing road traffic accidents among young male drivers?

The research objectives are as follows:

- (a) To investigate the reasons behind the high representation of young male drivers in Irish road fatality figures.
- (b) To investigate the effect on young male Irish drivers of fear appeals that focus on death and disability as a consequence of bad driver behaviour.
- (c) To investigate the effect of high physical fear advertisements on young male Irish driver attitudes.

Seven focus groups were conducted between April and May 2007. The focus groups were held in a lecture hall in Cork Institute of Technology, Cork, Ireland. This location facilitated the use of a large projector system which was used to screen the road safety films and safety advertisements shown in this study. The focus groups were recorded on audio tape to facilitate data collection and analysis. The focus groups typically lasted between 1.5 - 2 hours. All participants were young male drivers aged between 17 and 24 years of age (the target profile of the study). Focus group participants were full time students taking classes in the Automotive Department of Cork Institute of Technology. These students were chosen as it was judged that:

- a. They would possess a car.
- b. They fitted the profile of the study in terms of age and gender.
- c. They would have a high interest in cars and the transport sector in general.

Participants were firstly briefed on the purpose and research objectives of the study. From the outset participants were assured of their anonymity and encouraged to contribute their opinions without prejudice. Having introduced the topic, a 10 - 15 minute preliminary discussion was conducted to gather data on the driving history and driving behaviours of the participants. Having completed this discussion, participants were shown two films and national and international adverts relating to speeding, drink driving, and seatbelt wearing.

Focus group subjects were firstly shown two films from a Road Safety DVD produced by Radio Telefis Eireann (RTE – the Irish national broadcasting service). The two short films (12 minutes each) were shown to participants. The first film entitled “*Left Behind*” contains candid interviews with parents, children and close friends of those who have been killed in road accidents. The film clearly illustrates the heartbreak experienced by those “left behind”.

The second film, entitled “*Shattered Lives*” deals with the serious injuries suffered by young male drivers who have been in car crashes. The documentary contains a number of interviews with young, paralysed drivers by RTE’s chief news correspondent, Charlie Bird. This short film explores the stark realities of being paralysed and the resulting life changing consequences for both friends and family.

Participants were then asked to discuss both films and identify which film they found most persuasive. They were also asked to explain the rationale behind their evaluation of the films and the cognitive processes used to appraise the films.

4. Results

It appears that the moral argument has been won in relation to seatbelt wearing, with participants in all focus groups accepting the necessity for both front and back seatbelt wearing. However, much work remains to be done in socially engineering young driver compliance with regard to drink driving and speeding. Advertising aimed at young drivers should focus on these areas. The focus groups revealed that speeding in particular is still very socially acceptable in Ireland. Road safety advertising should attempt to undermine the climate of acceptability that surrounds speeding in particular. Continuous and creative interventions are needed to proactively promote the highest possible overall levels of road safety. Given that road safety budgets are finite, it is important to produce adverts that are both relevant and credible to the target audience. Adverts must focus on the core motives of the target audience and take into account the perceptual landscape that young drivers inhabit.

Some of the current Irish road safety adverts were perceived by respondents as being visually impressive and highly dramatic but essentially “fake” and over the top. This lack of advert credibility is a barrier to attitude and behaviour change. Due to the dramatic crashes depicted in some adverts, young drivers are found to cognitively discredit the accuracy of the advert. The upward trend in producing increasingly shocking adverts appears to have tilted the balance of power away from the advertiser. If the advert is perceived as being “over the top”, then the integrity of the message contained in the advert is compromised. It is recommended that more research be conducted to ascertain what content young male drivers believe to be realistic and credible.

Drama based adverts that depict human pain and emotions such as remorse and guilt, have the potential to stimulate attitude change. The focus groups generally revealed that high threat advertising can be effective in hammering home a road safety message. However, they also found that high threat physical fear appeals cause some viewers distress. The focus groups produced evidence of defensive behaviours such as channel switching among respondents. This is a cause for concern.

More research should be done on segmenting the young male driver profile so that high risk individuals can be targeted. Not all young male drivers are dangerous drivers. More research should also be done on investigating the effectiveness of moderate fear appeals which may not stimulate the same level of defensive cognitive behaviours. However, it is unknown if adverts containing a moderate fear appeal have the same capacity for attitude change as those which contain a strong fear appeal, if all other variables are equal within an Irish context. The authors recommend that high threat road safety advertising should continue. However, this recommendation is contingent upon a more thorough analysis of target group perception and cognitive value systems being undertaken. Ensuring that road safety advertising is credible and realistic should take precedence over considerations relating to the levels of threat contained in the advertising.

One way of assessing the best content for road safety adverts is to open the communication channels between advertisers and young male drivers. The Transport Accident Commission (TAC) in Australia run competitions which give young people the opportunity to submit their ideas for road safety adverts. Competition entrants are given a brief and asked to design an effective road safety advert. The winning advert is then produced by the TAC for television audiences. The “*Make a Film, Make a Difference*” competition is an example of harnessing the creativity of the target audience to overcome the perceptual problems associated with road safety advertising (Note 6).

The data from the focus groups suggest that the content of road safety campaigns should focus on serious injuries rather than death. Adverts depicting seriously injured or wheelchair bound drivers are found to be highly effective in provoking cognition among young drivers. The focus groups established that road safety communications which depicted serious injuries were much more potent than those which depicted driver death. Road safety adverts aimed at young male drivers should also highlight the threat of killing or seriously injuring friends as a consequence of dangerous driving activities. Young men appeared to place an especially high value on the lives of their friends and family.

The data suggest that the fear associated with their own mortality is not as great as the fear of being responsible for killing or seriously injuring a friend. Adverts which stimulate feelings of guilt and remorse have been found to be

associated with high levels of persuasion. Such adverts need to graphically depict the effects of errant driver behaviour on others in order for them to be effective.

Lecture-style road safety adverts which highlight the dangers of errant driver behaviours such as speeding and drink driving were sometimes found to stimulate defensive cognitive processes. Some drivers were found to display scepticism at the claims made by these lecture-style adverts. Defensive cognitive processes were found to limit the effectiveness of these types of adverts. However, the majority of focus group participants did believe that these types of adverts could be effective if they were used in conjunction with dramatic, high threat road safety advertising.

Driver expectation of enforcement levels are influenced by advertising. The effective marriage of enforcement and advertising interventions permits the generation of synergies which can result in dramatic road fatality reductions. However, such gains are unlikely to be sustained in the long term if enforcement levels do not match the threat communicated by adverts. Advertising that stresses the threat of enforcement should be avoided until the level of enforcement displayed in adverts can be matched by the police presence on the roads. The threat of anti drink driving enforcement activities is not credible for many drivers in rural Ireland. Enforcement focused adverts may well prove to be effective in urban areas where enforcement levels are high. It is hypothesised that the drop in road fatalities in 2003 is attributable to the roll out of the penalty points system and the heavy promotional campaign that accompanied it. Enforcement levels need to be stepped up in rural areas. The gradual increase in Garda Traffic Corps numbers should help in this regard but the lack of late night transport links in rural areas is a central issue to Irish road safety which needs to be tackled. This problem can only be addressed through the cooperative efforts of all stakeholders.

High threat advertising generally appears to be effective in provoking attitude change. However, nearly half of the participants were found to have turned over the television channel, when a high threat advert appeared on the television. This finding is worrying. It is recommended that extensive quantitative research be undertaken to determine if cognitive level defensive systems are at this high level among the target group.

High threat adverts have served Irish road authorities well in recent years and they continue to make a positive contribution to Irish road safety. It is recommended that high threat advertising should continue in Ireland until substantive quantitative data can be gathered on target group defensive mechanisms. This research should be undertaken as a matter of urgency. A more thorough appraisal of moderate fear appeals is also recommended.

Television and cinema adverts can undoubtedly be effective in stimulating attitude change. However, in-car communications such as radio advertising perhaps merits more attention. Focus group participants mentioned adverts from "Red FM (Note 7)" which they considered to be persuasive. Other in-car communications such as signs and stickers on the steering wheel or on a key ring could also be used as a cognitive trigger to remind motorists to drive safely. However, as yet, there is a lack of research in this area. More research is needed to assess the effectiveness of in-car ambient advertising.

5. Other Communication Methods

The data from this study suggest that there should be a move towards other methods to communicate with young drivers. The need to win the hearts and minds of young drivers dictates that communication efforts should be expanded beyond the confines of traditional marketing channels. Evidence from the focus groups suggest that positioning crashed cars outside rural night clubs may be effective in making people think twice about drink driving. The focus groups revealed that seeing the actual effects of crashes on vehicles is a "real eye-opener". This type of communication would conceivably bypass many of the cognitive defensive mechanisms employed by young drivers who attempt to minimise the threat in other road safety communications. Young drivers would not be able to minimise the threat by suggesting creative license on the part of the advertisers. Neither would the young drivers be able to minimise the threat by switching over to another channel. The communication would send a message to drivers close to the time when a decision has to be made on how to get home. The close chronological proximity of the communication to the decision making moment may positively influence the captive audience when making plans to get home. However, it is also likely that this method of communication may distress some people.

Focus group participants also recommended a more hands on approach to advertising. They suggested that road safety presentations should be rolled out nationally to all secondary schools. Some of the material shown in the focus groups (the RTE documentaries) is being sent to secondary schools for inclusion in the Transition year (Note 8) syllabus. However, focus group members contended that all secondary students should view this material given that driving is an essential life skill that they will all have to learn. Some respondents contended that high speed driving is an activity that is learned over time. Many of the respondents interviewed began driving at 12 and

13 years of age. Focus group participants indicated that early interventions which promoted safe driving were therefore necessary in order to tackle the problem of speeding among young drivers.

Overall, focus group participants identified “traffic informers” as the most credible and consequently the most effective road safety communication medium available to road safety experts. The use of “traffic informers” and “road shows” are a new trend that has recently emerged in threat based social marketing. “Traffic informers” are crash casualties who have been severely and permanently injured in a road crash. These young “traffic informers” give presentations to secondary school students on the circumstances surrounding their crash and the knock on effects it has had on them and their families. This type of presentation is similar to the presentation shown in the documentary “*Shattered Lives*” which was shown in the focus groups. The results of this study suggest that this type of road safety communication is the most effective method of stimulating attitude change in young drivers. This type of communication again pre-empted many of the cognitive defence strategies that can be employed by young drivers in response to media communications. The use of “traffic informers” in adverts and short films was thought to be highly effective. The candid honesty of the “traffic informers” meant that these presentations were perceived as being highly credible.

However, it is hypothesised that the effects on young drivers of actually viewing a real life presentation by a “traffic informer” would produce even better results. It should be noted that these presentations are typically much longer than road safety adverts. It is not known if a certain time threshold needs to be crossed for a “traffic informer” advertisement to be effective. Due to the necessity of such a presentation to solicit empathy in order to be effective, it is questionable if a 60 or even 90 second advertising slot could effectively produce this effect. For this reason the role of short, snappy television adverts is assured. However, such adverts cannot offer the same level of emotional engagement as “traffic informer” presentations. The authors recommend the widespread use of “traffic informer” presentations in secondary schools across the country. These presentations could be shown to classes by means of a television or possibly even incorporated into a live, travelling road show where real life traffic informers actually visit the school. Road safety shows could also incorporate theatrical productions which might help to engage the audience via viewer participation.

Research investigating the effectiveness of one such road show entitled “*Never Saw the Day*” revealed that the core message of the show (road crashes have severe consequences) was effectively communicated to viewers. The British road show produced attitude change in viewers that was found to last up to a year. The research also found that people who had experienced the road show were also more receptive to future road safety campaigns (Vlakveld, 2005).

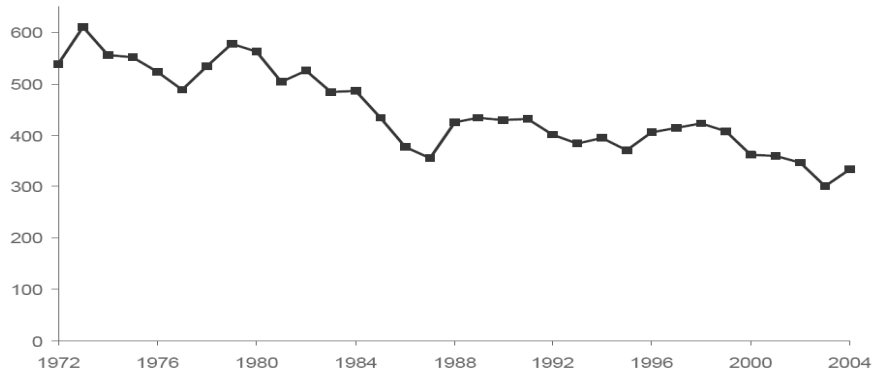
Road shows could also be used in conjunction with more traditional advertising channels to reinforce and accentuate the effects of social marketing communications. Whether the effects of a real life presentation by a “traffic informer” at a road show is more convincing than an audio visual presentation is unknown. This is an important research question that must yet be answered. More research into this area is advised. It is posited that the addition of these hybrid communication channels into the social marketing mix could provide an integrated communications package that would significantly reduce young male driver road deaths and injuries.

References

- An Garda Siochana (2005). *Garda road safety activities - Christmas 2005*. Available: <http://www.garda.ie/angarda/press/2005/p1dec05.html>, [5 Nov 2006].
- Anderson, J. W. (1978). The effectiveness of traffic safety material in influencing the driving performance of the general driving population. *Accident Analysis and Prevention*, 10, pp. 81-84.
- Bedford, D., McKeown, N., Vellinga, A. and Howell, F. (2006). *Alcohol in fatal road crashes in Ireland in 2003*. Population Health Directorate, Health Service Executive, Naas, Ireland
- Begg, D.J. and Langley, J.D. (2001). Changes in risky driving behaviour among young adults. *Journal of Safety Research*, 32, pp. 491-499.
- Benda, H.V. and Hoyos, C.G. (1983). Estimating hazards in traffic situations. *Accident Analysis and Prevention*, 15, pp. 1-9.
- Bjørnskau, T. (2000). Road traffic risk in Norway 1997/98 (Report no. 483). *Institute of Transport Economics*, Oslo, Norway.
- Cameron, M. and Harrison, W.A. (1998). Developing an effective public education strategy for road safety based on successful experience in Australasia. *Paper presented at the 9th International Conference Road Safety in Europe, Germany*.

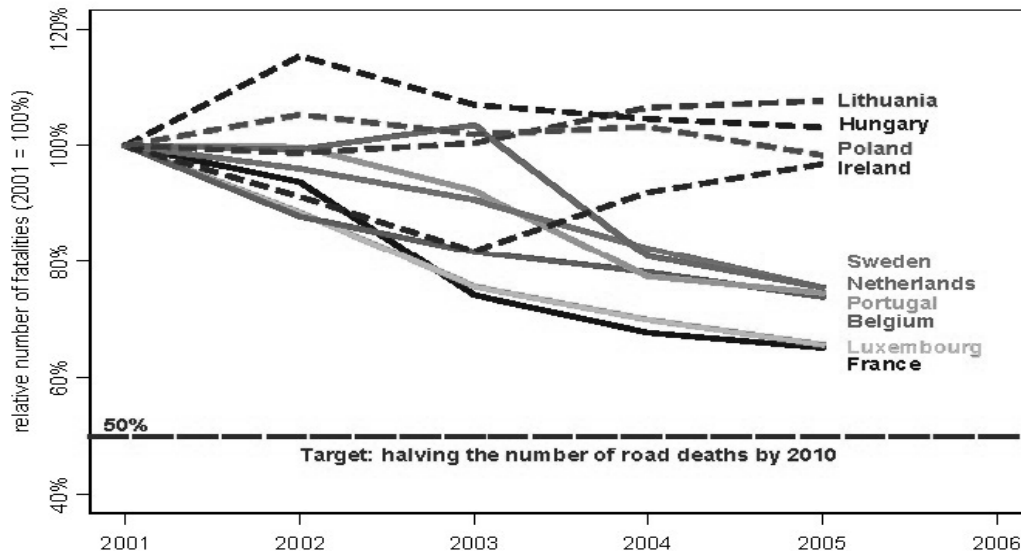
- Crowley, F. (2006). Integrated effects of Engineering, Enforcement and Education. *Proceedings of the National Roads Authority Road Safety Conference*, 7th March 2006, Dublin, Ireland.
- Dejong, W. and Atkins, C.K. (1995). A Review of National Television PSA Campaigns for Preventing Alcohol-Impaired Driving, 1987-1992, *Journal of Public Health Policy*, 16 (1), pp. 59-80.
- Delaney, A. Lough, B. Whelan, M. and Cameron, M. (2004). A review of mass media campaigns in road safety (Report No. 220) (ISBN 0 7326 1730 8). *Monash University Accident Research Centre, Melbourne, Australia*, May 2004.
- Delhomme, P. (1999). Evaluated road safety media campaigns: An overview of 265 evaluated campaigns and some meta-analysis on accidents. *Guarding Automobile Drivers through Guidance Education and Technology GADGET project*.
- Department of Health and Children (D.O.H.C.), (2004). *Strategic Task Force on Alcohol - Second Report (ISBN 0-9544914-2-4)*. Strategic Task Force on Alcohol, Dublin, Ireland.
- Donovan, R.J., Henley, N., Jalleh, G. and Slater, C. (1995). *Road Safety Advertising: An Empirical Study and Literature Review*. Report to the Federal Office of Road Safety, 9:95, Donovan Research, Perth.
- European Transport Safety Council (E.T.S.C.). (1995). Reducing injuries from alcohol impairment. *European Transport Safety Council*, Brussels.
- European Transport Safety Council (E.T.S.C.). (2006). "Promoting Seat Belt Use" (fact sheet no. 12). *European Transport Safety Council*, Brussels, April 2006. Available: http://www.etsc.be/documents/FactSheet_Seat_Belt_Use_2006.pdf,[01/02/07]
- Forsyth, E. (1992a). "Cohort Study of Learner and Novice Drivers. Part 1: Learning to Drive and Performance in the Driving Test" (TRL Report 338). *Transport Research Laboratory (T.R.L.)*, Crowthorne, Berkshire, UK.
- Forsyth, E. (1992b). "Cohort study of learner and novice drivers Part 2: Attitudes, opinions and the development of driving skills in the first 2 years (TRL Report RR 372). *Transport Research Laboratory (T.R.L.)*, Crowthorne, Berkshire, UK.
- Foss, R.D. (1989). Evaluation of a community-wide incentive program to promote safety restraint use. *Australian Journal of Public Health*, 79 (3), pp. 304-306.
- Fuller, R. (2005). Slowing drivers down: The implications of new research. *Proceedings from the National Roads Authority Road Safety conference*, 7th March 2006, Dublin, Ireland.
- Griep D.J. (1970). Propaganda and alternative countermeasures for road safety. *Accident Analysis and Prevention*, 2, pp. 127-140.
- Grosvenor, D., Toomey, T., and Wagenaar, A. (1999). "Deterrence and the adolescent drinking driver", *Journal of Safety Research*, Vol. 30, Issue 3, Autumn, pp. 187-191
- Hastings, G B. and B. Elliott (1993). "Social Marketing Practise in Traffic Safety" in *Marketing of Traffic Safety*. Paris: Organisation for Economic Cooperation and Development, pp.35-53.
- Jonah, B.A. (1986). Accident risk and risk-taking behaviour among young drivers. *Accident Analysis and Prevention*, 18, pp. 255-271.
- Jonah, B.A. (1997). Sensation seeking and risky driving: A review and synthesis of the literature. *Accident Analysis and Prevention*, 5, pp. 651-665.
- Jonah B.A., Thiessen R. and Au-Yeung, E. (2001). Sensation seeking, risky driving and behavioural adaptation. *Accident Analysis and Prevention*, 33 (5), pp. 679-684.
- Joint Transport Research Centre (J.T.R.C.). (2006). *Young Drivers: The Road to Safety (ISBN 92-821-1334-5)*. European Conference of Ministers of Transport.
- Kotler, P., and Zaltman, G. (1971). "Social marketing: An approach to planned social change," *Journal of Marketing*, 35 (July), pp.3-12.
- Laapotti, S., Keskinen, E., Hatakka, M. and Katila, A. (2001). Novice drivers accidents and violations - a failure on higher or lower hierarchical levels of driving behaviour. *Accident Analysis and Prevention*, 33, pp. 759-769.
- Mayhew, D.R., Warren, R.A., Simpson, H.M. and Haas, G.C. (1981). Young Driver Accidents: Magnitude and Characteristics of the Problem. *Traffic Injury Research Foundation of Canada*, Ottawa.

- National Roads Authority (N.R.A.). (2000). "Young Driver Accidents 2000" (RS 459). (ISBN 1 900293 65 X). *National Roads Authority*, Dublin. Available: <http://www.nra.ie/PublicationsResources/DownloadableDocumentation/RoadSafety/file,384,en.PDF>, [09/02/07].
- National Roads Authority (N.R.A.). (2004). "Road Collision Facts Ireland 2004" (RS 471) *National Roads Authority*. Dublin, November, 2005. Available: <http://www.nra.ie/PublicationsResources/DownloadableDocumentation/RoadSafety/file,1948,en.pdf>, [09/02/07].
- Road Safety Authority (R.S.A.) (2007). "Road Collision Facts 2006" (RS 2). *Road Safety Authority*, Ballina, December 2007. Available: http://www.nsc.ie/publication/publication/upload/RSA_RCF_2006_v7.pdf?PHPSESSID=67932fd7ebe81d99f7f055eed8a7f8f8 [12/02/08].
- Robertson L.S., Kelley A.B., O' Neill B., Wixom C. W., Eiswirth R.S. and Haddon Jr. W. (1972). A controlled study of the effects of television messages on safety belt use. *Insurance Institute of Highway Safety*, Washington, D.C.
- SafetyNet (2004). *Traffic Safety Basic Facts 2004 - Car Occupants*. Directorate General for Energy and Transport, Community Road Accident Database (C.A.R.E.) Available: http://www.erso.eu/safetynet/Fixed/WP1/2004/SN-TRL-1-3-BFS-Car_occupants_022005.pdf, [06/10/06].
- Shope, J.T., Waller, P.F. and Lang, S.W. (1996). Correlates of high-risk driving behaviour among high school seniors by gender. In: *40th Annual Proceedings for the Association for the Advancement of Automotive Medicine, Australia*, pp. 528-529.
- Vernick, J.S., Ogaitis, G.Li.S., MacKenzie, E.J., Baker, S.P. and Gielen, A.C. (1999). Effects of high-school driver education on motor vehicle crashes, violations, and licensure. *American Journal of Preventive Medicine*, 16, pp. 40-46.
- Vlakveld, W.P., (2005). Jonge beginnende automobilisten, hun ongevalsrisico en maatregelen om dit terug te dringen (R-2005-3). SWOV Institute for Road Safety Research, Leidschendam, The Netherlands, Available: <http://www.swov.nl/rapport/R-2005-03.pdf>, [26/06/07]
- Walsh, D., Chapman, R.E. Rudd, B.A. (1993). "Social marketing for public health", *Health Affairs*, Summer, pp. 104-19.
- Williams, A., Preusser, D., Bloomberg, R. and Lund, A. (1987). Safety belt use law enforcement in Elmira, New York: A reminder campaign. *American Journal of Public Health*, 77, pp. 1450-1452.
- Zador, P.L. (1991). Alcohol-related relative risk of fatal driver injuries in relation to driver age and sex. *Journal of Studies on Alcohol*, 52 (4), pp. 302-310.
- Zador, P., Krawchuk, S. and Voas, R. (2000). Alcohol-related relative risk of driving fatalities and driver impairment in fatal crashes in relation to driver age and gender: An update using 1996 data. *Journal of Studies on Alcohol*, 61, pp. 387-395.
- Zimmerman, R., (1997). *Social Marketing Strategies for Campus Prevention of Alcohol and Other Drug Problems*. Newton, MA: Education Development Centre.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. Lawrence Erlbaum Associates, Hillsdale, NJ: USA
- Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation seeking*. Cambridge University Press, Cambridge.
- Notes**
- Note 1. http://www.garda.ie/statistics98/rtastats_longterm.html [11/02/08]
- Note 2. Irish Police
- Note 3. Organisation for Economic Co-operation and Development.
- Note 4. Blood Alcohol Concentration
- Note 5. Public Service Announcements
- Note 6. <http://www.mafmad.com.au> [05/04/07]
- Note 7. Local radio station in Cork aimed at the younger demographic
- Note 8. This is typically the fourth year in the six year secondary cycle.



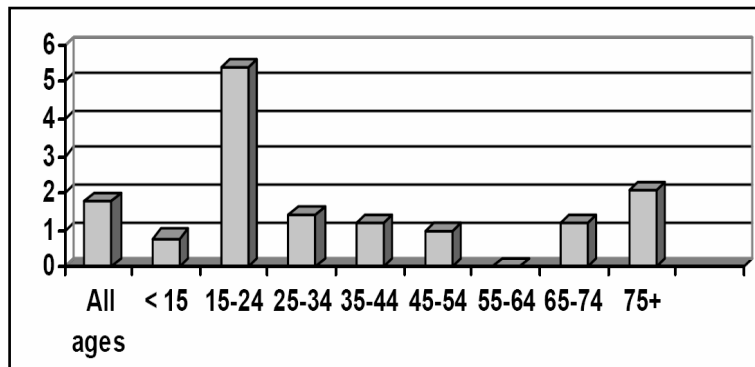
Source: National Roads Authority, 2004

Figure 1. Fatal collisions in Ireland 1972 – 2004



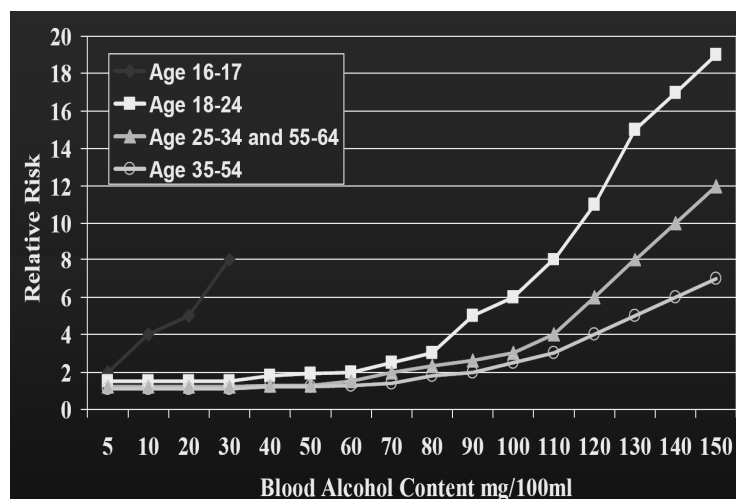
Source: European Transport Safety Council, 2006

Figure 2. Road fatality trends within the EU 2001 – 2005



Source: Bedford et al, 2006

Figure 3. Irish mortality rates (per 100,000 citizens) for passengers in 2003



Source: Crowley, 2006

Figure 4. Accident risk by blood alcohol level and driver age

	16-25	26-40	41-60	61-99	Female	Male
Belgium*	26%	34%	24%	17%	21%	79%
Denmark	22%	35%	21%	22%	21%	79%
Greece*	20%	34%	31%	16%	8%	92%
Spain	22%	36%	27%	15%	14%	86%
France	28%	29%	25%	19%	22%	78%
Ireland	27%	35%	17%	20%	24%	76%
Italy**	23%	32%	25%	20%	15%	85%
Luxembourg	13%	53%	29%	5%	16%	84%
Netherlands	34%	27%	22%	16%	19%	81%
Austria	31%	28%	23%	18%	21%	79%
Portugal	24%	37%	26%	14%	15%	85%
Finland	23%	22%	32%	22%	19%	81%
Sweden	21%	23%	29%	27%	15%	85%
UK	31%	29%	21%	19%	23%	77%
Total	26%	31%	25%	18%	18%	82%

* Data from 2001
 ** Data from 1998

Source: CARE Database / EC
 Date of query: February 2005

Source: SafetyNet, 2004

Table 1. Road fatalities in member states by gender and age in 2002