The Sixth Sense? Motorsport Spectators’ Sensory Imagery and Its Mediating Role in Sensory Stimuli and Arousal’s Relationship with Revisit Intentions

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A sport spectator perceives a variety of sensory stimuli that originate in sporting games and their ancillary products (Chung et al., 2015; Lee et al., 2012). Spectators perceive these stimuli through their five sensory organs (i.e., those of sight, hearing, smell, taste, and touch). The type and quality of each stimulus affects spectators’ behaviors, and this relationship is mediated by spectators’ emotions, which are affective consequences of sensory stimuli (Chung et al., 2015, 2016; Kwak et al., 2011). In this process, spectators’ five senses are the first domain to take in the stimuli at a live sporting event. That is, spectators’ perceptions of and feelings about these stimuli depend on their five senses.

While a number of studies have examined how sport consumers perceive sensory stimuli (Ballouli & Bennett, 2014; Ballouli & Heere, 2015; Chung et al., 2015, 2016; Lee et al., 2012, 2013), none has questioned the fundamental reliance on the five senses. This study addresses this gap by asking, “Are sport consumers’ five senses the only way they experience sensory stimuli?” Answering this question leads us into a topic that sport marketing scholars have rarely explored: sensory imagery.

Sensory imagery is an individual’s internal imagery, which is typically ignited through exposure to different types of sensory stimuli conveyed through mediated vehicles such as paper, sound, or video (Krishna, 2013). Motorsport spectators are excited by watching, hearing, and smelling the different components of racing (Chung et al., 2015, 2016). Their excitement may be increased when they experience such visceral stimuli as seeing a crash and the accompanying flying debris. On occasion, spectators may hear about such events secondhand; in those cases, they are likely to imagine the relevant sensory stimuli by drawing on other, prior or in-the-moment experiences.

Motorsport provides an ideal context in which researchers may examine how spectators’ sensory imagery affects their event experience.

Imagery is a way of using memory to picture certain information, which is conceptually distinct from representing that information concretely (MacInnis & Price, 1987). A number of studies have suggested that imagery should be understood as a process, because images are generated from the instantiation of a knowledge structure that already exists in schematic form but requires additional stimulation to bring into action (Acharya & Ray, 2005; Lee & Gretzel, 2012; MacInnis & Price, 1987). The schema cannot generate imagery on its own; instead, imagery is evoked by sensory representations of ideas or feelings—the same type of stimuli that allow people to perceive external imagery. Initiating imagery processing requires multi-sensory or single-sensory stimulation. Numerous studies have addressed how sport consumers relate to external stimuli, such as the sporting game, related services, and the sporting facility (Chen et al., 2013; Uhrich & Benkenstein, 2010; Uhrich & Koenigstorfer, 2009). However, no systematic studies have sought to understand how sport consumers’ process mental imagery.

Scholars have investigated a variety of antecedents and consequences of consumers’ sensory imagery processing (MacInnis & Price, 1987). These studies have found that such processing is stimulated by in-the-moment stimuli, such as pictures or specific discursive information, as well as needs for enhanced stimulation. Consumers’ sensory imagery processing affects their affective responses, behavioral intentions, and consumption experience (Acharya & Ray, 2005; Lee & Gretzel, 2012).

This study draws on these findings to construct a model in which perceived visual and aural stimuli affect spectators’ arousal and intentions to revisit an event and this relationship is partially mediated by their sensory imagery. The researcher used an exploratory factor analysis to test the validity of the sensory imagery concept and then used path analysis to test the effects of the five senses and the “sixth sense” of imagery on arousal and revisit intention. Data was collected from attendees of the Korean Formula One (F1) Grand Prix. The short history of the Korean F1
provided an ideal context: attendees had experienced very little sensory stimulation at that racing circuit, which suggested that they might actively implement sensory imagery to feel that stimulation. After dividing the grandstand into a number of subsections, investigators approached attendees in each section during the race to capture their in-the-moment experiences. Attendees who agreed to participate were given a self-administered questionnaire to complete. The final sample consisted of 330 participants, including 204 (61.8%) males and 126 (38.2%) females. Their average age was 33 years.

The survey included 16 questions about spectators’ perceptions of stimuli associated with their five senses and their sensory imagery. All questions were adapted from previous studies and slightly adjusted to reflect the context of F1 motorsport racing. Eight items asked participants to record their perceptions of visual, olfactory, gustatory, and tactile stimuli using a seven-point Likert-type scale. Aural stimuli and sensory imagery were asked by two items, respectively. The six constructs’ reliabilities ranged from .67 to .91. All these items were included in exploratory factor analysis and were factored into each of these six constructs as appropriate. The total variance was 77.04%, and the items' communalities ranged from .53 to .90. Three items measured spectators’ arousal, and three additional items measured their revisit intentions. These constructs’ reliabilities were both .92.

The authors used a path analysis to identify whether sensory imagery interacted with in-the-moment sensory stimuli and arousal to predict revisit intentions. The measurement model resulted in \( \chi^2 \) of 123.16 with 55 degrees of freedom (\( p < .001 \)) and achieved an acceptable model fit (CFI = .97,IFI = .97, NFI = .95, RMSEA = .06). All the standardized loadings of constructs were greater than .56. The AVEs ranged from .52 to .81. The constructs’ composite reliabilities ranged from .50 to .87. All the squared correlations between two constructs were less than the lowest AVE.

In path analysis, visual and aural stimuli significantly affected sensory imagery (\( \gamma = .18, p < .001; \gamma = .16, p < .01 \)), and sensory imagery affected arousal (\( \beta = .12, p < .05 \)). Arousal was also affected by visual stimuli (\( \beta = .40, p < .001 \)) and aural stimuli (\( \beta = .12, p < .05 \)). Of all the constructs, arousal had the greatest impact on revisit intention (\( \beta = .52, p < .001 \)). All the indirect effects were significant at the .05 level.

Findings indicate the validity of the sensory imagery concept and its mediating role in the relationship between in-the-moment sensory stimuli and spectators’ arousal and revisit intentions. While product marketing and advertising have made substantial use of consumers’ sensory imagery (Krishna, 2013), sport consumers’ sensory imagery has rarely been used for marketing. This is a little surprising, since spectators would capture an unforgettable scene from a game as a picture, not as a discursive story. Motorsport spectators’ longing to imagine visceral stimuli should be taken advantage of in developing multi-sensory marketing (cf. Hultén, 2011; Krishna, 2013).