

An Empirical Study of Emotional Response to Sounds in Advertising

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The goal of this paper is to better understand how individuals emotionally respond to common advertisement sounds. We attempt to model the antecedents to the emotional response variable by developing a set of hypotheses predicting emotional reaction and empirically test the hypotheses using data from 153 laboratory participants. During the survey, participants were asked to listen to 20 different sounds on a computer and subsequently answer questions regarding their emotional response toward each one. Results indicate the emotional response to a sound clip is predicted by the level of interest generated and how well the sound captured the participant's attention.

INTRODUCTION

As one of the highest rated commercials during Superbowl 2011, the Volkswagon Passat ad utilized several sounds to elicit emotional response, including the Darth Vader theme, a dog barking, and a car cranking. Comparable to the typical television commercial, this one includes a child in a home with his parents. Yet, this kid, dressed as Darth Vader, attempts to use "The Force" unsuccessfully on several items. Unknowingly, he believes he has started the engine of the family car by using "The Force", while dad, holding the keyless remote starter from the kitchen, winks at mom. Music and sounds are often used in radio and television advertising to trigger moods and communicate nonverbally (Bruner, 1990). For instance, viewers of the Passat ad feel immediate excitement for the surprised child. This type of emotion in marketing is not a novel concept. The most successful marketing campaigns use elements of emotional marketing to appeal to consumers. Ads depicting babies and puppies tend to work for this reason (Robinette, Brand, & Lenz, 2001). Robinette et al. further suggest emotion to be the "one-and-only" true basis of successful marketing.

For the purposes of this paper, emotion is defined as a condition of the mind that arises from cognitive assessments of events or thoughts; comes with physiological experiences; is often associated with actions, such as gestures and facial movements; and may result in actions to manage the emotions (Bagozzi, Gopinath, & Nyer, 1999). To better understand purchase behavior, researchers must recognize that buying emotionally engages people. Specifically, consumers must often choose among several similar products (we include both goods and services in our use of product). In doing so, they weigh

choice criteria against product options (O' Shaughnessy & O' Shaughnessy, 2003). One criterion that is widely used in purchase behavior is intrinsic liking. This includes how the product looks, feels, tastes, smells, and sounds. Making purchase decisions on the basis of liking implies that the product creates feelings of pleasure and enjoyment in the buyer (O' Shaughnessy & O' Shaughnessy, 2003).

Companies spend billions of dollars each year developing marketing strategies and advertisement campaigns to influence consumer behavior. Despite the large amount of money spent, much of it is wasted on unsuccessful marketing ploys that fail to successfully sell goods and services. Researchers have found that consumers have multiple emotional responses to marketing stimuli. For example, a consumer may see steak on a television commercial and consciously acknowledge that the steak *looks* delicious. If the sound of steak sizzling is added to the same commercial, the consumer may begin to crave or hunger for steak. This type of emotional response triggers activity in the human brain, which is composed of a network of neuron cell clusters. As a result, the neurons in the brain use more energy when stimulation occurs while the consumer is being exposed to an advertisement (Lovell, 2008).

While much is known regarding the effectiveness of sounds in advertisements, a vast amount of information is yet to be discovered thanks to newer outlets such as the Internet and smart phones. Visual persuasion such as television and online commercials, billboards, and magazine ads is the most prevalent form of advertising used by companies today. However, studies show that consumers are not only influenced by what they *see*, but what they *hear* as well. Historically, jingles and catchy slogans have been the primary marketing tools used to appeal to the ear. Little research has been conducted on the relationship between mental imagery generated by non-visual sensory cues and its influence on consumer behavior (Miller & Marks, 1992). Therefore, this study proposes a framework for better understanding the role of emotions in marketing. Specifically, the following research questions are posited: What influences emotional response to sounds in advertising? And, what specific sounds in advertising create the most emotion in consumers?

The rest of this paper is outlined as follows: First, the literature review of emotions in advertising is outlined, followed by the development of a set of hypotheses, predicting the conditions under which emotions are likely to emerge. A research strategy and construct measures to test the hypotheses are also presented, and the paper concludes with expected contributions, limitations, and opportunities for future research in these areas.

LITERATURE REVIEW

In this section of the paper, we review the literature relating to emotional response to sounds in advertising.

It has been noted that marketing researchers tend to divide as supporters of one of two philosophical stances: Descartes (1596-1650) – who used emotionless, mathematical explanations to account for physical phenomena, or Pascal (1623-1662) (1909)(1909)(1909)- “The heart has reasons that reason does not know” (O' Shaughnessy & O' Shaughnessy, 2003). While traditional marketing research portrays buyers as rational decision-makers primarily concerned with function and benefit, an alternate perspective views individuals as both rational and emotional buyers, whose concerns are not only function and benefit but also achieving pleasurable experiences. Schmitt (1999) coined the latter view as Experiential Marketing, distinguishing five types of experiences: sensory experiences, affective experiences, creative cognitive experiences, physical experiences (behaviors and lifestyles), and social-identity experiences. Siding with Pascal, the focus of this manuscript is on sensory and affective experiences associated with sound.

“Perception is a continual series of simple hypotheses about the external world which are built up and selected by sensory experiences (Gregory, 1970).” In the context of marketing, how buyers perceive products is created, in part, by the sounds affiliated with them. According to Martin Lindstrom, a marketing mogul and consultant, 83% of advertising focuses only on visual stimulation. This leaves a wide-open area of undiscovered marketing opportunity. Lindstrom (2010) feels that the human sense of hearing is just as powerful a tool as that of sight. He further suggests that consumers have a direct

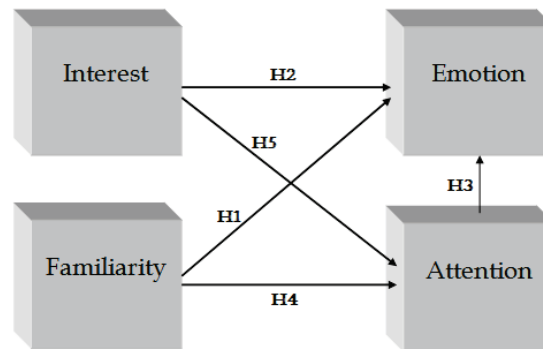
emotional response to common sounds heard in the environment. Therefore, in its current state, advertisers are underutilizing the sensory emotions associated with sounds; however, in order to utilize them to their fullest potential, it would be advantageous to marketers to discover which sounds are most appealing to the human ear.

Despite some overlap, research on the influence of sounds in advertising is comprised of two separate literature streams: cognitive and affective response. Advertising affects the “thinking” (cognitive) dimension and the “feeling” (affective) dimension of a buyer (Vakratsas & Ambler, 1999). Such areas of literature typically measure purchase intent, brand attitude, recall facilitation, or affective response as the dependent variable. Our knowledge of affective response as an outcome in advertising with sounds is somewhat limited. For instance, more empirical studies have examined brand attitude as the dependent variable (Anand & Sternthal, 1990; Blair & Shimp, 1992; Bozman, Mueling, & Pettit-O'Malley, 1994; Hung, 2000, 2001; MacInnis & Park, 1991; Mitchell, 1988; Park & Young, 1986; Simpkins & Smith, 1974) than affective response. Such studies involving affective response found more congruous timbre to be associated with happier, calmer, and more relaxed responses (Oakes & North, 2006). Similarly, North et al. (2004) found music specifically composed for radio advertisements to be associated with enhanced affective response.

HYPOTHESES

The research model, see Figure 1, integrates interest levels and familiarity with the sounds to show their effect on level of affective response (modeled as emotion) and attention. Specifically, emotion refers to the level of feelings evoked when hearing certain sounds, whereas attention is defined as the ability of the sound to capture the listener’s attention. The following paragraphs present hypotheses to be empirically tested.

**FIGURE 1
MEASUREMENT MODEL**



In many life situations, experiences and familiarity with things affect how one responds. For instance, Mano (1996) had subjects rate commercials on various dimensions. He found ad familiarity to be associated with more pleasantness and less boredom. Likewise, for the first hypothesis, we posit a relationship between one’s familiarity with the sound categories and an individual’s emotional response to the sound. Specifically, more familiarity should be associated with higher levels of emotional response. Thus,

Hypothesis 1: Familiarity with a sound will increase the level of emotion felt toward that particular sound.

The second hypothesis suggests a relationship between interest level and emotional response. Interest level is defined as the extent to which a person's attention is engaged by something. It is suggested that when an individual finds a particular sound interesting, he or she will have a greater level of emotional response to the sound. Thus,

Hypothesis 2: Interest in a sound will increase the level of emotion felt toward that particular sound.

Studies have shown that the inclusion of sounds in advertisements positively impacts the brand and commercial message by increasing memory, affect, and attention (Scott, 1990; Wallace, 1991). The extent to which a person focuses on a sound is how attention is defined for this paper. Hypothesis 3 associates the amount of attention initiated by a sound with the level of emotional response. In essence, higher levels of attention should be accompanied by more emotions. Thus,

Hypothesis 3: Attention will increase the level of emotion felt toward a particular sound.

Hypotheses 1, 2, and 3 suggest relationships with the dependent variable of emotion. The second dependent variable in the study is the extent to which a sound captures a subject's attention. Hypotheses 4 and 5 will produce relationships with this alternative dependent variable. Specifically, higher levels of familiarity and interest with certain sounds should evoke higher attention levels. Therefore,

Hypothesis 4: Familiarity with a sound will increase the level of attention felt toward that particular sound.

Hypothesis 5: Interest in a sound will increase the level of attention felt toward that particular sound.

PROCEDURES

Voluntary participants were recruited from the student population at a southeastern university. The target population consisted of males and females at least 19 years of age enrolled in upper-level undergraduate and graduate business classes. Individuals younger than 19 years old were excluded from the study to comply with consent agreement requirements. The research design involved a laboratory-based survey. A total of 153 students participated in the survey. The survey was used to determine emotional reactions associated with various sounds. Twenty sound clips were prepared in advance through discussion with four colleagues of the authors, including one professor and three graduate students. They were chosen based on common sound clips heard in on-line advertisements. Based on an initial pilot study of 15 subjects, 20 sound clips proved to be adequate in keeping the survey to less than 30 minutes. This time frame was sought to reduce subject fatigue. See Appendix A for a list of the sound clips used in the study.

Procedures involved participants listening to 20 sound clips and assessing each based on 20 different emotions. The list of emotions was created based on the Geneva Emotion Wheel (Baenziger, Tran, & Scherer, 2005); however, the list was modified to eliminate certain less recognizable terms, therefore, simplifying the process to facilitate understanding. Each participant used headphones while listening to a sound clip via a lab computer and rated the intensity of each emotion for the sound as either (1) not felt, (2) low, (3) moderate, or (4) high. Once each emotion was rated, the next sound clip played. This continued until all 20 sound clips had been heard. Emotion was calculated by taking the sum of the higher two emotional levels. Thus, a selection of moderate or high was used to assess emotion.

A computer-based questionnaire was also used to assess the variables familiarity, interest, and attention levels. The participant's familiarity with the sound was measured to determine their prior experience with or exposure to the sound. Participants were asked if they were familiar with the sound. If the response was *yes*, the subsequent question was to identify the sound in order to validate their

understanding of it. To measure interest and attention, participants were asked to rate both items on a 7-point Likert scale. Ratings ranging from *strongly disagree* to *strongly agree* were used when asked if they agreed with the statements, “The sound was interesting ... The sound captured my attention.”

The questionnaire used in the study is shown in Appendix B. The hypotheses were tested with SPSS using linear regression analysis. The following section conveys their results.

RESULTS

The demographic variables of gender, age, education level, and marital status were captured in this study to provide background information on the study’s participants. Results show that 74% of the participants are female, while the average age is 35 years old. Regarding education level and marital status, approximately 44% of the participants have completed their associate’s degree and 49% are married. Because this study relates to marketing, two more questions were asked to assess the participants’ marketing experience. Findings indicate that only 3% of the study’s subjects work or study in the marketing field, but 85% have taken marketing classes.

The correlation matrix displays the highest correlation between any two independent variables as .32, indicating there are no obvious problems with multicollinearity. Emotion was significantly correlated with familiarity ($r = .47, p < .05$), interest ($r = .85, p < .01$), and attention ($r = .84, p < .01$). Attention was also significantly correlated with familiarity ($r = .48, p < .05$), and interest ($r = .68, p < .01$). Descriptive statistics for the study are provided in Table 1.

TABLE 1
DESCRIPTIVE STATISTICS: MEANS, STANDARD DEVIATIONS, AND CORRELATIONS^a

Variables	Means	s.d.	1	2	3
1. <i>Familiarity</i>	86.7	8.6			
2. <i>Interest</i>	3.61	.69	.32		
3. <i>Attention</i>	4.45	.79	.48*	.68**	
4. <i>Emotion</i>	190	86	.47*	.85**	.84**

^aN = 153.

* $p < .05$, two-tailed test.

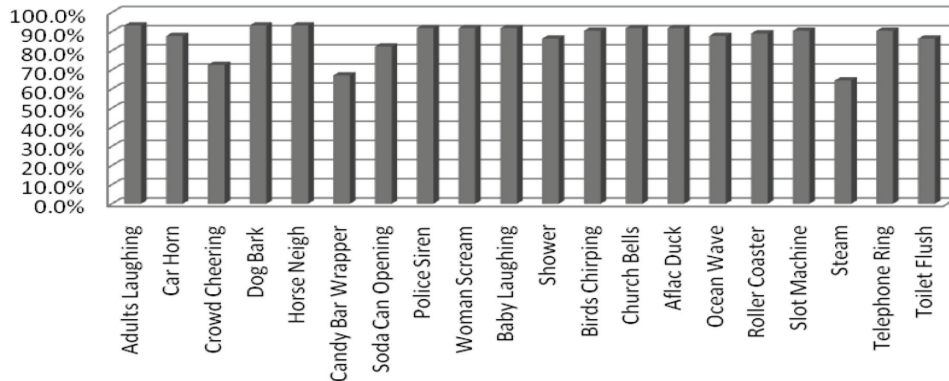
** $p < .01$, two-tailed test.

There are numerous ways to create a single sound. For instance, to create the sound “adults laughing” one can use two males, two females, or a crowd of both genders. However, the researchers chose sounds that they felt best represented each category. Therefore, familiarity was assessed based on the chosen 20 sound clips. Figure 2 shows that over 90% of the participants are familiar with the sounds of adults laughing, a dog barking, and a horse neighing; however, only 64% are familiar with the sound of steam and 67% recognized the opening of a candy bar wrapper.

The average level of interest for each sound clip was also assessed. The results indicate that of the 20 sounds, a baby’s laugh, ocean waves, slot machines jingling, and adults laughing are found to be the most interesting to participants. Rounding out the bottom of the list of most interesting sounds are the toilet flushing, a car horn blowing, and a telephone ringing.

It is interesting to note that although a car horn blowing is among the least interesting, it was near the top of the attention list. Other top attention getters include the laughter of a baby and adults, a police siren, and a screaming woman. Hearing a toilet flush and opening a candy bar wrapper are among the least interesting to the study participants.

FIGURE 2
PARTICIPANTS' FAMILIARITY WITH THE 20 SOUNDS



The variable with the most variance is emotion. The sound that evoked the most emotional response is the laughter of a baby. This is not surprising due to the widespread use of baby sounds in advertising, which commonly induces positive emotions in individuals. In contrast, fewest emotional responses were associated with the opening of a candy bar wrapper.

Hypotheses 1-5 were tested using linear regression. Hypothesis 1 suggested that familiarity with a sound will increase the level of emotion felt toward that particular sound. However, this hypothesis was not supported. Hypothesis 2 suggested that as a sound produced more interest, the level of emotion felt toward that particular sound would also increase. This hypothesis was supported ($\beta = .51, p < .001$). It was also found, as suggested in Hypothesis 3, that a sound capturing the attention of its listener is associated with more emotional response to that sound ($\beta = .45, p < .01$). Hypotheses 4 and 5 suggested relationships with attention as the dependent variable. Specifically, Hypothesis 4 suggested an increase in familiarity to be associated with an increase in attention, and Hypothesis 5 suggested an increase in interest to be associated with an increase in attention; however, neither of these hypotheses was supported. Together, 86.9% of the variance in emotional response was explained by attention and interest levels evoked by the sounds. See Table 2 for the regression results.

TABLE 2
REGRESSION TABLE RESULTS

	Model 1		Model 2	
	Emotional Response		Attention Level	
Familiarity	$\beta = -.017$	S.E. = 212.34	$\beta = .354$	S.E. = 1.67
Interest level	$\beta = .571^{**}$	S.E. = 29.04	$\beta = .495^*$	S.E. = .211
Attention level	$\beta = .463^{**}$	S.E. = 28.03		

$R^2 = 86.9\%$: Model 1, 53%: Model 2

N = 153 participants

* $p < .05$

** $p < .01$

DISCUSSION

In this study, a model of antecedents to the emotional response of sounds was presented to investigate specific hypotheses, while generating new insight into the realm of emotional responses to sounds in advertising. Although the researchers do not attempt to directly measure the final outcome – whether or

not certain sounds actually generate a purchase, it is suggested that specific emotions generated from marketing ploys may influence the purchase of a product or service. This study seeks to extend the work of researchers such as Lindstrom to further understand the effects of sounds in advertising.

As expected, it was found that the more an individual finds a sound interesting and it captures the listener's attention, the more emotional response will be produced. Surprisingly, more familiar sounds did not create more emotional response. One potential explanation is that given the low amounts of variance associated with the familiarity variable, there was not enough to allow for a significant relationship. In fact, at least 80% of the participants were familiar with 17 of the 20 sounds, which is expected because every day, common sounds were used in the study.

Although not specifically hypothesized, there are many interesting results to be found when analyzing the specific emotions associated with each sound. For instance, adults laughing generated the emotions of surprise, interest, happiness, and amusement, whereas, a crowd cheering created a sense of pleasure, happiness, amusement, and interest.

CONTRIBUTIONS AND IMPLICATIONS

The objective of this study was to illustrate how emotional responses to commonly used sounds in advertising could be captured and thus better understood. We found that emotional response was driven primarily by the amount of interest and level of attention evoked by specific sounds. Surprisingly, we did not find familiarity of the sound to play an important role in facilitating emotion. We believe that further study in these areas is needed to better clarify the relationships among these variables and to explore new variables that may ultimately influence purchasing decisions.

Several new research questions and directions for future research should be explored to create a better understanding of the use of sounds in advertising. For instance, sounds may elicit emotional memories of a product (e.g., the sound of opening a can of cola) predisposing consumers to recall reminiscences of using the advertised brand (O' Shaughnessy & O' Shaughnessy, 2003). Therefore, an extension of this research would be to model consumer recall ability as an antecedent to emotional response.

Although outside the boundaries of the current study, an interesting addition to a future study in this area would be to attempt to separate positive and negative emotional responses. For instance, if a subject responded that adults laughing created an intense feeling of jealousy, would that create a negative association with the product, or would the intense feeling simply make the product more memorable? This type of study might provide interesting new findings, particularly in the area of emotional responses.

While good results were obtained from the study, it is not without limitations. Some would suggest that emotional responses in a lab setting may not equate to actual purchase decisions because of the differences in the environments. That is, a lab setting may produce stimuli different from listening to an advertisement in the comfort of one's home or on a car radio. However, a laboratory provides researchers the opportunity to control their environment. Outside noise interference is prohibited, thus allowing participants to focus on a single sound. This method allows the researchers to protect against threats to internal validity. Therefore, more care is taken in the degree to which a study is assessing the concept the researcher is attempting to measure. A further limitation revolves around the ethical questions that arise from this topic. For instance, if we could isolate the sounds that resonate with audiences to promote purchase decisions, is that ethical? This is a debate that stirs many questions. Also, some researchers would suggest that traditional marketing research is flawed due to natural human error. Consumers in general have preconceived notions about products and are not always honest in rating them. Others may not know how to relay their thoughts or feelings towards a particular product during testing (Randall, 2009). In an attempt to combat these shortcomings, a revolutionary technique is being used – neuromarketing. It removes this margin of error by directly measuring brain activity. The neuromarketing procedure uses science and psychology to study consumer responses to marketing stimuli in order to measure consumer preference in products.

Testing for neuromarketing research may include the following: functional magnetic resonance imaging (fMRI), electroencephalography (EEG), galvanic skin responses, heart rate acceleration, and eye

tracking. An fMRI machine measures the changes of blood flow and oxygenation in the brain in response to advertisement stimuli. Electroencephalography (EEG) is a process by which electrodes are placed on the human scalp to measure brain electrical activity. Galvanic skin responses are measured by recording the electrical currents that pass through the skin in response to emotion. Heart rate acceleration tracking and eye tracking activity may also monitor consumer response to exposed marketing stimuli.

Although neuromarketing appears to be the most accurate form of interpreting consumer preference and buying behavior, there are skeptics and critics of its use. Critics feel that the techniques are invasive and that ultimately marketers will use the information to stimulate a false desire in consumers. These critics feel that humans are not viewed as potential consumers, but rather as test subjects (Tsai, 2010). Another concern is that addictions or cravings for products may develop unnecessarily (Randall, 2009). Critics and supporters also debate the validity of testing in a lab versus the actual response of a consumer when faced with a purchase decision. Would the same results occur? Overall, most critics feel that neuromarketing is a nice word for subliminal advertising and will be used to brainwash consumers into buying products.

CONCLUSION

Although this study significantly varies from neuromarketing science, overall, it contributes to a better understanding of how individuals emotionally respond to common sounds in advertisements. Our findings indicate that the emotional response to a sound clip is predicted by the level of interest generated by the sound and how well the sound captured the participant's attention. The method used to model the antecedents to emotional responses likely generalizes across other sound clips and provides a useful lens for examining such effects. Hence, future research is encouraged to provide further insights regarding the reliance on sound in advertisements to facilitate purchase decisions.

REFERENCES

- Anand, P., & Sternthal, B. (1990). Ease of message processing as a moderator of repetition effects in advertising. *Journal of Marketing Research*, 27, (3), 345-353.
- Baenziger, T., Tran, V., & Scherer, K. R. (2005). The emotional wheel. A tool for the verbal report of emotional reactions *Poster presented at the conference of the International Society of Research on Emotion*, Bari, Italy.
- Bagozzi, R. P., Gopinath, M., & Nyer, P. U. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science*, 27, (2), 184-206.
- Blair, M. E., & Shimp, T. A. (1992). Consequences of an unpleasant experience with music: A second-order negative conditioning perspective. *Journal of Advertising*, 21, (1), 35-43.
- Bozman, C. S., Mueling, D. D., & Pettit-O'Malley, K. L. (1994). The directional influence of music backgrounds in television advertising. *Journal of Applied Business Research*, 10, (1), 14-18.
- Bruner, G. C. I. (1990). Music, mood, and marketing. *The Journal of Marketing*, 54, (4), 94-104.
- Descartes, R. (1647). *Meditations on First Philosophy*.
- Gregory, R. L. (1970). *The Intelligent Eye*, New York, NY: McGraw-Hill.

- Hung, K. (2000). Narrative music in congruent and incongruent tv advertising. *Journal of Advertising*, 29, (1), 25-34.
- Hung, K. (2001). Framing meaning perceptions with music: The case of teaser ads. *Journal of Advertising*, 30, (3), 39-49.
- Lindstrom, M. (2010). *Buyology: Truth and Lies about Why we Buy*: Random House, Inc.
- Lovell, C. (2008). Is neuroscience making a difference? *All Business*, from <http://www.allbusiness.com/marketing-advertising/market-research-analysis-market/13774905-1.html>
- MacInnis, D. J., & Park, C. W. (1991). The differential role of characteristics of music on high- and low-involvement consumers' processing of ads. *Journal of Consumer Research*, 18, (2), 161-173.
- Mano, H. (1996). Assessing emotional reactions to tv ads: A replication and extension with a brief adjective checklist. *Advances in Consumer Research*, 23, 63-69.
- Miller, D. W., & Marks, L. J. (1992). Mental imagery and sound effects in radio commercials. *Journal of Advertising*, 21, (4), 83-93.
- Mitchell, A. A. (Ed.). (1988). *Current Perspectives and Issues Concerning the Explanation of Feeling in Advertising Effects*. Lexington, MA: Lexington Books.
- North, A. C., Hargreaves, D. J., Mackenzie, L. C., & Law, R. M. (2004). The effects of musical and voice 'fit' on responses to advertisements. *Journal of Applied Social Psychology*, 34, (8), 1675-1708.
- O' Shaughnessy, J., & O' Shaughnessy, N. J. (2003). *The Marketing Power of Emotion*, New York, NY: Oxford University Press.
- Oakes, S., & North, A. C. (2006). The impact of background music tempo and timbre congruity upon ad content recall and affective response. *Applied Cognitive Psychology*, 20, (4), 505-520.
- Park, C. W., & Young, S. (1986). Consumer response to television commercials: The impact of involvement and background music on brand attitude formation. *Journal of Marketing Research*, 23, (1), 11-24.
- Pascal, B. (1909). *The Necessity of the Wager*, New York: P.F. Collier & Son.
- Randall, K. (2009). Neuromarketing hope and hype: 5 Brands conducting brain research. *Fast Company*.

Robinette, S., Brand, C., & Lenz, V. (2001). *Emotion Marketing: The Hallmark Way of Winning Customers for Life*, New York, NY: McGraw-Hill.

Schmitt, B. (1999). Experiential marketing. *Journal of Marketing Management*, 15, (1-3), 53-67.

Scott, L. M. (1990). Understanding jingles and needledrop: A rhetorical approach to music in advertising. *Journal of Consumer Research*, 17, (2), 223-236.

Simpkins, J. D., & Smith, J. A. (1974). Effects of music on source evaluations. *Journal of Broadcasting*, 18, (3), 361-367.

Tsai, J. (2010). Are you smarter than a neuromarketer. *Customer Relationship Management*, 14, 19-20.

Vakratsas, D., & Ambler, T. (1999). How advertising works: What do we really know? *Journal of Marketing* 63, (1), 26-43.

Wallace (Ed.). (1991). *Jingles in Advertisements: Can they Improve Recall* (Vol. 18), Provo, UT: Association for Consumer Research.

APPENDIX A

SOUND CLIPS USED IN THE SURVEY

- | | |
|---------------------|----------------------|
| 1. Adults Laughing | 2. Car Horn |
| 3. Crowd Cheering | 4. Dog Bark |
| 5. Horse Neigh | 6. Candy Bar Wrapper |
| 7. Soda Can Opening | 8. Police Siren |
| 9. Woman Scream | 10. Baby Laughing |
| 11. Shower | 12. Birds Chirping |
| 13. Church Bells | 14. Aflac Duck |
| 15. Ocean Wave | 16. Roller Coaster |
| 17. Slot Machine | 18. Steam |
| 19. Telephone Ring | 20. Toilet Flush |

APPENDIX B

QUESTIONNAIRE ITEMS

1. Identify the emotion(s) that match closest to the way you felt after listening to the sound. Then determine the intensity of the emotion(s) you experienced by selecting one of the categories for each row. You may choose more than one emotion for each sound.

	No emotion felt	Low	Moderate	High
Longing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anger	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Contempt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surprise	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disgust	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relief	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jealousy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling Awe	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disappointment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Feeling Love	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guilt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleasure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Embarrassment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Happiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pride	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sadness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Amusement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compassion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interest	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Are you familiar with the sound? Yes or no. If you answered yes, specify the sound.
3. Which of the following categories best represent how you feel about the sound? The sound was interesting:

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------
4. The sound captured your attention?

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
-------------------	---	---	---	---	---	---	---	----------------
5. What is your gender? Male or Female
6. What is your date of birth? _____
7. What is your highest level of education completed?
 - Some High School
 - High School Diploma
 - GED
 - Some College
 - Associates Degree
 - Bachelors Degree
 - Graduate Degree
 - Post Graduate Degree
8. What is your marital status?
 - Married
 - Divorced
 - Separated
 - Widowed
 - Single
 - Living With Partner
9. Do you work or study in the marketing field? Yes or no. If yes, explain. _____
10. Have you taken Marketing classes at a College or other institution? Yes or no
11. Name as many of the sounds as you can recall from what you previously heard.