

From brain to behavior: the strategic role of neuromarketing in understanding consumer behavior

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1. Introduction

In a hyper-connected and emotionally saturated world, understanding how consumers think, feel, and decide is more critical than ever. Traditional marketing approaches, which rely on verbal feedback and conscious responses, often fail to capture the unconscious processes that drive real-world decision-making. Neuromarketing, as an interdisciplinary field grounded in neuroscience, psychology, and behavioral economics, addresses this gap by offering a window into the brain's emotional and cognitive responses to marketing stimuli (Lee, Broderick, & Chamberlain, 2007; Hubert & Kenning, 2008). By leveraging technologies such as electroencephalography (EEG), eye-tracking, galvanic skin response (GSR), and facial coding, neuromarketing allows researchers and practitioners to observe neural attention, emotional arousal, and micro-expressions in real time—thus uncovering hidden preferences and behavioral triggers (Vecchiato et al., 2011; Ohme et al., 2009).

2. From Brainwaves to Strategy: Insights, Applications, and Ethical Reflections

Rooted in dual-process theories of cognition (Kahneman, 2011) and the somatic marker hypothesis (Damasio, 1994), neuromarketing offers a scientifically grounded approach to decode the consumer mind. It captures the implicit drivers of choice—attention, memory, and emotion—before they are filtered through rational thought. EEG signals, for example, can reveal peak engagement moments during advertisements, while eye-tracking maps the precise areas of visual attention, enabling brands to optimize content and design (Ariely & Berns, 2010; Plassmann, Ramsøy, & Milosavljevic, 2015). These tools are now used not only in commercial advertising, but also in product development, packaging design, political messaging, and even public health initiatives (Lindstrom, 2011; Yoon et al., 2012).

Strategically, neuromarketing enhances personalization, experience design, and brand positioning by grounding decisions in how consumers actually respond—emotionally and physiologically—rather than how they claim to respond (Venkatraman et al., 2015). However, this powerful access to non-conscious data also brings ethical responsibilities. Concerns about manipulation, privacy, and informed consent are central to current debates (Stanton, Sinnott-Armstrong, & Huettel, 2017). To maintain trust, researchers and organizations must implement clear ethical protocols and ensure participants are aware of how their biometric data is collected and used (Morin, 2011).

Looking ahead, the field is expected to evolve through hybridization with AI and big data analytics, while expanding into sectors like education, sustainability, and digital governance. Cross-cultural research is also essential to validate findings across different consumer populations and avoid universalizing cognitive responses (Karmarkar & Plassmann, 2019).

3. Conclusion

Neuromarketing offers a powerful lens through which to study and anticipate consumer behavior. Its ability to merge affective and cognitive neuroscience with real-world marketing challenges allows for a richer, more accurate understanding of how people perceive, evaluate, and act. Far from replacing traditional methods, neuromarketing complements them by revealing the emotional undercurrents that guide consumer decisions. To harness its full potential, the field must continue evolving within an ethical framework that respects autonomy and avoids overreach. Ultimately, neuromarketing is not just a tool—it is a strategic perspective that brings marketers closer to the human brain, and thus, closer to the truth of behavior.

References

- Ariely, D., & Berns, G. S. (2010). Neuromarketing: The hope and hype of neuroimaging in business. *Nature Reviews Neuroscience*, 11(4), 284–292.
- Damasio, A. R. (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*. Putnam.
- Hubert, M., & Kenning, P. (2008). A current overview of consumer neuroscience. *Journal of Consumer Behaviour*, 7(4-5), 272–292.
- Kahneman, D. (2011). *Thinking, Fast and Slow*. Farrar, Straus and Giroux.
- Karmarkar, U. R., & Plassmann, H. (2019). Consumer neuroscience: Past, present, and future. *Organizational Research Methods*, 22(1), 174–195.
- Lee, N., Broderick, A. J., & Chamberlain, L. (2007). What is neuromarketing? A discussion and agenda for future research. *International Journal of Psychophysiology*, 63(2), 199–204.
- Lindstrom, M. (2011). *Brandwashed: Tricks Companies Use to Manipulate Our Minds and Persuade Us to Buy*. Crown Business.
- Morin, C. (2011). Neuromarketing: The new science of consumer behavior. *Society*, 48(2), 131–135.
- Ohme, R., Reykowska, D., Wiener, D., & Choromanska, A. (2009). Analysis of neurophysiological reactions to advertising stimuli by means of EEG and galvanic skin response measures. *Journal of Neuroscience, Psychology, and Economics*, 2(1), 21–31.
- Plassmann, H., Ramsøy, T. Z., & Milosavljevic, M. (2015). Branding the brain: A critical review and outlook. *Journal of Consumer Psychology*, 25(1), 123–141.
- Stanton, S. J., Sinnott-Armstrong, W., & Huettel, S. A. (2017). Neuromarketing: Ethical implications of its use and potential misuse. *Journal of Business Ethics*, 144(4), 799–811.