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# IS NEUROMARKETING ETHICAL? CONSUMERS SAY YES. CONSUMERS SAY NO.

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## ABSTRACT

*Advancements in the development of neuroscience have created the capacity for neuroscientific methods to be applied to marketing science and ultimately marketing practice. As a relatively nascent subfield in marketing, neuromarketing applies neuroscientific methods to study consumer reactions to specific marketing related stimuli. This study analyzes the use of neuromarketing by for-profit and non-profit organizations from an ethical perspective based on consumers' point of view. The implications of consumers' ethical judgments are also explored. The empirical evidence indicates that consumers perceive the use of neuromarketing-based marketing tactics by for-profit organizations to be unethical, yet the same tactics are considered ethical when non-profit organizations use this tool. The implications of these ethical judgments show the most favorable consumer responses for non-profit organizations that do use neuromarketing based marketing practices and, interestingly, the most unfavorable response for non-profits that forego the use of such practices. Managerial implications are also discussed.*

## INTRODUCTION

Neuromarketing is a technology based and nascent field of marketing research aimed at observing consumers' reaction to stimuli. Measuring consumers' reaction to stimuli is a common practice and, according to Wang and Minor (2008), these measures include: (1) behavioral measures, (2) verbal measures, and (3) psychophysiological measures. Neuromarketing differs from these traditional methods of measuring reactions to stimuli because it requires the application of neuroscientific based methods for the purpose of analyzing behavior in relation to markets and marketing exchanges (Lee, Broderick, and Chamberlain, 2007). Thus, neuroscience allows marketing researchers to observe uncontrollable brain function responses that result in specific physiological responses when individuals are exposed to specific stimuli. Neuroscientific methods include fMRI (Functional Magnetic Resonance Imaging), SST (Steady State Topography), EEG (Electroencephalography), Eye Tracking, and Galvanic Skin Response (Randall 2009). Examples of companies that use neuromarketing include: Microsoft, Yahoo, Hyundai, and others listed in Table 1.

Ethical concerns are considered one of the three most important aspects related to neuromarketing among marketing academics, neurologists, and marketing professionals (Eser, Isin, and Tolon, 2011). Among the ethical critiques of neuromarketing is the concern that neuromarketing will allow an unprecedented level of manipulation by companies through their

marketing activities (McDowell and Dick, 2013). This critique is based on the idea that consumers may be unjustly influenced through the use of specific stimuli that lead to specific physiological responses which can be uncovered only through neuromarketing based research.

**Table 1: Companies that use Neuromarketing**

Company	Industry	Purpose of using Neuromarketing
<b>GMTV*</b>	Television	Conduct a study to teach advertisers how viewers' brains act during morning hours
<b>VIACOM*</b>	Media	Study reactions to advertising
<b>HAKUHODO*</b>	Advertising	Observe responses to products, brands, advertising and video content
<b>PHD*</b>	Media planning	Measure the relative effectiveness of advertising
<b>Martin Lindstrom* (NeuroSense)</b>	Author	NeuroSense designed and analyzed all the fMRI studies used for Lindstrom's book research
<b>Yahoo**</b>	Media	Study consumers reaction to a television commercial
<b>Hyundai**</b>	Automotive	Study consumers reaction when viewing a sports car
<b>Microsoft***</b>	Technology/Software	Understand consumers' interactions with computers including their feelings of surprise, satisfaction and frustration
<b>Microsoft**</b>	Technology/Software	Study how engaged consumers are when using an XBOX
<b>Ebay**</b>	Online Auctions	Adapted ad campaign on the basis of neuromarketing research
<b>Frito-Lay**</b>	Food	Adjusted commercials, products, and packaging on the basis of neuromarketing based research
<b>NeuroFocus** (Conducted Neuromarketing research for, among others, Google, Chevron, and Walt Disney Company)</b>	Neuromarketing Research	Consulting based neuromarketing research
<b>The Weather Channel***</b>	Television	Study viewers reactions to promotions
<b>Daimler***</b>	Automotive	Study consumer reactions to car headlight characteristics
Sources: * Adapted from <a href="http://www.neurosense.co.uk/case_studies.html">http://www.neurosense.co.uk/case_studies.html</a> ** Burkitt 2009 *** Randall 2009		

Though Lindstrom (in Sullivan, 2009) posits that neuromarketing research can reveal only what is occurring in the brain, but cannot explain why it occurs, and Graham (2012) argues that the potential of neuromarketing effectiveness is limited because “we are not zombies when we shop, mindlessly and unknowingly putting brands in our baskets and stumbling to the checkout in a fog” (p. 288), these positions do not negate the possibility that behavior manipulation may be possible in ways previously thought not plausible.

Consumers may not be as enthusiastic about neuromarketing as companies who use neuromarketing and their agreeableness may vary depending on consumers’ understanding of how and why companies use neuromarketing. Consumers may feel manipulated and consequently may have a negative reaction towards the company using this technique. This plausible reaction appears to be similar to the one that subliminal advertising provoked after James Vicary proposed it to be effective in the 1950’s (Sutherland, 2004). However, according to Synodions (1988) the controversy over whether subliminal stimulation is effective remains and is now joined by a new controversy created by neuromarketing. The relevance of this topic is further illustrated by the Marketing Science Institute’s 2012-2014 research priorities inclusion of how the judgment of actions taken by organizations impact trust building (MSI 2012).

The potential of using neuroscience for the aforementioned marketing purposes has created multiple ethical concerns for academics, practitioners, and consumers (Wilson, Gaines, and Hill, 2008). Additionally, the effects of these concerns pose potential issues for nonprofit (NPO) and for-profit organizations. These issues may differ depending on the ethical perceptions of consumers in relation to how and why those organizations use neuromarketing-research-derived marketing practices. Considering the necessity of NPOs to depend on public good will to acquire the resources to operate, any perception of impropriety can have a detrimental effect on NPO funding (Kildow, 2005). It is plausible that understanding the implications of the use of marketing practices such as neuromarketing may be more critical for NPOs than for profit organizations though the implications for both are significant.

The distinction between what is considered ethical and unethical by consumers, the subjects of neuromarketing’s potential influence, must be better understood and may have the potential to guide the use of neuromarketing in the future. Understanding the implications of the use of neuromarketing has the potential to do the same. Therefore, we propose the following research questions: (1) what are consumers’ perceptions of the ethicalness of the use of neuromarketing by profit and nonprofit organizations, and (2) What are the implications of the use of neuromarketing for profit and nonprofit organizations on purchase intentions, word-of-mouth, and attitudes towards neuromarketing?

## LITERATURE REVIEW

### Neuromarketing

Scanning human brains to investigate how certain parts of the brain respond to specific stimuli is not a new phenomenon. The use of such imaging technology in the field of neuroscience has occurred for several years (Barkin, 2013). However, these techniques were commonly used only for medical purposes. The “fusion” of neuropsychological methods and

marketing science traces back to the beginning of the 21st century when neuroscience and economic perspectives were combined to form what is referred to as neuroeconomics (Garza and Saad, 2008).

In 2003 a group of researchers, intrigued by the Coke versus Pepsi challenge campaign in the 1970's, decided to conduct a similar study using a different research method. The researchers did this because they were perplexed by the Coke versus Pepsi phenomenon where, when blind tested, participants preferred the taste of Pepsi yet still bought Coke instead. Thus, the scientists wanted to explore why people bought products that were not necessarily those they preferred on the basis of taste (McClure, Tomlin, Cypert, Montague, and Montague, 2004). In order to address this research question the researchers studied brain responses in an experimental environment. To do this they used functional magnetic resonance imaging (fMRI) to observe the brain activity while participants were exposed to two different conditions: one in which participants did not know which brand of soda they consumed and another in which they were aware of the brand. The fMRI machine tracked brain blood flow while people performed these tasks. When performing these tasks in response to certain stimuli specific regions of the brain 'light up'. The results of the McClure et al. (2004) study suggested that when not knowing what brand of soda they were drinking half of the participants preferred Pepsi. Once participants knew what they were drinking almost three-quarters of the participants preferred Coke. Though similar to the findings pertaining to the original Coke versus Pepsi challenge, the intriguing aspect of the new study was being able to observe brain activity while consumers participated in the study.

As a part of their study McClure et al. (2004) found that two different systems cause the generation of preference. When participants did not know what they were drinking (sensory information only) the activity in the part of the brain called ventromedial prefrontal cortex predicted their preferences. However, when participants knew what they were drinking many of them altered their decisions. During this part of the study the brain activity that was more prominent occurred in the hippocampus, dorsolateral prefrontal cortex, and the midbrain. According to McClure et al. (2004) these areas of the brain have been found to be connected to emotion and affect (McClure et al., 2004), which suggests that previous brand knowledge affects decision making even when the taste may not be the one consumers actually prefer in blind tests.

### **Ethical Concerns in Neuromarketing**

The study by McClure et al. (2004) helped to make neuromarketing a new field of research while also raising significant concerns related to, amongst other aspects, the ethical implications of such technology use for research. Some researchers and practitioners gladly accepted the new field (Garcia and Saad, 2008; Perrachione and Perrachione, 2008; Lindstrom, 2009), but others, including the general media, criticized the phenomenon (Thompson, 2003; Blakeslee, 2004; Arussy, 2009). Commercial Alert, a nonprofit agency formed by Ralph Nader, proclaimed that neuromarketing was unethical and requested that the U.S. senate investigate the phenomenon (Sutherland, 2004).

Specifically for neuromarketing, two major ethical concerns are the invasion of privacy and, relatedly, the potential for mind control (Thompson, 2003; Lindstrom, 2009). The issue of

the invasion of privacy in marketing was discussed during the debate on the effectiveness of subliminal advertising. Many authors were concerned about whether the effects of subliminal advertising invade consumers' subconscious minds and ultimately alter their purchase decisions (Kelly, 1979). The main issue was that by communicating a subliminal message a person's behavior would change without the person being aware of the message's influence. While conspicuously influencing people's behavior might be considered ethical, doing so using covert measures is considered by some as unethical (Gratz, 1984; Hyman and Tansey, 1990). There is a similar concern applicable to neuromarketing. The major concern advocated by critics is that by scanning consumer brains and possibly discovering a 'super-effective' communication technique, corporations will be able to 'push the buy button' in a consumer's brain thereby being able to easily manipulate consumers' behavior. The morality of such an act is regarded as questionable and therefore needs to follow a strict code of ethics in order to prevent such immorality from transpiring (Murphy, Illes, and Reiner, 2008; Wilson et al. 2008). As a result of this possibility, Murphy et al. (2008) state that there is need to protect various parties that can be harmed or exploited by the research and to protect consumer autonomy in the event that neuromarketing becomes highly effective.

Despite positive acclamations on one side and criticisms on the other, some researchers do not believe that neuromarketing is as powerful as is sometimes suggested. Fleming (2006) explained in an interview that "neuromarketing is a concept based on fact plus a lot of assumptions – and surrounded by little fear", and that "it runs the risk of being perceived as a sham science." Kenning (2008) posits that even if fMRI use in marketing research helps us to better understand consumer behavior, the understanding itself is still not particularly definite, but rather rough and preliminary. Kenning (2008) also argues that neuromarketing does not allow us to read consumers' minds, that researchers should avoid oversimplification, and that a "buy button" does not exist in our brains. Despite the various criticisms neuromarketing has continued to evolve as a field of scientific inquiry and practice. Neuromarketing is an emerging topic of research in the academic field as made evident by special editions of the *Journal of Consumer Behavior* in 2008 and a special edition issue of *DerMarkt* in 2010. Neuromarketing is also popular among corporations which is illustrated by the fact that 13 of the top 100 brands in the U.S. are now using neuromarketing for strategy development (Sullivan 2009) and the growing number of neuromarketing research firms (McDowell and Dick 2013).

## **ETHICS AND NEUROMARKETING**

### **Conceptual Framework**

To better understand potential ethical dilemmas that can derive from the use of neuromarketing and the implications of those ethical judgments it is necessary to understand those instances when the dilemma is manifest. To guide this process the authors turn to normative theories of ethics. According to Shaw (2008) normative theories of ethics help distinguish right from wrong. Deontological and teleological moral philosophy theories of ethics represent two major perspectives included in normative theories of ethics (Hunt and Vitell, 1986). The deontological perspective emphasizes action that is based on an obligation or moral

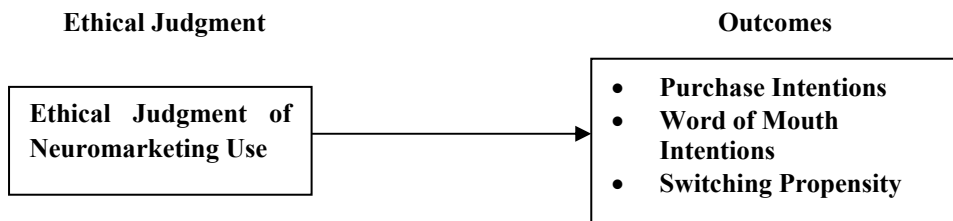
duty to do what is considered to be morally right when seeking a specific outcome whereas the teleological perspective emphasizes the consequences of an action as the basis upon which to determine the ‘rightness’ or ‘wrongness’ of an action (Hunt and Vitell, 1986; Hunt and Vasquez-Parraga, 1993). The empirical corroboration substantiating these two perspectives supports their use to measure ethical judgment and the resulting intended behaviors from an ethics viewpoint (See Hunt and Vitell, 1986; Hunt and Vasquez-Parraga, 1993; Flores and Vasquez-Parraga, 2009).

### **Ethical Dilemmas**

Ethical dilemmas arise when a situation involves a deontologically moral act that results in a negative consequence or when a teleologically right act involves an immoral action in order to produce a positive consequence. Both perspectives are usually taken into consideration in decision making and impact perceptions of the ethicalness of actions and what response those actions can incite. The development and use of a new tool or method such as neuromarketing can lead to ethical dilemmas. Thus, as Murphy et al. (2008) suggest, moral standards need to continue to be developed and followed when using new tools or methods. In this research, it is the perceptions of the ethicalness of the use of neuromarketing by NPOs and for profit organizations, and the implications of those perceptions, that can assist in the development of moral standards that can guide the use of neuromarketing. The capacity to measure ethical perceptions of the use of neuromarketing by profit and NPOs and the implications of those perceptions is enabled by the application of the Hunt-Vitell (1986) ethics model in this context. It is this measurement that helps address the two research questions being explored in this study. Thus, it is expected that consumers’ ethical judgment of the use of neuromarketing by profit and NPOs will impact their purchase intentions, attitudes towards the use of neuromarketing, word-of-mouth behaviors, and switching propensity (see Figure 1).

**Figure 1 – Neuromarketing use ethical judgment and its impact on consumer outcomes**

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## METHOD

### Research Design

A 2 (profit/nonprofit) x 2 (neuromarketing use/no use) between-subject scenario based experimental design was utilized to explore consumers' ethical judgments of the use of neuromarketing by organizations and the implications of those judgments. This method allows for a more precise operationalization of manipulations, control over potentially unmanageable variables, and reduces the duration over which these events would otherwise potentially occur (Bitner et al., 1990). Each scenario included an ethical dilemma based on the Hunt-Vitell (1986) ethics model. The ethical dilemma is based on the use or decision to not use neuromarketing for improving responses to marketing tactics. Thus, the neuromarketing use/no use aspect was manipulated by describing a situation in which the for-profit or NPO used neuromarketing driven marketing tactics or had the opportunity to use them, but chose to not use the neuromarketing based approach. The profit/nonprofit aspect was manipulated by describing an organization that was either a NPO or a for-profit organization. The context of the scenarios involved a beer brewery targeting college students as the for-profit organization and a NPO focused on decreasing the rate of alcohol abuse and addiction amongst college students. This context increases the relevancy of the scenario setting to the intended study subjects.

### Data Collection and Procedure

A sample of 324 responses was collected from a southern U.S. university. Approximately 58% of respondents were male and 42% were female while about 89% were 19-30 years old. Data collection took place in a classroom setting where respondents were informed of the nature of the experiment. After the explanation each subject was randomly assigned to read one of the four conditions (profit or non-profit and neuromarketing use or non-use), then each subject answered the questions from the structured instrument. The total duration of the experiment was about 10-12 minutes. The group sizes for each of the four conditions are as follows: NPO/neuromarketing Use = 76; NPO/No neuromarketing Use = 85; For-Profit/neuromarketing Use = 84; For-Profit/No neuromarketing Use = 79.

### Measurement

Using the method employed by Hunt and Vasquez-Parraga (1993) and Flores and Vasquez-Parraga (2009), ethical judgment of the use of neuromarketing was measured using a 7 point scale (1-Very Unethical to 7-Very Ethical). All remaining scales utilized a 7 point likert scale (1-Strongly Disagree to 7-Strongly Agree) for measurement purposes. A one item scale adapted from Dabholkar and Bagozzi (2002) was utilized to measure the degree to which respondents considered their assigned scenario to be realistic. Two manipulation checks were included to determine whether respondents understood that either a for-profit or NPO was the subject in their assigned scenario and that the organization did or did not use neuromarketing. Three scales were developed to capture attitudes towards the use of neuromarketing, perceptions



of whether neuromarketing invades individual privacy, and perceptions of whether neuromarketing influences behavior. To assess behavioral intentions respondents were instructed to read a corresponding set of actions in response to the scenario they read and asked to indicate the single action they considered most appropriate. The 7 responses were adapted from Hunt and Vasquez-Parraga (1993) and Flores and Vasquez-Parraga (2009) and include the following:

- a. Speak positively about (fictitious name) and buy their product/donate money to support their cause.
- b. Speak positively to others about (fictitious name).
- c. Buy/donate money to (fictitious name) products/to support their cause.
- d. Take no action at all
- e. Refuse to buy/donate money to (fictitious name).
- f. Speak negatively about (fictitious name)
- g. Speak negatively about (fictitious name) and recommend not buying their products/donating to their cause.

The implications of the use, or lack thereof, of neuromarketing was captured by a word-of-mouth scale and switching propensity scale adapted from Sweeney and Swait (2008). Finally, demographic characteristics of respondents were also collected.

## RESULTS

### Manipulation and Realism Checks

All respondents in the sample correctly indicated the type of organization and whether neuromarketing was utilized according to their assigned scenario. The realism check showed that respondents perceived the scenarios they read to depict realistic situations with a 5.27 rating. For comparative purposes, Dabholkar and Bagozzi (2002) utilized an experimental design and described the realism check rating of 5.8 for the scenarios as an indication that the scenarios were considered highly realistic.

### Ethical Judgment

The results suggest that whether an organization is for-profit or a NPO has an impact on the ethical judgment of neuromarketing use. Specifically, the use of neuromarketing by a for-profit organization was perceived to be unethical (mean = 3.52) whereas the decision to forgo its use for marketing purposes was perceived as an ethical action (mean = 5.23). Interestingly, respondents were somewhat unclear about the ethicalness of an NPO deciding to use or not use neuromarketing (use mean = 4.51; no use mean = 4.66), but the results indicate an inclination to consider the use or non-use of neuromarketing by NPOs as ethical. Most of the differences in ethical judgment were significant,  $F(3, 314)=21.723$ ,  $p<0.001$ , which includes the mean score differences between the for-profit and NPO neuromarketing use (3.52, 4.51) as well as non-use groups (5.23, 4.66), and the for-profit use and non-use groups (3.52, 5.23).

## Implications of the Use or Non-Use of Neuromarketing

To assess the statistical adequacy of the scales utilized in this study, factor analysis was conducted to assess the measures developed for this study as well as those adapted from previous research. This analysis resulted in the switching propensity factor being eliminated from the analysis due to statistical inadequacy; the results reported pertain to all remaining factors.

The data was deemed suitable for analysis on the basis of the Kaiser-Meyer-Olkin (KMO) measure (.888) and Bartlett's test of sphericity ( $p < .001$ ) (Hair et al. 2010; Pallant 2010). Table 2 illustrates all factor loadings. Each factor was deemed suitable for analysis purposes because all standardized factor loadings were above .5, each factor exhibited a variance extracted level above .5, and reliability scores were above .7 (Hair et al. 2010).

Construct/Items	Reliability/Item Loadings
<b>Attitudes Towards Neuromarketing</b>	<b>.907</b>
Neuromarketing is a good practice for organizations to use	.85
An organization's use of neuromarketing is good for consumers	.79
Neuromarketing is a practice I would advise organizations to use	.92
Neuromarketing should be used if an organization can afford to pay for its use	.82
<b>Word of Mouth</b>	<b>.892</b>
I would say positive things about organizations that use neuromarketing	.80
I would recommend organizations that use neuromarketing to others	.96
I would encourage friends and relatives to purchase from/donate to organizations that use neuromarketing	.82
<b>Privacy Invasion -- I believe that neuromarketing:</b>	<b>.793</b>
Invades my privacy	.68
Allows organizations to know what I am thinking	.64
Diminishes my ability to maintain privacy for thoughts I want to be kept private	.94
<b>Behavior Manipulation -- I believe that neuromarketing:</b>	<b>.812</b>
Can influence my behavior	.60
Can make me purchase from/donate to organizations that I otherwise would not	.88
Can make me purchase more/donate more than I otherwise would	.84

Regression analyses were conducted to determine the influence of the ethical judgment of the use of neuromarketing or lack thereof. Although several of the regression analyses indicate relatively low explanatory power for some of the relationships, the design of this study is only intended to explore the impact of the ethical judgment of neuromarketing use or non-use rather than to seek a high degree of explained variance. As the results in Table 3 show, ethical

judgment has a significant effect on what respondents consider the most appropriate response to the use or non-use of neuromarketing, attitudes towards the use of neuromarketing, and word-of-mouth.

### Group Analysis

An analysis of the 4 groups' responses to what was considered the most appropriate response to the use or non-use of neuromarketing by for-profit or NPOs revealed multiple

	Most appropriate response to use/non-use of neuromarketing	Attitudes towards the use/non-use of neuromarketing	Word-of-Mouth
Ethical Judgment	.243*	.266*	.185*

\*Significant at  $p < .001$

interesting differences. Specifically, as Table 4 illustrates, a stark contrast emerged on the basis of whether a for-profit or NPO faced the decision to use or not use neuromarketing. For the for-profit groups, the decision to use neuromarketing resulted in 60.7% of respondents responding favorably (any response, a-c), 20.2% being neutral (response d), and 19.1% responding unfavorably (any response, e-f). The responses were comparatively more favorable when the for-profit organization decided to not use neuromarketing (67.1%, 22.8%, and 10.1%, respectively). However, the opposite effect occurred for NPOs. NPOs that chose to use neuromarketing received a more favorable response (84.2%, 6.6%, and 9.2%, respectively) than when deciding to not use neuromarketing (68.7%, 11.8%, and 23.6%, respectively).

Organization Type/Neuromarketing Use	Non-Profit Yes	Non-Profit No	For-Profit Yes	For-Profit No
<b>Response</b>				
Favorable	84.2%	68.7%	60.7%	67.1%
Neutral	6.6%	11.8%	20.2%	22.8%
Unfavorable	9.2%	23.6%	19.1%	10.1%

Additional analysis illustrated that there were no significant differences between groups when assessing each group's perceptions of whether neuromarketing invades individuals' privacy or can lead to an increased capacity to manipulate behavior. Overall, respondents mean scores for each respective three-item scale pertaining to the potential for privacy invasion (mean=14.56) and behavior manipulation (mean=13.74) revealed a moderate degree of agreement that neuromarketing may enable each aspect.

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## DISCUSSION AND IMPLICATIONS

This study is the first to explore the perceived ethicalness of the use of neuromarketing by organizations and the implications of those perceptions. The ethicalness of the practice of neuromarketing has been criticized by many groups (see Thompson, 2003; Blakeslee, 2004; Sutherland, 2004; Arussy, 2009; Lindstrom, 2009). Two of the most common criticisms are that it may allow for the invasion of the privacy of individual thought processes in response to specific stimuli and that it may allow for a heightened degree of behavior manipulation. Though current studies remain inconclusive regarding the extent to which neuromarketing may or may not allow for behavior manipulation, what is known is that organizations are using neuromarketing in an attempt to enhance marketing outcomes. Thus, understanding the implications of the perceptions of neuromarketing use may help guide the practice of neuromarketing as it evolves. This guidance is critical for both for-profit and NPOs and the findings of this study reveal interesting differences not only in the ethical perceptions of the use of neuromarketing, but also the implications of those perceptions depending on whether a for-profit or NPO utilizes neuromarketing.

Specifically, this study found that the use of neuromarketing by for-profit organizations was perceived to be unethical while forgoing the use of neuromarketing was considered an ethical act. However, for NPOs the decision to use neuromarketing was considered ethical and, though still considered ethical, the decision to forgo the use of neuromarketing was considered comparatively less ethical for NPOs relative to for-profit organizations. These perceptions of the ethicalness of the use of neuromarketing resulted in different outcomes for for-profit and NPOs. For-profit organizations received a comparatively more positive response in terms of what was considered an appropriate response by consumers when the organization did not use neuromarketing. The for-profit organization that used marketing received a less favorable response though it was still positive overall. However, the converse resulted for NPOs. For NPOs, the decision to use neuromarketing was deemed to result in an overwhelmingly positive response. Though still overall positive, the decision to forgo the use of neuromarketing by NPOs received a comparatively less favorable response and the least favorable response overall.

Cohen's and Dienhart's (2013) moral conception of trust provides a basis from which to interpret these disparate findings for for-profit and NPOs. The moral conception of trust posits that when A trusts B to be responsible for a particular action, and B accepts the responsibility to execute that action, B is now obligated to carry out the action. In this context, A is seeking a moral relationship within which the trust-responsibility acceptance aspect results in a moral effect. The NPO utilized in the scenario descriptions for this study operated for the purpose of seeking to reduce alcohol abuse and addiction. Conversely, the for-profit organization sought solely to increase beer sales. In this context it may be argued that the purpose driving each type of organizations actions creates a different degree of implied trust because NPOs are often considered more trustworthy than for-profit organizations (see Hansmann, 1981; Schlesinger et al., 2004). Thus, the differing results regarding what is considered an appropriate reaction for NPOs compared to for-profit organizations may be a result of a stronger feeling of trust for NPO activities relative to for-profit organizations. As a result, it is possible that the strongly favorable response for NPOs use of neuromarketing and the relatively strong unfavorable response for the

non-use of neuromarketing occur because there is a perceived implicit obligation for NPOs to achieve their mission for public good. Accordingly, then, this perceived implicit obligation derives from the public seeking a moral effect type relationship with the NPO which the NPO accepts when they take action. If the NPO does not act then they violate this relationship. This relationship does not necessarily occur in the same manner with for-profit organizations likely because of the less favorable perception of organizations that operate with a primarily profit driven motive. The results of this study lend support to this preliminary position.

Important managerial implications can be drawn from these results that differ depending on whether a for-profit or NPO is involved. For-profit firms that decide to use neuromarketing risk creating an unfavorable response which includes refusals to purchase from a firm, speaking negatively about a firm, or a combination of both. Conversely, the decision to use neuromarketing by NPOs leads to a strongly favorable response which includes donating funds, speaking positively about the NPO, or some combination of both. Additionally, NPOs face a more unfavorable response if it chooses to not use neuromarketing than a for-profit firm that does use neuromarketing. In the case of NPOs it seems that educating donors and potential donors of the use of neuromarketing may produce more support for the NPOs mission.

### **LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH**

Although this study provides insight into the ethical perceptions of neuromarketing use and the implications of those perceptions, multiple limitations do exist. First, because our findings were obtained from a single study the findings need additional support for the purpose of generalizing the findings to consumers in general. Second, none of the four experimental scenarios explicitly stated an outcome. Rather, neuromarketing was only included as a potential option for the organization with the promise, but not guarantee, of improved advertising effectiveness. Thus, it is possible that a scenario which includes an explicit outcome may alter responses. Finally, only the NPO and for-profit distinction was utilized as a treatment. However, other factors such as perceived trustworthiness of specific organizations, industries, or the level of understanding of neuromarketing may also impact the evaluations and implications of neuromarketing use.

Multiple future research possibilities are present in this line of research. Additional research is needed to better understand the divergent outcomes when the treatment is NPOs or for-profit organizations. In this case whether people trust NPOs more than for-profits and whether the moral conception of trust argument is corroborated can be assessed. Other research can further examine the relationship between relevant organizational outcomes such as future behavioral intentions and the degree to which respondents believe neuromarketing invades individual's privacy and manipulates behavior. Finally, as the capabilities of neuromarketing become better understood overtime these specific capabilities can be utilized to explore how they impact consumer assessments of the use of neuromarketing.

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## APPENDIX A

### SCENARIOS

#### **NPO that chose to not use neuromarketing**

Stop the Abuse, a large not-for-profit organization whose mission is to reduce the rate of alcohol abuse and alcohol addiction amongst college students, wants to increase the effectiveness of their advertising. Stop the Abuse uses advertising to increase awareness of the problem of alcohol abuse and addiction amongst college students. They also use advertisements in an effort to persuade college students to drink alcohol in moderation or not drink alcohol at all.

Stop the Abuse hired a business consultant who informed the organization about a new marketing technique called neuromarketing which can help improve the effectiveness of their advertising. Neuromarketing has the potential to allow advertisers to better understand how to influence people's decisions compared to traditional methods. However, in order to be able to have this type of influence on people, neuromarketing must utilize brain-scanning technology that allows advertisers to effectively "see" an individual's brain activity in response to different advertisements. Some people have referred to being able to see a consumer's brain activity as being able to read their thoughts. This information then allows advertisers to more accurately determine what type of advertising increases the likelihood of college students being influenced to stop drinking alcohol excessively and/or to stop drinking alcohol completely.

Despite what Stop the Abuse knows about the use of neuromarketing, the organization's management team decides that they should not use neuromarketing to develop a new advertising campaign. Thus, the organization decides to launch a new advertising campaign that is developed using traditional methods.

The other iteration of this scenario included in the random sample of questionnaires included:

- A NPO that chose to use neuromarketing

### **For-profit organization that chose to use neuromarketing**

Sudz, a beer brewery, needs to increase its beer sales to college students. A business consultant has informed them of a new marketing technique called neuromarketing that can help increase sales. Neuromarketing has the potential to allow advertisers to better understand how to influence purchase decisions compared to traditional methods. However, in order to be able to have this type of influence on consumers, neuromarketing must utilize brain-scanning technology that allows advertisers to effectively “see” an individual’s brain activity in response to different advertisements. Some people have referred to being able to see a consumer’s brain activity as being able to read their thoughts. This information then allows advertisers to more accurately determine what type of advertising increases the likelihood of a consumer being influenced to purchase a particular product.

With this information, Sudz decides that they will use neuromarketing to develop a new advertising campaign. This decision means Sudz will also end their previous advertising campaign that was developed using traditional methods.

The other iteration of this scenario included in the random sample of questionnaires included:

- A for-profit organization that chose to not use neuromarketing