

Neuromarketing Careers

Neuromarketing may offer opportunities for Ph.D.s and MBAs able to close the intellectual gap between brain science and market research

Is there a future for you in neuromarketing? Don't count on it just yet, even if you trust the nascent science of using magnetic resonance imaging (MRI) scans to uncover, perhaps even influence, how consumers choose among sham-poops, tortilla chips, or hedge funds.

Neuromarketing made a national news splash in 2003, when Read Montague of Baylor College of Medicine in Houston, Texas, used functional MRI (fMRI) technology to explain a famous Coke-Pepsi conundrum: The two sodas are very similar in chemical composition and there's little difference in taste, yet Coke maintains its market dominance. Montague and colleagues found that, both in blind taste tests and in fMRI scans of a brain region associated with taste, subjects were evenly divided in their preference for the two brands. But when Montague's subjects knew they were drinking Coke, brain centers

linked to emotion and cognitive control were disproportionately stimulated—which suggested that the powerful cultural wallop of the Coke brand can override the taste buds.

Business was intrigued, and it looked at the time as if neuromarketing might become a job engine for Ph.D.s and MBAs able to close the intellectual gap between brain science and market research. Neuroeconomics, the parent discipline that explores links between the brain and economic behavior, seemed poised to make a triumphant leap from academe to Madison Avenue.



Jordan Knight

A family of psychologists

Four years later, it's still poised. Jordan Knight, a junior at Emory University in Atlanta, Georgia (and also, adventitiously, a champion pole-vaulter on the university's track team), says he's determined to pursue graduate study and a

career track in the neuromarketing field. He's a business major but hails from a family of psychologists. His background left him frustrated with his first organization-and-management class at Emory: "I found business professors were dumbfounded to have someone ask about psychology."

Knight responded by enrolling in neuroscience courses and working with Clinton D. Kilts, a psychopharmacologist at Emory School of Medicine's psychiatry department. Kilts, who specializes in addiction studies and bipolar disorder but also maintains an interest in neuromarketing, confirms Knight's experience. "I remember talking to people at the business school," he says, "and being astonished when they'd reach some predetermined conclusion about how decisions are made and then support it by back-filling it with data." Why not use fMRI scans as a way to support or disprove business hunches about how consumers behave? Knight's experience in scoping out graduate programs, however, has persuaded him that the idea hasn't quite taken off. "It's hard to find a program about business and neuroscience; they flat-out don't exist," he says. "The field doesn't really exist yet," Kilts agrees. "We're pasting it together."

PUBLIC OPINION RESEARCH: MEASURING HAPPINESS

The number of jobs in public opinion research is still small, but the field is expanding, and not just in election polling

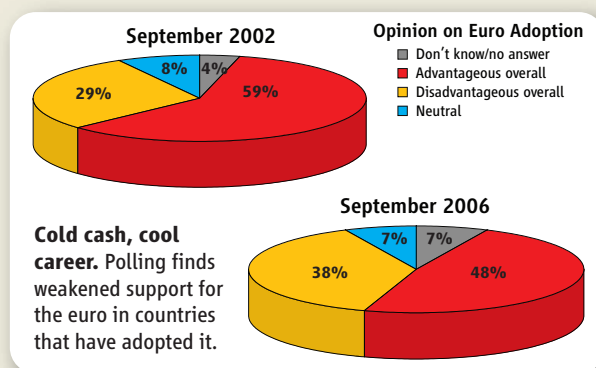
Polls closely tracked the race for the French presidency over the last few weeks, giving candidates and the public an early peek at the likely results. Meanwhile, things are just heating up in the United States, where the elections—and public opinion polling—can be expected to intensify in the next 18 months.

Public opinion research is clearly a thriving business. The number of jobs is still small, but the field is expanding—and not just in election polling. Governments increasingly sample the preferences of their citizens before making policy decisions, media outlets commission polls as part of their reporting, and research organizations map changes in attitudes on social questions.

Surveys tell us, for example, that Ireland embraces the euro, that Danes are happy with their lives, and that people in southern-European countries worry more about climate change than do those at higher latitudes. Researchers in this field attempt to understand cultural attitudes and preferences, then pass that information along to the people who need to hear it. "We give [the public] a voice, in a certain way," says Femke De Keulenaer, a researcher at Gallup Europe in Brussels, Belgium.

Both a career and a science

For behavioral scientists considering a career in public polling research, it helps to have a fascination with numbers. De Keulenaer earned a bachelor's degree in sociology from the University of Ghent in Belgium, and during her master's studies in quantitative analysis at the Catholic University of Brussels, she discovered how numbers "really can explain changes and trends in public opinion" within and across cultures, she says. But it wasn't until her Ph.D. work at the University of Antwerp that she realized that survey methodology "is both a career and a science." Soon after starting her doctoral program, she headed to the University of Nebraska, Lincoln, to train in survey methodology at the Gallup Research Center. The exchange helped her hook up with Gallup Europe, and she joined the organization last year.



Femke De Keulenaer

CREDITS (CLOCKWISE FROM TOP): JORDAN KNIGHT; FEMKE DE KEULENAER. GRAPHIC SOURCE: FLASH EUROBAROMETER NO. 193, NOV. 2006

Not that there hasn't been progress in research. A recent study at Stanford University in Palo Alto, California, led

by Brian Knutson and published in *Neuron*, monitored subjects' brain activity as they shopped online and bought a series of products worth up to \$80. Attraction to a product strongly correlated with activity in the nucleus accumbens, which seems to mediate the expectation of pleasure. Too-



Brian Knutson

high prices, on the other hand, stimulated the insula, which anticipates painful stimuli, and quieted the mesial prefrontal cortex, a phenomenon linked to disappointment when a hoped-for reward fails to materialize. MRI readings of these regions predicted whether the subject rejected or bought a product. This is the first time researchers have been able to

"This field attracts people who are uninterested in boundaries." —Scott Rick >>

connect brain activity with a real-life consumer decision.

Ambivalent about manipulating people

Scott Rick, a co-author of this study and a graduate student in the Social and Decision Sciences Department at Carnegie Mellon University in Pittsburgh, Pennsylvania, was an economics major as an undergraduate. But he revels in neuromarketing's interdisciplinary links between neurophysiology and economics. "This field attracts people who are uninterested in boundaries," Rick says. Yet there is one boundary Rick is not eager to cross: "I'm ambivalent about teaming up with companies to help manipulate people," he says. Instead, he would like an academic career at a business school, but he hasn't found such jobs plentiful. He is choosing at the moment between postdoc



offers at the University of Pennsylvania's Wharton School of Business and the California Institute of Technology, which has a cadre of graduate faculty members interested in the field.

George Loewenstein, Rick's adviser, concedes that so far there's really no clear career trajectory for an aspiring neuromarketer. He's not wholly unhappy about that. "If a

graduate student in neuroeconomics ended up in industry, that would be a disappointment," Loewenstein says. "The reality is that when you do marketing, you are a slave to economic interests, to people who want to promote certain goods and services."

That gulf in attitudes between academe and Madison Avenue, proverbially wide, still seems to be restraining neuromarketing from making its widely anticipated jump from the laboratory to the marketing department.

—MARK CALDWELL

Mark Caldwell is the author of several books and teaches at Fordham University.

At Gallup Europe, a branch of the 2000-employee Gallup Organization, De Keulenaer works on "Flash Eurobarometer" projects, a set of 15 to 20 surveys ordered each year by the European Commission to measure the attitudes of European citizens. Some polls investigate the issue du jour, such as a survey in February that highlighted opinions on higher education reform across the European Union. Others, such as the series investigating how locals are adapting to the euro, track trends in attitudes and behavior (see graphic on p. 1060).

Public opinion polls take the social temperature on everything from government programs to citizen well-being. "Happiness is a big issue for government," says Bobby Duffy, deputy managing director of the Social Research Institute at Ipsos MORI, which employs 900 researchers. "People have quite clear ideas about what they want." Duffy's work—and De Keulenaer's—helps policymakers know what those ideas are.

The work of public opinion pollsters requires grounding in basic social science research methods, such as how to ask good questions. Most Scots will answer in the affirmative if asked whether they favor Scottish independence from the United Kingdom, notes Robert Johns, a social researcher at the University of Strathclyde in Glasgow. But when given a range of options for governance, "support for independence plummets," he says. "In a way, both are valid. It's purely a function of question design."

As if quantifying feelings weren't hard enough, cultural quirks can skew results. De Keulenaer's latest project measures life satisfaction, a topic of interest to governments everywhere and a sociological hot spot. But it's hard to compare happiness across cultures, she explains, when some countries are intrinsically happier than others—or say they are, at least. Danes claim to be very happy with their lives, as do Americans—which is odd, she continues, considering how different the countries are. De Keulenaer's training helps her navigate these national tendencies and coax insightful answers out of the sea of optimism.

An evolving field

The demand for public opinion research is growing, says Oliver Krieg, a spokesperson for TNS Emnid, a German political and social research company with 12 researchers on staff. London-based MORI grew from about 100 researchers to 400 in the 10 years before it merged with Ipsos, another public opinion research company, in 2005.

But media and governments' appetite for survey information, coupled with the advent of instant communication, hasn't just caused the industry to grow. It has also sped the pace of the work. Whereas newspapers previously asked for results in a week, they now want data within hours. And deadlines, often, are absolute. "On Election Sunday, when you have a prognosis at 6 p.m., you can't publish at 6:15," says Heiko Gothe, project manager at Infratest dimap, a Berlin company with a dozen researchers monitoring voter attitudes in Germany. "It's very usual that we have a tough time schedule."

Gothe's training is in political science, but he chose public opinion research for its "possibility to combine scientific methods in a pragmatic field." One key to the job, he says, is writing: Because media clients will quote a report verbatim, researchers must present their findings in a way the public can easily understand—while staying meticulously accurate.

Although survey design employs long-established techniques, public opinion researchers also have to keep up with new approaches. "We're constantly reacting to new survey technologies to see if they have the potential as a research tool," says De Keulenaer. Improving research methods adds another tributary in her work stream of proposing and designing surveys, then analyzing and writing up the results.

By taking a scientific approach to cultural understanding, De Keulenaer and her colleagues help politicians and policymakers keep the big picture—and the attitudes of their constituents—in view.

—KRISTA ZALA

Krista Zala is a news intern in *Science's* U.K. office.