

PDRF White Paper

Using Neuroscience to explore How Advertising Works: Building Brands in the Brain

Gayle Fuguitt - CEO & President of The Advertising Research Foundation

Horst Stipp, Ph.D – EVP, Research & Innovation: Global & Ad Effectiveness

Background

The Advertising Research Foundation (ARF) was founded in 1936 by the ANA and the 4-A's, at a time when the US government wanted to regulate advertising, and they asked to create a new organization: the Advertising Research Foundation, dedicated to original, objective research. From that day forward, the ARF has been dedicated to discovering How Advertising Works.

In 1936, the organization proved that window display advertising in cities drew rural consumers into town to drive sales growth. 1961 marked the advent of important insights around the power of advertising to drive growth and sales...beyond awareness, and the recognition that reach, frequency and different media plans could deliver differential sales results. In 1989, the ARF led a ground-breaking meta-analysis of 300 Behaviorscan studies to prove that advertising works.

This work led to more original research, punctuated by the ARF's work around the applications of neuroscience to marketing objectives. Two studies were conducted, led by Dr. Horst Stipp: "Neuro 1", followed by "Neuro 2". Both helped the industry adopt neuroscience as a way to discover *how brands are built in the brain*.

This white paper is a disposition of the compendium of the ARF's learnings over the past 5 years to discover "How advertising works, Today."

The ARF has been a leader in research on advertising for almost 80 years. We know advertising works, but we need to re-visit this evidence to assess how advertising works *today*. To meet this challenge, we have started a new project that includes original research, three "Ground Truth" experiments.

Experiment 1 focuses on ROI and explores how to optimize cross-platform strategies and spending. The second experiment explores how consumers experience advertising in different media in order to take advantage of priming effects and synergies. Experiment 3 is designed to improve mobile measurement quality.

The second study uses primarily neuroscience-based methods to gain new insights on how brands are built in the brain. It explores how the consumers' experiences with different forms of advertising impact the precursors of purchases decisions – emotional reactions to advertising and their impact on brand perceptions, memory, and purchase intent.

Why did the ARF decide to use neuroscience methods to address these issues?

The ARF and Neuroscience Research

The ARF started to focus on the application of neuroscience to marketing in 2010 for three reasons:

- Member questions about the value of these new methods for improving ad testing
- The promise of these methods to improve creative – a priority for the ARF since its very beginnings
- The need for innovation in research to meet the challenges of a rapidly changing marketing environment.

In 2007, the ARF had issued a report on "Measuring Emotional Responses to Advertising". The report addressed marketers' increased emphasis on the role of emotions in consumers' responses to advertising. Many marketers and researchers had felt for some time that established practices in advertising, as well as theories and models of advertising effects, seemed to overemphasize cognitive processes. For example, Vakratsas and Ambler summarized

their review of theory and research evidence in this way: “we must relieve measures of affective responses from cognitive bias.” (1999)

As a result, there was growing interest in consumers’ unconscious and emotional reactions to marketing messages. Brand managers were looking for better ways to understand emotion in their advertising effectiveness research and for better ways to measure emotion, arousal, and implicit memory. Therefore, when neuroscientists approached market researchers and described these new tools, they listened. However, market researchers could not evaluate these methods’ validity because of the complexity of the underlying science. As a result, the ARF was asked by advertising, media, and market researchers to conduct a study that would help them evaluate the new neuromarketing methods.

The details of the ARF’s “Neurostandards Collaboration Project”, are described in a white paper, *Uncovering Emotions - Using Neuromarketing to Increase Ad Effectiveness* (Stipp & Woodard, 2011). In short, the ARF conducted an independent assessment of the issues surrounding the application of neuroscience to marketing research through a panel of neuroscience and marketing experts. The project’s main goal was to increase transparency and thereby help members become better informed users of these methods. At the same time, we hoped that this kind of project would help establish best practices and contribute to the development of neuromarketing research. The project was supported by advertiser, media companies, and agency sponsors.

- The “Neuro 1” project found that – despite a number of caveats - neurological and biometric marketing research methods have the potential to provide new and superior insights for the evaluation of commercials and other visual or print stimuli.

The expert reviewers emphasized that “traditional” measures have a good track record regarding conscious and rational processes, the strength of neuromarketing methods lies in their ability to uncover emotional reactions better than most other methods. Also, as the neuro methods usually provide second-by-second data on changes in viewer reactions, they are well-suited to diagnose and improve marketing messages in a very detailed manner.

- The Neuro 1 report concluded that marketers should explore neuroscience-based research methods and add them to their current “traditional” testing methods.

This last recommendation prompted ARF members to ask the ARF to continue this project and expand its scope. Members pointed out that the first “Neuro” project had not established that adding these new tests – which were not cheap -- would actually pay off in increased sales. Therefore, a new project was needed to help marketers assess whether they can increase the productivity of advertising investments by looking at all measures – “traditional” as well as the new neuromarketing methods – and assess their predictive validity across a broad range of products and services.

The “Neuro 2” project was conducted in 2013 to determine if adding these new methods to a traditional test can actually identify commercials that have the potential to sell more. Obviously, this was an ambitious and complex project as it is quite difficult to establish causality in “the real world” and as there is hardly ever a straight line between an ad exposure and a purchase. The typical purchase path is very complex, especially in today’s environment with many different advertising and marketing touchpoints. Despite these obstacles, the project established significant findings:

- The “Neuro 2” project concluded that adding neuroscience-based methods to a traditional test of commercial creative can improve the power of the test significantly.

In the models examined in this study, adding fMRI measures provided the strongest improvement. However, models based on a different set of commercials (as well as other studies we have seen) indicate that other measures can be predictors of sales. This analysis examined 11 biometric and neurological measures, but there are obviously many more measures that are being used by neuromarketing companies. (For example, we could not include SST and facial coding measures in our study.) Therefore, we think the important finding here is that we have independent evidence that these measures have the ability to improve advertising impact. (For details on this study see A. Dimoka et. al “*Predicting Advertising Success Beyond Traditional Measures: New Insights from Neurophysiological Methods and Market Response Modeling*”; Journal of Marketing Research 2015, in print.)

- The other important finding from this test is that “traditional” measures were significant predictors of ad elasticities. In other words, this is not about abandoning established ad testing methods, but it is about innovation that increases the likelihood of creating an ad that sells and improves branding.

The Evolution of Neuromarketing

Since the ARF conducted these studies and worked with researchers, advertisers, and agencies to improve the understanding of these methods and establish best practices, we have seen a remarkable evolution. The question today is no longer if marketers should use neuroscience-based marketing research, but *How can these tools be used to make ad creative and other marketing communications more effective?*

We observed these developments in the evolution of neuroscience applications to marketing during the last five years:

- Neuromarketing research vendors improved their methods, best practices, analytic skills, and provided more validation. This progress is reflected in the fact that several of the top rated papers presented at the ARF’s Re;Think and Audience Measurement (AM) conferences employed neuroscience-based methods.
- The increased use of and high regard for research papers submitted to ARF conferences is just one sign of the expanded uses of these methods in advertising and marketing research. Organizations such as ESOMAR, NMSBA, and PDRF are also using these methods to gain more insights. The number of companies offering these methods has exploded, not just in the US, but worldwide.
- Neuroscience-based methods are increasingly being used not only to test and improve creative, but also for a variety of other research and business objectives. Biometrics and other neuromarketing methods are now also being employed to improve website design, packaging, shopping experiences and even product design.
- The expansion of neuromarketing has also been fueled by technological advances that are continuously improving the capabilities of the researchers and respond to the industry’s need for scalable faster solutions. These technological advances allow researchers now to conduct studies not only in labs, but also in the field, through webcams, etc. (In fact, many biometric measures have become so “mainstream” that they can be found on smartphones and “wearables” to monitor athletic performance.). At the same time, most researchers have been able to reduce their costs and lower prices for studies substantially.

Last, but not least, the work of researchers who have applied neuroscience to marketing problems has provided fresh insights into how advertising works, especially regarding unconscious and emotional drivers of consumer response to advertising. The research has confirmed assumptions of researchers who suspected that past research put too much emphasis on cognitive processes, but did not have reliable tools to confirm that hypothesis (Vakratsas and Ambler, op cit.). We can now analyze creative messages to explore which elements drive positive emotional responses, whether or not the brand logo is paid attention to, and whether or not the creative is connected to or maybe overwhelms the branding message. As demonstrated in Scott McDonald’ research review presented at PDRF 2015, neuro research can illuminate the unique properties of print advertising. The ARF’s How Advertising Works project, in addition to original research, is also reviewing existing studies and comes to the same conclusion as Scott McDonald: Neuroscience gives us new insights into how advertising is processed in consumers’ brains and how different media, ad formats, and usage patterns impact these processes.

Change or be Changed

Beyond the specific advantages of using neuroscience-based methods, we think researchers and marketers can find a broader lesson here: change or be changed!

Marketers today are focused on the rapid changes in consumer behavior, especially those driven by new media technologies that affect where, when, and how consumers are exposed to advertising. Similar technological changes are also impacting research methods and measures. These changes are giving rise to Big Data, Programmatic Buying, Neuroscience and Biometric Research, and other innovations that researchers need to master if they want to keep pace with consumer change and secure their place at the decision table.

We have to be at the bleeding edge of innovation, think differently and redefine the role of researchers. This does not mean researchers should dismiss established and validated methods. But it does mean that when the value of new methods has been demonstrated, when new methods for improving creative, measuring emotion and generating effective consumer engagement have been developed, it is time to stand up and deliver.

“Stand and Deliver” is the industry’s invitation to respond to the C-suite demand to answer: how should I spend my dollars across platforms, and where should I spend my next dollar?

Neuroscience holds the key that can unlock growth. The improved speed and cost accessibility of today’s neuroscience solutions will aid its application to business questions that need to be answered urgently today for the c-suite.

“Change or be changed” is our invitation to be at the decision-making table. You’re invited. The ARF is here to help.