EVALUATING THE IMPACT OF ADVERTISEMENT CHARACTERISTICS ON RECALL DURING THE SUPER BOWL: A TWO YEAR COMPARISON

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This study investigates the effects of length, frequency, and type of product (product vs service and dot-com vs. non-dot-com) on advertising recall. Subjects were surveyed the day after Super Bowl XXXIV and Super Bowl XXXVI to determine recall of brand and ad messages shown during the game. The results indicate that length and frequency positively and significantly influence brand as well as message recall. The results also show that non-dot-com and product ads significantly outperformed dot-com and service ads in recall of brand and ad messages.

INTRODUCTION

Given the increasingly costly and crowded television format, prudent marketers need to better understand factors that may influence the effectiveness of their advertising expenditures. In this study, we replicate Newell and Henderson's (1998) study by investigating whether the length and frequency of advertisements affect recall. In addition, we check whether the type of ad (product vs. service; dot-com vs. non dot-com) plays a role in recall of advertisements presented during the Super Bowl. To strengthen the reliability of the study, the results from two years, Super Bowl XXXIV (2000) and Super Bowl XXXVI (2002) are presented and compared.

BRIEF OVERVIEW OF PAST RESEARCH

Advertisers are concerned with how to deliver their messages most effectively to consumers in an increasingly cluttered television medium. Consequently, the effects of frequency, length and type of ad on recall has elicited a number of studies. The following is a brief overview of this research.

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Frequency

When viewers are more frequently exposed to an advertisement, they can be expected to have more time to think and elaborate about the message (Cacioppo and Petty 1979), which helps consumers to learn and retain information contained within the message better (Ephron 1995; Gorn and Goldberg 1980; Hornik 1989; Sawyer 1981; Singh and Rothschild 1983). Additionally, D'Sousa and Rao (1995) found that increased ad repetition led to greater brand and top of mind awareness. Newell and Henderson (1998), using a field study, stated that the frequency of ads for a brand has a significant and positive impact on recall. More recently, Maley, Hunt and Parr (2000) found that frequently repeated words resulted in proportionately greater recall.

Furthermore, as the number of exposures to an advertisement increases the persuasive impact of the message improves (Craig, Sternthal, and Leavitt 1976), understanding of complex promotional messages is enhanced (Anand and Sternthal 1990), and favorable attitudes toward an existing product (Winter 1973) or a new brand (Ginter 1974) increase.

Overall, past research suggests a significant and positive relationship between the number of times a viewer is exposed to advertisements of the same

brand and the recall of that brand. Thus, it is hypothesized that:

H_1: The frequency of advertisements for a brand during the Super Bowl will have a significant positive effect on recall of the brand.

Length

A number of researchers have studied the effects of the length of an advertisement on commercial recall. Specifically, many of these researchers suggest a relationship between the length of the promotional message and the ability of viewers to learn information contained in the advertisement. Longer messages enable advertisers to repeat information (e.g., brand names, arguments) more often and viewers have more time to process this information (Singh and Cole 1993). Past research indicates that longer commercials tend to result in greater recollection of information contained in advertisements (McMains 2000; Fabian 1986; Mord and Gilson 1985; Singh and Rothschild 1983) and greater recall of brand names of products (Singh and Cole 1993). A recent study finds subjects recall brand names significantly better with emotionally-based 30-second commercials than with 15-second commercials; although no difference in recall is found between 15-second and 30-second informationally-based commercials (Singh and Cole 1993). Other studies suggest that 30-second commercials are more effective in general than 15-second advertisements (Mord and Gilson 1985; Patzer 1991; Newell and Henderson 1998).

Overall, the literature seems to suggest that the more time viewers have to process information within the advertisement, the more familiar they become with the product and other information contained in the advertisement. Thus, it is hypothesized that:

H_{2a}: The length of a promotional message significantly and positively affects brand recall.

H_{2b}: The length of a promotional message significantly and positively affects advertisement message recall.

Product vs. Service Ads

As a way to enhance retention, Engel, Blackwell and Miniard (1995) suggested that information can be stored in both semantic and visual forms. Information stored in both forms essentially doubles the pathways that can be traveled within memory for retrieving the information, relative to storage in only one form. More pathways leads to better retention because if one way is blocked, there is another way to the same destination. Research (Butter 1970) also shows that concrete words enhance incidental learning. MacInnis and Price (1987) assert that memory was greatest for pictures, next for concrete words, and the least for abstract words. Since services are intangible and abstract as opposed to products which have concrete physical entity, service brand names will most likely be encoded using semantic coding, while product brand names will most likely be encoded in two forms semantic as well as imagery. For example, Dell elicits both the word "Dell" as well as the physical image of a computer, while Anderson Consulting only provokes an abstract idea of giving advice. As a result, service brands can be expected to have lower level of retention than that of product brands. Thus, it is hypothesized that:

H_{3a}: Those brands that are of service companies in nature will be recalled significantly less than those of product companies.

H_{3b}: Those advertisements (messages) that are of service companies will be recalled significantly less than those of product companies.

Similarly, since most dot-com companies are service in nature, such as Monster.com, E*trade.com, and WebMD, it can be expected that the recall for dot-com companies will be less than that of non-dot-com companies. Thus, it is also hypothesized that:

H_{4a}: Those brands that are of dot-com companies will be recalled significantly less than those of non-dot-com companies.

H_{4b}: Those advertisements (message) that are of dot-com companies will be recalled significantly less than those of non-dot-com companies.

METHOD

Given the lack of control of extraneous variables in field studies, it is important to replicate field studies to lessen the possibility that the same uncontrollable extraneous variables will skew the results. Thus, data from two Super Bowls were used. Since student samples were used in Newell and Henderson's (1998) study, it was appropriate that the same type of population was used for a replication. Respondents consisted of students located at a medium size university in the Midwest. The subjects were not forewarned of the study to ensure that their viewing and memories of the telecast advertising were unbiased.

Questionnaire

For both studies, respondents were asked to provide the name of the brand and a description of the advertisement(s). Thus, their unaided recall scores represent the number of brands and messages of the commercials accurately recalled from the nationally broadcast advertisements. In addition, respondents provided the approximate percentage of the game they watched and the specific quarters in which they viewed at least some of the game. The survey also contained questions gathering general demographic information, viewing habits, team preferences, and general feeling states of respondents during the game.

Samples

Questionnaires were administered the day after the Super Bowl XXXIV to over 360 respondents of which 353 surveys were useable and 303 (85.8 percent) watched at least some of the game. The hypotheses were tested using subjects who viewed the entire game (n=203).

Similarly, questionnaires were administered the day after the Super Bowl XXXVI to over 310 respondents of which 304 surveys were deemed useable and which 272 (89.5 percent) watched at least some of the game. Again, the hypotheses were tested employing subjects who reported that they watched all of the game (n=178).

RESULTS

General Demographics

Of those who stayed and watched the entire game, only 26 percent were women and 74 percent were men in the first study. For the second study those who saw the entire contest 28.1 percent were women and 71.9 percent were men. The respondents had an average age of 21.2 years (first study) and 21.1 years (second study).

In study one (January 2000), beginning with the opening kickoff in the first quarter and ending at the final gun of the fourth quarter, there were 56 commercials shown, not counting local and half-time commercials. Subjects accurately recalled an average of 2.77 brand names and 3.11 messages. In study two (January 2002), there were 58 commercials shown with an average of 3.24 brand names and 3.25 messages being recalled.

Hypothesis 1

Hypothesis 1 states that the frequency of advertisements for a brand during the Super Bowl will have a significant positive effect on recall of the brand. In the first study, eight of the 39 national brands were promoted multiple times using different advertisements. Consequently, to determine whether frequency affects viewer recall, the percentage of brands recalled, instead of the raw number of brands recalled, was used as dependent variable to reflect the differential number of brands using single vs. multiple ads. Furthermore, since viewers watched both single and multiple commercials for brands, a

paired-t test was conducted to test the percent of recall of those brands promoted with only one commercial against those represented by multiple commercials. The mean percentage of brand recall with multiple commercials (13.2 percent) is significantly higher ($p<.00$) than the single commercial condition (5.1 percent).

In the second study, thirteen of the 34 national brands were promoted multiple times using different advertisements. The mean percentage of brand recall with multiple commercials (22.8 percent) is significantly higher ($p<.00$) than the single commercial condition (1.42 percent). Thus, Hypothesis 1 is confirmed by both studies.

Hypothesis 2

Hypothesis 2 posits that the length of a promotional message significantly and positively affects brand (2a) and message recall (2b). To test this hypothesis, commercials were grouped by total length of broadcast message exposure. In the first study, there were three 10 seconds ads, forty- six 30 second ads, and seven 60 second ads. Again, the percentage of recall was used as a dependent variable, and paired-t tests were conducted to compare the recall of brands/messages of different length ads. The mean percentage of *brand* recall for 10 seconds, 30 seconds, and 60 seconds were .3 percent, 3.4 percent and 16.8 percent respectively. Similarly, the mean percentage of *message* recall was .3 percent, 3.7 percent and 20 percent, respectively. There were significant differences, for both brand recall as well as message recall, between 10 seconds and 30 seconds ($p<.00$), 10 seconds and 60 seconds ($p<.00$), and 30 seconds versus 60 seconds ($p<.00$).

In the second study, there were eight 15 second ads, forty- five 30 second ads, two 45 second ads, two 60 second ads and one 90 second ads. To be compatible with the first study, 45 second, 60 second and 90 second ads were grouped together and be labeled as 60 second ads for the analysis. The mean percentage of brand recall for 15 seconds, 30 seconds, and 60 seconds (and over) were 2.5 percent, 4.8 percent and 19.2 percent respectively. Similarly, the mean percentage of message recall were 2.5 percent, 5.0 percent and 19.4 percent, respectively. There were significant differences for both brand recall as well as message recall, between 15 seconds and 30 seconds ($p<.00$), 15 seconds and 60 seconds ($p<.00$), and 30 seconds versus 60 seconds ($p<.00$). Thus, Hypothesis 2 is supported.

Hypothesis 3

Hypothesis 3 holds that those brands (3a) and messages (3b) from service companies will be recalled significantly less than those from product companies. There were 28 service and 27 product ads in the first study, and 32 services and 26 product ads in the second study. To test these hypotheses, paired t-tests were conducted on the mean percentage recall rate. In the first study, the mean percentage recall rates for those service companies vs. product companies were 4.7 percent and 6.8 percent (brand recall), and 4.7 percent and 7.2 percent (message recall), respectively. The main effect of service vs. product was significant for brand recall ($p<.00$), as well as for message recall ($p<.00$). In the second study, the mean percentage recall rates for those service companies vs. product companies were 4.1 percent and 9.0 percent (brand recall), and 3.7 percent and 8.5 percent (message recall), respectively. The main effect of service vs. product was significant for brand recall ($p<.00$), as well as for message recall ($p<.00$).

Hypothesis 4

Finally, Hypothesis 4 holds that those brands (4a) and messages (4b) from dot-com companies will be recalled significantly less than those of non-dot-com companies. There were 24 commercials associated with dot-com vs. 31 commercials associated with non-dot-com companies in Super Bowl XXXIV, and 7 dot-com commercials and 51 non-dot-com ads in Super Bowl XXXVI. To test these hypotheses, paired t-tests were conducted on the mean percentage recall rate. In the first study, the mean percentage recall rates for those dot-com companies vs. non-dot-com companies were 3.7 percent and 7.3 percent (brand recall), and 3.7 percent and 7.6 percent

(message recall), respectively. The main effect of dot-com vs. non-dot-com was significant for brand recall ($p<.00$), as well as for message recall ($p<.00$). In the second study, the mean percentage recall rates for those dot-com companies vs. non-dot-com companies were 0.6 percent and 6.3 percent for both brand recall as well as message recall, respectively. The main effect of dot-com vs. non-dot-com was significant for both brand recall and message recall ($p<.00$). Thus, both Hypothesis 4a&b are supported.

DISCUSSION AND MANAGERIAL IMPLICATIONS

The results of this study suggest that total message length and the number of times a brand is advertised significantly affect consumer recall of promotional messages broadcast during the Super Bowl. Furthermore, the study finds significant difference in the recall of advertisements between dot-com and non-dot-com companies and between service and non-service (product) companies. Table 1 presents a summary of recall rates for both studies for easy comparisons. As seen in Table 1, the overall pattern of recall rates are amazingly similar, providing some evidence of reliability of the results.

Though the results of the study indicate that more (in terms of length and repetition) may be better, advertisers have to make some estimate about the optimal level of advertising for their brand. For example, Anheuser-Busch decided to advertise its Budweiser brand of beer using two different 60-second and five 30-second commercials during the Super Bowl XXXIV. The result of this strategy was that Budweiser was recalled by more of those surveyed than any other brand. However, does the incremental recall justify the huge incremental cost to air the commercials? To what degree a company increases the length and/or the number of times its ad is presented must be based upon its own unique set of promotional objectives and financial circumstances.

Though there is no published study that indicates that increasing the number of exposures negatively affects ad recall, almost certainly there is a level at which diminishing returns emerge in terms of cost of exposures versus recall of the ad. It should be noted, however, that past research suggests that message repetition is nonmonotonically related (inverted "U" shape) to the effectiveness of the communication (Anand and Sternthal 1990; Berlyne 1970). Consumers appear to react to too many exposures of the same promotional message with tedium and reduced favorability. One way to avoid negative reaction to multiple ads may be to vary the executions of ads for a single product. Unnava and Burnkrant (1991) found that varied executions for the same brand were recalled significantly more than the same ads for the same brand. Those brands promoted more than once during the Super Bowl did not use the same execution twice with effective results. This information may be useful for advertisers who want to promote a brand more than once during a program or across multiple programs, yet avoid a possibly negative reaction to multiple exposures of the same ad.

The research also found that there were significantly lower levels of ad recall on commercials associated with either a service company or a dot-com company. Given the recent stock price crash and the pending insolvency of most dot-com companies, clearly, the go-go era of free spending is over. A significant drop in the number of dot-com commercials in Super Bowl XXXVI from that of Super Bowl XXXIV also attested this trend. The dot-com companies need to be more marketing oriented as opposed spending oriented. Similar doubt was raised by Zain Raj (Krauss 2000) who questioned the marketing skills of those dot-com companies which advertised on the Super Bowl, emphasizing only getting attention rather than building appropriate brand image. His criticism of dot-com companies seems appropriate given the results of this study. For the first study, many respondents could recall doctors working on a man with "money coming out of the Wazoo," or the "cat herding," but failed to identify the sponsor company's name. Paul (2000) asked "can you remember the Internet dot-com companies that spent up to $3 million each on those 30-second Super Bowl football championship game ads on Sunday?" He went ahead with the answer, "Advertising experts say few of the ads will stick with viewers...." Perhaps it

TABLE 1
Comparisons of Recall Rates (%) from Two Studies

Brand Recall Rate

	Length			Frequency		Services		Dot-com	
	10/15	30	60	S*	M	S**	P**	D***	ND***
XXXIV	.3	3.4	16.8	5.1	13.2	4.7	6.8	3.7	7.3
XXXVI	2.5	4.8	19.2	1.4	22.8	4.1	9.0	0.6	6.3

Message Recall Rate

	Length			Frequency		Services		Dot-com	
	10/15	30	60	S*	M	S**	P**	D***	ND***
XXXIV	.3	3.7	20.0	--	--	4.7	7.2	3.7	7.6
XXXVI	2.5	5.0	19.4	--	--	3.7	8.5	0.6	6.3

* S: Single exposure
** S: Services
*** D: Dot-com
M: Multiple exposures
P: Products
ND: Non-Dot-com

pays for the dot-com companies to employ the retention enhancing techniques Engel, Blackwell and Miniard (1995) suggest for other companies. For example, there should be closely coordinated stimulus elements in an ad in order to enhance the memorability of these elements. Also, there should be strong interrelations among the benefits provided by the dot-com companies and the elements in the ad. Finally, the ad should not be funny just for the sake of getting attention.

LIMITATIONS AND FUTURE RESEARCH

The media promotion and the anticipation of the Super Bowl may limit the generalizability of findings from this study. Though the Super Bowl is not a typical television program, it provides a unique opportunity to test ad recall using a program that includes advertisements which have not been seen before (Horovitz 1995). In addition, though it may be problematic to assign these results to "regular" programs, it seems that the results from this study be applicable to other special event programs and, in particular, sports-related programs. Further research is necessary to determine how viewing habits of the Super Bowl vary significantly from other programs. Another possible limitation of the findings of this study, as well as an avenue of future research, involves the degree to which recall of ads are affected by the significant pre-game publicity. Thus, the findings and recommendations presented must be considered preliminary in nature and more replication across broad consumer segments is recommended.

REFERENCES

Anand, Punam and Brian Sternthal (1990), "Ease of Message Processing as a Moderator of Repetition Effects in Advertising," *Journal of Marketing Research*, 27 (August), 345-53.

Berlyne, Donald E. (1970), "Novelty, Complexity, and Hedonic Value," *Perception & Psychophysics*, 8, 279-86.

Butter, M. Johnna (1970), " Differential Recall of Paired Associates as a Function of Arousal and Concreteness Image Levels," *Journal of Experimental Psychology*, 84, 252-256.

Cacioppo, John T. and Richard E. Petty (1979), "Effects of Message Repetition and Position on Cognitive Response, Recall, and Persuasion," *Journal of Personality and Social Psychology*, 37 (1), 97-109.

Craig, Samuel C., Brian Sternthal and Clark Leavitt (1976), "Advertising Wearout: An Experimental Analysis," *Journal of Marketing Research*, 13 (November), 365- 372.

D'Sousa, Giles and Ram C. Rao (1995), "Can Repeating an Advertisement More FrequentlyThan the Competition Affect Brand Preference in a Mature Market?," *Journal of Marketing*, 59 (April), 32-42.

Engel, James F., Roger D. Blackwell and Paul W. Miniard (1995), *Consumer Behavior*, New York: the Dryden Press, 518-519.

Ephron, Erwin (1995), "More Weeks, Less Weight: The Shelf-Space Model of Advertising," *Journal of Advertising Research*, (May/June), 18-23.

Fabian, George S. (1986), "15-Second Commercials: The Inevitable Evolution," *Journal of Advertising Research*, 26 (4), RC3-RC5.

Ginter, James L. (1974), "An Experimental Investigation of Attitude Change and Choice of a New Brand," *Journal of Marketing Research*, 11 (February), 30-37.

Gorn, Gerald J. and Marvin E. Goldberg (1980), "Children's Response to Repetitive Television Commercials," *Journal of Consumer Research*, 6 (March), 421-424.

Hornik, Jacob (1989), "Temporal Instability as a Moderating Factor on Advertising Effectiveness," *Journal of Business Research*, 18, 89-106.

Horovitz, Bruce (1995), "Hut1, Hut2: Advertised," *USA Today*, Section B, 1.

Krauss, Michael (2000), "Raj: Focus on Super Bowl Silly, Almost Deadly Ad Move," *Marketing News*, September 11, vol.34, Issues 19, 12.

MacInnis, Deborah J. and Linda L. Price (1987), "The Role of Imagery in Information Processing: Review and Extensions," *Journal of Consumer Research*, Vol.13, March, 477.

Maley, Jennifer E., Maree Hunt and Wendy Parr (2000), "Set-size and Frequency-of-occurrence Judgements in Young and Older Adults: The Role of the Availability Heuristic," *The Quarterly Journal of Experimental Psychology*, 53A (1), 247-270.

McMains, Andrew (2000), "Ad Recall Rises with Viewing Time," *Adweek Midwest Edition*, vol.41, Issue24, 79.

Mord, Marvin S. and Edith Gilson (1985), "Shorter Units: Risk-Responsibility-Reward," *Journal of Advertising Research*, 25 (August-September), 9-19.

Newell, Stephen J. and Kenneth V. Henderson (1998), "Super Bowl Advertising: Field Testing the Importance of Advertising Frequency, Length, and Placement on Recall," *Journal of Marketing Communications*, 4(4), 1-12.

Patzer, Gordon L. (1991), "Multiple Dimensions of Performance for 30-Second and 15-Second Commercials," *Journal of Advertising Research*, 31 (August-September), 18-25.

Paul, Franklin (2000), "Focus-Can You Remember Those Super Bowl Dot-com Ads?," http://biz.yahoo.com/rf/000131/bi5.html.

Sawyer, Alan (1981), "Repetition, Cognition, and Persuasion," in *Cognitive Responses in Persuasion*, Richard E. Petty, Thomas C. Olstrom, and Timothy E. Brooks, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 237-262.

Singh, Surendra N. and Catherine A. Cole (1993), "The Effects of Length, Content, and Repetition on Television Commercial Effectiveness," *Journal of Marketing Research*, 30 (February), 91-104.

_____ and Michael L. Rothschild (1983), "Recognition as a Measure of Learning From Television Commercials," *Journal of Marketing Research*, 20 (August), 235-48.

Unnava, H. Rao and Robert E. Burnkrant (1991), "Effects of Repeating Varied Ad Executions on Brand Name Memory," *Journal of Marketing Research*, 28, (November) , 406-16.

Winter, Fredrick W. (1973), "A Laboratory Experiment of Individual Attitude Response to Advertising Exposure," *Journal of Marketing Research*, 10 (May), 130-140.