Opening the box: brain science challenges media neutrality

Neuroscience shows how the brain deals differently with digital and printed media, say **Mike West,** Royal Mail, and **Graham Spickett-Jones,** University of Hull

PSYCHOLOGISTS HAVE KNOWN for decades that many of our decisions have little to do with rational thought. Marketers also recognise some of these issues; some advertising models suggest that it might be better to attempt to communicate with consumers using emotional messages and humour, rather than hope for thoughtful reflection on a brand.

Psychologists and marketers also tend to agree that three major components combine in the decision-making process: thought, emotion and behaviour. However, true understanding of how the human mind physically reacts in response to marketing stimuli, and what this means, has been lacking. When models of campaign practice are struggling to keep up with a rapidly developing media landscape, the need for such insight is urgent.

The answer lies in neuroscience. The idea that aspects of this technique can help to show how the brain is dealing with different marketing messages and consumer decisions makes for a seductive promise, but can it help to shape more effective marketing campaigns? Using the neuroscience approach of functional brain imaging (via fMRI - functional Magnetic Resonance Imaging) it is now possible to untangle some of the ways the brain deals with marketing messages, and, in particular, the manner in which they are delivered. For example, does the brain deal with physical media differently from screen-based electronic media? This was the focus of a recent study commissioned by Royal Mail.

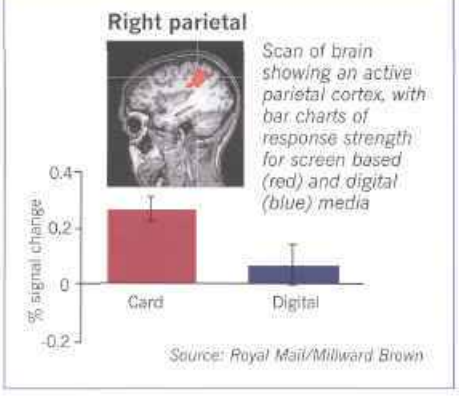
Print versus digital communication

The research commissioned an independently conducted brain imaging study to understand how the brain reacts to physical print media versus digital online advertising. The study was designed with media research specialist Millward Brown, and conducted by Bangor University's psychology department. An fMRI scan identified parts of the brain in research subjects that are especially activated by imaging changes in the blood supply, mapping the more activated parts of the brain.

During the research, physical media was found to generate more activity in the parietal cortex, which is an area closely associated with integration of visual and spatial information. This suggests that print-based material is more 'concrete' for the brain, and can act as a cue for memory. This may mean physical DM material has a better connected memory 'trace' in the mind.

FIGURE 1

Response of Parietal Cortex



This is not simply due to tangible media stimulating both sight and touch and this being reflected in brain activity - the subtraction of signals from scrambled physical material controls for this. However, the multisensory nature of the material results in the content being seen as more 'real'. DM-based material was associated with responses that suggest greater 'internal' thinking - suggesting it is processed more in relation to subjects' own feelings and memories. For physical stimuli, there was less deactivation of the brain's 'default network' - a network of brain regions that become more active when the individual is not focused on the outside world (Figure 1).

However, material presented on the screen elicited responses associated with greater difficulty in maintaining attention on the task. Online materials proved harder to focus on for subjects, activating brain areas associated with filtering of irrelevant information to attend to the task at hand, such as the temporo-parietal junction. This fits with other bio-sensory studies showing that it takes a greater cognitive effort to attend to screen-based material.

Physical prompts were found to stimulate brain activity in areas of the brain, including the limbic region, which is closely associated with emotional processing. Emotional functions have been shown in many studies to arouse a more favourable response to a brand or message. These findings indicate that physical, tangible media stimulates an emotional response that produces enhanced recognition, and heightens the priority given to the brand for subsequent encounters with similar or related brand messages (Figure 2).

Response to physical prompts

Certain areas of the brain were particularly stimulated by the physical prompts as opposed to the digital, such as the right retrosplenial cortex, which is involved in both memory and the processing of emotionally powerful stimuli. This suggests that physical presentation may generate more emotionally vivid ad memories.

Also engaged by physical media stimuli was the right-middle cingulate, which is active during decision-making on emotional and social issues. It was also activated when participants decided whether they would 'save' rather than 'bin' the material, which suggests that it plays a prominent role in emotional response and judgement.

Finally, the cerebellum saw increased activity, which is mainly concerned with movement and motor control, but is also associated with both spatial and emotional processing. Given the allowances made in analysis for the motor actions involved with interacting with the stimuli, and the activity in the other emotion-related areas, it is likely this result is evidence of enhanced emotional processing.

For communication strategies that have to capture recipients' attention to commu nicate content, emotional connections are potentially vital to open the door to a response, then establish a positive emotional impact to give brand communications a more receptive response. Physical media appear to have a potentially powerful role as 'priming agents', helping a brand mes sage establish a more visceral emotional connection, which may be vital in the early parts of a campaign if the multiplier effect of an integrated campaign is to produce the results marketers strive for. This helps to explain why mail has been shown to have a multiplier effect in integrated campaigns.

Mike West is business development manager for media applications at Royal Mail.
mike.west@royalmail.com
Graham Spickett- Jones (far right) is a senior lecturer in the Business School at the University of Hull, where he does research into interpersonal and media communication in promotional marketing.
j.g.spickett-jones@hull.ac.uk

The brain has been shown to be involved in levels of emotional processing, often subconsciously, prior to the thinking and reasoning tasks usually associated with higher order intelligence.

Evidence suggests that what people direct their thinking towards is determined by what their unconscious mind 'feels' to be in their best interests. Much of our critical reasoning may be a by-product of the emotional reactions, which first give priority to what people focus attention on. Physical media may 'smuggle in' sets of relatively engaging emotional responses to portrayed messages, through some unconscious associations to the character of the medium. Because of this higher positive emotional disposition to the medium, such messages are more likely to produce a positive response to the message, and enhance the likelihood of noticing related messages and 'feeling' more positive toward them.

There is evidence that emotional reactions, at conscious and subconscious levels, can play a vital role to determine the way people think and what they are likely to think about, at least for everyday tasks. From this study's findings, this seems to give an advantage to exchanges of information through concrete print media, while more abstract exchanges of information (digital) may be more easily filtered out by the brain, and make a lesser impression on the brain patterns created.

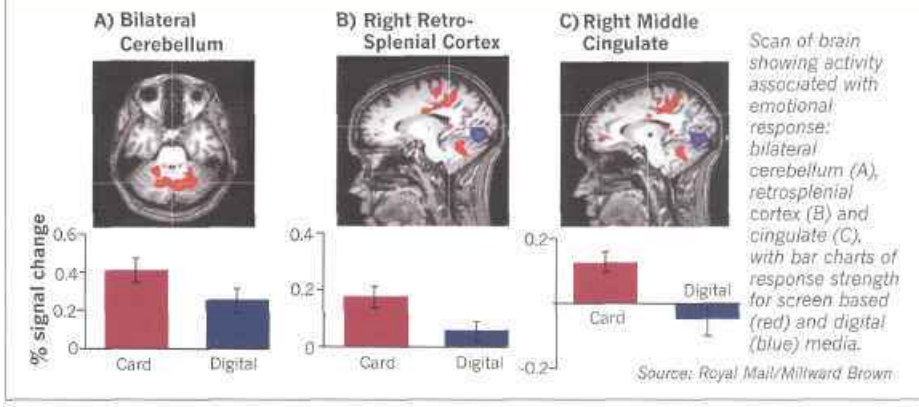
However, once the brain has forged this positive emotional memory structure, the door in the mind may open wider for a range of media messages to pass through.

Encouraging behaviour

The fMRI findings suggest that people interpret marketing messages in physical media, using parts of the brain that are known to integrate memory with visual stimuli and spatial awareness. A message delivered by a physical medium produced a more powerful response than a digital message. The physical reality of the medium seemingly gives the message a priority that commands a range of interconnected brain activities and results in a grounded experience with a more 'concrete' impression formed in the brain.

FIGURE 2

Emotional responses for card and digital media



Scan of brain showing activity associated with emotional response: bilateral cerebellum (A), retrosplenial cortex (B) and cingulate (C), with bar charts of response strength for screen based (red) and digital (blue) media.

Source: Royal Mail/Millward Brown

The study suggests information gleaned via a physical prompt is easier for the brain to access and retrieve at a later time. Trying to think about virtual or digital prompts deactivates certain areas of the brain, such as the medial prefrontal cortex, posterior cingulate gyrus and temporo-parietal junction. This suggests that, when physical media is used to carry the marketing message, the brain has to work less hard to retrieve any formed patterns or memories.

This study should not be taken to denigrate online marketing. Such media offer powerful opportunities to engage with consumers, not least through interaction and enhanced targeting. However, the findings suggest that physical media, such as DM, also have a powerful role as part of a multimedia campaign. They offer a 'real' experience that can add powerfully to consumers' emotional engagement with a marketing idea. This takes them further along their journey to engage with brands.

The study findings show that information conveyed by physical media is more firmly stored, in stronger and emotionally connected patterns in the brain, which are more easily brought to mind later. It makes recognition of a message positive and easier to perform. This provides powerful evidence that physical, print media supports the widely recognised and reported 'availability bias', where more easily assessed ideas and concepts generate a more favourable disposition.

By providing deeper understanding of the effects media context can have on message reception, neuroscience is starting to offer answers about how to use different types of message, and when to use specific media platforms at moments in a campaign cycle to leverage the impact of the campaign. As this understanding grows, so should the importance placed by media planners on early impressions for priming the brain, to enhance response to later elements of a multimedia campaign. On this evidence, physical media seems to be potentially important as one of the tools for making an early positive emotional impression.

Planning implications

To develop effective campaign strategies, media planners should perhaps question if there are functions at work in the brain that help to determine consumer responses, and what campaign elements might help prime favourable responses.

Technology such as fMRI is helping to identify brain functions that can steer campaign practice and enhance campaign strategy. This may help optimise campaign resources, but it may also take a shift in mindset before campaign practices fully embrace the capacity of physical media. While parts of the marketing industry may hang on to traditional practices, fMRI promises to offer new opportunities to test aspects of a campaign's impact.

Fonte: Admap, Washington, v. 45, n. 1, p. 24-25, Jan. 2010.