

Pioneering Neuroscience Study Reveals Impact of Digital Out-of-Home Advertising

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Large-format digital outdoor advertising drives strong emotional responses that are ultimately linked to increased likelihood to buy, according to a new neuroscience study.

Findings from the pioneering study, “The Science Behind The Art of Outdoor,” were released by [Neuro-Insight](#) and Ocean Outdoor at an industry seminar at The Gherkin in London.

The research for the first time uses neuroscience to quantify the impact of large-format outdoor advertising in an urban setting, providing new evidence about how these premium sites elicit key brain responses that are drivers of purchase behavior.

Specialist neuro-research company Neuro-Insight conducted research looking at brain response to outdoor advertising, focusing in particular on the impact of premium outdoor sites, to discover the impact they have on people and identify what sort of sites elicit the most powerful responses.

The research measured brain response to 24 outdoor sites around West London, comprising 11 Ocean sites and 13 sites from other outdoor media owners. To measure responses, 115 people were fitted with headsets that captured second by second brain activity as they watched a filmed journey featuring the outdoor sites, which they had seen in real life in an escorted bus journey that preceded the study. Around 1.8 billion data points were collected and analyzed during the course of the study.

According to Neuro-Insight, Neuro-research was chosen as the way of exploring impact because it provides a means of looking at people’s emotional, sub-conscious responses, which are difficult to assess through traditional, questions-based research.

“In the last 20 years, there have been huge advances in the understanding of basic brain function; we now know that the brain is highly specialized, and by plotting which parts of the brain are active in response to a given piece of communication, we can get insight into what people are thinking and feeling about that communication,” said Heather Andrew, a founder of Neuro-Insight U.K., the U.K. office of the Melbourne, Australia-based market research firm.

“Through measuring the brain response of participants on a second by second basis, it became clear that unique large format and spectacular poster sites were eliciting a much stronger emotional response than standard sites. This emotional response tells the brain something important is happening, and primes the brain to remember it, resulting in higher levels of memory encoding.

“And memory encoding – what we put into memory – is hugely important, because it correlates with decision-making and purchase intent. This pattern of response – high emotional intensity followed by strong memory encoding – is what characterizes and demonstrates the effectiveness of these premium outdoor sites.”

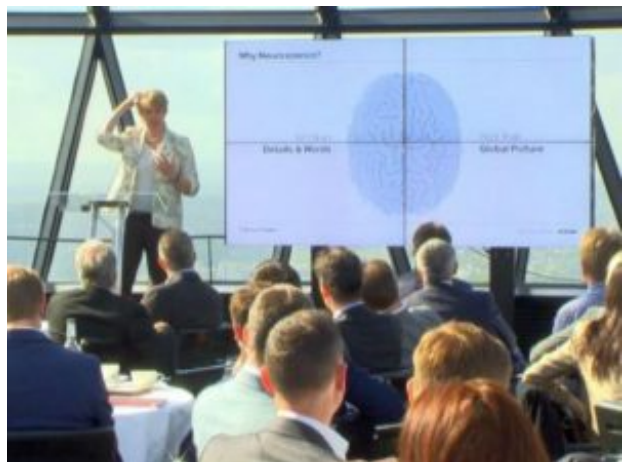
“Instinctively we have always known that premium digital outdoor advertising captures attention,” said Tim Bleakley, CEO of [Ocean Outdoor](#). “Now we can replace instinct with research that scientifically quantifies brain response and provides evidence of its positive long-term impact on customer behavior.

“As Ocean grows its portfolio, it is important to also grow our understanding of what each site brings to the outdoor advertising mix. The evidence presented by this study enables us to assist in creating great locations and proves the priming effect of digital outdoor as a core part of any campaign.”

The study has four critical implications for the outdoor industry, impacting not just media owners but also advertisers, agencies, real estate and property owners, architects and city planners:

1. Great outdoor is a win for everyone – Evidence from the study shows that people react better to environments featuring great poster sites. The best sites elicit raised and positive responses, reflecting their size, position

and the sight lines leading up to them. This evidence will help outdoor media owners to work with real estate and property owners to create urban landscapes that provide both effective advertising and a better experience for the people who see it.



2. Digital sites trump static ones – Across all the measures in the study, digital sites outperformed static ones, and this was even more evident when the digital sites involved an element of movement. Our brains are primed to respond to changes in our immediate environment, and moving screens attract much stronger responses than static images, clearly demonstrating their greater effectiveness.
3. Energize your creative – There was clear evidence from the study that big, iconic poster sites elicit stronger responses across the board than standard ones. This wasn't down to creative executions; the results held true when we matched campaigns across the sites. Effectively, great sites make the creative work much harder.
4. The most iconic sites had a powerful priming effect on other sites – As part of the study, researchers rotated the order in which people saw the various poster sites to see whether any sites had a positive “priming” effect, that is, did they make such a strong impact that people responded better when they subsequently saw a similar advert on a different site? The results showed that premium, iconic sites did indeed have a strong and positive priming effect: Seeing a poster on one of these sites first meant relatively higher responses to subsequent viewings on other sites.

Technology

Neuro-Insight uses a unique brain-imaging technology called Steady State Topography (SST). Like the more familiar EEG, SST measures brain electrical activity but is more robust and sensitive than EEG. Equipment is easy to fit and comfortable to wear and research can be carried out in a normal room, with no need for a laboratory or hospital setting. SST was pioneered originally in academic research, and all the measures used by the company in market research are based on scientific data that has been extensively investigated and peer-reviewed. It's a quantitative methodology.

Methodology

In the out-of-home media study, 115 people took part and around 1.8 billion data points were collected and analyzed. People were pre-recruited and convened in groups of eight at a time. They were not told the specific purpose of the study, only that the study involved research into urban environments.

Prior to brain readings taking place, respondents were taken on a bus ride around West London, the route taking in a number of different poster sites so that their real life impact was top of mind. On their return to the research location, the respondents were then shown programming containing filmed journeys, which featured a range of poster sites from the journey they had just experienced.

Brain responses were recorded and data analyzed to allow researchers to focus and report on four key measures. These were visual attention, desirability, emotional intensity and memory encoding, in other words, what's being stored into memory.

Key findings

- There was a clear hierarchy of response, with unique and premium sites commanding higher responses than standard sites across all key brain measures.
 - Position and length of time in the visual field impacts on the number of peaks of memory encoding. The longer a site is in view, the stronger the impact it is likely to have.
 - These observations were independent of creative factors and held true when creative treatments were matched.
 - Premium sites had a “priming” effect on other sites; seeing a premium site first had a relative strengthening effect on a subsequent viewing of a standard site.
 - The stronger impact of the premium sites was driven primarily by right brain responses – reflecting their overall, emotional impact – establishing the “Wow” factor.
 - Right brain responses were particularly strong amongst AB viewers; indicating that they are especially affected by the visual impact and emotional “Wow” factor of premium outdoor sites.
- Source: *Neuro-Insight & Ocean Outdoor*

