

Sex Really Does Sell: The Recall of Sexual and Non-sexual Television Advertisements in Sexual and Non-sexual Programmes

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Summary: The present study examined memory for advertisements as a function of both advertisement content and the contextual programme content. Participants were randomly assigned to one of two conditions: in one condition, they watched a sexual programme and in the other a non-sexual programme. Embedded within each programme were the same highly sexual and non-sexual advertisements that had been matched in pairs for five products. Memory for the advertisements and involvement in the programmes was measured. It was found that on three indices (free recall, brand recognition and prompted recall), memory for the sexual advertisements was superior to that for non-sexual advertisements. There was no effect of the programme content on advertisement recall and no relationship between programme involvement and advertisement recall. The results are discussed with reference to extant literature on memory for advertisements. Copyright © 2015 John Wiley & Sons, Ltd.

Advertisements strive to be interesting, attention grabbing and memorable (Parker & Furnham, 2007) in order to serve the important commercial purpose of increasing product awareness. This increased product awareness is, in turn, geared to the ultimate goal of increasing the likelihood that viewers will purchase the goods or service advertised (Bushman, 2007). Sex in advertising is commonly utilized to this end with great success, as exemplified by the case of Calvin Klein's 1995 sexual advertising campaign that doubled sales of their jeans (Ivinski, 2000). However, the use of such campaigns has produced a great deal of controversy amongst both public and scientific communities (Ferguson, Cruz, Martinez, Rueda, & Ferguson, 2010). Given that advertising revenue provides the main source of income for the majority of television stations internationally (Bushman, 2005), understanding whether 'sex really sells' is arguably not only an area of public and scientific interest but has also a huge commercial significance for broadcasters. Indeed, advertisers demonstrate this importance through figures such as a \$2.5m price tag to air a single 30-second advertisement in the 2006 Super Bowl XL (Lamothe, 2007; as cited in Bushman, 2007).

Memory for sexually themed advertisements

Despite the frequent use of sexual themes in advertisements, there are contradictory findings regarding their effectiveness. It has been argued that advertisement memory is a critical factor in commercial effectiveness (Bushman, 2007), and a growing body of research has directly examined measures of recall for advertisement content. This has been performed predominantly through the design of matching sexual and non-sexual advertisements on extraneous factors unrelated to their sexual content, such as the brand, the product type, the duration of the advertisement and the target audience. The majority of these studies have demonstrated that sexual advertisements are more memorable than non-sexual

advertisements (Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Leka, McClelland, & Furnham, 2013). There is also strong physiological evidence to suggest that sexual advertisements result in a state of not only heightened arousal but also attention, when measured via galvanic skin responses (Belch, Holgerson, Belch, & Koppman, 1981). Furthermore, it has been suggested that a sexually charged advertisement can lead to greater behavioural intentions to purchase the product (Reichert, Heckler, & Jackson, 2001).

Although the majority of the literature suggests that sexually charged advertisements outperform their non-sexual counterparts, there are some contradictory findings; for example, Parker and Furnham (2007) failed to find an effect of sexual content on recall, and Fried and Johanson (2008) provided evidence to suggest that sexual content can be a distraction that interferes with the processing of the product information. One possibly confounding factor is the precise nature of the depiction of sexual activity and whether it is of a romantic or non-romantic nature and setting. This is difficult to control for in both advertisements and programmes and could in part explain equivocal findings.

Contextual programme effects

A further area of concern for broadcasters is whether to place advertisements with a sexual content within sexual or non-sexual programmes. Bushman and Bonacci (2002) examined the effects of sexual and violent programme content on recall for advertisements and found that when subjects saw programmes with sexual, violent or neutral content, they had poorer memory for the advertisements when they were embedded within sexual or violent programmes. This effect was also found to have an impact on the consumer's behavioural intentions to purchase the advertised products through coupons in a subsequent follow-up study (Bushman, 2005). Bushman and Bonacci suggested that sexual programmes might prompt viewers to think about sex, which disrupts the encoding of adverts, or that processing sexual material requires greater cognitive resources than non-sexual material, leaving less cognitive capacity for processing other stimuli

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such as advertisements. Furnham and Mainaud (2011) noted that there is considerable empirical evidence suggesting that individuals pay more attention to sexual media than non-sexual media.

However, Fried and Johanson (2008) claimed that Bushman and Bonacci (2002) and Bushman (2005) had failed to adequately control extraneous aspects of programme content. In two studies, they claimed that when these other aspects of the programmes are held constant, sex and violence do not affect the memory for the embedded advertisements—but other aspects of the programme's content (e.g. humorous content) do influence advertisement memory. The observation that sexual programme content has no effect on recall for embedded advertisements was also made by Leka et al. (2013). Despite these results, a large body of the literature has since replicated Bushman and Bonacci's (2002) and Bushman's (2005) original findings (e.g. Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Parker & Furnham, 2007). Thus, on balance, the evidence would suggest that sexual programme content hinders advertisement recall.

Advertisement–programme congruity

There is also considerable controversy surrounding advertisement–programme congruity; are sexual advertisements more effective when embedded in sexual programmes—rather than non-sexual programmes? Leka et al. (2013) argued that cognitive priming theory would suggest that a sexual programme context may strengthen the association between elements of the programme and the congruent sexual advertisement, leading to better recall, and cited Furnham, Bergland, and Gunter's (2002a) finding that recall for beer advertisements was better within programmes featuring alcohol consumption. Furnham and Mainaud (2011) also argue that a congruity effect would be consistent with the affect transfer hypothesis (De Pelsmacker, Geuens, & Anckaert, 2002), where the similarity between the type of mood elicited by the programme and the advertisement may serve as a primer for the processing of the advertisement content.

Conversely, evidence also exists suggesting that advertisement–programme congruity instead *impairs* memory for advertisements (e.g. Furnham, Gunter, & Richardson, 2002b; Furnham & Price, 2006). To explain their findings, Furnham and Price appealed to cognitive interference theory, which suggests that when advertisements are presented within a programme with similar content, the details of the advertisement and programme will merge together, making it difficult to discriminate between the two sources of material and impairing recall.

Despite these results suggesting that advertisement–programme congruity has an effect on advertisement recall (either positive or negative), the majority of findings in the recent literature indicate that the level of sexual congruity between the advertisement and programme has no significant effect on advertisement recall (Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Leka et al., 2013; Parker & Furnham, 2007). The fact that congruity appears to affect memory for advertisements in some cases suggests that a moderating variable may be required to explain the findings.

De Pelsmacker et al. (2002) offered an explanation when looking at congruity effects with respect to programme-induced viewer involvement.

Programme-induced involvement

Another factor thought to influence brand recall is the extent to which the viewer is 'involved' with the programme, although this has been a debated construct in the advertising literature. De Pelsmacker et al. (2002) reported that individuals experiencing low levels of programme involvement perceived advertisements embedded within a congruent context as clearer and more likable, whereas highly involved individuals perceived advertisements embedded in a contrasting context as having a higher likeability and clarity. The authors argued that for individuals with a low level of involvement, a congruent programme context could 'act as a peripheral cue, activating knowledge structures and facilitating message elaboration (priming effect)' (p. 51). In contrast, individuals with high involvement are more likely to process the information centrally because of the contrast between the advertisement and the programme (a contrast effect).

Bushman (2007) instead argued for a curvilinear relationship between the level of involvement with a programme and programme congruency effects. He proposed that when a programme induces high levels of involvement, congruity effects are eliminated because of depleted cognitive resources. When a programme induces low levels of involvement, motivational priming is absent. Between these two extremes (i.e. a moderate level of involvement with a programme), individuals are expected to be subject to congruity effects. Because of the highly involving nature of sexual programmes, Bushman predicted that there would be no congruity effects for advertisements embedded within sexual programmes, because of the high level of involvement they would engender, and this was confirmed in his study. This finding is consistent with the results obtained by Furnham and Hiranandani (2009), Furnham and Mainaud (2011), Leka et al. (2013) and Parker and Furnham (2007).

This study

The current study aims to shed light on the effectiveness of sexual advertisement encoding as a function of the advertisement content and the contextual programme. We aimed to do this by replicating and extending previous research, whilst addressing some of the methodological issues that have been identified as being critical in previous studies. To this end, we employed new advertisements and tested participants alone and under identical conditions, who were presented a mixture of both sexual and non-sexual advertisements within the programmes viewed, and in addition to measures of advertisement recall, we also measured programme recall and involvement.

The dependent variables consisted of three measures of memory for the advertisement (free recall, brand recognition and prompted recall) and three measures of interest and involvement for the programmes (free recall, prompted recall and a self-reported rating of interest and engagement). Participants were randomly allocated to one of two conditions: a sexual programme with both sexual and non-sexual advertisements or a non-sexual programme with both sexual

and non-sexual advertisements. The following hypotheses were tested.

- H1: Sexual advertisements will be better recalled than non-sexual advertisements because the sexual content will lead to greater arousal and attention. This result would be consistent with previous findings (Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Leka *et al.*, 2013).
- H2: Memory for the advertisements will be worse within a sexual programme context than within a non-sexual programme context. Individuals watching highly sexual and therefore involving programmes will have less cognitive resources available to process the advertisements (Bushman & Bonacci, 2002). Such a finding would also be consistent with previous research (Bushman, 2005; Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Parker & Furnham, 2007).
- H3: There will be an interaction between the programme type and advertisement type, with sexual advertisements being remembered better in the non-sexual programme than in the sexual programme. This is predicted on the basis of Bushman's (2007) proposal that a curvilinear relationship exists between programme-induced involvement and programme-advertisement congruity effects (also Leka *et al.*, 2013).
- H4: The sexual programme is expected both to be rated as more engaging and to elicit heightened states of attention and will therefore be more memorable than the non-sexual programme. This follows from the findings of Leka *et al.* (2013) and earlier physiological evidence (e.g. Belch *et al.*, 1981).

METHOD

Participants

The sample consisted of 25 men and 25 women, with the ages ranging from 18 to 52 years and a mean age of 24.24 years ($SD = 7.43$ years). They were recruited from a subject panel at a London-based university and were paid a small sum for their participation.

Materials and apparatus

The same five sexual and five non-sexual advertisements were embedded in either a sexual or non-sexual programme.

The advertisements were placed in one of two advertisement breaks in the programmes, with the first being 16 minutes from the end of the programme and the second being 8 minutes from the end of the programme, ± 1 minute in order to sequence the advertisement break in an appropriate and inconspicuous place during a change of scene. This ensured that the amount of time between the presentation of the advertisements and the recall tests would be the same in both conditions despite the sexual programme (26 minutes) being slightly longer than the non-sexual programme (22 minutes). Thus, the advertisements were placed roughly one-third and two-thirds of the way through each programme. The order of the adverts was the same within each type of programme (Table 1) with one of each matched pair of advertisements appearing in separate advertisement breaks such that the participants would not see advertisements with the same content (sexual or non-sexual) or the same product type, consecutively. This served two important functions: firstly, to prevent the experimental manipulations from being transparent and, secondly, to provide ecological validity.

The two programmes (sexual and non-sexual) were intended to appear to be videos recorded straight from the television with no manipulations. Care was taken to make the transitions between the programmes and the advertisements—and between the advertisements themselves—as seamless and professional as possible, in order to achieve a level of quality similar to that which would be expected on a broadcast television channel. The videos were edited using CAMTASIA.2 software (TechSmith Corporation, Okemos, MI), and the videos were presented on a 20-in. Dell P2011H computer screen (Dell Inc., Round Rock, TX) in an mp4 format via the Quicktime player on a Windows 7 Professional platform (Microsoft Corporation, Redmond, WA). Participants accessed the audio through a pair of Sony Noise Cancelling headphones (Sony Corporation, Minato, Tokyo) and were free to adjust the sound to an optimal level themselves before beginning the experiment.

Programmes

The sexual programme was an 18+-rated episode from *Sex and the City* called 'Was It Good for You?' (Season 2, Episode 28; King & Algrant, 1999). Furnham and Mainaud (2011), Parker and Furnham (2007) and Furnham and Mainaud (2011) selected this episode for their studies as in both studies, independent panels of women and men chose it on the basis that it contained nudity, strong sexual references and scenes of a sexual nature, and was sexually arousing. In addition, the episode was found to be equally sexually appealing to both men and

Table 1. The content, product, brand and position in the two advertisement breaks of the five pairs of advertisements

Position	Advertisement Break 1			Advertisement Break 2		
	Content	Product	Brand	Content	Product	Brand
First	Sexual	Jeans	Antique Rivet	Non-sexual	Jeans	Killer Jeans
Second	Non-sexual	Burger	Ball Park	Sexual	Burger	Carl's Jr.
Third	Non-sexual	Shower gel	Vosene	Sexual	Shower gel	Fa
Fourth	Sexual	Skincare	Elave	Non-sexual	Skincare	Lavon
Fifth	Non-sexual	Sauce	Buffalo Tom's	Sexual	Sauce	Kraft

women. Geer and McGlone (1990) found that men were more aroused by explicit erotica whereas women were more aroused by romantic erotica. Furnham and Mainaud (2011) suggested that the equal appeal of this episode to both sexes was because the episode contained both explicit sexual and romantic content. The non-sexual programme was a U-rated (suitable for everybody) episode from *Friends* called 'The One with the Cooking Class' (Season 8, Episode 21; Borkow, Buckner, Jones, & Halvorson, 2002). Furnham and Mainaud (2011) used this episode as their non-sexual programme, and it had again been selected by an independent panel of women and men on the grounds that it did not contain any sexual scenes or references.

With respect to other criteria, it was felt that these two series were well matched. Both programmes are well known and have been viewed widely in the UK (*Friends* attracting 9.64 million viewers in 2004 and *Sex and the City* 4.4 million viewers in 2005). Both programmes are also very similar in their style and length, are American comedies and revolve around the lives of a group of friends who regularly meet at a coffee shop in New York. There were no other highly salient themes (e.g. violence) present in the chosen episodes that might influence the involvement levels of the participants.

Advertisements

The 10 advertisements were selected on the basis that they were all of a similar length (30 seconds \pm 10 seconds), did not contain violence and sold commodities that could be found in shops (as opposed to a service). Three product categories were chosen: toiletries, food and clothing. As much as possible, attempts were made to have gender-neutral advertisements, although this was difficult and may have introduced a possible confound.

Importantly, the advertisements were drawn from foreign broadcasting sources with the intention that they would be completely novel to the participants. Using foreign-made and foreign-shown advertisements (but all in English) also allowed us to present far more overtly sexual content than would be permitted in advertisements broadcast in the UK. Five out of the 10 advertisements were selected on the basis of their strong sexual content, which consisted of a mix of romantic and seductive erotica, and explicit male and female sexual nudity. This mix of sexual content was to try to ensure that the sexual content would be equally appealing to men and women. These five sexual advertisements were matched with five non-sexual advertisements for very similar products (Table 1). The matching advertisements were chosen so that the products looked similar, and the advertisement was aimed at the same audience category. Each pair was also matched for humour. The products were not brand matched, but as the brands were unknown to the participants, there would not be any effect of prior brand identity or previous exposure effects on performance. All brand and product identity was intended to come from the advertisements alone.

Questionnaires

The two questionnaires used in the study were similar to those used by Furnham and Price (2006) and Leka et al.

(2013). The first was used to evaluate the participants' memory for the products advertised, and the second to measure their memory and level of involvement for the contextual programme. Participants were also asked to provide details of their gender, age and whether they had seen the programme or any of the advertisements before.

Advertisement questionnaire

For the free recall test, a mark was allocated for correctly remembering the brand name, another for correctly recalling the product type and a final mark for recalling the slogan. Participants then had to complete a brand recognition task in which they were required to identify the brands that they had seen in the video. Each of the five pairs of the target products was presented as images (containing the brand logo) together with pairs of distractor images for similar products. Participants were asked to circle the target products. Participants were then provided with the brand name and product advertised in each advertisement, along with two four-alternative multiple-choice questions (the first of which concerned the product slogan), followed by an open question. One mark allocated for each correct answer, giving participants a maximum recall score of 15 for the sexual and non-sexual advertisements, respectively. Finally, participants were asked which advertisement they felt made the biggest impact on them and why.

Programme questionnaire

Participants were first asked to write down as many character names as they could. Because of the likely familiarity with the programmes, and thus the main characters, only names of characters not in the main cast were scored, with three possible characters (and therefore three possible marks) available. Participants were then asked to write down as much of the plot as they could remember. This was scored out of 10 using a marking scheme that evaluated the number of plot lines that were correctly remembered. Participants were then required to complete a prompted recall task. This consisted of eight open questions (where participants had to generate their own answers) followed by five four-alternative multiple-choice questions. Finally, participants had to give a rating on a scale of 1 (*very uninteresting and boring*) to 10 (*very interesting and stimulating*) to indicate how engaging they found the programme.

Procedure

The study was described as 'evaluating TV programmes', but the exact nature of the evaluation was not made explicit. No mention of the advertisements was made. Participants were tested alone in identical experimental cubicles with no distractions. They saw only one show. Departmental ethical permission was sought and granted.

Participants were told to make themselves comfortable and were shown how to adjust the sound level on the headphones provided. Because of the overtly sexual nature of some of the advertisements and *Sex and the City*, they were also requested to complete an informed consent form explaining that they were seeing content rated 18+ by broadcasters.

Before beginning the video playback, the participant was instructed to try to pay full attention to all aspects of the video, from start to finish. At the end of the screening, the experimenter re-entered the cubicle and gave the participant the two questionnaires (bound together in one booklet). The participants were asked not to turn over to the next page until all of the questions on a given page were completed and were told not to return to previously answered questions, as information on later pages could help answer previous questions—and this would invalidate the study. To ensure that participants were following the rules, the experimenter ‘checked in’ on them on several occasions, under the guise of making sure that the questionnaire was clear. It is possible that the presence of the experimenter may have lessened the perceived anonymity of the participants who may have felt somewhat uncomfortable viewing the highly sexual ads although he tried not to be intrusive. Participants were finally debriefed and thanked for their participation.

RESULTS

Advertisement recall

Mean advertisement recall scores as a function of the sexual content of the advertisement and programme are presented in Table 2. To test H1, H2 and H3, a series of repeated-measures ANOVAs were conducted on the data with advertisement type as the within-participants variable and programme type as the between-participants variable, both of which had two levels: sexual and non-sexual content.

Free recall

There was a significant main effect of the advertisement type on free recall, $F(1, 48) = 52.65$, $p < .001$, $\eta_p^2 = 52.3\%$, with sexual advertisements ($M = 4.66$, $SD = 2.26$) being recalled better than non-sexual advertisements ($M = 2.64$, $SD = 2.06$). There was no main effect of programme type on advertisement free recall, $F < 1$ (sexual: $M = 3.40$, $SD = 2.16$; non-sexual: $M = 3.90$, $SD = 2.04$) and no interaction between advertisement type and programme type, $F < 1$.

Brand recall

There was again a significant effect of advertisement type on brand recall, $F(1, 48) = 31.7$, $p < .001$, $\eta_p^2 = 39.8\%$. Brand recall for sexual advertisements ($M = 4.62$, $SD = 0.78$) was significantly higher than that for non-sexual advertisements ($M = 3.76$, $SD = 1.06$). Again, there was no significant effect of programme type on brand recall, $F(1, 48) = 1.98$,

Table 2. Mean recall score as a function of advertisement type (sexual vs non-sexual) and programme type (sexual vs non-sexual)

Recall measure	Sexual advertisement		Non-sexual advertisement	
	Sexual programme	Non-sexual programme	Sexual programme	Non-sexual programme
Free	4.48 (2.50)	4.84 (2.02)	2.32 (1.82)	2.96 (2.27)
Brand	4.48 (0.97)	4.76 (0.53)	3.60 (1.08)	3.92 (1.04)
Prompted	10.90 (2.88)	11.85 (1.22)	7.00 (2.92)	7.95 (2.19)

Note. Values in parentheses are standard deviations.

$p = .166$, $\eta_p^2 = 4.0\%$ (sexual: $M = 4.04$, $SD = 1.02$; non-sexual: $M = 4.34$, $SD = 0.78$), and no interaction between the two variables, $F < 1$.

Prompted recall

The main effect of advertisement type was also observed for the prompted recall measure, $F(1, 48) = 147.3$, $p < .001$, $\eta_p^2 = 75.4\%$, with sexual advertisements ($M = 11.38$, $SD = 2.24$) again being recalled better than their non-sexual counterparts ($M = 7.48$, $SD = 2.60$). Again, there was no significant effect of programme type on prompted recall, $F(1, 48) = 2.57$, $p = .115$, $\eta_p^2 = 5.1\%$ (sexual: $M = 8.94$, $SD = 2.90$; non-sexual: $M = 9.90$, $SD = 1.70$), and no interaction between advertisement type and programme type, $F < 1$.

As predicted, sexual advertisements were found to be more memorable than non-sexual advertisements irrespective of the sexual content of the programme within which they were embedded. This provides strong support for H1. Although mean recall was higher for all three recall measures when advertisements were embedded in non-sexual rather than sexual programmes, none of these differences reached significance, so H2 is not supported. Finally, none of the measures yielded a significant interaction between advertisement type and programme type, and thus, H3 was not supported.

Ninety-two per cent of participants reported the sexual advertisement as having made the biggest impact upon them and that in 60.5% of these instances, the advertisement was for *Elave* skincare products, which was the most sexually explicit advertisement, as it contained male and female full-frontal nudity. This is not surprising as this was rarely seen in the UK and may be thought of as a manifestation of the von Restorff (1933) effect.

Programme recall and interest ratings

A series of independent-sample *t*-tests were conducted to compare memory for (free and prompted recall) and rated interest in the content of the sexual and non-sexual programmes (Table 3). There was a significant difference in the free recall scores, $t(48) = 3.78$, $p < .001$, $d = 1.07$, with the sexual programme content being recalled better than the non-sexual programme content. However, prompted recall for the sexual programme content was not significantly different to prompted recall for the non-sexual programme content, $t(48) = 0.25$, $p = .80$, $d = 0.07$. Finally, the difference between the mean interest ratings given for the sexual and non-sexual programmes approached significance, $t(48) = 1.55$, $p = .06$ (one-sided), $d = 0.45$. These findings therefore provide partial support for H4.

Table 3. Mean programme recall scores and interest ratings as a function of programme content

	Sexual programme	Non-sexual programme
Free recall	7.12 (1.83)	5.24 (1.69)
Prompted recall	10.76 (1.51)	10.60 (2.80)
Interest rating	7.96 (1.30)	7.24 (1.92)

Note. Values in parentheses are standard deviations.

Sex differences

As no hypotheses were made regarding the gender of the viewers, this variable was not included in our analyses. However, a re-analysis of free recall, cued recall and brand recall for the sexual and non-sexual *advertisements* reveals a single significant result involving gender; overall, men were better at recalling brands ($M=4.42$) than women ($M=3.97$), $F(1, 46)=4.69$, $p=.036$, $\eta_p^2 = 9.3\%$. A re-analysis of recall scores for *programme content* and rated interest in the programme revealed no significant results involving the gender of the viewers.

DISCUSSION

As predicted, the memory for sexual advertisements was better than for non-sexual advertisements, and this was found using all three recall measures. This is consistent with an increasing body of research that strongly suggests that the sexual content in advertisements does increase their effectiveness (Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Leka et al., 2013). This effect may be due to a state of heightened arousal and attention, as exemplified by strong empirical physiological evidence (Belch et al., 1981). The strength of this effect is demonstrated in its highly significant effect in all three measures, even whilst using completely novel advertisements in a more ecologically valid design where sexual and non-sexual advertisements were presented together.

However, the prediction that memory for the advertisements would be worse within a sexual programme context than a non-sexual programme context was not supported and is inconsistent with the findings from a number of other studies (e.g. Bushman, 2005; Bushman & Bonacci, 2002; Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Parker & Furnham, 2007). However, the lack of a programme effect has been found previously (e.g. Fried & Johanson, 2008; Leka et al., 2013), and the current finding suggests that sexual advertisements can be effective when embedded in either sexual or non-sexual programmes. It is possible that the presence of a main effect of programme type (sexual vs non-sexual) in previous research can be attributed to a failure to adequately control extraneous aspects of the programme content (Fried & Johanson, 2008). Further, in the present study, participants watched the programmes individually rather than in a group, and therefore, they would not be subject to any potential embarrassment from watching sexually explicit programmes in the presence of others, which Leka et al. (2013) suggested might overload an individual's cognitive resources. Alternatively, watching the videos in isolation may have made participants more attentive than they would have been in the company of other participants, leading to better advertisement recall.

The hypothesis that there would be an interaction between the programme type and advertisement type with sexual advertisements being remembered best in a non-sexual programme was not supported. Thus, there is no support for Bushman's (2007) theory of a curvilinear relationship between programme-induced involvement and programme-advertisement congruity or indeed other theories developed

to explain congruity effects such as the cognitive priming theory (Leka et al., 2013), the affect transfer hypothesis (De Pelsmacker et al., 2002) and the theory of cognitive interference (Furnham & Price, 2006). The observation that the level of sexual congruity between the advertisement and the programme has no significant effect on advertisement effectiveness is consistent with other findings in the literature (e.g. Furnham & Hiranandani, 2009; Furnham & Mainaud, 2011; Leka et al., 2013; Parker & Furnham, 2007).

The final hypothesis that the sexual programme would be rated as more engaging and more involving (Leka et al., 2013) was partially supported. Although there was no difference on the measure of prompted recall, more material from the sexual programme than the non-sexual programme was recalled using a free recall measure. The interest ratings were high for both programmes, and the difference just failed to reach significance, which suggests that in fact the two programmes were extremely well matched on all other variables.

There are a number of methodological problems and issues involved with this study and those like it. One potential methodological concern with the study is the fixed order of the advertisements within the programme breaks. A recency effect would favour the sexual advertisements over the non-sexual advertisements as there was one more sexual advertisement in the second break (with the reverse being true for the first break). However, we believe that any primacy/recency effects are likely to have been minimal and note that the advertisement with the most subjective impact was a sexual advertisement that appeared in the first rather than second commercial break. Further, previous studies that examined ad order effects showed them to be minimal.

There are numerous other potentially confounding factors, some of which are easier to control than others. One is brand familiarity, which we tried to control for in this study. Another is programme and character familiarity, which could influence involvement and which in turn could influence the cognitive processing of the advertisements. This was not controlled for in this study (or others carried out in this particular research area) although there is no reason to expect it had any systematic effect as most studies have shown few memory effects of involvement.

Next, there is the issue of the adjacent nature of the sexual imagery in the programme and advertisement, which may have influenced memory. It was not possible to control for or manipulate this as the advertisements were inserted at the noted point in both programmes.

Finally, one advertisement (for Elave) may have had a disproportionate effect as it was clearly the most memorable and stood out from all the others, having full-frontal female nudity not generally seen in the UK. If there was any effect of an ad blocking encoding of the programme, it probably occurred for material around this advertisement. Therefore, in future research, it may be wise to either exclude ads of this type, or have more of them, so as to reduce the possibility of the von Restorff effect occurring and possibly biasing the results.

Overall, this study provides a strong argument for using sexual content in order to create interesting, attention-grabbing and memorable advertisements. The findings

suggest that broadcasters need not worry about the congruity between the sexual content of the programme and the advertisement; sexual advertising is more memorable than non-sexual advertising irrespective of the programme content within which the advertisement is embedded. This study strongly supports the notion that sex really does sell.

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