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How Your Biometrics Can Make Super Bowl Ads Better

By Alexis Madrigal February 3, 2010 | 7:57 pm | Categories: Brains and Behavior



Brian Levine is going to tell me what commercials I like without asking my opinion. He doesn't have to ask. With the biometric toolkit developed by his company, he says that my own subconscious impulses will give it away. My heart rate, the sweatiness of my hands, and how I'm sitting in my seat will give me away.

While he set up an eye-tracker in Wired's offices, I changed into the vest and T-shirt he gave me. I attached two sticky electrodes attached to my breast bone and one beneath my rib cage on the left side of my body. The T-shirt had special holes cut into it, so that the wires could poke through from the electrodes, and plug into the vest. A small monitor was strapped onto my finger.

Levine plugged all the wires now running out from my body into a fanny pack with a little PDA in it, which transmitted wirelessly to a laptop. After a little tinkering, my body's basic data appeared on the screen in an endlessly scrolling set of scribbly lines.

Then I sat down in front of a computer screen and watched a series of video clips of cute little babies, *Dexter*, a video of myself (!), and random people dancing at a wedding. The whole time, I hoped Levine couldn't somehow read an undiagnosed pathology from the lines on his screen or figure out exactly the sort of advertising that would press my buy button — fears shared by neuroethicists.

The premise of Levine's company, Innerscope, is that running this data through algorithms can tell advertisers which commercials work and which don't. They can quantify your subconscious responses to advertisements without resorting to the messiness of human language.

"We really look at unconscious measures compared to conscious measures," said Innerscope co-founder Carl Marci, director of the Social Neuroscience for the Psychotherapy Research Program at Massachusetts General Hospital. "We know that 5 to 25 percent of brain processing is dedicated to conscious processing. The rest is unconscious, and about half of that is emotional processing. You're talking about a massive amount of brain processing."

Some companies in the new neuromarketing field have tried to peer directly into the brain looking for clues to how consumers work. They use fMRI and EEG brain scans and other measures of what's happening in your gray matter.

The field remains "in its infancy," though, according to a 2008 *Journal of Consumer Behavior* review. It's hard to know how well data captured inside an fMRI machine at a laboratory relates to how your brain would function at a sports bar, for example.

Innerscope relies on less-fancy techniques, ones that have been proven to correlate with emotional response, but that technological advances have made much easier to deploy on, say, 50 people watching a football game.

What they're looking for is the magnitude of increase in the biomeasurements and how synchronized a bunch of study participants are in experiencing that response.

So, while my test setup was relatively true to reality, it was just a demonstration. Normally, Innerscope uses only aggregate data from a group, not an individual, and the situation is much more tightly circumscribed. (My co-workers wandered in to peer at me in the funny vest and laugh at my fanny pack.)

It's the aggregated reactions that allows Innerscope to separate spikes in biometric response that are positive from those that are negative.

When people love an ad, their biomeasurements go up — and they sustain their attention to it. When people hate an ad, or find it disgusting, Innerscope has found that some of them stop watching or turn away.

What advertisers are after are the moments that command a coherent positive reaction from the group.

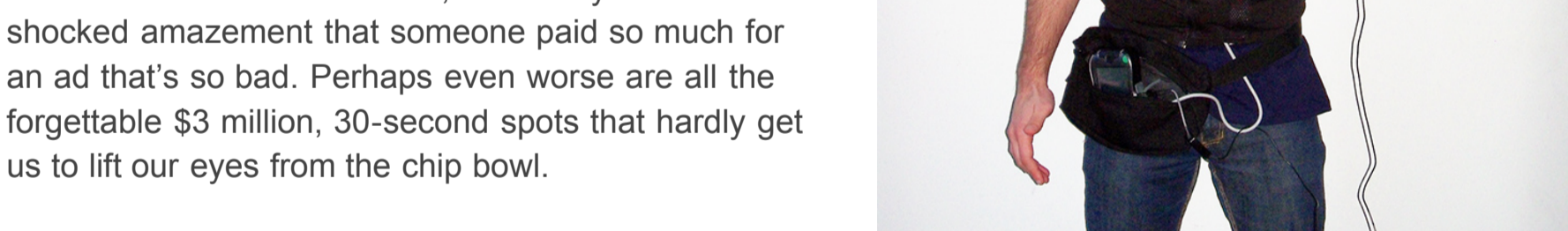
Quantifying How Much You Like GoDaddy Commercials

Innerscope is trying to solve a problem that's harder than it sounds: What makes a good commercial? The old saw attributed to department-store kingpin John Wanamaker sums up the problem: "I know I waste half the money I spend on advertising. The problem is, I don't know which half."

On the internet, with the rise of pay-per-click advertising and all sorts of other data-driven Google magic, the amount of wasted advertising is dropping. But on television and other media, things are murkier.

Big companies still need TV ads to build their brands. Coca-Cola isn't trying to get you to buy a Coke right now, it's building the company's brands so that the next 1,000 times you buy a soft drink, you choose its products. And it wants to do the same thing its search ad-purchasing counterparts are doing: cut down on their wasted advertising.

There is a multibillion-dollar industry dedicated to creating TV commercials and measuring how well they sit with people. Every single Cheetos or GoDaddy ad will be subjected to some kind of research. But still, we all know that moment during the Super Bowl when a terrible commercial comes on, and everyone stares in shocked amazement that someone paid so much for an ad that's so bad. Perhaps even worse are all the forgettable \$3 million, 30-second spots that hardly get us to lift our eyes from the chip bowl.



In the standard version of market research, people are simply asked how much they like an advertisement, which is remarkably problematic. People have to think about the ad, and the introduction of that conscious choice — to rate an ad with a meter or tell an interviewer something — changes how they might otherwise have responded.

In my test, Levine included one clip of a cute baby. I had a mild response to it, but if you asked me point blank, "Did you like the baby clip?" I probably would have given it a thumbs-up because, really, who wants to be seen as not liking cute little babies?

A 2005 review in *Brain Research Bulletin* found that many of the old research methods couldn't get the truth about what people liked just by asking them.

"Simply because people can express apparent preferences when asked does not mean these are accurate reflections of their thoughts and feelings or that they are the most relevant thoughts and feelings for the topic being investigated," wrote psychologist Fred Mast and Harvard Business School professor Gerald Zaltman.

Mining the literature for a better method, Marci and Levine found a broad base of support for the idea that measurements of the autonomic nervous system — the stuff you don't control consciously — correlates well with actual commercially relevant outcomes.

Innerscope isn't alone in this quest. A raft of companies are trying to find physical indicators to measure how you feel about something without asking. While fMRI imaging has garnered the most attention because of its heavy use in the brain-research world, other biometric techniques have adherents, too.

AnsverStream uses skin conductance and heart measures to do work for clients like ConAgra. Gallup & Robinson uses a technique developed at Johns Hopkins called facial electromyography to track the activity of the "smile" muscles.

Taken together, these companies represent a new wave in advertising research that aims to make it much more quantifiable — and better.

Auto-tuning Advertisements and the Rise of Consumer Zombies

Critics like neuroethicist Peter Reiner of the University of British Columbia say that there is a fine line between advertising that persuades, and using new knowledge of the brain to unfairly manipulate purchasing decisions. There are no laws in place to stop advertisers from creating ads that are precisely tuned to press your brain's behavioral buttons. Nor are there independent, meaningful ethical constraints on the research.

"It raises some very real issues about human autonomy and our ability to make a decision that is at least fair," Reiner said. "It's hard to know where that line accurately sits, but there is a line.... If they could cross the line, there's no reason to think that they wouldn't. Or even that we would have any way of saying that they couldn't cross the line or knowing if they did."

Cognitive neuroscientist Carl Senior and business researcher Nick Lee, both of Aston University in the United Kingdom, argue that fears about the evils of neuromarketing are overblown.

"Neuromarketing is here and, instead of creating legions of consumer zombies controlled by omnipotent corporations who use neuroimaging to create hypereffective advertising campaigns, we've have seen the beginnings of a more rigorous, and altogether more relevant, scientific approach to the study of marketing questions," they argued in a 2008 editorial in the *Journal of Consumer Research*.

For now, based on my experience, I'm not too worried. Mainly what I learned about myself is that I liked watching ... myself. By far, my greatest emotional response came during the video of me talking with Chester Santos, the U.S. Memory Champion in 2008. While that's embarrassing, it's probably not something that my girlfriend, mom, or Twitter followers couldn't have told you.

And Reiner's not worried about the current crop of technologies, either, but rather what may come down the line as the companies refine what they do.

"I'm really not worried about the [current] technology because none of them are able to cross the line: They are just slightly better mousetraps," Reiner said. "But there are a lot of clever people out there including this particular company [Innerscope]."

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