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**by Stephen J. Genco, PhD; Andrew P. Pohlmann;  
and Peter Steidl, MBA, PhD**

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# Introduction

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**W**elcome to *Neuromarketing For Dummies!* Neuromarketing is one of those topics that a lot of people talk about, but few people really understand. It's a brand-new field that sits at the intersection of three existing fields: marketing, market research, and brain science. In this book, we look at all these dimensions of neuromarketing, and consider its ethical and public policy implications as well.

As you dig into this book, you see that neuromarketing isn't about magical buy buttons in the brain, or about creating zombie consumers who are powerless to resist the enticements of brain-tickling marketers. It's about some amazing new discoveries in the brain sciences that are fundamentally changing the way we think about thinking, and are inevitably impacting how we think about buying, selling, and experiencing products and services. That's the revolution — and the excitement — that neuromarketing represents, and it's what we try to capture in *Neuromarketing For Dummies*.

## About This Book

Our approach follows the tried-and-true format of the *For Dummies* series. We cover our topic in a modular way so you can jump in at any point and not feel lost. You can read the chapters in whatever order you like, because each chapter is self-contained. If we mention something that we cover in another chapter, we tell you where you can find more information.

Sidebars (text in gray boxes) and anything marked with the Technical Stuff icon are skippable. Finally, we made some decisions regarding terminology that may hide some deep debates among scientists and researchers, but we did so to simplify our story and save you from a lot of philosophical arguing:

- ✔ We use the terms *brain* and *mind* interchangeably, even though some academics (and philosophers) would howl at such a simplification.
- ✔ We use the general term *brain sciences* to encompass the three major branches of science we include as foundations for neuromarketing: neuroscience, social psychology, and behavioral economics.

- ✔ We often use the term *consumers* to describe the people neuromarketing wants to understand; sometimes we just call them *people*.
- ✔ People who participate in studies or experiments we usually call *participants*, because we don't like the clinical term *subjects*, although we do use that term once in a while.

Within this book, you may note that some web addresses break across two lines of text. If you're reading this book in print and want to visit one of these web pages, simply key in the web address exactly as it's noted in the text, pretending as though the line break doesn't exist. If you're reading this as an e-book, you've got it easy — just click the web address to be taken directly to the web page.

Finally, in the grand tradition of the *For Dummies* series, we don't take our subject matter or ourselves too seriously — which is particularly important for the topic of neuromarketing, because some people treat this topic as something that's just too complicated for mere mortals to understand. Usually, when experts tell you something is too complicated for you to understand, it means you're about to be charged a lot of money or they don't want you to ask too many questions. We hope this book helps level the playing field between practitioners, consumers of neuromarketing services, and just plain consumers, so that everyone has a more grounded and realistic picture of what's involved and what's realistic to expect, in the brave new world of neuromarketing.

## *Foolish Assumptions*

We wrote this book for anyone who has an interest in neuromarketing, so we made very few assumptions about you and what you need to know to get the most out of this book. Here are the assumptions we made:

- ✔ We assume you don't have a degree in psychology, economics, statistics, or neuroscience — but if you do, we don't think it'll hurt you too badly.
- ✔ We assume you're interested in how people think and why they act the way they do, even when they don't act very rationally.
- ✔ We assume you're interested in how people are influenced by marketing and advertising, but we don't assume you're an expert in these fields.

- ✔ We assume you're interested in neuromarketing because you think it can help you in your business or because you think it can hurt you as a consumer. We cover both these perspectives in depth.
- ✔ We assume you're willing to consider new ideas about your own brain that may seem completely counterintuitive when you first hear them.

## *Icons Used in This Book*

Icons are the little images in the margins of this book. We use them throughout the book to draw your attention to certain kinds of information. Here's what each icon means:



The Tip icon marks any tidbit of information that you can use to help you apply neuromarketing principles in your business, design useful neuromarketing studies, or work successfully with a neuromarketing partner.



The most important points in each chapter are marked with the Remember icon. If you want to jump to the main points of each chapter quickly, just follow the Remember icons.



We use the Warning icon to point out things you need to look out for. These may be cautions about interpreting scientific concepts presented in the book, or advice to help you get the most out of working with neuromarketing partners.



Sometimes we can't resist sharing some technical details with you that you really don't need to know to understand the rest of a chapter. Often these are further details on scientific topics or particulars about how neuromarketing has been used in practice. We mark these with the Technical Stuff icon so you can skip over them if you want to. It's your choice.

## *Beyond the Book*

In addition to the material in the print or e-book you're reading right now, this product also comes with some access-anywhere goodies on the web.

Check out the free Cheat Sheet at [www.dummies.com/cheatsheet/neuromarketing](http://www.dummies.com/cheatsheet/neuromarketing) for tips on how to apply neuromarketing to advertising and information on the intuitive consumer model and how it differs from the rational consumer model (used in traditional marketing).

## Where to Go from Here

Although you can jump into this book at any point, we have some recommendations for where you may want to begin:

- ✔ For the basics, we recommend Chapters 1 and 2, because they provide an overview of the whole book and an introduction to the scientific foundations of neuromarketing.
- ✔ If you have a particular marketing area that interests you — like branding, product design, shopping, or entertainment — you can find the chapter that addresses that area in Part III.
- ✔ If you want to know how to get the most out of a neuromarketing study, check out Chapters 18 through 21.
- ✔ If you want to dive into the ethical and policy implications of neuromarketing, we suggest you start with Chapters 4 and 22.

If you want to dig deeper into the brain sciences that provide the foundations for neuromarketing, we suggest two excellent introductions: *Neuroscience For Dummies*, by Frank Amthor, and *Behavioral Economics For Dummies*, by Morris Altman, PhD (both published by Wiley).

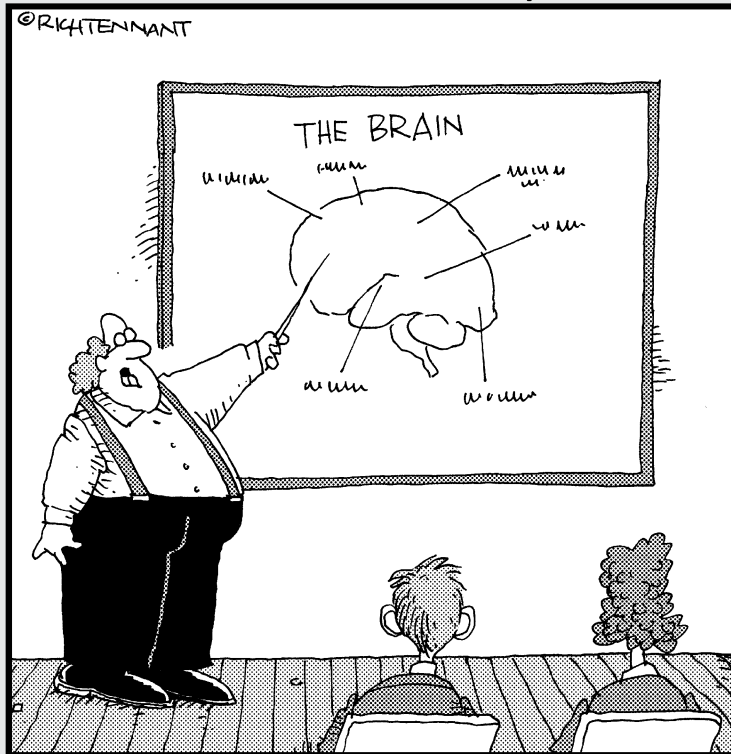
For more reading suggestions, references for all studies discussed in the book, updates and additions to book content, and pointers to training opportunities and upcoming speaking engagements, please visit the authors' website at [www.intuitiveconsumer.com](http://www.intuitiveconsumer.com).

# Part I

# The Brave New World of Neuromarketing

The 5<sup>th</sup> Wave

By Rich Tennant



"Information is moved via neurotransmitters from neuron to neuron via the synapses into the brain where it is then retrieved by the memory via a slap on the back of the head."

## *In this part . . .*

**H**ere, we provide an overview of the new world of neuromarketing and the topics to be covered in more detail in the rest of the book. If you want a quick summary of what neuromarketing is and what this book is about, start here.

Neuromarketing has emerged in market research today because of some amazing new discoveries in neuroscience, social psychology, and behavioral economics that have changed our understanding of how the human brain experiences, interprets, decides, and acts in the world. Perhaps it was inevitable that these discoveries would be applied to advertising, marketing, and consumer behavior. But there is still a lot of confusion about this new field, and more than a few misunderstandings about what it can and can't do, and whether it's a good or bad thing. In this part, we clear up the confusion and give you a solid foundation for understanding neuromarketing, what it's good for, and how it's impacting market research and marketing.

## Chapter 1

# What Neuromarketing Is and Isn't

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### *In This Chapter*

- ▶ Getting a definition of neuromarketing
  - ▶ Making sense of the science behind neuromarketing
  - ▶ Seeing how neuromarketing is being used today
  - ▶ Understanding the basics of neuromarketing measurement
  - ▶ Succeeding with neuromarketing research
- 

**N**euromarketing is a new field that is rapidly emerging in the world of consumer research. For some observers, it's the "Holy Grail" of research technologies that will finally unlock the mysteries of consumer choice and behavior in the human brain. For others, it's the root of all evil that will finally give marketers and advertisers ultimate control over our minds and pocketbooks.

So, which is it: Holy Grail or root of all evil?

As with most exaggerations, the truth lies somewhere in the middle. Neuromarketing does bring some quite powerful insights and techniques into consumer research, and in this book we discuss those contributions in detail. But neuromarketing is not a technique for turning people into "zombie consumers," and we also discuss in detail why that's the case.

Neuromarketing is controversial, in many cases because it isn't well understood. It's also evolving and growing very rapidly, so it's a moving target. At this stage in its development, there isn't much consensus regarding what neuromarketing is, what it does, where it's going, or what we should do about it. So, it makes sense to start with some clear definitions.

## Defining Neuromarketing



Because we want this book to be a reference for all aspects of neuromarketing, our definition of the field is quite broad. We define *neuromarketing* as any marketing or market research activity that uses the methods and techniques of brain science or is informed by the findings or insights of brain science. (For more on brain science, see the next section.)

Ultimately, neuromarketing is about solving exactly the same problems that all types of market research aim to solve: how a company should best spend its advertising and marketing budget to communicate its value to its customers, while generating revenues and profits for its shareholders. If neuromarketing is worth its salt, it has to help marketers solve these problems better than other types of research.

In this regard, there is nothing mysterious about neuromarketing. It's just another type of market research, subject to the same constraints of time, money, and usefulness as any other type of research that is performed every day.

### *Neuromarketing versus marketing*

Some people believe that neuromarketing is a field devoted to influencing people to buy things — often things they don't really need — and that it's, therefore, a bad and dangerous thing to do.



Part of the blame for this misconception lies with the term itself. *Neuromarketing* sounds suspiciously like a different (and nefarious) type of marketing, but it's not. Here's the distinction you need to keep in mind:

- ✔ **Marketing** is a field devoted to influencing people to like things, and ultimately to buy things, including things they may not need. Marketers are aware that people have brains. Marketing, therefore, is now and always has been devoted to influencing brains.
- ✔ **Neuromarketing** is a new way to measure *whether* and *how* marketing is working. Neuromarketers believe it's a better way to measure marketing because it's based on a more realistic understanding of how consumers' brains operate (we discuss the evidence for this claim in Chapter 2).

So, if you believe that influencing brains is a bad thing, then, in our opinion, your complaint is with marketing, not with neuromarketing.



## *What neuromarketing is good for*

Taking this broad view of neuromarketing, there are three major ways that it can help us better understand marketing and consumer behavior:

- ✔ It can tell us what's going on in people's brains while they're experiencing a marketing *stimulus* (any marketing material presented in a controlled research test).
- ✔ It can tell us how brains react to marketing stimuli presented in different *situational contexts* (for example, alone or next to competing products, at different price points, in a store versus online, and so on).
- ✔ It can tell us how brains translate those reactions into *consumer decisions and behaviors* (such as buying a product or switching loyalty to a new brand).

## *Brain science and the foundations of neuromarketing*

In this book, we use the term *brain science* to refer to all the scientific fields that underlie neuromarketing. We do this because we want to emphasize that the one obvious scientific source for neuromarketing — neuroscience — is not the only brain science that underlies neuromarketing. In fact, neuromarketing is built on top of at least three basic science fields, which, taken together, we refer to as the *brain sciences*, or simply *brain science*:

- ✔ **Neuroscience:** The study of the human nervous system, including the brain, its anatomy, functions, and the peripheral nervous system it controls. Neuroscience is most relevant to understanding the brain states and physiological reactions that accompany exposure to brands, products, and marketing materials.
- ✔ **Behavioral economics:** The study of how people make economic decisions in the real world. Behavioral economics is most relevant to understanding situational influences on consumer choice and behavior.
- ✔ **Social psychology:** The study of how people think and act in the (real or imagined) presence of other people. In recent years, social psychology has focused on the impact of nonconscious processes on human actions. It's most relevant to understanding how conscious and nonconscious brain processes work together in consumer choice and behavior.



## Terminology: Brain or mind? Nonconscious, unconscious, or subconscious?

**Brain versus mind:** The word *brain* tends to be used when people talk about anatomical structures or circuitry in the brain. The term *mind* tends to be used to refer to the subjective cognitive states a brain creates. For example, the *prefrontal cortex* is an anatomical part of the brain, but *attention* is a cognitive “state of mind” produced by activity in the brain. Generally, we use these terms interchangeably. We consider “nonconscious processes in the brain” to be equivalent to “the nonconscious mind.”

**Unconscious, subconscious, preconscious, and nonconscious:** There is a lot of intellectual baggage associated with all the terms that can be used to refer to the “not-conscious” processes

in the brain. *Unconscious* has some bad connotations, in terms of both the Freudian unconscious and the association with anesthetized states. *Subconscious*, in turn, carries a “secondary” or “subsidiary” connotation, as if it’s something below and, therefore, less than the conscious. A similar term is *preconscious*, which often would be perfectly appropriate, but it implies that *conscious* always follows *preconscious*, and this isn’t always true. Given all these issues, we use the more neutral term *nonconscious* in this book. Using this term has the benefit of referring neutrally to “everything other than conscious”; plus, it’s the term that’s becoming the standard in the academic literature.



Other important disciplines, such as neuroeconomics and cognitive psychology, underlie neuromarketing, too, but we don’t cover those fields in detail in this book. Also, each of the fields listed here is regularly spawning new subfields or merged fields, such as consumer neuroscience, consumer psychology, social neuroscience, and decision neuroscience, to name a few.

The point is that these are exciting times in the brain sciences, and neuromarketing is the beneficiary of all these fields.

## Understanding the New Scientific Foundations of Neuromarketing

Neuromarketing is a distinctive approach to market research because it’s based on new knowledge and findings from the brain sciences. This rich and rapidly growing body of knowledge provides many new perspectives on understanding consumer behavior. We call this new view of the consumer

the *intuitive consumer model*, as opposed to the *rational consumer model* that underlies most traditional market research. (We discuss these two models in detail in Chapter 2.) In this section, we offer an overview of some of the key findings that underlie the intuitive consumer model and neuromarketing.

Brain science tells us that the typical consumer is not a slow and careful deliberator when it comes to buying preferences and decisions, but instead is a *cognitive miser*, equipped with a brain that is adapted by evolution to conserve energy and produce fast and efficient consumer decisions and actions, not deep and logical assessments of marketing messages and purchase opportunities. Our consumer brains are attracted to both the new and the familiar, and they prefer the simple to the complex. These propensities are built into the circuitry of the brain, and they most often impact us below the level of conscious awareness.

This new picture of the human brain changes our understanding of how people see and interpret the world around them. This understanding has many implications for market research, which we introduce in Chapter 2 and cover in detail in Chapter 5. The most important of these implications is that human beings actually have very little awareness of why they do the things they do. This means that when people are asked by researchers about what they like or what they'll buy in the future, their answers are often guesses about what they think or will do. These guesses have been shown to be no more reliable and accurate than the guesses people make every day about what *other* people are thinking or going to do. People aren't lying or trying to deceive researchers when they make these guesses; they're literally unaware of the real causes and reasons for their actions.

This finding sets the fundamental challenge for market research. It's also the reason that neuromarketing has emerged in market research, because neuromarketing techniques hold the promise of measuring consumer responses that occur below the level of conscious awareness.

Many additional insights flow from this new science-based picture of the intuitive consumer. We focus on three more aspects of this picture in Part II: how emotions impact consumer decisions and behavior, how nonconscious goals drive decisions and actions, and how consumers really make decisions.

Modern brain science has made great strides in understanding the role of emotions in consumer behavior. Emotions operate at both conscious and nonconscious levels. They deeply impact our perceptions, beliefs, and attitudes, even when we aren't aware of them. They heavily influence what we notice (by directing attention), as well as what we remember (by triggering memory). We cover this topic thoroughly in Chapter 6.

The way in which our brains direct us toward any kind of decision and action, including consumer decisions and actions, is through the activation, pursuit, and attainment of goals. This is the basis of the motivational system that drives us, a system that has evolved over millions of years.

What we've learned from brain science, mostly in the last decade, is that goals can operate nonconsciously, as well as consciously. Contrary to our conscious experience, we're constantly activating and pursuing goals that we may have no idea exist. This finding has huge implications for marketing and consumer behavior — for both marketers and consumers. We consider these implications in Chapter 7.

Our understanding of human decision making has been revolutionized in the last 40 years. We used to see decision making as a conscious, deliberative process that could be reconstructed simply by asking a person to recount how he or she came to a particular decision. Today we know that people use different systems in the brain to make different kinds of decisions and that many decisions occur automatically, below the threshold of conscious awareness.

Consumer decisions are also highly influenced by *situational factors*, such as how a product is presented in a store or what other products it sits next to. These situational effects have been studied extensively in the new field of behavioral economics. A large body of research shows that these effects also often occur without conscious awareness of their impact.

With so many nonconscious influences on consumer decision making being uncovered, we need to take a new look at the power of traditional persuasion in marketing and advertising. We find that persuasion is probably less important in successful marketing and advertising than it was previously believed to be. Chapter 9 looks at consumer decision making in detail.

Neuromarketing is built on these insights and many others derived from brain science. It borrows the tools and technologies developed in the brain sciences and applies them to the world of marketing and consumer behavior. The underlying science will continue to progress, and neuromarketing will continue to benefit from this vibrant scientific foundation.

## *Exploring Where Marketers Are Using Neuromarketing Today*

Neuromarketing is being used today by marketers in many research areas. In Part III, we tell you how it's being used, what results are being achieved, and how it's likely to be used in the future, in six key marketing areas:

- ✔ **Brand:** Understanding brands and branding is an area in which neuromarketing is a natural fit. Brands are essentially ideas in the mind, and they draw their strength by making connections with other ideas in the mind. A strong brand is one that triggers deep associations with related ideas that keep that brand at “top of mind” for consumers. In Chapter 9, we show how strong connections in long-term memory make leading brands so hard to displace. We also show how neuromarketing techniques can be used to measure brand effects that consumers may not even know exist.
- ✔ **Product:** Product innovation and package design are two research areas in which neuromarketing is making significant inroads. Because people have a hard time predicting what they’ll like or do in the future, neuromarketing provides alternative ways to observe when a new idea is resonating positively with consumers and when it’s generating a gigantic “Huh?” We cover these and other uses of neuromarketing in product and package research in Chapter 10.
- ✔ **Advertising:** Advertising research is an active area for neuromarketing. How advertising works and what makes one ad more successful than another have always been a bit of a mystery. Neuromarketing offers new tools and techniques that illuminate, if not completely solve, this mystery. In particular, brain science leads us to the intriguing idea that ads may work best when they aren’t paid attention to, and that the repetition of positive emotional connections, rather than persuasive messaging, may be more effective at reinforcing brands and boosting sales. We discuss these and other ideas about ads and the brain in Chapter 11.
- ✔ **Shopping:** Shopping and in-store marketing are research areas where neuromarketing has much to offer. Shoppers expend surprisingly little conscious thought in the shopping experience. They pick up a huge number of visual and other sensory cues as they navigate their shopping journey, but they usually aren’t aware of most of them. Situational factors are highly influential in determining shopping outcomes, often at the expense of shoppers’ conscious intentions. How neuromarketing can be used to test shopper reactions in both real and simulated shopping environments is covered in Chapter 12.
- ✔ **Online:** Closely related to in-store shopping experience is online shopping experience. But there are important differences. In the online world, advertising and buying can exist right next to each other, with no need for consumers to delay gratification until they make their next trip down to the mall. As a result, the activation, pursuit, and attainment (or frustration) of consumer goals is much more immediate and dynamic in online shopping. For more details on the implications of this unique situation and how the human brain has adapted to online experience, see Chapter 13.

✔ **Entertainment:** The final marketing area we explore in Part III is entertainment. Although people are better able to identify when they're being entertained than when they're being persuaded, they have very little conscious access to why they find one TV program, movie, or video game more entertaining than another. Brain science provides some useful insights into what makes a story interesting and how interest is represented in the brain. This opens up the possibility of neuromarketing testing of entertainment programming. We look at this research in Chapter 14.

## *Explaining How Neuromarketing Measures Consumer Responses*

In Part IV, we shift our focus from sources and applications of neuromarketing to the basics of neuromarketing testing — how neuromarketing measurement techniques differ from traditional market research and from each other — and how they've been adapted from the tools and technologies of brain science.

First, we emphasize that although neuromarketers criticize some assumptions underlying traditional market research, there remains an important place for these approaches among modern research methodologies. In Chapter 15, we review the three “workhorses” of market research — interviews, focus groups, and surveys — and discuss when they make sense, and when they present risks and limitations.

Looking at the new neuromarketing research tools and techniques, we see in Chapter 16 that they fall into two general categories: approaches that measure *responses of the body* to marketing, and approaches that measure *responses of the brain*. Each approach captures a different kind of signal, and each comes with a different set of pros and cons as a measurement technology. In Chapters 16 through 18, we review these methods in detail.

The most important *physiological* or *biometric* measures (based on body signals) used in neuromarketing include the following:

✔ **Facial expressions:** The human face registers a wide variety of emotional states. Facial expressions can be read at two levels: observable changes in expressions (for example, smiles or frowns) and unobservable micro-muscle changes (for example, contractions of muscles associated with positive and negative emotional reactions). Facial expression measures have been found to be robust indicators of positive or negative emotional responses (called emotional *valence*).