

From Subliminal Perception to Neuromarketing

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Abstract: *The functioning of the brain is the subject of a special category of science, called neuroscience, which includes a number of new branches of science, such as: neurobiology, psychobiology, neuropsychology, psychophysiology, cognitive psychology, nervous system pathology, etc., and in the last time, and neuromarketing. All this was intended to explain how the brain, mind, cognitive processes and, most importantly, the human subconscious work. In this way we arrived at the subliminal perception (also called unconscious perception, which refers to the stimuli presented below the limit of consciousness and how they could influence the thoughts, feelings, reactions and actions of the individual, respectively his behaviour (including buying). Neuromarketing is also a new field of marketing that aims to use neuroscience to explain a series of consumer behaviours caused by stimuli whose action is not perceived by them without realizing it. Because the actions of marketers thus grounded not to be perceived by buyers as manipulative, it is necessary to strictly observe the so-called neuroethics.*

Keywords: *neuromarketing, neuroscience, neuroethics, subliminal, subconscious*

Introduction

The content of the concept of subliminal perception must be approached in close connection with that of sensation and, more broadly, with that of its perception.

In general, **sensation** (originating in Latin *sensatio*) means a "psychic process by which objects and phenomena in the objective world that act directly on the sense organs (sight, hearing, etc.) are reflected, in all their properties, as a unitary whole", respectively an "image resulting from this reflection" [1]. Considered to be a "fact of consciousness produced by the action of an exciter on the sense organs" it is nothing more than "the direct connection between consciousness and the external world" that is, "the transformation of the energy of external arousal into acts of consciousness". Only with the help of sensations can man know the outside world" [1]. As a form of psychic reflection of reality in the consumer's consciousness (of reproduction in the brain of reality), the sensation reflects (in isolation) the properties (simple, concrete, external, accidental) of objects that act as stimuli directly on the body. It is performed in the brain, as an effect of a process that begins with the action of the stimulus on the receptor, continues with the transmission of information through the related nerve pathways and ends in a psychic experience. As an indivisible psychic element of knowledge, it is the end result of an elementary, *primordial cognitive process*, performed on account of a property of the human body called *sensitivity*. [2]

Perception, in current language, has the meaning of "psychic process by which objects and phenomena in the objective world that act directly on the sense organs are reflected in human consciousness in all their properties, as a unitary whole" [3], respectively "the faculty of to perceive (understand and know) the phenomena of the external world" [4]. Compared to sensation, it represents a higher level of processing and integration of information (occurring through the senses) about the external world and about our own selves. Through it man obtains a synthetic, unitary image, in which the objects and phenomena that act directly on the sensory and analyzing organs are reflected as integral totalities, in their specific individuality. Like sensation, perception reflects simple, concretely intuitive features, accessible to the senses (targeting aspects such as: shape, color, size, smell, etc.), provided within a direct relationship between object and subject. However, moreover, it reflects the

object or phenomenon in all its features, in an integral and unitary way, which is why it is *richer in content* [5].

In other words, while the sensation has a *monomodal character* (being the function of a certain sense), the perception is *plurimodal* (it is given by several senses that act simultaneously but also successively), offering a specific image to the reflected object, on which the individual reaches to distinguish it from the others [6].

Moreover, sensations and perceptions (as ways of taking information from the environment), *do not represent two separate processes*, but *two successive stages* (sub processes) of the same process (knowledge), respectively *two modes of information operation* (one *analytical* and another *synthetic*). In the first stage, the brain (through sensations) takes over from the environment a number of isolated aspects (details), and later these are assembled, resulting in images of objects (perceptions) - the two stages succeeding each other at a very high speed, the interval between the end of one and the beginning of the other is often unclear. When the consumer looks at a certain commodity (a car, for example), before having his image as a whole, his mind has already combined the information about the type, color or shape of that car. In other words, we can say that, in the approach of the informational operation specific to the cognitive block, the perception is the successive stage, qualitatively superior, of the sensation [7].

Judging things through the prism of the marketer, perception is the *process in which the consumer receives, selects, organizes and interprets stimuli from the environment (but also from their own body), giving them certain meanings and forming the image of companies' offers to substantiate purchasing decisions.*

1. Subliminal Perception

Subliminal, means *under limen* (in scientific language *limen* means *sensory threshold*), the term designating that limit at which, a stimulus passes from the area where it is barely perceptible to the area where it is barely imperceptible. If, for example, the stimulus is a word or phrase, the first threshold they have to cross is that of detection, that is, the one in which most people become vaguely aware that they have been told (or written) something, without identifying what they have heard (or seen). The second threshold of consciousness is that of recognition, when people can know exactly what they have heard or seen [8].

The term *subliminal perception* was originally used to describe situations in which man perceives certain stimuli of *existence that he does not realize* the excitements that generate it being below the *sensory threshold* of intensity or time of exposure - too small to the stimulus to be noticed [9]. In other words, it defines what the individual may unconsciously understand; acting under the influence of a message he does not realize he has received [10].

Marketers (especially those with advertising concerns) need to know that a *subliminal message* is a signal or message that is specifically designed to be transmitted below normal perceptual limits [11]. Although it is beyond the level of consciousness, it very effectively excites the senses of consumers. Therefore, the subliminal suggestions it contains can be compared to the hypnotic ones. Such advertising messages are therefore intended to influence a consumer's intention to buy, without the consumer being aware of the true source of motivation. In order to reach their target (and justify their name), they must be transmitted either very quickly (in a very short period of time) or in such a way that the consumer's brain cannot receive and record them consciously (the information reaches brain, but the individual should not be aware of it).

Advertising psychologists are the first to use both direct and indirect stimuli simultaneously - relying on the fact that associating one subliminal message with another supraliminary one will result in easier and faster processing of the subliminal message. We must not forget, however, that sometimes in this way another class of behaviors will be favored (at the same time) [12]. For example, a supraliminary message urging "Fade the hunger!" (once met in front of a pizza restaurant in Iasi), meant to trigger in

the consumer's subconscious the desire to buy pizza, can miss its target, generating unwanted effects: the consumer can really become aware (faster) of feeling hungry, without - and necessarily direct the request towards the pizza that that place offers.

A study conducted in the USA concluded that over 60% of Americans claim that they are subjected to daily assaults of subliminal messages aimed at changing their personal decisions, believing that advertisers can present images and sounds in such a way that consumers should not even realize that they have perceived them. [8]

Despite all the demonstrations made by psychologists based on laborious experiments, the idea that the advertising industry does not resort to subliminal advertisements is being promoted more and more insistently, invoking one thing as simple as possible: *they do not exist*. In this regard, Bob Garfield stated (in *Advertising Age* magazine): "Subliminal advertisements exist only in people's minds. No one in the advertising industry appeals to them, because it's hard enough to impress people by hitting them on the top of the head with direct messages." Bill Cook, from *Advertising Research Foundation* believes that subliminal advertisements is part of popular culture, as well as astrology and abductions by aliens [8]. "If it's so hard for us to communicate a simple message in 30 seconds", he wondered, "how likely is it that we can communicate something in a split second?" [8]

Romania prohibited this practice by Law 148 of 2000 on advertising.

2. Neuromarketing

Even if subliminal messages do not work, advertising industry specialists have not given up on applying the latest discoveries in science to convince us to buy. Today, when subliminal advertising is no longer fashionable, a new discipline is gaining more and more followers: neuromarketing [8]. Traditional studies on consumer behavior aim to discover and explain his reactions to various stimuli in the *post-rational phase*, reactions that are filtered and distorted even by the act of thinking the answers. However, as neurologists estimate that only 2% of the human brain's energy is used in conscious activities (meaning that approximately 98% of an individual's thoughts and actions originate in the subconscious), it was considered imperative to find ways to detect people's reactions *before* their minds begin the act of filtering. This is the only way to find out the true preferences of consumers (which are often not expressed in words) [13]. Marketing specialists have often (and for a long time) faced the limitations of traditional methods of studying behaviors, limitations that could not be removed until after the advent of neuromarketing.

The concept of *neuromarketing* [14] has its origins in a theory launched by Professor A. Smidts in 2002, a theory consecrated under the name of "neuron doctrine". It is a developing interdisciplinary field that harmoniously combines knowledge from psychology, *neuroscience*, economics and marketing, and is often referred to as *consumer neuroscience*, as a *sub-area of neuroeconomics*. The purpose of neuromarketing is to study how the brain is physiologically affected by marketing techniques [15] and to find out what consumers feel and think when exposed to commercials, when shopping, when surfing the Internet, when playing video games, etc. To achieve this, he uses imaging investigations of the brain and clinical psychology (thus capitalizing on *neuroscience* to understand a large part of consumer behavior).

Thus, neuromarketing (or consumer neuroscience) is a relatively new and controversial frontier (multidisciplinary) scientific field - but it is something other than a simple reunion of psychological, neuro-psychological and neuroimaging methods and techniques marketing in order to study people's buying behaviors. It has also been defined as a "technique for investigating the reasons that lead individuals to buy different products or services depending on the activation of different areas of the human brain" [16], respectively a way of describing brain reactions under the impact of marketing stimuli, allowing, through specific tools, their correlation with the psychological reaction, as a result of exposing the subjects to certain advertising messages. Far from giving full satisfaction to marketers, neuromarketing still oscillates between myth and reality, between truth and falsehood [17]. Not infrequently, the beneficiaries of promotional campaigns (very expensive, by the way) are induced by

the illusion that they are offered solutions that are as attractive as it is more difficult to explain scientifically from the position of behavioral neuroscience (i.e. true nonsense). This explains the fact that managers (often non-specialists in neuromarketing) agree to pay colossal sums on such promotional campaigns (in the hope of maximizing profitability), which ultimately buys nothing but lies. On the other hand, buyers will not be at ease either - realizing that they can simply be manipulated by the techniques they use. The use of eye movement tracking technology, for example, is recommended only if you want to check if the advertising message attracts consumers' attention, not to see what the consequences are in their brains. In fact, more and more people believe that neuromarketing uses the findings of neuroscience to manipulate their perception and buying behavior. The idea that the brain can reveal hidden truths about consumers (and profitable for business people) is not only attractive, but also (often) misleading. When the consumer accesses the online, they do not realize that, in fact, they are subjected to tests in favor of merchants, the latter thus finding out what messages the man automatically gets his hands-on money (or card) to buy what is offered to him.

Among the *special (medical) tools* used by neuromarketers are brain scanners (which use magnetic resonance imaging to identify the parts of the brain that react to different stimuli), electroencephalography (to capture the brain's reactions to certain stimuli), GSR (*galvanic skin response*) sensors - to find out the reaction of consumers to different commercial messages -, functional nuclear magnetic resonance (fMRI) etc. [18]

Although these techniques can be used separately in the implementation of research, the recommendation of specialists is to combine them, because in this way it becomes possible to gather information from several sources, as well as to identify the correlations between them. [18]

Through its interdisciplinary approaches, *neuromarketing* supports those interested in the study of buying behaviors (and even consumers), because:

- by identifying and measuring automatic, less controlled and unconscious reactions, its methods and techniques (specific to neuroscience) make it possible to avoid social approval reactions (common to many clients), thus offering a unique opportunity to discover their real attitudes;
- allows the identification and understanding not only of what is happening in the mind of the consumer, but also of the reason for what is happening (which is the real cause of reactions - otherwise imperceptible - to various stimuli);
- its specific methods are more easily agreed by consumers (being to their liking), which makes the interview or experiment they are asked to participate in more interesting and attractive;
- ensuring the revelation of consumers' hidden attitudes towards their own offer, but also towards the offer of others, the approaches related to neuroscience being certain that can show us that the real reason for choosing an offer is by no means the preference for it. , but dissatisfaction with competitors' products [15];
- ensures the best positioning of the company's products on the market, because, as the well-known promoters of neuromarketing Al Ries and Jack Trout stated since 1981: "Positioning is not what you do to a product. Positioning is what you do with your mind" [19]. If in such an approach the brain is the goal to be conquered, then neuromarketing is the one that illuminates this goal - which became possible by identifying the emotional and unconscious springs that determine the consumer to choose the new product;
- facilitates the development of new products, neuromarketing techniques can be used to test consumer reactions to various components of the product mix (name, texture, smell and aroma, color, packaging, warranties and service, etc.)
- supports the launch of products on the international market, allowing to anticipate and solve cultural problems (which often make a very well received product in one country to be rejected in another) by identifying and highlighting those cultural differences in consumer perception that otherwise do not could be identified - offering marketing solutions related to understanding the correct positioning, highlighting the visual elements related to the product

- and promotion, the stylistic subtleties of language that need to be avoided or used in communication, etc.
- in the case of products already on a market, neuromarketing techniques favor the testing of consumers' requirements regarding their characteristics (technical, economic, cultural, etc.), as well as resolving customer dissatisfaction (highlighting the deep but hidden causes that generate them);
 - allows to explain the very diverse behaviors of people during shopping, given the fact that they do not act in the way they declare in the interviews they take or in focus groups. To solve this problem, neuroscience uses the research of behavior even while they are shopping, but using a controlled virtual reality. By using this technique, buyers are instilled (in the brain) only the impression that they are in a real situation (thus being fooled), thus more easily studying their buying behavior - starting from the premise that their reactions in virtual reality they are the same as in real life [19]. Neuromarketing techniques are recommended because they allow the activation of pleasure centers in the buyers' brains to make them instinctively ask for the goods. In this regard, specialists recommend several ways in which the company can benefit from neuromarketing [20]. Is about:
 - using the *magic of colors* in the case of products, packaging, posters and commercials, etc., which arouse strong emotions in the subconscious of customers, proving to be, as in the case of Coca-Cola, for example, the signature of the business. However, any exaggeration in this regard is detrimental to sales. For example, too shrinky packaging can easily trigger product rejection reactions;
 - avoid using too many options, so as not to offer the customer too many choices. When it is lured with too many assortments of the same product on the same shelf (of the same color, shape of the package, etc.), there is a risk that it will go unnoticed (people are not willing, instinctively, to make an effort to differentiate its assortments - something that comes from the brain);
 - avoid overselling the benefits of bundled sales - an expensive package at the expense of quality can bring relatively high sales, but only for a while. In no case will he retain customer loyalty in the medium and long term;
 - capitalizing on customer sensitivity, which is not the same for all buyers. Therefore, marketers must identify both their points of maximum sensitivity (babies or children, sympathetic old people, suffering people, stars, etc.) and the groups of consumers sensitive to each of them. For example, babies do not attract everyone's attention anyway. If, for example, their gaze in an image is directed at the consumer, the latter will be conquered only by the image, without taking into account the advertising message transmitted. Only if his gaze is directed to the message will he also be received;
 - ensuring the possibility of assessing the consumer's satisfaction (or dissatisfaction) with the promotional message transmitted. Neuromarketing usually allows this, the correct interpretation of such reactions (which take place in the subconscious of customers) causing marketers to adapt their offer according to their size and nature;
 - capitalizing on the effects of bonuses, which automatically determine in the customers' subconscious the impulse to buy the product thus promoted. If, for example, the free goods are attached to the promoted goods at the client's home, without asking how cheap or expensive this bonus service would be, he will prefer it to the detriment of another, offered without bonus;
 - exploiting the feeling of missed bargain that most people have, using specifications such as: "limited supply"; "Only today you can benefit from..." etc., - knowing that most of them suffer from missed opportunities (saying What I had and what I lost without being valid for most consumers).

To test the usefulness of neuromarketing, Read Montague, in a study conducted in 2003, organized an experiment (the results of which were published in 2004) in which a group of consumers were given a drink of Coca Cola and Pepsi while their brains were monitored by MRI. In this way, it was found that when people knew that they drank Coca Cola, they stated that they preferred Coca Cola to the

detriment of Pepsi, and when they did not know the drink consumed, they reported that they preferred Pepsi. The conclusion of the study was as follows: Pepsi enjoyed a privileged place in the subconscious preferences of consumers (they choose Coca Cola not because they like it, but because of the experience of consuming it). [21]

Another company that has used specific neuromarketing techniques to find solutions to improve sales of Campbell soups in the US is Innerscope Research in Boston. In order to identify the elements that underlie the *purchasing decision*, it used the collection of biometric data from consumers' right in the supermarket. In this way it was concluded that the production company should change the design of the soup cans by removing images that did not produce an emotional reaction (such as that of spoons) and emphasizing those that produced such reactions to customers (such as steam rising from the plate), which later proved to be very beneficial. [20]

In Romania, the first neuromarketing research is relatively recent [13]. It is about the study commissioned by Apicola Costache (a Romanian honey brand) and coordinated by a doctor (Ana Iorga) with an MBA in marketing and a doctoral student in neuromarketing. Its objective was to test consumers' perception of honey and identify the attributes they unconsciously associate with the product, to test their perception of the product packaging (compared to the competition), and its visibility on the shelf. The study found that there are large differences between young and older consumers first in how they look at honey (the elderly as a palliative treatment and the young as a sugar substitute) and then in the distribution of honey. attention to the shelf: while the elderly moves their eyes - without realizing it - from the center to the left and back to the right, on a linear path (according to their habit of reading books), the young people jump from left to right, in a chaotic way (as they are used to taking their information, not from books or magazines, but from the internet). Such information (obtained by neuro technique) could never have been obtained by traditional methods of researching customer behavior. [13]

Among the main *objectives of neuromarketing* could be:

- enriching the marketers' experience and optimizing the consumers' experience;
- stimulating consumers (through all their five senses) in making the best buying decision;
- capitalizing on the brand idea in the minds of consumers, as well as creating an emotional connection with it, etc.

That is why it is good to know that *any well-done marketing is neuromarketing*. [22]

Conclusions

Far from giving full satisfaction to marketers, neuromarketing still oscillates between myth and reality, between truth and falsehood. [17] Not infrequently, the beneficiaries of promotional campaigns (very expensive, by the way) are induced by the illusion that they are offered solutions that are as attractive as it is more difficult to explain scientifically from the position of behavioral neuroscience (i.e. true nonsense). This explains the fact that managers (often non-specialists in neuromarketing) agree to pay colossal sums on such promotional campaigns (in the hope of maximizing profitability), which ultimately buys nothing but lies.

On the other hand, buyers will not be at ease either - realizing that they can simply be manipulated by the techniques they use. The use of eye movement tracking technology, for example, is recommended only if you want to check if the advertising message attracts consumers' attention, not to see what the consequences are in their brains. In fact, more and more people believe that neuromarketing uses the findings of neuroscience to manipulate their perception and buying behavior.

The idea that the brain can reveal hidden truths about consumers (and profitable for business people) is not only attractive, but also (often) misleading. When the consumer accesses the online, they do not realize that, in fact, he is subjected to tests in favor of merchants, the latter thus finding out what messages the man automatically gets his hands-on money (respectively on the card) to pay what is offered to them. That is why, as a field of science, neuromarketing (although it seeks to find in the

subconscious of the individual a "button" to activate its purchase) should not deviate from the rules of ethics (*neuroethics*) - rules that prohibit the manipulation of consumers' minds for you make them buy products they don't use at all or just don't like. In order not to conflict with neuroethics, neuromarketing should only be aimed at finding advertising messages in such a way that they become more interesting, attractive and *useful* for those to whom they are addressed.

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