5-2012

Is Differentiation Better?: Consumer Memory for Online Advertisement Selection

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by

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An Honors Thesis in partial fulfillment of the requirements for the degree Bachelor of Science in Business Administration in Marketing.

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May 11, 2012

Abstract

The proliferation of internet content has generated a significant online marketing increase in recent years. While there exists a relatively broad base of knowledge regarding the impact of traditional advertisement structures and their effects on consumer behavior, less is known about the impact of the interactive world of online advertising, particularly video advertising. Research has been done to address the question of identifying a more suitable model for the online video format than a standard pre-roll advertisement. The Pool Lane One of VivaKi found that the most effective model was the ad-selector, which allowed consumers to choose their preference from a group of advertisements in a given time frame. This study seeks to address contextual variations within the ad-selector model to determine how they impact recall. When the viewer is presented choices from the same brand or product class, there is potential for Competitive Interference to inhibit learning. Conversely, learning of advertised information could be improved if the ad-selector model increases Personal Relevance. Therefore, the interaction of Competitive Interference and Personal Relevance within the ad-selector model are examined in regards to free recall.

Background

There are countless studies examining consumer recall of advertisements under varying circumstances, but most relate to traditional media formats such as print and television. The body of knowledge about internet advertising is expanding; however, the way we interact with the internet is constantly evolving. Online video advertising continues to grow as the use of the internet as a media forum increases and replaces traditional formats. According to Klenja citing emarketer, in 2011 spending on online video advertising was expected to grow to $2.1 billion (2011). He also cites comscore showing the penetration of video ads at 49% of the American

population in November of 2010, with the average number of times exposed during the month being 37 (Klenja 2011). In the same quarter, FreeWheel's Video Monetization Report states that 91% of video ads were pre-roll ads, which are essentially a standard 30 second made-for-television commercial (Klenja 2011). The high percentages reflected in these numbers demonstrates the relative importance of online video as an advertising market and the vast opportunities that exist within this market for improved returns through more effective ad models. Online video advertising is reaching a large number of American households, but marketers are failing to adapt their methods to meet the needs of this constantly changing online landscape as demonstrated by their continued use of the standard pre-roll ad. In 2008, a group of researchers and companies created a collective dubbed "The Pool" to examine potential improvements in the advertising models being used in the online format under VivaKi, a Publicis Group (Katz 2010). The research they undertook demonstrated that the most effective online advertising model, among those generated with pre-roll as a benchmark, was the *ad-selector* in which consumers could choose which ad they preferred among two to three choices in a given time frame with a default set to air if they did not make a selection (Katz 2011). The research also noted improved results when choices were given from multiple product categories rather than the same advertiser (Katz 2011). These results would be expected based on the theory of Competitive Interference developed by Burke and Srull, which indicates that a consumer's ability to recall brand information is detrimentally effected by proximity to competing brands or brands from the same manufacturer (1988). Burke and Srull examined the effects of Competitive Interference in the context of magazine ads, and therefore was formatted around subsequent exposures to different advertisements. In the ad-selector model consumers are evaluating advertisements simultaneously which slightly alters the nature of the interference effects, but as

order of competing ads did not affect outcomes within Burke and Srull's experiment, the same effects should be observed within the ad-selector model assuming the initial choice segment functions like print advertisement with three still-shot choices (1988). Also, Personal Relevance, which increased in the ad-selector model (Katz 2011), improves recall based on the conclusions of Norris, Colman, and Aleixo who examined the relationship between viewing content of television programs and memory for advertisements (2003). In this study "involvement was positively and significantly correlated with recall and memory for the advertisements" (Norris et al., 2003), and although involvement was linked to the choice of the television program, the choice of a video advertisement could be expected to produce similar results. Personal Relevance could also be viewed as a moderating factor in selective exposure effects, which increases congruency bias in attention and memory as demonstrated by Smith, Fabrigar, Powell and Estrada (2007). The aim of my research, then, is to determine how consumer choice variations within the ad- selector model impact recall.

Hypothesis

The hypothesis presumed is that the presence of Competitive Interference will have a negative effect on the subject's ability to recall information about the selected advertisement, and, conversely, the presence of Personal Relevance will improve the subject's ability to recall information about the advertisement. Therefore, the combination of a presence of Personal Relevance and lack of Competitive Interference will yield greatest recall and the presence of Competitive Interference and lack of Personal Relevance will yield the lowest recall.

Methodology

Participants

A total of 360 subjects participated in the study; 300 test participants were from Amazon's Mechanical Turk Service, completing the requested task for a $1.00 incentive and 60 University of Arkansas undergraduate students receiving extra credit for participation. A total of 54 respondents were removed from the data for failing to adequately complete an interference task, defined as less than 75% completion, or failing to provide appropriate responses to the recall measure, such as providing information from the interference task as opposed to the advertisement, leaving 306 participants included for final analysis. Of the 306 respondents, 171 were female and 135 were male. The median age range was 26-29, with a median household income range of $20,000-$39,000 per year. The majority of the respondents (68%) had at a minimum completed some college or attained the level of bachelor's degree.

Procedure

The study was initially disguised with the title of "Effects of Education Games on Learning" in order to control for possible attention bias to the advertisements. Participants were randomly assigned to one of five conditions of advertisement selection controlling for Competitive Interference and Personal Relevance with the fifth group serving as a control with the absence of either condition. In order to simulate the initial choice component of the ad-selector model, participants were shown three thumb-print size product advertisements to select from and then were shown a larger image of the advertisement they selected before proceeding. Competitive Interference was imposed by offering three advertisement selections from within the same brand (see appendix, section 1). No Competitive Interference was presented to the participants by offering them three advertisement choices from different brands across varied

product categories (see appendix, section 1). Personal Relevance was imposed by asking participants to "select the advertisement for the product you have the most experience with," and the no Personal Relevance received instructions to "select the advertisement with the most vowels." The control group was shown only one advertisement and instructed to "select the advertisement below."

Table 1: Assignment of Conditions

	No Competitive Interference	**Competitive Interference**
Personal Relevance	1. No Competitive Interference with Personal Relevance	4. Competitive Interference with Personal Relevance
No Personal Relevance	3. No Competitive Interference with No Personal Relevance	2. Competitive Interference with No Personal Relevance
5. Control: no choice		

After viewing the advertisements, participants were then required to begin a series of interference tasks involving the completion of simple anagrams in order to create interference in the learning process and initiate long term memory. Respondents were given a list of words and asked to rearrange the letters to form a new word with increasingly difficult lists of words, moving from three letter words to five letter words. Following the interference task, participants were asked to recall as much information as possible about the advertisement that they had previously viewed and to list each response separately. Participants, excluding those in condition five, were also asked to recall information about the other advertisements they were exposed to prior to selection. Questions regarding purchase intentions for the product and affect and Personal Relevance for the selected advertisement were asked on a 7 point likert-type scale as well as general demographic information. The recall questions were scored and used to create two measures of free recall to serve as dependent variables. One of the measures was % Total

Recall addressing the proportion of responses from the recall set for the advertisement selected out of the total number of responses for both free recall sets (n responses for selected ad/(n responses for selected ad + n responses for other ads viewed) * 100). The other measure was % Accuracy addressing the proportion of responses within the free recall set for the advertisement selected that were both correct and relevant ((Correct Responses/Total Responses for ad selected)*100). All responses were evaluated and compared against a list of potential responses (see appendix, section 2). Answers that captured words, phrases and concepts directly stated were accepted as well as any correct physical descriptions. For example, in regards to the Brawny advertisement used it states "every dog has its off day," this phrase, plus the phrase "every dog has its day" (same concept), or the word "dog" would all be accepted responses; however, the word "absorbent" would not be accepted because it was not directly or conceptually presented anywhere in the advertisement. Also, words listed separately but representing one idea were combined and scored as one response such as two line item responses of "paper and towel", combined to one line item response of "paper towel".

Results

The results of the study found significant differences between several of the conditions and main effects in both %Total Recall and %Accurate Recall.

Table 2: % Total Recall

	No Competitive Interference	**Competitive Interference**	
Personal Relevance	68.40% n=75	61.23% n=43	66.16%
No Personal Relevance	73.06% n=46	63.13% n=93	66.52%
	70.21%	62.98%	

For %Total Recall, the main effect of Competitive Interference, where respondents were shown advertisements from the same brand, was significantly different than No Competitive Interference, where respondents were shown varied context advertisements (F=11.78, p=.001). This significant difference is a result predicted by the initial hypotheses. The main effect of Personal Relevance, expected to be higher than No Personal Relevance, showed no significant difference between groups (F=.028, p=.868). The stronger effect in this model would be Competitive Interference with a higher eta squared value than Personal Relevance, as well as a significant difference between groups regardless of Personal Relevance. Examining the interaction of conditions, theoretically Condition 1 should have the highest recall and Condition 2 the lowest. Although Condition 3 has the highest mean score, it was not significantly different than Condition 1, and both were significantly greater than conditions 2 and 4 as predicted ($p<.05$).

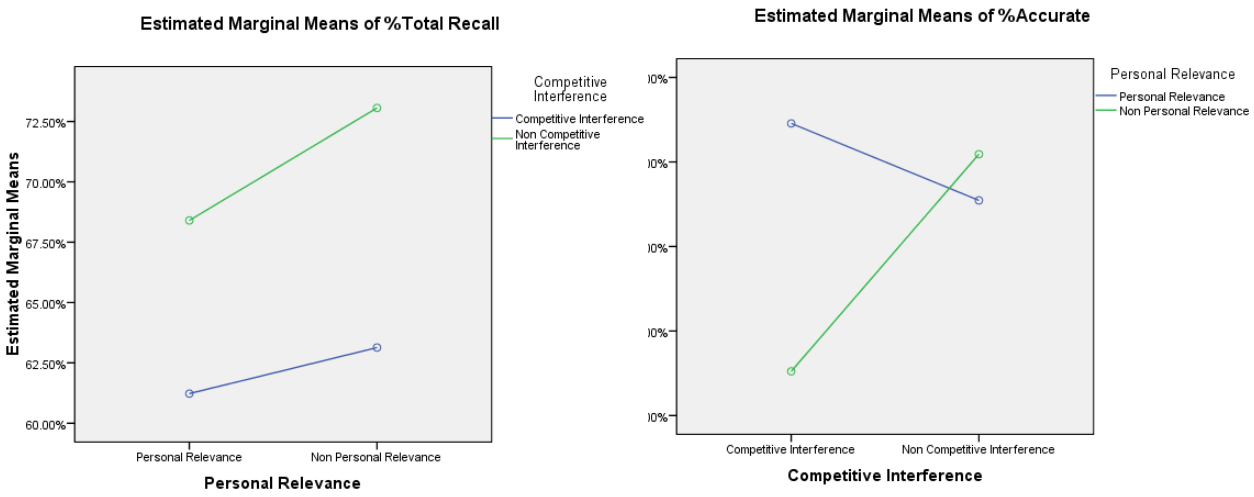
Table 3: %Accurate Recall

	No Competitive Interference	**Competitive Interference**	
Personal Relevance	82.73% n=75	87.28% n=43	84.53%
No Personal Relevance	85.46% n=46	72.61% n=93	76.85%
	83.76%	77.52%	

For %Accurate Recall, the main effect of Competitive Interference was significantly different than No Competitive Interference (F=5.23, p=.023), and Personal Relevance was significantly different than No Personal Relevance as predicted by initial hypotheses (F=7.98, p=.005). Examining the interaction of conditions, Condition 4 had the highest mean value of 87.28%, but was not significantly different than Condition 1, which theoretically would be

highest, or Condition 3 ($p>.05$). All three conditions 1, 3 and 4 were significantly higher than Condition 2, as predicted ($p<.05$).

Graph 1: Dependent Variable Means



Discussion

When consumers are given choices within a varied context, they have more associations with the advertisement they select out of the total associations for the set of advertisements than those who view choices from a set with competing information. There is no difference in the percentage of associations when consumers select an advertisement that is personally relevant or not. This demonstrates the importance of avoiding Competitive Interference in generating associations with an advertisement. Competitive Interference can occur with advertisements from the same brand or manufacturer such as in this study, and potentially brands from the same product category as well.

Also, Competitive Interference reduces the accuracy of the associations that are generated, although Personal Relevance seems to play a larger role in accuracy of associations than in number of associations. When a consumer is personally involved with an advertisement they will remember specific details more accurately, but when they view an advertisement

without any Competitive Interference they will remember more accurately and generate more associations, making Competitive Interference the key factor. In order to reduce Competitive Interference and increase associations and their accuracy, advertisers should seek to address the context of choices given to the audience, understanding that being the only choice given may not be beneficial to the brand. Part of this observed effect may be explained by the theory of perceptual fluency if processing is eased by a lack of Competitive Interference inducing increased affect for the final choice (Wagner & Gabrieli 1998).

In addressing accuracy as a single consideration, a negative effect can be observed when consumers are exposed to choice sets with Competitive Interference and no Personal Relevance. There is no difference between accuracy of recall so long as the advertisement is personally relevant or lacks Competitive Interference (or both), but when an advertisement lacks one of these criteria, there is significantly decreased accuracy of recall. Controlling for Personal Relevance can be partially accomplished through targeted marketing, but controlling the context of the advertisement to reduce Competitive Interference may be a more assured way for advertisers to avoid this pitfall.

Although the results were significant, several limitations of the study may indicate need for future research. In regards to the manipulation of the condition assignment for Personal Relevance, the manipulation check revealed no significant difference in personal relevance between assigned groups. Therefore, it was not personal relevance directly that was manipulated, but within %Accuracy there was a difference between groups in terms of recall, revealing that some aspect was manipulated. It may be that what was actually being altered was involvement as part of the elaboration likelihood model developed by Petty, Cacioppo and Shuman due to the phrasing of the manipulation (1983). Also, in the conditions involving Competitive Interference

the advertisements used were not product advertisements, but promotional posters (see appendix section1), which may have altered recall potential.

The aim of this study was determine the impact of Personal Relevance and Competitive Interference within the ad-selector model. The results revealed that the factor Personal Relevance, which theoretically increases in this model, improves accuracy of recall, but more significantly the absence of Competitive Interference improves both accuracy and total recall in consumer memory. Therefore, increasing Personal Relevance and controlling for context within the ad-selector model of online video advertising to reduce Competitive Interference would create the most effective results in terms of consumer recall.

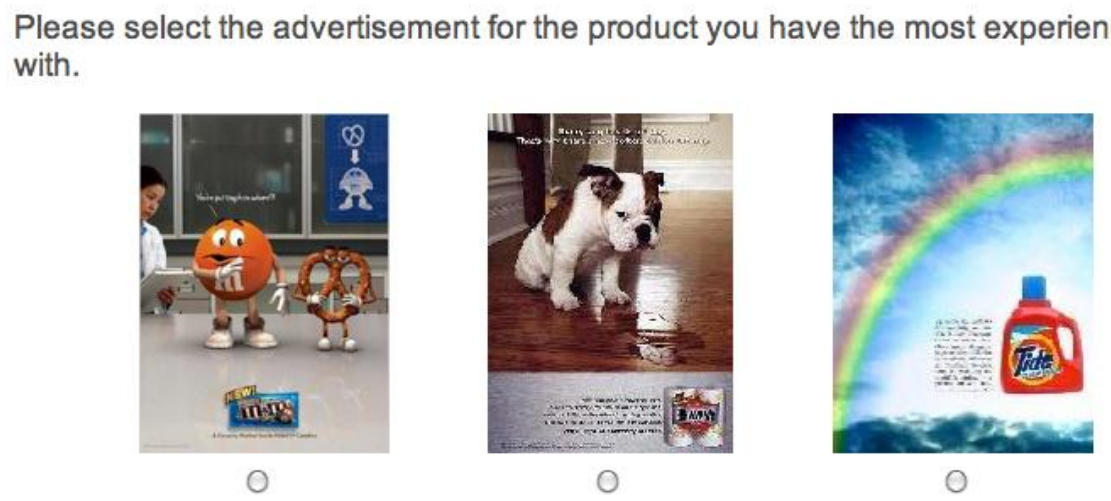
Acknowledgments

I would like to thank Dr. Molly Jensen for all of her support and guidance as my advisor throughout this process. Also, thank you to the marketing department faculty for your advice and support including Dr. Betsy Howlett, my second reader, and Dr. Scot Burton.

Appendix

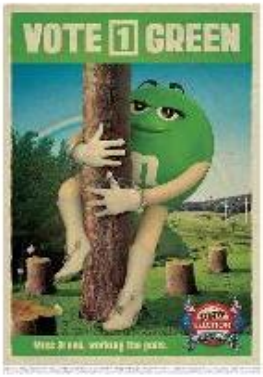
Section 1: Measurement Instrument Conditions

1. Personal Relevance with No Competitive Interference



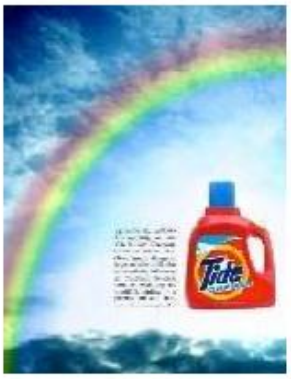
2. No Personal Relevance with Competitive Interference

Please select the advertisement with the most vowels.



3. No Personal Relevance with No Competitive Interference

Please select the advertisement with the most vowels.



4. Personal Relevance with Competitive Interference

Please select the advertisement for the product you have the most experience with.

5. Control

Please select the advertisement below.

Please note that order was randomized to control for any potential order effects.

Section 2: Table of Responses

BRAWNY

ACCEPTED	REJECTED
Accident	Absorbent
Brawny	Bounty
Cloth like feel	Cat
Descriptions of dog	Couch
Descriptions of Setting	Eyes
Don’t sweat the little accidents	House
Logo, Red logo	Kitchen
Making light of every day messes	Light
Making messes is how they learn	Room
Package, Double Package	Tough
Paper towels	Wall
Paper towels	Words, Text
Puddle	
Puddle	
Softer	
Thicker	

TIDE

ACCEPTED	REJECTED
Blue	Beach
Blue cap	Bleach
Bright	Field
Clean breeze	Flowers
Clouds	Fresh
Color(s)	Grass
Detergent	Green
Fading	Hill
Enjoy	New
Fading	Ocean Breeze
Red bottle	Prism
Shining	Save
Sky, Blue sky	Scent
Stay	Sun
Tide	Text
Wash	Trees
	White

M&M's

ACCEPTED	REJECTED
Candy	Beakers
Character description	Brick building
Chocolate	Chalkboard
Clipboard, Notepad	Fireplace
Desk, Table	Funny
Diagram, Blueprint	M&M red
Doctor, Nurse	M&M brown
Frightened	Salty
Lab coat	Sidewalk
Lady, Woman	Sweet
M&M (human)	White sign
New	
Orange	
Orange M&M	
Package, M&M bag	
Pretzel (human)	
X-ray	
You’re putting him where	

RED M&M's

ACCEPTED	REJECTED
British flag	Blue
Candy	Green
Cartoon	Large
Chocolate	Monsters
Crowd, Mob, Riot, Group	New
Election	Vowels
EU Flag	Win 1,000/1,000,000
Fist	Words
Hat	
Lettering, Calligraphy	
Pitchforks, Weapons	
Political, Propaganda	
Red	
Redolution, Revolution	
Russian, Soviet	
The redolution is now	
Vote red	
Win $100,000	

BLUE M&M's

ACCEPTED	REJECTED
A vote for blue	America
American style	Green
Blue	Red
British flag	Vowels
Columns	White shoes
Eagle	Win1,000/1,000,000
Election	
EU flag	
Finger, Hand	
Gloves	
Is a vote for you	
Money	
Political	
Ribbons	
Stars	
Win $100,000	

GREEN M&M's

ACCEPTED	REJECTED
1	Dance
Butterflies, Birds	Building
Election	City
EU Flag, UK Flag	Environment
Green	Font
Handcuffs	Go Green
Logging	Hat
Miss green	Lasso
Rainbow	Price
Stumps	Red
Tree	Red
Vote	Telephone pole
White boots	Vowels
White gloves	Win 1,000
Win $100,000	Win 1,000,000
Wind energy	
Working the poll	

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