Research Paper

My destination in your brain: A novel neuromarketing approach for evaluating the effectiveness of destination marketing

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ABSTRACT

Emotional reactions to marketing stimuli are essential to tourist destination marketing, yet difficult to validly measure. A neuromarketing experiment was peformed to establish whether brain event-related potentials (ERPs), elicited by destination photos, can be used to evaluate the effectiveness of tourist destination marketing content in movies. Two groups of participants viewed pictures from the cities of Bruges and Kyoto. Prior to viewing the pictures, one group saw an excerpt from the movie *In Bruges*, which positively depicts Bruges' main tourist attractions. The other group saw a movie excerpt that did not feature Bruges (*the Rum Diary*). An early emotional response was osberved to the subsequently presented Bruges pictures for the *In Bruges* group only; no reliable between-group differences were found in ERPs to pictures from Kyoto. In conclusion, EEG-based neuromarketing is a valuable tool for evaluating the effectiveness of destination marketing, and popular movies can positively influence affective destination image.

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1. Introduction

Competition for effective destination branding is increasing. As a result, the past decades have seen the development of an entire branch of tourism science devoted to evaluating the effectiveness of the marketing efforts aimed at promoting tourist destinations (e.g. Echtner & Ritchie, 1993; Tasci, Gartner, & Cavusgil, 2007; Yüksel & Akgül, 2007). This paper presents a mainly methodological contribution to this literature in the form of a neuromarketing experiment, in which individuals' responses to destination photos after viewing marketing materials, in this case a popular movie excerpt, are recorded directly from their brains. To the authors' knowledge, the research presented hereconstitutes the first empirical study ever to use neuromarketing methodology in a tourism context.

1.1. Destination marketing

Destination image plays a central role in the tourist decision-making process and is the central construct in destination marketing research (see Baloglu and McCleary (1999), Beerli and Martin (2004), Chon (1990), Echtner and Ritchie (1993), Gallarza, Saura, and García (2002), Morgan and Pritchard (1998)). Destination image is defined as 'the sum of beliefs, ideas, and impressions that a person has of a destination' (Crompton, 1979, p. 18). To avoid confusion with the related concept of destination branding, this paper takes the view of Stepchenkova and Li that'destination images and destination brand associations are essentially two sides of the same coin' (Stepchenkova & Li, 2014, p. 48). Destination image demonstrably affects desirable tourist behavior outcomes, such as visit intention (Zhang, Fu, Cai, & Lu, 2014), attitude toward sport event participation (Kaplanidou & Gibson, 2010), and intent to recommend (Josiassen, Assaf, Woo, & Kock, 2015). Destination image also affects residents' perceptions of place (Stylidis, Sit, & Biran, 2014). In sum, according to Royo-Vela (2009), destination image is crucial to management decisions.

Extensive literature reviews of destination image research are available in the recent tourism literature (e.g. Tasci et al., 2007; Zhang et al., 2014; Stepchenkova & Li, 2014). The critical review of Josiassen et al. (2015) is specifically recommended for its completeness. Instead of re-creating such work here, this paper offers a

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general summary of knowledge about destination image and focuses on the intersection of destination image and emotions.

Potential tourists develop destination images through cognitive and emotional (also called *affective*) interpretations (Baloglu & Brinberg, 1997; Baloglu & McCleary, 1999; Beerli & Martin, 2004; Moutinho, 1987). Together with behavior toward the destination, cognition and affect comprise the three components in the most common current conceptualization of destination image (Tasci et al., 2007). A second common conceptualization, developed by Echtner and Ritchie (1993)), serves to 'provide deeper insight into how each of the components is internalized' in potential tourists (Tasci et al., 2007, p. 199). The cognitive component of destination image is based on the tourist's perceptions, beliefs and knowledge of destination attributes such as attractions and natural resources. The affective image component refers to the emotions elicited by the destination, more specifically the 'emotional responses toward the various features of a place' (Zhang et al., 2014, p. 215). The cognitive component demonstrably influences the affective component, which in turn influences positivity or negativity of the overall destination image (Baloglu & McCleary, 1999; Josiassen et al., 2015). The affective component is more dynamic than the cognitive component, changing in response to destination experience and reflection (Kim, McKercher, & Lee, 2009). Next to these components *overall* destination image refers to 'individuals' overall evaluative representation of a destination' (Josiassen et al., 2015, p. 3). Overall destination image is uniquely powerful as a behavioral predictor (Zhang et al., 2014) and argued to be a separate concept from component-based destination image (Josiassen et al., 2015).

While the bulk of destination image research has focused on the cognitive components, the affective component of destination image has been gaining increasing attention (Bigné Alcañiz, Sánchez García, & Sanz Blas, 2009; Kim et al., 2009; Zhang et al., 2014). This component has generally been measured using self-response psychometric scales, especially Likert-type or semantic differential formats (Baloglu & McCleary, 1999; Zhang et al., 2014), although some advocate a forced-choice dichotomous format (Dolnicar & Grün, 2012) or qualitative methods (Cherifi, Smith, Maitland, & Stevenson, 2014; Govers, Go, & Kumar, 2007; Ryan & Cave, 2005; Stepchenkova & Li, 2014; Stepchenkova, Kim, & Kirilenko, 2014). Regardless of response format, asking participants to report their affective destination image may give useful data (Baloglu & McCleary, 1999; Wencki, Mitas, & Straatman, 2014) but gives at best only a rough sketch of the emotions a potential tourist experiences when confronted with a marketing stimulus or with the destination itself.

According to Tasci et al. (2007), the psychometric approach fits more closely with the cognitive than with the affective component of destination image. At the same time, emotions have been shown to play a crucial role in decision making (e.g. Loewenstein & Lerner, 2003). According to Li and colleagues (Li, Scott, & Walters, 2014, p. 1), 'unconscious emotional responses that can provide unbiased portrayal of individual's initial emotional reactions when exposed to a stimulus have been largely ignored' in the tourism literature. This gap in the literature may largely be attributed to methodological challenges (for discussion, see Li et al., 2014). Emotional responses come and go quickly and possess a complexity that does not always lend itself well to description by a self-response scale on a questionnaire. As a result, direct measurement of such emotional responses, for instance through peripheral electrophysiological methods such as heart rate, skin conductance and facial electromyography (Kim, Kim, & Bolls, 2014), or through eye-tracking methodology (Wang & Sparks, 2014), is only beginning to emerge in the destination marketing literature (see Li et al., 2014, for a review, and Pearce, 2012 for an excellent discussion). Arguably, however, recording emotional responses directly from the brain is potentially the most sensitive physiological measure for assessing the impact of destination marketing stimuli on affective destination image formation. However, before further developing this thought, the role of organic marketing agents such as movies on destination image formation.

1.2. The role of movies in the marketing of destinations

The image of a particular destination is formed in tourists' minds based on a variety of internal processes and external stimuli (Baloglu & McCleary, 1999). External stimuli are usually divided into three types of 'image formation agents', including induced image agents, which comprise commercial activities aimed at marketing a destination; organic image agents, which comprise information without apparent commercial interest in a destination; and previous experiences at the destination (Gartner, 1994; Lee, Lee, & Lee, 2014). Organic image formation is considered especially valuable to destinations, as potential tourists consider information without a clear commercial interest as more trustworthy (Wencki, 2012). In the words of Stepchenkova & Li, 'destination brand cannot be confined to marketer-induced associations only' (Stepchenkova & Li, 2014, p. 59). Thus, destinations increasingly explore marketing avenues through social networks and popular culture, as messages through these channels may be considered less commercially motivated, and thus more veritable, by would-be visitors. One such communication channel is the popular motion picture. The possibility that popular motion pictures induce emotions that influence affective destination image warrants further investigation.

Motion pictures (henceforth movies) have been recognized in the tourism research literature as an important destination marketing channel (Beeton, 2005). Movies are viewed by potential customers as relatively unbiased or trustworthy information sources (Kim & Richardson, 2003). Although various researchers have categorized movies as autonomous (Beerli & Martin, 2004) and organic (Gunn, 1972) image formation agents, there is general consensus that movie audiences do not likely perceive destination information in movies as commercially motivated (Kim & Richardson, 2003). Substantial boosts in visitation and economic impact following releases of relevant movies have been recorded (Bolan & Williams, 2008). On the other hand, the effects of movie portrayals can just as easily be negative (Sönmez & Sirakaya, 2002). Destination marketing organizations are aware of these effects and actively encourage the recording of movies at their destination through, for example, tax incentives. An extensive review of literature about movies as a destination marketing tool is available in Bolan and Williams (2008) and will not be undertaken here.

Instead, this paper highlights an important gap in this literature. Bolan and Williams (2008) theorize that movie content addressing a destination induces a certain image of the destination in the movie audience. This process is specifically believed to be fueled by identification with characters: audiences see a character enjoying a destination on screen and imagine themselves in that situation (Kim and Richardson (2003)). It is not unlikely that this process of identification directly affects the affective component of destination image. However, it has not been empirically demonstrated whether experiencing a positive destination portrayal in a movie changes the emotional reactions to a destination. We propose, as argued in the previous section, that this question is best addressed by measuring such emotional reactions directly from the brain.