

Barrie Gunter, Tala Tohala and Adrian Furnham

# Television Violence and Memory for TV Advertisements

## Abstract

*This study attempted to investigate further recent research showing that violent programming interferes with audience memory for embedded advertisement content. In an extension of earlier work, the impact of the surrounding program was examined in relation to memory for advertising that itself contained violence as well as for non-violent advertising. Participants therefore saw either a violent or a non-violent advert embedded in either violent or non-violent film clips that were similar on other dimensions that might influence memory, such as arousal and involvement. After viewing the clip, participants evaluated the advertisement and the film clip and completed several recall and recognition tests for the commercial content. The violent advert was recalled better than the non-violent advert for the same brand, with the latter suffering most especially when presented in a violent program environment. Males exhibited better overall recall of advertisements than females, though there was no significant gender by advert-type interaction. Viewers' subjective evaluations of both the surrounding program and the advertisement they watched were positively correlated with advertisement recall. The results are discussed in relation to interference and construct accessibility hypotheses.*

## Introduction

In a recent study by Bushman (1998), viewers' memory for television advertisements was found to be impaired when the commercial messages were embedded in violent, surrounding film content, as compared with a non-violent film environment. This effect was explained in terms of interference with cognitive processing of advertising messages that derived from hostility-related ideas invoked by anger-provoking violent programming. Under such circumstances, cognitive effort becomes deflected from processing the advertising by the presence of these hostile thoughts. This paper presents a replication and extension of Bushman's initial experiment. Bushman tested the impact of a violent versus non-violent program environment on audience memory for a non-violent advertisement. The current study also examines the effects of the performance of an advertisement that itself contained violence when placed in these two types of program environment.

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Research evidence has accumulated over many years to show that the effectiveness of television advertising, as measured in particular by audience memory for commercial message content, is affected by the surrounding program environment (Bryant & Comisky, 1978; Bello, Pitts & Etzel, 1983; Schumann, 1986; Norris & Colman, 1992, 1993). Recent research has shown that a program environment characterized by violence can significantly impede viewers' memory for embedded advertising content (Bushman, 1998; Prasad & Smith, 1994). This finding is important given the prevalence of violence in mainstream television programs (National Television Violence Study, 1998; Gunter & Harrison, 1998). It is also significant in the context of econometric research which shows that while some advertisers appear to eschew placement of their commercial messages in programs known in advance to be violent, other advertisers exhibit no such concerns (Hamilton, 1998). Research presented in this paper extends earlier studies on the effects of a violent versus non-violent program environment on audience memory for television advertising, by investigating whether certain types of advertising might actually benefit from a violent environment.

The influence of adjacent programming has been hypothesized to stem from a number of psychological reactions that in some way inhibit information processing from advertising messages. Program content can affect viewers' mood states (Axelrod, 1963; Goldberg & Gorn, 1987; Kamins, Marks & Skinner, 1991) or excite them in a way that interferes with effective processing of the informational content of the advertisements (Singh, Churchill & Hitchon, 1987). A program can also involve viewers so powerfully that they are unable to re-direct their attention or cognitive effort to adjacent advertising sufficiently to facilitate information encoding or storage from commercial messages (Bryant & Comisky, 1978; Park & McLung, 1986; Thorson & Reeves, 1986; Thorson, Reeves & Schleuder, 1985; Schumann & Thorson, 1990).

Program environment has been found to have both positive and negative effects on viewers' memory for televised advertising. Some results have indicated that program context can facilitate advertising recall (Lloyd & Clancy, 1991; Johnson, 1992), while others have indicated a negative effect (Bryant & Comisky, 1978; Norris & Colman, 1992; Park & McLung, 1986; Thorson & Reeves, 1986; Gunter, Furnham & Beeson, 1997). Inconsistencies in the ways key variables such as attention, memory and exposure to stimulus materials have been operationalised have been invoked to account for some of these differences in results (Norris & Colman, 1993, 1994). In addition, involvement may interact with the nature of surrounding program content to affect advertising recall in different ways. Thus, whether a surrounding program environment has facilitative or inhibitory effects upon cognitive processing of embedded advertising material can also depend on the nature of differences or similarities between programs and advertisements, with 'psychological involvement' in the program magnifying these effects (Furnham, Gunter & Walsh, 1998).

Bushman (1998) reported that viewers' memory for television advertisements was impaired by violent, adjacent movie content, as compared with a non-violent program environment. This effect has also been observed to occur elsewhere (Prasad & Smith, 1994; Shen & Prinsen, 1999). Bushman explained this interference with cognitive processing of advertising messages in terms of hostility-related ideas invoked by surrounding violent film content. It was theorized that cognitive effort becomes deflected from processing the advertising to calming the anger brought on by adjacent program violence. This effect was attributed to cognitive responses generated specifically by violent content, given that the violent and non-violent film sequences used in this research had been pre-tested to produce non-significant differences in self-reported excitement and physiological arousal.

The possibility that memory for televised advertising could be influenced by the emotion-arousing properties of surrounding program content should be expected on the basis of previous memory research. Mood, for example, is known to affect memory (Bower, 1981; Burke, Hauer & Reisberg, 1992; Mayer, McCormick & Strong, 1995). Recall of television advertisements was found to be better when they were placed in a program that produced a happy mood in viewers than one that was sad (Goldberg & Gorn, 1987). Furthermore, a positive feeling produced by a program can generate a generally more favorable attitude to embedded advertising (Murry, Lastovicka & Singh, 1992). The latter effect, however, is dependent upon the degree of mood congruity between program and advertisement. Thus, advertisements judged to be emotionally positive are liked even better when placed in a happy program. In contrast, advertisements judged to be emotionally negative (i.e., sad) are liked better when placed in a mood congruent 'sad' program (Kamins et al., 1991). Violent programs have been found capable of putting viewers in a bad mood, by making them angry (Anderson, 1997; Bushman & Geen, 1990). Previous research has shown that recall of advertisements was impeded when they followed a disturbing news story as compared with affectively neutral program content (Mundorf, Zillmann & Drew, 1991).

Since violent media content is known to be able to make viewers think angry thoughts (Berkowitz, 1984; Bushman, 1985; Bushman & Geen, 1990), this cognitive activity could potentially interfere with encoding and storage of adjacent advertisement content (Bushman, 1998). According to Berkowitz (1984): "...the aggressive ideas suggested by a violent movie can prime other semantically-related thoughts, heightening the chances that viewers will have other aggressive ideas in this period" (p.411). Thus, hostile thoughts generated specifically by a violent media portrayal could exhibit cognitive contagion and spread out to activate other hostile thoughts not directly related to the original media stimulus (Collins & Loftus, 1975; Isen, Clark, Shalcker & Karp, 1978). In addition, thoughts are linked, along the same sort of associative lines, not only to other thoughts, but also to emotional reactions and behavioral tendencies (Bower, 1981). In this way, observation of vio-

lence can result in a complex network of associations consisting of aggressive ideas, emotions related to violence, and the impetus for aggressive actions. Bushman (1998) also argued that viewers affected in this way might be cognitively pre-occupied by efforts to reduce such negative thought patterns and that this 'mood repair' process might cause further interference with storage of information from advertisements. Bushman's work indicated that it was anger specifically that predicted poorer recall of advertising content, rather than any other emotions that may have been evoked by the surrounding program content.

In the current study, violent and non-violent versions of the same advertisement were used. One version of this advertisement, for an American model of car, was embedded along with a program trailer in either a violent or non-violent film clip. Other scholars had recommended the extension of research into television violence effects on memory for advertising in the light of evidence that such effects could vary with the type of advertising. In particular, audience involvement with an advertisement might interact with program context effects (Shen & Prinsen, 1999). In this instance, it was reasoned that advertising that contained violence might be more memorable when placed in a violent program environment, because violence in the program might render the violence-related constructs found in the advertisement more accessible (Sanbonmatsu & Fazio, 1991).

### Research Hypotheses

Three hypotheses were explored in this research.

*Hypothesis One:* Memory for advertising will be impeded when it is placed in a violent program context as compared with a non-violent program context, following Bushman (1998).

*Hypothesis Two:* Memory for non-violent advertising will be impeded by placement in a violent program context to a greater extent than will memory for violent advertising following Shen and Prinsen (1999).

*Hypothesis Three:* Violence in an advertisement will enhance its memorability when placed in a violent program environment because violence-related constructs in the commercial message will be primed by the violence in the surrounding program (see Sanbonmatsu & Fazio, 1991).

### Method

#### *Participants*

The participants were eighty British undergraduate students recruited from University College London (38 males and 42 females). The age of the participants ranged from 19 to 25 years with a mean age of 21 and a modal age of 20. Thirty-one percent of participants reported having a television in their bedroom with the modal category for daily viewing of television being between one and two hours.

## *Design*

Participants were randomly divided into four treatment conditions: Group One: violent advert embedded in violent film clip (n=20); Group Two: violent advert embedded in a non-violent film clip; Group Three: non-violent advert embedded in a violent film clip; and Group Four: non-violent advert embedded in a non-violent film clip. The position of the advert was controlled. In each condition 10 participants saw the test advert immediately after the first part of the film clip followed by a film trailer (filler) and the other 10 saw the film trailer (filler) immediately after the first part of the film clip followed by the test advert. The participants received no reinforcement for their participation.

## *Apparatus and Materials*

Film clips. The film clips were pre-selected to be differentially violent but equally involving and arousing. The following two film clips were chosen, following pre-tests, from a pool of eight different film clips and were each about 10 minutes long.

*True Romance (violent)*. A young man and his girlfriend collaborate with the police to work undercover in a crime bust operation. The operation goes wrong when an unexpected gang of criminals enter the room. The armed police and gang start shooting at each other and a policeman gets shot as well as the young man (main character). The girl crawls her way to her boyfriend screaming and crying, because he appears to be dead. There is a lot of shooting and everyone ends up dead except the girl. The Clip length was 10 min. 20 seconds.

*The Net (non-violent)*. A young woman stumbles upon a computer disc with some confidential information. She goes on holiday, has all her things stolen, and gets involved with a man one night who steals her belongings and plots to kill her. She gets away from him. When she tries to check out of her hotel, she is told she already has, leaving her mystified. She has no form of identification on her. When she gets home, her house has been emptied and put on sale by persons unknown. Since her personal records have been tampered with, the police believe her to be someone else, with a criminal record and guilty of possession of narcotics, prostitution and parole violation. She is seen running away from them, totally confused. The length of the clip was 10 min., 12 seconds.

## *Advertisements*

The advertisements shown were chosen from a pool of 28 American adverts to control for familiarity of commercial messages to British audiences.<sup>1</sup> Two stimulus advertisements were chosen that comprised violent and non-violent messages for the same product. A trailer for a forthcoming television film was also selected to be shown along with the advertisement in the break.

*Chevy S10 (violent)* – This advert depicts a man standing at a bar who is staring at a young woman sitting at a table with her boyfriend. She smiles at

the man at the bar and her boyfriend notices. The boyfriend gets up and punches the man at the bar. A fight then breaks out in the restaurant, bottles are broken and screams are heard. The boyfriend then throws the man at the bar out of the window. As the man falls down this multi-story building the announcer says "meet Sean Graham professional stuntman, this is how he lives." The man falls on a mattress by the Chevy S10, and is then seen holding up a picture of it. A voice-over announces, "this is what he drives, Chevy S10, like a rock". The advertisement ran for 32 seconds.

*Chevy S10 (non-violent)* – This advert depicts the Chevy S10 driving through long winding roads in the countryside. Meanwhile the announcer states all sorts of facts about the vehicle that are also printed on screen, such as "This is what the Readers Digest thinks of the Chevy S10" and "It's the Best buy", in black letters on a white background. Other facts are announced in the same way, as the Chevy S10 is depicted driving along a road. This advertisement ran for 27 seconds.

*Programme filler – Trailer for the Film Jack* – This trailer depicts scenes for the film Jack about a young boy whose body grows at an accelerated rate. Although he is a 10-year-old boy, he looks about 40. This trailer was used as a filler to make the advert break appear a lot more natural. The trailer ran for 20 seconds.

Advertising breaks were created in the center of each film sequence, at an appropriate break point in the action, in which one advertisement was placed along with the program trailer which was used as a filler item to create a more natural looking break. The order of the advertisement and trailer was counter-balanced so that half of the participants saw the trailer first followed by the experimental advert (violent or non-violent) and the other half saw these items in reverse order.

#### *Questionnaires.*

Participants completed a series of questionnaires that measured their mood, their evaluations of the film extracts and advertisements, and their memory for advertising content.

*Program rating questionnaire.* Participants responded to a set of 11 ten-point, adjectival scales (absorbing, involving, engaging, enjoyable, exciting, happy, hostile, arousing, interesting, entertaining, disturbing and violent).

*Advertisement rating questionnaire.* Participants responded to a set of 10 ten-point, adjectival scales (absorbing, involving, engaging, enjoyable, exciting, happy, hostile, interesting, entertaining, disturbing and violent). The scales were anchored at one end by 1 (not at all) and at the other end by 10 (extremely).

*Free recall questionnaire.* The free recall questionnaire asked participants to write everything that they could remember about the advertisement they had seen, e.g., product type, brand name and the details of the advertising message.

*Brand name recognition.* The brand name from the advertisement was placed randomly within a list of four brand names for the same type of product (automobiles) and four brands for a dissimilar product type. Participants were required to choose the brand that had been shown in the advertisement they had viewed.

*Cued recall.* Participants were provided with the name of the brand being advertised and were then asked three questions about the content of the advertisement, in a multiple-choice format.

The free recall protocols were content analyzed and scored against a comprehensive set of salient points. Seven content details were drawn up and pre-tested in advance and included all the details mentioned in the participants' answers. Two independent judges, who achieved 100% agreement, scored these protocols. In the scoring of brand name recognition and cued recall, one point was allocated to any correct answer and zero for an incorrect choice.

*General questionnaire.* Participants were asked to provide details of sex, age, TV viewing habits, and whether the participants had seen the viewed advert or film clips before. The majority of the participants indicated some prior familiarity with the film clips: 56% reported prior familiarity with the *True Romance* film clip and 67% reported prior familiarity with *The Net*. Only one participant reported ever having seen the advert before and his data were discarded.

### *Procedure*

*Pre-test.* Twelve undergraduate students majoring in psychology (6 men, 6 women) acted as judges. They all viewed all eight film clips. The judges provided a set of 11 evaluative ratings for each film clip (see Table 1). The scales were anchored at one end by 1 (not at all) and at the other end by 10 (extremely). A cover sheet explained that the questionnaires were part of a media evaluation study being conducted jointly with a journalism department of another institution.

The *True Romance* film clip was judged to be significantly more violent ( $M = 9.5$ ,  $SD = 0.67$ ) than *The Net* film clip ( $M = 3.08$ ,  $SD = 1.78$ ),  $F(1,23) = 136.2$ ,  $p < 0.001$ , and the *True Romance* film clip was judged to be significantly more hostile ( $M = 8.83$ ,  $SD = 0.94$ ) than *The Net* film clip ( $M = 4.53$ ,  $SD = 2.19$ ),  $F(1,23) = 38.1$ ,  $p < 0.001$ . No other evaluative scales produced significantly different ratings between the two film clips (see Table 1).

**Table 1: Pre-Test Evaluation Scores for Violent and Non-violent Film Clips Selected as Stimulus Materials for Main Experiment**

Measure	Violent Film Clip		Non-violent Film Clip	
	M	SD	M	SD
Absorbing	7.08	2.42	7.50	1.18
Arousing	6.42	1.73	5.50	1.94
Engaging	7.83	2.03	7.25	1.35
Entertaining	7.50	2.50	7.50	1.68
Exciting	7.25	2.49	6.67	2.11
Interesting	6.17	2.36	6.92	2.15
Involving	6.67	2.61	6.83	1.69
Violent	9.50	0.67	6.84	1.78
Hostile	8.83	0.94	4.53	2.19
Disturbing	6.63	0.98	4.23	1.22
Enjoyable	4.38	1.44	5.25	1.81

*Main Experiment*

The participants were randomly assigned to one of four conditions, to view a violent or non-violent film clip with either a violent or non-violent advertisement embedded in it. Participants were placed in two different rooms where the same video was presented varying only on the dimension of advertisement/trailer position in the break. In each room there was a TV screen and video player in clear line of vision. The experimenter told participants that they were going to help in research on the evaluation of specific film content and that they would be shown a fifteen-minute video clip. At the end of the film extract, the participants then filled out a total of seven questionnaires. These were filled out one at a time with each being distributed only after the preceding questionnaire had been completed and collected. The order of presentation was: (1) film evaluation, (2) free recall of the advertisement, (3) recognition of the advertised brand and then (4) cued recall of advertisement content. The participants were then shown the advertisement again and rated it on an evaluation form. A final questionnaire was then distributed which asked for personal details. The participants were then debriefed.

**Results***Order Effects and Previous Exposure*

There were no presentation order effects on memory for advertising ( $t[89] < 1.0$ ). Further, there were no significant Pearson zero-order correlations between participant age (Free recall:  $r = 0.03$ ; Cued recall:  $r = -0.12$ ; Brand recognition:  $r = -0.11$ ) or self-reported television viewing habits (Free recall:  $r = .14$ ; Cued recall:  $r = 0.03$ ; Brand recognition:  $r = -0.09$ ) and memory for advertising content. There was no prior familiarity with either of the two



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advertisements because they had not been shown before in Britain. These variables were therefore excluded from subsequent analyses.

## *Advertisement Ratings*

A series of multivariate analyses of variance was conducted to see if the adverts differed significantly on the evaluative rating dimensions. There was a significant main effect of advertisement type on the rating scores for the different evaluation dimensions ( $F(1,69)=80.52, p<0.05$ ). The results summarized in Table 2 indicate that the violent and non-violent versions of the advertisements differed significantly on all rating dimensions, and not just in terms of how violent or hostile they were perceived to be. The violent advertisement was perceived to be more absorbing, interesting, engaging, entertaining, involving, enjoyable and exciting than the non-violent advertisement.

**Table 2: Mean Advertisement Evaluation Scores**

	Violent		Non-violent		F
	M	SD	M	SD	
Absorbing	3.62	1.79	1.60	0.70	44.5**
Interesting	3.75	1.90	1.80	0.79	35.7**
Violent	5.12	2.15	1.05	0.22	142.1**
Disturbing	2.25	1.83	1.05	0.22	16.8*
Enjoyable	3.97	1.80	1.65	0.77	56.2**
Exciting	3.95	1.75	1.37	0.59	77.6**
Hostile	2.47	1.83	1.12	0.52	20.3**
Involving	1.64	1.64	1.55	0.68	36.5**
Entertaining	4.10	1.92	1.62	0.70	58.6**
Engaging	3.45	1.51	1.43	0.71	58.3**

Note: Degrees of freedom = 1, 69\*  $p < 0.05$ \*\*  $p < 0.01$

The advertisement evaluation data were subjected to factor analysis with VARI-MAX rotation in order to examine the dimensional structure of participants' advertisement ratings. The analysis was computed on reaction data collected across the entire sample. Two significant factors emerged, accounting for 68.6% of the variance. These results are summarized in Table 3.

The factors were labelled *Entertainment* (46.3% of variance) defined by seven items and *Violence* (23.3% of variance) defined by three items. All evaluative items were accounted for by these two factors. Two distinct factor variables were created by aggregating over the scores of their defining items.

**Table 3: Advertisement Evaluation Factors**

	Entertaining	Violent
Entertaining	0.79	0.31
Exciting	0.85	0.00
Enjoyable	0.82	0.21
Interesting	0.79	0.15
Absorbing	0.81	0.00
Involving	0.83	0.78
Engaging	0.00	0.17
Violent	0.21	0.82
Hostile	0.00	0.80
Disturbing	0.13	0.84
<i>Eigen Value</i>	4.7	5.6

*Program Ratings Differences*

A multivariate analysis of variance was computed to find out if the programs differed significantly on the rating dimensions. There was a significant main effect of program type on the rating scores for the different evaluation dimensions ( $F(1,69) = 31.1, p < 0.001$ ). The results summarized in Table 4, indicated that the two programs were found to differ significantly in terms of their violent, hostile, entertaining enjoyable, and disturbing factors. The violent film clip was rated as significantly more violent, hostile and disturbing and as significantly less entertaining and enjoyable than the non-violent film clip.

**Table 4: Mean Program Evaluation Scores**

	Violent	Non-violent	F
Absorbing	5.20	5.93	2.68
Hostile	7.35	4.67	31.19**
Arousing	5.75	5.13	1.66
Disturbing	6.73	4.15	20.72**
Engaging	5.00	5.87	2.86
Entertaining	4.75	6.15	7.99*
Enjoyable	4.15	5.42	7.19*
Exciting	5.10	6.00	3.91
Violent	5.87	2.37	351.10**
Interesting	4.20	5.00	2.78
Involving	4.58	4.78	0.156

\*\*  $p < 0.001$ , \*  $p < 0.05$

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The program evaluation data were subjected to factor analysis with VARIMAX rotation in order to examine the dimensional structure of participants' program ratings. The analysis was computed on reaction data collected across the entire sample. Two significant factors emerged, accounting for 78.9% of the variance. These results are summarized in Table 5.

The factors were labelled *Entertaining/Involving* (54.9% of variance) defined by seven items that included a mix of entertainment-oriented items and items signifying strength of impact of the program and *Violence* (24.1% of variance) defined by three items, two of which were violent and hostile. All evaluative items were accounted for across these two factors. Two new factor variables were created by aggregating over the scores of their key defining items.

**Table 5: Program Evaluation Factors**

	Involving	Violent
Interesting	0.89	0.00
Entertaining	0.91	0.20
Involving	0.83	0.18
Enjoyable	0.91	0.18
Exciting	0.91	0.20
Arousing	0.76	0.23
Absorbing	0.84	0.10
Engaging	0.78	0.33
Disturbing	0.00	0.80
Violent	0.43	0.96
Hostile	0.00	0.88
Eigenvalue	5.5	2.4

### *Effects of Program Violence on Memory for Advertisements*

A series of three, three-way ANOVAs were computed to compare *free recall* and *cued recall* of advertisements and *brand recognition* as a function of the type of film clip (violent, non-violent), advertisement type (violent, non-violent) and gender. The summary means are presented in Table 6. The list of F-values is presented in Table 7.

**Table 6: Mean Recall and Brand Recognition for Violent and Non-Violent Advertisements as a Function of Type of Film Clip**

Film Clip Advertisement	Violent		Nonviolent	
	V	NV	V	NV
<u>All (N)</u>	20	20	20	20
Free Recall	3.75	2.45	3.29	3.18
Cued Recall	2.19	1.79	1.96	2.15
Brand Recognition	0.67	0.72	0.80	0.60
<u>Males (N)</u>	9	9	11	10
Free recall	4.13	2.28	3.91	3.45
Cued recall	2.38	1.67	1.91	2.10
Brand recognition	0.75	0.89	0.82	0.50
<u>Females (N)</u>	12	11	9	10
Free Recall	3.38	2.64	2.67	2.90
Cue recall	2.00	1.91	2.00	2.20
Brand recognition	0.58	0.55	0.78	0.70

V – violent; NV – non-violent

There was no significant main effect of film clip type on any of the dependent measures ( $F_s < 2.0$ ). A significant advertisement type effect emerged for free recall ( $F(1,79) = 7.18, p < 0.05$ ), but not for cued recall or brand recognition. Violent advertisements were better recalled than non-violent advertisements. There was a significant gender type effect for free recall ( $F(1,79) = 4.33, p < 0.05$ ), but not for cued recall or brand recognition. Males exhibited better free recall of advertisements than did females.

A significant advertisement by film clip interaction was found for free recall ( $F(1,79) = 5.06, p < 0.05$ ), but not for cued recall or brand recognition. The violent advertisement was better free recalled when shown in a violent film clip and the non-violent advertisement was better free recalled from within a non-violent film clip.

None of the gender by film clip type interactions or gender by advertisement type interactions was significant. This result failed to support the third hypothesis that predicted a significant gender by advert interaction whereby memory for the violent advertisement would be higher among males than among females. No significant gender by advertisement type by film clip type interaction was found either. This is inconsistent with the fourth hypothesis that predicted that memory for the violent advertisement within the violent film clip would be better among males than females.

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**Table 7: Summary F-Table (ANOVAs): Effects of Film Type, Gender and Advert Type on Memory for Advertisements**

F(1,79) Values	Free recall	Brand recognition	Cued recall
Film	0.24	0.00	0.12
Advert	7.18*	0.48	0.31
Gender	4.33*	0.68	0.01
Film by Advert	5.06*	1.38	2.60
Film by Gender	1.78	2.51	0.19
Advert by Gender	2.94	0.02	0.72
Film by Advert by Gender	0.15	0.98	0.68

\*  $p < 0.05$

Two further sets of two-way, film type by advertisement type ANOVAs were computed separately among male and female participants, for free recall, cued recall and brand recognition scores. No significant main or interaction effects emerged on any memory variable among females. Among males, there was one significant main effect of advertisement type in relation to free recall ( $F(1,37) = 7.83, p < 0.008$ ), reflecting significantly better recall of the violent advertisement than of the non-violent advertisement. There was no significant interaction between advertisement type and film type ( $F(1,37) = 2.84$ ). No significant main or interaction effects occurred among male participants on cued recall or brand recognition.

### *Audience Ratings of Advertisements and Memory for Advertisements*

Relationships between subjective advertisement ratings and memory for advertising were examined using Pearson zero-order correlations that were computed between the three dependent measurements and two advertisement factor variables. The results are displayed in Table 8. Scores on the items defining each factor were aggregated to create single factor scores. Cronbach Alphas were computed and revealed high internal consistency across constituent scales for both the Entertainment factor (Alpha = 0.79) and the Violence factor (Alpha = 0.95). There was no statistical significance in the correlation between either of the two evaluative ratings factors and brand recognition or cued recall of advertising content. In contrast, both the Entertainment rating and Violence rating of the advertisement were significantly and positively correlated with free recall. The more entertaining and more violent the advertisement was perceived to be, the more likely it was to be recalled.

**Table 8: Zero-order Correlations between Advertisement Ratings and Memory for the Advertisements**

	Entertaining	Violent
Free Recall	0.64**	0.22*
Brand Recognition	0.08	-0.06
Cued Recall	0.24	-0.04

\*\*  $p < 0.001$ , \*  $p < 0.05$

On re-computing these correlational analyses separately among males and females, it emerged that the Entertainment factor exhibited a significant and positive relationship with free recall among both males ( $r = .72$ ,  $p < 0.001$ ) and females ( $r = .43$ ,  $p < 0.01$ ). The Violence factor, however, exhibited a significant relationship with free recall only among males ( $r = .34$ ,  $p < 0.04$ ), and showed no significant relationship with free recall among females ( $r = -0.003$ ).

#### *Audience Ratings of Programs and Memory for Advertisements*

Relationships between subjective program ratings and memory for advertising were examined via zero-order bi-variate Pearson correlations that were computed between the three dependent measures (free recall, brand recognition and cued recall of advertising) and these two program evaluation factor variables. Cronbach's Alphas were computed to reveal high internal consistency among the constituent items of the Entertaining/Involving factor (Alpha = 0.77) and the Violence factor (Alpha = 0.89). The Entertaining/Involving factor was significantly related to free recall ( $r = 0.62$ ,  $p < 0.01$ ) and cued recall ( $r = 0.27$ ,  $p < 0.05$ ), but not to brand recognition ( $r = 0.09$ ). The Violence factor was not significantly related to any measure of memory for advertising (free recall:  $r = 0.13$ ; cued recall:  $r = -0.15$ ; brand recognition:  $r = -0.07$ ).

#### **Discussion**

This study investigated relationships between memory for televised advertising and nature of the surrounding program environment. It aimed to extend research that indicated that violent programming can impair memory for embedded advertising (Bushman 1998; Prasad & Smith, 1994; Shen & Prinsen, 1999). The current experiment extended Bushman's investigation by testing for the effects of program violence on advertising with and without violence.

There was no effect of advertisement position, that is, whether it preceded or followed the surrounding program in relation to a filler item. This meant

that any effect of a surrounding program on the recall of the advertisement was not specific to any serial position effect. Additionally, participants' age, viewing habits, prior familiarity with the advertisements (which were American and therefore had not been shown on British television), and prior familiarity with the film clips were not significantly correlated with any of the recall measures. This is consistent with Bushman (1998) who reported no item-order or previous stimulus material exposure effects.

Overall, the violent version of the advertisement was remembered better than the non-violent version. It was hypothesized that memory for advertising would be impaired by presentation within a violent program environment as compared with a non-violent program environment. This hypothesis was partially supported. Memory for the non-violent version of the advertisement was worse when it was shown within the violent film clip than in the non-violent film clip. This result was consistent with Bushman (1998). The same effect did not occur in respect of the violent version of the advertisement.

It was also hypothesized that the disadvantage of placing an advertisement in a violent program environment would be greater in the case of the non-violent version of the advertisement than in the case of the violent version. This hypothesis was supported.

The third hypothesis predicted that placement of a violent advertisement inside a violent program might enhance its memorability compared to showing it in a non-violent program. This hypothesis was supported. It was clear then that a standard advertisement with no violence was not suited to placement within a violent program. A violent surrounding program environment impaired audience recall of the advertisement. In contrast, if the advertisement itself contained violence, it benefited from placement within a violent program. Memory for the violent advertisement was better when it was embedded in a violent than in a non-violent program environment. This finding is consistent with the notion of construct accessibility (Sanbonmatsu & Fazio, 1991). Thus, a violent program context may render violence-related constructs more accessible and these, in turn, may facilitate memory for an advertising message that contains violent attributes (Sanbonmatsu & Fazio, 1991; Bushman & Geen, 1990).

Although not featured as an experimental hypothesis, the results indicated that males displayed a better overall recall of advertising than did females, although there was no significant interaction between gender and advertisement type for any of the memory measures. The better memory performance of males may derive from the nature of the product – a car – being more male oriented than female oriented. There was no evidence, however, that violence within the commercial message specifically impeded females' recall of advertising. Nor was there any evidence of differential program environment effects upon the advertising recall or recognition of females and males. Both genders remembered the violent version of the advertisement better than the non-violent version, regardless of the program environment. Hence the

results here do not confirm earlier findings that females exhibit worse recall of violent information than do males (Furnham & Gunter, 1985; Gunter & Furnham, 1986). There was clear evidence, nonetheless, that males were attracted by violence in advertising. For males only, the perception of more violence in the advertisement was associated with better advertising recall.

The subjective ratings of the film clips were partly related to memory for advertising. In particular, participants' ratings of how entertaining they found the film clip they watched (though not how violent they found it) were positively correlated with free and cued recall of embedded advertising. This result was consistent with previous findings that indicated significant relationships between subjective ratings of programs and recall of advertising messages embedded within them (e.g., Bryant & Comisky, 1978; Thorson & Reeves, 1986; Norris & Colman, 1993; Gunter, Furnham & Beeson, 1997; Gunter, Furnham & Frost, 1994).

In addition to subjective ratings of the surrounding film, evaluations of the advertising itself were also linked to how well it was recalled. Advertisement evaluations, in this case, were grouped into two factors: entertainment value and violence. Both of these ratings were positively correlated with free recall of the target advertisement. This result may also partly explain why the violent version of the advertisement was better remembered than the non-violent version. Experimental participants rated the violent version as significantly more entertaining than the non-violent version. It is possible that an entertaining advertisement engages viewers' attention to the commercial message more effectively creating more opportunity for content details to be encoded. The concept of advertising message involvement (AMI) has been previously invoked to explain consumer motivation to attend, comprehend and integrate advertising message information into memory at the time of the advertising exposure. As AMI increases, the cognitive effort expended by the consumer to process the contents of an advertising message increases (Gardner, Mitchell & Russo, 1978). There are many factors that are likely to influence a consumer's AMI level. Advertisers can employ certain executional tactics to increase AMI. Unique, vivid visuals, sounds and dialogue are more likely to capture and hold the attention than common ordinary executions (Berlyne, 1971; Reyes, Thomson & Bower, 1980). Further, executions that are emotionally intense are more likely to grab attention than emotionally flat executions.

In turn, violence in an advertisement may render the advertisement more memorable in free recall, but not brand recognition nor cued recall, because the violent advertisement is less emotionally flat than the non-violent version of that advertisement that depicts a very ordinary informative execution. Violent advertisements are also rare and thus viewing one is an unusual event that may elicit greater attention.

From the above discussion, it is clear that the relationship between television advertising and surrounding program content can be highly complex. Viewers' ability to remember advertising messages can be affected by the



adjacent program content in different ways. Research evidence has begun to accumulate that program violence may provide a poor environment for the placement of advertising (Bushman, 1998; Prasad & Smith, 1994; Shen & Prinsen, 1999). Other researchers have indicated that advertisers for certain products may elect to avoid placing their commercial messages in programs known in advance to contain violence for fear that adverse publicity about television violence may attach itself to the public image of their brands (Hamilton, 1998). Such advertisers might take further comfort from research showing that program violence interferes with audience recall of advertising. The current research has shown, however, that certain types of advertising (i.e., advertising with its own violent content) may perform well even within a violent program environment. The further indication that the entertainment value of advertising – a factor that is orthogonal to its violent nature – is an important variable too, leads to the recommendation that future research should be conducted to tease apart these factors to determine how serious a problem program violence poses for advertisers.

## Note

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