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PASSIVE OR ACTIVE: UNDERSTANDING CONSUMERS' BEHAVIORAL RESPONSES TO ONLINE ADVERTISING

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Abstract

Approach and avoidance are two major types of behavioral responses when consumers encounter interferences caused by online advertising. This paper argues that approach-avoidance is not the only dimension from which researchers can examine behavioral responses toward online advertising. The inclusion of the active-passive behaviors dimension enriches the understanding of consumers' coping strategies. Active and passive behaviors differ from each other by the intensity of coping efforts. Active behavioral responses imply that consumers act upon online ads and make efforts to approach or avoid them. Passive behavioral responses indicate that consumers make little efforts to change the current status, and would rather approach or avoid in a passive way. Data was collected through an online survey by asking participants to recall their experiences with online ads and their behavioral responses. We found that the effects of ad design characteristics (content, form, and behavior) on consumers' behavioral responses differ across two-dimensions: Approach-Avoidance and Active-Passive. In addition, these effects also vary when consumers have different views (negative vs. positive) of the online ads. The contribution of this study lies in suggesting the two-dimensional view of studying consumers' responses toward online ads and in deepening our understanding of consumer behavior in dealing with digital artefacts in general.

Keywords: Online advertising, Theory of psychological reactance, Design characteristic, Active-passive behavior, Approach-avoidance behavior, Stimulus-organism-response model

1 INTRODUCTION

Along with the rapid growth of Internet users, online advertising has been a popular method for promoting commercial products and services, advocating public goods, and communicating political agendas. While advertisers hope to create brand awareness and generate positive attitudes through online ads, consumers often perceive them as intrusive, uninformative, and disturbing (McCoy, Everard, Polak, & Galletta, 2007; Zhang, 2000). Therefore, not all the online ads are well accepted, and consumers may have mixed feelings about online ads. Some consumers feel annoyed, interrupted, or offended (Prestopnik & Zhang, 2010), while others feel pleased, inspired, or educated. These various feelings lead to their negative or positive views of different types of online ads and potentially influence their behaviors toward online ads. Important questions for researchers and practitioners exploring this context emerge, such as "What factors may contribute to users' attitudes towards online ads?" and "How do users respond to these ads?"

Unlike advertisements in traditional media, online ads have a higher degree of variety in terms of content (e.g., product, education, public good), form (e.g., location, size, color), and behavior (e.g., movement, onset timing). Online advertising has become one important component of website design. As demonstrated in prior studies, online environments including websites with online ads have significant effects on consumers' cognitive, affective, and behavioral responses (Dailey, 2004; Eroglu, Machleit, & Davis, 2001).

Behavioral response refers to the actions undertaken by users during or after their interactions with external environments. Approach and avoidance are two major categories of behavioral responses in the stimulus-organism-response theoretical paradigm (Eroglu, Machleit, & Davis, 2003; Mehrabian & Russell, 1974). Some studies generally present approach-avoidance behavior as different behavioral directions towards behavioral responses (e.g., Clark, Ezell, Clark, & Sheffield, 2009; Eroglu, et al., 2003). However, this operationalization is not informative enough to provide a concrete understanding of consumer behaviors. Consumers do not always take active actions; they may approach or avoid the website in a more passive way. For instance, consumers may choose to read online ads without clicking on them or to wait for them to go away instead of taking any action. These behavioral responses are more passive, because they demand less effort from consumers. Limited research has been conducted to investigate behavioral responses toward online ads from the active-passive dimension.

This paper aims to extend the literature on behavioral responses to online ads by studying active-passive dimension of consumers' behavior responses. Specifically, we examine how various design characteristics may influence consumers' evaluations and behavioral responses to online ads. The main research questions are:

- RQ1: What design characteristics of online ads influence consumers' evaluations of online ads?

- RQ2: What behavioral responses do consumers perform when they encounter online ads?

- RQ3: How do consumers' evaluations of design characteristics influence their behavioral responses?

2 LITERATURE REVIEW

Ha (2008) reviewed online advertising research published in six advertising journals between 1996 and 2007 and suggested some major topics in advertising research. Among these proposed topics, online advertising formats, consumers' attitudes toward online ads, and consumers' behaviors toward online ads are ones that are interesting to both academics and practitioners. Zhang and Kim (2008) conducted a meta-analysis of literature on web ads and identified a large group of empirical studies on

online advertising which focus on the design features and ads effectiveness. Ad content (e.g., emotional message, usefulness, and credibility) and form (e.g., banner, color, and animation) are influential to the formation of users' attitudes and subsequently their reactions to online ads (Burns & Lutz, 2006; Lohtia, Donthu, & Hershberger, 2003; Wang & Sun, 2010). Some design features (e.g., bright color) of online ads are found to attract consumers' attention, whereas others (e.g., flash, animation) turned out to be distractive and intrusive, interfering with people's main tasks (W. Hong, Thong, & Kar Yan, 2004; Lohtia, et al., 2003; Zhang, 2000, 2006).

Given that most online ads are disruptive and distracting, the direct result is that consumer activities may be disturbed or interfered with. Psychological reactance is a motivational state when people feel that their freedom is constrained (J. W. Brehm, 1966; S. S. Brehm & Brehm, 1981). According to the theory of psychological reactance, people attempt to re-establish their freedom when they feel it is threatened or eliminated, and the magnitude of reactance is a function of the proportion of free behaviors threatened or eliminated (J. W. Brehm, 1966; S. S. Brehm & Brehm, 1981). In Information System literature, the theory of psychological reactance has been used to understand users' interface preferences (Murray & Häubl, 2011), information technology adoption (Lee & Lee, 2009), and technology acceptance (Zhang, Aikman, & Sun, 2008). In marketing literature, this theory is also useful to explain consumers' responses to freedom-threatening events (e.g., promotional influences, sell tactics and persuasion) (Clee & Wicklund, 1980; Steven M Edwards, Hairong Li, & Joo-Hyun Lee, 2002; Morimoto & Chang, 2006). Two major types of threats to freedom are personal threats and impersonal threats. Characteristics of online ads that impede freedom of user behaviors are considered as impersonal threats. Brehm and Brehm (1981) argued that the state of psychological reactance is not directly measurable, but it is predictable through a variety of behavioral effects. Hong (1989) developed a scale to measure the psychological reactance; however, some empirical studies investigating psychological reactance still infer this motivational state from the relationship between the degree of threatened freedom and behavior responses (e.g., Steven M. Edwards, Hairong Li, & Joo-Hyun Lee, 2002), while others operationalized it as perceived loss of control (Morimoto & Chang, 2006).

Three types of consumer responses (cognitive, affective, and behavioral) to online environment stimuli have been identified (Kim & Kim, 2012). Compared to behavioral responses, cognitive and affective responses usually happen within a short period of time after users' exposure to the environment and can possibly influence their behavioral responses (Mehrabian & Russell, 1974). Approach and avoidance behaviors are two general behavioral intentions or behavioral responses when human beings interact with the environment. According to the Stimulus-Organism-Response (S-O-R) model (Mehrabian & Russell, 1974), approach and avoidance are two distinct behavioral responses to affective or cognitive evaluations aroused by environmental stimuli. Approach and avoidance are also considered as the motivation of human behaviors in some literature. Elliot (2006) had a hierarchical explanation of approach-avoidance motivation, which encompasses both the energization and direction of behaviors. Approach motivation encourages behaviors towards the positive stimuli, whereas the avoidance motivation leads to behaviors away from the negative stimuli. Approach and avoidance are also two distinctive action strategies undertaken by people to cope with stress, leading them toward or away from the threat (Roth & Cohen, 1986; Skinner, Edge, Altman, & Sherwood, 2003).

Active and passive coping strategies differ from each other in the amount of effort people apply to solve problems; people adopt these two coping strategies to deal with affect, arousal, and stress (Asmus & Bell, 1999; Hobfoll, Dunahoo, Ben-Porath, & Monnier, 1994). Lazarus (1984) suggested to adopt a primary and secondary appraisal strategy to cope with stress. The primary appraisal is an evaluation of the potential consequences, and the secondary appraisal is an evaluation of the amounts of cognitive and affective efforts required to perform different actions (Beaudry & Pinsonneault, 2005; Lazarus & Folkman, 1984). If the demand of pursuing the pleasure or avoiding the pain is not very high, people may passively react to the environment and invest less effort, which represents the passive dimension of behavioral reactions to internal or external environments. Active and passive

dimensions are also applied to understand the use of social networking sites (Pagani, Hofacker, & Goldsmith, 2011). Active technology use indicates actions that require larger amounts of effort, such as creating comments and uploading pictures, whereas passive technology use includes actions that need smaller amounts of effort, such as browsing and reading content.

Therefore, approach-avoidance and active-passive can be two underlying dimensions of understanding consumer behaviors toward online ads. Table 1 provides brief descriptions of the four types of behavioral responses: active-approach, passive-approach, active-avoidance, and passive-avoidance, from the two-dimensional perspective.

	Active	Passive
Approach	Make efforts to move toward the stimuli (e.g., click the link, check the products in the ads)	Making little efforts but move toward the stimuli (e.g., read the ads, watch the video)
Avoidance	Make efforts to move away from the stimuli (e.g., close the ads, mute the audio, block the ads)	Making little efforts but move away from the stimuli (e.g., ignore the ads, wait for the ad to disappear by itself)

Table 1. Two-Dimensional View of Consumers' Behavioral Responses to Online Ads

3   METHODOLOGY

Due to the lack of existing studies on active and passive behavioral responses, we conducted an exploratory study and collected data by asking the following six questions in an online survey through Amazon Mechanical Turk (AMT). Online participants received some monetary compensation after they finished the survey task.

- Q1. What is the most negative ad you have ever encountered? (Free text)

- Q2. Please list the top three reasons why it was the most negative. (Free text)

- Q3. What did you do when facing negative ads? (Multiple-choice)

- Q4. What is the most positive ad you have ever encountered? (Free text)

- Q5. Please list the top three reasons why it was the most positive. (Free text)

- Q6. What did you do when facing positive ads? (Multiple-choice)

Responses for four free-text questions (Q1, Q2, Q4, and Q5) were content analyzed. One of the researchers developed an initial coding scheme from an open coding exercise using a small portion of the data. The scheme was discussed among the three researchers and subsequently revised several times to reflect our evolving understanding of the data. The final set of codes (Table 2) was classified into six categories. The first three categories are related to three types of design characteristics: ad content (7 codes), ad form (10 codes), and ad behavior (6 codes); the other three categories are related to people's evaluations of those design characteristics: evaluation of ad content (7 codes), evaluation of ad form (3 codes), and evaluation of ad behavior (10 codes). Using the coding scheme, two researchers then coded all the responses independently and discussed the coding results with the third researcher. The inter-coder reliability agreement ranged from 81% to 98%. During the coding process, the researchers noticed participants' responses to the "What" questions (Q1 and Q4) and "Why" questions (Q2 and Q5) were somehow mixed. For instance, when they answer Q1 and Q4, they sometimes described design characteristics, writing comments like "Those ones that flash really bright and say that you've won something," and "The ones that don't move but catches your eye with a great

photo or saying." In order to ensure the completeness of meaning interpretation, the researchers decided to combine the answers to the "What" and the "Why" questions of negative ads and positive ads, respectively, as the unit of analysis.

The answer options of two multiple-choice questions (Q3 and Q6) cover some potential behavior responses toward online ads. These behavioral responses indicate the intentions of moving toward or away from the online ads, so approach and avoidance are two major categories for classifying these behaviors. Given the different levels of effort invested to accomplish those behaviors, these behavioral responses can also be viewed as active or passive behaviors.

4   DATA ANALYSIS

Statistical software SPSS 20.0 was used to conduct the data analysis. A total of 261 participants responded to the survey. The ages of respondents ranged from 18 to 62 years old. Among these respondents, a majority (74%) declared they were White, followed by Asian/ Pacific (9%), African-American (6%), Hispanic (5%), multi-racial (4%), Native American (1%), and other (2%). 145 of them were female, and 115 were male. One respondent did not identify the gender.

4.1   Frequency Analysis

Table 2 below shows the frequency analysis of coding results in each category. Overall, the counts of codes of negative ads are more than those of positive ads, which indicates that respondents had more comments about negative ads.

Content wise, product ads were mentioned the most often in both negative and positive questions. Ads about education and research were not considered negative at all, while ads of adult content and political/social ads were rarely viewed positively. Pop-up/pop-under, audio, and location are the top three **form** characteristics of negative ads, while location, picture, and pop-up/pop-under are the top three of positive ads. Examples of respondents' comments on form characteristics of negative ads include the following: "I hate something pop out without your control," "The sound is loud," and "Gets in the way of the content I am reading." As for the positive ones, respondents favored those ads because of the absence of pop-up/pop-under, nice pictures, and appropriate locations, writing comments like, "The ads that are located as a link to the right side of my computer screen, rather than a pop-up or video ad," "Very well designed graphically speaking and therefore appealing (eye-catching)," and "It was positioned in a part of the screen where it didn't effect what I was doing." The results indicate that the pop-up/pop-under features are form characteristics that can easily arouse people's negative views of ads. Similarly, whether ads are placed in an appropriate location in the webpage influences people's judgments. In the category of **ad behavior**, frequency was mentioned more often than any other attribute in both categories of negative and positive ads. This finding indicates that the repetition of ads usually leads to an unpleasant impression, whereas lower frequency of appearances makes people feel more positive. For example, one respondent commented that he disliked "pop ups that continuously re-open new windows as you close one," while another respondent liked the ads because he would "Rarely see them."

Evaluations of design characteristics represent consumers' judgements of design characteristics at a more abstract level. When examining respondents' evaluations of design characteristics (evaluation of ad content, evaluation of ad form, and evaluation of ad behavior), we found that usefulness of ad content, aesthetics of ad forms, and intrusiveness of ad behaviors are three predominant attributes commented on by respondents in spite of the overall positive or negative evaluation. These results indicate that certain critical factors similarly determine people's negative or positive views of online ads. For instance, one respondent had an comment about the usefulness of negative ads: "they are useless," whereas another respondent commented, "[it was] generally relevant to me." Similarly, respondents complained about the aesthetics of negative ads because they were "unappealing,"

"noisy," "unattractive," and so on. They appreciated the aesthetics of positive ads because these ads were "pretty," "artistic," and "tasteful." As for the evaluation of ad behavior, intrusiveness was the top concern when respondents commented on both negative and positive online ads. Some respondents explicitly pointed out that negative ads were intrusive, while others implied the intrusiveness of ads by providing descriptions. For instance, a strong comment in this regard was "[it] feels like someone is shoving advertising down my throat". By contrast, positive ads are considered to be less intrusive. Typical comments include "wasn't pushy," "not intruding," and "It was not invasive to what I was doing."

Category	Code	Negative Ads		Positive Ads	
		Counts	Percentage	Counts	Percentage
Content (7 Codes)	Adult	41	21%	2	1%
	Education/Research	0	0%	11	6%
	Entertainment	12	6%	19	11%
	Political/ Social	18	9%	1	1%
	Product	119	61%	125	71%
	Public good	1	1%	16	9%
	Other	4	2%	3	2%
	Total	*195*	*100%*	*177*	*100%*
Form (10 codes)	Size	15	10%	9	14%
	Location	20	13%	14	21%
	Color	3	2%	5	8%
	Animation	14	9%	4	6%
	Video	9	6%	5	8%
	Audio	25	17%	3	5%
	Picture	15	10%	11	2%
	Banner	3	2%	4	6%
	Pop-up/ Pop-under	47	31%	7	11%
	Text	0	0%	4	6%
	Total	*151*	*100%*	*66*	*100%*
Behavior (5 codes)	Movement	11	14%	3	18%
	Onset timing	22	28%	3	18%
	Duration	7	9%	5	29%
	Frequency	36	46%	5	29%
	Mouse over	2	3%	1	6%
	Total	*78*	*100%*	*17*	*100%*
Eva_Content (7 codes)	Conceptual Clarity	6	3%	14	6%
	Credibility	70	29%	32	13%
	Interestingness	7	3%	35	14%
	Social acceptability	62	26%	1	0%
	Moral cause	3	1%	18	7%
	Usefulness	91	38%	149	59%
	Timeliness	0	0%	5	2%
	Total	*317*	*100%*	*254*	*100%*
Eva_Form (3 codes)	Aesthetics	62	85%	64	83%
	Ease of use	9	12%	12	16%
	Functioning	2	3%	1	1%
	Total	*73*	*100%*	*77*	*100%*
Eva_Behavior (10 codes)	Speed	1	0%	1	1%
	Onset timing	10	3%	1	1%
	Duration	7	2%	5	4%
	Frequency	36	10%	5	4%
	Annoyance	78	22%	7	6%
	Interactivity	2	1%	6	5%

	Intrusiveness	102	29%	62	55%
	Privacy invasion	21	6%	3	3%
	Controllability	71	20%	18	16%
	Hazard	29	8%	4	4%
	Total	*357*	*100%*	*112*	*100%*

Table 2.   *Counts of Coding Results of Negative and Positive Ads. Note. Eva_Content = Evaluation of Ad Content, Eva_Form = Evaluation of Ad Form, Eva_Behavior = Evaluation of Ad Behavior. N=261.*

Data about behavioral responses was collected through two multiple-choice questions (Q3 and Q6). Participants were asked to select all the applicable options they had performed when encountering negative or positive online ads. Based on the action of approaching or avoiding as well as the amount of coping efforts, these behavioral responses are generally classified into four categories, active-approach, passive-approach, active-avoidance, and passive-avoidance. Following this two-dimensional view, Table 3 lists the counts of behavioral responses to negative ads and positive ads.

Among all the behavioral responses, "Ignored it" is the top one behavioral response to negative ads, followed by "Looked for ways to get rid of it." These two behaviors reflect different coping strategies when respondents tried to avoid negative ads: passive versus active. "Read or viewed" or "ignored" were the top two behaviors performed by consumers when they dealt with positive ads. The former indicates the action of passively approaching, whereas the latter implies the action of passively avoiding. Interestingly, 105 respondents chose the "clicked" option and indicated that they had actively interacted with the positive ads, and 92 respondents actually went to the place led by the ad.

	Behavioral Responses	Counts	Categories
Negative ads	Looked for ways to get rid of it	150	Active-Avoidance
	Easily got rid of it	51	
	Asked others for help	8	
	Abandoned the app it appeared	60	
	Ignored it	157	Passive-Avoidance
	Waited for it to go away	55	
	Continued what you are doing	78	
Positive ads	Clicked	105	Active-Approach
	Bookmarked	20	
	Went to the place led by the ad	92	
	Bought something	38	
	Recommended	29	
	Read or viewed	149	Passive-Approach
	Ignored it	55	Passive-Avoidance

Table 3.   *Counts of Behavioral Responses toward Negative Ads and Positive Ads*

The frequency analysis shows a general pattern of users' behavioral responses to online ads. Overall, although respondents pointed out that some ads were negative, a large number of them chose to avoid those ads in a passive way. In other words, the level of psychological reactance aroused by the negative ads may not be high enough to result in any resistant actions. As for the positive ads, respondents are more willing to approach these ads, either actively or passively.

4.2   Correlation Analysis

The descriptive analysis above reflects the consistency of design characteristics respondents were concerned with between negative ads and positive ones when they form their views of online ads. The behavioral responses to online ads generally fall into the four categories. However, the frequency analysis only provides a brief summary of coding results. Thus, the question, "How do design characteristics relate to the behavioral responses?" remains unanswered. In the following section, we try to approach this question by focusing on the analysis at the individual level.

To get a better sense of the coding results, we summed the number of codes in each category except the ads content category for each respondent. We did not sum the codes in the ad content category because each respondent mostly commented on only one type of content. Moreover, it does not make much sense to interpret the covariance between the number of content type and the number of design characteristics (e.g., ad form, ad behavior). It is also important to note that the number of codes in each category represents the number of design characteristics being commented on by one respondent in that category. Values of ad form and ad behavior categories indicate the number of design characteristics that have been commented on by one respondent. Values of three variables--the evaluation of ad content, the evaluation of ad form and the evaluation of ad behavior--reflect the degree of users' cognitive or affective evaluations of these design elements. Values of behavioral response categories are the sum of all the applicable actions that had been taken by respondents.

We conducted a Pearson-Correlation analysis to check the linear correlation between the counts in each category. Table 4 shows the correlation analysis results of coding counts of negative ads. The numbers in the parentheses next to the variable names are the range of counts in each category, according to the coding schema. Apparently, none of the respondents' comments covers all the codes in any category. The significant correlation coefficients indicate the co-occurrences of codes in different categories mentioned by one respondent. The analysis results reveal that when respondents stated their reasons for deciding negative ads, comments on forms and behaviors are usually significantly correlated. Their evaluation of form and evaluation of behavior have positive significant relationships with the active-avoidance behavior. This finding indicates that form and behavior characteristics of online ads are usually evaluated together by users and that bad design of forms or behaviors will lead to a higher possibility of active-avoidance behavior. Results show that respondents would take actions to get rid of the ads. However, none of the design characteristics or evaluation of design characteristics are significantly correlated with the passive-avoidance behavior.

Variable	Min	Max	SD	1	2	3	4	5	6	7
1. Form (0-10)	0	3	.78	1	.36**	-.31**	.59**	.30**	.23**	-.01
2. Behavior (0-5)	0	2	.54		1	-.28**	.19**	.43**	.12	.08
3. Eva_Content (0-7)	0	3	.75			1	-.26**	-.46**	-.16**	-.11
4. Eva_Form (0-3)	0	2	.47				1	.19**	.21**	.06
5. Eva_Behavior (0-10)	0	5	1.09					1	.23**	-.01
6. Act_Avoid (0-4)	0	4	0.82						1	-.08
7. Pas_Avoid (0-3)	0	3	0.92							1

Table 4.   Correlations Analysis of Counts of Codes of Negative Ads. Eva_Content = Evaluation of Ad Content, Eva_Form = Evaluation of Ad Form, Eva_Behavior = Evaluation of Ad Behavior, Act_Avoid = Active-Avoidance Behavior, Pas_Avoid = Passive-Avoidance Behavior. N=261.

Min = Minimal counts of codes for one respondent, Max = Maximum counts of codes for each respondent, SD = Standard deviation. *p<.05, **p<.01, ***p<.001.

Table 5 presents the correlation analysis results of positive ads. Two approach behavior variables, active-approach behavior and passive-approach behavior, are negatively and significantly correlated with the passive-avoidance behavior, which reflects that the primary evaluation of stimuli leads to distinct directions of behavioral responses. Similar to the negative ads, ad form and ad behavior of positive ads are also significantly correlated, indicating these two types of design characteristics are usually commented on together.

When examining the correlation between design characteristics and consumer behaviors, we found that the evaluation of ad content is significantly correlated with three types of consumer behavior. This finding indicates that the quality of ad content is critical in predicting consumers' behaviors toward positive ads. Variables of design characteristics--such as ad form, evaluation of ad form, and evaluation of ad behavior--are all significantly correlated with passive-approach behavior. This finding implies that good form and behavior design of ads would at least lead to approach behavior. Unlike the negative ads, respondents' passive-avoidance behaviors are significantly negatively correlated with the evaluation of content.

Variable	Min	Max	SD	1	2	3	4	5	6	7	8
1. Form (0-10)	0	3	.55	1	.22**	.07	.37**	.47**	.03	.20**	.00
2. Behavior (0-5)	0	1	.25		1	.05	.03	.35**	.13*	.10	-.06
3. Eva_Content (0-7)	0	4	.80			1	.03	.07	.16*	.40**	-.28**
4. Eva_Form (0-3)	0	2	.46				1	.20**	.12	.20**	-.11
5. Eva_Behavior (0-10)	0	3	.65					1	.20**	.31**	-.04
6. Act_Approach (0-5)	0	5	1.18						1	.31**	-.18**
7. Pas_Approach (0-1)	0	1	.50							1	-.35**
8. Pas_Avoid (0-1)	0	1	.41								1

Table 5.   *Correlations Coefficients between Counts of Codes of Positive Ads. Eva_Content = Evaluation of Ad Content, Eva_Form = Evaluation of Ad Form, Eva_Behavior = Evaluation of Ad Behavior, Act_Appro = Active-Approach Behavior, Pas_Appro= Passive-Approach Behavior. Pas_Avoid = Passive-Avoidance Behavior*

     Min = Minimal counts of codes for one respondent, Max = Maximum counts of codes for each respondent, SD = Standard deviation. *p<.05, **p<.01, ***p<.001.

The Pearson correlation results provide information of the co-occurrences of codes in different categories and reveal the correlations among variables about design characteristics (ad form, ad content, ad behavior), evaluation of design characteristics, and behavioral responses. Three variables-- evaluation of ad content, evaluation of ad form, and evaluation of ad behavior--reflect users' affective and cognitive processing of online ads, which are antecedents of respondents' behavioral responses. Because co-occurrences do not provide many insights for further interpretation of how the design characteristic ads relate to consumer behaviors, we decided to use regression analysis to detect how the counts of behavioral responses vary with the counts of design characteristics. In the following paragraphs, we will present the procedures and results of regression analysis.

4.3 Regression Analysis

We conducted regression analysis to examine to what extent the evaluation of design characteristics could possibly influence consumers' behavioral responses. Based on the descriptive analysis of behavioral responses, two types of behavioral responses to negative ads (active-avoidance and

passive-avoidance) and one type of behavior to positive ads (active-approach) are continuous variables. Therefore, we ran three simultaneous multiple regression analyses with three independent variables-- evaluations of ad content, evaluation of ad form, and evaluation of ad behavior--on these three types of behavioral responses. Two other types of the behavioral responses to positive ads (passive-approach and passive-avoidance), only have one code in each category, so we chose to apply a logistic regression analysis to examine the predictability of the independent variables on the probability of dependent variables.

4.3.1   Behavioral Responses to Negative Ads

Table 6 presents the results of two simultaneous multiple regression analyses on active-avoidance and passive-avoidance behaviors to negative ads. Two independent variables--evaluation of ad form and evaluation of ad behavior--significantly predict the active-avoidance behavior to negative ads, $F_{(3, 257)} = 7.82$, $p<.001$ ($\beta_{Eva\text{-}Form} = .17$, $p < .01$; $\beta_{Eva\text{-}Behavior} = .19$, $p < .01$). However, none of the three independent variables has a significant relationship with passive-avoidance behavior to negative ads.

Variable	Active-Avoidance Behavior				Passive-Avoidance Behavior			
	B	SEB	Beta	p value.	B	SEB	Beta	p value
Eva_Content	-.03	.08	-.03	.659	-.17	.09	-.13	.060
Eva_Form	.29	.11	.17	.008	.08	.13	.04	.523
Eva_Behavior	.14	.05	.19	.005	-.06	.06	-.08	.281
Constant	.79	.13			1.33	.15		
R^2	8.4%				1.8%			

Table 6.   Regressions on Active-Avodiance and Passive-Avoidance Behaviors toward Negative Ads. Eva_Content = Evaluation of Ad Content, Eva_Form = Evaluation of Ad Form, Eva_Behavior = Evaluation of Ad Behavior, B = Unstandardized coefficients. SEB= Standard Error, Beta = Standardized coefficients, N=261.

4.3.2   Behavioral Responses to Positive Ads

Table 7 shows the results of simultaneous multiple regression analysis on active-approach behavior to positive ads. The combination of three independent variables can significantly predict the variance of active-approach behavior $F_{(3, 257)} = 6.03$, $p<.001$. However, when examining the effects of individual variables, evaluation of ad form does not have a significant effect in predicting active- approach behavior. The other two independent variables, evluation of ad content and evaluation of ad behavior, significantly predict respondents' active-approach behavior ($\beta_{Eva\text{-}Content} = .14$, $p < .05$; $\beta_{Eva\text{-}Behavior} = .17$, $p < .01$).

Variable	Active-Approach Behavior			
	B	SEB	Beta	p value.
Eva_Content	.20	.08	.14	.018
Eva_Form	.19	.15	.08	.191
Eva_Behavior	.29	.11	.17	.006
Constant	.71	.12		
R^2		6.6%		

Table 7.   Simultaneous Multiple Regression on Active-Approach Behavior toward Positive Ads. Eva_Content = Evaluation of Content, Eva_Form = Evaluation of Form, Eva_Behavior = Evaluation of Behavior, B = Unstandardized Coefficients, SEB= Standard Error, Beta = Standardized Coefficients, N=261.

Logistic regression was conducted to assess whether three predictor variables--evaluaiton of ad content, evaluation of ad form, and evaluation of ad behvior--can significantly predict a respondent's proabibility of performing passive-approach or passive-avoidance behaviors. When all the three predictors are considred together, they can significantly predict whether a respondent would display the passive-approach behavior, $\chi^2_{Pas-Approach} = 75.63$, $df = 3$, $N = 261$, $p<.000$, or the passive avodiance behavior, $\chi_{Pas-Avoid}{}^2 = 24.43$, $df = 3$, $N = 261$, $p<.000$. Table 8 also presents the odds ratios, which are the odds of peforming passive-approach or passive-avoidance behavior. The results suggest that passive-approach behavior is increasingly greater as consumers have more comments when they evaluate the ad content, ad form and ad behavior. The odds of performing passive avodiance behavior is increasingly lower as consumers have more comments when they evaluate the content of positive ads.

Variable	Passive-Approach Behavior				Passive-Avoidance Behavior			
	B	SEB	Odds ratio	p value.	B	SEB	Odds ratio	p value.
Eva_Content	1.21	.21	3.36	.000	-.99	.23	.37	.000
Eva_Form	.71	.32	2.03	.027	-.57	.39	.56	.146
Eva_Behavior	1.05	.26	2.86	.000	.07	.25	1.07	.779
Constant	-1.46	.28	.23	.000	-.41	.24	.67	.088

Table 8.   *Logistic Regression on Passive-Approach and Passive-Avoidance Behaviors toward Positive Ads. Eva_Content = Evaluation of Ad Content, Eva_Form = Evaluation of Ad Form, Eva_Behavior = Evaluation of Ad Behavior, SEB = Standard Error, B = Unstandardized Coefficients, Beta = Standardized Coefficients, N=261.*

This section presents the three-step analysis we followed to interpret the qualitative data regarding consumers' evaluations and behavioral responses to online ads. The frequency analysis was helpful in identifying several prominent design characteristics consumers were concerned with when they formed their impressions of online ads. The correlation analysis reveals the co-occurrences of codes, and the results show that design characteristics of online ads are significantly related to some behavioral responses. Furthermore, the regression analysis demonstrated that the effects of ad form and ad behavior varied in influencing different types of behavioral responses.

5   DISCUSSIONS

The content analysis and the follow-up quantitative analyses yielded some interesting results. First of all, we developed six categories covering three types of design characteristics of online ads as well as users' evaluations of these design characteristics. These six categories are ad content, ad form, ad behavior, evaluation of ad content, evaluation of ad form, and evaluation of ad behavior.

Second, overall, consumers have more comments regarding negative ads because the total counts of codes about negative ads are higher than those about positive ads. A possible explanation for this difference is that consumers can easily recall the drawbacks of online ads, given the interruptive and distractive nature of online ads.

Third, some design characteristics are consistently important in influencing consumers' impression of online ads. For instance, ad form related characteristics, such as pop-up/pop-under, location, and picture, are top concerns of both negative and positive ads that were pointed out by respondents. When recalling negative ads, consumers mostly mention ad behavior related characteristics, such as frequency, onset timing, and movement. However, evaluation of these design characteristics cannot explain the passive-avoidance behavior to negative ads. As for the positive ads, the evaluation of ad content and the evaluation of ad behavior significantly positively predict the approach behavior (active

and passive), but only the evaluation of ad content significantly negatively predicts the probability of performing passive behavioral responses.

Fourth, the effects of design characteristics on behavior responses vary when consumers have different impressions. The multiple regression analysis indicates that the evaluation of ad form and the evaluation of ad behavior have significant positive relationship with consumers' active-avoidance behavior toward negative ads. This finding can be explained by the theory of psychological reactance. Forms and behaviors are two types of design characteristics that are closely related to a user's capability to freely control the online ads and experiencee the online environment. Complaints about these two design characteristics result from consumers' detection of the restraint of freedom; in these cases, consumers prefer to take active actions to restore freedom.

6   CONCLUSION

There are several limitations that should be taken into account when interpreting the findings of this study. The sample of this research is collected through the U.S. Amazon Mechanic Turk, so the representativeness of this sample is limited to the cultural and social environment in the United States. It is possible that consumers may have different concerns about online ads in other cultures. Second, this study is an exploratory study of consumers' evaluations of online ads. The data analysis is dominated by qualitative analysis, and the quantitative analysis is only used to provide further interpretations of the qualitative data.

Approach and avoidance are two dominant behavioral responses that have been studied in the literature. Approach and avoidance are behavioral strategies adopted by consumers to move towards or get away from the online ads. Consumers are motivated to approach pleasure and avoid pain. However, based on the empirical data in this study, a good portion of consumers chooses to passively ignore or wait. The passive behavioral responses reflect smaller amounts of effort invested to coping with the online advertising. Therefore, we propose the active-passive as a second dimension of understanding consumer behavior.

According to theory of psychological reactance, passive behavior implies that a low degree of reactance to freedom constrained events. We speculate that if the degree of reactance reaches a threshold, the motivational force would be strong enough to encourage some active actions. For instance, consumers would actively avoid the negative ads if their freedom is being threatened or actively approach the positive ones if the ads bring them pleasure.

The contribution of this study lies in proposing a two-dimensional view of examining consumers' behavioral responses toward online advertising. As research on the active-passive dimension is very limited, this study opens up new venues by providing empirical evidences for the behavioral dimension and applying new theories to this topic area. This study also has practical implications for ad designers and online advertising managers as it highlights important ad features that influence consumers' evaluations and responses toward online ads. Practitioners may consider assessing the effectiveness of online ads through the lens of psychology reactance so that online advertising can reach a better balance between freedom and control.

References

Asmus, C. L., & Bell, P. A. (1999). Effects of Environmental Odor and Coping Style on Negative Affect, Anger, Arousal, and Escape1. *Journal of Applied Social Psychology, 29*(2), 245-260.

Beaudry, A., & Pinsonneault, A. (2005). Understanding User Responses to Information Technology: A Coping Model of User Adaptation. *MIS Quarterly, 29*(3), 493-524.

Brehm, J. W. (1966). *A theory of psychological reactance*. New York: Academic Press.

Brehm, S. S., & Brehm, J. W. (1981). *Psychological reactance: A theory of freedom and control*. New York: Academic Press.

Burns, K. S., & Lutz, R. J. (2006). The function of format: Consumer responses to six on-line advertising formats. *Journal of Advertising, 35*(1), 53-63.

Clark, W. R., Ezell, J., Clark, J., & Sheffield, D. N. (2009). Stay or leave: Applying Approach-avoidance theory to virtual environments. *Journal of Database Marketing & Customer Strategy Management, 16*(4), 231-240.

Clee, M. A., & Wicklund, R. A. (1980). Consumer behavior and psychological reactance. *Journal of Consumer Research, 6*(4), 389-405.

Dailey, L. (2004). Navigational web atmospherics: Explaining the influence of restrictive navigation cues. *Journal of Business Research, 57*(7), 795-803.

Edwards, S. M., Li, H., & Lee, J.-H. (2002). Forced exposure and psychological reactance: Antecedents and consequences of the perceived intrusiveness of pop-up ads. *Journal of Advertising, XXXI*(3), 83-95.

Edwards, S. M., Li, H., & Lee, J.-H. (2002). Forced Exposure and Psychological Reactance: Antecedents and Consequences of the Perceived Intrusiveness of Pop-up Ads. *Journal of Advertising, 31*(3), 83-95.

Elliot, A. (2006). The Hierarchical Model of Approach-Avoidance Motivation. *Motivation and Emotion, 30*(2), 111-116.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing - A conceptual model and implications. *Journal of Business Research, 54*(2), 177-184.

Eroglu, S. A., Machleit, K. A., & Davis, L. M. (2003). Empirical testing of a model of online store atmospherics and shopper responses. *Psychology & Marketing, 20*(2), 139-150.

Ha, L. (2008). Online Advertising Research in Advertising Journals: A Review. *Journal of Current Issues & Research in Advertising, 30*(1), 31-48.

Hobfoll, S. E., Dunahoo, C. L., Ben-Porath, Y., & Monnier, J. (1994). Gender and coping: The dual-axis model of coping. *American Journal of Community Psychology, 22*(1), 49-82.

Hong, S.-M., & Page, S. (1989). A psychological reactance scale: Development, factor structure and reliability. *Psychological Reports, 64*(3c), 1323-1326.

Hong, W., Thong, J. Y. L., & Kar Yan, T. (2004). Does Animation Attract Online Users' Attention? The Effects of Flash on Information Search Performance and Perceptions. *Information Systems Research, 15*(1), 60-86.

Kim, J.-E., & Kim, J. (2012). Human factors in retail environments: a review. *International Journal of Retail & Distribution Management, 40*(11), 818-841.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*: Springer Publishing Company.

Lee, G., & Lee, W. J. (2009). Psychological reactance to online recommendation services. *Information & Management, 46*(8), 448-452.

Lohtia, R., Donthu, N., & Hershberger, E. K. (2003). The Impact of Content and Design Elements on Banner Advertising Click-through Rates. *Journal of Advertising Research, 43*(04), 410-418.

McCoy, S., Everard, A., Polak, P., & Galletta, D. F. (2007). The effects of online advertising. *Communications of the ACM, 50*(3), 84-88.

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology*. Cambridge, MA: MIT Press.

Morimoto, M., & Chang, S. (2006). Consumers' attitudes toward unsolicited commercial e-mail and postal direct mail marketing methods: Intrusiveness, perceived loss of control, and irritation. *Journal of Interactive Advertising, 7*(1), 1-11.

Murray, K. B., & Häubl, G. (2011). Freedom of choice, ease of use, and the formation of interface preferences. *MIS Quarterly, 35*(4), 955-A956.

Pagani, M., Hofacker, C. F., & Goldsmith, R. E. (2011). The influence of personality on active and passive use of social networking sites. *Psychology & Marketing, 28*(5), 441-456. doi: 10.1002/mar.20395

Prestopnik, N. R., & Zhang, P. (2010, August 12-15). *Coping with Nuisance on the Web.* Paper presented at the Sixteenth Americas Conference on Information Systems (AMCIS), Lima, Peru.

Roth, S., & Cohen, L. J. (1986). Approach, avoidance, and coping with stress. *American Psychologist, 41*(7), 813-819.

Skinner, E. A., Edge, K., Altman, J., & Sherwood, H. (2003). Searching for the structure of coping: A review and critique of category systems for classifying ways of coping. *Psychological Bulletin, 129*(2), 216-269.

Wang, Y., & Sun, S. (2010). Examining the role of beliefs and attitudes in online advertising A comparison between the USA and Romania. *International Marketing Review, 27*(1), 87-107.

Zhang, p. (2000). The Effects of Animation on Information Seeking Performance on the World Wide Web: Securing Attention or Interfering with Primary Tasks? *Journal of Association for Information Systems, 1*(1), 1-28.

Zhang, P. (2006). Pop-up Animations: Impacts and Implications for Website Design and Online Advertising. In D. Galletta & P. Zhang (Eds.), *HCI and MIS: Applications* (Vol. 5): M.E. Sharpe publisher.

Zhang, P., Aikman, S. N., & Sun, H. (2008). Two types of attitudes in ICT acceptance and use. *International Journal of Human–Computer Interaction, 24*(7), 628-648.

Zhang, P., & Kim, Y. (2008, July). *Web advertising: What do we know about its acceptance and impacts? A meta-analysis of the literature.* Paper presented at the Proceedings of the Pacific Asia Conference on Information Systems (PACIS), Suzhou, China.