

# NEUROMARKETING: LEGAL AND POLICY ISSUES

A COVINGTON WHITE PAPER

THEODORE VOORHEES, JR., WASHINGTON

DANIEL L. SPIEGEL, WASHINGTON

DANIEL COOPER, LONDON

BEIJING

BRUSSELS

LONDON

NEW YORK

SAN DIEGO

SAN FRANCISCO

SEOUL

SHANGHAI

SILICON VALLEY

WASHINGTON

**COVINGTON**

COVINGTON & BURLING LLP

[WWW.COV.COM](http://WWW.COV.COM)

CONTENTS

- Executive Summary..... 1
  - Potential Legal Issues ..... 1
  - Policy Issues..... 2
- Overview..... 3
- Background: Techniques and Illustrations ..... 5
  - Functional Magnetic Resonance Imaging (fMRI)..... 6
  - Qualified Electroencephalography (QEEG)..... 6
  - Steady-State Topography (SST) ..... 7
  - Eye Tracking..... 7
  - Galvanic Skin Response (GSR) ..... 8
- Potential Legal Issues ..... 8
  - Consumer Protection..... 9
  - Privacy and Data Protection..... 12
  - Tort Issues..... 15
- Policy Issues ..... 16
  - Scope of Use ..... 16
  - Self-Regulation..... 17
  - Engagement..... 17
- Conclusion ..... 18
- Appendix ..... 19
- Attorney Biographies ..... 20

## Executive Summary

---

Neuromarketing involves the use of neuroscience research to shape advertising and marketing strategies so that brands will connect with consumers in deeper and more lasting ways. Neuromarketing's value proposition is that because consumers are often unable to articulate their decision-making processes in purchasing goods and services, conventional market research methods, such as focus groups and surveys, are of limited value to marketers. Neuroscientists assert that consumers' inability to articulate their true feelings arises from the fact that some of the most powerful influencers affecting their brand loyalty and purchase behavior are unconscious brain processes beyond their reckoning. By studying the impact of different marketing stimuli on the brain through advanced techniques including functional magnetic resonance imaging ("fMRI") and qualified electroencephalography ("QEEG"), neuromarketers are creating campaigns designed to generate more powerful and longer-lasting positive responses to advertising.

At the same time that use of neuroscience techniques has been expanding, there has been a concurrent increase in concern among government regulators and consumer advocates that these new marketing tools will produce new forms of consumer deception and erode privacy rights. Although challenges of this kind are not new to the advertising industry, the advances in consumer tracking brought on by the Internet Age have magnified consumer concerns, given advocacy groups more powerful arguments to support their longstanding critique of industry practices, and prompted government regulators and multilateral health standard-setting bodies to take notice.

### Potential Legal Issues

The use of neuroscience to enhance advertising appeal raises a number of legal issues in three broad areas:

- **Consumer Protection.** As neuromarketing techniques become more sophisticated and arguably more powerful, the industry will likely face increasing resistance from regulators concerned that consumers are being misled into believing they want or need a product they have no use for, or deceived into thinking a purchase arises from their rational choice whereas in fact they are being induced to act based on stimulated subconscious impulse. To regulators, these techniques may cross the line from fair encouragement to unlawful coercion. At least one European regulatory agency has already taken action against a financial services company employing neuromarketing. We expect there will be similar enforcement actions in the United States before long.
- **Privacy Issues.** Some of the more aggressive claims by neuromarketers about the power of their techniques to understand brain function and impact behavior have predictably raised privacy concerns among regulators and the general public. At a time of increased sensitivity to corporate monitoring of consumer behavior, thanks largely to the proliferation of Internet tracking and targeting technologies, the prospect of additional intrusions into personal thought processes has raised heightened concern. In addition to facing scrutiny by European data protection authorities and the Federal Trade Commission, neuromarketers may soon be confronted by the burgeoning privacy plaintiffs' bar in the U.S., which in the last year alone has filed more than 150 lawsuits

alleging that new marketing techniques, such as online behavioral advertising, violate consumer privacy.

- ***Tort Issues.*** The use of neuromarketing techniques to induce purchase of a product which, if misused, could cause personal injury, raises important questions under the law of products liability. It is not at all difficult to imagine product liability claims being asserted, especially by or on behalf of children and other vulnerable groups, that neuromarketing wrongfully induced the claimants to use products that are unreasonably dangerous for them, or to over-consume or become dependent on unhealthy foods or beverages, by overriding their rational powers of self-control. Other tort claims may be advanced under a theory that by penetrating to internal areas of brain function, neuromarketing impermissibly “touches” a protected personal domain giving rise to liability for battery or assault.

### Policy Issues

Because the concerns we have identified are growing within the global regulatory, consumer advocacy and public health communities, the advertising sector faces a number of policy choices as it seeks to determine how best to safeguard industry interests. These choices need to be addressed on at least three levels:

- ***Scope of Use.*** The industry should first develop a baseline analysis of the extent to which neuromarketing is currently being used as a standard practice. Data should be gathered by country and by product category. It is clear that neuromarketing providers have moved the technology out of university settings and into the marketplace. But the industry needs to conduct a disciplined assessment of where and how this growth is occurring on a global basis.
- ***Self-Regulation.*** The development of self-regulatory standards for the advertising industry in the application and scope of use of neuromarketing will likely play a critical role in reducing both legal and policy risk in this field. The industry should consider developing policies that provide for peer review of claims of efficacy, establish ethical standards for implementing neuromarketing techniques, prevent targeting of children and other vulnerable groups, and assure accountability.
- ***Engagement.*** The advertising industry needs to develop a strategy for interacting positively with the various stakeholders that will have an interest in the use of neuromarketing. Not to do so risks granting free license to those who are most critical of the industry to sensationalize the practice and shape the narrative in ways which might induce regulators spurred by consumer hostility to sharply curtail this promising new field.

## OVERVIEW

---

The application of neuroscience research to advertising and marketing strategy and product design—a new field now known as “neuromarketing”—has generated widespread and rapidly growing interest among advertisers because of the promise it seems to offer to connect brands with consumer preferences in deeper and more enduring ways. Marketers have long known that consumers are influenced by often unconscious, emotion-driven responses to products, but until recently there has been little understanding of how this process actually works in the human mind or how to apply what little is known to create more effective ads and design more appealing products. Neuromarketing is being promoted as a breakthrough in the understanding of these thought processes. Proponents assert that by using these new brain analysis technologies that show the impact of particular stimuli on a person’s attention, emotion, and memory, advertisers can finally discern with great specificity the particular attributes of an ad or product design that will deliver the greatest positive appeal to consumers.

A central premise of neuromarketing’s value proposition is that consumers are often unable to accurately discern their desires and decision-making processes when purchasing goods and services. This means that conventional market research methods such as focus groups and consumer surveys are of limited value to marketers. Neuroscientists assert that consumers’ inability to articulate their true feelings arises from the fact that some of the most powerful influencers affecting their brand loyalty and purchase behavior are unconscious processes beyond their reckoning. By studying the impact of different marketing and design stimuli on discrete areas of the brain associated with feelings and recognition functions, neuroscientists claim they can understand what really appeals to consumers and thereby help brand owners improve the effectiveness and increase the return of each dollar or Euro they spend on advertising.

Yet at the same time that advertisers have been increasing their reliance on neuroscience techniques, there has been steadily growing concern among government regulators and consumer advocates that this new marketing tool will open the door to new forms of consumer deception and further erosion of privacy rights. Of course concerns of this kind are not new to the advertising industry; critics have been complaining about deception in advertising since the dawn of the industry, and the notion that ads might unfairly manipulate internal human instincts was widely disseminated with the 1957 publication of *The Hidden Persuaders*, by Vance Packard.<sup>1</sup> What is different today, however, is that dramatic advances in the technology used to identify, monitor and trace brain functions have greatly expanded our knowledge of how people think and respond to stimuli. Marketers have, in turn, enthusiastically embraced the new technology in pursuit of their commercial objectives. One untoward consequence is that consumer advocacy groups have found new support for their longstanding critique of the advertising industry, and government regulators and multilateral health standard-setting bodies are beginning to take serious notice. The challenge industry faces today is particularly acute in light of the modern era’s greatly heightened concern for children as an especially

---

<sup>1</sup> Vance Packard’s 1957 critical study of the advertising industry’s techniques of persuasion remains perhaps the best known exemplar of this genre. A more recent treatment of the subject can be found in Martin Lindstrom’s *Brandwashed: Tricks Companies Use to Manipulate Our Minds and Persuade Us to Buy* (2011).

vulnerable demographic group. It is no surprise that the most prominent attacks on advertising practices in recent years have involved promotion of products—especially foods and beverages—used by children.

The rapid emergence of neuromarketing has also raised global alarm among privacy advocates, who have long been concerned by the rapid expansion of information-gathering technologies during the Internet era that have become increasingly invasive in response to the threat of international terrorism. Privacy concerns arise most immediately in the clinical setting where basic neuroscience research for advertising purposes is carried out on human subjects. But broader and potentially more consequential privacy issues arise as neuroscience-enhanced advertising impacts individual consumers. Critics claim that these techniques result in unprecedented intrusions into the consumer's thought patterns and thus trample on the sanctity of the individual's "inner self." At least one European regulatory agency has already taken action against a financial services company employing neuromarketing. We expect there will be similar enforcement actions in the United States before long.

This paper offers a preliminary overview of the major legal and policy issues that neuromarketing raises for the global advertising industry. Following a brief introduction describing some of the more common methods of neuromarketing research, we summarize what we believe are the main legal and policy issues that are raised by this new technology. Our goal is to provide a high-level overview of the challenges the industry faces as more advertisers begin to rely on the new techniques, as the public becomes more aware of the implications for consumer protection and privacy rights and as governments consider the feasibility of regulating this new marketing practice. The advertising industry is already under pressure and considerable scrutiny from regulatory agencies, NGOs and advocacy groups in Europe and the U.S. where particular attention is paid to certain important industry sectors (e.g., foods, alcoholic and non-alcoholic beverages, pharmaceuticals), and where the special concerns of vulnerable groups, especially children, are paramount. In these circumstances, any incremental expansion of the power or invasiveness of advertising techniques could cause heightened risk for the industry absent the early development of a compelling counter-narrative that describes the clear benefits that the new technology will deliver for consumers, that answers and corrects the many exaggerated attacks on and claims regarding neuromarketing's capabilities, and that explains the ethical safeguards that are in place or being developed to protect children and other vulnerable groups.

It bears noting that neuromarketing is still a science in its infancy, and that many of the claims being made for this new discipline remain unproven.<sup>2</sup> One might therefore be tempted to treat this new practice as a somewhat obscure, highly technical, under-developed and unproven tool of no great interest to the average consumer or even to most regulatory officials. In fact the opposite is more likely to be true once the public and regulators begin to see these new marketing techniques emerging in the broader context of the world's rapidly growing systems of surveillance and detection technology. There is increasing apprehension among consumer

---

<sup>2</sup> Psychiatrists caution that these claims are "questionable at best," (Carl E. Fisher *et al.*, *Defining Neuromarketing: Practices and Professional Challenges*, 18 *Harv. Rev. Psychiatry* 230 (2010)) and many academics have stated that current neuromarketing techniques cannot produce marketing campaigns that are so persuasive as to overwhelm individual autonomy. (See Christopher R. Madan, *Neuromarketing: the next step in market research?*, 1 *Eureka* 34 (2010).)

groups and policymakers alike that science and technology are advancing far more rapidly and with much greater invasive impact on consumers than the public is able to fully appreciate, and that these advances are occurring across a wide array of techniques for monitoring many aspects of human behavior.

This dense milieu of modern surveillance and detection methods has generated an enhanced level of apprehension about the erosion of privacy, identity, and personal integrity, with the result that each new “high-tech” tool that emerges will likely be perceived to have higher importance and pose greater dangers than would ever have been apparent had any of these practices been examined in isolation. Hence, while one might hope that a field as obscure and under-developed as neuromarketing will not rise to a level of paramount public concern, at least not any time soon, in fact this outcome is far more plausible than first appreciated once one considers the broader array of threats to privacy and personal integrity within which neuromarketing is only one small but easily identifiable part.

## BACKGROUND: TECHNIQUES AND ILLUSTRATIONS

---

Although neurological studies have been a part of marketing campaigns for decades, “neuromarketing” first gained nationwide attention in 2004 with the publication that year of a study by neuroscientists analyzing the famous “Pepsi Challenge.”<sup>3</sup> Beginning in the 1970s, Pepsi conducted several ad campaigns “challenging” Coke drinkers to take a blind taste test involving both colas. The results consistently favored Pepsi, yet Coke remained by far the dominant brand. In their 2004 paper, McClure and his fellow researchers sought to account for this persistent anomaly by repeating the famous tests with the addition of functional magnetic resonance imaging (fMRI) to measure the tasters’ brain responses during testing.

The subjects’ responses were measured under two conditions: (1) anonymous delivery of the Coke and Pepsi (the blind taste test), and (2) “brand-cued” delivery, where the subjects were told which brand they were tasting. Under the first condition, subjects’ preferences were roughly equal, but fMRI tests showed that Pepsi tended to produce a stronger response in the region of the brain that processes feelings of reward.

When the subjects were informed about which brand they were tasting, however, the results—and the subjects’ brain activity—were different. When the subjects knowingly drank Coke, the fMRI revealed increased activity in areas of the brain associated with higher-level activities such as memory and emotion-processing. This suggested that the subjects’ experience of the more popular product was overlaid with more abstract feelings likely including memories of ad campaigns and positive emotional associations with the Coke brand. Pepsi did not provoke this kind of response.

The study challenged the conventional notion that consumer preferences for a food or beverage are directly based on the physical properties of the product rather than culturally shaped perceptions of and associations with the brand. Marketers, of course, had long believed in their ability to shape consumers’ preferences without reference to the physical product itself, but this study provided a scientific basis for this belief. The study received national media coverage, and no doubt contributed to the steady rise of neuromarketing

---

<sup>3</sup> See Samuel M. McClure *et al.*, *Neural Correlates of Behavioral Preference for Culturally Familiar Drinks*, 44 *Neuron* 379 (2004)

research, which has since grown in popularity and sophistication.<sup>4</sup> Below we provide a brief overview of the principal methods of neuroscience research employed for neuromarketing and some illustrations of its application.

### FUNCTIONAL MAGNETIC RESONANCE IMAGING (fMRI)

fMRI measures brain activity by monitoring the changes in blood flow in different parts of the brain. As suggested by the Pepsi Challenge experiment, neuromarketing researchers believe that increased activity in certain parts of the brain can reflect the basis for a subject's preference for a product. Researchers measure a range of reactions from a mere experience of pleasure as the subject consumes a product to a deeper, more abstract emotional connection to the product, depending on the region of the brain that is activated.

Notable neuromarketing experiments that have relied on fMRI technology include one carried out at McLean Hospital, a psychiatric institution run by Harvard University, that reportedly involved measuring the neural responses of whiskey drinkers to various images including "college [students] drinking cocktails on spring break, twentysomethings with flasks around a campfire, and older [men] at a swanky bar."<sup>5</sup> Interestingly, although the subjects professed to enjoy the campfire scenes, the spring-break images provoked the most brain activity. The results of the McLean study, which was financed by the Boston-based marketing firm Arnold Worldwide, reportedly helped shape an ad campaign for Jack Daniel's.

Another study using fMRI, conducted by researchers at Stanford and Caltech, showed that wine drinkers experienced more pleasure when they were told that they were drinking a more expensive bottle of wine.<sup>6</sup> As one commentator noted, the "important aspect of these findings is that people aren't rationalizing on a survey, i.e., reporting that a wine tastes better because they know it's a lot more expensive. Rather they are actually experiencing a tastier wine."<sup>7</sup>

### QUALIFIED ELECTROENCEPHALOGRAPHY (QEEG)

QEEG monitors electrical activity in the brain through electrodes placed on the scalp. When groups of neurons are activated in the brain, an electric charge is generated, which, in turn, causes an electrical field. The electrodes record those fields. The activity can then be projected onto a three-dimensional representation of the brain that shows which areas were activated at specific moments.

---

<sup>4</sup> By one count, there are more than 90 firms providing neuromarketing services for dozens of Fortune 500 companies. A partial list of these service providers and their advertiser clients is provided in Appendix A hereto.

<sup>5</sup> Alli McConnon, *If I Only Had a Brain Scan*, Business Week, Jan. 22, 2007, available at [http://www.businessweek.com/magazine/content/07\\_04/c4018008.htm](http://www.businessweek.com/magazine/content/07_04/c4018008.htm).

<sup>6</sup> See Hilke Plassman et al., *Marketing Actions Can Modulate Neural Representations of Experienced Pleasantness*, 105 PNAS 1050, 1050-51 (2008).

<sup>7</sup> Roger Dooley, *Why Expensive Wine Tastes Better*, Neuromarketing (Jan. 16, 2008), <http://www.neurosciencemarketing.com/blog/articles/why-expensive-wine-tastes-better.htm>

Although fMRI provides a more detailed illustration of brain activity, QEEG is the preferred method of many neuromarketing researchers because it is less costly and can be used in “real world” settings outside the laboratory such as stores and movie theatres. A typical example of a study involving QEEG was carried out by the U.K. firm Neuroco (which has since been acquired by Neurofocus), in which a subject was fitted with a neuro-sensor cap and a pair of glasses containing a tiny video camera, which enabled the researchers to track her actions and correlate them with her brain patterns.<sup>8</sup> The subject was then monitored during her visit to a shopping center where her attention and emotional responses to various products and fragrances were measured.

### STEADY-STATE TOPOGRAPHY (SST)

SST has been described by a leading neuromarketing research firm as “essentially a refinement of EEG.”<sup>9</sup> SST typically involves monitoring electrical activity in the brain using EEG, while a steady “flicker” is presented in the subject’s peripheral vision. The flicker elicits a response in the brain known as the Steady State Visually Evoked Potential (SSVEP). When a subject is presented with a stimulus (e.g., an ad), the response elicited by that stimulus can be identified by contrasting it with the steady SSVEP. SST is noteworthy principally for its ability to show researchers the extremely rapid variations in brain activity over time. In a well-known study using SST, researchers monitored brain activity of 35 subjects as they watched several television commercials.<sup>10</sup> A week later, the participants were asked to recall the commercials based on a series of frames taken from the same commercials. The researchers discovered that brain activity in posterior regions of the frontal cortex during commercial viewing predicted the subjects’ ability to recall the commercials.

### EYE TRACKING

Eye tracking technology can be used to measure gaze direction, fixation duration, and pupil size, each of which correlates with attention, emotional response, and other cognitive processes. Eye tracking is often combined with QEEG, as it was in the Neuroco experiment, and has been particularly useful in evaluating consumers’ responses to in-store displays. A recent, highly publicized study conducted by Campbell’s Soup Company used eye-tracking (among other methods) to measure consumers’ response to the iconic Campbell’s soup label and in-store shelf displays.<sup>11</sup> The use of eye tracking showed that the large Campbell’s label on the top of the can tended to divert consumer attention away from important label details, such as variety name. These findings prompted Campbell’s to re-proportion and relocate its

---

<sup>8</sup> See David Tiltman, *Market research: Mind reading*, Marketing (Nov. 23, 2005, 12:00 AM), <http://www.marketingmagazine.co.uk/news/529442/>.

<sup>9</sup> Neuro-Insight, <http://www.neuro-insight.com/the-company/> (last visited Nov. 21, 2011).

<sup>10</sup> See R. B. Silberstein et al., *Steady-state Visually Evoked Potential topography associated with a visual vigilance task*, 3 Brain Topography 337 (1990).

<sup>11</sup> See Ilan Brat, *The Emotional Quotient of Soup Shopping: Campbell’s Taps ‘Neuromarketing’ Techniques to Find Why Shelf Displays Left Some Customers Cold*, Wall St. J. (Feb. 17, 2010), available at [http://www.innerscoperesearch.com/news/WSJ\\_Campbells\\_2010\\_02.pdf](http://www.innerscoperesearch.com/news/WSJ_Campbells_2010_02.pdf).

logo and to divide its soups into four categories that are color-coded to enable consumers to locate particular varieties more easily.

### **GALVANIC SKIN RESPONSE (GSR)**

GSR, also known as “skin conductance” measures the electrical conductivity of the skin, which varies with its moisture level. This method is useful in neuromarketing because increased variations in moisture level due to sweating can indicate psychological or physiological arousal. GSR was used (along with EEG and other methods) to gauge subjects’ responses to two, nearly identical versions of the same commercial for a skin care product.<sup>12</sup> The sole difference between the two version was a four-second scene. In Version 1, the scene featured a model’s face. In Version 2, the model made a gesture, touching her face with her hand and then touching her stomach. The second version of the ad provoked a stronger arousal in the subjects, as measured by GSR. In a discussion with the subjects following the presentation of the ads, the researchers noted differences in the level of knowledge of product benefits, which were the subject of both commercials. And more of the subjects who were shown Version 2 chose the advertised product as a complimentary gift (out of a choice of three brands) than those who watched Version 1.<sup>13</sup>

### **POTENTIAL LEGAL ISSUES**

---

Neuromarketing’s methods and goals potentially raise multiple legal issues for those who engage in this practice. At its core, neuromarketing involves an effort to influence consumer decision-making at an unconscious level. In this regard, the techniques will inevitably be criticized as a tool for overriding or circumventing rational consumer choice by using powerful stimuli to provoke emotional responses to products. As discussed below, neuromarketing by its very nature will be of heightened concern to regulatory agencies in Europe and the U.S., whose missions are to protect the public by ensuring that consumers are given accurate and adequate information about products and services so they will be able to make informed, i.e., “rational,” choices about what they purchase.

Neuromarketing also raises novel privacy issues for consumers who are exposed to advertising whose potency has been enhanced by this technology. As discussed below, any technique that induces consumer behavior by stimulating subconscious mechanisms within the brain will immediately trigger concerns about potential privacy infringement. It is not hard to anticipate arguments that such practices will destabilize the individual’s right to limit access to his personal, withheld thoughts and mental processes.

Finally, and for some of the same reasons, neuromarketing may trigger assertion of tort claims based on traditional product liability theory, and on more creative arguments that the stimuli to

---

<sup>12</sup> See Rafal Ohme et al., *Analysis of Neurophysiological Reactions to Advertising Stimuli by Means of EEG and Galvanic Skin Response Measures*, 2 J. Neuroscience Psychol. & Econ. 21 (2009).

<sup>13</sup> fMRI, QEEG, SST, and GSR are only the most prominent of many different research methods currently being employed for neuromarketing research. Others, including Facial Electromyography (fMEG)— which is used to gauge changes in emotional state by measuring activity in two key muscle groups in the face—are in use, but only by a small number of research firms.

the brain that neuromarketing intentionally unleashes on consumers constitute unconsented “touching” of inner parts of the mind with arguably injurious consequences for the consumer amounting to common law “intrusion,” “battery,” or possibly even “assault.”

We discuss these potential legal liability theories in turn below.

## CONSUMER PROTECTION

As neuromarketing techniques become ever more sophisticated—arguably producing more intrusive access to and manipulation of consumers’ unconscious thought processes—the industry will likely face increasing resistance from regulators concerned that these techniques will result in advertising that is too persuasive and powerful for comfort. Regulators may conclude that consumers are being misled into believing they want or need a product they have no use for, or deceived into thinking a purchase arises from their rational choice whereas in fact they are being induced to act based on subconscious impulse. To regulators, these techniques may cross the line from fair encouragement to unlawful coercion.

Member states—pursuant to an EU directive—already have regulatory frameworks in place to reach such techniques. The EU’s Unfair Commercial Practices Directive prohibits “unfair commercial practices,” which fall into two broad categories: practices that are “misleading” and practices that are “aggressive.”<sup>14</sup> Under the U.K.’s implementation of the Directive, for example, a commercial practice may be “misleading” if it omits material information so as to cause the average consumer to purchase a product that he or she would not have otherwise purchased.<sup>15</sup> This could be construed to cover an advertiser’s failure to disclose its use of neuromarketing techniques, rendering a consumer unable to consider and combat the effect of those techniques on her decision to purchase a product. A practice may be “aggressive” if it applies “coercion” or “undue influence” to impair the average consumer’s freedom of choice to purchase a product.<sup>16</sup> Neuromarketing’s potential incursions into a consumer’s unconscious decisionmaking processes and arguable undermining of free will could fall within the prohibition on “aggressive” advertising.

The U.S. Federal Trade Commission (“FTC”) will also have keen interest in neuromarketing techniques that are thought to be unduly persuasive, given the Commission’s mandate to prohibit “unfair and deceptive” trade practices under Section 5 of the FTC Act.<sup>17</sup> The FTC’s concern will be particularly pronounced to the extent the agency believes neuromarketing is being used to sell products to children. Unfairness is a nebulous concept under Section 5, and the FTC has sweepingly pronounced that a trade practice is “unfair” if it injures consumers, violates public policy, or is otherwise unethical or unscrupulous.<sup>18</sup> Consumer injury, according to the FTC, results when a seller “unreasonably creates or takes advantage of an obstacle to

---

<sup>14</sup> Council Directive 2005/29/EC, 2005 O.J. (L 149) 22.

<sup>15</sup> See The Consumer Protection from Unfair Trading Regulations, 2008, S.I. 2008/1277, art. 7 (U.K.).

<sup>16</sup> *Id.*, art. 8.

<sup>17</sup> 15 U.S.C. § 45(a).

<sup>18</sup> Fed. Trade Comm’n, Commission Statement of Policy on the Scope of the Consumer Unfairness Jurisdiction (1980), available at <http://www.ftc.gov/bcp/policystmt/ad-unfair.htm>.

the free exercise of consumer decision-making,” or when an advertiser “unjustifiably hinder[s] . . . free market decisions.”<sup>19</sup> Consumer advocates will likely argue that this is precisely the injury that results when neuromarketing “manipulates” consumer decision-making and thereby supplants free will.

Neuromarketing might also be characterized as an unlawful “deceptive” trade practice. According to the FTC, an ad is deceptive if its failure to provide additional, needed information causes a reasonable consumer to form a misimpression about a product.<sup>20</sup> Under this element of a Section 5 offense, the FTC has examined endorsements by consumers, experts, organizations, and celebrities, and has required the disclosure of financial and other important arrangements between advertisers and product endorsers.<sup>21</sup> Applied to neuromarketing, a claim could be made that needed information is rendered “missing” by techniques used in the ad to override the consumer’s rational decision-making process, so that the deciding factor in the purchase choice is impulse rather than the product’s physical attributes.

Another point that will concern consumer protection enforcers, as noted above, is the fear that advertisers will use neuromarketing to target vulnerable populations, such as children, the elderly, economically disadvantaged minorities, persons suffering from or vulnerable to addiction or compulsive behavior, or other members of traditionally protected groups. The EU’s Unfair Commercial Practices Directive departs from the “average consumer” standard to a stricter model when advertisements are directed at vulnerable consumers—like children—or will foreseeably affect them.<sup>22</sup> The FTC has stated that protecting children from unfair and deceptive advertising is a priority for the agency, noting that “children may be deceived by an image or a message that likely would not deceive an adult.”<sup>23</sup> Children lack the healthy skepticism with which adults approach marketing and advertisements, and in the neuromarketing context, children may be particularly susceptible to neuromarketing’s persuasive power. The FTC has also devoted resources to investigate marketing schemes that target the elderly and members of minority groups based on similar concerns about these groups’ vulnerability to advertising claims.<sup>24</sup>

---

<sup>19</sup> *Id.*

<sup>20</sup> See Roscoe B. Starek, III, Commissioner, Fed. Trade Comm’n, Prepared Remarks at the National Infomercial Marketing Association (Oct. 15, 1996), available at <http://www.ftc.gov/speeches/starek/nima96d4.shtm>.

<sup>21</sup> See 16 C.F.R. §§ 255.0–255.5 (2010) (“Guides Concerning Use of Endorsements and Testimonials in Advertising”).

<sup>22</sup> See Council Directive 2005/29/EC, 2005 O.J. (L 149) 22.

<sup>23</sup> J. Howard Beales, III, Director, Bureau of Consumer Protection, Fed. Trade Comm’n, *Advertising to Kids and the FTC: A Regulatory Retrospective that Advises the Present* (Mar. 2004), available at <http://www.ftc.gov/speeches/beales/040802adstokids.pdf>; see Roscoe B. Starek, III, Commissioner, Fed. Trade Comm’n, *Summary of Prepared Remarks at the Advertising and Promotion Law Minnesota Institute of Legal Education* (July 25, 1997), available at <http://www.ftc.gov/speeches/starek/minnfin.shtm>.

<sup>24</sup> See Press Release, Fed. Trade Comm’n, *FTC Challenges Cross-Border Telemarketing Scam Targeting Elderly Americans* (July 22, 2004), available at <http://www.ftc.gov/opa/2004/07/ipc.shtm>; FTC

These issues are likely to arise earliest and most prominently in certain industry segments especially targeted by regulators. Among these are the food and beverage industries (which face criticism relating to the global rise of obesity, particularly among children), the beverage alcohol industry (whose advertising and marketing practices are often blamed for the harmful use of alcohol and socially undesirable behaviors, including underage drinking and drunk driving), and the pharmaceutical industry (whose recent “direct-to-consumer” advertising initiatives have garnered close regulatory attention). Consumer advocates have already asserted that “[n]euromarketing is a tool to amplify these trends.”<sup>25</sup> The food industry has been the subject of close scrutiny due to the world-wide obesity crisis. Highly publicized studies have tied fast food advertising to childhood obesity.<sup>26</sup> Spurred on by consumer advocacy groups, such as Commercial Alert<sup>27</sup> and Center for Digital Democracy,<sup>28</sup> regulators have already begun to investigate the industry’s use of neuromarketing techniques: in August 2010, the FTC ordered 48 food and beverage companies to disclose whether they had conducted neuromarketing research on appealing to children and how they have incorporated the resulting data into their advertisements.<sup>29</sup>

The FTC also regularly investigates the alcohol industry, and brings enforcement actions when it finds unfair and deceptive advertising. The Center for Digital Democracy has called on the FTC and the National Association of Attorneys General to investigate the use of neuromarketing in alcohol advertising.<sup>30</sup>

Already under intense regulatory scrutiny in Europe and the U.S., the pharmaceutical industry’s possible use of neuromarketing, especially in the controversial “direct to consumer” segment, could well jeopardize that industry’s gains in the consumer marketing arena. The misuse of medicines leading to injury and death, not to mention addiction, could present very grave liability risks and strong consumer backlash. The sensitivity of using neuromarketing in relation to medicines is such that the industry could put itself in a potentially exposed position from a legal and policy perspective unless great care is taken to avoid missteps.

---

Consumer Alert, Fed. Trade Comm’n, *Hoax Targets Elderly African Americans* (Oct. 2000), available at <http://www.ftc.gov/bcp/edu/pubs/consumer/alerts/alt077.shtm>.

<sup>25</sup> *Commercial Alert Asks Feds to Investigate Neuromarketing Research at Emory University*, Commercial Alert, Neuromarketing (Dec. 17, 2003), <http://www.commercialalert.org/issues/culture/neuromarketing/commercial-alert-asks-feds-to-investigate-neuromarketing-research-at-emory-university>.

<sup>26</sup> See Shin-Yi Chou et al., *Fast-Food Restaurant Advertising on Television and Its Influence on Childhood Obesity*, 51 J.L. & Econ. 599 (2008).

<sup>27</sup> Commercial Alert, *Neuromarketing*, <http://www.commercialalert.org/issues/culture/neuromarketing> (last visited Nov. 21, 2011).

<sup>28</sup> <http://www.democraticmedia.org/> (last visited Nov. 21, 2011).

<sup>29</sup> See Fed. Trade Comm’n, *Order to File Special Report*, FTC Matter No. P094511 (2010), available at [http://www.ftc.gov/os/6b\\_orders/foodmktg6b/P094511/P094511order.pdf](http://www.ftc.gov/os/6b_orders/foodmktg6b/P094511/P094511order.pdf).

<sup>30</sup> See Press Release, Ctr. for Digital Democracy, *Health Groups: FTC & State AGs Must Investigate Online Marketing of Alcohol Products & Impact on Youth* (May 18, 2010), available at <http://www.democraticmedia.org/online-alcohol-marketing>.

## PRIVACY AND DATA PROTECTION

Assertions by consumer advocacy groups that neuromarketers can “literally peer inside our brains”<sup>31</sup> and “subjugate the mind . . . for commercial gain”<sup>32</sup> have predictably raised privacy concerns among regulators and the general public. At a time of increased sensitivity to corporate monitoring of consumer behavior, thanks largely to the proliferation of Internet tracking and targeting technologies, the prospect of additional intrusions into personal thought processes has raised heightened concern.

To frame the issues relating to consumer privacy,<sup>33</sup> it is helpful to contrast the kinds of privacy concerns raised by neuromarketing with those that have arisen in the context of online behavioral advertising (“OBA”). OBA recently has come under close regulatory scrutiny for its impact on consumer privacy,<sup>34</sup> and is often mentioned alongside neuromarketing in discussions about the privacy implications of new forms of advertising. However, the privacy implications are somewhat different for OBA. OBA involves the monitoring of individuals’ web browsing activities for the purpose of determining the products or services in which they are most likely to be interested and targeting advertisements on that basis.<sup>35</sup> The privacy

---

<sup>31</sup> *Commercial Alert Asks Senate Commerce Committee to Investigate Neuromarketing*, Commercial Alert, Neuromarketing (July 12, 2004), <http://www.commercialalert.org/issues/culture/neuromarketing/commercial-alert-asks-senate-commerce-committee-to-investigate-neuromarketing>.

<sup>32</sup> *Commercial Alert Asks Emory University to Halt Neuromarketing Experiments*, Commercial Alert, Neuromarketing (Nov. 30, 2003), <http://www.commercialalert.org/issues/culture/neuromarketing/commercial-alert-asks-emory-university-to-halt-neuromarketing-experiments>.

<sup>33</sup> Neuromarketing also potentially raises privacy concerns at the clinical level for research subjects undergoing fMRI, QEEG, SST and other procedures. Serious privacy issues are presented under the Health Insurance Portability and Accountability Act of 1996, Pub. L. No. 104-191, 110 Stat. 1936 (codified in scattered sections of 42 U.S.C.) and under the EU Data Protection Directive, Council Directive 95/46, 1995 O.J. (L 281) 31 (EC). Because these issues most directly effect neuromarketing service providers, however, and only indirectly raise legal concerns for advertisers, we will leave this topic for future discussion.

<sup>34</sup> Indeed, the majority of the FTC’s work in the privacy space has been dedicated to setting standards for the collection and use of consumer information for OBA. See, e.g., *In re ScanScout, Inc.*, No. 1023185 (Fed. Trade Comm’n 2011) (preliminary settlement with company accused of using “Flash cookies” for online behavioral tracking); *In re Matter of Chitika, Inc.*, No. 1023087 (Fed. Trade Comm’n 2011) (preliminary settlement with online advertising company accused of tracking consumers’ online activities even after they had chosen to “opt out” of such tracking); see also FTC Staff Report: Self-Regulatory Principles for Online Behavioral Advertising (2009), <http://www.ftc.gov/os/2009/02/P085400behavadreport.pdf>.

Regulators in the EU have taken an even more aggressive posture vis-à-vis online tracking, amending the ePrivacy Directive to require companies to obtain “informed consent” before using “cookies”—the principal tool for online monitoring—to collect personal information.

<sup>35</sup> See, e.g., Digital Advertising Alliance, *Understanding Online Advertising*, <http://www.aboutads.info/consumers> (last visited Nov. 21, 2011).

concerns surrounding OBA are largely focused on individuals' ability to prevent the collection, use, and disclosure of their personal information for this purpose. In other words, the notion of privacy principally at issue in OBA is "information privacy."<sup>36</sup>

Neuromarketing—at least as currently employed—raises fewer issues about the collection, use and disclosure of consumers' personal information because the information powering neuromarketing campaigns is largely derived from experimentation with human volunteers in the laboratory, and not taken from consumers at large. The privacy issues associated with neuromarketing are thus more likely to implicate the notion of privacy as "limited access to the self." As the philosopher Sissela Bok has explained this theory, privacy is "the condition of being protected from unwanted access by others."<sup>37</sup> Neuromarketing techniques, which purport to "access" the mind's protected space by stimulating certain parts of the brain, could be subject to the charge that they violate this second notion of individual "spatial privacy."

The distinction between these two conceptions of privacy is important for understanding the legal and regulatory precedents that could inform potential challenges to neuromarketing by regulators, consumer advocates and the plaintiffs' class action bar. The privacy frameworks that have recently drawn the most attention in the advertising industry are primarily directed to protecting information privacy and would appear to be of little value as precedents. The framework set out in the FTC's closely watched staff report, *Protecting Consumer Privacy in an Era of Rapid Change*, is largely inapplicable to neuromarketing practices because it is geared toward "addressing the commercial use of consumer data."<sup>38</sup> This is true as well for the EU's Data Protection and ePrivacy Directives,<sup>39</sup> which govern the processing and use of personal data in Europe.

More likely to be relevant in this context are regulatory regimes that are grounded in more spatial notions of privacy including the right to secure "limited access to the self." In the U.S., examples include the Telemarketing Sales Rule,<sup>40</sup> which among other things, prohibits unsolicited calls to consumers who have put their phone numbers on a national "Do Not Call Registry," and the federal CAN-SPAM Act,<sup>41</sup> which limits the ability to send unsolicited bulk email (i.e., "spam"). Both laws are geared toward protecting the individual's personal space (e.g., home or mobile phone or personal computer) from penetration by unwanted and unduly intrusive marketing solicitations. One could imagine Congress, state or foreign regulator restricting neuromarketing on similar grounds.

Another basis for challenging neuromarketing might come in the form of lawsuits asserting the common law theory of "intrusion upon seclusion." The intrusion tort provides a civil remedy

---

<sup>36</sup> See generally Daniel J. Solove, *Understanding Privacy* (Harv. Univ. Press, May 2008), available at <http://www.usdrinc.com/downloads/Privacy.pdf>.

<sup>37</sup> Sissela Bok, *Secrets: On the Ethics of Concealment and Revelation* 10-11 (1983).

<sup>38</sup> FTC Staff Report, *Protecting Consumer Privacy in an Era of Rapid Change: A Proposed Framework for Businesses and Policymakers* (2010), at iv, <http://www.ftc.gov/os/2010/12/101201privacyreport.pdf>.

<sup>39</sup> Council Directive 95/46, 1995 O.J. (L 281) 31 (EC) [hereinafter "Data Protection Directive"]; Directive 2002/58, 2002 O.J. (L 201) 37 (EC) [hereinafter "ePrivacy Directive"].

<sup>40</sup> See 16 C.F.R. §§ 310.1- 310.9 (2010).

<sup>41</sup> See 15 U.S.C. § 7701 *et seq.*

against one who intrudes “upon the solitude or seclusion of another or his privacy affairs or concerns” if the intrusion is “highly offensive to a reasonable person.”<sup>42</sup> A plaintiff must usually show that he or she had a privacy interest in the area or matter that is the subject of the alleged intrusion, and that such intrusion was “highly offensive to a reasonable person.” Just as a person has a privacy interest in the interior spaces of the home,<sup>43</sup> a court might hold that he or she has a privacy interest in the interior spaces of the mind.<sup>44</sup> Whether neuromarketers’ “access” to that space would be “highly offensive” is perhaps a closer question, but given neuromarketing’s relative novelty and hostile accounts in the popular press and from consumer groups comparing the practice to “mind control,” such an outcome appears possible.<sup>45</sup>

It should be noted that the foregoing analysis is based on distinctions between OBA and neuromarketing that are already being blurred, as some firms attempt to combine the two fields of research. For example, Yahoo! has studied the effectiveness of behaviorally targeted advertising by using neuromarketing techniques, such as GSR and eye tracking.<sup>46</sup> Other companies are apparently combining neuromarketing techniques with OBA, profiling users based on their web browsing history and targeting advertisements that have been shown through neurological testing to be effective in persuading certain types of people. Recently, an early adopter of this practice in Germany was fined by the Hamburg data protection authority for employing this practice without obtaining consumer consent.<sup>47</sup>

As the German DPA action indicates, companies may be able to avoid penalty by obtaining consent to their practices. But what is not clear is how consent may be obtained from the consumer in many of the contexts where neuromarketing techniques are employed. How, for example, would a company obtain consent to present a television commercial or print advertisement to a mass consumer audience? As regulatory scrutiny of neuromarketing practices continues to increase, these are the kinds of questions that industry must begin to consider.

Looking even further down the road, some have speculated that the diminishing costs of brain monitoring devices and other tools used in neuromarketing may enable advertisers to combine the research and implementation phases of neuromarketing. By deploying monitoring devices

---

<sup>42</sup> Restatement (Second) of Torts § 652(B) (1977).

<sup>43</sup> See, e.g., *Dietemann v. Time, Inc.*, 449 F.2d 245 (9th Cir. 1971).

<sup>44</sup> See Stacey A. Tovino, *Functional Neuroimaging Information: A Case for Neuro Exceptionalism?*, 34 Fla. St. L. Rev. 415, 463 (2007) (“Thoughts, feelings, and other mental processes that are studied by fMRI arguably constitute ‘private affairs or concerns’ for purposes of the . . . intrusion tort.”).

<sup>45</sup> Cf. *Texas State Employees’ Union v. Tex Dep’t of Mental Health & Mental Retardation*, 746 S.W.2d 203, 206-07 (Tex. 1987) (affirming lower’s holding that employer’s mandatory polygraph policy violated employee’s privacy rights because intrusion was “highly offensive to a regular person”).

<sup>46</sup> See Tony Marlow, *New Study: The Power of Relevancy*, Yahoo! Adver. Blog, (Apr. 18, 2011, 1:32 PM), <http://www.yadvertisingblog.com/blog/2011/04/18/power-of-relevancy-biometric-study/>

<sup>47</sup> See Thomas Fischl & Katharina A. Weimer, *Hamburg DPA Files Bank €200,000 For Accessing Customer Data and Customer Profiling*, Global Regulatory Enforcement Law Blog (Dec. 6, 2010, 6:24 AM), <http://www.globalregulatoryenforcementlawblog.com/2010/12/articles/data-security/hamburg-dpa-files-bank-a200000-for-accessing-customer-data-and-customer-profiling/>.

in both physical and virtual consumer spaces (e.g., shopping malls, web-based search sites), marketers could screen consumers in order to measure reactions to certain stimuli and personalize the consumers' experience on the spot. For example, if a scan of a consumer's brain activity, eye movement or skin conductance suggests an experience of pleasure in response to examining a particular product, that consumer might receive a personalized discount to encourage him or her to purchase the product. Needless to say, the legal and policy issues that would accompany this use of neuromarketing are more fraught than those previously discussed. Given that the process would necessarily involve the collection and use of information about a person's brain and other physio-chemical activity, a practice that in many jurisdictions would require consent and be subject to controls on dissemination, how would consent be obtained? Would prominent in-store notices or web-based disclaimers be sufficient? Or would express consent from each shopper or web-based click-through procedures be required? These are the issues that the industry must consider now, as this technology may be only a few years away.

## TORT ISSUES

Although perhaps the most pressing challenges at the moment, the consumer protection and privacy issues discussed above are not the only legal liability concerns neuromarketers and advertisers will likely confront as adoption of these techniques continues to expand. In the U.S. especially, private litigants may invoke the common law of torts to contest neuromarketing practices in class action litigation.

First, the use of neuromarketing techniques to induce purchase of a product which, if misused, could cause personal injury, raises important questions in the law of products liability. A defendant in a products liability case is generally not liable if the plaintiff's injury was caused by his own misuse of the product. If, however, the plaintiff can show that the product was inappropriate and perhaps even unreasonably dangerous for a person like him, and that he was induced to purchase the product by subtle advertising techniques that overcame his rational powers of resistance, then perhaps product liability could be established. The same train of argument could be expected in the case of products like food, alcohol beverages or pharmaceutical drugs that can cause injury from overconsumption and misuse.<sup>48</sup> It is not at all difficult to imagine product liability claims being asserted, especially by or on behalf of children and other vulnerable groups, that they were induced to over consume certain products—or indeed to become compulsive, dependent or addicted consumers—due to the allegedly insidious, subconscious enticement of neuromarketing-enhanced advertising.<sup>49</sup>

---

<sup>48</sup> Cf. *R.I. Laborers' Health & Welfare Fund v. Philip Morris, Inc.*, 99 F. Supp. 2d 174, 181 (D.R.I. 2000) (products liability suit alleging, *inter alia*, "that the tobacco industry . . . [conducted] [m]arketing studies aimed at discovering how best to attract children and teenagers to smoking, use of cartoons in advertising, distribution of promotional items such as t-shirts and baseball caps . . . while, at the same time, the tobacco companies knew that, if such tactics were successful, young people would become addicts and would eventually suffer the same dismal fate as those they were meant to replace").

<sup>49</sup> Cf. *Stevens v. Parke, Davis & Co.*, 507 P.2d 653, 664 (Cal. 1973) (holding that a jury could find negligent "overprescription" of drug was a "foreseeable consequence of the extensive advertising and promotional campaign planned and carried out by the manufacturer . . . [which included] . . . both direct

Second, as noted above, neuromarketing techniques seek to create positive, emotional responses to products and advertising by triggering physiological changes in the body. Whether the practice is causing increased blood flow or electrical currents in a particular part of the brain or directing desired eye movements, neuromarketing is designed to literally “touch” consumers in these ways. This raises the question of whether such “touching”—when carried out for commercial purposes and without consent—could sustain a claim for tortious intrusion<sup>50</sup> or battery, sometimes paired with assault.<sup>51</sup> When one considers that the universe of consumers who could be exposed to a neuromarketing campaign includes children and other vulnerable groups, as well as persons with compromised medical conditions, such as high blood pressure, mental or emotional impairment, or epilepsy that could conceivably be induced or exacerbated by stimuli engendered by neuromarketing, the likelihood of such claims increases, even if their underlying merits remain open to serious question.

## POLICY ISSUES

---

As we have noted above, advertisers face various forms of potential legal challenge to their use of neuromarketing. It is clear that the regulatory, consumer advocacy and public health communities are beginning to pay attention at national and multilateral levels, that criticism and calls for reform are imminent and that we will likely see various types of action taken to attempt to curtail and impose restrictions on neuromarketing in the near to medium term as this technique develops as a central component of standard marketing practice. These circumstances raise a number of policy choices that the industry needs to consider on at least three levels: (1) how to accurately measure the current extent of use of neuromarketing practices by the advertising community in Europe, the U.S. and Japan and in major emerging markets, (2) whether to initiate a program of industry self-regulation at the global level to ensure that the ethical practice standards that will almost certainly emerge are ones the industry can live with, and (3) when and how best to engage government regulators, the advocacy community and other likely antagonists in an effort to defuse a potential confrontation before it becomes a crisis for advertisers.

We address each of these policy issues briefly below.

## SCOPE OF USE

The advertising industry needs to develop a baseline analysis of the extent to which neuromarketing is being used and penetrating the field as a standard practice. Such analysis needs to determine in which industry sectors the practice is most widely employed and in which national geographies. We have seen the growth of neuromarketing companies which

---

and subliminal advertising, to allay the fears of the medical profession which were raised by knowledge of the drug’s dangers”).

<sup>50</sup> See Tovino, *supra* note 47, at 462-64.

<sup>51</sup> Cf. *United States v. Madigar*, 46 M.J. 802 (C.G. Ct. Crim. App. 1997) (holding that X-ray radiation pass through the body could constitute the requisite “touching” for the offense of assault and battery); *Irwin v. Arrendale*, 159 S.E.2d 719 (Ga. Ct. App. 1967) (holding that prisoner allegedly forced to undergo X-ray without consent had stated a claim for “a technical assault and battery”).

have moved the technology out of university settings and squarely into the marketplace. But the industry needs to conduct a disciplined assessment of what is actually happening from a global perspective. A future trend line of neuromarketing growth also needs to be part of this assessment.

## SELF-REGULATION

The near term development of self-regulatory standards by the advertising industry in relation to the use of neuromarketing would be a critical component in reducing both legal and policy risk inevitably rising in this field. As difficult as it may seem to develop self-regulatory standards for a new and rapidly developing technology, the industry has little practical choice in the matter if consumer hostility and sweeping government regulation are to be avoided. The industry should consider developing policies that provide for peer review of claims of efficacy, ethical standards for implementing neuromarketing techniques, resolutions against targeting vulnerable populations such as children, and accountability procedures. Indeed, the Advertising Research Foundation has already initiated the NeuroStandards Collaboration Project,<sup>52</sup> a major collaborative study intended to test the scientific validity of neuromarketing methods currently in use. Similar standard-setting initiatives covering implementation of the new technologies might well contribute to alleviating government and public concerns about neuromarketing.

## ENGAGEMENT

Clearly the advertising industry needs to develop a strategy as to how it will interact with the various stakeholder groups that will have an interest in the use of neuromarketing. Not to do so would risk granting free license to those who are most critical of the industry to sensationalize the practice and shape the narrative in ways which might well force a sharp curtailment of neuromarketing in key markets by regulators spurred by consumer hostility. The self-regulation program which the industry could well develop would play an integral role in stakeholder outreach. As the advertising industry knows well, self-regulation can be a potent defense against excessive government intervention. The chemical manufacturing and alcohol industries, for instance, have long served as models for how meaningful self-regulatory policies can assuage government fears and engender trust. More recently, the food and beverage industry and the online advertising sector have managed to moderate increasing concerns among regulators and consumer groups through their self-regulatory efforts. The neuromarketing industry, and advertisers who wish to work with it, should pay close attention to these industries' initiatives.

---

<sup>52</sup> <http://www.thearf.org/assets/neurostandards-collaboration> (last visited Nov. 21, 2011)

## CONCLUSION

---

When industries are faced with new and innovative technologies which are capable of altering traditional practices in ways that may be controversial, there is often a strong tendency to wait until such technologies are fully developed before taking collective action leading to self-regulation. We predict that public and government scrutiny of neuromarketing will only intensify as the field continues to develop. We have identified a number of legal issues that have already arisen, and more that are likely to arise as neuromarketing services continue to proliferate. We have also identified policy decisions in the areas of assessment, industry self-regulation, and public engagement that will have to be addressed as industry responds to growing public and government concern. We would urge advertisers to seriously consider the implications of neuromarketing and take appropriate action compatible with their business interests and ethical standards.

Theodore Voorhees, Jr., Washington  
Daniel L. Spiegel, Washington  
Daniel Cooper, London

COVINGTON & BURLING LLP

## APPENDIX

---

### SELECTED NEUROMARKETING PROVIDERS

EmSense (emsense.com)  
Gallup and Robinson (gallup-robinson.com)  
Innerscope Research (innerscoperesearch.com/index.html)  
Mindlab International (themindlab.org)  
MindSign Neuromarketing (mindsignonline.com)  
NeuroCompass (neurocompass.com)  
Neuro-Insight (neuro-insight.com)  
Neuro Focus (neurofocus.com)  
NeuroSense (neurosense.com)  
Sands Research (sandsresearch.com)  
Sensory Logic (sensorylogic.com)

### SELECTED MANUFACTURER/MARKETERS THAT APPEAR TO BE USING NEUROMARKETING SERVICES (LIST ASSEMBLED FROM PUBLIC SOURCES)

A&E Television	Frito-Lay	Procter & Gamble
Blue Cross/Blue Shield	Google	Scottrade
California Olive Ranch	L'Oreal	Starcom MediaVest
Campbell's Soup	McDonald's	Viacom
CBS	Microsoft	The Weather Channel
Citi	Nestle	
Daimler		
Disney		