

Subliminal Advertising Applications in Sport: Neuromarketing

Özge ERCAN¹, Alper Cavit KABAKÇI²

Sinop University, Department of Sport Sciences, 57000, Sinop, TURKEY

Kirikkale University, Faculty of Sport Sciences, Kirikkale, TURKEY

Email: oercan@sinop.edu.tr

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Abstract

With the acceleration of technology, companies have to constantly renew also their marketing strategies in order to get closer to consumers, to encourage them to buy their products and to outperform their competitors. One of these marketing strategies is neuromarketing. Neuromarketing is a marketing activity that tries to find consumers' buying behavior towards a product in a subconscious way with rational data. This marketing method makes measurements on brain waves with devices such as Positron Emission Tomography (PET), functional Magnetic Resonance Imaging (fMRI), Electroencephalography (EEG), Steady State Probe Topography (SSPT), Galvanic Skin Response (GRS), Magnetoencephalography (MEG), Eye Tracking. It is thought that neuromarketing will directly affect research and its applications in sports marketing in the near future. Therefore, in this study, a comprehensive literature review has been performed and the concept of neuromarketing has been examined thoroughly with document analysis and its effects on sports marketing has been evaluated.

Keywords: Neuromarketing, Sports Marketing, Consumer, Purchase Decision, Subconscious

Introduction

Marketing has an important role among the criteria that businesses use to outperform their competitors. When the consumer is approached with the consumption dimension of the products or services offered, the marketing also has a decisive position. Habits and behaviors in one's daily life, as well as the manner in which a product or service is presented, is a major factor in the choice and purchase decision. Technological fluctuations taking place in marketing techniques, as well as in all areas, necessitate the examination of consumer psychology in order to determine the customer's intention to purchase precisely with technological means. One of the techniques used in combination of psychology and technology is neuromarketing.

Neuromarketing is a marketing activity that measures the person's reaction to the marketing elements, when a product or service is offered to him/her, by measuring the activities of the brain with the technological devices directly observing the subconscious and also a marketing activity that develops strategy by following a person's psychological processes. There is no way of informing and misleading the individual except for what they think. Because, the evaluation is made by means of the signals from the brain. Neuro marketing, in general means, is the response of the human brain to the signals sent by marketing stimuli. It helps marketers to understand the thought that drives consumers to buy, reveals the actual data that lead to consumer preferences, makes the modeling of these data and rationalize them. Thus, it allows the development of effective marketing strategies. While some of the researchers thinks that it is unethical to observe the subconscious of consumers with neuromarketing, many advocate this method since they are much more effective than traditional marketing techniques.

Nowadays, the crowding of the many people-oriented sectors such as health, education and management requires the more use of marketing and advertising by companies. Sports sector is also one of the leading areas of these applications. Sports sector is a powerful part of the overall marketing strategy. It is inevitable for the companies operating in the sports sector, which have a large share in the world market to use neuromarketing and include these strategies in their own marketing processes. In fact, there are many neuromarketing evidences, though they are not so obvious, in increasing the applications and efficiency in sports marketing.

In this study; it was aimed to make a theoretical contribution to the studies in the field of neuromarketing and to determine the current and future effects of it in the sports sector by discussing the concept of neuromarketing, how it arises, the methods, techniques and devices used in neuromarketing, the reasons for the preference of neuromarketing by the companies, the position of neuromarketing in the global marketing and the ethical dimension of neuromarketing. The document analysis, one of the qualitative research methods, is used. Document analysis covers the analysis of materials containing information about the targeted facts (Yıldırım and Şimşek, 2008).

The Concept of Neuromarketing

The creation and shaping of the company's perception of people who is offered a product or service lies at the core of marketing. For this reason, marketing is the struggle of perception and metaphors rather than the companies. Marketing is not only responsible for teaching processed information, but also for not forgetting this information. Recently, the inclusion of technology in marketing has led to the emergence of new concepts that test whether

information is kept in mind or not. Neuromarketing is one of the foremost one of these concepts.

The human brain is a structure that perceives the messages around it with its senses and reinforces these perceptions. Neuromarketing investigates the brain and neural responses of stimuli due to market changes (Zurawicki, 2010). With neuromarketing, it is possible to better define the consumers' decision to buy, the intention to choose a brand and the factors affecting brand loyalty. Medical techniques are used to understand how our central nervous system reacts to marketing stimuli (Orzan et al., 2012). By this way, the processes of the brain for marketing are monitored. It combines psychology, neuroscience and economics to examine how the brain is physically affected by advertising and marketing strategies (Khushaba et al., 2013).

As it is known, while a company achieves positive results in the medium and long term with the right marketing techniques, it takes only a few seconds to disappear as a result of a wrong strategy. Therefore, marketing strategy should be right. This fact is of paramount importance, since the human brain behaves differently from their discourse. The contrast between the conscious and unconscious attitudes of the consumers in their movements may also lead to misdirection of the marketing strategies of the companies. Since the vast majority of consumer purchases are made unconsciously, it is necessary to know how the brain works to estimate the buying behavior. Perhaps the most important feature of neuromarketing that distinguishes it from other marketing techniques is that the information processing mechanisms in the human brain provide the entrepreneurs with the knowledge to produce ideas to improve their communication decisions with their customers (Pop and Iorga, 2012).

It can be concluded that neuromarketing has a different approach in terms of researching the reasons of consumption for the customer. But, at the same time it should not be missed that neuromarketing is a part of general marketing and it makes a major contribution to general marketing techniques by measuring consumers' purchasing reactions experimentally (Plassmann et al., 2015).

The continuous change of technology and consumer needs has led to the emergence of neuromarketing in general marketing.

The Emergence of Neuromarketing

Neuromarketing has developed slowly over the centuries with its origin in Ancient Egypt. The development of molecular biology, electro physiology, and computational neuroscience in the second half of the 20th century has helped us to understand that the study of neuronal networks in the brain causes psychological reactions, such as emotion, cognition, and mental behavior, and the resulting physiological reactions (Babu and Vidyasagar, 2012).

Neuromarketing has emerged in modern times when Professor Gerry Zaltman has been using fMRI since 1999 to expose consumers' aspects of marketing stimuli. However, Professor Ale Smidts, for the first time in 2002, has been a direct scientist working on neuromarketing (Belden, 2008).

The first reported use of the word neuromarketing in the world of marketing has been published in an Atlanta press released on June 1, 2002, and the advertising company, BrightHouse, has announced that a division of labor, including the psychiatrists of Emory University, has been using fMRI for marketing research (Fisher et al., 2010). BrightHouse and SalesBrain have been the first US and global companies to offer neuromarketing research and consultancy services that advocate the use of technology and information from the field of cognitive neuroscience (Lee et al., 2007; Fisher et al., 2010).

Neuromarketing Methods, Techniques, and Devices

As a term of neuromarketing; it aims to provide fruitful information to the marketers and researchers by measuring consumers' subconscious and unconscious behavioral responses and intensity, which have effects on choosing decisions of consumers in marketing, with medical techniques, methods and devices associated with neuroscience. The most common medical methods, techniques and devices used in neuromarketing are as follows (Lee et al., 2007; Hubert and Kenning, 2008; Eisenbarth, 2018):

Positron Emission Tomography (PET)

Positron Emission Tomography is one of the methods of nuclear medicine used for diagnosis and treatment of important diseases. In the PET method, agents called positron are sent to the blood via injection. Gamma rays occur when positrones collide with electrons in the body and the device detects and displays them. Thus, the activity of the sections is measured by the increase in blood flow in the brain. For example, when the consumer see the product, the product packaging, or design; the device perceives and observes the reactions which occurs in the middle and upper part of the brain that detects the message and comments it (Belden, 2008).

Functional Magnetic Resonance Imaging (fMRI)

MRI is a method used to detect activity in the active areas of the brain in 3D. fMRI uses the data obtained based on the rate of blood flow and the oxygen concentration in the blood to detect these regions. Blood and oxygen flow is increased to the active brain regions compared to other regions and this flow is detected by fMRI. According to the subject of the researches, the evaluation is done in the direction in which region of the brain this flow increases. fMRI is in parallel with the PET method. It is also one of the commonly used methods in marketing research (Belden, 2008).

Electroencephalography (EEG)

EEG or electroencephalography is a method of measuring the electrical activity of nerve cells during sleep and awake. Being economical, easy interpretation of data and portable size of the device are among the most preferred methods in neuromarketing. This method provides information about brain waves. Measurements are made with electrodes placed on the head (Camerer et al., 2005).

Steady State Probe Topography (SSPT)

Steady-state probe topography is a variant of the EEG, which allows for the millisecond time scale to be studied in a cortical (centralized data analytics of the human brain) electrical activity (Gray et al., 2003).

Galvanic Skin Response (GRS)

Galvanic Skin Response Device measures the electrical conductivity of the skin with the help of sensors. In the case of excitement and calmness, the response of the skin to electrical conductivity is different. When a state of excitement occurs in the body, the alert is transmitted to the nervous system. Stimulation of the nervous system causes sweat glands to work more (Shi et al., 2007).

Magnetoencephalography (MEG)

Magnetoencephalography is a functional imaging technique for mapping the brain activity using highly sensitive magnetometers in magnetic fields produced by electrical currents in the

brain. MEG applications provide basic research on the perceptual and cognitive brain processes, the function of the various parts of the brain, and the identification of neuro-feedback (Hillebrand and Barnes, 2002).

Eye Tracking

Eye tracking is a method used to verify where a person is looking. Eye tracking provides objective and quantitative information. Eye movements are recorded in milliseconds to determine a user's attention patterns for a particular stimulus. It compares the duration of each participant in each field and the patterns of screening groups of the participants. The ability of an eye tracking device to grasp the real perception of the participant is only possible with the adjacent inquiry of the participants. Because, what is automatically perceived by the eye does not mean that the brain perceives it consciously. Therefore, participants should be questioned about what they see in order to remember what the participants saw (Theuner et al., 2008). A large number of markers uses this method in web content, product display, packaging and advertising design.

Neuroscience has the potential to connect to the social sciences in various ways. Many of the most central issues in the social sciences research - such as the nature of individual choice, the factors that shape social interactions, and the ways in which societies react to unexpected events - can better benefit from neuroscience because of a better understanding of the underlying neurocognitive mechanisms (Levallois et al., 2012). Neuroscience research also directly affects the theory and practice of marketing and seems to continue to influence it further.

Why do the Companies Prefer Neuromarketing Method?

Market research has an important place in the successful management of marketing strategies. Many large or small companies want to reach the cause of emotion that pushes consumers to buy. Consumers are motivated by the perception of psychogenic stimuli in the process of purchasing a product or service and when making a purchase decision. For this reason, while companies perform marketing activities, they are successful only if they offer stimuli that affect consumers' perceptions and behaviors directly. The innovative approach of neuromarketing shows that it is included in marketing research. Neuromarketing is a neuro-economics subfield that addresses marketing-related problems through methods and analyzes from brain research and promotes the integration of neuroscientific findings in marketing sciences. With the dazzling images spread from brain scanning in the scientific and popular media, researchers in marketing have been affected not only by psychological, but also by physiological reactions, by consumers' perceptions of a product based on the main element of the marketing mix (Gang et al., 2012).

The interest in recent neuroeconomics has been significantly overlapping with the area of marketing research. Since the birth of neuromarketing, researchers have focused more on some areas, such as the impact of advertisements and memories (Touhami et al., 2011). Marketers are excited about brain imaging for two main reasons. Marketers believe that neuroimaging will lead to more efficient trade between costs and benefits. This hope is based on the assumption that people are not able to fully express their preferences when they are asked to make it clear, and they contain confidential information about the real preferences of consumers in their brains. This type of confidential information, in theory, can be used to influence buying behavior, so that with improved product design and increased sales, the cost of performing neuroimaging studies will outweigh. At least, brain imaging not only illuminates what people love, but also what they will receive (Ariely and Berns, 2010).

The data obtained from consumers through survey, focus groups etc. are in the person's own control. Neuromarketing, however, makes measurements with devices in the subconscious of the person, and determines the behaviors that are actually taken, not the views that a person reflect. Therefore, it differs from traditional marketing techniques (Shiv and Yoon, 2012).

Consumer transmits the alerts to the brain with sense organs and the brain makes these alerts meaningful by manipulating them. Neurotechnology provides opportunities for marketers to use information about the potential triggers which can provide very positive emotional responses (Wilson et al., 2008). However, it cannot be used to find the purchase button in the human mind and can be used as an additional marketing tool besides traditional market research (Kolar, 2014).

Neuroscience and marketing seem likely to come up with new technologies to enable researchers to better understand the role of emotions in decision-making, to develop more effective procurement methods, to create more trust and brand loyalty, to measure the intensity of an individual's tastes, and to be more convincing marketers in general. (Wilson et al., 2008). However, the use of technology that explores the inner workings of the human brain, especially those that go beyond what would be revealed in traditional behavioral tests, emerges important ethical problems (Murphy, 2008).

If neuromarketing practices are misused, underused or violates ethical rules, it can generate the risk of trespassing the private sphere of people, causing physical or psychological harm, or causing unnecessary impact on people's behavior (Ienca and Andorno, 2017). Therefore, the boundaries of the methodology to be used in neuromarketing should be well decided.

Ethical Aspects of Neuromarketing

Since the term neuroethic was first introduced in 2002, there is no exact definition yet. It covers basic philosophical human concepts such as free will, practical issues such as addressing neurological issues related to personal identity, autonomy and human dignity, privacy and clinical practice (Gatterer, 2012).

As a new application of neuroscience methods, neuromarketing studies need to be carried out in a responsible manner. Neuromarketing studies bring also important professional, ethical and scientific concerns. This new area is also an example of professional ethics debates in the complexity of academic-industrial relations (Fisher et al., 2010). The use of data derived from brain imaging reveals ethical dilemmas for marketers and researchers, since they are trying to limit the understanding of customers' true intentions and some activities lack transparency. Therefore, moral issues arising from neuroscience practices can be seen as an invasion of the privacy rights of individual consumers. Hence their consent and understanding is required (Gang et al., 2012). Ethical and confidentiality concerns in neuromarketing are frequently discussed. Accessing the unconscious of the consumer and leaving them vulnerable to purchase emphasizes the necessity of ethical rules. For researchers, manipulation of the information for neurosurgery, to worry them to get information as informed by the experimental measurements (thought structure, effect level, interest, emotional shooting, etc.) and other applications are seen as objectionable (Ienca and Andorno, 2017).

Nowadays, many research articles aiming at addressing ethical concerns of marketing go beyond the conduct of a study that asks consumers about their opinions on specific applications. Many times, in textbooks and even in marketing ethics researches have discussed ethical issues such as consumer happiness and honest marketing. However, the great social needs of today require consumers to go beyond what they like (Rotfeld, 2007). Of course, the unethical, fundamentally flawed and potentially harmful neuroscience perception

of neuro-marketing should not be mistakenly applied to academic marketing research (Bakardjieva and Kimmel, 2017).

There is no reason for neuromarketing not benefit from neuroimaging, even if there is no more than the start of economic research in marketing. Indeed, the field of neuromarketing should be considered a legitimate and important area for future research. This is very important to ensure a better understanding of human behavior. Applying neuroimaging to marketing research problems should enable us to better understand the impact of marketing techniques and also to gain insight into key issues related to business relationships with previously challenging responses (Lee et al., 2007).

Sports and Neuromarketing

Sports marketing is the presentation or introduction of an industrial product or service through sports. Research in this area has increased significantly in recent years, with major sporting events such as the Olympics and the World Cup. Despite this growth, the understanding of successful and dynamic sports marketing is still evolving. There is an increasing consensus among sports marketing researchers that marketing intelligence and planning should be the target of sports organizations (Ratten, 2016).

Today's corporate understandings are the self-imposed brands that are beyond the boundaries, eliminate cultural differences and appealed by large audiences. In a world where major global sports brands are emerging as sovereign powers, diversity in thought and practice is an important feature of the next phase of the sports market (Chadwick, 2007). Thus, neuromarketing, which follows a practical and technical path, seems to be the next step in sports marketing.

The ease of accessing more people through sports is a priority not only for companies that offer products or services through sports, but also for companies that use sports as a tool. It is clear that sports marketing, which makes itself accepted in this field, will provide companies with great opportunities when combined with neuromarketing. In fact, Darabi et al. (2017) applied neuromarketing in sports marketing. In that study, they used electroencephalography and analyzed brainwaves. At the end of the research on sports brand ads, they have stated that they can understand the effect of ads on customers' brain waves (alpha, beta, delta and theta).

In recent years, sports marketing has become even more interesting especially in the areas of advertising and sponsorship. As it is generally known, sponsorship is a non-traditional marketing technique and sports sponsorship practices provide companies with extraordinary economic development in recent years (Close et al., 2015). On the other hand, Fett (2011) have stated that companies began to use neuromarketing in sports sponsorship, which enables the application of neuroscience technologies to the field of market research in order to identify the true emotions of sports audiences in this field and to reveal the most effective emotional drivers.

Sports sponsorship can easily create a brand awareness, develop image and increase sales by linking the target group to the company. In this case, the application of neuroscience techniques to measure the effectiveness of sports sponsorship and how athletes react to the sports content of their brains makes sports marketing even more important for companies. Emotional triggers create the impulse to buy. Neuroscience proves the impact of emotions on purchasing decisions through laboratory investigations. Companies that have already established emotional ties through sports can therefore easily code their brand to the subconscious of sports audiences through neuromarketing (Fett, 2011).

As a result, the combined use of experimental instruments such as electroencephalography with eye tracking will provide better results, taking into account the development of the sports management industry, no matter in which case the neuromarketing technique is applied in the field of sports marketing. Combined use of various devices to achieve an increasing growth in the economic sector, to find reasons to make a purchase decision, and to influence waves can be more beneficial. Thus, the analysis of these signals creates an impact on the purchasing decisions of consumers (Darabi et al., 2017).

Discussion and Conclusion

The main aim of the companies in meeting with various sports or athletes is the fact that sports audiences are actually their target groups and companies try to enlarge their place in audiences' perception formation. For this reason, it is important that sports and marketing managers make decisions based on robust data while carrying out such perception management towards the target audience. In fact, neuromarketing is a method that will provide these data to managers. Because, neuromarketing practices are based on scientific and academic studies especially in the fields of medicine and psychology.

The most important element here is the scientists and professional marketers who will do this work. If the ethical rules are not violated when using the data obtained, neuromarketing seems to bring many innovations to sports marketing. Because it can trigger a social change in the masses that exist in the sport. If the ethical rules is violated, it is strong enough to cause serious damage to sports and marketing. Because it carries the marketing deep into human psychology.

On the other hand, sports sponsorship, which increases the popularity of sports, is one of the fastest marketing tools. It is also possible that the neuromarketing will begin to carry out marketing activities using sports sponsorship. Sports sponsorship will play a key role in the dissemination of individual subconscious responses to be achieved through especially neuromarketing to the large masses.

In the face of these developments, if neuromarketing provides functional benefits in general marketing, sports marketing may shift in a very different direction. Companies will be able to offer more creative products and services by creating a systematic system that will provide adaptation to the perceptions and purchasing reactions of sports consumers.

Conflict of Interest

The authors have not declared any conflicts of interest.

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