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EXPLORING NEUROMARKETING DYNAMICS

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ABSTRACT

Neuromarketing, which evolves from cognitive neuroscience, is a blend of science and technology. This comparatively new field has been helping us in understanding customer inner psychology by portraying an unbiased segment of the consumer's minds. The snapshots of human brain in action are eventually analyzed and implemented in marketing. In fact, neuromarketing focuses on the theory development related to marketing. The intricate workings of the brain may enable the marketers to understand the consumer's response to the advertising messages. In this conceptual research paper, the concept of the field is explored along with the techniques and methods used. The practical applications in the marketing fields are discussed with criticisms.

Keywords: Brain; Consumer; Marketing; Neuromarketing; Research

I. INTRODUCTION

The field of Neuromarketing aims to comprehend the effects of marketing tools on human beings by a deep observation and examination of the human emotions. Emerging research have pointed out that the consumer's eagerness to buy products and services is distinctly emotional process where the brain uses a number of short cuts to fasten the decision making process. Neuromarketing in a way investigates the suitable emotions for human decision making and uses this knowledge to tap the scope of marketing activities.The field lies on the intersection of neuro economics, neuroscience, consumer neuroscience and cognitive psychology.

II. DISCUSSION

Neuromarketing, as being a discipline of neuroeconomics, "uses clinical information about brain functions and mechanisms to help explain what is happening inside of the 'black box' so prevalent in many explanations of consumer behavior". The potential of neuromarketing is "to hit on subconscious biases" that the traditional advertising methods cannot discover. This can be quantified e.g. with attempts to reduce failures in marketing planning and activities [1]. Based on the other definition, neuromarketing analyses and understands human behaviour in relation to markets and marketing exchanges. This definition is maybe more descriptive and open, moving away from being solely a commercial application of neuroimaging. In addition, the definition has specified the research area from an individual consumer into the organisational research [2].

The current neuromarketing research methods have typically been a combination of behavioural and neurophysiological responses. The test subject has usually participated in the experiment while the neurophysiological responses have been measured [2].

The experiments have typically been stimulus presentations, either in the form of block design, or in the form of event-related design. The block design typically consists of relatively long period of stimulation without the

BOLD signal returning to the level prior to stimulus. This results into a plateau of hemodynamic intensity in the parts of the brain that are active. The block design is a more powerful method of locating specific parts of the brain where the activity during the task is significantly different from that of the baseline condition [3]. [4] describes a framework that can be applied to study the neurophysiology of value-based decision making. According to this framework, the computations that involve making a choice can be divided into five distinct processes. Rangel's theory suggests that the different types of behaviours are controlled by different valuation systems. These valuation systems are defined as Pavlovian (i.e. behaviour that is "evolutionarily appropriate" to particular environmental stimuli), habitual (i.e. behaviour that correspond to commensurate through experiences based on slow, iterative learning), and finally goal-directed (i.e. based on the computation that values the average reward of the behaviour) [4].

It uses imaging technology (positron emission tomography PET, magneto encephalography MEG, functional magnetic resonance imaging FMRI, electroencephalography EEG, galvanic skin response GSR) in order to quantify emotions and record reactions of the human brain to different stimuli such as sound, smell, images, touch, taste and others [2]; [5] While neuromarketing has only recently proliferated amongst neuroscientists, a number of ad-hoc studies have been conducted in the marketing discipline. The research in the field of neuroeconomics has also included a considerable overlap with the marketing research [2]. The concept of trust has been in the scope of neuromarketing research. Trust has indisputably had a central role in customers' decision making and in the success of brands [6]. There are initial results that have suggested caudate nucleus, a specific brain section, to be active when a human being requires some kind of trust.

Another fundamental area of neuromarketing research has been the pricing of goods and services. Pricing has been an important measure for companies in positioning their products [7].

Discovering the temporal and spatial relation of brain activity can possibly help to understand the weighing of specific pricing proposals over others, such as the prices ending in 0.99. [2].

Negotiation as being a "central concept in marketing" has understandably been subject to neuromarketing research. Studying negotiation interaction with the use of game theory has been an interest for both neuromarketing and neuroeconomics studies [7].

The study by [8] may help companies to use neuromarketing techniques to understand what elements of the marketing assets are in the interest of the customers.

Recently endocrine-specific elements are also included in the neuromarketing studies. A new field of research that focuses on why do consumers prefer a product and predict consumers' behavior is *neuroendocrinology*. The Hormonal Quotient (HQ) may be used to identify, understand and predict human traits, motivations and behavior [9].

During the neuromarketing studies was highlighted the importance of some hormones, such as *oxytocin*, or neurotransmitters like *dopamine*, with many implication in the consumer's behavior and decision making process. Our dopamine system is constantly adapting to everything we already know and gives us reward when something new or different occurs [10]. The oxytocin is found in all vertebrates, but the evolution of the human being's brain adapted it to new tasks like caring for others or our social involvement. Oxytocin has been associated with trust and tolerance of others. When consumers trust a product or company and they feel safe the level of their oxytocin is higher than when fear and insecure situations occur [11].

Additional to the above parameters, neuromarketing researchers and consulting companies developed other parameters they consider are essential for these studies such as Purchase Intent/Persuasion, Novelty, Awareness/ Understanding/ Comprehension or Effectiveness [12] or Cognition, Recognition, Vision and Motor used by Sands Research [13].

III. CRITICISMS OF NEUROMARKETING

According to [14], the brain can be divided into three sections, namely, the old, middle and the new one. The new brain feels the middle one reflects and the old one decides. This implies that the main focus of neuromarketing is the old brain which is responsible for the survival instincts. The key criticism of this perspective is that it explores a path which is at a deeper sub-conscious level beyond the control of consumers. They add that consumers are not even aware of these practices because there is too little transparency when it comes to the companies using such practices and too little of the research is being published [15].

Neuromarketing has attracted increasing attention, but critical aspects of it remain underexplored, including what exactly it is or includes, and how it is used in practice. The field has already generated controversy. For example, the popular press has reported on the perceived dangers of neuromarketing, including concerns that advertisers might find a “buy button” or “magic spot” in the brain [16]; [17].

Editorials in the scientific literature have argued that these worries are most likely premature since the current state of imaging technology does not allow for accurate, deterministic predictions of human decision making [18];[19]. Others have expressed concerns that neuromarketing might one day threaten individual autonomy if this technology were able to effectively manipulate consumer behavior [20]. Universities and medical professionals have been criticized for forming partnerships with neuromarketing companies [21].

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