MedicalXpress

Study shows how the brain responds to deceptive advertising

February 28 2012

Several specific regions of our brains are activated in a two-part process when we are exposed to deceptive advertising, according to new research conducted by a North Carolina State University professor. The work opens the door to further research that could help us understand how brain injury and aging may affect our susceptibility to fraud or misleading marketing.

The study utilized functional magnetic resonance imaging (fMRI) to capture images of the brain while study participants were shown a series of print advertisements. The fMRI images allowed researchers to determine how consumers' brains respond to potentially deceptive advertising. "We did not instruct participants to evaluate the ads. We wanted to mimic the passive exposure to advertising that we all experience every day," says Dr. Stacy Wood, Langdon Distinguished Professor of Marketing at NC State and co-author of a paper describing the research.

Participants were exposed to three pre-tested advertisements that were deemed "highly believable," "moderately deceptive" or "highly deceptive." The ads were also pre-tested to ensure that they were for products that consumers found equally interesting and desirable – leaving the degree of deception as the only significant variable.

"We found that people have a two-stage process they go through when confronted with moderately or highly deceptive ads," Wood says.

During the first stage, researchers saw increased activity in the precuneus – a part of the brain associated with focusing conscious attention. "We found that the more deceptive an advertisement is, the more you are drawn to it," Wood says, "much as our attention is drawn to potential threats in our environment." Specifically, in this study, the more deceptive an ad was, the more precuneus activity was observed.

During the second stage, researchers saw more activity in the superior temporal sulcus (STS) and tempero-parietal junction (TPJ) regions of the brain. This suggests increased "theory-of-mind" (ToM) reasoning. ToM is a type of processing that allows us to distinguish our wants and needs from those of others, particularly as this applies to intuiting the intentions of other people. In this case, it appears to indicate that participants were trying to determine the truth behind the claims in the potentially deceptive advertisements.

"What's interesting here is that the moderately deceptive ads cause more activity during this second stage," Wood says. That may be because highly deceptive ads are screened out more quickly and discarded as not meriting further attention.

Overall, when looking at both stages of brain response, researchers found there was greater brain activation when participants were exposed to moderately deceptive ads. But, if moderately deceptive ads stimulate more brain activity, does that make us more susceptible to the sales pitch in ads that trigger just a pinch of skepticism?

Apparently not. In a follow-up, behavioral component of the study, researchers interfered with the ToM stage, making it more difficult for participants to determine the intention behind the ads. As a result, participants more frequently believed moderately deceptive advertising. This suggests that the second stage is an important step that helps protect consumers by allowing them to better discriminate and screen out

deceptive ads.

"Now that we've identified these stages of brain response, it may help future researchers identify underlying neural reasons why some populations are more prone to fall prey to deceptive ads," Wood says. "For example, if these regions of the brain are likely to be affected by aging, it may explain why older adults are more vulnerable to fraud or deceptive advertising. Or how might concussive brain injuries, such as those seen in some sports, affect our long-term discrimination in making good consumer choices?"

More information: The paper, "Suspicious Minds: An fMRI Investigation of How Consumers Perceive Deception in the Marketplace," was co-authored by Wood, Dr. Adam Craig of USF (lead researcher), Dr. Yuliya Loureiro of Fordham and Dr. Jennifer Vendemia of USC. The paper is published online in the *Journal of Marketing Research.*

Provided by North Carolina State University