Commercial Validation

THINKBOX PAYBACK STUDY

LINKING BRAIN RESPONSE TO MARKET PERFORMANCE OF TV ADVERTISING by Neuro-Insight

October 2011

Executive Summary

A study released recently in the UK by Thinkbox, Neuro-Insight, and Ebiquity has shown some of the strongest evidence to date tying neuromarketing metrics to marketplace performance and advertiser return on investment.

Ever since a 2004 fMRI showed that brand identification had a major impact on brain activity and reported preference in consumers tasting Coca-Cola and Pepsi under blind and non-blind conditions, neuromarketing has been an inescapable part of the market research conversation. By measuring consumer response passively, neurological techniques have promised to provide more objective and predictive results than conventional market research. Yet many decision-makers have rightfully wondered if the various technologies employed by neuromarketers—ranging from facial electromyography to hospital-grade fMRI machines—are able to produce results with an actual bearing on market performance.

The 2011 Payback 3 study commissioned by UK television researcher Thinkbox sought to correlate creative effectiveness—as measured by neuromarketing consultancy Neuro-Insight—with market performance as measured by econometrics researcher Ebiquity. Working from their database of 3,000 campaigns, Ebiquity identified eighteen advertisements for testing, assembled in nine pairs. In order to isolate creative effectiveness, each pair of advertisements featured similar products and equivalent media investments—but one of each pair was known to have had a major impact on market performance and one a weak impact.

In the second phase of the study, Neuro-Insight used its patented SST technology to analyze each pair of advertisements on a range of metrics associated with creative effectiveness. Although previous work had shown correlation in individual cases between market performance and Neuro-Insight`s memory encoding metric, this study marked the first broad comparative study in which neurologically measured creative effectiveness was measured against market performance in a number of consumer fields.

The resulting analysis showed both a strong relationship between market performance and creative effectiveness and a strong relationship between Neuro-Insight`s neurological metrics and market performance. In 8 of 9 pairs, the more effective market advertisement was also the more effective neurological advertisement. Especially among respondents in each category`s target market, the more successful advertisements were associated with higher levels of memory encoding, particularly at key branding moments. In addition, higher performing advertisements tended to show much higher levels of right brain activity (associated with emotional response). Fascinatingly, the largest differences

in neurological measurements appeared in the most significant consumer categories—automobiles, home renovations, and household electronics.

As more and more firms consider neuromarketing as an important component of their market-research strategy, neuromarketers are increasingly being asked to answer the same questions as any other market research provider—questions about the ultimate economic value of a sometimes-expensive product. Although Neuro-Insight`s internal results have been promising on this front for quite some time, the Payback 3 project marks the first time neuromarketing has been able to answer the ROI question robustly, with a broad, independent study: successful market advertisements, broadly speaking, are those that show strong responses on SST metrics.

About Ebiquity

A worldwide leader in marketing analytics and econometric services, Ebiquity helps media and marketing clients improve market performance with a wide portfolio of data-driven solutions. Ebiquity`s worldwide offices create a global network offering econometric analysis, database services, and custom media technology services to over 1,000 clients worldwide.

About Thinkbox

At the forefront of understanding audience-media response, Thinkbox is a marketing collaborative sponsored by shareholders representing over 90 percent of the UK commercial TV market. By working with media and marketing partners worldwide, Thinkbox helps advertisers make the most of their TV campaigns by understanding the unique advantages and opportunities offered by TV advertising. Thinkbox has been responsible for a number of major studies exploring how and why TV advertising works, and shares this expertise in numerous events, publications, and media channels.

About Neuro-Insight

Neuro-Insight is an international neuromarketing consultancy specializing in bringing scientific rigor to marketing analysis. Neuro-Insight is proud to be the only neuromarketing provider to have verified its methodologies with extensive peer-reviewed publications. These publications have detailed, in addition to the scientific validity of Neuro-Insight`s metrics, robust correlations between these metrics and consumer behavior. This result—a rigorous collaboration between independent experts, matching neuromarketing data with actual marketplace performance—continues in that tradition.

In addition to providing quantitative analysis of marketing and media content, Neuro-Insight`s long experience in analyzing neurological responses has allowed the development of a broad spectrum of brand-maximizing best practices used to make improvements to client content. Notable among these best practices—and relevant to the forthcoming analysis of individual advertisements—are the importance of narrative, the importance of maximizing end branding, and the positive effect of including certain memorable 'iconic triggers` for coordination across campaigns.

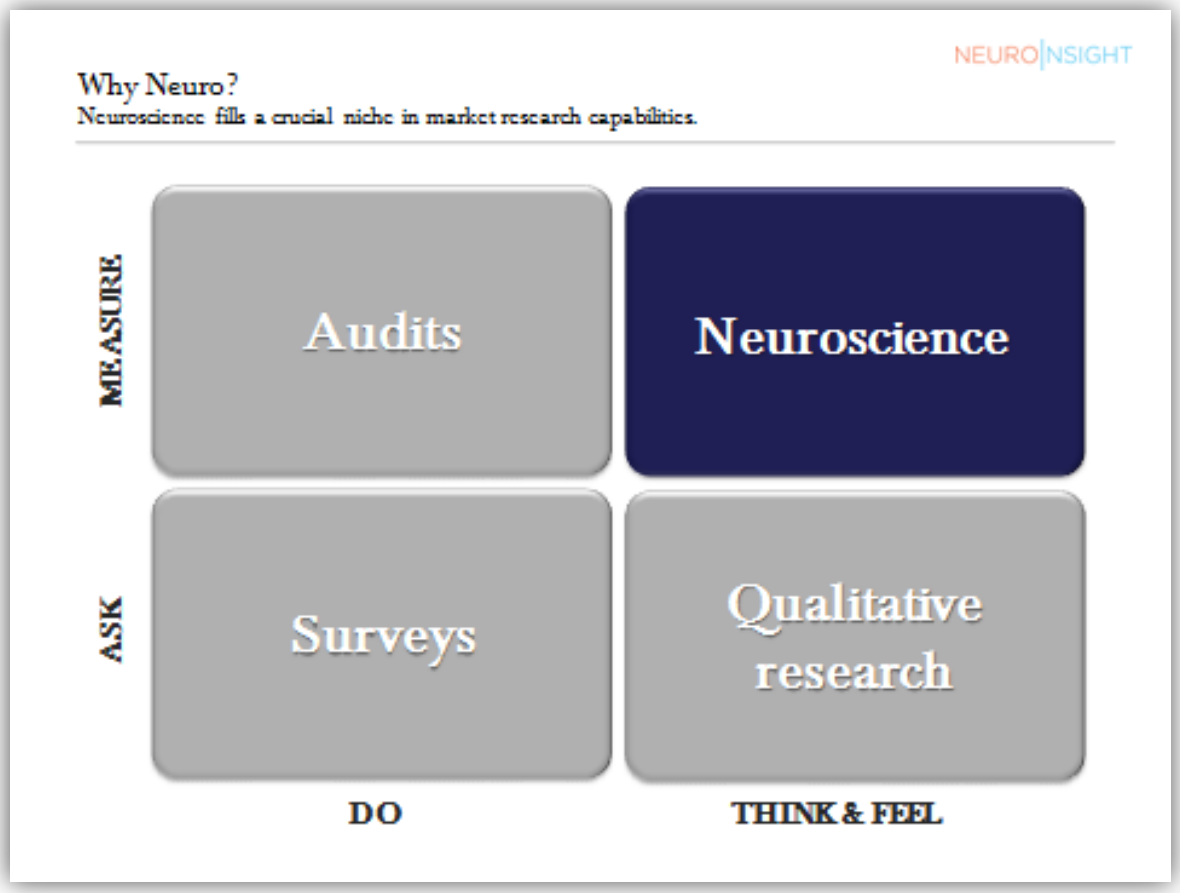
Background and Objectives

Thinkbox, in their third payback study, worked with econometric modelling specialists Ebiquity to investigate the return on investment advertisers could expect from television and other media. To add a further dimension to this work, Thinkbox commissioned a specialist neuro-research company, Neuro-Insight, to examine the role played by creative effectiveness in the financial success or otherwise of a cross-section of television commercials. Neuro-research was chosen as a means of analysing emotional, sub-conscious responses difficult to assess through traditional, question-based research.

The advertisements researched were chosen by Thinkbox and Ebiquity, comprising eighteen ads from nine market categories. In each category, one advertisement was known to have been highly successful in terms of its financial performance, and one was known to have been relatively unsuccessful. Neuroscience was used to investigate how brain response—and thus creative effectiveness—differed between successful and less successful ads, in order to understand the relationship between creative effectiveness and market performance.

While the link between creative effectiveness and business performance has been debated in advertising research for a very long time, only recently has understanding derived from neuro-marketing begun to inform this debate. In the last two decades, new imaging techniques like fMRI have enabled neuroscientists to show that the brain is extremely specialized—different parts of the brain do very specific things. Moreover, it has been repeatedly shown that subconscious brain responses—of the kind impossible to articulate on surveys or in focus groups—have a significant impact on subsequent decision-making and behaviour.

By measuring brain activity as a respondent interacts with a given message, neuromarketers are able to identify the cognitive correlates of emotional response, memory encoding, and—ultimately—likely subsequent behaviour. This cannot be overemphasized: while traditional market research methodology is excellent at measuring conscious, explicit responses, neuromarketing research offers an unparalleled ability to delve into the subconscious responses marketers have always appealed to but rarely been able to measure.



It was in this context that Thinkbox chose neuroscience to investigate creative effectiveness during the Payback study.

Technology used for the study

To assess the creative effectiveness of the advertisements, Thinkbox chose to use Neuro-Insight`s patented Steady State Topography (SST) technology. Like the more common EEG, SST measures brain activity—but with proprietary modifications that greatly improve the signal-to-noise ratio. SST, unlike EEG, is able to give stable data from just a single reading—in a naturalistic in-program viewing environment—per respondent, and can therefore give effective analysis of how an advertisement`s effectiveness changes with each viewing.

SST is exclusively used in neuromarketing by Neuro-Insight. Founder and CEO Richard Silberstein, who pioneered SST`s clinical use before adapting it to commercial operations, has verified SST`s efficacy in over 180 academic publications. Unlike other neuromarketing firms, all Neuro-Insight market research measures are based on extensively investigated, peer-reviewed scientific findings.

As a scientific process, SST delivers quantitative results. Readings are taken 500 times per second from 20 felt sensors positioned in headsets worn by respondents. The Payback 3 study, featuring 120 respondents and a half-hour long content reel, collected around 1.8 billion data points.

The Equipment

Fieldwork in progress

Methodology

Recruitment and sample

This study recruited a gender-balanced sample of 120 respondents between 18 – 65, with an age span and social class mix broadly reflective of the population as a whole. The sample was evenly distributed between heavy and light television watchers. Neuro-Insight uses a minimum sample size of 50 respondents in each cell to ensure statistical significance; this sample was enlarged here to enable relevant breakouts of target markets for each advertisement.

Fieldwork took place in Southeast London, from 4th – 6th October 2011.

Running the recording sessions

Respondents were convened in groups of eight. On arrival, after a brief introduction to the details of the session and equipment, each respondent was fitted with a specialised SST headset. Respondents were then shown a thirty minute programme containing three ad breaks. In order to negate sequencing effects, ad breaks were rotated within the program, and ad order within the breaks.

While the content was presented, readings were taken many times per second from 20 felt sensors positioned in the headsets. Each individual`s responses to a standard series of images used in all Neuro-Insight research were analysed as a benchmark to adjust for differing levels of overall brain response in each participant.

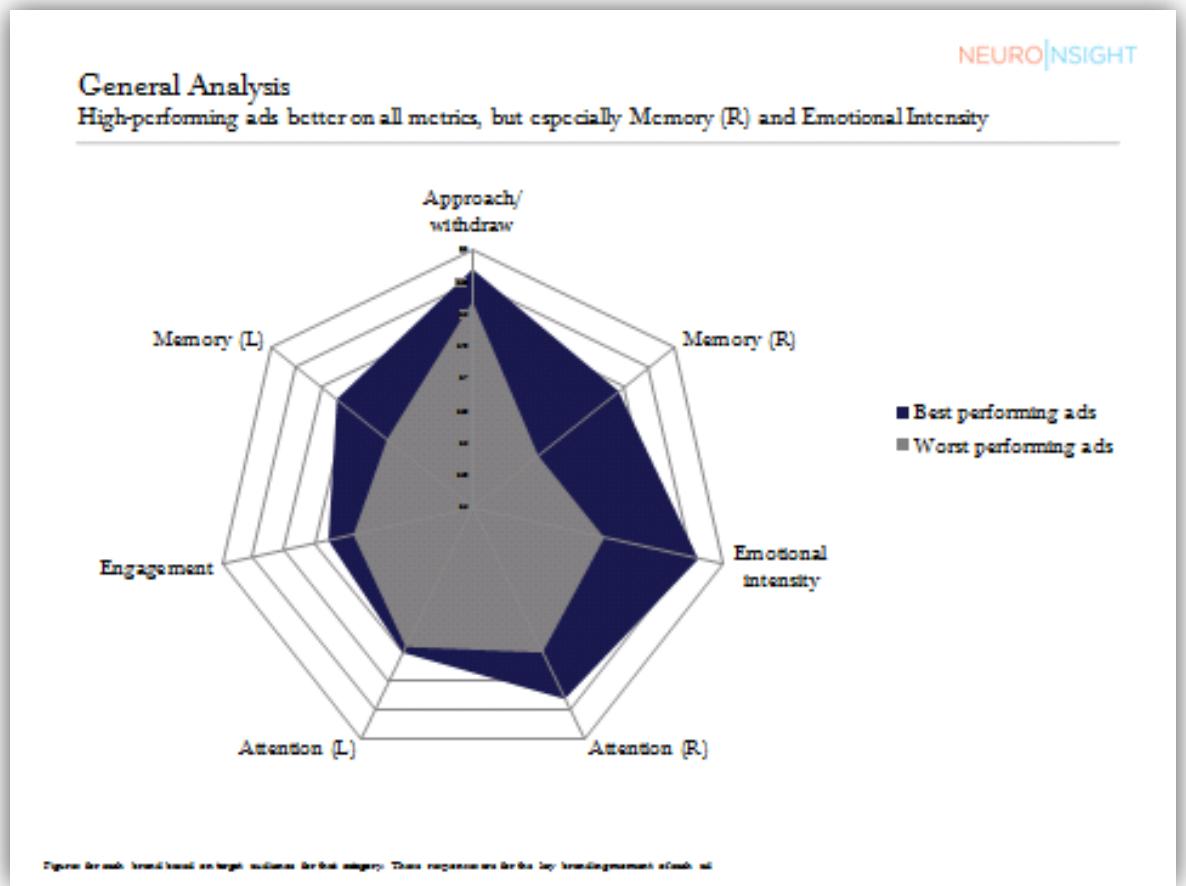
In order to maintain a normal viewing state and not unnecessarily cue participants to the test material, participants were not told at any stage specifically what material was being tested or who had commissioned it - they were simply told that the study was researching responses to television viewing.

At the end of the session, respondents completed a brief questionnaire covering demographics, TV viewing habits, product or category usage, and other basic information. Based on these responses, Neuro-Insight analysts were able to split the sample into sub-groups for subsequent analysis.

Overview of the Payback Study ads

The eighteen advertisements in the Thinkbox study were first subjected to a broad analysis. This broad analysis compared neural levels between the effective and ineffective ads. For each advertisement, an effort was made to perform the analysis specifically on members of that product`s target market. Credit card advertisements, for example, were analysed among people who claimed to be sole financial decision-makers for their households. Dairy products were analysed among dairy consumers.

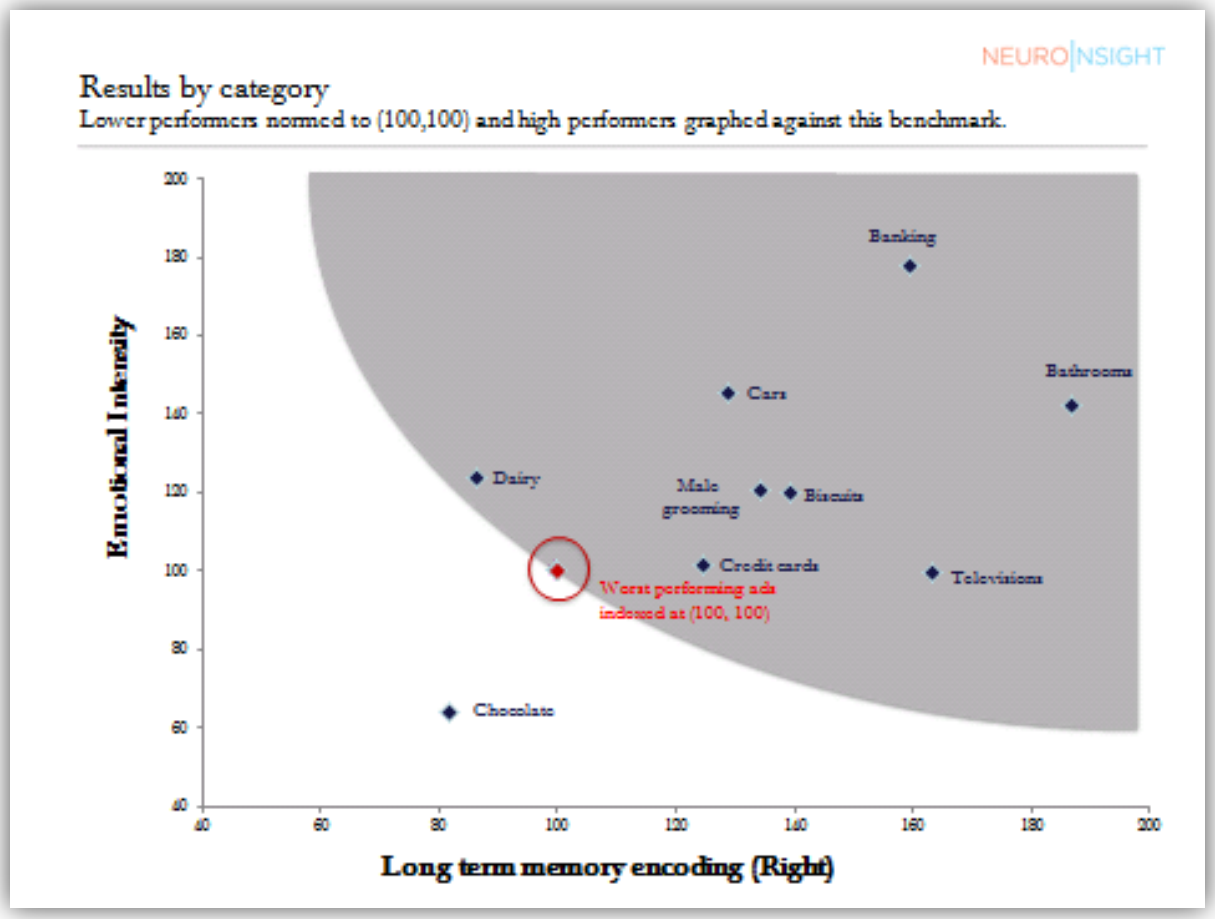
These average brain responses were plotted on a radar chart, with each radial representing one of Neuro-Insight`s key brain metrics. Successful ads elicited stronger brain responses across all measures, particularly right brain memory encoding and emotional intensity. This higher activity in brain regions associated with holistic and emotional responses supports the view that successful advertising tends to succeed emotionally. Interestingly, attention to detail was shown to be the least predictive of advertising success.



A deeper analysis was then attempted, plotting the relative impact of the successful and less successful ads (again among the target audience) at the key branding moment. This analysis used two metrics—emotional intensity and right-brain long-term memory encoding[1]. Right-brain memory encoding was used for this study because, while left-brain memory encoding is a crucial metric of response to new advertisements, these historic (and therefore familiar) advertisements would be best measured in the less priming-sensitive right brain.

Successful ads in each category were then indexed against the less successful ones—the latter were plotted at (100,100) on the graph, and each category`s successful ads charted relative to those. The grey shaded area (figure below) shows the broad region within which excellent ads were found: very high emotional intensity and at least moderate memory encoding; very high memory encoding and at least moderate emotional intensity; or high levels of both.

[1] As these responses are measured in very different regions of the brain, there is very little risk of an 'echo` in which the two metrics both measure the same response.



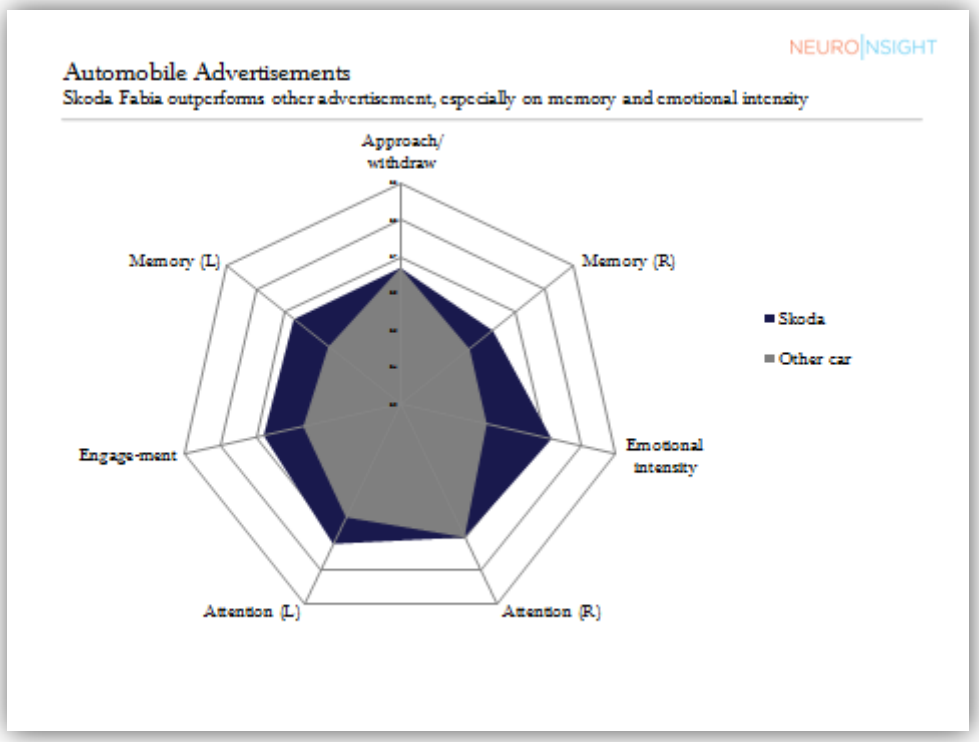
In every category except one the more successful ads appeared where expected. Intriguingly, the greatest disparities between advertisements occurred in the most major decision categories—banking, bathrooms, and televisions. This matches, perhaps, with the intuitive notion that such decisions would require stronger persuasion.

Still, this top-line analysis can only tell part of the story. Numbers alone, while broadly useful for identifying trends, can do little to predict the overall success of an advertisement—creative and executional elements play a major role. For this reason, Neuro-Insight examined each individual ad in more detail, hoping to better understand their success. The following section analyses successful ads in two different categories—an iconic ad for the Skoda Fabia and a less well-known but still successful ad for Cadbury`s Digestives.

Skoda Fabia

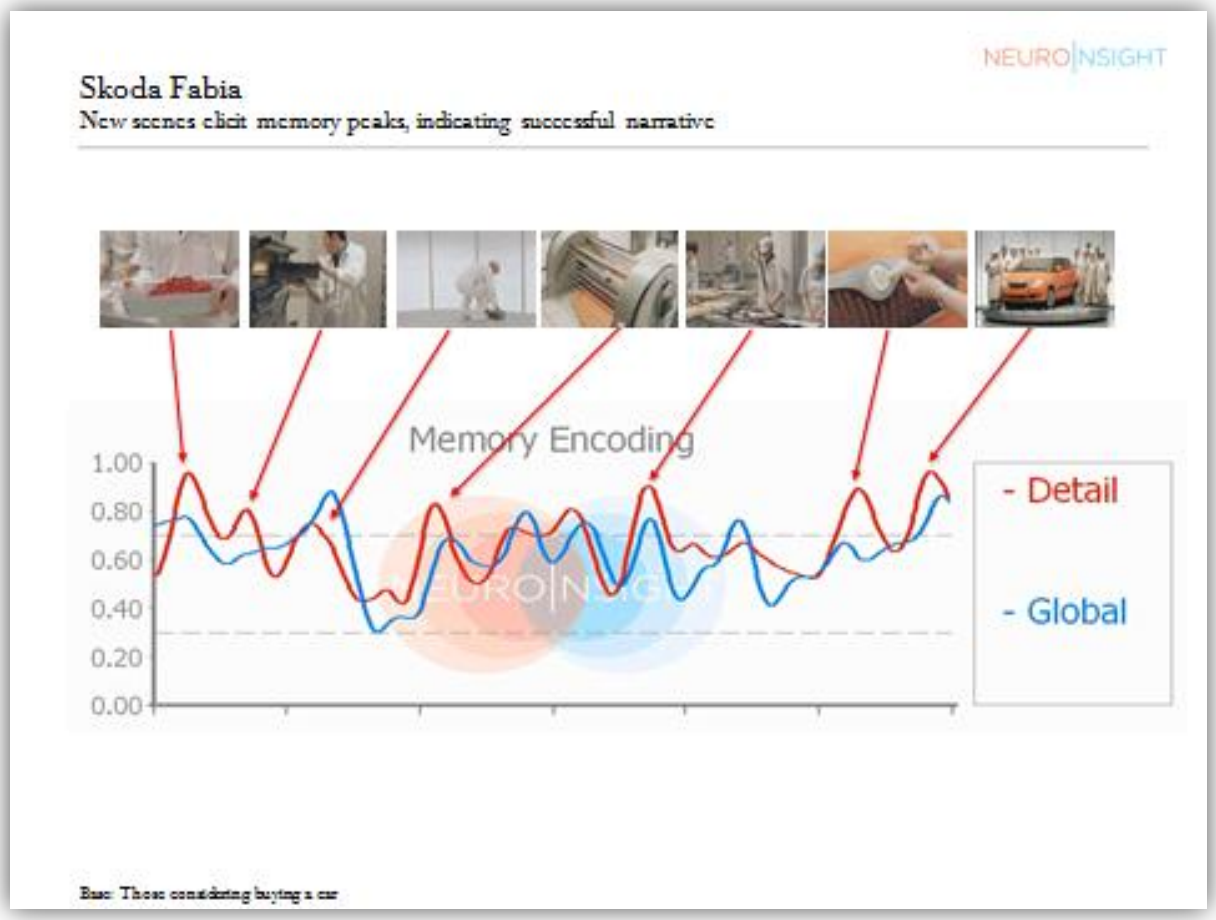
Ebiquity identified the Skoda Fabia "Cake" commercial, in which a team of chefs build a car from cake ingredients, as a remarkably effective automobile advertisement The 60 second version of the commercial was analysed among viewers considering buying a car in the next twelve months.

The initial analysis compared the Skoda ad to the other, less successful, car ad in the study, averaging all brain measures across the course of the ad.

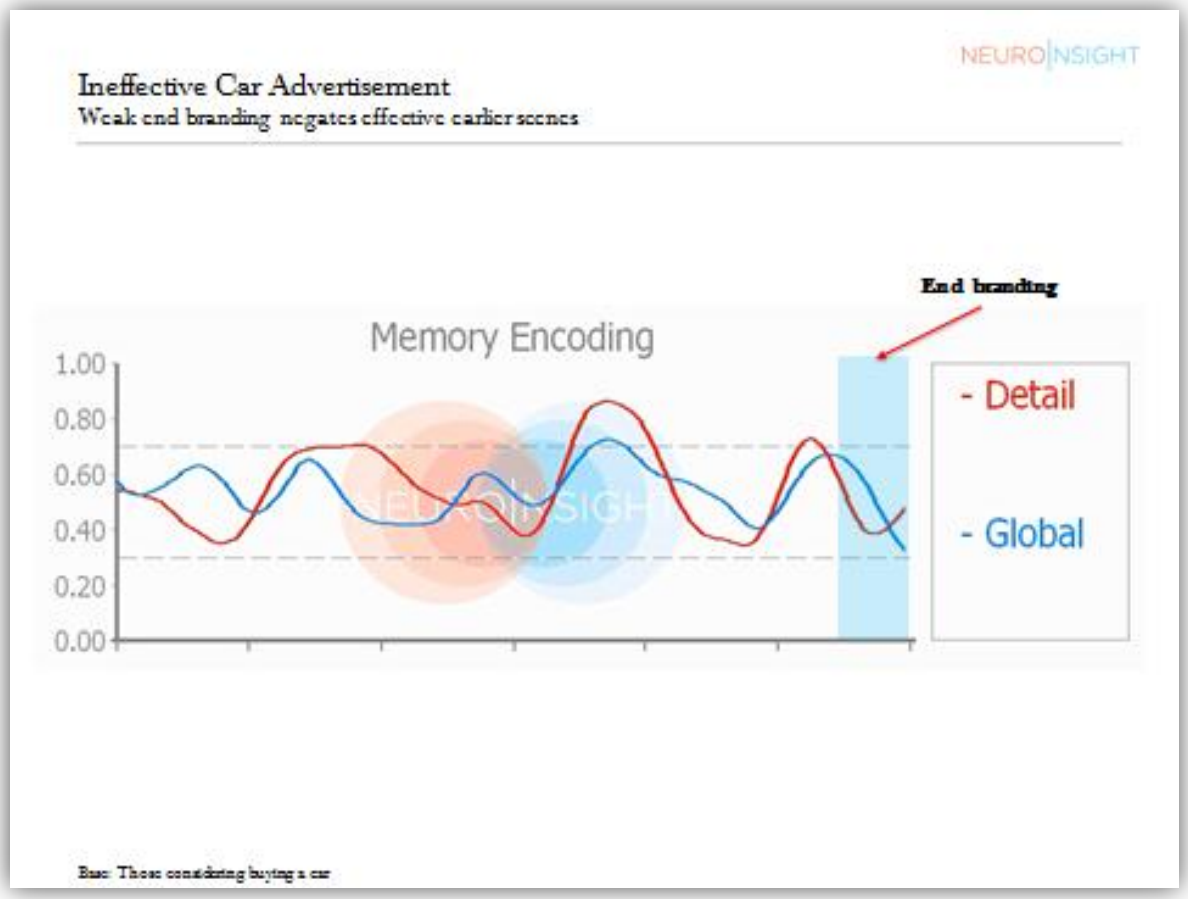


Across almost all measures the Skoda advertisement showed superior performance. While both ads show similar levels of approach/withdrawal and attention, the Skoda advertisement is much stronger in terms of memory encoding and emotional response. During the crucial end branding scene, there was an even more pronounced difference between the brands, with the Skoda ad eliciting much higher levels of memory encoding.

Interestingly, a time-series analysis of memory encoding through the ad shows that the Skoda ad creates numerous peaks in encoding as new scenes appear. This suggests that viewers are actively following the narrative, perhaps contributing to the very high peaks of encoding at the end when the brand is revealed. The emotional response to the Skoda ad (not shown) is also strong, mostly positive and peaks in response to the finished car at the end of the ad.



The less effective advertisement, in contrast, did not elicit strong memory response at final branding. Despite some high memory encoding early in the ad, Neuro-Insight`s research indicates brand linkage achieved by the ad is likely to be relatively weak.



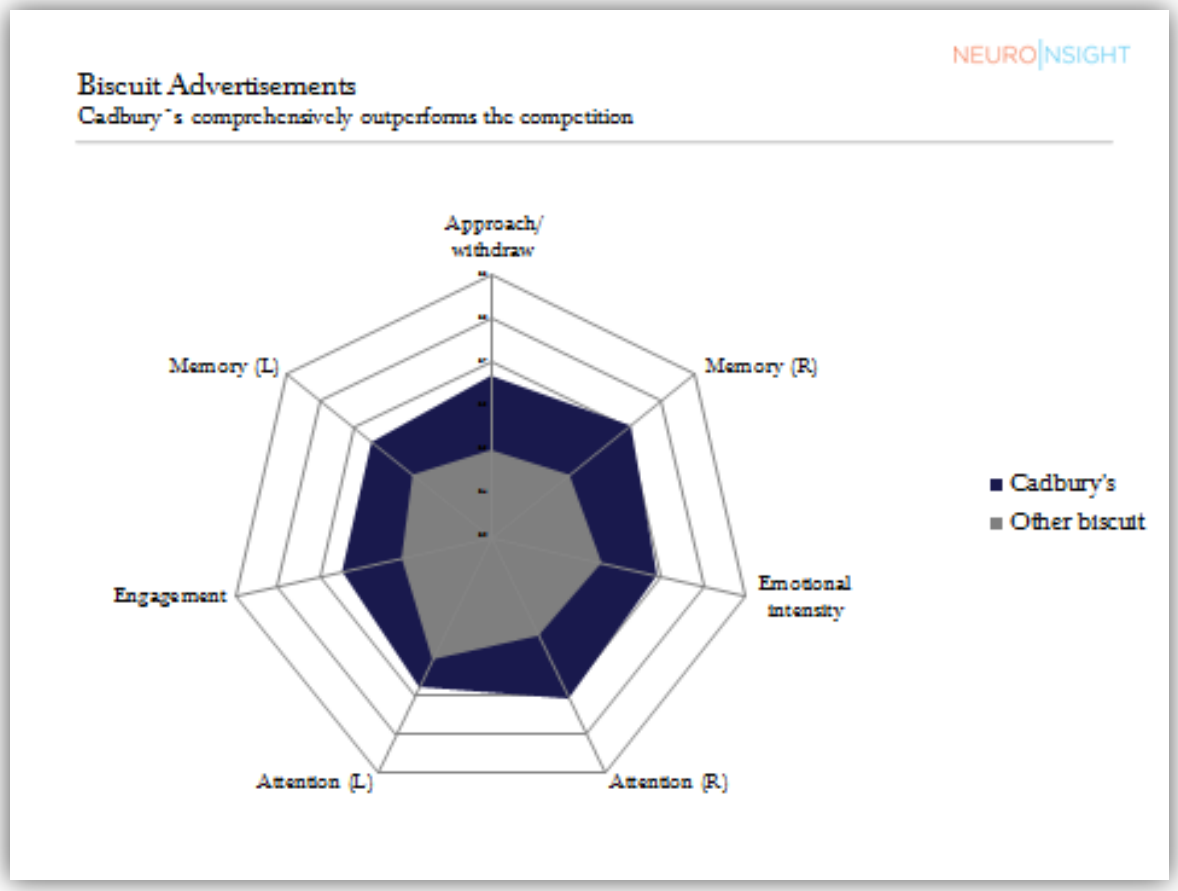
The Skoda ad is, in Neuro-Insight`s estimation, an exemplar of excellent creative techniques eliciting strong brain response. Memory encoding is driven an engaging narrative, with a high peak at end branding. The ad inspires powerful emotional responses, driven in part by the music (the iconic "My favourite things" from The Sound of Music). Small executional details are crucial–individual ingredients, like chocolate and the strips of liquorice used for the fan belts in the car`s engine, earn extremely strong responses. The ad also strongly encodes several key visual moments—'iconic triggers` which might be used for coordination with other media. The car badge, for example, which is very strongly encoded at the end of the ad, would be an excellent focus for a print or online campaign.

Cadbury`s Digestives

The biscuit ad selected for its successful market performance was for Cadbury`s Digestives. In the ad, various characters experiment with ways of melting a block of chocolate onto a digestive biscuit. Responses were analysed for those people claiming to buy biscuits and cookies.

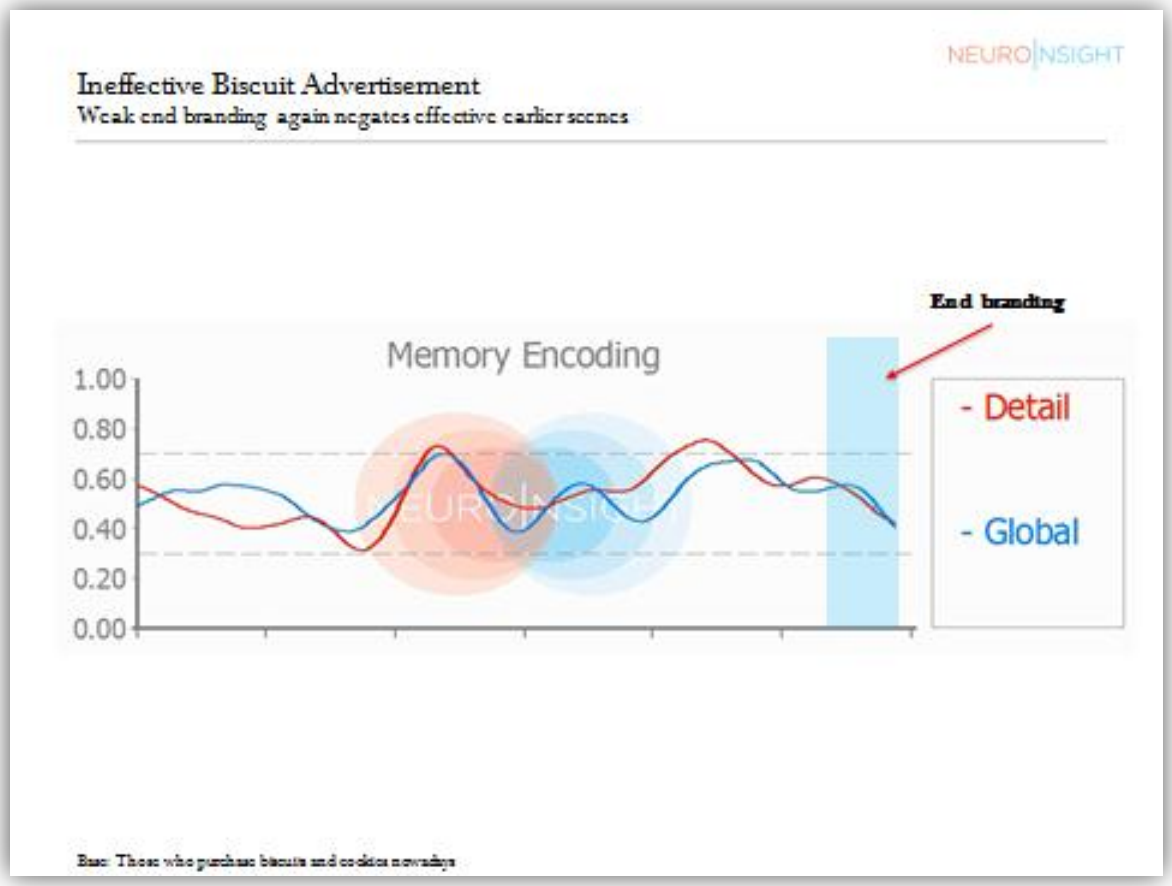
In general, compared to the other biscuit ad in the study, the Cadbury`s Digestives ad elicited stronger brain activity across all key measures, with a similar emphasis on right brain metrics. Final branding behaves similarly—Cadbury`s significantly outperforms the competitive biscuit ad.

This ad`s response pattern shows a strong audience engagement with the narrative: peaks in left brain memory encoding (detail) follow each key scene. Most of these scenes feature the product itself, culminating in excellent memory encoding at end branding.



Emotional response to the ad was also positive: with predominantly approach reactions during the ad augmented by strong approach at final branding.

In contrast, although the competitive biscuit commercial elicited strong memory encoding during certain portions of the ad, neither of these featured the product or brand, and there was a very weak memory encoding response at end branding.



Once again, then, the Cadbury`s ad elicited positive responses in the key areas identified by Neuro-Insight as associated with successful marketplace advertising. Memory encoding response was strong and driven by a powerful narrative. Emotional activity was strong and positive, often peaking in response to subtle executional details. Chocolate – inextricable from the Cadbury`s brand itself – played a key role throughout the ad, and certain well-encoded 'Iconic Trigger` moments promise to integrate well into other media.

Summing up

The findings of this study corroborate strong anecdotal evidence linking creative effectiveness with strong financial performance, and suggest that neuroscientific analysis may be able to reliably differentiate between creative executions which will be successful and unsuccessful in the marketplace. Obviously, no single blueprint exists for successful advertising, and scores and numbers only tell part of the story. However, certain brain responses, revolving around the key measure of long-term memory encoding, do tend to be associated with marketplace-effective advertising. An understanding of brain response and how it relates to advertising can help a brand to optimise creative impact and, crucially, contribute to greater advertising effectiveness.

Every day, neuromarketers around the world are contributing significantly to an understanding of how to maximise advertising effectiveness. This study, which continues Neuro-Insight`s long tradition of publishing robust research results, adds to this growing body of knowledge about how brain response can be used to understand campaign market effectiveness—a topic which will only become more important as neuromarketing continues to mature.

Contact Us

Pranav Yadav
CEO, Neuro-Insight U.S.
Email: py@neuro-insight.com