Augmented Reality Experiences: Exploring Psychological, Cognitive, and Sensory Aspects

Jennifer B. Barhorst, Ph.D., College of Charleston, USA, barhorstj@cofc.edu
Graeme McLean, Ph.D., University of Strathclyde, UK, graeme.mclean@strath.ac.uk
Nina Krey, D.B.A., Rowan University, USA, krey@rowan.edu
Heiner Evanschitzky, Ph.D., University of Manchester, heiner.evanschitzky@manchester.ac.uk
Ana Javornik, Ph.D., University of Bristol, ana.javornik@bristol.ac.uk

ABSTRACT

Augmented reality (AR), which overlays a virtual world onto the real world (Javornik, 2016), provides tremendous opportunities for brands to engage consumers through psychological, cognitive, and sensory processes as they interact with the technology. Due to the rapid development of AR, however, there is a dearth of research to understand how individual psychological, cognitive, and sensory aspects associated with AR experiences influence commonly studied outcome behaviors. With company investments in AR technology set to increase to $195 billion by 2025 and consumer downloads of mobile AR applications expected to reach 5.5 billion by 2022 (Statista, 2020), the need to deepen the understanding of this burgeoning technology's impact on consumption experiences is of importance to both firms and scholars. We seek to address this gap by examining the psychological, cognitive, and sensory aspects of AR experiences that foster positive brand outcomes through the elicitation of episodic memories.

A concept that was initially introduced by Tulving (1972) over 40 years ago, episodic memory is a memory system that facilitates the remembrance of personally experienced events associated with particular times or places that are triggered by a retrieval cue. Episodic retrieval involves an interaction between a 'retrieval cue' (self-generated or by the environment) and a memory trace leading to some or all aspects of the episode in the trace (Rugg & Wilding, 2000). It does so by inducing Chronethesia, a conscious awareness of being present while remembering the past (Tulving, 1985). Further, and of interest to marketers is that the priming of episodic memory may not only induce memories of the past, but it may also trigger the ability for one to re-experience one's own previous experiences through mental time travel (MTT). When in a state of MTT, one not only remembers the past but feels like they are in a past moment re-living the experience. This feeling of re-living the experience is a state that includes characteristics such as seeing, hearing, and feeling what occurred in the past event (Tulving, 2002).

In this between-subjects study with 933 participants, we compare AR to a range of digital brand stimuli from one Christmas-themed campaign. The campaign stimuli included a Snapchat AR experience, a branded website 360-experience, a YouTube advertisement, and a static image.

The results suggest that the sensory and atmospheric aspects of AR not only have the capability of triggering episodic memories, but when compared to other digital brand stimuli, they enhance

episodic memory's effect on behavioral intentions through the elicitation of MTT. Therefore, the findings from this study add to the extant literature on AR's ability to foster positive brand outcomes through the elicitation of episodic memory and MTT.

Keywords: augmented reality, episodic memory, mental time travel

References available upon request