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CONSUMER NEUROSCIENCE AND ITS APPLICATION IN MARKETING

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ABSTRACT:

Consumer neuroscience has gained considerable insights in basic functions of the human brain, through application of neuroscientific methods to marketing research questions. These findings have found a broad audience in the scientific community of economists, biologists and psychologists. There are also neurologists and psychiatrists involved in neuromarketing and consumer neuroscience, although the general medical neuroscientific community has only recently started to draw its attention to the findings of this field of research and how they can contribute to psychiatry. The intention of this paper is to start a similar discussion in the neurological community. We think that especially the field of behavioral neurology could profit from collaboration with economists and marketing researchers, as the neurobiology of behavior is a common interest and there is theoretical evidence that behavioral symptoms of neurological diseases could affect consumer behavior and economic decision-making. Neuro-science is one of the most important studies in 21st century with the development of the technology of neuron-imaging, it meets a bloom in the cross domain of psychology, sociology, economics and management.



KEYWORDS: *Consumer neuroscience, neuroscientist, neuroeconomics, neuron-imaging, neurology, conscious, etc.*

INTRODUCTION:

In the recent past, the relevance of neuroscience in the field of marketing has grown. There are hopes that neuroscience can help throw light on the aspect of decision making of consumers. Not all researchers are this optimistic though, some of them look at this optimism unconvincingly. How can neuroscience help form future theories and models in consumer decision making? How can neuroscience be included in research methodology of consumer decision making? We believe that neuroscience has many advantages. It helps in forming better theories, gives new empirical tests of standard theoretical claims, can give analysis for observed heterogeneity within and across populations. It can also deliver an instrument which takes into account the physiological context and assesses what role is played by constructs such as hunger, stress, and social influence on the preferences of consumers. We need to delve into finding out how neuroscience paradigms can help us comprehend decision making processes. We wish to do so while keeping the interest of a vast audience. For audiences who wish to read more on the subject of decision neuroscience, we recommend looking up Glimcher et al. (2009), Vartanian and Mandel (2011), Glimcher, P., Camerer, C., Fehr, E., & Poldrack, R. (2009), Neuroeconomics: decision making and the Brain, Amsterdam: Elsevier, Vartanian, O., & Mandel,

D. (2011) or Neuroscience of decision making, New York: Psychology Press. Neuroeconomics and Neuromarketing from the newest studies even though they are similar in using neuroscience to uncover the secret of the individual's brain, there are more differences in the methodology. There is a feasible approach to import the neuroscience into Management Science and it will lead to a new concept of Neuromanagement, which will be a new field in management science and will result in a revolution in this field.

DEFINITION:

Consumer neuroscience is the combination of consumer research with modern neuroscience. The goal is to find neural explanation for consumer behaviours in individuals both with or without disease.

Consumer neuroscience is a discipline of psychology that seeks to observe peoples unconscious responses to communication. It asserts that traditional marketing research generally ignores and inaccurately reports implicit cognition and emotional trigger. The methods employed in neuroscientist to measure these implicit responses are designed to by pass the subjects symbolic response by measuring what happens inside the brain.

IMPORTANCE OF NEUROSCIENCE:

Consumer neuroscience uses neuroscience tools to study behaviour of consumers and their decision making processes. Traditional marketing techniques such as self-reports or interviews mainly allow the measurement of conscious reactions to marketing-related stimuli.

From the vast field of neuroeconomics, comes the subject of neuromarketing, which is also known as consumer neuroscience. Neuromarketing is very useful in helping solve marketing problems by using concepts from brain research. By using methods of neurology, the "black-box" of a living being can be better understood.

Rather than being viewed as a hindrance or competition to traditional forms of consumer research, neuromarketing should instead be viewed as a supplementary method which can be used in order to analyse specific behaviour of consumers, when it comes to decision-making. Consumers' wishes and expectations when it comes to their options can be found out by using neuromarketing's medical imagery. Another benefit of involving neuromarketing in consumer research is that it brings out the point that decision-making for a consumer is an emotional and instinctive process.

METHODOLOGY

Different methods from neuroscience prove useful in examining the neural processes which cause human behaviour. Since every method is different, each one of them has their own benefits and disadvantages. Therefore, research is required in order to find out which are the most effective methods.

Responses of both the central as well as the peripheral nervous system are measured using neurophysiological methods. In the field of consumer neuroscience, the focus has been on using methods which sense changes and manipulate activity in the brain, which is a part of the central nervous system.

LITERATURE REVIEW

The beginning of research on the subject of the role played by neuroscience and biology in decision-making can be traced back to 2004 when one of the first papers on this topic was published. This particular paper by (Shiv et al. 2005) came out of a workshop on this subject at the Invitational Choice Symposium in 2004. The paper made the following key claims; "knowledge in neuroscience can potentially enrich research on decision-making" (p. 375) and "integrating neuroscience with decision-making offers tremendous potential" (p. 385). Since 2004, tremendous progress has taken place in the field of decision neuroscience over these ten years.

The field of decision neuroscience includes sub-fields like neuroeconomics, consumer neuroscience and social neuroscience. According to (Levy and Glimcher 2012), we now have a more refined understanding of the process by which the brain calculates the value of options while making a choice. We can also understand how the brain compares the values and make a choice and also the role played by context in assigning values and decision-making. Apart from the broad field of decision neuroscience, its "sub-field of consumer neuroscience has also grown by leaps and bounds.

Consumer neuroscience is an area that delves into the ways by which neuroscience methods can be applied to problems regarding consumer behaviour and marketing. Proof of the growth in this field, is that more and more relevant marketing papers that use neuroscientific methods are being published, there are special issues of journals focusing on the topic (e.g., Shiv and Yoon 2012), conferences are taking place on the subject, and summer schools and symposia are being organized. The fact that business schools are investing in this field by employing faculty to work in this area and are conducting training for doctoral students as well, shows that the growth is remarkable. More than 30 business schools are engaged in studying this field and attempts to focus on the history of consumer neuroscience and also throw light on the theories and developments in research methodology.

Existing literature in multiple areas of neuroscience provides material for the field of consumer neuroscience as well. Studies on the valuation and decision network (Hsu et al. 2005), inter-temporal choice (Kable and Glimcher 2007), self-control (Hare et al. 2009), framing (De Martino et al. 2006), and heuristic choice (Venkatraman et al. 2009) are examples of literature in neuroeconomics. In the area of social neuroscience, neuroscientific techniques are used in order to explain factors which underline ways of understanding consumer behaviour. These factors include, the neural basis of social interaction, perceptions about trust, fairness, and reciprocity (Hsu et al. 2008) mentalizing, empathy, emotion regulation, social exclusion, and pain networks (for reviews, see Lieberman 2007; Rilling and Sanfey 2011). All these theories together help us comprehend consumer decision-making processes and also the manner in which social context influences decision-making.

The subject of consumer neuroscience is vast and includes many topics. In the first ten years of the development of this field, the four crucial factors of marketing (product, price, promotion and place) have all been given interest. Pricing and products (e.g., Knutson et al. 2007; Plassmann et al. 2008), have been given a lot of attention and so has branding (for review, see Plassmann et al. 2012). Advantages of using neural methods were highlighted by (Knutson et al. 2007) in their study wherein they had participants take part in a shopping task while being under the fMRI scanner. Their research work deduced that if we add neural methods to self-report measures, then the efficacy of predicting purchasing decisions can be improved substantially.

The technique fMRI was used by (Plassman et al. 2008) for the purpose of examining the relation between information generating expectations about quality of a product and the perception of that product. They wished to study whether any given information can affect the perception of the quality of the product. For example, does the price of a product influence how the product's quality is viewed by the consumer. Results of their study showed that by changing the price of identical wines, a change in viewing the taste of the wines was observed.

ADVERTISING AND EMOTION:

Studies of emotions are crucial to advertising research, as it has been shown that emotion plays a significant role in ad memorization. Classically in advertising research, the theory has been that emotion and ratio are represented in different regions of the brain, but neuroscience may be able to discover this theory by showing that the ventromedial prefrontal cortex and the striatum play a role in bilateral emotion processing. The attractiveness of the advertisements correlates with specific changes in brain activity in various brain regions including the medial prefrontal cortex, posterior cingulate, nucleus accumbens and higher order visual cortices.

NEUROMARKETING ON CONSUMER BUYING BEHAVIOUR:

Beginning with the influence of neuromarketing on the marketing tool Consumer Buying behavior, the following statements can be made. Due to the fact that dazzling representations of products are growing constantly, an in-depth analysis, specifically by the use of neuromarketing techniques, of consumer-buying behavior can be advantageous (Gang, Lin, Qi, & Yan, 2012, May; Butler, 2008).

However, there are certain things that need consideration. First of all, it is significant that consumers are mostly not able to phrase their desires and needs when asked explicitly, which is why it is assumed that the brain itself encloses internal information, which could elucidate true desires and needs. If this knowledge would be available, the buying behavior of people could most likely be influenced and the disadvantage in regard to the cost aspect of neuromarketing aspects would be outweighed by the advantage of the internal information delivered (Ariely, & Berns, 2010). Therefore, neuromarketing techniques are a perfect opportunity (Kenning et al., 2007).

As stated by Eser, Isin and Tolon (2011), neuromarketing uses the latest advances in brain scanning to learn more about the mental processes behind customer purchasing decisions|| (p.854). The critical statement about a buy button|| in the brain, which would in theory be able to determine the buying behavior of consumers by activating the brain area responsible for making the final decision, can herewith be denied since all neural and cognitive processes connected with buying decisions are influenced by several factors, or so called multi factors, and thus cannot be reduced to one single area (Ariely, & Berns, 2010). Finally, one can say that neuromarketing methods in general, and especially in regard to consumer buying behavior, can measure significant influences, and its results can be used as a template for future analysis or product development (Wilson, Gaines, & Hill, 2008).

CONCLUSIONS:

As a conclusion, consumer research provides a real-world application for neuroscience studies. Consumer studies helps neuroscience to learn more about how healthy and unhealthy brain functions differ, which may assist in discovering the neural source of consumption related dysfunctions and treat a variety of addictions. Additionally, studies are currently underway to investigate the neural mechanism of "Anchoring" which has been thought to contribute to obesity because people are more influenced by the behaviours of their peers than an internal standard. Discovering a neural source of anchoring may be the key to preventing behaviours that typically lead to obesity.

LIMITATIONS:

Most of the consumer neuroscience studies involving brain scanning techniques have been conducted in medical or technological environments where such brain imaging devices are present which is not a realistic environment for consumer decision making.

Testing underlying neurophysiological principles is extraordinarily difficult from an experimental setup standpoint simply because it is unclear exactly how various factors are perceived in the human mind.

There are many concerns over the value and the potential usage of consumer neuroscience data. In its current state, consumer neuroscience research is a compilation of only loosely related subjects that is unable, at this point, to produce any collective conclusions.

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