



# BRAIN WAVES

By Leslie Limon

**Today's marketers are taking a "cerebral" approach to better understand their target audiences. How is neuroscience informing the ways products are marketed and sold? Are there ethical implications to getting inside someone's head?**

More than half of the people who took the Pepsi Challenge in the 1970s preferred the taste of Pepsi over Coca-Cola. So why wasn't

Pepsi the market leader? Smokers in a 2004 study from the United Kingdom declared their nation's anti-smoking warnings to be effective. So why did they continue to light up, contributing to the equivalent of \$27.4 billion in tobacco sales? Why, despite the massive hype around the debut of the Segway personal transporter, did sales in its first two years reach only 6,000? And when Ford rolled out an automobile built around what consumers said were their most desired features, why did it bomb?

Anomalies such as these are the tip of the iceberg. In 2007, according to Martin Lindstrom, author of

*Buyology: Truth and Lies About Why We Buy*, corporations spent \$12 billion on market research in the United States, yet eight of 10 products failed within three months of their launch. How come? If people said they'd buy something, why didn't they actually buy it?

Clues came from a Baylor University neuroscience study that reported the results of a much later version of the Pepsi Challenge, done in 1993.

Subjects in this Pepsi test tasted their colas from inside a functional magnetic resonance imaging (fMRI) scanner, which uses magnetism and radio signals to show blood-flow



changes in the brain during a task — an indication of which neural areas are activated.

The subjects drank the sodas twice: first without any knowledge of which was which, and then again with prior knowledge of whether the sample was Pepsi or Coke. In the blind tasting, the activated areas of their brains synced up perfectly with their brand-blind preferences. But when the subjects knew they were sampling a specific brand, the fMRI showed activity in a more complex range of brain areas: specifically, regions associated with emotion and working memory. What did scientists believe they were seeing at work?

Neural evidence of brand loyalty. This study captivated industry.

Was it possible, by analyzing a customer's brain, to gather more reliable evidence of what he or she really wanted? Could companies obtain data more reliable than what was emerging from traditional market research? Could a brain scan predict consumer behavior?

The field of neuromarketing — marrying science, technology and marketing — was off and running. Its goal, according to Yuliya Komarova, an assistant professor of marketing in Fordham's Schools of Business, is "to capture non-

conscious, automatic reactions before people 'correct' for them using rational processes."

Many corporations now use neuromarketing — some in their own laboratories — to understand the deeper drivers of our behavior. Neuromarketing consulting firms have sprouted worldwide. But corporations and scientists are continuing to discover both its capacities and its limitations.

For one thing, there doesn't appear to be a "buy button" hidden in each consumer's brain that can be identified and pressed. "We cannot use neuroscience to tell you what to



## NEUROMARKETING TOOLKIT

In addition to fMRI technology, other neuromarketing technologies include biometrics, which measure physiological changes, and steady-state topography, or SST, which uses a skull cap to record electrical changes along the scalp produced by current flows in the brain. While fMRI offers better spatial resolution, SST can record uninterrupted brain activity over a far longer period.

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buy,” said Melissa Hobley (FCLC ’01), chief marketing officer of the neuromarketing consultancy Buyology, Inc. Brain studies can, however, “go below the surface to understand why we buy what we buy.” And that insight can be critical to brands looking to avoid failure. It pays for companies to use neural data to understand customers better than customers understand themselves: “It’s proven that consumers can’t identify emotions that drive them to buy,” Hobley said.

### Giving consumers what they want

Hobley’s firm specializes in determining what those emotions are. Its weapon of choice? Timed-response online surveys, which force

respondents to answer questions before conscious processes kick in. One client, a leading women’s magazine, came to Buyology to find out why its newsstand sales were declining. Testing revealed that what people said during traditional market research — the desire to see robust headlines on the cover — was different from what actually attracted them to buy the publication: larger images and less clutter. The magazine tweaked its cover design based on this finding and saw a 10-percent boost in newsstand sales the following month.

Decision-making research and behavioral psychology have long been intertwined, but the rise of neuromarketing has raised some ethical questions. For example, is

neuromarketing being used in ways that benefit consumers in addition to the companies that employ it? Nathaniel C. Lupton, an assistant professor of management in the Fordham Schools of Business, views this as an area of concern.

“If firms have to use more intricate methods to squeeze more dollars out of a beleaguered marketplace, maybe the system isn’t working that well,” he said. He also questions the method’s reliability, suggesting that its scientific aura could give people a false sense of confidence in the results.

Komarova cautions against confusing correlation with causality: “Behavioral research gives us reason to believe that A causes B,

but in neuroscience we can only say if A changes, B changes.” We can observe, then, how a stimulus and the brain’s response may track in parallel, but are warned about concluding that the stimulus is the reason behind a person’s thought patterns or behavior.

## Is Big Brother watching?

How many companies are already neuromarketing to us? Can we tell? And if we can’t, does that point to an ethical problem? That’s open to debate. Certainly, manipulative or subliminal marketing has existed for ages, long before it became possible for us to peer inside people’s brains. But neuromarketing has compelled academics, ethicists and companies to consider anew whether campaigns informed by neuromarketing amount to “being marketed to without your consent,” as Lupton describes it.

Many researchers see positive outcomes from neuromarketing, though. Komarova’s research team, for example, has used fMRI data on consumers’ responses to deceptive advertising to redefine “deception” and to push for stronger consumer protection. The results were published in a July 2012 article in the *Journal of Marketing Research*.

Where will neuroscience take us in the world of market research — and research on marketing? Will it succeed in identifying what people really want and help companies to provide it? Will it create more ways to convince people they want things they don’t need? Or will it educate us about why we do what we do, making us more savvy consumers?

Time will tell.

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# What goes up will ... go up?

**BEHAVIORAL THEORY** has informed finance and economics for decades, but these days, it is more sharply focused than ever on understanding investor decision-making. “The 2008 financial crisis showed that standard models have not worked very well,” said Sris Chatterjee, professor of finance and associate dean of graduate business education at Fordham’s Schools of Business.

Behavioral finance begins with the premise that investors’ choices are often inconsistent with rational economic theory. Decision-making models grounded in human psychology offer better explanations. One is the human impulse to avert losses, and another is our need to justify transactions. Momentum, a phenomenon that defies traditional economics, is a third.

“The data of stock prices and returns show that stocks that have been doing well for three months will continue to do well for the next three months, and stocks that have not done well recently will tend not to do well in the next three to six months,” said Chatterjee, explaining the momentum phenomenon. So much for the caveat that “past performance does not predict future returns,” at least in the short term.

Human psychology can thus cause the price of a stock to deviate considerably from its intrinsic value — causing market performance to fly in the face of “rational” thinking. Just ask hedge fund investors who suffered huge losses by assuming the market would quickly correct overvaluations. “Behavioral theory tells us price dynamics are not that clear-cut,” said Chatterjee, who is teaching Behavioral Finance as part of the Gabelli School’s value investing specialization. Contrary to what hedge fund investors were betting on, he explained, “an overpriced stock may actually trade at even higher prices before going down to its fundamental value.”

– Limon

