
Brain Scans Show What's Wrong With Conventional Marketing



By Hilke Plassmann , INSEAD Assistant Professor of Marketing, with Benjamin Kessler, Web Editor

Identifying what makes some people more responsive than others to marketing actions leads to more effective campaigns.

In their quest to maximise sales and market share, a lot of marketers still rely heavily on demographic segmentation, but what if all that costly effort is based on the wrong data? Hilke Plassmann, Assistant Professor of Marketing at INSEAD, argues that marketing efforts oriented around factors such as age, gender, and locale often miss the mark. For segmentation to matter, she suggests, it would have to take into account what motivates customer behaviour, what is in their minds. In her research she takes this idea quite literally by looking at brain structure, specifically whether an individual's grey matter volume in specific areas can predict his or her responsiveness to marketing actions.

Plassmann's [past work](#) used functional brain imaging technology to show that expectations created by marketing through pricing, branding, etc. affect how consumer experiences are encoded in the brain. For example, if you tell someone the cheap wine he or she is drinking comes from a \$90 bottle, the

tippler's taste centres in the brain are apt to "light up" so that he thinks it is actually tastier. In a new study, "[Individual Differences in Marketing Placebo Effects: Evidence from Brain Imaging and Behavioral Experiments](#)" (co-authored with Bernd Weber, Professor of Neuroscience at University Hospital Bonn), Plassmann digs deeper into this phenomenon, identifying the specific brain areas involved and theorising exactly how they influence each individual's receptivity to marketing.

Grey Matter Volume and Personality

"We know from previous work that the volume of grey matter (the cells that process most of the relevant information) can be linked to certain personality traits and related behaviours," Plassmann says. By scrutinising data sets from several of her brain imaging experiments on how marketing actions impact enjoyment during consumption, she was able to pinpoint three relevant areas of the brain. She then applied a new meta-analysis tool to link the role of these brain areas to personality characteristics involved in consumer behaviour. In two separate studies, she then tested consumers for responsiveness to pricing and branding as well as for those personality characteristics, and indeed found there were significant correlations.

Food and Aesthetic Consumption

In these experiments, in addition to using milkshakes and wines, Plassmann had participants respond to what they thought was an art show including works by famous painter Wassily Kandinsky as well as by Plassmann herself – in fact, all the art was by unfamiliar artists. She found the same patterns in responsiveness to "brand names" held true for both aesthetic and food consumption.

Marketing and the Mind

If you think only less discerning people are influenced by marketing, you will be surprised by at least one aspect of the study. In fact, Plassmann found that grey matter volume in a specific area of the pre-frontal cortex -- what can be linked to one's 'need for cognition' and analytical thinking -- seemed to make one more reliant on marketing cues, not less.

"If you have a high need for cognition, you're a person who needs something in your environment such as the brand or price tag to help you interpret your experiences," Plassmann explains. "Analytical people, people who derive

pleasure from deliberating, are more reliant on these marketing cues.”

Another personality trait that enhances susceptibility to marketing is one’s motivation to look for a pleasurable experience, the reward-seeking drive. This could be thought of as the tendency to be gratified by life’s little luxuries and to consume for pleasure rather than calorie intake, for example.

“The idea here is that the marketing signal, such as the high price tag, lets these customers anticipate a specifically indulgent consumption experience and their high sensitivity to such experiences amplifies their expectation of how pleasurable the expensive wine would taste,” Plassmann says.

Plassmann also notes the importance of a third trait, which makes consumers less responsive to marketing actions. The literature calls it “somatosensory processing”; essentially, it’s the ability to filter out the externals and go with your own body signals, your “gut”. People who can focus on what is happening in their body are less affected by marketing because their responses are deeply grounded in physical, bodily experience rather than messages from outside.

Nurture, Not Nature

The fact that these traits are linked to brain structure doesn’t make them DNA-dictated, Plassmann stresses. “We have what we call plasticity in the brain. I can train myself to use these brain areas and then the grey matter will become thicker. It’s very important to understand the grey matter volume is impacted by your actions and learning. You’re not born with this responsiveness,” she says.

Public Policy Interventions

This is good news for public policy institutions and consumer advocacy groups that aim to sow public scepticism about marketing campaigns for alcohol, tobacco, and other potentially harmful products. “You can obviously see it from a different perspective, for example targeted groups that are either vulnerable, such as kids, or people that have clear evidence that they have disadvantageous behaviours such as overspending or undersaving. This means that now that you can think about how to better design specific public policy interventions, for example PSAs (public service announcements),” Plassmann says.

Smarter Segmentation

Plassmann says these findings point the way for marketers to develop smarter approaches to customer segmentation. If individual brain structure plays a central role in determining individual differences in consumer behaviour, then assuming that people's responses to marketing can be easily categorised by demographics may not be an adequate strategy going forward.

Big Data affords opportunities for a more nuanced understanding of your customer base. "We should think about customers' attitudes and their needs and ask 'what are the interesting patterns in this new wealth of data?' This is where my results feed in, so now we know that personality traits linked to how sensitive consumers are to rewards, what they need for cognition, how much they can focus on their gut feeling, all matter for responsiveness to high price tags and luxury brands and can integrate this in market segmentation," Plassmann says.

More broadly, her research also shows how marketers can learn from cutting-edge technologies such as brain markers to gain relevant customer insights. "Insights and tools from neuroscience will fundamentally change how market research is done today and will shed light on how customers really make decisions", Plassmann says.



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