

Chapter 10

Consumer Neuroscience: Evolution and Commercial Applications

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ABSTRACT

Consumer neuroscience is a quickly growing discipline that harnesses both theoretical principles and applied measures from the decision and affective neurosciences, along with psychophysiology and vision research, in order to explain and predict consumption behaviors. This discipline links several subfields, including neuroeconomics, social and affective neuroscience, and neuromarketing. This emerging field comprises both direct and peripheral measures of neural processing related to consumption behaviors. Consumer neuroscience complements traditional commercial research measures such as self-report, which can often be inaccurate and biased by anticipated or recalled, but not actual, consumption behaviors. All told, consumer neuroscience represents a unique field focusing on the consumer and the innumerable factors that affect individual preferences and consumption behavior. This chapter will provide a comprehensive overview of the field's history, key measures used, case examples of academic and commercial work, and a discussion of the field's continued bright trajectory.

INTRODUCTION

In academic institutions as well as the private and government sectors, the term consumer neuroscience is quickly becoming a familiar term. While the measurements made within the field of consumer neuroscience have been used for decades, their application to address brain-based explanations of marketing choices and consumer behavior has explains the rapid growth of this field.

Further, the decreased footprint of hardware, the processing speed and increase data storage capacity of computing, and the ability to execute sophisticated statistical modeling and prediction algorithms have created the perfect scenario for the field's proliferation. This chapter will provide a comprehensive overview of the field's history focusing on key models and measures used, examples of organizational

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integration models in brand research, case examples of academic and commercial work, and a discussion of the field's future trajectory.

Many in academia study neuroeconomics, or decision neuroscience, which focuses primarily on determining neural processes that work to determine how humans determine the financial valuation of specific information. Consumer neuroscience is also considered the academic area of study which focuses on determining the neural processes that occur “up-stream” of consumer choice. Consumer neuroscience is unique because its main focus is on the consumer and how various factors affect individual preferences and purchasing behavior. The field of neuromarketing harnesses theory from both neuroeconomics and consumer neuroscience research to best architect consumer products and experiences. In other words, neuromarketing focuses on the study of various marketing techniques and attempts to integrate neuroscience knowledge to help improve the efficiency and effectiveness of said marketing strategies.

The tools used in neuroeconomics, consumer neuroscience and neuromarketing rely on capturing data in the moment, as consumers are experiencing consumer oriented choices. These tools will be further discussed within the body of this chapter. A key difference of these measures compared to those used in traditional market research is that they removed the bias that time factors into the consumer's self-reported recall or intentions regarding a past or future consumer choice.

Surveys and focus groups, for example, rely on the consumer's to accurately remember factors that may have influenced a past purchase. While the consumer can report what they recall are factors salient to making a consumption decision, they often don't account for subtle cues that worked below conscious threshold to nudge their consumer choice. Further, self-reported recall or intention often assumes that consumer is defining choices based on rational information, weighing all decision utilities before making a logical choice. Consumers, however, are not rational decision makers while in the moment deciding on what to purchase. Their justifications of these purchases however are often rational, making self-report outcomes less sensitive to measuring the consumer. Measures of the brain and body largely resolve the bias of traditional self report measures, as they capture real time or near real time neural and physiological responses during consumption choices.

BACKGROUND

Early Commercial Measurement

In the United States in 1906, Daniel Starch launched the field of advertising research through his essay titled “Advertising: Its Principles, Practices & Techniques.” This work was instrumental in developing the rationale that advertising had to be seen, read, believed, remembered, and most importantly, acted upon, to be considered effective. Building upon these ideas, polling icon George Gallup developed the concept of aided recall, in which researchers would assess memory for an ad without actually showing the ad to study participants. This technique has been adapted and continues to be used as a market research tool to measure the effectiveness of radio and television advertising.

Later, the 1940s through 1960s produced a different type of market research focusing on qualitative information to augment quantitative data captured from consumer recall. That is, market research in this era aimed to understand the individual consumer at a highly personal level. To this end, focus groups originated in the late 1930s at the US Bureau of Applied Social Research at Columbia University in an attempt to determine the social and mental effects of mass communications on the general public. Focus

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