There's a Sucker Born in Every Medial Prefrontal Cortex

With the help of brain scanners, scientists are refashioning themselves as ‘neuromarketers.' Can they finally make advertising a science?

By Clive Thompson

When he's not pondering the inner workings of the mind, Read Montague, a 43-year-old neuroscientist at Baylor College of Medicine, has been known to contemplate the other mysteries of life for instance, the Pepsi Challenge. In the series of TV commercials from the 70's and 80's that paired Coke against Pepsi in a blind taste test, Pepsi was usually the winner. So why, Montague asked himself not long ago, did Coke appeal so strongly to so many people if it didn't taste any better?

Over several months this past summer, Montague set to work looking for a scientifically convincing answer. He assembled a group of test subjects and, while monitoring their brain activity with an M.E.I. machine, recreated the Pepsi Challenge. His results confirmed those of the TV campaign: Pepsi tended to produce a stronger response than Coke in the brain's ventral putamen, a region thought to process feelings of reward. (Monkeys, for instance, exhibit activity in the ventral putamen when they receive food for completing a task.) Indeed, it's people who preferred Pepsi, the ventral putamen was five times as active when drinking Pepsi than that of Coke fans when drinking Coke.

In the real world, of course, taste is not everything. So Montague tried to gauge the appeal of Coke's image, its "brand influence," by repeating the experiment with a small variation: this time, he announced which of the sample tastes were Coke. The outcome was remarkable: almost all the subjects said they preferred Coke. What's more, the brain activity of the subjects was now different. There was also activity in the medial prefrontal cortex, an area of the brain that scientists say governs high-level cognitive powers. Apparently, the subjects were mediating in a more sophisticated way on the taste of Coke, allowing memories and other impressions of the drink — in a word, its brand — to shape their preference.

Pepsi, crucially, couldn't achieve the same effect. When Montague reversed the situation, announcing which tastes were of Pepsi, far fewer of the subjects said they preferred Pepsi. Montague was impressed: he had demonstrated, with a fair degree of neuroscientific precision, the special power of Coke's brand to override our taste buds.

Measuring brand influence might seem like an unusual activity for a neuroscientist, but Montague is just one of a growing breed of researchers who are applying the methods of the neuroscience lab to the questions of the advertising world. Some of these research-
Scientists working with Daimler Chrysler recently scanned the brains of potential customers.

"They were reminded of faces when they looked at the cars," one scientist says.

Other neuromarketers have demonstrated that we react to products in ways that may not be explained by traditional market research. Daimler Chrysler is just one of many companies working with Daimler Chrysler to scan brains of potential customers and look at pictures of cars and rated them for attractiveness. The scientists at BrightHouse are using what they call the "neuroscience of marketing" to help companies design products that are more appealing to potential buyers. They believe that by understanding how the brain responds to different stimuli, they can create products that will be more successful in the marketplace.

Still, many scientists are skeptical of neuromarketing. The technology, they argue, is still in its infancy and is not yet ready for prime time. But they are also quick to point out that neuromarketing has the potential to revolutionize the way we think about marketing.

"This is not a new science," one scientist said. "It's just a new application of an old technology."