

“If you notice it as advertising, it hasn’t worked.” Peripheral persuasion and neuromarketing as
Behaviorism

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I would like to thank Dr. Porowski and the other students in the doctoral seminar in
which this paper was initially presented for their constructive feedback and encouragement.

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“[Rhetoric] has no need to know the truth about things but merely to discover a technique of persuasion, so as to appear among the ignorant to have more knowledge than the expert.”
–Socrates to the sophist Gorgias in *Gorgias* (Plato, 1966)

Introduction

As a freshman in college, my dorm-mates and I would watch our favorite movies whenever our work load allowed. One movie in particular, *Rounders* (1998), wielded a certain influence over an unconscious impulse in me. However, it took me a number of years to connect the dots between my watching this particular movie and my going out to purchase a certain product. Was it Mike McDermott (Matt Damon), that poker-playing softy, who held this apparent magical power over me? Or was it McDermott’s prodigal friend, Lester “Worm” Murphy (Edward Norton), who had not only manipulated Mike into helping him out in his time of need but had also duped me into falling under his spell? Regardless of who is to blame, *Rounders* entranced me, forcing me to go out (either before while I was renting the movie or immediately after) and purchase a package of my, and America’s, “favorite cookie:” Oreos. Strangely, however, there was no verbal mention of that deliciously creamy, yet crunchy, cookie in the movie whatsoever. There were no hidden messages in the movie, nor were there any evil advertisers lurking outside my window whispering “Oreos... Oreos” every time I watched the movie, at least not to my knowledge.

Years later, I realized the source of this sway: It was that Russian villain, Teddy KGB (John Malkovich), who methodically twisted, licked, pressed, and dunked Oreos in every scene he appeared in; the Oreo even played a kind of hero, for when KGB was bluffing against our hero, McDermott, KGB’s “tell” was when he stopped eating Oreos.

Eureka! These few screenshots of KGB and his Oreos almost always prompted me to get up, leave my dorm room (which was no small feat late at night), go to the store, spend five bucks on Oreos and a small carton of milk (no small feat, either, for a broke college student), and then leave and go home to partake of my newly purchased, devilish delight. What was it that encouraged me to act in this way? Had KGB really gotten me to do something that I would not have otherwise done? If *Rounders*, a Hollywood movie, had this sort of power over an ignorant college freshman, then were advertisers involved in this movie in some way to control influence me to make the purchase?

Media outlets, if they want to be attractive to consumers to stay in business for any given period of time, have little choice but to influence and be influenced by the norms of culture, but the concern of this paper is not the unintentional influence upon a culture from media outlets in general. This paper is mainly concerned with the special techniques currently being utilized by advertisers, who masterfully employ persuasive techniques to intentionally influence consumers' decision-making processes. This paper focuses on two marketing strategies: a traditional marketing tactic known as "peripheral persuasion" and a relatively new technique utilizing state-of-the-art, functional magnetic resonance imaging (fMRI) technology known as "neuromarketing." These techniques, although powerful in their widespread application, are simply newer manifestations of an older psychological training system known as Behaviorism.

Peripheral Persuasion

Two major forms of peripheral persuasion exist in the marketplace today: advertisers who subtly work their way into popular programming and advertisers who get the populace to come to them. Both forms of advertising are very effective, and this section outlines some of these strategies and where they are commonly utilized in the marketplace.

“If you can tell that it was advertising...”

At the risk of sounding alarmist or of generalizing outside of the scope of reality, advertising might be the single most powerful entity in the American marketplace, given that America is a representative republic run by a group of elected officials who serve the public's majority opinion. This majority opinion is influenced by a deep undercurrent of mass-communicated messages, each competing for a particular worldview or a portion of the viewer, listener, or reader's attention. The ability of the public to avoid being influenced in a direction that it does not want to go is contingent upon recognizing where and when those forces are coming from so that they can be processed and evaluated. Martin Lindstrom (2008) notes that people have become numb to overt advertising, with the onslaught of “the Internet with its pop-ups and banner ads, cable TV, twenty-four-hour news stations, newspapers, magazines, catalogues, email, iPods, podcasts, instant messaging, text-messaging, and computer and video games [all] vying for our increasingly finite and worn-out attention spans” (p. 38). These media outlets, however, attempt “central routes to persuading” (Aronson, 2012, p. 73), and American sensitivities are growing jaded via over-stimulation. Reinhold Bergler (1999) found that sympathy for advertisements declines with age and that “the intention of advertising – to sell something – is already understood by 57.1% of six year olds” (p. 43), implying that awareness equals rejection or at least more critical evaluation.

Thus, “Central route”-type advertising is becoming irrelevant due to the distribution of Tevo® and the rampant suspicion of (and annoyance with) the American public's attitude toward traditional advertising (Unnikrishnan, N. & Bajpai, S., 1996; Kunkel, D., & Roberts, D., 1991). This trend is what advertising agencies such as Integrated Entertainment Partners are trying to avoid in deference to a more “peripheral route to persuasion” (Aronson, 2012, p. 73). Modern

advertisers are moving toward what they call “integrated advertising,” which is perhaps a more sophisticated form of “product placement.” In the Frontline NBC production *The Persuaders* (Rushkoff, 2003), the CEO of Integrated Entertainment Partners, Mitch Kanner, stated that “If you can tell that it was advertising within the context of content, it didn’t work, okay. It’s not seamless enough.” Although I have not been able to confirm it, I suspect that Kanner’s summary of integrated advertising is the scheme that was in my abovementioned Oreo manipulation event with *Rounders*. What makes integrated advertising different than product placement is its “seamlessness,” i.e., the fact that a product does not necessarily even have to be mentioned explicitly throughout the course of a regularly programmed television show or Internet broadcast to be considered advertising.

Major industries pay large sums of money to be incorporated into popular television programming, websites, and movies. Some examples include how the company Starbucks in *I am Sam* (2001) became a sort of character, reinforcing the destructively obsessive, yet heart-rendingly sympathetic, behaviors of the lead character, Sam (Sean Penn); how the company FedEx (in which Fred Smith, the CEO of FedEx appeared personally) in *Castaway* (2000) acts as a protagonist to bring about a love connection between Chuck (Tom Hanks) and an unnamed woman, whose package Chuck had been holding onto for hope and perseverance throughout his survival story; and how Absolut Vodka infiltrated the typically commercial-less HBO series *Sex and the City* (2002) with an entire episode about “The Absolut Hunk,” a martini developed by Absolut, Inc., for this specific marketing campaign.

“If you can’t beat ‘em...”

In addition to marketers working with producers and directors to weave their products into the programming that consumers are so intently attuned to, marketers have a number of

ways that they can promote their own products in an integrated fashion or where consumers will willingly promote products for them. In 2001, BMW Motors developed BMW Films, a Hollywood production company that put together eight-minute Internet shorts directed by and featuring major players people in the industry, such as Guy Richie, Madonna, and James Brown. These films were action-packed and entertaining, but they amounted to little more than eight-minute car commercials; however, millions of people actually sought out these clips to watch them online. Another example of a company that has created a “viral”-like buzz on the Internet is Toyota, with their “Swagger Wagon” (Hill, 2010) jingle. As of October 31, 2012, this video had 11,352,183 “hits,” 29,668 “likes” and only 1,432 “dislikes.” The popularity of this jingle attests to the success of this style of marketing in getting people to visit these sites. The editor of *Advertising Age*, Scott Donohue, calls this type of advertising “attraction advertising;” he adds that this is “advertising as a piece of entertainment that people will not only tolerate but will go in search of” (Rushkoff, 2003).

Getting people to actually do something about a *product*, not just an advertisement, is a bit of a different game. Advertisers are not only interested in getting people to look at a product, but they are also more interested in getting them to actually change their behavior and buy a product – the true measure of success for an advertiser. One example of this type of success is in how *Glee* motivated over 880,000 people to download one song in a week in March, 2012. Additionally, *Glee* singles have at one time topped iTunes’s singles charts at numbers 1, 2, 3, 5, and 8 in the same month. In so doing, the ability of the show’s writers and iTunes’s advertisers to work in tandem has brought about an overwhelmingly profit-strong combination.

In summary, integrated advertising and peripheral routes to persuasion present an effective and subtle method for advertisers to motivate consumers to behave the way in which

they want them to behave. Whether it is seamlessly working a product into a riveting plotline or getting consumers to listen to hear the right words or click on a desired website, integrated marketing is a force that should be recognized and revered for its power and guile. But advertisers are quickly becoming aware of how to use another technique inherent in peripheral advertising called neuromarketing.

Neuromarketing

Neuromarketing is in the very early stages of its infancy, but the knowledge that neuromarketing is uncovering about consumers and how their brains work could hold an even more powerful sway over how advertisers conduct business and present products in the future. The next section briefly examines the history of neuromarketing and how advertisers hope to use it in the future.

From the Beginning

Recent trends in marketing strategies and research have utilized biometric technologies in a number of study techniques to attempt to determine what actually stimulates a person to purchase a product, not just make them react positively (or negatively) to an external stimulation. Researchers have historically utilized a number of methods to detect physiological changes in people that might indicate interest or that might actually result in a desired behavioral outcome – to get a consumer to purchase a product.

Indirect Biometric Techniques

The measurement of physiological responses to various stimuli is generally referred to as biometric analysis, and this type of analysis is typically applied in the medical field before it is adapted into other fields for research purposes. One of the oldest explorations of biometric research that was subsequently transferred into the field of marketing is the use of galvanic skin

response (GSR), which basically observes the real-time changes in the electrical properties of the skin during a manipulation or stimulus event. This technique can be used to measure instinctual physiological responses, which humans are most likely not aware of, and the application of this technique dates back to as early as the 1930s (Landis, C., & Hunt, W.A., 1935; Porter, 1938). This technique was incorporated into marketing research as early as 1960 (Lazer, W., & Kelley, E.J.); however, GSR can only measure intense emotional reactions to stimuli, and advertising is often looking for more subtle changes in human physiology to determine whether a stimulus has been successful. The rudimentary Lazer and Kelley study aimed to “add new dimensions to the field of marketing” (p. 24) through its use of interdisciplinary methods, the mindset of which has persevered into modern-day marketing research and applications. These techniques became more sophisticated over time (Kroeber-Riel, 1979), and researchers began controlling for specific consumer responses. However, GSR’s practicality for advertisers has somewhat died out, although various studies using GSR technology are still being conducted today in situations where strong emotional or instinctual responses can be evaluated with meaningful results (Latulipe, C., Carroll, E.A., & Lottridge, D., 2011).

In addition to GSR, other subconscious biological data have been tested for a number of years, such as eye-tracking techniques and pupillometry (i.e., the use of computers to measure the dilation of the pupils). Before gaining ground in the marketing literature, as is often the case, these techniques began being explored in military settings with troops. One educational research study in particular, conducted in March of 1950, used distracting sounds to determine whether troops learned more during an educational film where noises and attention-grabbing objects were used at strategic points throughout the film (Neu, 1950). The ultimate finding in this case was as follows: “There is no evidence that the insertion of relevant attention-gaining devices of the kind

used in this study adds to the effectiveness of an informational film” (underline is original, p. 5).¹ Again, these studies were still simplistic and were not yet seen as being applicable in other fields.

Although eye-tracking devices and pupillometry studies have somewhat gone out of fashion with the onset of more advanced neurological techniques, a number of interesting studies are still being conducted in the marketing field for sociological research and for medical reasons (Risko, E.F., & Kingstone, A., 2010). The goals of modern eye studies are typically less ambitious than the Neu (1950) study. Current research mainly aims to be used alongside of more sophisticated techniques to determine what types of stimuli “grab” consumers’ attention, which is the first step in pitching a product to get the consumer to actually act as a result of an administered stimulus (Józsa, 2010).

“Direct” Neurological Techniques

In addition to external biometric techniques that used unconscious physiological responses to gauge emotional reactions to various stimuli and infer effective manipulations, new technologies and new media began to give rise to a different type of marketing research. Television was becoming more prominent in the 1960s, and medical technologies had begun “direct”² analysis of neurological processes. One of these medical technologies used brain waves to detect whether people were acting on a conscious or subconscious level, and Herbert E. Krugman, sponsored by General Electric, began conducting research on the influence of television versus print media using brainwave technologies (Brain wave measures of media involvement, 1971). Krugman’s (1971) findings were rudimentary at best, i.e., “Our

¹ The study was originally designed for a government program investigating “Rapid Mass Learning” (p. 3) techniques for purposes of educating US soldiers. This historically fascinating paper was one in a series of educational projects investigating whether intentionally placed stimuli (e.g., visual, aural, and physical) would enhance the learner’s comprehension of the intended curriculum.

² I say “direct,” because neurological processes are still very much a mystery, even to modern neurological scientists, who consider neurological sciences to be very much in its infancy (for an example of this claim, see (Kenning, P., Plassmann, H., & Ahlert, D., 2007), who claim to be the first to find a concrete application for fMRI in the field of marketing.

understanding of how passive learning takes place is still deficient, and we are not yet sure how to measure its effectiveness in a fair manner” (p. 9), but these types of pioneering studies opened the possibilities for more in-depth analyses to be conducted by subsequent generations of researchers and marketers.

More advanced techniques, such as magnetic resonance imaging (MRI) and positron emission tomography (PET), began to be used in the medical community through the 1980s and ‘90s, and as was consistent with other biometric technologies, these techniques eventually made their way into the marketing research. However, because MRI and PET are very expensive and allow for very little subject interaction while scanning is taking place, scientists began experimenting with other forms of brain scanning technology. Encephalographic studies, such as magnetoencephalography (MEG) (which measures the magnetic field given off by electrical synapses in the brain using a remote magnetic scanner) and electroencephalography (EEG) (which is “the graphic recording of the electric activity of the human brain” (Brock, 2008)) were also conducted during the early years biometric technology in advertising.

One medical technology, however, has emerged as being the most informative in regard to marketing research: functional magnetic resonance imaging (fMRI), a technique that uses real-time measurements of blood flow within the brain to determine the areas of the brain being utilized during a controlled-for stimulation. Scientists then use their understanding of the various parts of the brain to intelligently infer the type of neurological response the subject is having to a given stimulation or manipulation.

Dayan and Montague, researchers out of the Human Neuroimaging Lab at Baylor College of Medicine, uncovered some neurological findings from the mid-1980s by Wolfram Schultz related to temporal difference reinforcement learning (TDRL). Based on an older

Skinnerian Behaviorism model, TDRL posited that the dopamine pathways in the brain could not only *react* to operant conditioning (i.e., B.F. Skinner's proposed theories based on observations of external subject behaviors (Skinner, 1953)) but that the brain could also *predict* operant conditioning by preempting predictable rewards and initiating dopamine at the stimulus, not the reward. Therefore, according to Schultz's (1988) theory, TDRL provided neurological support to the Behaviorist model. Subsequent research in this field has begun basing research on the Behaviorist concept that certain external stimuli can influence the internal behavior in a predictable way, thus initiating a predictable external behavior (Graham, 2010).

Schultz's work consisted of probing primates' brains with a needle that could detect the electrical synapses in single neurons while the subject was undergoing a reward-driven task. However, Montague and his team noticed that Schultz's theorized reward signals, which began in the nucleus accumbens, and Dayan and Montague's experimentally derived reward signals, as observed using the considerably more sophisticated fMRI technique, were a precise match. Consequently, in an article titled "A neural substrate of prediction and reward" (Schultz, W., Dayan, P., & Montague, R., 1997), Schultz's theoretical model was presented in combination with Montague's suspicions regarding a number of inconclusive laboratory observations.

This neurological behavior, however, was not linked in an interdisciplinary fashion through formal research findings until Montague et al. (2004) transferred their reward-based neurological findings into the discipline of marketing, coining the first use of the term "neuromarketing." The construct was simple: observe neurological and behavioral responses of subjects in two tasks: 1) the "anonymous delivery of Coke and Pepsi" and 2) the "brand-cued delivery of Coke and Pepsi" (p. 274). They found that Pepsi "brand knowledge" dramatically influenced not only the subject's *behavior* (i.e., the choice the subject made) but also his/her

brain activity (i.e., the regions of the brain that lit up as a result of “brand knowledge”). Since this landmark study in 2002 (published online in 2004), which demonstrated that human behavior could be correlated with specific brain regions during a live experimental session, virtually thousands of research scientists and marketing agencies worldwide have been vying for a piece of the proverbial neuromarketing “pie.”

Neuromarketing and You

Neuromarketing works off of an evolutionary hypothesis that a primitive area in the brain may literally be able to *make* a person decide to do something, regardless of whether he/she wants to on a rational level. Corroborating this assumption from a sociological perspective, Frank Lutz, the campaign spin-doctor, stated that “80% of our life is emotion and only 20% is intellect. How you think is on the outside; how you feel is on the inside, and that’s what I need to understand,” presumably to get people to believe what he wants them to believe (Rushkoff, 2003). The instinctive drives that neuromarketers hope to stimulate to get a subject to behave a certain way reside in the deepest recesses of the human brain, such as the caudate nucleus, which has been attributed to housing religious and spiritual centers in the brain as well as being the portion of the brain that predict future behaviors (i.e., “the decision-maker” (Dimoka, A., & Davis, F.D., 2008)). Another likely station for this brain activity is in the brain’s dopamine centers. Other areas of the brain such as the cerebral cortex and cingulate gyrus are thought to have developed later in the evolutionary process, relating them with higher-order processes, such as language acquisition, communication, and reasoning ability. However, the deepest, most instinctive processes in the brain reside in the reward signals of the brain, and it is these areas that advertisers hope to stimulate because the reward signals are in the areas that will actually motivate a consumer to behave in accordance with a suggestion or stimulus (Schultz, 2000).

The language that neuroscientists have adopted to refer to these deeper brain processes is “old brain” versus “new brain” for the more instinctive versus higher-order processing centers, respectively. These ideas are not necessarily novel to marketers, as “marketing guru” Clotaire Rapaille and others like him have referred to this old brain as the “reptilian brain” and have tried to capitalize on instinctive decision-making tendencies, such as fight-or-flight and sex and hunger drives, since these ideas first became popular in the marketing literature (Renvoisé, P. & Morin, C., 2007).

With the numerous extant studies exploring the field of neuromarketing, however, there are just as many research studies that seem to debunk or discredit the findings of neuromarketing researchers. Expressing this sentiment, Bob Garfield, a writer for *Advertising Age* magazine, stated that “There are more ways to get inside the consumer’s heads than ever before, and because it’s so expensive to do that, advertisers are substantially relying on data that are absolutely meaningless” (The Persuaders, 2004). Part of what Garfield is saying is true in that, because neuromarketing has just recently been introduced in an interdisciplinary fashion for marketers to try to sell consumers things that they do not rationally want, neither scientists nor marketers have been able to satisfactorily make sense out of the data mean that they have been able to obtain thus far.

Christophe Morin (2011), from a somewhat skeptical position, noted several troubling issues in the field of neuromarketing:

First, very few marketing researchers have formal training in cognitive neuroscience. Second and more importantly, marketing researchers have long feared the public outcry against potential ethical and privacy issues introduced by the use of neuroimaging technology for commercial purposes. As a result, few

scientific neuromarketing studies on advertising effectiveness have yet been published. (Neuromarketing: The new science of consumer behavior, p. 133)

Based on this assessment, some might be tempted to conclude, then, that neuromarketing is innocuous and that we do not really need to worry about it negatively affecting our decisions, but this may not necessarily be the case.

Montague et al.'s (2004) initial work proposing neuromarketing is a viable avenue through which cognitive decision-making models can be constructed, and it is only beginning to gain ground in the research community. Neuromarketing is currently very profitable in financial markets, and if ethics committees and policy-makers can agree on reasonable parameters around which the neurological findings can be applied in an advertising context, it will certainly not take long for additional research scientists to begin working toward robustly integrating traditional Skinnerian ideas into how advertisements should be constructed to obtain maximal efficacy with regard to influencing human behavior. In fact, these advancements (or at least the threat of these types of advancements) in the field of neuromarketing have triggered a number of ethics-in-advertising organizations to begin raising alarms with policy-makers and the general public. Where these organizations are concerned, Christians should also be prepared and equipped to think critically about the information and claims being presented to us through the many media outlets with which we interact on a daily basis.

Conclusion

Advertising, mass media, and marketing are very real and very pervasive forces in American culture that utilize both conscious factors when aiming to influence an audience. One of the methods becoming more pervasive in American culture due to technological advancement is the use of fMRI scans to detect deep brain reactions to external stimuli. Moreover, the

application of this technology is motivated by a Behaviorist paradigm that seeks to obtain a predictable behavioral outcome as a result of an external stimulus. Going back to my personal experience as a freshman in college, had I been directly confronted with some of the techniques and schemes inherent in peripheral persuasion and neuromarketing, I am confident that it would not have taken me as long to understand why I was being influenced to leave my comfortable dorm room and purchase a product that had been subtly, non-verbally, suggested to me in the movie *Rounders*. Although I may still have left my room to purchase Oreos anyway, I would have done so on my own volition. Thus, recognizing the potential avenues through which marketing methods vie for the 21st century American's attention is critical to understanding sociological contexts that aim to influence us.

Works Cited

- Aronson, E. (2012). *The social animal* (11th ed.). New York: Worth Publishers.
- Bergler, R. (1999). The effects of commercial advertising on children. *Commercial Communications*, 41-48.
- Brock, C. (2008). Recording the brain at work: the visible, the readable, and the invisible in electroencephalography. *Journal of the History of the Neurosciences: Basic and Clinical Perspectives*, 17(3), 367-379.
- Bradshaw, J. (Producer), Broyles, W. (Writer), & Zemeckis, R. (Director). (2000). *Castaway* [Motion Picture].
- Dimoka, A., & Davis, F.D. (2008). Where does the TAM reside in the brain? The neural mechanisms underlying technology adoption. *Twenty Ninth International Conference on Information Systems* (pp. 1-18). Paris: Human Computer Interaction.
- Garfield, B. (2004, November 4). *The Persuaders*. Retrieved from Frontline NBC:
<http://www.pbs.org/wgbh/pages/frontline/shows/persuaders/interviews/garfield.html>
- Graham, G. (2010, July 27). *Behaviorism*. Retrieved 2012, from Stanford Encyclopedia of Philosophy: <http://plato.stanford.edu/archives/fall2010/entries/behaviorism/>
- Hill, J. (Director). (2010). *Swagger Wagon* [Motion Picture]. Retrieved March 2012, from
<http://www.youtube.com/watch?v=ql-N3F1FhW4>
- Johnson, R. (1996). Bad news revisited: The portrayal of violence, conflict, and suffering on television news. *Peace and Conflict: Journal of Peace Psychology*, 2, 201-216.

- Józsa, E. (2010). A potential application of pupillometry in web-usability research. *Social and Management Sciences*, 18(2), 113-119. Retrieved from http://www.pp.bme.hu/so/2010_2/pdf/so2010_2_06.pdf
- Kenning, P., Plassmann, H., & Ahlert, D. (2007). Applications of functional magnetic resonance imaging for market research. *Qualitative Market Research: An International Journal*, 10(2), 135 - 152. doi:10.1108/13522750710740817
- Cohen, B. (Producer), Koppelman, D. L. (Writer), & Dahl, J. (Director). (1998). *Rounders* [Motion Picture].
- Kroeber-Riel, W. (1979, March). Activation Research: Psychobiological Approaches in Consumer Research. *Journal of Consumer Research*, 5(4), 240-250.
- Krugman, H. (1971, February). Brain wave measures of media involvement. *Journal of Advertising Research*, 11(1), 3-9. Retrieved March 2012, from <http://www.thedryingroom.com/tv/Brin%20Wave%20Measures%20of%20Media%20Involvement%20-%20Herbert%20E.%20Krugman.pdf>
- Kunkel, D., & Roberts, D. (1991). Young minds and marketplace values: Issues in children's television advertising. *Journal of Social Issues*, 47, 57-72.
- Landis, C., & Hunt, W.A. (1935, January). The conscious correlates of the galvanic skin response. *Journal of Experimental Psychology*, 18(5), 505-529. doi:10.1037/h0062766
- Latulipe, C., Carroll, E.A., & Lottridge, D. (2011). Love, hate, arousal and engagement: Exploring audience responses to performing arts. *CHI '11 Proceedings of the 2011 annual conference on Human factors in computing systems* (pp. 1845-1854). Vancouver, BC: ACM. Retrieved March 2012, from <http://hci.sis.uncc.edu/wordpress/wp-content/uploads/2011/05/love-hate.pdf>

- Lazer, W., & Kelley, E.J. (1960, October). Interdisciplinary Horizons in Marketing. *Journal of Marketing*, 25(2), 24-30.
- Lindstrom, M. (2008). *Buy-ology: Truth and lies about why we buy*. New York: Doubleday Publishing Group.
- Montague, P.R., McClure, S.M., Li, J., Tomlin, D., Cypert, K.S., & Montague, L.M. (2004, October 14). Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*, 44(2), 379-387. doi:10.1016/j.neuron.2004.09.019
- Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society* (pp. 131-135). Springer Science & Business Media, LLC. doi:10.1007/s12115-010-9408-1
- Luca, M. D. (Producer), Nelson, K. J. (Writer), & Nelson, J. (Director). (2001). *I am Sam* [Motion Picture].
- Neu, D. (1950). *The effect of attention-grabbing devices on film-mediated learning*. Penn State University, US Department of Health, Education, & Welfare. Port Washington: Office of Naval Research. Retrieved from <http://eric.ed.gov/PDFS/ED044927.pdf>
- Plato. (1966). *The collected dialogues of Plato, including the letters* (Bollingen Series 71 ed.). (E. H. Cairns, Ed., & W. Woodhead, Trans.) New York: Bollingen Foundation.
- Porter, J. (1938, November). Adaptation of the galvanic skin response. *Journal of Experimental Psychology*, 23(5), 553-557. doi:10.1037/h0054236
- Renvoisé, P. & Morin, C. (2007). *Neuromarketing: Understanding the buy button in your customer's brain*. Nashville: Thomas Nelson.
- Risko, E.F., & Kingstone, A. (2010, November). Eyes wide shut: implied social presence, eye tracking, and attention. *Attention, Perception, and Psychophysics*, 73, 291-296. doi:10.3758/s13414-010-0042-1

- Rushkoff, B. G. (Writer), & Dretzin, B. G. (Director). (2003). *The Persuaders* [Television Special]. Retrieved March 2012, from <http://www.pbs.org/wgbh/pages/frontline/shows/persuaders/>
- Schultz, W. & Romo, R. (1988). Neuronal activity in the monkey striatum during the initiation of movements. *Exp. Brain Res.*, *71*, 431-436.
- Schultz, W., Dayan, P., & Montague, R. (1997). A neural substrate of prediction and reward. *Science*, *275*, 1593-1599.
- Schultz, W. (2000, December). Multiple reward signals in the brain. *Nature Reviews: Neuroscience*, *1*, 199-207. Retrieved from <http://dionysus.psych.wisc.edu/lit/Articles/SchultzW2000a.pdf>
- Skinner, B. (1953). *Science and human behavior*. New York: The Free Press.
- Raab, J. (Producer), & Tuccillo, L. (Writer). (2002). *Sex and the City* [Motion Picture].
- Unnikrishnan, N. & Bajpai, S. (1996). *The impact of television advertising on children*. New Delhi: Sage.