

Neuro Marketing - An Expanding Field Of Marketing Research

Anwesh Dash, Ratikanta Dash, Biswajita Das

Department of MBA, NM Institute of Engineering and Technology, Bhubaneswar, Odisha

Department of MBA, Raajdhani Engineering College, Bhubaneswar, Odisha

Department of MBA, Aryan Institute of Engineering and Technology Bhubaneswar, Odisha

ABSTRACT - Different brain regions are activated according to choice predictability, with unpredictable choices eliciting activity in regions associated with silent vocalisation and judgement of rewards. Technological advances associated with the development of interdisciplinary studies arrive encouraging and motivating the search for understanding and clarification of the complex features of the human mind. One such possibility is the Neuromarketing, which is the result of the union of Marketing and Psychology and Neuroscience. This area search in the brain's understanding of the human mind, emotions, behaviours and decision-making. This paper provides for basics of understanding convergence of Neuro Science and Marketing, leading to better understanding of unconscious behaviour of consumers.

Keywords - Advertising, Consumer Behaviour, Consumer Neuroscience, Neuromarketing

I. INTRODUCTION

Neuromarketing is considered a cutting-edge science, a mix of more research fields: i.e., Neuroscience which focuses on nervous system, and predominantly on the human brain; Brain Science is a division of Neuroscience studying the connections between the brain and its structure or function of cognitive psychology which makes connection between human mind and behaviour. It refers to mental activities such as memory, learning, imagery, problem solving, reasoning or decision making. Cognition occupies a major place in the human psychology. Almost everything a consumer does when searching for a product or making a decision involves activities like perceiving, remembering, learning, language process, thinking or memory.¹

Neuro Marketing concept has arisen as a result of using not only logical but also emotional responses of consumers while they have decided to purchase. Neuro marketing is a new and interdisciplinary marketing comprehension that benefits from various disciplines as Neurology, Psychology, Sociology and Medicine. It's defined that customers combined the rational and irrational decisions and decide by these occurred data while they are making a purchasing decision. Neuromarketing, in the simplest form, can be defined as the application of neuroscience to integrate and enhance the techniques of marketing. It is an interdisciplinary area of study which has its foundations in psychology, neuroscience, cognitive and brain sciences, economics, culture and other allied fields of study.²

II. BASICS OF CONSUMER NEUROSCIENCE RESEARCH

Consumer Neuroscience (Hike Plassmann et al.) Consumer neuroscience evolved alongside wide-ranging developments in behavioural decision-making research and cognitive neuroscience, with the common goal to better understand various elements of consumers' evaluation and purchase decision processes (for a recent review, see Kenning and Plassmann, 2008). In consumer behaviour research, neuroscience has received considerable attention for at least two reasons. First, neuroscience can be viewed as a new methodological tool, a "finer scalpel" to dissect decision-making processes without asking consumers directly for their thoughts, evaluations, or strategies. Second, neuroscience can be viewed as a source of theory generation, supplementing traditional ones from psychology and economics proper.³

Cognitive neuroscience uses three types of techniques to ask how the brain controls behaviour. These are (1) experimental psychology (2) neuropsychology, and (3) brain imaging. The goal of Cognitive Neuroscience is to explain the relationship between the brain and the mind, and structure and function. Many neuroscientists that use economic theory and methods for their research would find the intuitions behind Stanley Jevons's attempt of 1879 to root economics in the materialist psychophysiology surprisingly familiar.

III. LITERATURE REVIEW

Simonson, I. (2005)⁴. In Defence of Consciousness: The Role of Conscious and Unconscious Inputs in Consumer Choice. Although the argument that unconscious inputs are often key determinants of consumer decision making is compelling, it may be overstated, particularly with respect to choice. A comparison of the effect of conscious inputs (e.g., the attributes of options in the choice set) and unconscious inputs (e.g., a seemingly irrelevant observation or task) indicates that the former have a significant advantage. In particular, the

impact of conscious inputs is supported by choice task norms and is less susceptible to being lost in the “noise” that is characteristic of most natural consumer environments (e.g., stores). Indeed, although consumers often have limited insight into influences and processes producing their choices, the assumption that consumers base their choices on conscious, wilful evaluation of task-relevant inputs has been quite successful in explaining a wide range of phenomena. It is expected that future research will put greater emphasis on the interactions between conscious and unconscious influences on decision making

Chessa, A. G., & Murre, J. M. (2007)⁵. A neurocognitive model of advertisement content and brand name recall. Author suggests a (point process) model of learning and forgetting, inspired by the structures of the brain, that apply to model long-term memory for advertising and brand name recall. Recall-probability functions derived from the model are tested with classic data by Zielske (1959), as well as advertisement content and brand name recall data of a Dutch study that tracked over 40 campaigns of TV commercials. Data fits and cross-validation results indicate that the recall functions serve as a good first approximation for aggregate behaviour. The shapes of optimal GRP schedules, which are obtained by maximizing a recall measure, are strongly related to the model parameters and corresponding memory processes. Comparisons with existing models in the literature indicate that a neuro biologically motivated model may give a more realistic description of memory for advertisements Żurawicki, L. (2010)⁶. *Neuromarketing: Exploring the brain of the consumer*. Berlin: Springer. Research in neuroscience adds a new twist, however. Human (and perhaps animal) brains are wired to respond to novelty. It has been namely shown that dopamine whose secretion is linked to pleasure is also released when people encounter new stimuli. This activity is reflected in striatum richly endowed with the dopamine receptors which manages the interaction between the individual and the outside world. Accordingly, the new information reaches the striatum with the supplement of dopamine, produces a gratifying experience (Berns 2005a) and in turn directs striatum to re-focus in proportion to the intensity of the novelty signal 64 2 Consumption as Feelings (Zink et al. 2005). One way to explain this phenomenon is that whereas the pursuit of new experiences entails risks, at the same time it offers a promise of new positive sensations. The more so, that under uncertainty, the level of stress hormone cortisol rises in the brain, and together with the dopamine secretion can ultimately produce a strong feeling of wellness. In a series of experiments, Maimaran and Wheeler (2008) showed that the abstract novelty exerts an impact on subsequent consumers’ choice of the real things. They used arrays of different geometric shapes to demonstrate a dual phenomenon:

(1) exposure to variety of nonrepresentational symbols enhances the variety – seeking behavior when it comes to real choices, (2) as a separate trend, consumers favour uniqueness in actual preferences when previously primed with the uncommon abstract cues.

Santos, J. P., et al. (2011)⁷. Investigating the role of the ventromedial prefrontal cortex in the assessment of brands. The ventromedial prefrontal cortex (vmPFC) is believed to be important in everyday preference judgments, processing emotions during decision-making. However, there is still controversy in the literature regarding the participation of the vmPFC. To further elucidate the contribution of the vmPFC in brand preference, Authors designed a functional magnetic resonance imaging (fMRI) study where 18 subjects assessed positive, indifferent, and fictitious brands. Also, both the period during and after the decision process were analyzed, hoping to unravel temporally the role of the vmPFC, using modelled and model-free fMRI analysis. Considering together the period before and after decision-making, there was activation of the vmPFC when comparing positive with indifferent or fictitious brands. However, when the decision-making period was separated from the moment after the response, and especially for positive brands, the vmPFC was more active after the choice than during the decision process itself, challenging some of the existing literature. The results of the present study support the notion that the vmPFC may be unimportant in the decision stage of brand preference, questioning theories that postulate that the vmPFC is in the origin of such a choice. Further studies are needed to investigate in detail why the vmPFC seems to be involved in brand preference only after the decision process.

Touhami, Z. et al. (2011)⁸. *Neuromarketing: Where marketing and neuroscience meet*. Neuromarketing is a new field where brain science and marketing meet. The emergence of brain imaging encourages marketers to use high-tech imaging techniques to resolve marketing issues. Marketers and advertisers have exploited the results of many brain imaging studies to know what could drives consumer’s behaviour. They have found out that some marketing actions can generate added satisfaction in a placebo-like manner. The findings of the human reward system studies also play an important role in Neuromarketing research. The number of Neuromarketing studies is growing and the findings are important for marketing research. However Neuromarketing suffers from many limits that are a barrier to its development. Through this article, authors attempt to give an overview on Neuromarketing and its neural correlates while provide a perspective toward the use of field for less commercial purposes.

Droulers, O., & Adil, S. (2015)⁹. Perceived gaze direction modulates ad memorization. Gaze has important functions in human social interactions. A direct gaze can be used to focus observer’s attention on a face, while an averted gaze can be used to direct observer’s attention to an object or a point in space. Several studies in

neuroscience and psychology demonstrate the role of gaze direction not only in orienting observer's attention but also in modulating his cognitive process. Perceived gaze direction (direct gaze or averted gaze) influences cognitive functioning as it encourages observers to focus attention on the gaze itself, increasing face memorization. Nevertheless, direct gaze may also cause adverse cognitive consequences, like impaired peripheral target detection for example. In marketing, little is known about gaze direction effect on consumer attention toward ads and ad processing. This research presents recent findings on the psychological and neural mechanisms of gaze direction processing. Then, using a folder test procedure, it investigates the influence of perceived gaze direction of a character's in a print ad on product and brand memorization. Comparing two conditions— ads presenting a face with “a gaze toward the product” or “a gaze toward the observer” – our results show that ads with a gaze toward the product increases product and brand memorization. As these results were obtained by reproducing a natural context – a folder magazine – it can be assumed that they are of particular interest for managers, especially in the light of the more and more crowded advertising environment marketers have to face nowadays. Further research is needed to explore other effects of gaze direction, such as for example the effects on advertising evaluation.

López, M. A., et al. (2016)¹⁰. Neuromarketing: Discovering the Somatic Marker in the Consumers Brain. *Brain, Body, Brain, Mind and Behavior* Brain and body are inextricably integrated by biochemical and neural circuits that are mutually connected. The study argues that when the poor response option of decision making comes to mind, it is briefly experienced an unpleasant feeling in the gut. This feeling marks an image and has to do with the body (soma), which is why it's called somatic marker. i.e., The Somatic Marker Theory. The somatic marker forces the attention to the negative result that a certain action may lead to, and functions as an alarm that warns you on how that option leads to that result. Then you can immediately reject this option, which allows you to choose from fewer alternatives. There would still be a margin for using a cost / benefit analysis and use your deductive capacity, but only after the somatic marker drastically reduces the number of options. This final deductive process will arise in many cases, but not all. Somatic markers increase the accuracy and efficiency of the decision process.

IV. ADVERTISING AND CONSUMER BEHAVIOUR

Neuro scientists and top researchers have untangled advertising mysteries of Neuromarketing, a new spin on market research that focuses on those seeking revolutionary technologies such as functional magnetic resonance imaging (fMRI) that gazes directly into the customer behavioural and attitudinal scientific findings. While traditional marketing is still using old-age demographic equations to target audiences, Neuromarketing proves these methods no longer relevant and emphasizes Psycho-graphic layer processing: consumer's attitudinal and behavioural morphogenesis. While traditional marketing still considers people targets, Neuromarketing has humanized and erased the term „target“ and reshaped the process to connect with subconscious behaviour.

Within modern social psychology and neuroscience, the term “emotion” is usually described as encompassing three primary concepts - arousal which relates to the intensity or strength of the emotion, valence which dictates the direction of the emotion from strongly positive to strongly negative and motivation which is the action orientation component of the emotion, specifying the related behavioural response from approach to avoidance. Emotions in this light are often described as non conscious automatic responses. These reactions are manifested in autonomous responses in the nervous system, behavioural responses and glandular responses. Autonomous responses are commonly changes in blood pressure and increased heart rate; behavioural responses are generally freezing, withdrawal or approach; glandular responses are commonly general sweating and hormonal reactions (Baars and Gage, 2010; Hansen and Christensen, 2007). These emotional responses have been found to be extremely important drivers of all human behaviour - consumer behaviour included (Genco, 2013).¹¹

V. CONCLUSION

Neuro-marketing draws on neuro-scientific technologies to understand the subconscious reasoning and behaviour of customers. It measures brain and body signals instead of, or along with, traditional self-reporting tools like surveys or interviews. This literature review suggests that different brain regions are activated according to choice predictability, with unpredictable choices eliciting activity in regions associated with silent vocalisation and judgement of rewards. Although the Marketing is essentially connected to everything that surrounds the market, it aims to study the needs, seeking to please them fruitful and effective way for organizations to get more loyal customers and profits of its brands.

Neuromarketing already arose from the need for more knowledge about the consumer information that these traditional methods and research as a sales monitoring, consumption patterns deductions and traditional market research could not provide.¹²

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