The Effect of Emotions On The Memory Of TV Commercials

Rodoula Tsiotsou (Ph.D)

Hellenic Basketball-Clubs Association and Democritus University of Thraki

Abstract

The study investigated the effects of program-induced emotions (pleasure and arousal) on the memory of TV commercials. Moreover, the direct and indirect effects of prior experience with sports and involvement with sports on emotions and memory of the commercials were studied. A televised basketball game was used for studying the above relationships. The results of the study indicated that there was not any relationship between emotions and ad memory. However, there were strong relationships between arousal and pleasure, involvement with sports and arousal, and involvement with sports and pleasure. Further research with larger sample size and different populations are recommended for a better exploration of the topic.

Introduction

In today's competitive economic environment, advertisers use every available means to make their products known to the consumers. One of these means is sporting events. Sport is characterized by high levels of involvement and such involvement has created increased interest in advertisements. Alliance with selected sports may assist commercial enterprises in differentiating themselves and their products from competitors (McCarville & Copeland, 1994). In 1971, television broadcast 800 hours of sports but the desire for more sports increased telecasts of sports in 1992 to 1,800 hours in the U.S. (Eitzen & Sage, 1993). Television networks pay money for the rights to broadcast a league’s game (professional or collegiate) in the hopes of obtaining their money back, plus a profit, by selling advertising time. Companies currently spend around $4 billion annually on sports advertising. By the turn of the century, analysts predict that companies will spend $13.8 billion per year on advertising (Fennel, 1990). Ads have different forms in sport events shown on TV: commercials interrupt the events or ads are shown on the screen during the event next to the score cards or score reviews. Advertising's dominating role is demonstrated in the game modifications. In order to enhance profitability, the television industry has been able to manipulate the structure and process of televised sports. Examples of rule changes that permit more commercials are official time-outs at the end of each quarter, television time-outs, 2-minute warning in football, 20-second time-out in basketball, and the intended play-off system in all professional sports.

Since a large amount of money is spent in advertising during televised sport events, it is essential to explore its effectiveness. Although advertising has been widely used in televised sport events, very limited research exists on its impact on sport consumers and on subsequent consumer decisions. Previous research on advertising has focused either on spectators (Turco, 1992) or on television viewers (Newell & Henderson 1994; Pavelchak, Antil & Munch, 1988) of sport events. Results from a study of spectators revealed that exposure to corporate names and logos at sport events does increase product awareness and may subsequently lead to product consumption (Turco, 1992). Another study showed that 70 percent of stadium spectators recalled scoreboard advertising; of the responses from football stadia, 77 percent identified the existing stadium advertising while among the basketball spectators, 62 percent were accurate (Stotlar & Johnson, 1989).

The purpose of this study was to explore how involvement and prior experience with sports influence ad memory (measured by ad recall, recognition, and main idea of the ad) in an effort to improve advertising practices and strategies of televised sports. The primary questions this study attempted to answer were: how arousal and pleasure induced while watching a sport event affect advertising
memory? Are involvement and prior experience with sports related to emotions induced during a televised sport event? To assess the above questions relevant marketing literature on emotions, involvement and experience is reviewed in the next sections in order to provide a theoretical framework for the study and identify research hypotheses.

**Emotions**

The role of emotions induced by a television program in relation to advertising effectiveness is not clear in the marketing literature. Some studies have shown that positive/negative emotions affect positively/negatively the processing and memory of the advertising. (Isen, 1984; Mayer, 1986; Goldberg & Gorn, 1987). Goldberg and Gorn (1987) found that consumers evaluated advertisements based on the emotions induced by a television program. Commercials were perceived as more effective when viewed in the context of a happy program rather than a sad program. Similar results were found by other researchers such as Park and McClung (1986) and Soldow and Principe (1981).

There are contradicted opinions regarding the role of emotions in advertising effectiveness. Some scholars have suggested that viewers’ interest in commercials decreases when they are highly involved with a program (Park & McClung, 1986). Bello, Pitts, and Etzel (1983) believe that commercials interrupting highly involved programs negatively affect information processing. Taking the opposite view, Krugman (1983) posits that when consumers are interested in a program this interest is carried over to the commercials that interrupt it.

Two theoretical frameworks have attempted to explain the relationship between program-induced emotional reactions and memory (ad recall), the processing efficiency and the intensity theory. Both theories argue that program-induced emotions determine viewers information processing.

The processing efficiency principle posits that people process information more efficiently when feeling pleasure than when they experience the opposite emotions. Unpleasant states inhibit learning because they decrease motivation of processing information whereas pleasant emotions facilitate learning by activating well-integrated knowledge structures that influence encoding and as a result ad recall (Isen, 1984). Mathur and Chattopadway (1991) findings support the processing efficiency theory. Their study revealed that a happy program was positively related to recognition whereas a sad program was inversely related to such cognitive responses. Thus, advertising recall is associated with program context.

The intensity principle suggests that cognitive responses (ad recall) are related to the level of program-induced emotional reactions. Emotional intensity focuses attention to the stimuli that induce the emotions which increases information processing, facilitates encoding and recall of the stimuli. Emotional intensity should decrease recall for nonemotion-inducing stimuli. Thus, an emotionally involving program should have a negative effect on ad recall (Pavelchak et al., 1988).

Based on the intensity principle, Pavelchak, Antil and Munch (1988) investigated the effect Super Bowl XX had on the emotions (pleasure, arousal and polarization) of viewers in three U. S. cities and how these emotional reactions influenced recall for ads shown before and after the game. They found that arousal was related to recall much more strongly than it did to pleasure and that recall of the ad was negatively related to emotional intensity and unrelated to emotional pleasure. A replication of the previous study showed that emotion and arousal did not affect ad recall (Henderson, 1994). Another study measured recall of ads shown during Super Bowl XXV, indicated that the total length of the ad, the number of times the ad was shown, and the position of the ad within the pod were related to ad recall (Newell & Henderson, 1994).

**Involvement**

Though some studies have investigated the effect of advertising on televised sports, none of these have investigated the direct and indirect effects of involvement and prior experience with sports on emotions and subsequently on the memory of the commercials. Involvement in the marketing literature has been basically studied in attitude, persuasion, and advertising research (Celsi & Olson,
Involvement in advertising has been examined in terms of either the product advertised, or the media used or the program context (Stewart & Ward, 1994; Park & McClung, 1986; Soldow & Principe, 1981; and Kamen, 1981). This review of literature is focused on involvement with the program context.

**Involvement with the Program Context**

Studying individual responses to advertising in the media context has been argued to be more fruitful than focusing on characteristics of the advertising (Stewart & Ward, 1994). People watch a television program in order to fulfill certain needs, rather than to view commercials. However, viewers are exposed to commercials which are part of the program. Thus, there should be a linkage between audience's reaction to the program and its commercials (Park & McClung, 1986). However, the relationship between program involvement and the level of commercial involvement is not clear.

It has been suggested that a curvilinear relationship exists between the two constructs where high involvement with the program has a mitigating effect on the involvement level with the commercials. Park and McClung (1986) examined the effect of the audience involvement with TV programs on their involvement with the commercials. The TV programs were distinguished into two types: a) cognitive; where the subject is processing issue-oriented information from the television program; and b) affective; where the subjects identify themselves with the main character in the TV program. The results of their study supported the curvilinear relationship between program involvement and commercial involvement.

Soldow and Principe (1981) suggested an inverse relationship between program involvement and commercial effectiveness. They measured commercial effectiveness by unaided brand recall, sales-message recall, attitude toward the commercial and intent to buy the product. They found that commercials were less effective within more involving environments than within less involving environments. However, Krugman (1983), who tested the above hypothesis, found that the opposed is true: commercials that interrupt interesting programs are more effective.

**Prior Experience**

Experience in marketing has been studied in terms of consumer products. However, some research findings may apply to sport events as a service. Product-related experience has been defined by Park, Mothersbaugh, and Feick (1994) as memory for relationships between the self and the product in terms of information search, product usage, and purchase experience. Experience has been utilized as a measure of consumer knowledge or familiarity (Bettman & Park, 1980). It has been proposed that the amount of product-related experience is positively related to the amount of product-class information stored in memory. Moreover, personal experiences with products may increase the perceived validity and relevance of information. Thus, product-related experiences are considered as valid cues in making judgments related to the products. A second proposition is that the amount of product related experiences is strongly associated with the level of self-assessed knowledge than with objective knowledge. The above two propositions were tested and confirmed by the results of the study conducted by Park, Motherscaugh, and Feick (1994). The same study suggested that product-related experience plays more important role in consumers' knowledge assessments than product information cues. This can be explained by higher accessibility of product-related experience in memory.

The role of prior experience with sports in consumer behavior is an unexplored area that needs further research. Graham studied the spectators attending the U.S. Men's Clay Court Championship (1992, 1994) and found that the majority of the spectators (89.6% and 85.6%) were former or current tennis players. Moreover, they participated in at least four other type of sports (golf, swimming, jogging, and biking), they attended other sports as well (basketball, football, baseball, and golf) and they watched sports on TV (tennis, football, basketball, baseball and golf). These findings indicate that spectators and viewers of sport events have prior experience and are highly involved in sports.
The review of literature suggests that there is no clear conceptualization and operationalization of the experience construct. Moreover, prior experience with a service and its relation to purchasing behavior is an unexplored area that needs to be studied by marketing scholars in the future. The following section presents the research hypotheses drawn from the above review of literature.

**Hypotheses**

The review of literature on emotions, involvement and prior experience does not suggest definite relations between these constructs and ad effectiveness. No previous research has investigated the relationship between sport involvement, and prior experience with sports and the emotions elicited while watching a sport event on TV. In addition, the lack of relevant research as it is related to viewing sport events made this study more difficult in terms of the hypotheses being proposed; and at the same time essential for further understanding how advertising works in different program types and contexts.

This study attempted to investigate the role of program context related factors such as prior experience and involvement with sports, and their role in emotions (pleasure and arousal induced during the program) and on the memory of TV commercials. It replicates part of Pavelchak's et al. (1988) study though it introduced new factors that might influence emotions. It investigated memory (measured by ad recall, ad recognition, and main idea of the ad) instead of ad recall alone. Furthermore, it uses a simple televised sport event instead of a special event to gather information regarding the above factors. This is an exploratory study in terms of the variables used to explain emotions and subsequently memory of the commercials in an effort to better understand the impact of advertising, to enrich current findings and suggest managerial implications that will facilitate advertising efforts.

People involved in sports and having prior experience with sports should be expected to be more involved with a televised sport. The high involved viewers should be expected to experience positive emotions while watching a televised sport event. Thus,

**H1:** Involvement with sports is positively related to pleasure induced during the sport program.

**H2:** Prior experience with sports is positively related to arousal induced during the sport program.

Pleasure and arousal are two positive emotions that express the emotional state of the viewers. Since both variables explain the same construct there should be related to each other. Thus, it was expected that:

**H3:** Pleasure is positively related to arousal.

However, when the sport programs are interrupted by commercials, the high involved and with prior sport experience viewers will not pay attention to the commercials. Based on the intensity principle, it is expected that high involved sport fans will be expected to be occupied by processing information regarding the sport event than the commercials. For example, they may think about the bad play of a player or the wrong/successful strategy the coach has used or the bad calls of the officials. The opposed is expected to happen for low involved audience. As Howard has pointed out: "when an advertisement interrupts a television program, the people whose involvement in the program is low do not have their ongoing pattern of thought interrupted but merely take in the advertising as part of their entertainment (Soldow & Principe, 1981). Thus,

**H4:** Pleasure induced during the sport program is negatively related to ad memory.

**H5:** Arousal induced during the sport program is negatively related to ad memory.

The literature on involvement has shown that an inverse relationship exists between involvement and
memory of the ad. As a result, it was hypothesized that:

H6: Involvement with sports is negatively related with memory of the ads.

After reviewing the relevant literature, the hypotheses for the study were constructed. The above hypotheses assisted in developing the model on figure 1. The following sections present the methodology utilized, the analysis and the results of the study.

Methodology

Subjects

The study utilized an experiment and the survey research method. Simple random sampling technique was used to gather information for the study. The researcher went to two undergraduate classes at the beginning of the class period and presented the study as an investigation related to sports. Then, a 12 minute video was shown of a collegiate basketball game between the University of Arkansas and the Louisiana State University. Two sets of commercials were included in the video one at the beginning of the experiment and one at the end of the video. Then, the subjects were asked to fill out the questionnaire without discussing the questions to ensure independence of observations and to follow the sequence of the questionnaire without going back to previous questions. The total sample size consisted of 68 subjects.

Instrumentation

The questionnaire was anonymous and consisted of six parts. Part I of the questionnaire used a modified version of the Pleasure Arousal Dominance (Mehrabian & Russel, 1974) instrument to gather data related to the pleasure and arousal the subjects felt while watching the video. The Dominance part was excluded from the questionnaire because it did not seem appropriate for this study. Part II consisted of one question referring to recall of the commercials shown. Part III asked about the commercials the subjects could recognize in a set of commercials. Part IV gathered data regarding the main idea, other than selling the product, of some of the commercials. Parts II, III, and IV were combined in the final analysis to measure ad memory. The mean score of the three parts constituted the ad memory variable. Part V consisted of a battery of questions related to involvement with sports and basketball. The questions referred to the sport publications being read, the sports watched on TV, and the sports attended. Finally, Part VI gathered information related to prior experience with sports and basketball.

Statistical Analysis

Causal modeling (path analysis) procedures were used to test the model fit and estimate the model coefficients. A path analysis was used to represent direct, indirect, and moderate causal effects among the variables of interest (prior experience with sports, involvement with sports, arousal, pleasure, and memory of the ad) and test the overall fit of the model to determine if the model is consistent with the observed correlations. The hypothesized initial model is shown in Figure 1 and the revised model is shown in Figure 2. The direct causal effects of the exogenous (unexplained) variables, prior experience with sports and involvement with sports on the endogenous (explained) variables arousal, pleasure and memory were represented with the arrowheads indicating the assumed direction of causation. Based on the review of literature, it was hypothesized that pleasure and arousal are the direct determinants of memory of the ad. The magnitude of these effects are represented by the path coefficients. The first step in the path analysis was the specification of a network of direct causal links among the variables. Then, the indirect, moderate and total effects were determined. It was hypothesized that prior experience with sports is the indirect determinant of memory of the ad whereas involvement, pleasure and arousal are the direct determinants.
The path coefficients were estimated with the use of multiple regression analysis which provides unbiased estimates of the structural coefficients and other associated results. Multiple applications of multiple regression were used to estimate the causal effects in the path analysis and to determine whether the hypothesized model provides an acceptable fit to the sample data. The fit of the model was assessed by comparing the observed correlations with the reproduced correlations for all the pairwise combinations of variables. Differences larger than .05 between the observed and reproduced correlations indicated lack of the model fit to the sample data.

Results

The bivariate correlations among the variables for the path model are shown in Table 1. Most correlations for the initial model range in strength from low to moderate. The hypothesized model shown in Figure 1 was tested using the correlations in Table 1. It was concluded that the model did not fit the data when the actual correlations were compared with the reproduced correlations. The structural coefficients of the revised model are shown in Figure 2. Only two paths were significant at the .05 level. The path from involvement with sports to pleasure (p<.0073) and the path from pleasure leading to arousal (p<.000). A small negative relationship existed between pleasure and memory, and involvement with sports and memory but both relationships were not statistically significant. The first revision of the model included an extra path leading from involvement with sports to arousal. That path was significant at the .05 level (p<.0215) and improved the fit of the model.

However, there was a difference between a reproduced and observed correlation larger than .05 that indicated a possible path from prior experience to memory of the ad. When this path was added some
Coefficient differences became larger which showed that the additional path did not improve the fit of the data so it was not included in the final model (Figure 2). Paths not statistically significant or with not strong relationships between the variables were not omitted due to the small sample of the study and the lack of previous theoretical framework.

**Table 1: Observed and Reproduced Correlations**

<table>
<thead>
<tr>
<th></th>
<th>Observed Correlations</th>
<th>Reproduced Correlations for the Revised Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Involvement</td>
<td>Experience</td>
</tr>
<tr>
<td>Involvement</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Experience</td>
<td>0.337</td>
<td>1.0</td>
</tr>
<tr>
<td>Pleasure</td>
<td>0.323</td>
<td>0.188</td>
</tr>
<tr>
<td>Arousal</td>
<td>0.437</td>
<td>0.288</td>
</tr>
<tr>
<td>Memory</td>
<td>-0.072</td>
<td>-0.141</td>
</tr>
</tbody>
</table>

*Differences between reproduced and observed correlation is greater than .05

Figure 2: Revised Model
### Table 2: Summary of Causal Effects in the Revised Model

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Determinant</th>
<th>Causal Effects</th>
<th>Direct</th>
<th>Indirect</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pleasure (R=0.104)</td>
<td>Involvement</td>
<td></td>
<td>0.269</td>
<td>0.269+</td>
<td></td>
</tr>
<tr>
<td>Arousal (R=0.385)</td>
<td>Involvement</td>
<td></td>
<td>0.204*</td>
<td>0.130</td>
<td>0.334+</td>
</tr>
<tr>
<td></td>
<td>Prior Experience</td>
<td></td>
<td>0.088</td>
<td>0.088+</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleasure</td>
<td></td>
<td>0.420</td>
<td>0.054</td>
<td>0.474</td>
</tr>
<tr>
<td>Memory (R=0.039)</td>
<td>Involvement</td>
<td></td>
<td>-0.057</td>
<td>-0.050</td>
<td>0.107</td>
</tr>
<tr>
<td></td>
<td>Pleasure</td>
<td></td>
<td>-0.188</td>
<td>0.076</td>
<td>-0.112</td>
</tr>
<tr>
<td></td>
<td>Arousal</td>
<td></td>
<td>0.158</td>
<td>-0.011</td>
<td>0.147</td>
</tr>
<tr>
<td></td>
<td>Prior Experience</td>
<td></td>
<td></td>
<td>0.022</td>
<td>0.022+</td>
</tr>
</tbody>
</table>

* Direct effect significant at the .05 level
+ Total effect may be incomplete because of unanalyzed components

**Discussion**

The study increased our knowledge of how televised sports affect emotions and how these program-induced emotions influence ad memory. It showed the importance of investigating "everyday" televised sport events and the role of involvement and prior experience with sports on ad memory. The study attempted to measure the above variables in an "everyday setting".
refers to the usual way people watch or do not watch a sport event. No special event or occasion has been chosen in this study by purpose. The televised special events are only a few and probably attract people’s attention more easily whereas the televised sport events are larger in number and not very attractive to some people. This study investigated how everyday people watch or do not watch televised sport events and what emotions they experience. Moreover, for advertising purposes there was an interest on how the emotions elicited during the sport program affected memory of the commercials that interrupted the program. The basketball video shown at the experiment was not edited out but it showed the original flow of the program. Two dimensions of emotions, pleasure and arousal, were investigated for increasing our understanding of how these emotions influence memory. As Pavelchak et al. (1988) have suggested "if only one dimension is investigated, then the overall emotional impact of a stimulus may be underestimated, overestimated, or misunderstood" (p.365).

The study demonstrated a) that there is a moderate relationship between prior experience with sports and involvement with sports, b) there is a strong positive relationship between pleasure and arousal, c) there is a relationship between involvement with sports and pleasure and arousal, d) arousal, pleasure and involvement with sports do not affect ad memory. The expected positive relationship between involvement and arousal (H1) was supported. Thus, the intensity theory which suggests that an aroused state of emotions can inhibit the effectiveness of the ad was only partially confirmed. The study supported the findings of Henderson (1994). Given that the TV program affected the emotions of the viewers, it was found that program-induced emotions had no impact on ad memory. Although, it has been recommended that "program context should be defined not only by the specific type of program involved, but also by the psychological perspective of the viewer" (Pavelchak et al. 1988, p.365), the results of this study did not support such an assertion. However, taking into account the low effects of the paths from involvement with sports, pleasure and arousal to ad memory, the fact that these paths were not statistically significant, and the small sample size, the above assertions should be considered with caution.

Recommendations for Future Research

The study partially replicated two previous studies on how a televised program influences the emotional state of the viewers, and how the program-induced emotions affect memory of the commercials shown. Henderson (1994) found that a program can exert a significant influence on emotions. However, his study did not indicate any significant relationship between emotions induced during a program (The Superbowl) and ad recall. Pavelchak et al. (1988) demonstrated that pleasure and arousal exert a significant negative influence on ad recall. The results of this study did not prove the relationship between the variables investigated but suggests further research on the topic with a larger sample size for more reliable results. Another limitation of the study was the use of student population to gather data. Other populations should be studied as well.

References


Commercials," Advances in Consumer Research, 13, 544-547.


All material presented in The Cyber-Journal of Sport Marketing is copyright unless otherwise stated. For academic and personal use, The Cyber-Journal of Sport Marketing's papers may be downloaded, or read, free of charge. Material published in the The Cyber-Journal of Sport Marketing may not be further reproduced, except as described in the previous sentence, sold or published by use of any existing or future media without the express permission of the executive editor. The Journal is registered as a journal (issn:1327-6816) with the Australian National Library and the ISSN International Centre in Paris.