

CONTEXT EFFECTS ON MEMORY FOR TELEVISION ADVERTISEMENTS

CLAIRE E. NORRIS

De Montfort University, UK

ANDREW M. COLMAN

University of Leicester, UK

This study focuses on the hypothesis that television viewers', depth of psychological involvement in a program is inversely related to their recall and recognition of accompanying advertisements. Ninety subjects watched an involving or a relatively uninvolved television program accompanied by six completely unfamiliar advertisements. They then responded to a series of questionnaires designed to measure their perceptions of the programs and the advertisements and their memory for the advertisements. As predicted, subjects' recall and recognition of the advertisements correlated negatively with their ratings of the programs as suspenseful, challenging, involving, and worth remembering, and positively with their ratings of boredom with the programs. But, in sharp contrast, subjects' attitudes towards the advertisements, attitudes towards the brands, and rated intention to buy the products correlated positively with their ratings of the programs as stimulating, thought provoking, attention-grabbing, challenging, immersing, and as having impact.

Keywords: context, effects, memory, television, advertisements, viewers, psychological, involvement, television programs

During the past three decades, several aspects of program context have been examined for their possible bearing on the effectiveness of television advertisements. Among the context effects that have been investigated are program genre (Barclay, Doub, & McMurtrey, 1965; Schwerin, 1958; Schwerin & Newell, 1981); program-induced viewer mood (Axelrod, 1963; Goldberg & Gorn, 1987; Kamins, Marks, & Skinner, 1991, Schumann, 1986); program-advertisement congruity (Bello, Pitts, & Etzel 1983; Hansen, Barry, Reed, & McGill, 1976; Horn & McEwan, 1987; Johnson, 1981; Kamins, Marks, & Skinner, 1991; Lambert, 1980; Murphy, Cunningham, & Wilcox, 1979); program-induced viewer excitement (Singh, Churchill, & Hitchon, 1987); attitude or liking for the program (Clancy & Kveskin, 1971; Leach, 1981;

Priemer, 1983; Schumann, 1986; Thorson & Reeves, 1986; Twyman, 1974); program-induced viewer drive for closure (Kennedy, 1971); program-induced emotional arousal or pleasure (Pavelchak, Antil, & Munch, 1988); program impact or appeal (Television Audience Assessment, 1984); and above all program-induced viewer involvement (Bryant & Comisky, 1978; Colman, Grimes, & Wober, 1989; Lloyd & Clancy, 1991; Park & McClung, 1986; RBL, cited in Johnson, 1992; Siebert, 1978; Soldow & Principe, 1981; Thorson & Reeves, 1986; Thorson, Reeves & Schleuder, 1985).

This body of research is, however, riddled with apparently contradictory findings, especially with regard to program-induced viewer involvement, which has received the most attention from researchers. Some reports have suggested a positive, facilitative effect of program context on recall or perception of accompanying advertisements (e.g., Lloyd & Clancy, 1991; RBL, cited in Johnson, 1992), while others have suggested a negative effect (e.g. Bryant & Comisky, 1978; Colman, Grimes, & Wober, 1989; Norris & Colman, 1992; Park & McClung, 1986; Soldow & Principe, 1981; Thorson & Reeves, 1986; Thorson, Reeves, & Schleuder, 1985). The inconsistency may be partly explained by the operation of selective exposure in the studies reporting a positive relationship (Schumann & Thorson, 1987; Thorson, Friestad, & Zhao, 1987), but it is probably due also to the different ways in which viewer involvement has been operationalized in different studies.

The theories put forward to explain these effects are correspondingly divergent. When a negative or inverse relationship is reported, reference is often made to some aspect of information processing, in particular the limited-capacity properties of the human information processing system, the effects of processing demands on attention and the resulting interference from competing stimuli, or the proactive and retroactive interference of context material on memory for accompanying advertisements. According to these information processing interpretations, an involving program is assumed to impair or inhibit the cognitive processing and the subsequent recall and recognition of the accompanying advertisements. Conversely, when a positive effect is reported, reference is generally made to some sort of facilitative priming or carry-over effect from the program to the advertisements. According to this view, an involving program is assumed to induce a state of mind in which viewers are more alert, aroused, attentive, or in some other way more receptive to the accompanying advertisements.

There is little agreement about the operational definitions of predictor variables, especially of the predictor variable *involvement*. Viewer involvement has been measured using a variety of rating scales anchored by such adjectives as *absorbing*

(“How absorbing was the program segment?”, *interesting*, *involving* (Bryant & Comisky, 1978), *suspenseful* (Soldow & Principe, 1981), *irrelevant*, *means a lot to me*, *matters to me*, *interesting*, *significant*, *vital*, and *essential* (Park & McClung, 1986). Colman, Grimes, and Wober (1989) operationalized involvement in terms of enjoyment value, informativeness, perceived quality, and emotional arousal potential. RBL (cited in Johnson, 1992) operationalized involvement using the standard UK audience appreciation (AI) index used by the Broadcasters’ Audience Research Board (“It touched my feelings” and “I learnt something from it”), an overall opinion index, and a claimed attention level index. Lloyd and Clancy (1991) measured involvement using a set of scales collectively labeled “entertainment value” that were thought to measure “various aspects of viewers’ feelings and emotions” (p. 39).

It is by no means clear that all of these rating scales measure the same underlying variable of program-induced viewer involvement. It is possible that different researchers measured various context effects other than involvement, and this may explain the inconsistent directional trends in the results. The exception to this would seem to be Bryant and Comisky (1978), who claimed that their ratings of the predictor variable involvement were high in both reliability and predictive validity (see Bryant, 1974), and Park and McClung (1986) whose scales were adapted from Zaichkowsky (1984). Lloyd and Clancy (1991) also claimed that their “entertainment value” scales were reliable and valid, but they did not supply evidence to support this claim.

Viewers’ responses to advertisements have been measured in a variety of different ways. Many researchers have measured just one dependent variable, such as memory (e.g., Bryant & Comisky, 1978; Clancy & Kweskin, 1971; Johnson, 1992; Murphy, Cunningham, & Wilcox, 1979; Pavelchak, Antil, & Munch, 1988), attitude towards the advertisement (e.g., Axelrod, 1963; Krugman, 1983), or viewer involvement in the advertisement (e.g., Park & McClung, 1986). Others have measured two or more of these dependent variables (e.g., Colman, Grimes, & Wober, 1989; Goldberg & Gorn, 1987; Kamins, Marks, & Skinner, 1991; Kennedy, 1971; Lloyd & Clancy, 1991; Schumann, 1986; Soldow & Principe, 1981; Thorson, Friestad, & Zhao, 1987). Studies have also varied widely in the sophistication with which the dependent variables have been measured. The measurement of memory, for example, has ranged from crude tallies of the number of advertisements recalled (e.g., Pavelchak, Antil, & Munch, 1988) to sophisticated measures of free recall, cued recall, and recognition of advertisements (e.g., Colman, Grimes, & Wober, 1989).

Several other criticisms of the context literature necessitate caution in interpreting the findings. Many studies have used undergraduate students as subjects (e.g., Axelrod, 1963; Bryant & Comisky, 1978; Goldberg & Gorn, 1987; Horn & McEwan, 1977; Kamins, Marks, & Skinner, 1991; Murphy, Cunningham, & Wilcox, 1979; Pavelchak, Antil, & Munch, 1988; Schumann, 1986), but the reactions of students to television programs and advertisements are unlikely to be typical of the population as a whole.

In many experiments, no attempt has been made to control for prior exposure to the advertising or programming materials (e.g., Crane, 1964; Goldberg & Gorn, 1987; Horn & McEwan, 1977; Kamins, Marks, & Skinner, 1991; Kennedy, 1971; Lloyd & Clancy, 1991; Schumann, 1986; Soldow & Principe, 1981; Thorson, Friestad, & Zhao, 1987; Thorson & Reeves, 1986; Webb, 1979). As an unfortunate consequence of this, reported effects on the processing of advertisements cannot be attributed unequivocally to the effects of the program context at the time of testing.

Other researchers do not appear to have pretested or piloted the programs or the advertisements (e.g., Crane, 1964; Kennedy, 1971; Murphy, Cunningham, & Wilcox, 1979; Park & McClung, 1986; Soldow & Principe, 1981; Schumann, 1986; Thorson, Friestad, & Zhao, 1987; Thorson & Reeves, 1986; Webb, 1979). Programs and advertisements ought to be piloted in order to enable selection of materials that provide a satisfactory range of scores on the predictor variables, so that any observed context effect can be interpreted in relation to those predictor variables. One prominent study sampled materials with reference to a variable (suspensefulness) that was not actually measured within the experimental procedure (Soldow & Principe, 1981).

Some researchers have not adhered to the generally accepted five per cent probability level for statistical significance (e.g., Horn & McEwan, 1977; Kennedy, 1971; Murphy, Cunningham, & Wilcox, 1979; Schumann, 1986), and others have failed to report any statistical tests of differences or relationships to support their interpretations of their results (e.g., Barclay, Doub, & McMurtrey, 1965; Steiner, 1966).

Finally, several studies (Barclay, Doub, & McMurtrey, 1965; Clancy & Kweskin, 1971; Krugman, 1983; Pavelchak, Antil, & Munch, 1988; Rogus & Griswold, 1989; Steiner, 1966) have used a survey methodology which, though naturalistic, lacks validity because it does not allow control of prior exposure to the programs or advertisements or systematic manipulation of the type of materials viewed. Also, the scales used to measure involvement in these studies have tended to be very limited and in some cases – for example in the case of the Broadcasters' Audience Research

Board's appreciation index (AI) – they have been double-barreled. Finally, in these survey studies the time of testing in relation to exposure to the advertisements has not generally been carefully controlled and often not even reported.

The investigation described below is intended as a methodological improvement on previous research, and is aimed at providing a clearer picture of program context effects. Audience involvement was chosen as a predictor variable because it has often been reported to be an important context variable in earlier studies and because it has generated apparently contradictory results. A laboratory study was used in preference to a survey methodology because it provides an opportunity to control the context variables and many other factors that could influence advertisement effectiveness. The programs used in this study were chosen, following a large-scale pilot study, in order to induce a wide range of involvement in the viewers. The pilot study indicated that the programs differed sharply on several measures traditionally associated with involvement in previous research, and also on empirically derived scales of involvement derived from a full-scale cluster analysis.

A further methodological improvement was the participation of subjects chosen from the general population of a major city, which is likely to have enhanced the external validity of the study in comparison to those that have been confined to undergraduate students. A special technique was used to ensure that the context programs and the advertisements had never been seen before by any of the subjects, which solved the ubiquitous problem of contamination from previous exposure. Last, sophisticated measures of both recall and recognition of advertisements, product types, and brand names were used, together with scales to measure attitudes towards the advertisements and intention to buy the product.

METHOD

SUBJECTS

The subjects who participated in this study were 90 members of the general population of Leicester over the age of 16 (45 men and 45 women). Table 1 shows the composition of the total sample and the groups assigned to each treatment condition with regard to sex, age, and numbers of years of formal education.

The subjects were recruited via three small display advertisements in a local newspaper offering “£3 for just 1 hour of your time. Take part in our TV research”. People who responded to the advertisements by telephone were allocated randomly to

three treatment conditions, with equal numbers of subjects in each.

TABLE 1
COMPOSITION OF SUBJECT SAMPLES

Condition	Sex		Post-16 Educ. (yrs)					
	M	F	0	1	2	3	4	5+
Music	18	12	7	6	4	2	3	8
Action-drama	13	17	8	4	6	5	1	6
Nature	14	16	10	2	3	6	3	6
All Ss	45	45	25	12	13	13	7	20

	No. in Each Age Band						
	10-19	20-29	30-39	40-49	50-59	60-69	70-79
Music	8	9	4	1	4	3	1
Action-drama	6	8	4	3	3	3	3
Nature	6	6	7	3	2	4	2
All Ss	20	23	15	7	9	10	6

MATERIALS

Programs The three programs used in the research were selected from European satellite and Australian television channels. This enabled English-language material to be used that the subjects were unlikely to have seen before. In the pilot study, none of the 115 undergraduate students from the University of Leicester or the 36 members of the general population of Leicester had seen the programs before.

The pilot study also confirmed that the three programs chosen differed significantly on 14 seven-point counterbalanced rating scales designed to measure program-induced involvement. The positive anchors were: *involving* ($F(8, 242) = 7.72, p < 0.001$), *absorbing* ($F(8, 242) = 11.60, p < 0.001$), *stimulating* ($F(8, 242) = 13.20, p < 0.001$), *suspenseful* ($F(8, 242) = 7.63, p < 0.001$), *boring* ($F(8, 242) = 7.70, p < 0.001$), *challenging* ($F(8, 242) = 9.87, p < 0.001$), *interesting* ($F(8, 242) = 12.84, p < 0.001$), *thought-provoking* ($F(8, 242) = 23.03, p < 0.001$), *worth remembering* ($F(8, 242) = 15.20, p < 0.001$), and *attention-grabbing* ($F(8, 242) = 7.85, p < 0.001$), as having *impact* ($F(8, 242) = 11.03, p < 0.001$), as eliciting *attention* ($F(8, 242) = 3.71, p < 0.001$) and *concentration* ($F(8, 242) = 14.05, p < 0.001$), and as making the subjects feel *immersed* in the program ($F(8, 242) = 9.52, p < 0.001$). The programs that were finally chosen were as follows:

Condition 1 (music): "Blue Night" (28 minutes and 37 seconds, excluding advertisements). This was an alternative popular music program including hits from

George Harrison and “Guns and Roses”, and a feature on the singer Joan Armatrading.

Condition 2 (action-drama): “China Beach” (29 mins and 45 seconds, excluding advertisements). This serial program, set during the Vietnam war, followed the lives of the medical staff in an American army hospital unit.

Condition 3 (nature): “Perspectives” (28 minutes and 32 seconds, excluding advertisements). This program focused on the necessity to prevent the extinction of the world’s animals because of their potential benefits to mankind.

The pilot study revealed that the nature program was significantly more *challenging, interesting, thought-provoking, worth remembering, stimulating*, had more *impact*, and elicited more *attention* than the action-drama program, which, for its part, was rated significantly more *involving, absorbing, stimulating, suspenseful*, as eliciting significantly more *attention*, and as significantly less *boring* than the music program ($p < 0.05$ in each case). The nature program was rated as significantly more *involving, absorbing, stimulating, suspenseful, challenging, interesting, thought-provoking, worth remembering, attention-grabbing*, as having significantly more *impact*, as eliciting significantly more *attention* and *concentration*, as making the subject feel significantly more *immersed* than the music program, and as significantly less *boring* than the music program ($p < 0.05$ in each case).

Advertisements One advertisement break containing six advertisements appeared within each television program. These advertisements were selected from a total sample of 41 advertisements taken from Australian and South African television channels. This enabled a choice to be made of target advertisements and brand names that were unlikely to be known to subjects. The six advertisements were chosen to span a wide variety of product types. Preliminary work by Norris (1992), in which 103 undergraduate students from the University of Leicester participated, ensured that the advertisements and brand names were unfamiliar to subjects and the six advertisements did not differ significantly from one another on a counterbalanced set of eleven seven-point rating scales measuring subjects’ attitudes towards the advertisements, attitudes towards the brands of products, and intention to buy the products ($p > 0.05$ in each case).

The six advertisements in the advertising break were arranged in the following random order: Cool Charm deodorant, IXL jam, Canola oil, Drive laundry liquid, Sard stain remover, and Skinny milk. The length of the advertising break was 2 minutes and 24 seconds, and it appeared on average 13 minutes and 50 seconds ($SD = 0.007$

minutes) from the end of each program.

Questionnaires Several questionnaires were used to measure the subjects' perceptions of the programs and advertisements and their recall and recognition of the advertisements. After supplying details of their sex, age, and years in education since their sixteenth birthday, subjects were asked if they had ever seen the program episode prior to participating in this research (none of them had done so). Subjects then responded to the following questionnaires in the order shown:

Program ratings: Subjects responded to a counterbalanced set of 14 seven-point rating scales to measure their involvement in the programs they had just watched. These included all of the scales across which the three programs were found to differ in the pilot study (*challenging, interesting, thought-provoking, stimulating, involving, absorbing, concentrated, immersed, suspenseful, boring, attention-grabbing, worth remembering, impact, attended*). The first eight of these scales constituted the empirical definition of the variable *involvement* derived from a full scale cluster analysis of a very large number of candidate items, including all those that have been used as indices of involvement in previous published research (Norris, 1992). In addition, six further scales were included to enable a comparison to be made between this study and previous research purporting to measure the effects of program-induced viewer involvement (*suspenseful*, from Norris & Colman, 1992, and Soldow & Principe, 1981; *boring*, from Colman, Grimes, & Wober, 1989; *attention-grabbing*, from Norris & Colman; *worth remembering* from several studies including RBL, cited in Johnson, 1992; *impact* from RBL; and *attended*, from Norris & Colman).

Measures of recall and recognition: Subjects' recall and recognition of the six advertisements were measured with the following four measures. (a) Free recall: Subjects were asked to write down as much as they could remember about the advertisements including brand name, product and details of the advertisement. (b) Recognition of products: Subjects were asked to try to recognize the six product types from among a total of 48 randomly organized products types also commonly advertised on television. (c) Cued recall of brand names: The four product types relating to the target advertisements were given, and subjects were asked to recall the corresponding brand names. (d) Recognition of brand names: Each brand name was printed beneath the relevant product type among six possible brand names, randomly ordered, and the subjects' task was to circle the appropriate brand name. For authenticity, the non-target items were culled from Capitman (1976) and Crowley (1979) and from products advertised in Australian and South African television

advertisements and American magazines not available in Britain. This precaution ensured that the non-target brand names would be equally as plausible and unfamiliar to the subjects as the target brand names.

Advertisement ratings: Subjects were presented with brief summaries of the six advertisements and were asked to respond to a counterbalanced set of 11 seven-point scales measuring the attitude towards advertisement, attitude towards the brand, intention to buy the product, and subjects' estimations of their own memory for the advertisements (metamemory). These scales were based on previous research in which advertisement ratings were used (Colman, Grimes, & Wober, 1989; Homer, 1990; Mackenzie & Lutz, 1989; Mackenzie, Lutz, & Belch, 1986; Yi, 1990). To double-check the pilot study finding that the brand names were all quite new to the subjects, they were also asked if they had heard of the brand names prior to participating in this research (none had). If subjects estimated their memory for the advertisement as very low, they were asked not to fill in the remaining advertisement ratings scales for each advertisement, because it was thought subjects would be unable to provide meaningful ratings of advertisements that they could not remember.

PROCEDURE

Subjects were assigned to treatment conditions randomly and tested in groups of between 15 and 30. They were told that the research related to psychological aspects of television viewing and that they were about to watch a program that had been recorded from an English-speaking foreign television channel. They were also told that the program would last for about 30 minutes, after which they would be asked to fill in a few short questionnaires. The subjects were requested to relax and simply watch the program as they might watch television at home. No mention was made of the advertisements.

After watching the program and advertisements, the subjects were asked to respond to the questionnaires in the order described above. They were not allowed to backtrack in order to change or supplement their responses to earlier questionnaires on the basis of information provided in subsequent questionnaires. If subjects were unable to remember details clearly, they were requested to guess. The completion of the questionnaires was timed. Subjects were given two minutes to complete their personal details and the program ratings, a further six minutes for the completion of the free recall of advertisements (a) questionnaire, and six minutes for the remaining three memory questionnaires (b, c, and d). The advertisement ratings were untimed. After

completing all the questionnaires, the subjects were paid £3.00, and a general debriefing session was held.

Pearson product-moment correlations were calculated to investigate the relationship between the program ratings, advertisement ratings and memory for the advertisements. One-way analyses of variance were carried out to see if there were any significant differences between the context programs on memory for, or attitude towards the advertisements.

Scoring of Questionnaires. The seven-point rating scales were each scored from zero (*low*) to six (*high*).

The scoring of the recognition measures was straightforward: in each case one point was awarded for a correct choice and zero for an incorrect choice. Free recall descriptions of the advertisements were marked out of 30 according to lists of 30 salient points created in advance by two independent raters. These covered virtually all the details mentioned in subjects' descriptions.

Free recall of product types was scored on a three-point scale: 2 marks were awarded for perfectly or virtually correct products, 1 mark for answers that were substantially correct but insufficiently precise (e.g. salad oil instead of cooking oil), and zero for incorrect answers.

Free recall and cued recall of brand names was scored on a five-point scale: 4 marks were awarded for perfectly correct or virtually correct words, three marks for almost correct answers but with small mistakes or omissions (e.g. XL instead of IXL), two marks for answers with recognizable elements of the brand's sound or appearance which could none the less not be described as almost correct (e.g. Excel), and one mark for answers with initial letter correct or the correct number of syllables but no other recognizable elements of brand names sound or appearance (e.g. IFG).

The scoring of the free recall and cued recall questionnaires was performed by two independent judges using the lists of salient points and the marking scheme described above. When there was a discrepancy, the mean of the separate scores was taken. As a check on the reliability of the scoring procedures, correlations between judges' scores were calculated. The correlations were found to be $r = 0.99$ ($p < 0.001$) for free recall and $r = 0.99$ ($p < 0.001$) for cued recall.

The questionnaire measuring perceptions of the programs produced 14 scores pertaining to the 14 individual rating scales, a score for ratings of involvement (termed *broad involvement*) calculated by summing the 14 individual rating scores of involvement, and a more focused score for ratings of involvement (termed *narrow involvement*) which was a composite score of the scales that had been found through

the cluster analysis to define the term *involvement* empirically.

The free recall and cued recall questionnaires were combined to form a global recall score. The recognition questionnaires (recognition of products and recognition of brand names) were similarly combined to form a global recognition scale. All the memory scores were summed to form a global memory score for each subject.

RESULTS

PROGRAM RATINGS AND MEMORY FOR ADVERTISEMENTS

Table 2 shows the correlations between subjects' ratings of the programs and their free recall, product recognition, cued recall, brand recognition, global recall, global recognition, and global memory scores for the advertisements.

The first thing to notice is that the overwhelming majority of the correlations were negative and many were significant. Subjects' ratings of both broad and narrow

TABLE 2
CORRELATIONS BETWEEN PROGRAM RATINGS AND MEMORY FOR ADVERTISEMENTS

Program Ratings	Free Recall	Product Recog.	Cued Recall	Brand Recog.	Global Recall	Global Recog.	Global Memory
Broad Involvement	-0.07	-0.13	-0.23*	-0.23*	-0.13	-0.20	-0.14
Narrow Involvement	-0.09	-0.12	-0.22	-0.23*	-0.14	-0.19	-0.15
Involving	-0.19	-0.22*	-0.24*	-0.25*	-0.19	-0.26*	-0.21
Absorbing	-0.05	-0.18	-0.21	-0.17	-0.11	-0.20	-0.12
Stimulating	-0.14	-0.18	-0.20	-0.14	-0.16	-0.18	-0.17
Suspenseful	-0.25*	-0.28**	-0.30**	-0.24*	-0.27**	-0.29**	-0.29**
Boring	0.07	0.18	0.09	0.24*	0.08	0.24*	0.10
Interesting	-0.06	-0.11	-0.11	-0.18	-0.08	-0.16	-0.09
Thought-provoking	-0.08	-0.08	-0.19	-0.14	-0.12	-0.12	-0.13
Worth Remembering	-0.14	-0.14	-0.22*	-0.24*	-0.17	-0.21*	-0.18
Impact	-0.06	-0.12	-0.18	-0.24	-0.10	-0.18	-0.12
Attention-grabbing	-0.10	-0.17	-0.26*	-0.15	-0.16	-0.18	-0.17
Challenging	-0.17	-0.14	-0.29**	-0.28**	-0.22*	-0.23*	-0.23*
Attended	-0.11	-0.01	-0.00	-0.04	0.08	-0.02	0.07
Concentrated	-0.12	-0.02	-0.04	-0.14	0.10	-0.08	0.08
Immersed	-0.14	-0.17	-0.29**	-0.24*	-0.19	-0.23*	-0.21

Note: Broad involvement refers to summation of all 14 rating scales. Narrow Involvement refers to the summation of the rating scales pertaining only to empirical definition of involvement derived from the cluster analysis.

* $p < 0.05$, ** $p < 0.01$.

involvement correlated negatively and significantly with measures of cued recall and brand recognition. Subjects' ratings of how *involving* they found the programs correlated negatively and significantly with global recognition scores as well as scores of product recognition, cued recall, and brand recognition. Ratings of the programs as *suspenseful* correlated negatively and significantly with all of the memory scores, and ratings of the programs as *worth remembering* and how *immersed* the subjects felt correlated negatively and significantly with global recognition scores and with cued recall and brand recognition scores. Ratings of *challenging* correlated negatively and significantly with all of the global memory scores as well as the cued recall and brand recognition scores. Ratings of the program as *boring* correlated significantly and positively with global recognition and brand recognition scores. Ratings of the programs as *attention-grabbing* correlated negatively and significantly with just the cued recall questionnaire.

TABLE 3
CORRELATIONS BETWEEN PROGRAM AND ADVERTISEMENT RATINGS

Program Ratings	Attitude to Ad	Attitude to Brand	Intention to Buy
Broad Involvement	0.38*	0.42**	0.28
Narrow Involvement	0.36*	0.39**	0.23
Involving	0.23	0.27	0.25
Absorbing	0.14	0.12	0.02
Stimulating	0.32*	0.32*	0.26
Suspenseful	0.07	0.08	0.18
Boring	-0.38**	-0.28	-0.12
Interesting	0.31*	0.17	0.07
Thought-provoking	0.06	0.22	0.04
Worth Remembering	0.14	0.11	0.06
Impact	0.45**	0.45**	0.31*
Attention-grabbing	0.51***	0.55***	0.45**
Challenging	0.33	0.38*	0.17
Attended	0.27	0.29	0.09
Concentrated	0.27	0.27	0.20
Immersed	0.41**	0.38*	0.25

Note: Broad Involvement refers to summation of all 14 rating scales. Narrow Involvement refers to the summation of the rating scales pertaining only to empirical definition of involvement derived from the cluster analysis.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

CORRELATIONS BETWEEN ADVERTISEMENT AND PROGRAM RATINGS

The correlations between the program and advertisement ratings are given in Table 3. All the correlations are positive, except those pertaining to subjects' ratings of the programs as boring. Many of the correlations were significant. Broad and narrow ratings of involvement correlated significantly and positively with subjects' attitudes towards the advertisements and attitudes towards the brands of the products ($p < 0.05$ in each case). Subjects' ratings of the programs as having *impact* and being *attention-grabbing* correlated highly significantly and positively with subjects' attitude towards the advertisements, attitudes towards the brands, and subjects' reported intention to buy the products. Subjects' ratings of the programs as *stimulating*, *challenging*, and of being *immersed* in the programs correlated significantly and positively with attitude towards the advertisements and attitude towards the brands of products. Ratings of the programs as *interesting* correlated positively and significantly only with reported attitudes towards the advertisements, and ratings of the programs as *boring* correlated negatively and significantly with attitudes towards the advertisements.

DISCUSSION

The results of this study strongly confirm that psychological involvement in a television program (whether defined empirically or as in previous research) is related to memory for and attitudes towards accompanying advertisements. But completely different results were obtained for memory scores on the one hand and subjects' attitudes and ratings of the advertisements on the other.

The results for memory were quite straightforward, consistent, and in line with expectations. The correlational results for the individual memory questionnaires replicate the findings above. The more *suspenseful* the subjects found the programs the lower were their memory scores on all four memory questionnaires. The more *involving* the program, the lower the scores on all questionnaires except the free recall questionnaire. The more *involving*, *challenging* and *worth remembering* the programs were rated, and the more immersed the subject was, the lower the scores were on the cued recall and recognition of brand names questionnaires. The more *attention-grabbing* and the less *boring* the subjects found the programs, the lower the scores were on the cued recall questionnaire and recognition of brand names questionnaire respectively. These results tend to show negative relationships between program ratings and the recognition and cued recall questionnaires.

The majority of the involvement ratings of the programs yielded negative correlations with the objective measures of global recall, global recognition and global memory for the accompanying advertisements. The consistency of these findings is reinforced by the strength and statistical significance of many of the correlations. In particular, subjects' ratings of the programs as *suspenseful* and *challenging* correlated negatively and highly significantly with all three memory scores, while the ratings of *involving* and *worth remembering* correlated negatively and significantly with the global recognition scores. These data show that the more involving, suspenseful, challenging, and worth remembering the subjects found the program, the less they tended to remember about the accompanying advertisements. Similarly, the positive correlations pertaining to boredom also echo the negative relationship between memory and involvement in the program. The more *boring* the program (indicating low involvement) the higher the memory scores for the advertisements.

The negative trend in the results corroborates the findings of several previous studies hypothesizing involvement as the predictor variable (Bryant & Comisky, 1978; Colman, Grimes, & Wober, 1989; Norris & Colman, 1992; Park & McClung, 1986; Soldow & Principe, 1981; Thorson & Reeves, 1986). In accordance with previous research, these results can be explained with reference to the proactive or retroactive interfering effects of involving programs on the cognitive processing of advertisements or the effects of stimulus overload on attentional processes caused by the greater processing demands of involving programs.

In this investigation, involvement was measured using both empirical definitions derived from a cluster analysis of a wide range of involvement terms, but separate measures based on terms used in previous studies were also included to facilitate comparison of the results with previous research. The significant negative correlation for subjects' ratings of the programs as *involving* replicated that in previous studies (Bryant & Comisky, 1978; Norris & Colman, 1992; Soldow & Principe, 1981). Although not significant, the negative trends in the results of several other scales comprising the empirical definition of involvement also replicated those in previous research: *absorbing* (Bryant & Comisky; Norris & Colman); *interesting* (Bryant & Comisky; Colman, Grimes, & Wober, 1989; Norris & Colman; Park & McClung, 1986); *concentrated* (Norris & Colman); *attended* (Norris & Colman).

Of the scales used in previous research which had not been established as part of the empirical definition of involvement, *suspenseful* was found to be correlated negatively and significantly with memory, as was found by Norris and Colman (1992).

In addition, subjects' ratings of the program as *boring* correlated significantly and positively with recognition scores and thus provided similar results to those of the *interesting/boring* scale in the Colman, Grimes, and Wober (1989) study.

Turning to a discussion of the correlations between program ratings and advertisement ratings, surprisingly contrasting results were observed. All the correlations except the one relating to boredom were positive, and again many were significant. Subjects' ratings of the programs as *attention-grabbing* and as having *impact* correlated positively and significantly with their attitudes towards the advertisements and the brands, and their intention to buy the products. These data show that the more *attention-grabbing* a program is and the more *impact* it has, the more favorable were perceptions of the advertisements and the greater the stated intention to purchase the product.

Other significant correlations show that the higher the ratings of the program as *challenging*, *stimulating*, *interesting*, and the more *immersed* the subjects felt in the program, the more favorable were their attitudes towards the advertisements and the advertised brands. Broad involvement also correlated positively and significantly with attitudes towards the advertisements and brands. Similarly, the correlations between rated boredom in the program and the advertisement ratings were negative. The more boring the programs, the less favorable the subjects' reactions to the advertisements.

With reference to the particular variables used, the results of this study contrast with those of Soldow and Principe (1981) who observed a negative relationship between program-induced involvement and attitudes towards advertisements and intention to purchase the products advertised. Two studies appear to have reported the positive relationship observed here for intention to purchase products advertised and program ratings (Lloyd & Clancy, 1991; RBL, cited in Johnson, 1992).

How can the apparently contradictory effects on memory and attitudes towards the advertisements be explained? It is possible that an involving program may create a positive mood and attitude which carries over to the advertisements. At the same time, an involving program may absorb much of viewers' attention and thereby interfere with memory encoding of the competing stimuli within the advertisements, perhaps through the operation of proactive or retroactive inhibition or as a result of the limited capacity attentional processes being focused on the program. The formation of attitudes may require less information processing, and thus interference from an involving program, or competition for attentional processes, is less likely to affect the transference of positive attitudes towards the advertisements in the same way as they affect memory encoding.

A useful direction for future research would be to investigate whether other predictor variables, such as the entertainment and enjoyment value of a program, produce similar context effects using the same methodological improvements. In the light of the clear pattern of context effects found in this study using unfamiliar advertisements under rigorous conditions, it would also be useful to examine the effects of context on repeated (rather than one-off) exposure to both novel and familiar advertisements.

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Address correspondence and reprint requests to:

DR ANDREW M. COLMAN
Department of Psychology
University of Leicester
University Road
Leicester LE1 7RH
ENGLAND