Cutting-edge research combines fMRI and biometric results to reveal key elements in Super Bowl ad success

The Time Warner Medialab, Innerscope Research and Temple University’s Center for Neural Decision Making (CNDM) at the Fox School of Business have announced the results of a comprehensive study of this year’s Super Bowl ads that reinforced the power of emotion and compelling storytelling.

The research teams used a combination of biometric and fMRI (functional magnetic resonance imaging) technologies to monitor viewers’ skin conductance, heart rates, respiration, motion and brain activation to get a more thorough understanding of how consumers reacted to different ads. The findings showed that brands that took audiences on an emotional journey – including Cheerios, Chevrolet, Budweiser and Hyundai – delivered the highest moments of engagement.

“It’s exciting to have the research capabilities to literally go inside the brain of the consumer to find out what’s driving engagement,” said Kristen O’Hara, senior vice president and chief marketing officer, Time Warner Global Media Group. “These findings deepen our understanding of consumer behavior, and we will continue to push the boundaries of ad research to ensure that we’re delivering the most effective content to our consumers and our business partners.”

This year’s top-performing ads took viewers on journeys featuring relatable characters in stories that slowly developed. General Mills’ Cheerios told an intimate story of a growing family featuring a daughter who bargains with her father for a new puppy; Hyundai’s “Sixth Sense” commercial took viewers through the relationship between a father and son; Budweiser told a heartwarming story of determination through a puppy trying to meet up with a Clydesdale horse; and Toyota’s “Joyride” ad brought viewers along for a fun ride with the Muppets. The fMRI results validated the initial biometric study’s findings of increased engagement among the top 10 performers, which were announced last week.

“Traditional measures capture aspects of cognition, but advertisers need to know more than what people consciously think about ads,” Innerscope Research Co-founder and Chief Science Officer Dr. Carl Marci said. “In order to go deeper into areas of the brain, you need tools like fMRI that can help you understand the mechanisms that allow ads to break through the clutter.”

The biometrics study was conducted live during the Super Bowl while Innerscope monitored 80 participants to capture fluctuations in heart rate, skin conductance, and breathing patterns at the company’s Media Lab and facilities in Boston and the Time Warner Medialab in New York.
“The biggest challenge here was to conduct a study of academic rigor within an industry timeframe,” said Khoi Vo, senior research associate at CNDM and lead researcher on the fMRI study.

Ads that performed well on biometrics also elicited increased brain activity, relative to ads that performed poorly, in key areas of interest for marketers. These included brain regions associated with emotional relevance (amygdala), memory formation (hippocampus) and executive function (lateral prefrontal cortex).

Among top-performers, ads like those from Cheerios and Volkswagen elicit emotional responses as well as activating two additional regions of the brain commonly associated with valuation and reward – the ventromedial prefrontal cortex and ventral striatum. These areas are consistent with prior work conducted by Temple CNDM in the area of advertising effectiveness research.

“It is exciting to see some consistency across studies, as well as convergence across methodologies – in this case biometrics and fMRI,” said Dr. Angelika Dimoka, director of CNDM. “The Center has been at the forefront of advancing research in consumer neuroscience through its emphasis on strong theoretical frameworks, multi-methodological approaches and convergent validity. Though consumer neuroscience has been criticized in the past for lacking in these aspects, this study moves the needle on all fronts and represents a significant advancement in the field.”