



Marketing and Neuroscience

What Drives Customer Decisions?

A White Paper Based on the American Marketing Association's Virtual Event Marketing and Neuroscience: What Drives Customer Decisions?

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About this white paper:

On May 10, 2011, the American Marketing Association held a virtual event entitled: Marketing and Neuroscience: What Drives Customer Decisions. This unique event gives marketers an opportunity to gain access to leading experts in the neuroscience field who are using neuroscience to supplement and enhance their research and marketing initiatives.

Attendees of the event learned how neuroscience is being utilized by leading companies to uncover the hidden drivers within a customer's decision making process. During the event we explored which neuroscience-based techniques are most effective and learned about practical applications for this cutting edge technology that can help marketers to gain bottom-line results

Sessions:

Increasing our Brainpower: Using Neuroscience Effectively

Barbara O'Connell,

Senior Vice President, Consumer Neuroscience Practice, North America, Millward Brown

Scientific research in multiple fields, such as neuroscience, behavioral economics and psychology, has highlighted that consumers' decisions are driven as much by gut instinct as considered thought. Yet how can marketers understand something as nebulous as "gut feel"? Over the past few years, there have been an increasing number of agencies who are deploying methods used by neuroscientists to answer marketing questions that conventional research cannot.

Barbara will talk about what information these methods can provide to marketers, when they make sense, and best practices to keep in mind when employing them.

Exploring the "Neuro" Frontier: 10 Psychological Principles of Customer Experience Management

Steven Walden,

Senior Head of Research and Consulting, Beyond Philosophy

Today, the ability to leverage employee and customer assets to extend brand impact, drive business results, and improve loyalty can make the difference between surviving and thriving. Learn about the 10 key psychological principles that organizations use in customer experience management and the business case for their use.

The Brain Makes Behavior: How Top Marketers Are Applying Neuromarketing Knowledge for Marketplace Success

Andrew Pohlmann,

Managing Partner Professional Services, NeuroFocus

Neuromarketing is on the global business community's mind today. Few marketing firms offer the rare combination of top-tier neuroscience expertise and actual client applications to explain how to use this marketing research breakthrough in the real, not the theoretical, world.

Andrew Pohlmann will outline the ways in which authentic full-brain neurological testing is delivering targeted, reliable, and actionable learnings for companies around the globe.



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Increasing Our Brainpower: Using Neuroscience Effectively

A dilemma faces marketers today, Barbara O’Connell of Millward Brown told an American Marketing Association virtual event audience on May 10, 2011. “Recent research in neuroscience, behavioral economics, and psychology reveals that consumers’ decisions are driven as much by gut instinct as considered thought, but how can marketers understand something as nebulous as gut feel?” she asked.

While conventional market research uses powerful techniques such as surveys, interviews, and group discussions, O’Connell said “neuroscience is beginning to offer some new possibilities” in helping marketers understand decision-making drivers that are based more on intuition than on reasoning or analysis. Neuroscience techniques, such as brain scanning and eye tracking, measure people’s responses indirectly rather than directly.

O’Connell gave an overview of neuroscience, its adaptation and value to market research, specific techniques, and examples of applications. She concluded that while neuroscience methods are a useful addition to conventional market research methods, greater insight can be achieved into consumers’ responses to brands and marketing when both types of approaches are combined.

Less Really Is More

O’Connell cited social scientist Barry Schwartz, author of *The Paradox of Choice: Why More is Less*, who argues that the large number of choices available to consumers today can cause anxiety and bring about “decision paralysis.”

For example, O’Connell said, a gourmet grocery introducing a new line of jam set up a table with 24 varieties of jam, and offered samples. While 60% of the customers stopped and tasted the jams, only 3% of them actually made purchases. The next day, the grocery set up the table with only six varieties, and while only 40% of the customers stopped, 30% of them actually bought.

“Choosing which of 24 varieties to buy seemed to be too daunting a task,” said O’Connell. “Whereas selecting from six was a much more manageable choice.”

Consumers Not Good at Telling Why They Buy

“Consumers really aren’t very good at telling us why they buy what they buy,” O’Connell said. She showed a chart that analyzed the factors people cite as important in their decision to buy a brand, compared to their opinions about the brand they bought last. The chart showed some interesting differences. “Factors people don’t say are important to them do figure into their decision,” said O’Connell.

Ease and convenience of locating a brand, as well as how it makes the user look—modern, popular, fun, cool—are more important to people than they admit. Meanwhile, many people say “cheapest” is important to them, but findings show this importance is overstated.

It is generally true that consumers are able and willing to express their attitudes if asked, but research shows that in some situations they may be unwilling or unable to reveal their opinions. This reaction varies among individuals as well as cultures. For example, people in Indonesia and India are reluctant to express a negative opinion about TV ads they have just watched, while those in France and Singapore are much less hesitant to do so, O’Connell said.



Neuroscience Offers New Possibilities in Market Research

Market research uses many tried and proven tools, both qualitative and quantitative, including survey-based interviewing and group discussions or development work, to uncover attitudes and preferences. But technological advances have created new ways to gain understanding about why people do what they do, and what drives attitudes and behaviors.

O'Connell defined neuroscience as "a broad term encompassing a variety of techniques, all of which use indirect rather than direct/explicit measurement of people's response." Most of these techniques, such as brain scanning, brainwave measurement and eye tracking, have been used in medical or academic settings for years and are now being adopted by marketers.

"The addition of these techniques to tried-and-true research approaches can provide deeper, richer, more nuanced answers to marketing questions," said O'Connell.

Considerations: Ethics, Hype, Practicality

O'Connell addressed some concerns that have been raised about neuroscience.

Ethical concerns are unfounded, she said, because neuroscience methods "only measure but do not 'brainwash' or influence behavior."

There is hype about what neuroscience can deliver. The ability to measure how certain areas of the brain respond to stimuli can add value, but "it comes down to interpretation," O'Connell said. And some measures have limitations. For example, neuroscience can measure positive or negative emotional responses, but conventional research must be used to determine the specific emotions experienced.

Practicality and scalability are issues. Some techniques can be expensive, the setting, clinical, and sample sizes, small.

Thus, "neuroscience is a useful addition, but not a replacement," O'Connell said. However, "it is happening now and being adopted by marketers," although "neuroscience, like any new technique, must be held up to scrutiny."

Integration Is Key

Three important tests help researchers decide how neuroscience tools can provide additional insight:

Do the tools yield meaningful results? Make sense? Are they useful? Scalable?

Do they deliver incremental insights? Provide new learning? Justify the cost?

Are they better behavior predictors, and more scientific and objective than conventional tools?

Neuroscience techniques are particularly useful in uncovering two types of information: things people do not want to reveal, and things people are unaware of or do not realize have influenced them.

Ultimately, integration with conventional marketing research techniques is key. "It does not always make sense to use [neuroscience] approaches," O'Connell noted. "You must consider the marketing questions and research objectives, and which methods are best suited to answering those questions and meeting those objectives."



Neuroscience Techniques

Neuroscience techniques provide indirect measurements of responses to marketing and brands. Many have roots in medicine and academia. O’Connell described the pros and cons and some applications of different methods, including brain scanning, brainwave measurement, eye tracking, implicit association measurement, and facial coding.

1. Functional magnetic resonance imaging

Functional magnetic resonance imaging (fMRI) measures blood flow to various parts of the brain during different tasks, exposure to stimuli, or experiences. But large, expensive equipment and the unnatural or unusual experience of the test limit fMRI to small sample sizes and make it non-scalable.

2. Electroencephalography

Electroencephalography (EEG) uses sensors or electrodes on the scalp to measure electrical impulses emitted by the brain. It is simpler than brain scanning and good at measuring changes over short time periods. In its full medical form, it is expensive and not scalable, uses small samples, and takes time for calibration. Measuring fewer sites allows for larger samples and greater cost effectiveness.

Wireless, dry EEG headsets such as the EmSense EmBand and Neurofocus’ Mynd provide options for EEG that are less intrusive and more scalable. EmSense EmBand headsets combine EEG brainwave measures with other biosensory inputs, including heart rate, head motion, breathing, blinking, and body temperature.

O’Connell presented an EEG application to evaluate a TV ad for a body lotion product that showed the value of integrating conventional and neuroscience approaches. The application used the explicit survey-based copy test to provide an overall assessment of the ad’s performance, alongside brainwave measurements from EmSense to allow granular analysis of moment-by-moment viewer response to the ad.

“While there is convergence from the two methods on some points,” O’Connell said, “there are insights from the explicit measures we did not get from the brainwave data, and likewise the brainwave data provided information that the copy test did not.”

Asked how the two components work together, O’Connell said EmSense can provide information on positive or negative emotions but cannot identify exact emotions such as delight, happiness, or surprise. Integrating EmSense results with copy testing results provides a way of identifying the exact emotions.

Another participant asked whether contradictory results have been found. O’Connell said results have been puzzling in some cases, but not contradictory. Sometimes it may take more brainwork to reconcile the two sources of information to develop a story that makes sense.

O’Connell cited several specific situations for which it would make sense to use a combined EEG and survey-based approach to help identify any problems and optimize ad performance:

- Launching a new campaign, introducing a new spokesperson, or repositioning a brand
- Developing an ad with a complex narrative structure, or one that uses metaphors to convey its message
- Developing ads that rely heavily on emotional strategies
- Cutting down a successful 30-second spot into 15 seconds to include only the most compelling scenes and scenes that are best linked to the brand and convey key messages



Some broad applications in which brainwave measurements can add insight to survey-based measures include ad development and assessment, concept testing, logo and package design, product testing, and in-store (mobile equipment)/virtual marketing shopper insight.

3. Magneto Encephalography

Magneto encephalography (MEG) detects the magnetic field generated by the brain to measure brain activity. Like fMRI, it uses big scanners and is expensive and non-scalable.

4. Facial Coding

Facial coding measures micro-expressions that correspond to different emotional states, such as happiness, sadness, skepticism, and surprise. It can capture a range of emotions, not just positive or negative ones like EEG or biosensory metrics can. It can be done using a simple camera or webcam, but the manual coding required makes it time-consuming, somewhat subjective, and expensive for large samples. Some agencies offer automated facial coding, which can be faster, less subjective, and easier to scale, but it captures a more limited range of emotions.

5. Eye Tracking

Eye tracking records what a participant is looking at, in what order, and for how long. It is portable, non-invasive, and relatively easy to use and scale. Even small sample sizes of 30 or 40 samples provide reliable results. Some agencies can offer eye tracking with in-home webcams, and kits can be carried to any location.

O’Connell presented some applications, including a “heat map” of a print ad using color-coding to indicate areas that received higher or lower interest, and a “gaze path” that shows where a respondent is looking on an ad, in what order, and for how long.

In one study, people were presented with two scenes, a tranquil forest and a train wreck. When they were asked to look at the forest, they did, but eye tracking showed that they also looked at the train, even though they mostly claimed to have looked only at the forest.

Eye tracking is clearly valuable for advertising or other visual stimuli to learn what people actually look at, O’Connell said. It gives more accurate information than self-report, since research shows that claimed viewing is not always the same as measured actual viewing. For example, people tend to overestimate their viewing of brand names or taglines—two key elements of ad effectiveness—perhaps to please the interviewer.

O’Connell said eye tracking can be useful in ad development and assessment, concept testing, logo and package design, online usability and micro-site development, and in-store marketing.

6. Other Biometrics

Other metrics that use measures of autonomic arousal without direct measure of brain activity include galvanic skin response, heart rate, respiration, and body temperature. However, these responses lag behind brain activity by several seconds, and it is hard to use them to determine emotional states or to know whether the states are positive or negative. For example, excitement and stress look similar on these measures. They also require cumbersome equipment, and the sample sizes are often small.



7. Implicit Association Measurement

Implicit association measurement uses behavioral tasks to infer participants' attitudes and feelings about various stimuli, such as brands, ads, or concepts. The theory is that thinking about a brand, for example, will activate a network of unconscious, or implicit, associations based on a person's experience, knowledge, and emotions. Implicit measurement can provide information about what people think and feel that may be either inaccessible or about which they are unaware. It goes beyond information that can be provided by asking people explicit questions.

Implicit measurement uses lexical decision, or word choice, tasks. The specifics of the task and the nature of the dependent variable (e.g., word choice, reaction time) may vary as a function of the stimulus. Implicit measurement can tell us how consumers think about a brand, its messaging, ideals, and other concepts that they may not be aware of or are able to express explicitly. It can also be used to reveal consumers' emotional response to a brand, whether positive or negative, and the strength of that reaction.

A participant asked how implicit association activates verbal association. O'Connell said respondents are asked to think explicitly about a brand, for example, and then are asked some questions about it to "activate" their associations about that brand but the focus is on the behavioral task and, in some cases, their reaction time. Further, the words selected for some of these tasks are very important, since only those words—and not others—can be evaluated. The word choice is driven by the nature of the stimulus and can employ both positive and negative words, emotional words, or ideal-based, aspirational words, as appropriate.

These tasks are relatively easy to administer online and are not time-consuming. They lend themselves to a variety of applications, including brand equity assessment and positioning; concept, logo, package, or name testing; ad or product development; and brand and spokesperson affinity.

O'Connell said that often consumers will give functional benefits when asked explicit questions but will not be able to readily express benefits that are abstract or related to higher-order ideals. "Implicit association will help us get at those things," she said.

Getting the Best Out of Neuroscience

O'Connell outlined the best practices of neuroscience:

- Be critical, she said. She suggested asking the same questions of neuroscience methods as of any conventional research technique, and "ask for proof, go along for fieldwork, or take the test yourself."
- Look for experience. "This is a complex area, so familiarity with the approaches and a scientific perspective is important to understand what is claim versus what is reality, and when neuroscience-based approaches offer the most value. Likewise, experience in drawing together neuroscience and conventional research is key to maximizing your value."
- Integrate. "These methods do not reveal the inner truth," O'Connell said, noting that neuroscience techniques "need interpretation in light of other information."

"Neuroscience techniques are an addition to our toolkit for understanding consumers, but groups, surveys, tracking consumer conversations in social media, and all other methods researchers employ have a role to play," said O'Connell. "Real understanding comes from integrating information rather than focusing on only one perspective. It is in this context that these approaches will prosper."



Exploring the “Neuro” Frontier: 10 Psychological Principles of Customer Experience Management

In marketing, the problem typically is how to drive customers to us, to get them to buy, to get them to recommend, said Steven Walden, Senior Head of Research and Consulting at Beyond Philosophy. The psychology of customer experience helps to address this challenge.

The study of customer experience has evolved, Walden said. Following an earlier focus on why satisfied customers defect, around the year 2000, “customer experience turned marketing on its head by focusing less on the rational and more on those emotional clues.”

Then around 2005, attention turned to quantifying the effects of the experience and measuring the emotions. In 2010, focus shifted to the psychology of customer experience.

Customer experience “is about creating an emotional connection with your customers or clients, clueing them in, entertaining, making wow moments, moments of delight.” Focusing on the psychology of this experience, Walden outlined “principles we can actually do on the ground to create that emotional connection,” and he explored the use of neuroscience in marketing to help understand what drives customer decision making.

The Old versus the New Paradigm

Customer experience is no longer just about the “4Ps” from the old paradigm—the mixture of price, product, promotion, and place, Walden said. In the new paradigm, it is about seeing the experience, feeling wowed by the experience, having that feeling embedded in memory, and creating the emotional connection that makes the customer want to return and stay with that company in the long term—in effect, creating loyalty.

“The economics behind experience are all around loyalty, recommendation, customer lifetime value,” he said.

How Neuroscience Fits In

Walden referred to Professor Antonio Damasio, a leading expert in neuroscience, who wrote, “Over time, emotions and their corresponding bodily change(s) become associated with particular situations and their past outcomes.” When make decisions, people consciously or subconsciously associate these physiological signals, or “somatic markers,” and their evoked emotions with their past outcomes, and they bias decision-making toward certain behaviors.

Evidence from brain scans shows that emotions impinge directly on consumer decision making, Walden said. That fits with what the psychology of customer experience is about: finding that emotional connection.

Further evidence comes from studying patients with damage to certain regions of their frontal lobe. They can still reason logically, but because they have lost the ability to feel emotion, their decision-making ability is flawed. “You need emotion to decide,” Walden said.

Other evidence from neuroscience highlights the importance of subconscious and memorable moments. Even when people cannot remember how they made a decision, they like to say they made the logical decision. However, evidence says it is not all logical and the subconscious is critical. Walden noted that the subconscious processes 200,000 times more information than the conscious mind and processes emotions about 10 times faster than the conscious mind.



New Opportunity for Marketing

Such evidence presents a new opportunity for marketing. Companies can differentiate themselves by focusing on creating emotional value, finding those things that are blind to the conscious side of clients, and building that emotional connection. A classic example, Walden said, is that everyone says they buy IBM for its deep features and benefits, but the key point is that no one ever got fired for buying IBM.

Moreover, it is important for companies to look at how customers perceive them. Organizations tend to see their experience, including their advertising, call center, and point of sale, almost as a concrete, detailed painting. However, customers tend to see their experience as an impression. Understanding that and using psychological principles of how people perceive will help companies create new marketplaces and opportunities.

“Put simply, experience psychology is the application of psychological principles to the practice of customer experience management founded on neuroscience,” said Walden.

He clarified that experience psychology differs from consumer psychology. Whereas consumer psychology focuses on how the customer views the organization, experience psychology is about what the organization controls; it focuses on what and how the organization delivers in terms of customer and employee experience.

Ten Principles of Experience Psychology

Walden outlined the 10 key principles of experience psychology and how companies can use them in their business.

1. We make decisions based on preconceived expectations and prejudices of what an experience will be—not what it is.

Walden gave the example of watching a video of a football game. Even with an objective stimulus and objective criteria, such as “I support my team,” people still feel predisposed to a certain position, and there is an emotional bias. This applies to every situation. The implication is that there is a pre-experience to consider, often subconsciously received, that sets the tone of any experience.

Knowing this principle, “you can breach expectations to create a new market space,” said Walden. He cited the example of a library in the United Kingdom that successfully transformed itself from a boring environment for academic learning to a new market space by offering a new experience, an entertainment space, “a new emotional wow.” Shopping malls now ask for the library in their mall to encourage customers to come. Breaching preconceived expectations can allow companies to expand their market and get new customers.

2. We don’t always consider all elements of an experience, only those most noticeable.

According to Professor Damasio’s somatic marker hypothesis, memorable moments embedded in memory are dragged out when making decisions. The implication of this principle is that there is a perceived experience that is often received through somatic marker moments of pleasure or pain.

Creating a wow moment, such as the look of a lush store or the use of music in a store, can change the perceived experience and influence how people feel toward that store. They are not rational-based or logical moments; rather, they affect people’s emotions. Another example is the Changi Airport in Singapore that changed its design to “Lovemark” its travellers’ airport experience. Lovemarks is a marketing concept that works to move beyond the brand into experience.



3. We identify a moral code in what you do, even if it is not directly relevant to the purchase in question.

When customers have a relationship with a company through their experience or the brand, the company means something, and the customers want to see the good the company does, which can make them more forgiving if something goes wrong, Walden said.

“Donate as you buy” programs or a “say no to paper and plastic” campaign are examples. The implication is that experience reflects on who the company is as an organization and can color any other received information about the company.

4. Sometimes we don’t know about the things that influence us; we just subconsciously perceive them.

A customer may buy a car and say the decision was based on price. However, the key, influential difference might have been how the salesperson engaged the customer. The implication is that customers perceive value from seemingly inconsequential touch points.

Another example is a grocery store where the removal of carpeting caused sales to plummet. The carpet and its feel may offer subconscious clues, but these are critical and often differentiating. “Remember, when things are very close together in commoditized markets, small things, subconscious or unconscious things, make that difference. Emotional wows make that difference. That’s how people will decide.”

Geek Squad is another example of a company successfully creating an emotionally and subconsciously engaging experience—the black tie, secret-agent black glasses, and the black and white cars. The experience does not have to be significant or brilliant, only enough to encourage people to buy “for the simple emotional hit that they get,” Walden said.

The principle applies also to direct mail aiming to make a hit with a one-second moment when people read the literature. Heuristics studies have shown the results. In one study, researchers flashed one of three images in front of the subjects: a smiling face, a frowning face, or a neutral geometric shape. They then showed a Chinese character to the subjects and asked how they liked it. The subjects preferred the characters they saw after having seen the smiling face, even though it was flashed for only 1/250th of a second.

5. Emotional twinges affect our “in the moment” decision making and hence behavior.

Products and services designed to impart an impression of confidence or other positive emotional content will make people feel the difference and feel pleased to have that experience. “The key concept there is that routine experiences can be fun,” said Walden. The implication is that emotional experience weighs heavily, more so than rational experience, in commoditized markets. This concept can be seen in many applications, such as “press this button” displays and animal mascots.

6. We are prone to be wary of anything that threatens our well-being.

In decision making, gaining a little means less than losing a lot, Walden said. People are much more averse to losing something, and even a little negative emotion can go a long way to destroy trust. Companies must understand what destroys trust. The implication of this principle is that customers judge prices relative to a reference point and are twice as sensitive to losses.

7. It is about what we want from an experience at a deep level and as we traverse it.

Companies must understand customers’ goals and wants at a deep level, which are often more than is expressed on the surface. Buying decisions may be based on how a salesperson spoke to the customer, for example. Companies must use these goals in their product and service designs.



This principle is also about building an attachment between employees and customers, and understanding the deep meaning of these relationships and what people really want. Walden cited the example of an orchestra that used this concept to build greater attachment between individual players and their fans, thereby differentiating the experience fans have with the orchestra.

8. Our memory of an event is not perfect, but subject to manipulation.

This principle is about the “peak-end rule,” which highlights the importance of the best or worst moments and the last moment of an experience. For example, one negative experience, such as an incorrect bill, and an unfavorable last experience, such as a price increase, can leave an overall bad image, whereas a peak or end experience that is pleasant, such as the way the customer left the mall, can greatly improve the experience.

9. We like to follow the herd, be seen as part of the group.

Customers are not just individuals but like to feel they are part of a community. Social media are one example. Another is Harley-Davidson, which turned the motorbike industry around by creating a community of bikers to connect with each other.

10. We get bored with the same old, same old. Sometimes innovation for its own sake is important.

Companies must ask themselves “what is the cost of not investing, not being innovative, or being old-fashioned,” Walden said. They should avoid being old-fashioned and out-dated.

Business Implications

When they measure, map the customer journey, pilot and test new concepts, engage social wealth, and Lovemark their experience, businesses must consider the impact of emotion and the subconscious.

Walden said neuroscience has demonstrated experimentally that customer experience defines customer emotion, and the subconscious and unconscious influence how people make decisions. Organizations can build predictive models from these measurements and ultimately gain in sales.

Noting that the market research industry endorses the case for focusing on how emotions drive value, Walden added that any experience design should encompass the 10 principles of experience psychology. He encouraged companies to ask, “Are we and could we use this at each point in our client journey to create a differentiation that goes beyond the 4Ps and creates emotional thought?”

Asked which principle is the most important, Walden said, “It depends on what you want as a business and where you are situated as a business.” As a starting point, he recommended using all the experience psychology principles to understand the business and map out the customer experience. Look at all 10 principles to see where the gaps are and where it might be possible to breach expectations or do something different, creative, and new.

A participant asked how a company can use the principles to build a better customer experience. Walden said a company might first decide what experience it wants to look at, such as customer billing or another function. It would then flowchart each step, analyze the questions behind each principle, and decide what is good, what is bad, and where to add value.

Walden said companies must be consciously aware of how they measure, to predictively discover what drives and what destroys value. Some emotions are unconscious and cannot be measured via standard methods. A classic example is that people say advertising is not important, yet when measured through the emotions, it is found to be very important subconsciously.



Companies need effective tools, such as the Emotional Signature, that go beyond rational measurements and that fit with their business needs. Walden noted the importance of choosing a tool that is reliable, easily executed, has credentials, and can get answers about not only the emotions that drive value to the business but also what to do to influence important subconscious attributes in the experience.

A participant asked whether a company should look to all 10 principles to evaluate an experience. Walden said yes. Experience psychology asks about the journey, not the destination, he said. It asks about how to create that emotional thought, and how, if, or when experience psychology can be used. The process of asking these questions is critical because it changes the thinking about how to differentiate the business in the market.

Another participant asked whether there have been obstacles to experience psychology. Resistance will come from those who do not like the word “emotion,” Walden said. However, demonstrating the business case and return, the scientific approach, and the technical reliability will unblock board-level investment decisions. Further, he suggested positioning experience psychology not as an analytical tool but as an anchor to enable creativity. The 10 principles are an aid to that creative process.

Asked whether there are tools to assist with customer mapping, Walden said a company’s resources will determine its need. Resources can come from research, consultant help, an expert, or internally. The 10 principles can be used to flowchart each level of experience. He added, however, that getting independent verification is important to bridge the internal and external views.

The Brain Makes Behavior: Applying Neuromarketing Knowledge for Marketplace Success

Behavior begins at the brain, said Andrew Pohlmann, Managing Partner Professional Services at NeuroFocus. “Measuring and understanding reactions in the brain are critical to understanding how your consumer will behave.”

Pohlmann noted three trends that have been converging to explain today’s neuromarketing revolution: accelerating breakthroughs in neuroscience, the increasing power of computing technology, and the evolution of traditional research.

Breakthroughs in Neuroscience

Pohlmann referred to an interview in 2009 with Dr. Eric Kandel (Nobel Laureate in Medicine and a member of the NeuroFocus Advisory Board) and Charlie Rose in the PBS Brain series. During this interview, Charlie Rose commented, “We have learned more about the brain in the past five years than during all of human history combined.”

Today, it is far more possible to reliably measure effects in the brains of consumers and draw conclusions, Pohlmann said.

Breakthrough methodologies in neuromarketing are only possible due to parallel advances in computing capacity, software tools, and algorithms. Exponential growth in computing technology has enabled the processing of the billions of pieces of data collected during neuroscience experiments and consumer research. Data that might have taken months to process now take days or even hours.

Another breakthrough is the notion of subconscious processing and the consumer experience. The human brain processes 11 million bits of sensory information every second, but our



conscious minds can handle only about 40 bits per second. The brain processes the remaining bits of information unconsciously. The question is whether we are measuring and appropriately capturing that decision-making process within our consumer research, Pohlmann said.

Five “Neuro-Lessons” for Marketing

Pohlmann listed five lessons learned from neuroscience research:

- Most processing in the human brain occurs subconsciously, below the level of conscious awareness.
- Most of this subconscious processing is emotional, not logical. “Logical” refers to a considered conscious decision, while “emotional” refers to the realm of the subconscious or non-conscious.
- Subconscious processes have a significant effect on shoppers’ attitudes, decisions, and behaviors.
- Subconscious processes do not control us entirely, but they form the vast majority of our decision-making. Conscious choice represents a minority.
- Consumers cannot tell you about these influences because they are unaware of them. Therefore, it is important to combine logical and neurological processes.

Spectrum of Applications

Neuroscience is useful in a full spectrum of applications:

- **Brand:** Brand analysis lends itself well to neuromarketing methodology. For example, consumer sentiment indices are emotionally based. Evaluating what consumers really feel about a brand must be understood at the subconscious level since the notion of a brand is already a nebulous concept.
- **Products:** While it is hard for consumers to articulate what they want from products and services, neuroscientific methods can find out by measuring an individual’s sensory responses to a product throughout the consumption experience. Research shows that advertising and promotions drive sales when they highlight the highest-impact “neurological high points” based on those measurements.
- **Packaging:** Package design and performance—how a product feels in the hands and how it looks on the shelf—are very important for the purchasing decision moment. Neuroscience can analyze the neurological responses to graphics, design elements, and messages.
- **Advertising:** Neuroscience can measure consumers’ subconscious second-by-second responses to advertising and other messaging. The timing placement of a TV ad has significant impact, as do the program and ad that precede it. Ads appearing on TV, online, in print or even outdoor all lend themselves well to neurological testing.
- **In-store marketing:** In-store applications of neuromarketing research range from studying individuals in a live store setting, to studying them while viewing a video of in-store experiences, to using 3D virtual reality systems to create an immersive environment in which they can view and manipulate virtual products. Neuroscience can measure neurological reactions throughout these experiences.



Application of Neuroscience to Marketing

NeuroFocus uses EEG as its preferred methodology. Dense arrays of up to 64 high-definition sensors collect data 2,000 times every second, fully capturing activity across all brain regions while a consumer is experiencing a brand, product, packaging, advertising, or in-store experience.

NeuroFocus blends EEG with eye tracking and skin conductance measurements. In addition to knowing how consumers are reacting neurologically, it is also important to know what they are looking at. But eye tracking alone can be misleading. For example, if consumers are looking at a package for a long time, it could be due to confusion rather than interest or enjoyment. Therefore, understanding both effects is critical. Only by correlating brainwave activity with visual focus can you arrive at that accurate understanding.

Core Metrics

Three primary NeuroMetrics that are measured directly at the brain are the underpinnings of NeuroFocus's understanding of how consumers interact with the stimulus being studied.

- **Attention:** Attention measures sustained focus and shifts in focus over time. It is important to understand which parts of a stimulus captures attention, and when attention wanes.
- **Emotion:** Emotion is the most important driver in decision making and also the most difficult to measure through traditional marketing research approaches. This metric measures the intensity of emotional engagement and the automatic motivational classification of stimuli as consumers go through the consumption experience. Pohlmann noted some challenges. "When you ask someone about an emotion, you change the emotion," he said. And requesting consumers to quantify or rank emotional responses, such as on a scale of 1 to 10, is even more difficult for them.
- **Memory:** The memory metric measures the formation and strengthening of connections in long-term memory. Undergoing experiences is like a read-write mechanism; a consumer is both recalling memory and creating new memory.

Market Performance Indicators

Three Market Performance Indicators are derived from the primary NeuroMetrics to illuminate the formation of:

- **Persuasion/purchase intent:** This indicator reveals the effect that a stimulus has on consumers' likelihood to buy (or view).
- **Novelty:** This indicator tells how new and different something appears—a very important indicator for products like consumer electronics, where new products are released frequently.
- **Awareness:** This indicator tells whether consumers understood or comprehended the message being communicated.

Deep Subconscious Response

Another measure is deep subconscious response to a brand or messaging. To create a baseline response, consumers are first exposed to core messaging such as words, phrases, or terminology that represent certain attributes. Then they are exposed to a stimulus, for example a TV ad, a package, or some form of brand representation. To measure the effect of the



stimulus on consumers' subconscious perceptions, the baseline test is repeated. Any significant difference recorded between the baseline and the post-stimulus response indicates the effect, or 'lift' that the stimulus had on those perceptions.

NeuroLab: The Future of Research

Many of NeuroFocus' clients are commissioning NeuroFocus to design, construct, staff, and operate dedicated NeuroLabs to conduct neuromarketing studies on an ongoing basis. They do so because the ability to do testing this way is cost-effective and offers the greatest latitude of research projects. This collaboration allows them to have a dedicated team and meets their needs for confidentiality.

Benefits of Neurotesting

Pohlmann described some live examples of neurological testing:

- NeuroFocus helped New Scientist magazine make a definitive selection of a specific cover design among three possible choices for an issue of the magazine. The project team determined the effectiveness of each zone on the covers, looking at the title, the lead-in for the article, and imagery. The selected cover worked well because of its smooth, circular exploration imagery and its red font. The other two covers had sharp edges or corners in their imagery, giving an impression of chaos or violence. The selected cover also leveraged the pop-out paradigm of white text. The resulting issue was the second-highest selling issue of the year and a sales increase of 12% over the same issue in the previous year, despite a weakened economic environment.
- A&E Networks worked with NeuroFocus to study ad performance for its program Intervention. Neurological testing helped to identify that 50% of ads scored a significantly higher effectiveness in Intervention versus a competitive drama, and the other 50% scored the same effectiveness. The study also showed the effect of priming. With its strong emotional program content, Intervention sustained high viewer attention throughout the program, benefitting advertisers.
- Neurodesign improved shelf performance for a beer bottler by identifying several areas for improving the bottle's packaging. They included reducing from three fonts to two, ensuring the name is visible on the back of the bottle, changing to a clear bottle so the beer is visible, using silver foil only around the edges of the cap, and showcasing lime flavor on the label. The new design resulted in the product regaining much of the market share previously lost to a competitor's product.

A participant asked how NeuroFocus identified what details to improve on the bottle. Pohlmann said purchase decisions can be affected by pricing, distribution, promotion, and many other factors. The hypothesis was that it was a packaging issue. The team looked at the bottle from many different perspectives—front, back, on the shelf, etc.—and analyzed from each perspective. It also used eye tracking to determine the effectiveness of different zones on the bottle and applied some of its neurological best practices for packaging design.

- A neuro-designed aisle makeover resulted in increases in both aisle sales and target product sales after changing the aisle, which was surrounded by sharp metal edges, to adopt features such as rounded corners, rounded end-caps, natural shelving materials, and category separation. Neurological testing was used to simulate the environment in different ways and helped guide the makeover from a neurological perspective, including using eye tracking to see how easy it was to navigate through the displays.



A participant asked how neurological testing can apply to direct mail. Pohlmann said brainwave activity measurements coupled with eye-tracking can reveal consumer responses to each static image as well as each page in the DM material. Direct mail is a fantastic test scenario because it gives immediate feedback and allows testing, iterating, and validating and refining of assumptions, which are not always possible with other advertising media.

When both the neurological approach and the survey approach are used in a project, sometimes the results do contradict each other, which is a great reason to conduct both, Pohlmann said. Understanding where they are the same and where they differ will drive a better decision.

In response to a question about scent and sound marketing, Pohlmann spoke about the Total Consumer Experience. This NeuroFocus methodology analyzes how all the sensory stimuli, including sight, sound, touch, taste, and smell, affect consumers' subconscious experience of a product. It can provide clear findings as to which parts of the experience are driving engagement, especially if studying different packaging with the same product.

Neurological Best Practices

Pohlmann introduced a NeuroFocus book written by Dr. A.K. Pradeep, CEO at NeuroFocus, titled *The Buying Brain: Secrets for Selling to the Subconscious Mind*. He shared some of the best practices from the book.

Best Practices Focusing on Women

- Women are attracted to images of women in groups, especially when enjoying a shared activity.
- Women engage faster with faces and respond to direct eye contact.
- Women process language more fluently than men, so respond more readily to text-based ads, including text-based puzzles.

Best Practices Focusing on Men:

- Men are impulsive shoppers. Keep your message short, simple, and focused.
- Men respond to messages showing advancement and success. These include images such as athletes performing a feat or skill, or an enviable man.
- Men are attracted to spatial imagery.

General Best Practices

- Place images on the left, text on the right. The left hemisphere of the brain is better at processing text and numbers, and the right hemisphere is better at processing imagery. Moving images to the left and text to the right will make it more natural or easier for the brain to process information, and what a consumer finds easier to process may be viewed as more appealing.
- Minimize visual clusters. Have visual anchors and keep to three to five core images or image clusters to make it easier to navigate an ad.
- Use unique fonts and font treatments, but make sure they can be easily decoded, or the effect will backfire. Make it easy and entertaining for consumers to process information.
- Lead with emotion. Emotion is a critical component of persuasion. Good emotional engagement with the consumer is vital to developing a good brand connection and influencing future behavior.



- Motion, novelty, error, and ambiguity are four ways to attract attention. These techniques can also help to send additional messaging.
- Sustain attention with simple puzzles and surprises. Puzzles should not be too difficult, or they will frustrate and turn off the consumer. They should be easily solved, and a puzzle that can engage the consumer and be interacted with will capture even more attention.
- Use iconic signatures of your brand. Capture consumer experiences and use them for provocative advertising, such as snapping a Kit Kat bar in half, using an iPad, and opening a carton of yogurt.
- Enforce consistency in branding across products and packages. A variety of touchpoints will help build the brand and engagement.
- Use as many senses as possible in presenting your product. A multisensory experience will help build the emotional experience as well.
- Emphasize your product's links to the natural world.
- Embed the product so that the story cannot be remembered without it.

Applying “Neuro Lessons” for Success

“As someone is interacting with a product in a product experience, the process of making a purchase decision, making a repeat purchase decision, or building loyalty with a brand is reinforced within the brain,” Pohlmann said. “Understanding which parts of the product experience are the most evocative neurologically can provide great raw material for marketing collateral.”

He said, “To understand what your consumer really thinks about your marketing, you need to understand both their logical and emotional responses, whether those responses occur consciously or subconsciously in their brains.”

A participant asked whether different methodologies apply to B2B versus B2C. Pohlmann said the core methodology is the same, although the stimuli or touch points are very different. The same principles apply when looking at the B2B experience because ultimately the business-to-business interaction is a human-to-human or brain-to-brain interaction.

The current trend is toward integrating the articulated responses and neurological responses, but Pohlmann said he believes that “in the not-too-distant future, neuroscience will become the benchmark, and the stated results will become the add-on.”

“Since the brain does make behavior, it’s very important to integrate that within your consumer research methodology, but certainly not lose sight of what your consumers are saying to you as well,” he added.

Pohlmann emphasized the importance of having “good conversations with your consumers, understanding what drives their behavior from attitudinal or usage study” when coming up with an initial list of innovations to consider.

Narrow down the innovation list by working directly with consumers and others in the industry, he said. Then take the neuroscience approach and combine it with stated results when making the final decisions.

“When it comes to making decisions, it is very important to understand how your consumers are interacting with your brand or your product,” he said.



Barbara O'Connell

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Barbara is currently the North American lead for the Global Consumer Neuroscience Practice. Barbara is responsible for both educating and spreading the word within Millward Brown on the use of our new solutions and their interpretation.

Barbara joined Millward Brown in 1996. Barbara is experienced with brand and advertising tracking, copy testing, brand equity, advertising development research, custom research solutions and media modeling with a variety of Fortune 100 companies.

Barbara held a post-doctoral fellowship at The Salk Institute in La Jolla, California, has a Ph.D. in psychology from the University of California at San Diego (funded largely by a National Science Foundation Fellowship), an M.A. in psychology from the University of Colorado, Boulder and a B.A. from The Johns Hopkins University.

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Steven is Senior Head of Research and Consulting for Beyond Philosophy™ and co-author of their latest book: *Customer Experience: Future Trends and Insights*. A highly engaging and professional speaker, he brings the topic of Customer Experience to life using anecdotes gleaned from his 14 years of consulting expertise. In *Customer Experience* he is recognized as an expert in understanding how to use the emotions and the subconscious mind of clients and consumers to generate value.

Andrew Pohlmann

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Prior to joining NeuroFocus, Andrew served in various senior leadership roles at such firms as JP Morgan Chase, Washington Mutual, Citigroup, and Alticor specializing in corporate strategy, product development, business development and marketing. He was a Partner with Meridian Consulting where he assisted numerous global brands to implement world-class management methodologies and innovation programs.

About the American Marketing Association

The American Marketing Association (AMA) is the professional association for individuals and organizations who are leading the practice, teaching, and development of marketing worldwide. Our principal roles are:

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Through relevant information, comprehensive education and targeted networking, the AMA assists marketers in deepening their marketing expertise, elevating their careers and ultimately, achieving better results.



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