

Academic Abstracts

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Fear Appeals – Lancaster Room

Examining the Effect of Fear Patterns with Repeated Exposures

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Abstract

This study used an experimental design to test the advertising wear-out of fear-relief and fear-only patterns in fear appeal anti-speeding advertisements, using both static and dynamic measures of fear. A driver-behaviour simulation test, which had previously been shown to be a valid and reliable test of drivers' speed choice across a range of realistic driving situations, was used as the predictive dependent variable. The static measure findings of this study, that investigated consumer reactions to fear-appeal TV commercials over repeated exposures, were that emotion and attention wear-out occurred immediately for both fear patterns, while persuasiveness of each of the advertisements, in terms of reduction in speeding behaviour, were highest for the fear-relief advertisements. The dynamic measure findings were that the pattern of felt fear and relief, if any, remained constant with successive exposures, although the level of fear experienced diminished by a third (fear-relief) to a half (fear-only). Despite some loss of 'fearfulness', the fear-relief commercial continued to be effective in reducing (simulated) speeding behaviour when repetition progressed from moderate to heavy.

Keywords

Fear appeals, fear patterns, advertising wear-out, repeated exposures, continuous measurement, road safety advertising.

Introduction

A pattern of fear is the sequence of fear arousal and fear reduction, if any, that is felt by the viewing audience when exposed to a fear appeal advertisement. A previous study (Thornton, 2006) had identified two main types of fear patterns within four anti-speeding television commercials – fear-relief and fear-only. A fear-relief pattern involves arousing fear and causing the audience to experience an unpleasant feeling that is then reduced by showing the consequences of the recommended behaviour. A fear-only pattern, commonly used in road safety advertising, is created by only arousing fear and not reducing fear by providing relief components within an advertisement. This study investigates advertising wear-out of fear patterns within anti-speeding TV commercials using both static and dynamic measures of fear and compares the behavioural effectiveness of fear-only and fear-relief advertisements with moderate and heavy repetition.

Research Objectives

The research objectives of this study were: first, to determine if the two patterns (fear-only and fear-relief) remained effective over successive exposures or if they wore out, in regard to both attention wear-out and emotion (fear, shock and relief) wear-out; and second, to measure the behavioural effects of 'moderate' and 'heavy' repetition of fear-appeal advertisements.

Justification for the Research

It is important to consider the effect of repeated exposures on the two types of fear patterns as both theoretically and practically it is more useful to know the effect of the patterns after several exposures, given that most advertisers, in any domain (commercial or social marketing) aim for at least three exposures (to inform, persuade, remind) of a television advertisement to a target audience, and often achieve many more exposures. These 'many more' exposures may cause a fear-appeal TV commercial to 'wear-out', losing its persuasive effect. Given the budget constraints, particularly of government departments and road safety authorities, television advertisements in road safety campaigns have to remain effective during multiple viewings as it is too expensive and inefficient to produce advertisements that will have an initial effect but then have to be replaced regularly due to loss of attention or impact. 'Shock' advertising has been a

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popular technique used by Australian road safety authorities in recent years, and it is believed that shock advertisements lose their impact after just a few exposures because their 'shock value' diminishes quickly (Moore and Harris, 1996; Tedmanson, 2001). This loss of 'shock value' was referred to by Hughes (1992, p.61) as wear-out, that is, 'a reduction in subjects' favourable responses after repeated exposures to a message. A favourable response from the social marketer's perspective, in relation to fear appeal advertisements, would be that the target audience does feel fear, and as a result of this feeling, does intend to adopt the promoted behaviour. Advertising wear-out is very important to commercial companies and there have been numerous studies (Henderson-Blair and Rabuck, 1998; Pechmann and Stewart, 1988) that have investigated wear-out of advertising for general products and services. The measures used for wear-out in these previous studies included sales, purchase intent, awareness, recall, persuasion, reminder potential and competitive imagery (Scott and Solomon, 1998). When studying advertising wear-out in social marketing, different measures of wear-out apply, such as expected changes in social behaviour rather than buying behaviour. This study examines the issue of advertising wear-out in the area of anti-speeding advertising as the wear-out of fear appeal anti-speeding advertisements has received minimal attention by previous researchers.

There are several causes of wear-out. It can occur because of diminished attention, counter-learning (interference) from other advertisements, or loss of acceptance due to counter-arguing with the message (over-exposure) (Rossiter and Percy, 1997). Emotion wear-out, for example diminished fear due to habituation, also occurs and is particularly important for social marketing advertisements as the issues or causes being promoted largely rely on emotions to motivate the target audience to act in a socially desirable way. Action measures of wear-out can be used (Stewart, 1999); for example, brand choice after advertisement exposure or in the instance of anti-speeding advertisements, speed choice.

Both Ephron (1995) and Jones (1997) raise several disadvantages of media scheduling following the effective frequency theory. This theory assumes the traditional perspective on advertising scheduling by purporting that advertising has to be repetitive for consumers to learn and remember advertising messages (Ephron 1995). It must be noted, however, that their research is in regard to advertising for commercial products and services, with no mention of the implications of, or generalisability to, social marketing messages. The new model that both authors support is based on continuous advertising that involves an advertisement being exposed to consumers only once just prior to their weekly purchase. The new model represents a shift from a focus on frequency to a focus on reach. The research suggests that one exposure to a brand message has a greater effect on brand share than additional exposures (Ephron, 1995, p.18). However, this rule holds only for well-known and established brands in a market. Ephron also stated that learning theory is largely irrelevant because brands are competing for purchases, not teaching messages (Ephron, 1995, p.20). These opinions demonstrate that both journal articles focus on commercial brands with data for each study being collected from such sources as AC Nielsen scanning data. Research is required that explores effective frequency in social marketing areas, where learning theory is still relevant and where there are fewer competing brands (for example speeding behaviour versus driving within the speed limit).

There is no research regarding how viewers react during repeated exposures to fear appeals. Studies of repeated exposures to investigate 'wear-out' have typically used positive-appeal commercials for products (e.g., Belch, 1982; Machleit and Wilson, 1988; Silk and Vavra, 1974). Positive-appeal commercials have also been used in all previous studies using continuous 'moment-to-moment' recording of reaction patterns to TV commercials (Aaker, Stayman, and Hagerty, 1986; Baumgartner, Sujan, and Padgett, 1997), which is the pattern-recording method employed in this study.

The two types of fear patterns, given repeated exposures, may result in different effects. It is argued that a fear-only advertisement is likely to suppress the bad behaviour only temporarily. Therefore, there is a need for frequent reminders, which is the reason why road safety advertisers often select a heavy media schedule for their hard-hitting 'shock' (fear-only) campaigns. These fear-only advertisements (especially the 'shock' subtype advertisement) may lose their 'shock value' with repeated viewings however, as mentioned previously, this is an uninvestigated question.

There is a distinction between emotion wear-out of feelings such as fear, shock and tension, and behavioural wear-out, that is measured by using a driving-simulation task. It is highly likely that emotion wear-out will occur quite quickly with successive exposures of a fear-only advertisement. That is, once viewers have initially seen a fear-only advertisement and have experienced feeling 'shocked' by the graphic images, it is likely that they will be significantly less shocked on repeated viewings of the advertisement. If emotion wear-out does occur quite quickly this would be of concern to road safety advertisers who believe in the principles of positive punishment, as this theory would require the audience to feel as fearful as possible to have the greatest behavioural effect. Correspondingly, fear-relief pattern advertisements could be considered blander than the fear-only ('shock') advertisements, and thus may lose viewers' attention more quickly, resulting in fewer (or weaker) negative reinforcement 'trials'. This behavioural effect of repetition of both fear-only and fear-relief advertisements, that is the more important outcome in regard to meeting the objectives of road safety advertisements, is unknown and requires investigation.

Method for Obtaining Static Measures of Advertising Wear-out

An experimental design was the method used to address the research objectives in this study. This involved an advertising experiment that tested the effectiveness of two types of underlying 'patterns' of fear arousal

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– fear-relief and fear-only – within anti-speeding advertisements. Four anti-speeding advertisements (described in Table 1) that had been previously fear patterned in an earlier study were also used as the stimulus materials for this current study.

Table 1: Description of the experimental advertisements

Fear-relief advertisements	Fear-only advertisements
Advertisement 1 – ‘Pizza’ showed a pedestrian being hit by a speeding car, a surgeon then commenting on how speed caused the fatal injuries, followed by a second scenario showing in slow motion the pedestrian’s body being hit by the car (fear component) and then a final recommendation by the surgeon to reduce speed with a different scenario showing a person driving below the speed limit who was able to stop their car and not hit the pedestrian (relief component).	Advertisement 3 – ‘Trike’ showed visuals of children riding tricycles on a driveway with audio of a catchy and upbeat jingle; a child then riding his trike onto the road and being hit by a speeding motorist with audio of screeching brakes followed by a dramatised heartbeat sound (fear component)
Advertisement 2 – ‘Pram’ showed three different speeding scenarios with a car avoiding, frightening, then hitting a pedestrian (fear component), with information at the end of the advertisement about stopping distances at different speeds, and a recommendation to drive more slowly in local streets (relief component).	Advertisement 4 – ‘4WD’ showed a mother driving her children to school in a 4WD speeding along local streets; and on her way to the school she ran over a child crossing the road and killed him (fear component).

Social marketers find it difficult to define advertisement effectiveness measures because of a large amount of uncontrollable variables therefore an advertisement experiment is extremely useful for predicting the effectiveness of an advertisement. The major advantage of using an experimental design to measure the effectiveness of various advertisements is the greater control of extraneous factors than if testing the advertisements in their natural setting of in-home viewing. For example, Cacioppo and Gardner (1999, p.89) stated that laboratory studies can afford impressive control over relevant variables, an important feature when dissecting phenomena as complex and multiply determined as the emotions. The effects of the advertisements are more likely to be isolated when other variables are controlled, such as the age of the viewing audience, number of advertisement exposures, similarity in time of measurement, and avoidance of competing advertisements. The major drawback of this experimental design is an artificial setting for viewing advertisements.

A post-only monadic experimental design was used for the static wear-out study to avoid sensitising the audience to the purpose of the study. A total of 284 participants, from a first-year marketing class, divided into four experimental groups, took part in the experiment. For three consecutive weeks each group viewed one advertisement (the same advertisement) per week and then completed a questionnaire pertaining to the advertisement after each viewing session. The advertisements were shown in tutorial classes. The assignment of the four advertisements to various tutorial classes was based on convenience, given the relative randomness of how students were allocated to tutorials in the first instance (that is, by a computer programme that allocated tutorial places for students at the beginning of session). No quota sampling was undertaken, which resulted in an uneven gender balance in the experimental groups. There was also an attrition rate over the three weeks of the experiment, with many students not attending all three sequential weeks of tutorials. Hence, while there was an initial group of 284 students in week one, the number of usable responses dropped to 87 when analysing only those participants who were present in all three weeks of the study. The drop-out participants from the study, who were students who missed one or two tutorials within the three-week testing period, had no special characteristics or differences to those who remained in the study. This study was given ethics approval by the University’s Human Research Ethics Committee. Participants were offered a \$AUD20 bookstore voucher if they completed the three week task. Every participant was also thanked with a \$1 charity chocolate.

A separate group of 42 participants was used for the control group that undertook the Video Speed Test. The Video Speed Test (VST) developed by British researchers Horswill and McKenna (1999), involved participants watching a video of seven short scenes of a person driving a vehicle in real driving situations. After each scene, participants indicated how much faster or slower, if at all, they would drive in that situation. That is, the test measured the person’s tendency to speed up or slow down in each of the varied, driver-as-camera, videotaped driving scenarios. The VST has been shown to correlate highly with self-reported habitual speeding and to be statistically significantly related to drivers’ past involvement in speed-related accidents (Horswill and McKenna, 1999). The participants were also university marketing students aged 18-25 years old and therefore were of a similar demographic composition to those participants in the experimental groups. Bloom and Novelli (1981) pointed to the need for a control group for studies. The control group was not shown an advertisement prior to undertaking the VST, as other advertisements may have included arousing elements that would influence speed choice.

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Results: Static Measures of Fear Patterns with Repeated Exposures

Table 2 provides a summary of the various demographic and driving characteristics of the participants of the study. Chi-square and analysis of variance (ANOVA) were undertaken that determined that each of the experimental groups were not statistically significantly different in terms of their average age, years of driving experience, regularity of driving, and speeding history and behaviour. The advertisements did not differ in terms of the advertisement execution variables of realism, believability, ability to convince, and relatedness to the target audience. However, the groups did differ by gender, with groups three and four containing a significantly greater proportion of females. A split sample by gender was therefore conducted in the ANOVAs.

Tables 3 and 4 show the wear-out of fear, shock and relief and attention for participants who participated in all three weeks of the study. Repeated measures analysis of variance was used to test for wear-out on the fear, shock, relief and attention measures of wear-out. Fear, shock, and relief were measured on a 4-point answer scale, whereby participants were asked to rate how fearful, shocked or relieved they felt when viewing the advertisement, with 0 equal to 'not at all', 1 equal to 'slightly', 2 equal to 'quite' and 3 equal to 'extremely'.

Table 2: Test for equivalence of participant groups (static measures)

	Ad 1 - Pizza	Ad 2 - Pram	Ad 3 - Trike	Ad 4 - 4WD	F-value	Chi-Square	Sig
Participants (Wk 1)	96	54	55	79			
Participants (all weeks)	27	15	23	22			
Average age	20	19	20	20	2.10		0.101
Age range	17-30	17-27	17-26	17-27			
Avg yrs of driving	3.5	3.0	3.3	3.1	0.87		0.460
Gender (Male per cent)	52 per cent	37 per cent	57 per cent	38 per cent		7.91	0.050
Speeding fine	27 per cent	21 per cent	36 per cent	22 per cent		3.37	0.338
Regularity of driving	56 per cent	54 per cent	69 per cent	69 per cent		9.48	0.149
Likelihood of speeding	2.30	2.45	2.33	2.50	2.02		0.112
Realistic	2.54	2.55	2.45	2.57	0.54		0.656
Believable	2.60	2.51	2.57	2.57	0.35		0.793
Convincing	2.65	2.60	2.74	2.68	0.72		0.539
Relate to driver	.51	.36	.48	.49	0.11		0.995
Relate to situation	.68	.49	.52	.28	0.89		0.465
Seen the advertisement before	5.0 per cent	4.0 per cent	3.8 per cent	3.2 per cent		Cell sizes are < 5	

In the first week, Advertisement 4 (4WD) had the highest level of fear. The higher rate of wear-out for the fear-only advertisements seemed to have been caused by a higher initial (Week 1) fear rating. It should be noted that after three weeks of exposure Advertisements 1, 2 (fear-relief) and 4 (fear-only) had the same rating of fear. All of the advertisements decreased in fear by the third weekly exposure, but Advertisement 3 (Trike) had the highest wear-out rate of fear (53 per cent). Advertisement 3 (Trike) had the highest recording of shock in the first week of the study and had the highest wear-out, but in this instance it was for the emotion of 'shock'. All the advertisements had higher wear-out rates (percentages) for the emotion of shock than for the emotion of fear. Each of the advertisements provided very little relief to the participants, however, as expected, the fear-relief pattern advertisements, Advertisements 1 and 2, had higher ratings of relief, than the fear-only advertisements, Advertisements 3 and 4. The relief scores for Advertisements 2 (fear-relief) and 4 (fear-only) actually increased after the third exposure. Participants' relief scores therefore differed across the types of advertisements. Open-ended responses could perhaps better explain this occurrence, thus in future studies reactions to advertisements could also be obtained using both closed-ended and open-ended responses.

Table 3: Emotion wear-out

	Ad 1 - Pizza (n=27)	Ad 2 - Pram (n=15)	Ad 3 - Trike (n=23)	Ad 4 - 4WD (n=22)
Fear				
Week 1	1.22	1.40	1.48	1.68
Week 2	1.37	1.07	0.96	1.32
Week 3	1.00	1.00	0.70	1.00
Wear-out - Week 1 to 3	18 per cent	29 per cent	53 per cent	40 per cent
F statistic (repeated measures)	4.51	4.85	8.34	6.19
Sig	.021	.027	.002	.008
Shock				
Week 1	2.39	1.93	2.50	2.13
Week 2	1.61	1.47	1.38	1.65
Week 3	1.21	1.27	0.83	1.04
Wear-out - Week 1 to 3	49 per cent	34 per cent	67 per cent	51 per cent
F statistic (repeated measures)	16.76	3.29	26.00	11.98
Sig	.000	ns	.000	.000
Relief				
Week 1	0.62	0.40	0.32	0.24
Week 2	0.50	0.53	0.27	0.19
Week 3	0.42	0.80	0.14	0.33
Wear-out - Week 1 to 3	32 per cent	-100 per cent	56 per cent	-38 per cent
F statistic (repeated measures)	0.70	1.41	0.38	0.39
Sig	ns	ns	ns	ns

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Attention was measured on a 5-point scale, with 5 indicating that the participant 'paid absolute attention to the advertisement', 4 indicating that the participant 'watched most of the advertisement', 3 indicating that the participant 'only watched half the advertisement', 2 indicating that the participant 'hardly paid any attention to the advertisement' and 1 indicating that the participant 'ignored the advertisement entirely' due primarily to the artificial exposure situation. Repeated-measures ANOVA found that attention wear-out occurred for Advertisements 1, 3 and 4. There was, however, minimal attention wear-out for each advertisement given the viewing environment was a classroom setting, therefore greater attention is expected than in an in-home viewing situation. Despite participants being shown an advertisement each week, meaning forced exposure to the advertisement, this did not mean forced attention, as there was still some diminishing effect on attention over the three weeks of the experiment, demonstrating that absolute attention is not paid to advertisements, even in experimental settings.

Table 4: Attention wear-out

	Ad 1 – Pizza (n=30)	Ad 2 – Pram (n=17)	Ad 3 – Trike (n=26)	Ad 4 – 4WD (n=25)
Week 1	4.87	4.76	4.78	4.80
Week 2	4.63	4.58	4.62	4.32
Week 3	4.23	4.65	4.04	4.00
Wear-out – Week 1 to 3	13 per cent	2 per cent	15 per cent	17 per cent
F statistic (repeated measures)	4.72	.380	3.70	6.12
Sig	.017	ns	.040	.007

The VST measure of speed choice (after the third exposure) showed significant differences between advertisements ($F = 3.47$, $p = .01$). A post-hoc test (Least Significant Difference) was undertaken, given the significant finding of ANOVA, and revealed that the mean score for Advertisement 3 (Trike) was significantly higher than the mean scores for both Advertisements 1 (Pizza) and 2 (Pram). The VST mean scores are reported by total and gender due to the larger proportion of females in groups 2 and 4 as shown in Table 5. The control group's average score was +6.98km/hr (male = 8.03, female = 5.79). Advertisement 3 (mean = +8.7km/hr; $m = 11.0$, $f = 6.3$) resulted in the highest VST speed, despite receiving high scores for evoking fear and shock. Advertisement 3 was significantly different to Advertisements 1 (+4.2km/hr; $m = 6.2$, $f = 2.1$) and Advertisement 2 (+3.3m/hr; $m = 7.9$, $f = 2.5$), but not to Advertisement 4 (+5.8km/hr; $m = 7.5$, $f = 4.9$). Advertisement 2 (Pram) and Advertisement 1 (Pizza) were more persuasive advertisements in terms of reduced speed, particularly for females.

Table 5: Behavioural measure of advertisement effectiveness – VST dependent variable (Participants in all three weeks of the study – static rating condition)

Advertisement	Total avg VST kms/hr	Male avg VST kms/hr	Female avg VST kms/hr
Advertisement 1 – Pizza	4.18 (n = 30)	6.22 (n = 15)	2.13 (n = 15)
Advertisement 2 – Pram	3.30 (n = 16)	7.92 (n = 2)	2.52 (n = 14)
Advertisement 3 – Trike	8.72 (n = 24)	10.95 (n = 14)	6.33 (n = 10)
Advertisement 4 – 4WD	5.76 (n = 19)	7.50 (n = 6)	4.87 (n = 13)
Control	6.98 (n = 51)	8.03 (n = 27)	5.79 (n = 24)

Method for Obtaining Dynamic Measures of Advertising Wear-out

This study also examined advertising wear-out using the fear-relief continuous measurement dial to produce dynamic measures (CRM) of fear (tension) wear-out. The dial and programme were designed to develop a more valid measure of fear arousal and reduction (relief) that would capture viewers' responses when viewing the entire advertisement. The data collection procedure for obtaining the dynamic measures of the advertisements was more time-intensive, due to individual recording versus the group recording that was undertaken for the static measures. Therefore, only one fear-relief advertisement, Advertisement 1 – 'Pizza', and one fear-only advertisement, Advertisement 3 – 'Trike', were used in the dynamic measures test of wear-out.

Participants were recruited from first-year undergraduate marketing classes. A pre-questionnaire was given one week prior to the commencement of the advertisement testing that contained the West, French, Kemp and Elander (1993) scale of speed choice. This was used to allocate even numbers of speeders and non-speeders to each advertisement group. Non-drivers were screened out. Participants were offered a \$20 university bookstore voucher as an incentive. Payment of the incentive was contingent upon participation for all three weeks of the study. Initially, 53 participants took part during the first week of the experiment, with 41 returning for the second week, and 37 for the third week. The data for the following analysis were taken from 37 participants' recordings for all three weeks of the experiment. Subsequent comparison of the dropouts' patterns with those of the final sample showed no discernible differences in reactions to the advertisements. Participants were randomly allocated to the two experimental groups to watch one of the two anti-speeding advertisements each week, for three consecutive weeks. Participants were shown one anti-speeding commercial only, rather than seeing the advertisement within a group of general commercials.

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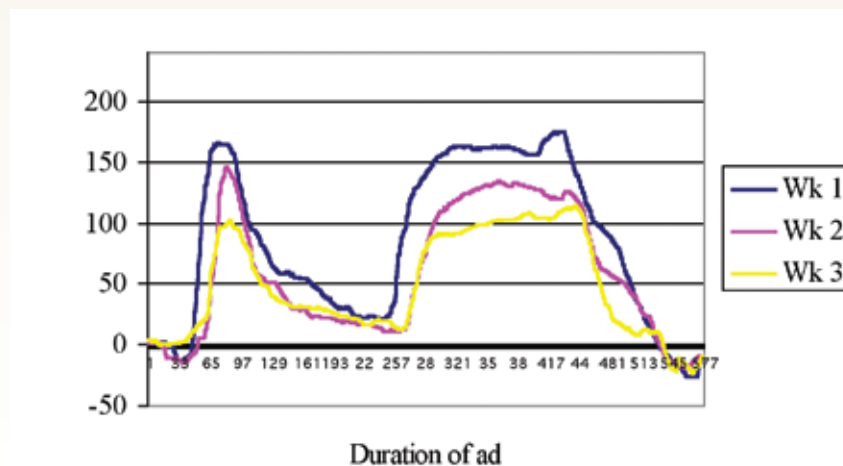
Showing other advertisements may have aroused the participants, thereby increasing their speed choice (for example, an exciting advertisement for Coca-Cola may have aroused the viewer and result in higher speed scores). Also, it was necessary to keep the experimental design of the dynamic measurement component of the study relatively consistent with static measurement study to allow for comparative analysis.

Participants were not told of the driving test to come, but were told they would be watching commercials, a task that would take 5 minutes to complete each week, for three consecutive weeks. All participants were tested individually. A lounge-room (in-home) viewing situation was simulated by conducting the experiment in a comfortable office with a sofa and coffee table, with the participant sitting approximately 2 metres from the television set. Each week, for three consecutive weeks, the participant would undertake the CRM-dial task while watching their allocated test advertisement. Immediately after the test advertisement exposure in the third week, each participant underwent the VST speed-choice test (Horswill and McKenna, 1999).

Results: Dynamic Rating of Fear Patterns with Repeated Exposures

Group mean patterns of felt fear and relief experienced are shown for the 'Pizza' (fear-relief) commercial in Figure 1 and for the 'Trike' (fear-only) commercial in Figure 2. As expected, the 'Pizza' advertisement response conformed to the double fear-relief pattern, with a first peak when the pedestrian was hit by the car and a second when the accident was re-enacted in slow motion, each followed by fear reduction, that is, relief, during the recommendations by the surgeon to drive slower. The basic reaction pattern to 'Pizza' across repeated exposures, three in this experiment, one week apart, did not change. This finding confirmed the result of eye-tracking research with print advertisements on successive viewings, where the 'scan-path' remained consistent each time the reader saw the advertisement (Pieters, Rosbergen, and Wedel, 1999). There was some diminution of fear on each successive viewing of the 'Pizza' advertisement. By the third exposure, the peak fear response reduced to about two-thirds of its initial exposure level for 'Pizza'.

Figure 1: CRM-dial ratings of Advertisement 1 – 'Pizza' (fear-relief) with repeated exposures



The 'Trike' advertisement response conformed to a slow build-up of fear that peaked suddenly (shock) when the youngster was hit by the car. However, there was greater diminution of fear on each successive viewing of the 'Trike' advertisement. By the third exposure, the peak fear response reduced to about half of its initial-exposure level for 'Trike', that had a slightly higher initial exposure peak than 'Pizza', as would be expected for a 'shock' commercial. There was a further intriguing result in the pattern for 'Trike'; by the third exposure, there was a clear anticipatory fear reaction that occurred before the youngster was hit, because the viewer was now aware that a shock was coming. Furthermore, the 'Trike' advertisement, with each successive exposure started to morph into a fear-relief advertisement.

The VST mean scores are again reported by total and gender due to the unequal representation of males and females in each advertisement group as shown in Table 6. In regard to the total sample, both test advertisements, Advertisement 1 – 'Pizza' (mean = +2.92km/hr; $m = 4.61$, $f = 2.00$) and Advertisement 3 – 'Trike' (mean = +3.79km/hr; $m = 6.17$, $f = 2.47$), resulted in significantly lower VST speed-scores ($F = 5.48$, $p = .006$) to the control group (mean = +6.98km/hr; $m = 8.03$, $f = 5.79$). The difference between the test advertisements was not significant ($F = .16$, $p = .696$). However, analysing the results by gender showed that the significant differences found between the test advertisements and the control group were mainly driven by the female speed-choice scores ($F = 2.70$, $p = .079$) in comparison to male speed-choice scores ($F = 2.01$, $p = .148$).

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Figure 2: CRM-dial ratings of Advertisement 3 –‘Trike’ (fear-only) with repeated exposures

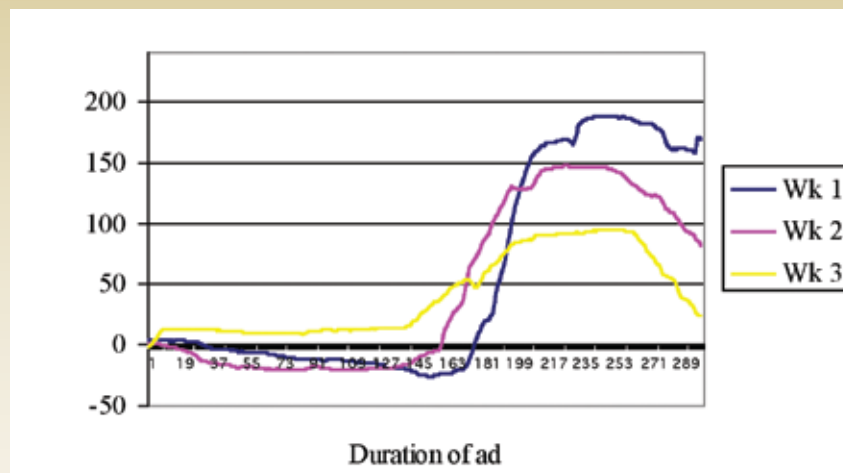


Table 6: Behavioural measure of advertisement effectiveness – Dependent variable of VST (dynamic rating condition)

Advertisement	Total avg VST km/hr	Male avg VST km/hr	Female avg VST km/hr
Advertisement 1 – ‘Pizza’	2.92 (n = 19)	4.61 (n = 8)	2.00 (n = 11)
Advertisement 3 – ‘Trike’	3.79 (n = 18)	6.17 (n = 6)	2.47 (n = 12)
Control group	6.98 (n = 51)	8.03 (n = 27)	5.79 (n = 24)

Advertising Wear-out: Comparison of Moderate and Heavy Exposures

The separate data collection processes (for the static and dynamic measures of advertising wear-out) within this study allowed for the examination of what happens to fear appeals with heavy repetition, and specifically how two types of fear appeals, classic fear-relief and the newer ‘shock’ approach (fear-only), continue to influence driving-speed reduction after many exposures. In part two of this study, participants watched the fear-appeal commercials three times while also making moment-to-moment (MTM) dial ratings of fear and relief experienced during the commercial. This forced-exposure viewing situation could be equivalent to ‘heavy’ repetition in natural viewing, similar to receiving at least nine in-home exposures. In the static measures component of this advertising wear-out study, these commercials were viewed three times without CRM ratings, that is estimated to be the equivalent of about six in-home exposures (Rossiter and Percy, 1997). In both experiments, the VST simulated driving test was administered after the final exposure, so comparisons can be made in regard to the behavioural effects of each advertisement after ‘moderate’ repetition (static measures condition) and ‘heavy’ repetition (dynamic measures condition).

The VST is known to differ in effect by gender (male vs. female drivers, with male drivers tending to speed more than females in all situations, on average), therefore the results are reported for the total student sample, and by gender in Table 7. The entries in the table are the mean changes in driving speed from the speed selected by the separate control group which undertook the VST without seeing any commercial beforehand: a plus sign indicates driving faster than the control group’s speed and a minus sign indicates speed-reduction that is, driving slower.

Table 7: VST scores (change in speed in km/hr) for moderate and heavy repetition

	Total sample	Males	Females
<i>Fear-relief Advertisement (‘Pizza’)</i>			
Moderate repetition	-1.8 (n = 62)	-2.2 (n = 34)	-1.9 (n = 28)
Heavy repetition	-3.0 (n = 19)	-3.8 (n = 8)	-2.4 (n = 11)
<i>Fear-only Advertisement (‘Trike’)</i>			
Moderate repetition	+2.1 (n = 35)	+3.8 (n = 21)	-0.5 (n = 14)
Heavy repetition	-2.1 (n = 18)	-0.6 (n = 6)	-2.8 (n = 12)

‘Pizza’ (fear-relief) was the more effective commercial overall in the static measures experiment (-2.2 km/hr speed reduction for the total sample) and it remained the more effective commercial under heavy repetition in this experiment. The effectiveness appeared to increase slightly (-3.1 km/hr for the total sample) although the smaller sample size in the dynamic measures condition of the experiment necessitates caution in interpreting this result.

‘Trike’ (fear-only), under moderate repetition, caused young males (and because women were neutrally affected, the total sample) to increase their speed. However, under heavy repetition, in the dynamic measures condition of the experiment, the fear-only approach seemed to wear in, in that its effect on young males

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became neutral (-0.6 km/hr) and it then began to work with young female drivers (-2.8 km/hr). It appears that fear-only advertisements may work better after multiple viewings. Overall, however, after heavy repetition, the fear-only appeal, 'Trike', commercial was still less effective than the classic fear-relief appeal, 'Pizza', commercial.

This study investigated consumer reactions to fear-appeal TV commercials over repeated exposures. It was found that the pattern of felt fear and relief for the 'Pizza' advertisement remained constant with successive exposures, although the level of fear experienced did diminish by a third. The level of fear experienced because of the 'Trike' advertisement (fear-only) diminished to a half with the pattern of fear morphing into a fear-relief pattern.

Despite some loss of 'fearfulness', the fear-relief commercial continued to be effective in reducing (simulated) speeding behaviour when repetition progressed from moderate to heavy. Despite loss of 'shock value', the late shock (fear-only) commercial seemed to become more effective with heavy repetition, perhaps due to the development of an 'anticipatory shock' reaction with repeated viewing and the tendency for viewers to feel greater relief at the end of the advertisement by the third exposure. Overall, however, the fear-relief approach was found to be more effective in reducing young drivers' speed.

Managerial Implications

The findings suggest that researchers and practitioners need to focus on the pattern of fear, and not just on the level of fear, within road safety fear appeals advertisements. Asking road safety practitioners to classify their advertisements into the two broad categories of fear-only or fear-relief patterns would be a starting point in educating practitioners to start thinking differently about how they construct road safety advertisements. Additionally the findings of the repeated exposures experiments undertaken could aid practitioners in deciding on the life cycle of their advertisements. The studies indicated that shock-appeal road safety advertisements, despite losing their shock value quite quickly, had favourable behavioural effects with increased exposures. This suggests that there is less need to design new advertisements, thus potentially saving significant amounts of money, particularly given the funding spent on new creative executions.

Limitations and Directions for Future Research

A student sample was used for this study. Such a sample is appropriate when internal validity is the main consideration as opposed to external validity (Lynch, 1999). Generalisations about different target audiences and the general population cannot be made, however, given the results an extension of the study to other groups within the population would help address external validity. A controlled experiment allows for the effects of an individual advertisement to be measured rather than trying to measure wear-out in the context of advertising campaigns and other real-life influences. An important qualification for this study was the forced-exposure design. 'On-air', these TV commercials may begin to lose attention substantially after half a dozen or so viewings (although the results of the static measures condition of the experiment, using the equivalent of six viewings, suggested that consumers still reported 'watching most' of the commercial). After nine or more on-air viewings that were artificially simulated in this experiment, loss of attention may cause the advertisements to also lose their influence on drivers' speed reduction. The use of an experiment can be criticised for its superficial setting; for example, in this study, subjects paid absolute attention to the advertisement whereas in the real-life situation of watching TV at home, they may not have paid attention to the advertisement to the same extent. It is suggested that three experimental advertising exposures for the dynamic rating component of this study would be equivalent to approximately nine exposures in-home viewing situations (Rossiter and Percy, 1997), with the results of this study showing that even with forced exposure to the advertisements there was a decline in the attention paid to the advertisements over the three weeks in the static measures component of this study. Most road safety advertisements are aired in short bursts, for example, just before a holiday period, thus making nine exposures realistic.

Conclusion

The major research objective of this study was to analyse how viewers reacted to successive exposures of different fear pattern TV advertisements, using both static and dynamic measures of advertising wear-out. Emotion and attention wear-out occurred immediately for all fear patterns, using static measures of fear and relief. It was shown that fear-only pattern advertisements had higher rates of wear-out than fear-relief patterns. Additionally, fear-relief advertisements were more effective, using a behavioural dependent variable of speed-choice, the VST. The dynamic measures condition of the study showed that the fear-only 'shock' advertisement began to 'wear-in' and became more effective with repetition but fear-relief continued to be the most effective type of commercial for deterring speeding among young drivers.

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REFUTING FEAR IN HEURISTICS AND IN RECYCLING PROMOTION: TOWARDS A SOCIAL MARKETING BASED ON HOPE

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Introduction

This paper deals with emotions in order to demonstrate that recycling behaviour is associated more with positive emotions than with cognitions. The resulting model displays a marked contrast to the classic cognitive paradigm in the sense that this perspective highlights the idea that consumers act on the basis of their affective reactions, with cognitive factors playing a minor role. In addition, it shows within the hedonic process there are alternative routes to achieve both recycling involvement and behaviour depending on both the emotional and cognitive characteristics of individuals.

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