Can brain scans of small focus groups predict the opinions and reactions of the broader public? 31 test subjects who were interested in quitting smoking were recruited in Los Angeles to evaluate three anti-smoking ad campaigns. As they watched the ads, their neural activity was measured.

Each campaign involved a mix of 30- and 15-second ads, for a total of 90 seconds of TV time; each ad ended by presenting the hotline 1-800-QUIT-NOW. The participants rated whether the ads were powerful, helpful, attention-grabbing and so on.

The campaigns were labeled A (a humorous effort that empathized with viewers about the difficulty of the task facing them), B (more serious but also empathetic), and C (light-hearted). The test subjects’ survey answers suggested the following rank-order of effectiveness, best to worst: B, A, C. Incidentally, that matched the opinions of public-advocacy-campaign experts who had been consulted when the ads were being selected for study.

However, among participants, levels of brain activity in a region associated with individual behavioral change — part of the medial prefrontal cortex — told a different story, and suggested a different ranking: C, B, A. “The brain data was pretty much diametrically opposed to what people were telling us,” says Matthew D. Lieberman, a professor of psychology at UCLA and a co-author of the study.

That made the researchers nervous, he says, because they didn’t expect such divergence in the two sources of data. But the rankings derived from brain activity, it transpired, better captured real-world performance when the ads’ effectiveness was quantified in two markets outside L.A. (Michigan and Louisiana).

Campaign C caused a 32-fold increase in calls to the anti-smoking hotline relative to the preceding and following month; campaign B produced an 11.5-fold increase; and campaign A a 2.8-fold rise.

Might future focus-group studies skip the interview portion and go straight to the fMRI results? If findings like this hold up, it’s a possibility.


P.S. An earlier study, using the same sample, showed that individuals who displayed the greatest amount of activity in the medial prefrontal cortex when they watched the three ad campaigns were the most likely, one month later, to have cut back on their smoking.