



Using the P3a to gauge automatic attention to interactive television advertising

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ABSTRACT

This paper is the first step to an understanding of how engagement with interactive television advertisements may increase the relevancy of a brand and therefore facilitate the automatic processing of the brand's logo (measured via the P3a) after viewing the advertisement, compared to non-interactive television ads. Event-related potentials (ERPs) and attitudes were measured in response to advertisement-specific brands. ERP latencies and self-report measures were analysed with mixed design analysis of variance. P3a latency decreased for the brands associated with the longer interactive ads, but remained stable for the brands associated with the normal ads and increased for the control brands. This indicates that automatic attention was greater for those brands which were associated with the longer Dedicated Advertiser Location (DAL) interactive ads in the ad reel. The findings of this analysis suggest that brands associated with interactive ads do have more attention automatically allocated to them.

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1. Introduction

A key feature of the changing television landscape is the fragmentation of audiences across a growing number of broadcast networks and media platforms, increasing the need for advertising that relies on viewer engagement rather than TV exposure alone. The conversion from analog to digital television provides an opportunity for new ad formats, including interactive TV ads, which allow viewers to increase their engagement with advertised brands. This paper is the first step to an understanding of how engagement with interactive television advertisements may increase the relevancy of a brand and therefore facilitate the automatic processing of the brand's logo (measured via the P3a), compared to non-interactive television ads.

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1.1. Interactive television

The digitization of television has introduced new capabilities to the television viewing experience, including new interactive formats for advertising (Cauberghe & De Pelsmacker, 2006). In the United States, Canoe Ventures, a joint initiative by the six largest cable companies, including Cablevision Systems, Comcast and Time Warner Cable, promises to roll out interactive television (iTV) ads in Spring 2010 to at least 18 million homes that already have two-way-communication digital cable boxes installed (Spangler, 2010). Viewers watching these ads will be able to press their remote controls to make a “request for information” (RFI) about a product, or even buy the product (Arango, 2008; Petrecca, 2008). Interactive TV advertising services are also likely to be featured on emerging platforms such as IPTV (Schechner & Kumar, 2009) and mobile phones (Nasco & Bruner, 2007), and are already present with some video-on-demand (VOD) and digital video recorder (DVR) services (Manly, 2006). This study investigates a key question for broadcasters and marketers: how effective are these new iTV ads?

We also compared the effectiveness of two iTV ad formats currently in use around the world. (1) *Impulse response* ads do not take viewers away from the TV content, which plays out under the ad’s interactive banners (or “snipes”). The interactive content is limited by the size of these banners, however, usually to the process of completing a transaction (which generally requires a second, confirming, button press). This format is used widely in the UK and in the US on the OpenTV platform. (2) *Dedicated Advertiser Location (DAL)* ads take viewers away from their program to a series of sub-channels, which look like a PowerPoint presentation or small website (“microsite”). The potential for interactivity is very high with this format, as viewers can navigate (change channel) across many pages of content by pressing the colored buttons on the remote control. Again, this format is used widely in the UK.

Interactivity has been associated with greater satisfaction, self-efficacy, and memory (Rafaeli, 1988), more comprehension (Lustria, 2007), a higher sense of involvement and belonging (Rafaeli & Sudweeks, 1997), the generation of more thoughts, especially positive thoughts (Sicilia, Ruiz, & Munuera, 2005), as well as having a positive effect on attitude toward the site (Johnson, Bruner, & Kumar, 2006). We expected to see a similar positive benefit of interactivity in facilitating memory for the advertised brand, which should in turn increase the chances of the brand being purchased (e.g., Alba & Hutchinson, 1987).

Additionally, we expected to see differences in performance between the two iTV ad formats. DAL iTV ads provide a longer viewing experience than impulse ads, and longer form ads are usually more effective because: (1) longer ads are more likely to be attended to, at more points in time (Rossiter & Percy, 1997); (2) they provide space to make more arguments, and to more completely substantiate arguments; (3) they provide space for the inclusion of a product category message, useful when the target audience is unfamiliar with the category; and (4) they provide execution and response options not available in shorter advertising formats (Agee & Martin, 2001; Chapman & Beltramini, 2000; Singh, Balasubramanian, & Chakraborty, 2000; Singh & Cole, 1993). The additional duration of interactive engagement with the brand provided by the DAL format should further increase the benefits of interactivity, compared to the simple impulse response format.

1.2. The use of neuroscience in media and marketing

Even though the use of neuroscience in the marketing research area is controversial, especially within the neuroscience community (see Lee, Broderick, & Chamberlain, 2007), studies have highlighted the decision-making neural processes and systems associated with exposure to advertising. The most spectacular forms of this research have used brain scanning techniques such as fMRI. For example, Schaefer and Rotte (2007b) found that the area of the brain associated with self-relevant processing, the medial prefrontal cortex, demonstrated an increase in activity only when participants saw logos for prestigious and familiar cars, which presumably were more desirable for them than less familiar and pragmatic cars (see also Schaefer, Berens, Heinze, & Rotte, 2006). Schaefer and Rotte (2007a) use the somatic marker hypothesis (Bechara & Damasio, 2005; Damasio, Everitt, & Bishop, 1996) to explain associations between favourite brands and neuroanatomical reward circuits. They suggest that meaningful brands could act as external stimuli that generate somatic markers and therefore influence a person’s economic behaviour by automatically and unconsciously biasing their selections.

Although contemporary research in this area uses various functional imaging techniques (Kenning & Plassmann, 2005), the cost of these scanning methods can be an inhibiting factor. In contrast, electroencephalogram (EEG) measurement is very cost efficient and has excellent temporal (timing) resolution compared to fMRI (Plassmann, Ambler, Braeutigam, & Kenning, 2007). An EEG recording is a continuous measurement and quantification requires the analysis of various frequency bands (Stern, Ray, & Quigley, 2001). An event-related potential (ERP) is a voltage fluctuation within an EEG recording that is time sequenced to a specific event. The components of the ERP can be measured by peak latency (measured in milliseconds) or by peak amplitude (measured by microvolts). An ERP is elicited by each trial or event but needs to be repeated and group averaged to improve the signal to noise ratio. Each measured ERP is therefore a statistical mean. While the temporal resolution of the ERP is accurate enough to measure processing activities occurring within the brain, the spatial resolution of this technique is not adequate enough for us to precisely estimate the locations of these processes (Picton et al., 2000).

One of the most commonly researched components from the ERP is the P300, which is a positive peak occurring at about 300 ms after the presentation of a stimulus. The P300 can be elicited by a target stimulus in an odd-ball paradigm when participants are required to respond to the target. This component is not generated by the standard stimulus (Polich, 2003). Polich (2007) suggests that shorter P300 latencies are related to superior cognitive performance. The P300 is thought to reflect cognitive processing and in particular has been used to indicate working memory processes (Donchin et al. (1986) as cited in

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