MEASURING SPONSORSHIP EFFECTIVENESS: EXAMINING THE CONNECTION BETWEEN FAN IDENTIFICATION AND PHYSIOLOGICAL RESPONSE TO SPORTS SPONSORSHIP EVALUATION AFTER EXPOSURE

by

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ABSTRACT

This dissertation investigates the extent to which exposure to a sponsorship during images from a highly arousing sporting event affects cognitive, affective, and behavioral evaluations of the sponsorship. Additionally, this study examined the role that fan identity to a particular sport has on cognitive capabilities and sponsorship evaluations. Mere exposure and fan identity theories were employed to measure influence on sponsorship outcomes. Despite the quantity of existing conceptualized models regarding sponsorship effectiveness, the advertising field lacks sufficient empirical investigation of interaction effects, particularly in a controlled environment. An experiment was employed to empirically examine how exposure to different types of sponsors, (both functionally congruent and incongruent to the sport) impacted recall, recognition, attitude, and purchase intentions, while gauging an individual’s fan identity and emotion (pleasure and arousal) during the event. Self-report was used to measure emotion (pleasure and arousal), and psychophysiology measures were used to collect physiological arousal, a measurement all but absent in fan identification and sponsorship research.

Immediate exposure to a sponsor had no impact on evaluations; however, fan identification to the sport was a significant predictor for sponsorship success. Furthermore, sponsors that were functionally congruent to the sport received more favorable evaluations than those that were functionally incongruent. Differentiating congruency in terms of its functionally rather than articulation added a new level and definition to consider when examining sponsorship effectiveness. Lastly, the results contradicted previous studies, finding that no relationship
existed between psychophysiological arousal and recall and recognition in this study. The results could be due to the length of time of exposure or the stimuli type, warranting future research.

In terms of fan identification, the study supports previous tenets of fan identification to a sport that is moving from niche to mainstream status. Secondly, one’s fan identification to the sport is less influenced by geographical location and community affiliation, antecedents that were previously labeled as strong predictors for one’s identification. Fan identification is a strong predictor for all UFC-related consumption, involvement, liking, and self-reported arousal. Interestingly though, this study found differences between levels of physiological arousal and one’s level of identification--but not in the same direction as previous studies. Low identified fans showed higher levels of physiological arousal than highly identified fans, suggesting that either the novelty or arousing nature of the sport superseded identity, warranting future areas of research. Lastly, this study shows support for the role that fan identification and sponsorship congruency have on sponsorship success. The findings in this experiment support conceptualized models, as well as empirical findings using other quantitative methods, such as surveys.
DEDICATION

To my grandfather, Jonny Tafoya: a continuous source of inspiration and encouragement, proving anything is possible with honesty, hard work, and dedication.
### LIST OF ABBREVIATIONS AND SYMBOLS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>$a$</td>
<td>Cronbach’s index of internal consistency</td>
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<tr>
<td>ANS</td>
<td>Automatic nervous system</td>
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<tr>
<td>CNS</td>
<td>Central nervous system</td>
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<tr>
<td>IAPS</td>
<td>International Affective Picture System</td>
</tr>
<tr>
<td>IRB</td>
<td>Institutional Review Board</td>
</tr>
<tr>
<td>$M$</td>
<td>Mean: the sum of a set of measurements divided by the number of measurements</td>
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<tr>
<td>MMA</td>
<td>Mixed Martial Arts</td>
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<tr>
<td>NBA</td>
<td>National Basketball Association</td>
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<tr>
<td>NFL</td>
<td>National Football League</td>
</tr>
<tr>
<td>$p$</td>
<td>Probability associated with the occurrence under the null hypothesis of a value</td>
</tr>
<tr>
<td>PI</td>
<td>Purchase Intention</td>
</tr>
<tr>
<td>PGA</td>
<td>Professional Golfer’s Association</td>
</tr>
<tr>
<td>PNS</td>
<td>Parasympathetic nervous system</td>
</tr>
<tr>
<td>$r_s$</td>
<td>Spearman’s rho product-moment correlation</td>
</tr>
<tr>
<td>SCR</td>
<td>Skin conductance response</td>
</tr>
<tr>
<td>$t$</td>
<td>Computed value of $t$ test</td>
</tr>
<tr>
<td>UFC</td>
<td>Ultimate Fighting Championship</td>
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ACKNOWLEDGMENTS

First, I would like to thank God for helping me endure the many challenges encountered throughout the years, and blessing me with all the opportunities and amazing people He has brought into my life. Next, I would like to acknowledge my parents, Gary and Angela Devlin, who have always supported, sacrificed, and loved unconditionally so their children would succeed at life. They have been with me every step of the way, both professionally and personally, and I am grateful to have such a terrific family. To my brother and sister, Josh and Amanda, thank you for tolerating and supporting me these past few years! I love you guys! I would also like to thank my grandparents, Jonny and Anita Tafoya for all their cards and words of encouragement. I’m blessed that I get to share this moment with them both.

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CHAPTER 1 - INTRODUCTION

The Importance of Sports Sponsorship

The origins of sports can be linked back to the Ancient Greeks and the initial Olympic Games, yet the “size and scope of our technology and economy [of sports in American culture] may be unprecedented in human history” (Quinn, 2009, p. 3). According to Trail and James (2008), the sport-fan population is estimated to be approximately 200 million individuals in the United States, roughly 90% of all adults. Growing media consumption of worldwide sporting events, such as the FIFA World Cup and the Olympic Games, validate the unsurpassed popularity of sport on a global level. Over 3 billion people worldwide tuned in to the 2010 FIFA World Cup held in South Africa (FIFA, 2012), and NBC’s daily prime-time replay of the 2012 Olympic Games in London averaged 31.7 million viewers (Sandomir, 2012). The increased audience has resulted in a proliferation of commercialization, causing “a conflict [that] has developed between sports as a business and sports as a game” (Rein, Kotler, & Shields, 2006, p. 14). As Phil Schaaf (2004) stated in his book, Sports Inc.,

“The main revenue streams for the Yankees in Babe Ruth’s hey-day were simply tickets and concessions. Today the primary sources are tickets, national television contracts, local television contracts, cable television packages, radio rights, premium seating options, concessions, parking, licensing revenue, team sponsorships, global marketing agreements, and online revenue” (p. 33).

To highlight the progression of the sports economy, DuMont paid $75,000 in 1951 for the television rights to broadcast the NFL championship game between the Cleveland Browns and Los Angeles Rams (McDonough, 1994), and now television networks (NBC, CBS, and Fox) pay approximately $1 billion in broadcast rights just for the regular season games (Crupi, 2011).
The abundance of attention directed towards sporting events has initiated prompt corporate responsiveness, causing a nearly fourteen-fold increase in all sponsorship spending over the past two decades, from $3.6 billion worldwide in 1990 to $50 billion in 2012 (IEG, 2013). As shown in Table 1.1, domestic sports sponsorship accounted for $12.95 billion dollars in 2012, a 4.6% increases from 2011, and an amount twice of all other sponsorship spending combined (IEG, 2013). A mutually beneficial relationship between the sport and the sponsor has allowed many athletes and organizations to profit from sponsorships, synergistically allowing marketers to enhance their product image and exposure to new audiences.

Table 1.1

North American Sponsorship Spending by Property Type

<table>
<thead>
<tr>
<th>Category</th>
<th>2011 Spending</th>
<th>Increase From 2010</th>
<th>2012 Spending</th>
<th>Increase from 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports</td>
<td>$12.38 billion</td>
<td>6.2%</td>
<td>$12.95 billion</td>
<td>4.6%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>$1.85 billion</td>
<td>6%</td>
<td>$1.92 billion</td>
<td>4%</td>
</tr>
<tr>
<td>Causes</td>
<td>$1.68 billion</td>
<td>3.7%</td>
<td>$1.73 billion</td>
<td>2.6%</td>
</tr>
<tr>
<td>Arts</td>
<td>$869 million</td>
<td>3.2%</td>
<td>$892 million</td>
<td>3.1%</td>
</tr>
<tr>
<td>Festivals, Fairs, &amp; Annual Events</td>
<td>$804 million</td>
<td>2.8%</td>
<td>$823 million</td>
<td>2.4%</td>
</tr>
<tr>
<td>Associations &amp; Organizations</td>
<td>$532 million</td>
<td>3.5%</td>
<td>$548 million</td>
<td>3%</td>
</tr>
<tr>
<td>Total</td>
<td>$18.12 billion</td>
<td>5.5%</td>
<td>$18.86 billion</td>
<td>4.4%</td>
</tr>
</tbody>
</table>

Not only are sporting events and venues an integral part of advertising and promotion, but the bodies and the equipment of athletes are as well. According to recent research, the top 50 highest-paid athletes in the world earned a combined $1.1 billion in 2004, with over $400 million coming from product endorsements (Forbes, June 24, 2004). Although it is an extreme example, Tiger Woods became one of the highest paid athletes in 2009 by crossing the billion dollar earning threshold in career earnings, with brands such as Nike paying Woods $40 million dollars per year in endorsement deals (Badenhausen, 2009). However, sponsorship can cease when the
athlete fails to perform, professionally or personally. Prominent sponsors such as Gatorade and General Motors terminated sponsorship deals with Tiger Woods after his infidelity scandal and subsequent break from competitive golf (Associated Press, 2010).

The perceived power of the sponsorship not only has its impact on the business of sport, but also has shown its influence to dictate where players play. In 2012, Dwight Howard, who is sponsored by Adidas, would not consider a trade to Chicago Bulls largely due to the fact that Chicago Bulls star, Derrick Rose, was also sponsored by Adidas, threatening Howard’s sponsorship deal with Adidas. When asked about the decision, an Adidas executive stated:

“Adidas simply cannot have its two signature players on the same team in the same market. Derrick is the face of that market, and Adidas can’t possibly have maximum bang for its buck with Dwight there. It serves Adidas no purpose. They need them as rivals in competing markets” (Wojnarowski, 2011).

Although sponsorship may not be the only reason for Howard’s reluctance to move to Chicago, the fact that it was even a consideration underscores the impact of sponsorship dollars in mainstream sport for athletes, consumers, and marketers.

The increase of pairing sports with sponsors has established a new approach to profit generation. The Ultimate Fighting Championship (UFC) has yielded tremendous profit in dictating athlete’s behaviors to maximize potential sponsorship revenues for the organization. In 2010, the UFC (owner of performance beverage Xenergy) banned Good4U drinks from participating as a sponsor during any events, or from endorsing contracted UFC athletes because it was seen as a direct competitor to Xenergy’s market share. The UFC’s decision negatively affected marquee fighter Shane Carwin, who was sponsored by Good4U drink, causing him to tweet, “[a]nother worthy, great, honorable company supporting fighters banned from the UFC. Thank you for making the road even tougher” (Whitman, 2010, p. 1).
This case affirms the elevated leverage sponsorships exert upon sports and its athletes, highlighting the power that businesses believe that sponsorship has on consumer outcomes. However, there is a paucity of research examining the extent to which sponsorships actually influence consumer attitudes and purchase intentions when exposed to the brand during sporting events. According to Nick Palmisciano of Ranger Up clothing, “the uptick [in sales] from any fighter wearing our shirt in the cage does not ever make up for how much we pay that fighter. Ever” (Fowlkes, 2011, 1). Despite myriad propositions and conceptualized models regarding sponsorship effectiveness, there is a lack of empirical evidence from experimental studies examining intervening variables, specifically relating to the relationship between (a) an individual’s fan identity, (b) emotions resulting from exposure, and (c) cognitive capacity due to one’s involvement in the sporting event.

The Growth of Ultimate Fighting Championship as a Consumer Sport

While this dissertation aims to provide empirical evidence using an experimental methodology, much of the focus will pertain to the Ultimate Fighting Championship (UFC) as a primary context. The rapid emergence of the sport into mainstream, the high dependence on (and arguably oversaturation) of sponsorships, and polarizing degrees of fandom, make this form of mixed-martial arts (MMA) an ideal space to measure the effectiveness of sponsorship exposure. A brief understanding of the history of UFC underscores why the study of sport and sponsorship is of uniquely high utility for this sport.

At the turn of the century, the Ultimate Fighting Championship (UFC) was generally viewed by the public as nothing more than organized street fighting (“human cock-fighting” according to Senator John McCain); however, in 2001, Las Vegas casino owners, the Fertitta brothers, purchased the company and, with the help of the UFC’s President, Dana White, the
UFC has become a multi-million dollar organization, making MMA “one of the fastest-growing sports in America” (Lemke, 2008, paragraph 1), and one of the most recognized Mixed Martial Arts (MMA) promotion companies in the world (Hedegaard, 2008; Lim et al., 2010). The sport evolved from a banned activity in over 30 U.S. in 2001 to now being featured on network and cable television after partnering with FOX, which regularly broadcasts events on its main and ancillary networks. Ultimate Fighting Championship broadcasting reaches 149 countries and half a billion homes in 20 different languages (UFC, 2012). To date, the UFC has held televised events in nine countries other than the United States.

On November 12, 2011, the UFC integrated into mainstream media after airing its first network television fight on FOX (Weisman, 2011), attracting 5.7 million viewers and garnering a household rating of 4.3 among men ages 18-34 (Stupp, 2012); a rating for that was higher for that demographic than any college football telecast during the 2011 regular season with the exception of the LSU-Alabama game on November 5 (Sandomir, 2011). Since the initial mainstream broadcast, the audience size has remained stable. UFC 5 on FOX aired on December 8th, 2012, attracting an average of 4.4 million viewers, peaking at 5.7 million, and garnering a household rating of 4.0 among men ages 18-49, finishing as the number 3 show for the week among males ages 18-49, and the number one show of the night among males ages 18-34 (Iole, 2012). These are notable numbers considering that there were two other major sporting events (the Heisman award show and the Pacquiao-Marquez IV boxing fight) airing that same night.

The growth and success of the UFC is authenticated by its network television ratings, cable television ratings, and Pay-Per-View (PPV) buys; especially when compared to other sporting events competing for the coveted male aged 18-34 year old demographic. Evidence of
its growth was witnessed in 2006 when HBO Boxing reported an annual gross of $177 million in PPV—substantially less than the UFC’s reported $205 million in PPV sales (Sandomir, 2007). On network television, UFC events on FOX (1 thru 5), have garnered an average audience of 3.9 million viewers (Ross, 2012). Within key demographics, UFC events draw better ratings than NBA, NHL, and MLB, and have previous set numerous pay-per-view records (Scelfo 2006: Tremblow, 2007: Wertheim, 2007).

The UFC’s growing social media fan base further acknowledges the organization’s growth and success. As of April, 2013, there were approximately 10 million UFC Facebook fans, second only to the National Basketball Association’s (NBA) 16 million fans in terms league-specific Facebook fans. Even the juggernaut that is the National Football League (NFL) has only 7.1 million fans devoted to its specific league brand (Facebook, 2012). Twitter followers have also paralleled this social media trend, growing from 550 thousand following the UFC in March, 2012 to over 1 million in March, 2013 (Twitter, 2013). The UFC President, Dana White, has 2.5 million Twitter followers - a tremendous amount when compared to the likes of NFL Commissioner, Roger Goodell’s 380,000 followers

**Ultimate Fighting Championship Sponsorship Content**

Similar to other sporting event economic models, the UFC earns income on gate sales and PPV buys for the majority of its subsidy, also placing a strong emphasis on corporate sponsorship by obtaining sponsors such as Bud Light, Harley Davidson, and Burger King (MMAPayout.com Blue Book, 2012). Similar to the International Olympic Committee’s (IOC) “clean venue” policy that monitors which branding messages are allowed to be visible to television audiences, the UFC has limited which brands can be worn by its athletes, charging a “sponsor tax” ranging from $100,000 annually to $1 million per quarter to sponsor individual
athletes who are under contract with the UFC in order to maintain a level of exclusivity for the event sponsors (Wharton, 2011). The sponsor tax is levied by the UFC even if the sponsorship is brokered between the participating athlete and the corporate sponsor without assistance from the UFC (Fowlkes, 2011).

The goal is maintaining exclusivity, a “key element in increasing awareness, knowledge and the likelihood of sponsorship success” (Seguin, Lyberger, O’Reilly, & McCarthy, 2005, p. 227), and to prevent “ambush marketing” (Meenaghan, 1996), which occurs when sponsors seek event branding without paying for exclusive rights. Researchers examining the effects of “ambush marketing” report occurrences of misperception of an official event sponsor (Meenaghan, 1996; Sandler & Shani, 1989; Payne, 1998), often because of the sponsor’s market prominence rather than its actual sponsorship is given attribution (Johar & Pham, 1999). The rise in sponsorship spending and efforts to maintain exclusivity allow for the examination of the extent to which event sponsorships affect consumers’ cognitive, affective, and behavioral decisions, particularly in a growing sport, such as MMA and specifically within the UFC organization.

**Purpose of the Dissertation**

This dissertation’s purpose is to use experimental methodology to add empirical evidence to the conceptualized models of sports sponsorship outcomes. To achieve this, focus is placed on two main objectives: (a) to better understand how fan identity impacts physiological response during exposure to a highly arousing, individual, combat sport media and (b) to measure how individual variables such as fan identification, emotion, and physiological response interact with sponsorship variables such as functional congruency to impact awareness, attitude shifts, and purchase intentions.
The principal theory explored throughout this dissertation includes Wann’s (1994) fan identity theory to explore how affiliation and identification to a sport impacts physiological measures, such as arousal and pleasure, during exposure. Research has found anecdotal evidence suggesting psychophysiological differences exist between high and low identified fans (Branscombe & Wann, 1992; Hillman, et al., 2000; Hillman, Cuthbert, Bradley, & Lang, 2004); however, a limited amount of empirical research in this area exists, creating the need for increased investigation, particularly when one is exposed to highly-arousing content. Research in antecedents of fan identity, motivations for consumption, and the effects of fan identity is vast; however, meager academic research exists for individual sports (particularly for MMA) with even fewer incorporating the use of psychophysiological measurement. Furthermore, no current research has applied physiological response to sponsorship outcomes.

A growing body of work has examined the role of identification in sponsorship outcomes (Cornwell & Coote, 2005; Gwinner & Swanson, 2003; Madrigal, 2001), but very few studies have empirically tested conceptualized models or interaction effects in an experimental setting; common methods have privileged field studies occurring at sporting events over media-exposure interrogations. Furthermore, there is a void of knowledge in sports sponsorship relating to the psychophysiology measures, a need advocated by previous researchers (Kinney, 2006). This study will examine how individual factors interact with sponsorship variables, using the knowledge jointly gained from fan identity and psychophysiology to precisely measure sponsorship outcomes. To accomplish this, the dissertation will utilize standard self-report for cognitive, affective, and behavior response towards sports sponsorships along with psychophysiological data. The recording of skin conductance will provide accurate insights on
physiological arousal to better examine interaction effects between exposure to sports
sponsorships, fan identification, and sponsorship outcomes.

Secondly, this theory will explore the effects of Zajonc’s (1968) mere exposure theory
jointly with Pracejus’ (2004) proposition of affect transfer. Several conceptualized sports
sponsorship models indicate the effect of being merely, or briefly, exposed to a brand as an
antecedent for enhanced evaluations, followed by an affect transfer from the event to the
sponsor. However, there is little experimental research supporting the cognitive enhancements
or limitations that may be impacted by the potential intervening variables of fan identity,
involvement and emotion. The purpose of this dissertation regarding mere exposure is to
understand if and how being merely exposed to a sponsor increases or decreases evaluations
when accounting for identification, emotion, and involvement.

Using UFC in this dissertation allows for analysis of identification based on extreme
dichotomies of fan identity recognized from priori studies (Brown, Devlin, & Billings, 2013;
Devlin, Brown & Billings, 2012). Secondly, the amount and type of sponsors featured during
UFC matches provides an opportunity to manipulate and measure several different sponsorship
variables, such as perceived congruency with the event within controlled environment. Lastly,
using a sport that is not as mainstream as football or basketball reduces external confounds that
may occur when testing mere exposure and affect transfer.

**Significance of the Dissertation**

This dissertation will have three theoretical and practical implications for sport
communication and the advertising profession. First, this study will add the necessary empirical
evidence to the investigation of human physiological response currently lacking in fan
identification research. Much of the current research in fan identity has utilized self-report, but
has not sufficiently addressed the effects that fan identity has on physiological response. Early research using blood pressure (Branscombe & Wann, 1992) and skin conductance (Hillman et al., 2000) indicates differences between high and low identified fans; however, as our knowledge of psychophysiological response has increased, so has the need to readress fan identity’s effects on responses to stimuli. Furthermore, studies utilizing physiological response have not attempted to examine the cognitive and affective outcomes related to sponsorship. This study expands the empirical evidence by not only examining the effects of arousal and pleasure on the body, but also how those responses dictate cognitive, affective, and behavioral evaluations of sponsorships.

Second, this study will add to the growing body of empirical evidence in mere exposure literature, particularly in the field of advertising and sponsorship. Previous studies adjudicated this theory to be limited when examining product placements (Devlin & Zhou, 2012; Winkielman, Schwarz, Fazendeiro, & Reber, 2003), identifying factors that mitigate this effect—including brand fluency and the hedonic value surrounding the product placement. This research controls exposure to a particular sponsor, comparing affective and behavioral outcomes and using moderating effects such as fan identity and emotion to determine the degree of applicability in sports sponsorship literature. Previous models in sports sponsorships have suggested the initial step in sponsorship evaluation is simple awareness from mere exposure (Pracejus, 2004); however, the empirical evidence examining this in an experimental setting is largely unsubstantiated.

Third, this study will provide practical recommendations for sports sponsorship by offering empirical evidence to the conceptualized models that have been previously suggested, particularly those proposing the effects of fan identity (Devlin, Brown, & Billings, 2012;
Gwinner & Swanson, 2003; Madrigal, 2001). The study is designed to answer the call for investigation of sponsorships in experimental settings utilizing physiological response (Kinney, 2006) as understanding the role that physiological response (potentially influenced by fan identification), has on ones cognitive, affective, and behavioral evaluations of sponsorships will add evidence to the proposed model, allowing for further testing of interaction effects.

**Overview of the Dissertation**

Now that this initial chapter has (a) introduced the topic of this dissertation by discussing the role of sports sponsorships has in the current sports economy, (b) provided an overview of an emerging sport that relies on sponsorships for increased revenue, and (c) stated the purpose and significance of this study, the remainder of this dissertation unfolds from these established premises. Chapter 2 is divided into three parts, providing a review of literature relevant to this study. Part I focuses on sports-related literature, particularly Wann’s conceptions of fan identity. Part II offers more direct communication-based theoretical undergirding for the work, reviewing mere exposure theory and its involvement as a factor of sports sponsorship evaluations and affect transfer while also exploring conceptualized models of sports sponsorships and the other individual, group, and market variables assumed to influence outcomes. Part III provides an analysis of psychophysiology and the benefits it provides in this line of research, concluding with a review of the previous work done in regards to fan identification and psychophysiology. Chapter 3 focuses on the method of examination, providing a summary of the research questions and hypotheses, while operationalizing key independent variables: (a) fan identification, (b) exposure, and (c) sponsor congruency and providing an overview of the approach, stimuli, pre-tests, and procedure for the experiment. Chapter 4 presents the results from the experiment, and Chapter 5 extrapolates upon the primary findings, proposing theoretical and practical
stipulations, and discussing the study’s limitations and suggesting future research avenues for exploration. In all, this dissertation will forge new ground in a number of areas—both theoretical and applied—that offer insights for the field of communication and numerous ancillary disciplines.
CHAPTER 2 – REVIEW OF LITERATURE

The review of literature is divided into three parts. Part I commences with a discussion of fan identity theory (see Wann, 1994; 1996) to examine its implications on previously-proposed models examining sports sponsorship effectiveness. Part I also succinctly explores fan motivations for consumption, focusing on the emerging sport of mixed martial arts (MMA), and, more specifically, the Ultimate Fighting Championship (UFC). Part II focuses on sports sponsorship by reviewing the key variables and conceptualized models that have been proposed and by incorporating theories--most notably mere-exposure theory (Zajonc, 1968)—but also other cognitive processing theories purportedly affecting sponsorship effectiveness (Pracejus, 2004). Part III examines the use of psychophysiology and its application in understanding the effects of fan identity on physiological response during novel and/or arousing content.

Fan Identification Theory

Sports inherently involve a winner and a loser and, undeniably, the outcome of the event will be pleasing to some and upsetting to others. The unpredictability of the outcome counters various accepted tenets within mass communication theories such as mood management and selective exposure (Zillmann, 1988) suggesting individuals will select media with known outcomes to minimize unpleasantness. When one tunes in to a mediated sporting event, they know they may feel elation or deflation with a large degree of uncertainty involved; indeed, the uncertainly often becomes the primary appeal. Scholars have applied principles from other accepted theories, such as uses and gratifications (Katz, Blumler, & Gurevitch, 1973), to examine antecedents of sporting consumption (Raney, 2006). However, the most applicable
theory to understanding antecedents for sports consumption and the various degrees of affective and behavioral outcomes that occur as a result of consumption is fan identity (see Wann & Branscombe, 1990; Wann & Branscombe, 1993; Wann & Dolan, 1994; Wann, Dolan, McGeorge, & Allison, 1994). Fan identity has been successfully used as a predictor of consumption, as well as the extent to which individuals are affected psychologically by the outcome of sporting events. The cognitive, affective, and behavioral reactions of highly identified fans may produce extreme results, possibly due to the personal self-esteem factors impacted by one's identity to a team or sport (Wann, Melnick, Russell, & Pease, 2001).

Trail, Anderson, and Fink (2000) define identification “as an orientation of the self in regard to other objects including a person or group that results in feelings or sentiments of close attachment” (p. 165-166). Consequently, fan identification is defined as “the extent to which a fan feels a psychological connection to a team and the team’s performances are viewed as self-relevant” (Wann, 2006, p. 332). Identification to a team provides fans with a sense of belonging and attachment to a larger social structure (Wann & Branscombe, 1993). As a result, highly identified sports fans personally view the performance of their favorite team as being self-relevant, developing an emotional ownership of the team that can lead to internalization of their team’s performance (Donavan, Carlson, & Zimmerman, 2005). Fan identification extends itself from social identification theories, commonly referred to as “an acquired cognitive response within a person” whereas “some attributes, motives, and characteristics, and affective states of a model are part of the subject’s psychological organization” (Kagen, 1958, p. 298).

Early works in social identification posit that people tend to classify themselves into similar-type groups (Turner, 1985), allowing for vicarious group participation (Katz & Kahn, 1978), and ultimately causing the individual to interconnect the fate of the group with their own
Fan identity (used interchangeably with social identity from here on forth) derives from earlier group identity and social identity theories to better understand how levels of “fandom” exist, and to define the behavioral outcomes of such an existence. Involvement can range from passive to very involved, producing predictable outcomes, physiological changes, (Branscombe & Wann, 1992), and emotional shifts from pre- to post-game.

Fan identification is based on three tenets: (1) perception of belonging with the group (Turner, 1985), (2) acting congruently with the group’s identity by reinforcing antecedents of identification (Brown, et al., 2013) (3) and categorizing the group based on distinctiveness and prestige (Chatman, Bell, & Shaw, 1986). Perception of belonging with the group relies on the individual’s ability to classify themselves and others into various groups and social categories, which are defined by identifying prototypical characteristics abstracted from the group’s members (Turner, 1985). The individual emphasizes which categories are important and relevant to their identity, leading to organizational commitment (Spears, Doosje, & Ellemers, 1999), best understood as the relative strength of an individual’s identification with the group, belief in acceptance, willingness to exert effort on behalf of the group, and their desire to maintain membership (Reichers, 1985).

Two factors associated with influencing organizational commitment are the perceived prestige of the group (Chatman, et al., 1986) and distinctiveness of the group (Turner, 1985). Together, these two factors may be the most instrumental in building fan identification by producing the strongest long-term effects (Sutton, McDonald, Milne, & Cimperman, 1997). The need for affiliation with a distinct group, particularly within a community (Sutton et al., 1997), indicates that distinctiveness is often more important than positive group image (Mael, 1988;
Milcki & Ellemers, 1996). The development of in-groups and out-groups occurs as a result, affecting both psychological and behavioral outcomes (Ashforth & Mael, 1989; Branscombe, Ellemers, Spears, & Doosje, 1999; Jetten, Spears, & Manstead, 1999). The concept of in-group and out-group formation is increasingly important in relation to sports. Research shows competitive reward strengthens membership and causes in-group favoritism (Tajfel, 1981), further developing in-group and out-groups distinctions (Brewer, 1979). By increasing associations with a winning group, an individual boosts self-identity, their self-esteem (Cialdini, et al., 1976), emphasizing positive aspects of the group (team) while minimizing negative information (Wann & Branscombe, 1993).

While group success is important to forming in-groups and out-groups, it is not the most important antecedent of fan identity. Early works in fan identity (Wann, Tucker, & Schrader, 1996) identified the antecedents of why people selected a favorite team, which included influence from family, peers, and geographical location. Interestingly enough, team success was one of the lowest among predictors, drawing connections to foundations of social identity - group membership of like-individuals in a distinct group.

Wann and colleagues (1996) also found that geographical environment was another antecedent of fan identity. Community affiliation parallels the idea that sports promote the integration of schools, communities, and nations (Trail, Anderson, & Fink, 2003; Wann et al., 2001). Kolbe and James (2000) discovered similar findings in cities with a professional team, finding the association between the city and team were strong predictors of an individual’s team identity. Team identification is fostered through interactions with others as a result of exposure to the sport (Funk & James, 2001; Gwinner & Swanson, 2003), explaining why companionship is a common motivation for consuming mediated sports (Dietz-Uhler, Harrick, End, &
Jacquemotte, 2000; Gantz & Wenner, 1991; Wann et al., 2000), and why repeated exposure fosters the socialization process.

Other antecedents of fan identification include the extent to which one personally identifies with the team or athletes. Individuals with perceived similarities to the players nurture fan identification growth (Wann, 1994), increase group status (Ashforth & Mael, 1989; Ellemers, Van Knippenberg, De Vries, & Wilke, 1988), and create perceptual biases in favor of the members of their group over perceived out-groups because the athlete is seen as sharing the individual’s own social identity. This serves a function of preserving in-group solidarity while also justifying the exploitation of out-groups (Brewer, 1979). The in-group creates more complex schemas for its members and simplified schemas for out-group members (Wann & Branscombe, 1995), often enforced by reminding members about the history and tradition of the group and creating a ritual-like atmosphere (Underwood, Bond, and Baer, 2001).

Mael and Ashforth (2001) expound on the difference between sport identification and other various organizational identification with sport identification specifically hinging on (a) tangibility of outcomes, and (b) vicarious involvement. Unlike other organizational commitments an individual may have (such as place of employment) the emotional commitment one has to a team is completely voluntary; but, as Koppett (1981) states, “[c]ommitment is an illusion – an illusion so strong and so long ingrained that beyond a certain point the attachment is not longer entirely voluntary” (p. 13). Additionally, fan involvement with a team is vicarious with research in social identity theory claiming one does not have to actively participate in the activity for it to be relevant to their own identity (Ashforth & Mael, 1989; Mael & Ashforth, 2001). Vicarious participation is inordinately symbolic rather than directly related to the
outcome of the game, providing further support for the concept of team followership as an integral function of identity (Wann, et al, 2001; Wann, Royalty, & Roberts, 2000).

**Effects of fan identification.** Approaches to group behavior and social identity argue that membership in valued social groups lead to positive psychological outcomes, lower levels of alienation and loneliness, and higher levels of self-esteem (Cohen & Wills, 1985; Rowe & Kahn, 1998). Structural equation modeling and path analysis reveal causal patterns in which team identification has a direct effect on a person’s well being (Wann, 2006). When compared to a control group, highly identified fans were shown to display positive moods, positive evaluations (Hirt, Zillmann, Erickson, & Kennedy, 1992), greater indications of happiness, and less anger after victories (Sloan, 1979). Although fans of winning teams indicated elevated moods after a victory, that same “happiness” is not directed towards out-groups. Similar to the development of in-groups, fans with high levels of fan identity report an increased number of bias perceptions involving the team (Wann & Dolan, 1994; Wann & Schrader, 2000), whether their team is successful or not (Wann, 1994).

Other psychological effects occur with the success or failure of the team/athlete in which the individual identifies. Two psychological effects have been grouped as *basking in reflected glory* (BIRG) after success, or *cutting off reflected failure* (CORF) after failure; two techniques used to protect ones’ identity verified by psychological findings showing that individuals internalize success and externalize failure (Miller & Ross, 1975). Together, the psychological mechanisms have been used to explain fair-weather fans (Baade & Tiehen, 1990), offering insight concerning team identity and external group identities (Trail, Robinson, Dick, & Gillentine, 2003; Wann, Tucker, & Schrader, 1996).
Basking in reflected glory (BIRGing) ensues as the psychological connection with a successful team increases; the association with a team’s accomplishment is used to boost the individual’s identity (Bizman & Yinyon, 2002; Cialdini et al., 1976). An early study conducted by Cialdini et al. (1976) sampled college students from seven universities with Division-I football programs during the 1973 season, finding that people used the pronoun “we” more often and wore more apparel representing the school’s logo after games that their team won than after a loss. Those early findings led to the development of the term BIRGing (Dalakas, Madrigal, & Anderson, 2004).

Cialdini and his colleagues’ (1976) seminal work was instrumental in providing a platform for understanding how team identity is related to self-esteem, discovering a relationship between an increase in one’s self-esteem and association with a successful group. However, where there is success for some, there is bound to be failure for others. Later research revealed that people decrease their association with an unsuccessful team or group to protect their social identity (Snyder, Lassegard, & Ford, 1986), a phenomenon known as cutting off reflected failure (CORFing). Methods of CORFing include remembering past victories (Markman & Hirt, 2002), predicting better futures (Funk & James, 2001), or temporarily disassociating themselves with a team (Wann & Branscombe, 1990). Wann and Branscombe’s (1990) found that highly identified fans are less likely to permanently distance themselves from an unsuccessful team, whereas fans who are not highly identified will eliminate their allegiance to the team during periods of poor performance.

The effects of fan identification also show that responses of highly identified fans are more intense than those of a less identified fan (Branscombe & Wann, 1992; Bizmon & Yinyon, 2002), potentially resulting in an individual reacting to events occurring to the model as if they
happened to them personally (Kagen, 1958). In some instances, effects may include aggression as Branscombe and Wann (1992) found highly identified fans were more hostile towards the threat to the group than less identified fans. This was detected by noticeable physiological changes among highly identified fans following their team’s win or loss. Other sports examining levels of identity found subjects who were highly identified with a particular sports team exhibited significantly different physiological responses when shown photos of their favorite team compared to responses from teams they did not follow (Hillman, Cuthbert, Cauraugh, Schupp, Bradley, & Lang, 2000), again indicating the effects of fan identity on physiological response. It is not clear if similar physiological changes would occur in different stimuli conditions; for example, violent stimuli has shown to produce higher levels of arousal (Lang, Zhou, Schwartz, Bolls, & Potter, 2000).

Fan identity has also been shown to cause behavioral effects among highly identified fans. Game attendance (Fisher & Wakefield, 1998; Wann & Branscombe, 1993) and merchandise purchases (Fisher & Wakefield, 1998) are more prevalent in highly identified fans than low identified fans. Most importantly, for the purpose of this research, fan identity has been shown to impact sponsorship recognition, attitude, satisfaction, and knowledge of sponsors (Gwinner & Swanson, 2003; Madrigal 2000; Madrigal 2001). Terry and Hogg (1996) examined how social identity and group norms interacted to influence behaviors. The researchers found empirical evidence supporting the claim that those who were highly identified with the group perceived higher levels of normative pressure from other members, resulting in higher intentions to engage in in-group behaviors, whereas no differences in-group norms were found for low identifiers. This rationale, also used by Madrigal (2003), explains why highly identified fans
report higher intent to purchase sponsor’s products despite reporting less favorable affective responses towards those products.

Examination of the antecedents and effects of fan identification within the realm of the UFC has revealed differences between gender and age of the fan (Brown, et al., 2013). Results indicated that an individual’s gender and age group predicted identification with both the UFC organization (and sport), and the organization’s athletes. A survey of 911 self-identified fans of the UFC revealed that women were more likely to identify with the individual athlete, whereas males were more likely to identify with the organization and the sport as a whole. Brown and colleagues’ (2013) study also revealed differences in fan identity between age groups, with 18-25 year olds and 34-50 year olds representing the highly identified fans of the UFC, while the group in the middle of these demographics (26-33 year olds) were the least identified fans of the UFC. Such findings also support previous fan identification research finding correlations between fan identity and consumption of MMA-related media and likelihood of attending an event (Andrew, et al., 2009).

**Measuring fan identification.** Fan identification can be determined by levels of commitment and/or by levels of personal identification. Several instruments have been developed and dependably used to measure fan identity. The Sport Spectator Information Scale (SSIS), developed by Wann and Branscombe (1993), utilizes a 7-item scale assessing individual identification with a sports team. The Psychological Commitment to Team Scale (PCT), developed by Mahony, Madrigal, and Howard (2000), utilizes a 14-item Likert scale segmenting sport consumers based on loyalty. Together, these two scales prove to be the most reliable for measuring fan identity as they are highly predictive of fan behaviors and can be used to measure the strength of an individual’s identity to a team, athlete, or group through different sporting
events (Wann & Pierce, 2003). These scales have also been combined and modified for use in previous studies examining fan identification in the UFC with very high levels of scale reliability (Brown, Devlin, & Billings, in 2013).

**Sport Spectator Identification Scale (SSIS).** The Sports Spectator Identification Scale (SSIS), developed by Wann and Branscombe (1993), contains seven items (shown in Table 2.1) with responses ranging from 1 (low fan identification) to 8 (high fan identification). Responses are summed to determine an overall level of identification. Accepted work using this scale argues that scores 18 and below indicate low levels of identification, scores 19 to 34 indicate moderate levels, and scores over 35 are indicate highly identified fans (Wann et al, 2001). Initial reliabilities for the scale had a high Cronbach’s alpha coefficient of .91 (Wann and Branscombe, 1993), an acceptable score in all forms of social sciences (Nunnally & Bernstein, 1994). Consequently, the measure has also been used in research examining the impact that fan identity had on sponsorship evaluations (Madrigal, 2000).

Table 2.1

<table>
<thead>
<tr>
<th><strong>Sport Spectator Identification Scale Items</strong></th>
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<tbody>
<tr>
<td>1. How important to YOU is it that the (team) wins?</td>
</tr>
<tr>
<td>2. How strongly do YOU see yourself as a fan of the (team)?</td>
</tr>
<tr>
<td>3. How Strongly do your FRIENDS see YOU as a fan of the (team)?</td>
</tr>
<tr>
<td>4. During the season, how closely do you follow the (team) via ANY of the following:</td>
</tr>
<tr>
<td>a) in person or television, b) radio, or c) television news or a newspaper</td>
</tr>
<tr>
<td>5. How important is being a fan of the (team) to YOU?</td>
</tr>
<tr>
<td>6. How much YOU dislike (your team’s) greatest rivals?</td>
</tr>
<tr>
<td>7. How often do you display the (your team’s) name or insignia at your place of work, where you live, or on your clothing?</td>
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</table>
**Psychological Commitment to a Team Scale (PCT).** The Psychological Commitment to a Team scale (PCT), developed by Mahony, Madrigal, and Howard (2000), is also used to assess the strength of an individual’s commitment to a sports team, addressing limitations of the SSIS by accounting for attitudinal and behavioral commitment to a team. Such an advancement endorses the assumption that “fans who demonstrate loyalty toward a sports team possess an attitude bias that is both resistant to change and persistent over time. In addition, it is expected that strong and weak attitudes, or levels of personal commitment, toward a team would be effective guides to behavior” (Mahony, Madrigal, & Howard, 2000, p. 18). The scale “provides researchers with a reliable and valid tool for measuring attitude loyalty, or strength of fans’ commitment to a particular sports team” (p. 21). Defining commitment as one’s resistance to change is a function of understanding how fan identity shifts depending on a team’s success or failure.

Three separate samples (professional football, college football, and professional basketball) were used for establishing an internal consistency, reliability, and predictive validity. The scale uses a 14-item, 7-point Likert scale with positively worded items scoring 1 for strongly disagree and 7 for strongly agree and the opposite for negatively worded items. As a result, higher scores always represent greater psychological commitment to the team. See Table 2.2 for PCT scale items.

Considerations must be made when applying fan identification scales to studies regarding the UFC because of the unique nature of the sport the UFC’s organizational structure. The previous scales have been used to assess identity and commitment to a team; but because the UFC has well over 150 contract fighters performing at irregular intervals, it is entirely possible to identify with one or more athletes. Conversely, one may identify with none at all, instead
Table 2.2

*Personal Commitment to a Team (PCT) Scale Items*

1. I might think my allegiance to my favorite athlete is they consistently perform poorly.

2. I would watch a game featuring my favorite (sport) team regardless of which team they are playing.

3. I would rethink my allegiance to my favorite team if management traded away its best players.

4. Being a fan of my favorite (sport) team is important to me.

5. Nothing could change my allegiance to my favorite (sport) team.

6. I am a committed fan of my favorite (sport) team.

7. It would not affect my loyalty to my favorite (sport) team if management hired a head coach that I disliked very much.

8. I could easily be persuaded to change my favorite (sport) team preference.

9. I have been a fan of my favorite team since I began watching professional (sport).

10. I could never switch my loyalty from my favorite (sport) team even if my close friends were fans of another team.

11. It would be unlikely for me to change my allegiance from my current favorite (sport) team to another.

12. It would be difficult to change my beliefs about my favorite (sport) team.

13. You can tell a lot about a person by their willingness to stick with a team that is not performing well.

14. My commitment to my favorite (sport) team would decrease if they were performing poorly and there appeared little chance their performance would change.
focusing their identification on the sport as a whole (Brown et al., 2013). To address this issue, the SSID and PCT scales have been combined and modified, while still maintained internal validity and reliability (Brown et al., 2013; Devlin et al., 2012). The previous studies have established differences in levels of fan identity between an entire sample, with ranges from high to low identification, as well as differences in commitment to either an individual athlete or an organization as a whole.

Based on the literature reviewed concerning fan identity, the following hypotheses are posited:

H1a: Levels of fan identification will positively correlate with consumption of MMA media.

H1b: Levels of fan identification will significantly differ between men and women.

**Fan motivations for consuming MMA.** Given the mass number of sports fans, it is unsurprising that researchers have sought to thoroughly and unambiguously understand fan motives for sports consumption (Trail & James, 2001; Wann, 1995); however, this research tended to focus on established/mainstream sports and/or team sports, presenting new opportunities to explore emerging entities such as the UFC’s recent penetration into mainstream culture. A modicum of research on MMA has found robust opportunities for sports marketing exist within the realm of fighting-oriented sports (Andrew et al., 2009; Kim et al., 2008), primarily because of (a) its popularity within the coveted 18-34 male demographic, and (b) its recent emergence into mainstream media outlets.

Preliminary research proposed potential motivations of MMA consumption (Lee, Kim, Greenwell, Andrew, & Mahony, 2006), examining the relationship between personality and attitude towards MMA (Lim et al., 2010), motivations for media and merchandise consumption among current consumers of MMA (Andrew et al., 2009), spectator motives of individual sports
compared to team sports (Kim et al., 2008), and differences between American and South Korean consumers of MMA (Kim, Andrew, & Greenwell, 2009). Specific fan motives that impact media and merchandise consumption have been consistently identified. Regarding MMA, eight of ten potential motivations (sport interest, eustress, escape, economic factor, aesthetics, vicarious achievement, national pride, and socialization) were significant predictors of consumption (Lee et al., 2006). Among the preceding motivations, drama and sport interest were highest rated motives when examining individual sports (Kim et al, 2008). Other studies (Andrew et al., 2009; Kim et al., 2008) recommend that motivations for media consumption was indicated by aesthetics (technicality of the sport), followed by knowledge, drama, escape, and achievement. However, when examining motivations for merchandise consumption, achievement was the strongest predictor, followed by drama and knowledge (Andrew et al., 2009).

Recently, Kim et al. (2008) examined spectator motives for attending amateur MMA events based on the previous works measuring fan motivations for consuming sports. Additionally, the study investigated differences in motives between male and female fans--research that was later expanded by formalizing the relationship to fan identity (Brown, et al., 2013). Using a scale adapted from other sport motivation studies (Funk et al., 2001; Trail & James, 2001; Wann, 1995), Kim’s 2008 scale addressed 10 motives for MMA consumption: drama/eustress, escape, aesthetics, vicarious achievement, economics, national pride, violence, sport interest, adoration, and socialization. Results showed the primary audience for a MMA event was young males, with post high-school education, and possessing higher-than-median annual individual incomes, contradicting “critics’ claims that the sport only attracts lower-class spectators” (Kim et al., 2008, p. 113).
Andrew, Kim, O’Neal, Greenwell, and James (2009) have also explored fan motivations of media consumption, as well as merchandise consumption, quite pertinent when examining the effects that sports sponsorship has on men and women. Using a 43-item questionnaire, men and women differed greatly regarding demographics, spectator motives, and merchandise and media consumption. The spectator motives scale featured 27 items adapted from previous studies (Funk et al., 2002; Trail & James, 2001; Wann, 1995), adding violence, adoration/hero worship, and sport knowledge. Media and merchandise consumption were measured with three items adapted from Fink, Trail, and Anderson (2002), and three items from Kim et al. (2008). Similar to previous studies, aesthetics and drama were two of the highest motivations for MMA media consumption, with the addition of knowledge.

Research in fan identification revealed several antecedents of identification. Fan identification theories originate from social identity theories, explaining how fan identification develops from one’s need to be affiliated with a group for the enhancement of self-esteem. As a result, fan identification produces predictable affective and behavioral responses. Fan identification is a useful theory, not only for understanding antecedents of identification, but also how identification impacts cognitive, affective, and behavioral outcomes of sports sponsorships. While research has shown that fan identification positively correlates with involvement, liking, and arousal/sensation-seeking scores, still unknown is how non-fans will react to highly arousing images of MMA; therefore, the following hypotheses and research question are formulated:

H2: Fan identification will positively correlate with higher involvement scores.

H3: Levels of fan identification will positively correlate with reported liking of UFC images.

RQ1: To what extent will fan identification impact self-reported levels of arousal after exposure to UFC related images?
Sports Sponsorships

Sponsorships, conceptually defined as “the provision of assistance by a commercial organization, in cash or kind, to a sports property, in exchange for the rights to be associated with the sports property for the purpose of gaining commercial and economic advantage” (Tripodi, 2001, p. 96), have received a large amount of scholarly attention because of the financial growth experienced in the past two decades. The growing trend of financial expenditures from corporations was recognized as early as 1990, when global spending was $3.6 billion (Clark, Cornwell, & Pruitt, 2009), and dramatically increasing worldwide from approximately $28 billion in 2004 to eventually $48.6 billion in 2011—a 1250% increase over two decades. By far, the largest sector of North American sponsorship spending was directed towards sporting events in 2012, earning $12.95 billion from corporations, twice all other sectors combined (IEG, 2013). North American sponsorship spending surpassed traditional advertising budgets by 1.5% in 2011 (IEG, 2012).

Sponsorships are unlike traditional advertising messages because, unlike commercials and other types of advertisements (i.e. print), sponsorships rarely carry involved messages, resulting mere advertising fragments (Pham & Vanhuele, 1997). However, unlike traditional advertising, sponsorship “allows brands to be presented to a vast array of audiences,” (Tripodi, 2001, p. 110) that marketers would not normally reach, because “sport as a corporate marketing tool provides increased flexibility, broad reach, and high levels of brand and corporate exposure” (Pegoraro, Ayer, & O’Reilly, 2010, p. 1454). Indeed, sponsorship may be more effective than traditional advertising in certain instances because of the combination of cognitive processes involved with sports (Harvey, Gray, & Despain, 2006) and the variety of market factors, including sponsor-event congruency and brand prominence. Combined, these factors lead to
more beneficial associations (Johar & Pham, 1999; Pham & Johar, 2001). Additionally, a variety of other factors such as fan identification and event involvement provide a unique opportunity to marketers that traditional advertising cannot. Sponsorships engage the consumer at an emotional level, creating a link between the sponsor and the event that the consumer already values (Crimmins & Horn, 1996) because “both the message and medium are inextricably linked” (Meenaghan, 1996, p. 104). Therefore, sponsorships are considered to be a subtle and indirect form of advertising, able to surpass consumer defenses by presenting itself as a form of goodwill rather than over advertising (Meenaghan, 1996; 2001).

Not only do sponsorships have the ability to reach vast audiences, sponsorship-linked marketing is said to enhance brand equity, which according to Aaker (1996) and Keller (1993) comprises brand awareness and brand image. Regarding the marketer’s objectives, sponsorships are, “investments in causes or events to support corporate objectives (for example, by enhancing corporate images) or marketing objectives (such as increases brand awareness)” (Gardner & Shuman, 1988, p. 44). Keller’s (1993) definition of brand equity is based on the combination of brand awareness and brand image; brand awareness relates to brand recall and recognition by a consumer, and brand image refers to the set of associations linked to the brand the consumer previously holds in memory. Brand associations include all types of perceptions held in one’s memory from previous experiences.

Event selection. Managers selecting events to sponsor attempt to ensure that activities involved in the sponsorship contribute to a dependable and memorable form of communication to help the firm achieve a competitive advantage (Amis, Slack, & Berrett, 1999). Recent studies of Fortune 500 companies found that one-third of the firms have established sponsorship policies (Cunningham, Cornwell, & Coote, 2009). A survey of 50 managers revealed that (a) the firm’s
sponsorship policy and (b) the extent to which the sponsorship is leveraged with advertising and outside promotions are two main factors vital in differentiating their brand from the competition.

Similar to decisions included in traditional media planning, factors such as target audience, event size, and level (or amount) of sponsorship are necessary to impact current sponsorship policies (Cornwell, Roy, & Steinard, 2001). Events are often selected for either their overlap between event audience and the target market or because of perceived congruency between the brand and the event, operationalized as a functional relationship (e.g. running shoes and a track meet) or an articulation between the brand image and the event (e.g. luxury brands at U.S. Open tennis).

Managers seek to find advantageous connections by building a vast portfolio of sponsorships; however, scholars suggest that a risk of being associated with too many events can lead to confusion, diverse and unsupported memory networks--and potentially negative sponsorship responses (Speed & Thompson, 2000). Managers should be weary of sponsoring too many events and consider several different factors that may affect cognitive, affective, and behavioral outcomes, including level of sponsorship, whether they are an exclusive sponsor, (e.g. Olympic games and Visa), a title sponsors (e.g. Allstate Sugar Bowl), presentation sponsor (e.g. Dr. Pepper half-time show), or a sponsor with no special rights, appearing only as signage throughout the stadium. In addition, managers must also consider extending opportunities associated with sponsoring an event, such as merchandise areas, (Amis, Slack, & Berrett, 1999; Gwinner, 1999), to increase perceptions of differentiating the brand and adding value to the brand’s equity (Cornwell, Roy, and Steinard, 2001). These findings directly coincide with Cimmins and Horn’s conclusion (1996) that “[i]f the brand cannot afford to spend to communicate the sponsorship, then the brand cannot afford sponsorship at all” (p. 16).
Mere exposure theory. Pracejus (2004) outlines seven psychological mechanisms that impact brand equity and sponsorship effectiveness: (a) simple awareness, (b) affect transfer, (c) image transfer, (d) affiliation, (e) implied size, (f) implied endorsement, and (g) reciprocity, stating that, “[t]he mechanisms are not mutually exclusive, thus two or more may function in any given sponsorship association. Together, however, they represent a reasonably complete set of ways sponsorship works” (Pracejus, 2004, p. 175). The seven mechanisms, ordered by the amount of cognitive elaboration necessary to function, begin with simple awareness and conclude with reciprocity, as showing in Figure 2.1.

Figure 2.1: Processing mechanisms

Pracejus (2004) states, “[t]he only mechanisms to receive significant direct acknowledgement are simple awareness, affect transfer, and to a lesser extent, image transfer” (p. 176). The importance of simple awareness as a requirement for cognitive elaboration to begin highlights the importance of the mere exposure theory (Zajonc, 1968). Other sponsorship variables, such as congruency and fan identity, may impact different stages of processing, such as image transfer and affiliation; however, mere exposure (simple awareness) plays a significant role in sponsorship outcomes. Other cognitive mechanisms, affect transfer, image transfer, and reciprocity, may impact affective, and behavioral outcomes according to Pracejus (2004). Thus, mere exposure outcomes should not be examined in isolation, but rather as part of a complete sponsorship model.
Different cognitive processing models have been proposed describing how attitude shifts may occur as a result of exposure to a stimulus. Some models suggest that recall must occur for attitude shifts to take place; others explain how learning and attitude shifts may occur in the absence of recall. The mere exposure effect (Zajonc, 1968) best explains the importance of simple awareness and is particularly valuable in advertising and marketing messages where the goal is to get consumers to “like” brands after merely being exposed to them. This phenomenon suggests that repeated exposure to a stimuli increases favorable attitudes to a present target stimuli simply because it becomes easily accessible to the individual’s perception, resulting in more affective responses even in the absence of recall.

Over 40 years of research and more than 200 empirical findings (Bornstein & D’Agostino, 1992; Janiszewski, 1993; Obermiller, 1984) have supported the mere exposure effect (for review see Bornstein, 1989). Taken collectively, scholarly studies suggest that learning “can take place entirely outside of conscious awareness, involving implicit rather than explicit knowledge” (Bornstein & D’Agostino, 1992, p. 545), and that attitudes are significantly enhanced by mere exposure to a stimuli (Zajonc, 1968). Several studies have replicated the original findings through experimentation (Grimes & Kitchen, 2007; Janiszewski, 1993; Lee & Labroo, 2004; Zajonc, 2004) using a variety of stimuli, such as Japanese ideographs (Moreland & Zajonc, 1977), banner ads (Fang, Singh & Ahluwalia, 2007), and product placements (Janiszewski, 1993; Måtthes, Schemer, & Wirth, 2007). Studies have also been conducted to understand advertising effectiveness (Grimes & Kitchen, 2007; Måtthes, Schemer, & Wirth, 2007; Sawyer, 1981), brand evaluations (Lee & Labroo, 2004), social judgments (Saegert, Swap, & Zajonc, 1973), aesthetic judgments (Berlyne, 1974), and sponsorships (Bennett, 1999; Olson & Thjomoe, 2001).
The Perceptual Fluency/Misattribution model (PF/M) is the most widely accepted model used to explain how the mere exposure effect occurs (Lee & Labroo, 2004; Reber & Schwarz, 2004; Winkielman, Schwarz, Fazendeiro, & Reber, 2003). The Perceptual Fluency/Misattribution Model (PF/M) posits individuals will engage in subconscious and effortless processing of the target after exposure to a stimulus. Perceptual fluency increases as the individual is repeatedly shown a stimulus material, resulting in automatic and effortless processing. The individual misattributes the ease of processing as liking the stimuli because it requires less cognitive resources to process, creating enhanced evaluations during future encounters with the target stimuli (Devlin & Zhou, 2012; Lee & Labroo, 2004; Reber et al., 2004; Winkielman et al., 2003).

The effect occurs because prior exposure causes uncertainty reduction, increased predictability, and subjective familiarity, which are all incorrectly attributed to enhanced evaluation (Jacoby, Woloshyn, & Kelley, 1989). The PF/M supports an original premise of the mere exposure theory; that identification of something unfamiliar implies a threat (Zajonc, 2001), while familiar things may be enjoyable, and new things may be interesting (Zajonc, 2004). Cognitive processing theories suggest that individuals process familiar stimuli faster than novel stimuli (Winkielman, et al., 2003); therefore, individuals notice and prefer familiar stimuli, eliciting a positive reaction, and making the target easier to process later by leaving memory traces (Schacter, 1987; Shapiro, 1999).

Scholars have discovered that external variables such as repetition (Moreland & Zajonc, 1977) and duration (Seamon, Marsh, & Brody, 1984) increase perceptual fluency, thereby increasing liking after exposure. The repetition of exposure increases fluency because it provides a memory trace (Obermiller, 1984; Sawyer, 2006; Shapiro, 1999). More specifically, Fang,
Singh, and Ahluwalia (2007) found that increased exposure (frequency) shortens reaction times to recognition of banner ads (secondary information) and increases liking. However, other studies (Bornstein, 1992) found that over exposure may create satiation, causing boredom and producing a downturn frequency effect.

Researchers have examined how the mere exposure effect applies to advertisements (Grimes & Kitchen, 2007; Janiszewski, 1993; Lee & Labroo, 2004); however, little research has examined the mere exposure effect in the context of sponsorships. Advertising research suggests that when a brand is part of the secondary information, it is less likely to be recalled, however, attitudes increase as a result of exposure occurs (Janiszewski, 1993). Sponsorships function in the same capacity as advertisements and are regularly encoded as secondary information; therefore, sponsorships are an appropriate unit of analysis when examining the effects of mere exposure. As Grimes and Kitchen (2007) point out, understanding mere exposure is important in the realm of product placements, a form of advertising similar to sponsorships; however, diminutive research has empirically tested this theory as it relates to sponsorships (Bennett, 1999; Olson & Thjomoe, 2003).

One study examining the mere exposure effect of product placements found that the brand does not need to be recalled to have an impact on attitude (Måtthes et al., 2007). Måtthes and colleagues (2007) manipulated product placement frequency, examined program involvement, and individual’s persuasion knowledge. They found that frequency alone did not have any significant influence on attitude; however, a three-way interaction effect with program involvement, frequency, and knowledge of intention of persuasion impacts attitudes. The aforementioned study used a fictitious brand to isolate the effects of mere exposure, inhibiting examination of other variables that may impact the effectiveness of production placements.
In conclusion, the mere identification of a familiar object, even if prior knowledge of the object is disliked, should evoke a mild pleasure and appreciation. Individuals will process stimuli when they are fluent of it and higher levels of fluency make the target easier to process (Schacter, 1987; Shapiro, 1999), resulting in enhanced evaluations of the target due to the ease of processing rather than actual liking as suggested by the Perceptual Fluency/Misattribution model (PF/M) (Bornstein & D’Agostino, 1992; 1994; Lee & Labroo, 2004; Reber et al., 2004; Winkielman & Schwarz, 1998; Winkielman et al., 2003).

*Mere exposure in sponsorship studies.* Work in mere exposure has been systematically conducted over the past few decades, yet very few studies have examined the theory as it applies to sponsorships. Bennett (1999) examined the recall of a specific product category (i.e. fast food) during a soccer match, supporting mere exposure theory A controlled experimental setting (Olson & Thjomoe, 2003) also provides evidence of the mere exposure effect; however, the investigation of mere exposure theory as it relates to sponsorships is limited, inviting more research to be conducted.

In Olson and Thjomoe’s study (20003), participants were exposed to a series of images that featured a fictional brand with information about the brand, fictional brand without information, a real brand with information, and a real brand without information, resulting in 17 total exposures to the target sponsors. Their results showed that an increase in evaluations occurred for the fictional brand among the exposure group compared to the control group. Based on the previous work in mere exposure, the following research questions and hypotheses are proposed:

**H₄a:** Individuals exposed to sponsors will report more positive attitudes towards sponsors than individuals not exposed to sponsors.
H₄₆: Individuals exposed to sponsors will report higher purchase intentions for sponsors than individuals not exposed to sponsors.

Conceptualized models of sponsorship effectiveness. One of the largest gaps in sponsorship literature is the lack of universally accepted theories and models interpreting how consumers’ favorite properties influence the cognitive, affective, and behavioral intentions towards the sponsors (Alexandris & Tsiotsou, 2012; Cornwell & Maignan, 1998; Kinney, 2006). Conceptual frameworks have been proposed (Cornwell, Weeks, & Roy, 2005; Meenaghan, 2001; Poon & Pendergast, 2006), but have yet to be empirically tested in experimental settings. That is not to say empirical research has not been conducted as field studies and surveys have been employed (Bennett, 1999; Devlin, et al., 2012; Johar & Pham, 1999; Madrigal, 2000; Madrigal, 2001; Pham & Johar, 2001).

Early primitive models (Lee, Sandler, & Shani, 1997) used consumer survey data to construct a model based on attitudes towards the event, attitudes towards commercialization, and attitudes towards behavioral intent. Other models (Gwinner, 1997) approached the affective states of the individual by incorporating elaboration likelihood and image transfer based on previous interactions with the brand and frequency of exposure. More recent offerings have examined the individual’s cognitive processing abilities in relation to the sponsorship environment (Cornwell et al., 2005; Meenaghan, 2001) the impact of fan identification (Gwinner & Swanson, 2003; Madrigal, 2000; Madrigal, 2001), and the level of event involvement (Alexandris & Tsiotsou, 2012). Perhaps the most complete model comes from Cornwell, Weeks, and Roy’s (2005). They amalgamate individual processing mechanics, group-level factors (such as fan involvement), and market factors, establishing a set of outcomes to evaluate sponsorship effectiveness.
While a key to sponsorship success is the construction of a link between the sponsor and sponsored property, a variety of factors may increase the desired effect, or limit desired the effect. Research reveals instances where sponsors were not recognized as an event sponsor, or even worse, individuals identified a competitor as the sponsor when they were not associated with the event (Crimmins & Horn, 1996; Johar & Pham, 1999; Pham & Johar, 2001). However, several factors discussed below have been shown to impact the collateral benefits between the brand and the sponsored property/event. Although, the number of variables that have been examined are somewhat thorough, there is still a lack of formal models demonstrating how several factors interact with one another (Kinney, 2006).

**Factors influencing sponsorship effectiveness.** A variety of factors can impact consumer cognition (recall) and attitude toward the sponsor. Higher levels of recall occur when stadium signs are shown for longer periods of time (DeMars & Robinson, 1998), and factors such as congruency to event (Johar & Pham, 1999), the audiences’ attitude towards the event (Crimmins & Horn, 1996), previously held feelings towards the brand (Gwinner, 1997; Speed & Thompson, 2000; Stipp & Schiavone, 1996), fan identification to the sport and team (Gwinner & Swanson, 2003; Madrigal, 2000; Madrigal, 2001) and the brand’s market prominence (Johar & Pham, 1999; Pham & Johar, 2001; Roy & Graeff, 2003) all influence affective and behavioral evaluations.

Recent research thoroughly proposes and assesses several factors appearing to impact evaluations, which are organized by individual factors, group factors, and market factors. Individual factors include variables such as involvement (Alexandris, Tsaousi, & James, 2007; Gwinner & Swanson, 2003), emotion (arousal and pleasure) (Pham, 1992; Pracejus, 2004), knowledge and prior exposure (Devlin, et al., 2012), and ability to cognitively process stimuli
material as a function of simple awareness and mere exposure (Pracejus, 2004; Zajonc, 1968).

Group factors examine the role fan identity (or referred to as affiliation and social identity in some instances) has on sponsorship outcomes. The topic of fan identification has been thoroughly examined outside of sponsorship (See Wann & Branscombe, 1990; 1991; 1992; 1993; Wann & Dolan, 1994; Wann et al., 2001), and has recently been applied to models measuring sponsorship evaluations (Gwinner & Swanson, 2003; Madrigal, 2000; 2001; 2003); however, this area lacks breadth in potential interactions listed above. Market factors include the variables the individual does not control, such as congruency between event and sponsor, market prominence, and brand equity.

Lastly, it is equally important to apply proper methods of measuring sponsorship-linked marketing outcomes. Research in sponsorship effectiveness, as well as traditional marketing research, considers the following measurements as reliable dependent variables: (a) cognitive outcomes (recall and recognition), (b) affective outcomes (liking), and (c) behavioral outcomes (purchasing) (Cornwell et al., 2005; Kinney, 2006). Reliance on self-reports has limited the understanding of sponsorship outcomes and potential interaction effects in regards to processing mechanics associated with individual factors (i.e. arousal and liking). Kinney (2006) suggests that research employ the use of psychophysiology to better our understanding of sponsorship effectiveness. The psychophysiological measures themselves are diminutive in revealing the effects of sponsorship exposure, but can be used to understand and explain relationships occurring between a variety of the variables, such as arousal, fan identification, and awareness.

Involvement

Advertising has rigorously examined how program involvement impacts the evaluations of commercials in terms of recall (see Mueling, Laczniak, & Andrews, 1993 for review).
Despite the conducted research, “there is not clear, unambiguous conceptual definition of program involvement” (Moorman, Neijens, & Smit, 2007, p. 124). Early conceptualization of involvement differentiated between high and low involvement, suggesting that involvement should not be synonymous with attention, interest, or excitement (Krugman, 1965). Later conceptualizations of involvement include “an individual level, internal state variable that indicates the amount of arousal, interest, or drive evoked by a particular stimulus or situation,” (Mitchell, 1979, p. 194). Research examining commercials and sponsorships alike has produced mixed results, suggesting the interaction of intervening variables. One explanation for the inadequacies involvement as a factor in advertising research is that it has been defined in terms of individual suspense (Bryant & Comisky, 1978), arousal (Matthes et al., 2007), and even mental involvement (Pavelchak, Antil, & Munch, 1988).

Two dimensions of involvement can be operationalized and applied to advertising research: cognitive and affective (Park & McClung, 1986). Cognitive dimensions reflect the personal relevance of the message based on function performance where as the affective dimension reflects the personal relevance of the message based on emotional or aesthetic appeals. Park and McClung’s (1986) research indicated a curvilinear relationship between commercial involvement and level of program involvement. Cognitive involvement with the ads, measured in terms of recall, increased as affective involvement with the programs went from low to moderate, but decreased at high levels of affective involvement. Additionally, when cognitive involvement with the program was at low and moderate levels, affective involvement remained constant, however, decreased when cognitive involvement with the program was high.

Factors influencing involvement. Previous research empirically testing the antecedents of involvement reveal two main factors influencing involvement: (a) personal related factors and
(b) stimulus related factors (although the two are arguably interactive of one another). Personal related factors consider an individual’s motivations or ability to process information and the personal relevance of the advertised brand (Celsi & Olson, 1988). Relevance may also be influenced by knowledge, allowing receivers to be more proficient in processing and elaborating messages (MacInnis & Jaworski, 1989). Stimulus related factors affect involvement by either impeding or enhancing one’s ability to either voluntarily or automatically processes the message based on the construction of the stimuli (i.e. pacing, content, familiarity) (Antil, 1984).

Advertising research has modified levels of personal involvement, indicating that peripheral cues serve as important determinants of product evaluations in low-involvement conditions (Petty, Cacioppo, & Schumann, 1983). Consumers in high-involvement conditions reported favorable brand attitudes when they were able to identify a match between endorser and the product (Schaefer & Keillor, 1997), because individuals who are highly involved with an event are likely to have high interest and emotional attachment with an associated property (Havery, 2001; McDaniel, 1999), and an increased knowledge of both the program and associated brands (McDaniel, 1999).

A debate on effects of cognition still exists within advertising research based on the various proposed models, antecedents, and dimensions of involvement. Some research testing the main effect for recall of ads using involvement as in independent variable suggests that increased involvement with programs enhances recall of advertised message citing previous models suggesting that people must be engaged in the program in order to apply any processing efforts towards the stimuli (Lardinoit & Derbaix, 2001; Moorman, et al., 2007; Norris, Coleman, & Alexio, 2003). Other scholars have addressed the negative implications of increased involvement on recall (Bennett, 1999; Dalakas & Kropp, 2002; Pavelchak, Antil, & Munch,
1988), arguing that involvement hinders processing of advertisements because of a limited capacity for processing (Bryant & Comisky, 1978; Lang et al., 2000). Other scholars suggest involvement functions in an inverted-U pattern, stating that people who are minimally involved do not put effort into processing, but individuals will increase their effort to optimal levels as involvement increases before becoming cognitively overloaded and unable to process peripheral information (Lardinoit & Derbaix, 2001; Park & McClung, 1986; Pham, 1992).

**Sponsorship and sports involvement.** Involvement in regard to sponsorship literature is operationalized as a person’s “perceived relevance of the object based on inherent needs, values, and interests,” (Zaichkowsky, 1985, p. 342) and is influenced by their motivation, ability, and opportunity to process the event (Batra & Ray, 1983; MacInnis & Jaworski, 1989). Regarding sports, “the psychological concept of sports involvement is not participation (as it is used by Rudman (1989)) but rather the perceived interest in and personal importance of sports to an individual” (Shank & Beasley, 1998, p. 436). The study of sports involvement has been used for individual sports, such as golf (Lascu, Giese, Toolan, Guehring, & Mercer, 1995), and team sports such as baseball (Wakefield, 1995), examining how involvement relates to sponsorship recognition. Research in this area has suggested the sports involvement is a relatively good predictor of sports-related behaviors, such as consumption and enjoyment of sporting events, as well as recognition of peripheral cues associated with sports, such as sponsorships. Preliminary research in this area (Lascu et al., 1995) showed that involvement with the sport was positively associated with the ability to identify sponsors of a golf tournament. Consistent with research examining program involvement, it is proposed that the experience of involvement with a sporting event is comprised of situational factors and personal relevance. Olson, (2010) explains that an individual may be involved or interested in a particular sport; however, the situational
event (score) or teams participating, or the stakes (championship) may decrease or increase the level of involvement and perceived personal relevance, influencing the processing of the event and sponsorship material embedded within. At low levels of involvement with the event, one can also assume that little attention capacity will be allocated to the stimuli, thereby giving the sponsor limited attention. Similarly, Pham (1992) suggests that as the level of involvement increases towards the event at maximum levels, the individual is less concerned with peripheral targets (sponsorships) and more concerned with the event itself.

Research providing closer analysis of sports involvement (Shank & Beasley, 1998) attempts to provide an accurate scale to assess involvement, finding two factors; cognitive (useful/relevant/important) and affective (exciting/interesting/appealing). Previous work reveals that involvement is related to the number of hours viewing sports on television, reading about event, and attending event, implying that those who are most involved are more likely to expose themselves to sponsorships than uninvolved consumers. Research in sports involvement has also found that high involvement leads to stronger cognitive processing sponsorships since highly involved customers are more willing to engage in active processing of information regarding the sport (Gwinner & Bennett, 2006; Olson, 2010; Wakefield, Becker-Olsen, & Cornwell, 2007).

For this study, involvement is referred to as one’s desire to engage in the event, and not an affiliation to a particular team, sport, or individual, thus distinguishing it from traditional operationalizations of fan identification.

Based on the research conducted on the role of involvement, the following research questions and hypotheses are proposed:

H5a: *Involvement with a sponsored event has a curvilinear (inverted-U) effect on the unaided recall of sponsors.*
**H<sub>SS</sub>:** *Involvement with a sponsored event has a curvilinear (inverted-U) effect on the aided recall (recognition) of sponsors.*

### Emotion (Arousal and Pleasure)

Emotion, defined as the combination of arousal and pleasure is another factor shown to impact sponsorship outcomes (Cornwell et al., 2005). Lim, Martin, and Kwak (2010) state, “by investigating the mediating role of emotion (pleasure and arousal) that perhaps helps shape attitudes, which may enhance our understanding of nontraditional-sports media consumption” (p. 50-51). Russell, Weiss, and Mendelsohn (1989) concluded that degrees of pleasure and arousal could be manipulated through the environment and by information given to an individual. Mehrabian and Russell (1974) showed that the emotional responses of pleasure and arousal are affected by stimuli; thereby influencing the reaction an individual has toward the stimuli. Research shows that these variables also affect variety of approach-avoidance behaviors in terms of work performance, exploration, and social interaction. Stimuli that invoke negative feelings may result in avoidance by the individual, while stimuli that invoke positive feelings result in approach.

Levels of pleasure have been semantically defined as feelings of pleased or annoyed, unsatisfied or satisfied, happy or unhappy, melancholic or contented, despairing or hopeful, and elated or depressed (Mehrabian & Russell, 1974). Arousal is defined as a state of relaxed or stimulated, dull or jittery, calm or excited, sleepy or wide awake, frenzied or sluggish, and aroused or unaroused (Mehrabian & Russell, 1974). According to Mehrabian (1972), levels of pleasure and arousal can be accurately assessed with self-report technique using semantic differential measures or behavior indicators identified as positive or negative. Such items are featured in the Mehrabian and Russell Mood Measurement Scale (Mehrabian & Russell, 1974), becoming one of the most influential scales for the measurement of emotional experience.
(Havlena & Holbrook, 1986; Pavelchak et al., 1988). The Mehrabian Russell Mood Scale identifies the levels of arousal and pleasure in individuals through self-report. The semantic differential scale operates by showing extreme bipolar attitudes for each dimension. The combination of low/high arousal and low/high pleasure effectively produces most labels for moods and emotional states, for example, excited is high pleasure / high arousal and depressed would be labeled as reporting low arousal / low pleasure; distressed is low pleasure / high arousal; and contented is high pleasure / low arousal (Mehrabian & Russell, 1974). Other studies that examined the relationship between emotion and enjoyment demonstrate that pleasure is strongly correlated with joy and acceptance but negatively correlated with fear, anger, and disgust, whereas arousal was linked to fear, expectancy, and surprise (Havlena & Holbrook, 1986). Building from the mood scale, Russell, Weiss, and Mendelsohn (1989) developed the Affect Grid as a quick means of assessing affect along the dimensions of pleasure-displeasure and arousal-sleepiness. The authors state:

The Affect Grid is potentially suitable for any study that requires judgments about the affect of either a descriptive or a subjective kind. The scale was shown to have adequate reliability, convergent validity, and discriminant validity in 4 studies in which college students used the Affect Grid to describe (a) their current mood, (b) the meaning of emotion-related words, and (c) the feelings conveyed by facial expressions. (p. 493)

Combined, the two scales show the ability for one to identify and report their current mood state resulting from exposure to a stimulus. Additionally, the two scales show how the two dimensions of emotion, pleasure and arousal operate independently of one another.

Moods not only affect an individual’s media selection, but also influence an individual’s social judgments (Forgas & Moylan, 1988), which is consistent with Pracejus’ (2004) conceptualized model concerning affect transfer in sponsorships. In a study about social
judgment, Clore, Schwarz and Kirsh (1983) used field observations to examine how viewing a film that was predominantly sad, happy, or aggressive in tone influenced individuals later judgments. In the study, subjects were asked to fill out a self-reported mood scale following the film and then asked questions about politics, responsibility, guilt, and the value of life. Those who saw happy films reported more positive moods and their social judgments were more optimistic than those who saw sad or aggressive films. Later studies have also measured the effect moods had on advertising segments (Devlin, Chambers, & Callison, 2011), finding men evaluated serious-toned advertisements better when they were in a positive mood, and comedic-toned ads better when they were in a negative mood; whereas women evaluated all ads negatively when in a negative mood and all ads positively while in a positive mood state. One reason these effects are said to occur is because people are emotionally driven and consult their previous mood to make judgments rather than react.

**Examination of arousal.** Arousal can be defined as either a function of intensity and content, or a level of action activated by structural change (i.e. pacing, sound effects, rapid change in media). Understanding and measuring arousal has been conceived as “a unitary force that energizes or intensified behavior that receives direction by independent means” (Zillmann, 1991, p. 104). Many different approaches to defining and measuring arousal have been proposed, but for the purpose of sports sponsorship, theories of emotion and activation theory are employed as guideposts. The goal of understanding arousal is not to understand the source of processing (valence of stimuli), but to understand the cognitive processing that occurs after induced levels of arousal (high/low), which either can be present in both forms of valence (positive/negative).
Studies show that increased arousal affects an individual’s cognitive processing ability (Grigorivici & Constantin, 2004; Lang, 2000; Lang, Geiger, Strickwerda, & Sumner, 1993; Yegiyan & Lang, 2010) by increasing attention (Grimes and Kitchen, 2007; Lang, 2000), and program involvement (Winkielman et al., 2003; Schneider & Cornwell, 2005). Increased arousal signals that changes in the environment are occurring and must be monitored, resulting in a higher amount of resources allocated for cognitive processing, impacting the role of increased or decreased acquisition and storage of information (Mundorf, Zillmann, & Drew, 1991; Pavelchak, Antil, & Munch, 1988).

A comprehensive amount of literature that has shown the relationship between arousal and recall exists (Newhagen & Reeves, 1992; Lang et al. 2000; Lang, Potter, & Grabe, 2003). A growing body of research supports that content arousal (i.e. sex and/or violence) combined with fast paced structures may overload cognitive capacity and decrease the amount of the message capable of being processed and stored into memory (Geiger & Reeves, 1993; Bolls, Lang, & Potter, 2001). Extremely high levels of arousal have been shown to have a negative impact on ad recall (Park & McClung, 1986; Pavelchak, Antil, & Munch, 1988), processing capability of persuasive messages (Sabomatsu & Kardes, 1988), and performance of cognitive tasks, (Hasher and Zacks, 1979). The cognitive process of encoding an advertisement, particularly one that is embedded in a fast paced, arousal inducing media, involves several simultaneous tasks to be performed. Relevant portions must first receive attention, then be encoded into short-term memory, and then finally transferred into long-term memory for later retrieval (Lang, 2000).

**Arousal in sponsorship studies.** Similar to involvement, arousal varies from person to person based on several individual characteristics, such as fan identity and sensation seeking habits (Brown et al., 2013; Diehm & Armatas, 2004; Lim, Martin, & Kwak, 2010). Highly
identified fans report higher levels of arousal and physiological changes than less identified fans (Branscombe & Wann, 1992) after exposure to a stimulus. Cornwell and colleagues (2005) have also found evidence suggesting “[t]he extent to which a target audience processes a brand-event linkage created via sponsorship may be influenced by the level of arousal elicited by the sponsor, event, or both” (p. 31).

When examining sponsorships, the role of arousal operates in two different dimensions, (a) cognitive capacity, and (b) affective effects. First, arousal impacts cognition by controlling the amount of information that is processed by controlling resource allocation to the subprocesses of encoding and storage of the target stimuli (sponsors in this case) (Christianson, Goodman, & Loftus, 1992; Lang, 2000). Secondly, arousal influences affective response, and can therefore influence affect transfer from the stimuli onto the brand (Pracejus, 2004). Research in the field of arousal’s effect on consumer responses posits an inverted-U effect (Cornwell et al., 2005; Pham, 1992) when measuring for recall.

Advertising research has largely agreed that moderate levels of arousal are optimal for encoding, storage, and retrieval (Tavassoli, Schultz, & Fitzsimmons, 1995). However, in a sponsorship context, it has been posited that presenting individuals with marketing messages may cause an assimilation effect, whereas peripheral cues (sponsors) are assimilated with central cues (sport event) (Broach, Page, & Wilson, 1995). Sporting events induce affective reactions among audience members, which can then be linked to arousal (Pavelchak, et al., 1988). Two dimensions of arousal can be explored within the context of sports sponsorship: a measure of physiological changes associated with a fans’ level of involvement (Olson, 2010) or identity (Branscombe & Wann, 1992), the second being an individual’s cognitive capacity for encoding and storing secondary/peripheral cues such as sponsorships. During a sporting event, sources are
competing for attention and, as arousal increases, sponsorship recognition decreases (Pham, 1992). An experiment utilizing a 25-minute soccer match containing sponsorship billboards and measuring involvement, arousal, and pleasure via self-report using the Mehrabian and Russell (1974) mood scale indicated that involvement and arousal with a sporting event had a curvilinear effect on the recognition of embedded sponsors (Pham, 1992).

**A closer examination of pleasure.** The distinction between arousal and pleasure (or valance) dimensions are important because each may affect consumer behavior differently (Raghunathan & Pham, 1999). Research suggests that valence has the effect of influencing judgments in a mood-congruent direction (Forgas, 1995). Several mechanisms have been proposed. One suggested mechanism is an *affect transfer* mechanism, where mere association influences evaluation (Gorn, 1982). This effect is an automatic judgment, consistent with the classical conditioning approach, which suggests, “a close proximity between a target and a feeling experience may result in the evaluative meaning of the feelings (mostly their valence) being carried over to the target” (Pham, 2004, p. 361). This affect transfer is predominantly built by associations between what caused the mood and its connection to what is being evaluated. One explanation for this phenomenon is that people displace their mood onto the ad, which is used for later recall (Isen & Simmonds, 1978).

Another suggested mechanism for scholarly exploration is the mood-as-information approach, which suggests that people use their current mood to make evaluations (Schwarz & Clore, 1983) and misattribute their current feelings onto the target (Pham, 1996). Schwarz and Clore (1988) proposed that when evaluating objects, people often ask themselves, “How do I feel about it?” and negative states are often interpreted as disliking, while positive states are often interpreted as liking (Pham, 1996; Schwarz & Clore, 1983). During these processes of
evaluation, pleasant or unpleasant feelings emanating from the mood state at the time of judgment are misattributed to the target (Schwarz & Clore, 1983). In doing so, the individual is unable to recognize that the actual source of feeling is not the target being evaluated. Unlike the affect transfer mechanism, the mood-as-information is inferential, not merely influenced by association (Schwarz, 1990).

**Pleasure/Emotion in sponsorship studies.** In discussing the role that mood has in sponsorship research, Pracejus (2004) suggests that an affect transfer occurs and that, “in a sponsorship context is analogous to affect transfer in an advertising context, whereby one’s attitude toward the ad transfers to one’s attitude toward the brand, with little cognitive mediation” (p. 177). This rationale supports the affect transfer mechanism proposed by Gorn (1982) rather than the mood-as-information mechanism. Pracejus (2004) suggestion that ones feelings towards an event will transfer towards the sponsoring brand through association is supported empirically by other scholars, finding that the “emotional circumstances in which perimeter posters and/or sponsoring company’s other promotional images are observed might affect recall and message impact “ (Bennett, 1999, p. 293). Unlike image transfer, affect transfer does not recognize any cognitive elaboration.

Crimmins and Horn (1996) also supported the idea of affect transfer, citing Heider’s (1946) elementary of human calculus. The authors suggested that many brands with weak brand equity will be associated with events that may be highly regarded by those in attendance, therefore causing the impressions of the event to “rub-off” onto the sponsor. Although they presented no empirical findings to support this, later research has found that those who reported being a highly identified fan of a sport reported higher evaluations of its known associated sponsors than those who were not fans of a sport (Devlin et al., 2012). Other empirical evidence
has found positive correlations between attitudes towards the Olympic games and the sponsors of those games (Stipp & Schiavone, 1996). Despite the amount of advertising literature measuring the effects of affect transfer discussed earlier, little research has focused specifically on sponsorships.

Despite the amount of conceptualized models, there no experimental research that examines how ones reported arousal and pleasure impacts cognitive, affective, and behavior outcomes towards sponsors. Therefore, the research posits the following research questions:

\[ H_{6a}: \text{Arousal induced by UFC-related images will have a negative effect on the unaided recall of the sponsors.} \]

\[ H_{6b}: \text{Arousal induced by UFC-related images will have a negative effect on the aided recall (recognition) of the sponsors.} \]

\[ H_{7a}: \text{There will be a positive relationship between self-reported liking of the UFC-related images and a positive attitude towards all sponsors.} \]

\[ H_{7b}: \text{There will be a positive relationship between self-reported liking of the UFC-related images and higher purchase intentions for all sponsors.} \]

**Fan Identification’s Influence on Sponsorships**

Fan identity is described as an individual’s level of psychological attachment to a sports team. Fan identity features psychological, affective, and behavioral effects, including a self esteem boost from association with others (Mael & Ashforth, 2001), positive moods following team success (Hirt et al., 1992), and biased perceptions toward their team/organization (Wann & Dolan, 1994; Wann & Schrader, 2000). Highly identified fans report higher levels of arousal and physiological changes than less identified fans (Branscombe & Wann, 1992). Highly identified fans are also more likely to attend games (Fisher & Wakefield, 1998; Wann & Branscombe, 1993), purchase merchandise (Fisher & Wakefield, 1998), and--most importantly for this study--increase sponsorship success (Madrigal, 2000, 2001, 2003; Gwinner & Swanson, 2003).

Social identity research states that individuals are more likely to support institutions that reinforce group antecedents. Pracejus (2004) referred to this increased behavioral outcome as reciprocation, where those who are highly identified with a team will actually seek out corporate sponsorships and reward them with their patronage. Some individuals do so in order to comply with group norms out of need for social approval and acceptance, resulting in public compliance of the group’s values (Madrigal, 2001).

Empirical evidence supports the positive effect that fan identity has on sponsor evaluation, finding a positive correlation between fan identification and sponsorship recognition, positive attitudes towards sponsors, satisfaction with team sponsors, and purchase intention of team sponsors (Madrigal, 2001; 2003; Wann, 2006). When comparing high and low identifiers and sponsorship outcomes, attitude has a greater effect for low identifiers than for high identifiers; whereas, purchase intention was higher for high identifiers than low identifiers (Madrigal, 2001).

Highly identified fans are also more knowledgeable of sponsorship investments; making them more aware of the goodwill (or abuse) accompanying the sponsor investment (Meenaghan, 2001), and significantly impacting their evaluations. Not only are highly identified fans knowledgeable fans of a team or an organization, but they are also able to establish greater brand-event congruency, thereby increasing evaluations (Gwinner & Swanson, 2003; Johar & Pham, 1999; Madrigal, 2001; Roy & Cornwell, 2004). Alba & Hutchinson (1987) propose that
increased product familiarity enables consumers to develop stronger cognitive elaborations about the product, increasing the number of associations and likelihood of recall and positive evaluations (Sutherland, 1982).

Gwinner and Swanson (2003) conducted a field study at a NCAA Division I football game to measure the antecedents of fan identification and how various levels of fan identity impact recognition, attitude towards sponsor, patronage, and satisfaction with sponsor. The authors discovered that three factors (perceived prestige of the school, sports domain involvement, and fan associations) were predictors of fan identity and those with increased fan identity had higher scores for recognition, attitude towards sponsor, sponsor patronage, and satisfaction with the sponsor. Attitude was measured using a seven-point semantic differential scale indicating if their impressions with the sponsor were “bad” or “good”; “unfavorable” or “favorable”; “unsatisfactory” or “satisfactory.” Participants were then provided a list of 12 companies and were asked to circle the names of the companies that were sponsors, with six of them being actual sponsors and the other six being foils and direct competitors to the sponsor in order to measure recognition.

Madrigal (2000) also examined the impact that fan identity of a preferred sports team had on influencing purchases intentions of sponsors. Using students attending an NCAA Division I football game, participants were contacted prior to entering the stadium. Unlike the aforementioned study, Madrigal used hypothetical sponsors to avoid bias. Using a 7-point scale, Madrigal (2000) measured group norms and intentions towards the hypothetical sponsor, employing the Sports Spectator Identification Scale (SSIS) to assess levels of fan identification. Findings concluded that the highest predictor for future purchases were group norms followed by
fan identification. Moving away from awareness effects, the researcher was able to demonstrate how sponsorship linkages can influence consumers.

A subsequent study examined how individual’s beliefs, attitudes, and intentions were guided by their fan identification (Madrigal, 2001). The findings further supported the impact that fan identity has on a hierarchy of beliefs, attitudes, and intentions—however, not in the hypothesized direction. Fan identity had moderating effects on attitude and on purchase intentions, showing that low identified fans showed that attitude had a greater effect on purchase intentions, whereas highly identified fans reported intent to purchase based on group norms rather than their own personal attitude, suggesting that highly identified individuals will act in accordance with the other group members to maintain group membership. Similar findings were found in later studies (see Schlesinger & Gungerich, 2011), suggesting that fan identification with a sports club was positively correlated with consumers’ purchase intentions of the club’s sponsors.

Field studies and surveys show strong support for the effects of fan identification on sponsorship outcomes, primarily concerning attitudes and purchase intentions. Based on these previous studies, the following hypotheses are presented in this experiment:

\[ H_{8a}: \text{Highly identified fans will report higher attitude scores for all sponsors than low identified fans.} \]

\[ H_{8b}: \text{Highly identified fans will report higher purchase intention scores for sponsors than to low identified fans.} \]

**Market Factors**

An examination of the literature reveals two main market factors influencing sponsorship evaluations: (a) congruency, and (b) prominence. Unlike the individual and group factors, the individual cannot influence these factors. It is arguable that congruency, defined as the related
fit between the brand and the event, is determinant on the individual’s knowledge of both in order to make that judgment. However, the operationalization of these two factors is made assuming that the event and the sponsor, who would make the decision of sponsorship agreements, would be fully knowledgeable about their congruency. Prominence in this case, refers to the company’s brand equity and prominence in the market place rather than the visual prominence during the event itself.

**Congruency.** Congruency (also referred to as fit, relatedness, or similarity) between the event and the sponsor was a significant factor in numerous sponsorship studies (Cornwell, 1995; Cornwell, Pruitt, and Van Ness, 2001; Devlin, Brown, Billings, 2012; Gwinner and Eaton, 1999; Johar & Pham, 1999; Pham & Johar, 2001; Musante, Miline, & McDonald, 1999). The role of congruency has been defined and examined in two distinct areas, either functionally congruent or articulately congruent. Functionally congruent refers to the usefulness of the brands within the event and articulately congruent refers to image-based relationship between the brand and the event. Regardless of which direction is used for research, congruency is defined as, “the semantic relationship that many consumers assume should exist between events (e.g., a track-and-field competition) and the sponsoring companies (e.g., athletic shoes)” (Pham & Johar, 2001, p. 124). Natural associations make sense in the consumer’s mind, whether they are functionally congruent (Nike at a track meet) or image-based congruent (Rolex at the French Open).

Much of the research regarding sponsorship literature has examined the link between the event and its sponsor (Cornwell, 1995; Cornwell et al., 2001; Cornwell et al., 2005; Devlin et al., 2012; Gwinner, 1997; Johar & Pham, 1999; Pham & Johar, 2001), finding that congruency positively impacts sponsorship effectiveness, suggesting that sponsors should pursue
opportunities of brand-event congruence to improve cognitive (recall/recognition) and affective (attitudes) outcomes. Although, individual factors such as brand knowledge acquired from group identification (Tajfel & Turner, 1985), may mediate the effect of congruency. Roy (2000) and Cornwell (2004) found that consumers with higher levels of brand and event knowledge are able to make better judgments about the level of sponsor-event congruency than those who are less knowledgeable. This finding was later supported by Devlin and colleagues (2012), finding that highly identified fans of a sport reported higher affective and behavior intentions towards congruent sponsors of specific sport, whereas less identified fans reported higher evaluations towards brands that were incongruent with the sport.

**Prominence.** It is suggested that market prominence is used as a source of information when inferring the identity of event sponsors. Market prominence is established by a variety of factors, such as its brand equity and awareness, share-of-voice in the market, and visibility among competitors (Pham & Johar, 2001). While congruency is shown to produce positive outcomes for sponsorships, it can also be argued that factors such as prominence bias may work against brands that are congruent to the event, but have a much smaller market presence when compared to direct competitors. Research (Johar & Pham, 1999; Pham & Johar, 2001) has found strong support for the prominence bias effect, finding that larger competitors are more readily recalled than smaller market competitors and may be improperly given credit when they are not the sponsors.

Based on the literature regarding the effects of group factors and market factors influencing sponsorship outcomes, the author proposes the following two hypotheses and four research questions:

**H₉a:** *Individuals will freely recall more functionally congruent sponsors than non-functionally congruent sponsors.*
**H9b:** Individuals will recognize more functionally congruent sponsors than non-functionally congruent sponsors.

**RQ1b:** To what degree will fan identification impact physiological arousal during exposure to UFC images?

**RQ2a:** To what extent will fan identification impact individual’s attitudes of functionally congruent and functionally incongruent sponsors?

**RQ2b:** To what fan identification impact individual’s purchase intentions of functionally congruent and functionally incongruent sponsors?

**RQ3a:** To what extent will fan identification impact individual’s unaided recall of functionally congruent and functionally incongruent sponsors?

**RQ3b:** To what extent will fan identification impact individual’s aided recall (recognition) of functionally congruent and functionally incongruent sponsors?

Despite the amount research examining mere exposure, sponsor-event congruency, and fan identity, much of the previous sponsorship literature has been conducted through either field studies or surveys. The lack of experimental methods have disallowed researchers to separate causality from correlation and provide further depth of understandings as to which of the variables may be responsible for the outcomes discussed above. Therefore, the researcher posits the following additional research questions to better understand any interaction effects and potential causes for differential sponsorship outcomes:

**RQ4a:** To what degree will exposure to a sponsor yield different attitudinal evaluations of sponsors between the high and low identified fans?

**RQ4b:** To what degree will sponsorship congruency yield different attitudinal evaluations of sponsors between the high and low identified fans after exposure?

**RQ5a:** To what degree will exposure to a sponsor yield different purchase intentions of sponsors between the high and low identified fans?
RQ5b: To what degree will sponsorship congruency yield different purchase intentions of sponsors between the high and low identified fans after exposure?

Measuring Sponsorship Outcomes

The challenge with measuring sponsorship effectiveness comes from the lack of universally accepted measurements that are typically used in advertising, such as Gross Point Ratings. Studies examining the relationship between sponsorship investment and business performance (Jensen & Hsu, 2011), and the increase in sales stock (Ozturk, Kozub, & Kocak, 2004; Smolianov & Shilbury, 2005) report positive correlations; yet, there is still not an established method for corporations to measure the return on their investment. While some marketing professionals may rely on product sales to evaluate sponsorship effectiveness (Carrillat, Lafferty, & Harris, 2005), academic research has shown the importance of consumer-focused measures, suggesting that effects be measured in cognitive (recall), affective (attitude) and behavioral (purchase intention) responses (Cornwell et al., 2005; Kinney, 2006).

Cognitive. Cognitive effects measure the individual’s ability to recall and recognize the sponsor of an event. Several factors impact the level of cognition. The most notable would be the event itself, where user’s attention is divided between encoding and storing sponsor information while maintaining involvement and attention towards the event. Several studies have used this simple measure of sponsorship recall after exposure to an event (Bennett, 1999; McDaniel & Kinney, 1998; Johar & Pham; Pham & Johar, 2001). Research has suggested that sponsor awareness and association with the event are important indications of sponsorship effectiveness (Crimmins & Horn, 1996; Stotlar, 1993). Current research on sponsorship has identified four key variables that influence recall: sponsorship relatedness (Crimmins & Horn, 1996; Johar & Pham, 1999; Speed & Thompson, 2000), sponsor prominence (Johar & Pham,
1999; Pham & Johar, 2001), exposure to the sponsor (Bennett, 1999; McDaniel & Kinney, 1998), and involvement and identification with the team (Gwinner & Swanson, 2003). Research has also showed that recall is higher when sponsors are shown for a longer period of time (DeMars & Robinson, 1998) and when spectators already had a positive attitude toward the brand (Speed & Thompson, 2000).

However, simple measurement of recall has produced mixed results. Tripodi, Hirons, Bednall, and Sutherland (2003) found that different approaches to measuring recall of a sponsor based on wording of the question and mentioning more prominent brands yielded different estimates of recall. These results indicate the simple recall are “merely first-line measures of sponsorship impact, and do not of themselves serve to facilitate understanding of consumer engagement with sponsorship” (Meenaghan, 2001). According to Wakefield et al. (2007), “[t]he cues used to elicit response have been all but ignored in sponsorship research” (p. 64) and that previous work attempting to understanding the impact of cueing shows “different approaches to measurement yielded decidedly different estimates of recall. Although the findings may be context-specific, they do signal the importance of cueing in sponsorship research,” (Wakefield et al., 2007, p. 64).

The difficulty in relying on cued responses when asking individuals to consider sponsorships at different levels (i.e. exclusive sponsor vs. partner or secondary sponsor), is that individuals will rely on simple heuristics related to prominence and relatedness to formulate the correct answer rather than accurately recall the sponsor, suggesting the cued recall is less accurate than free recall (Padilla-Walker & Poole, 2002). The individual engages in a dual retrieval mode (Brainerd & Reyna, 1996) based on either direct access through previous exposure or a reconstructive process based on a “development of schemas that help to
reconstruct traces of meaning for the target” (p. 64). A reconstructive process may be less accurate than pure free recall, but still more accurate than relying on impressions for cues. Free recall is said to be the most reliable because of the accurate test of episodic memory. When measuring for recall, participants perceived unrelated and less prominent foils as unlikely sponsors correctly; however, when provided with foils that were prominent and related, recall accuracy lessened (Wakefield et al., 2007).

**Affective.** An individual’s attitudes are important and more likely to be used when processing information, forming intentions, and taking action (Boninger, Krosnick, & Berent, 1995; Fishbein & Ajzen, 1975). Affective effects extend the evaluation process from simple awareness and recall to a higher level of cognition by measuring attitudinal measures regarding the event and the brand, as well as any affect transfer and image transfer from the event onto the brand. These frequently-used measures in sponsorship research include liking, preference, and attitudes by typically asks questions such as, “Which of the following brands of [category] do you prefer?” (Nicholls, Roslow, & Dubish, 1999, p. 372).

**Behavioral.** Lastly, sponsorship effectiveness is commonly measured by individuals’ intent to purchase or involve themselves with the product/brand. While sponsorships can affect a corporation’s bottom-line and stock (Jensen & Hsu, 2011), true causality is hard to uncover without experimental testing. Sales data may account for some of the sponsorship effects; however, too many other external variables may also contribute, making final sales an invalid measure. Pope and Voges (2000) found a significant relationship between a sponsor’s image and purchase intention. Similarly, Devlin et al., (2012) found a significant relationship between attitude towards the sponsor of an event and likelihood to purchase. Research has shown that
individual factors such as fan identity (Devlin et al., 2010; Madrigal, 2000; 2003) also impact future purchase intentions.

**Psychophysiology**

Psychophysiology is operationalized as, “the study of relations between psychological manipulations and resulting physiological responses, measured in the living organism, to promote understanding of the relation between mental and bodily processes,” (Andreassi, 2007, p. 2). It allows researchers to monitor active nervous systems during exposure to stimuli, increasing precision of understanding bodily functions by removing confounds existing during self-report(s). Particularly when accounting for dependent measures that vary by definition from one individual to the next, such as arousal and pleasure. Studies using this type of measurement “range from emotional responses, as in fear and anger, to cognitive activities, such as decision making, information processing, and problem solving” (Andreassi, p. 2). By taking measurements from surfaces of the body, psychophysiology measures are considered non-invasive and may include one or more of the following: the electroencephalogram (EEG), the electromyogram (EMG), electrodermal activity (EDA), and/or electrocardiogram (ECG).

The nervous system is complex, but at its simplest form, is best understood with the division of two main branches, the central nervous system (CNS) and the peripheral nervous system. The CNS is comprised of the brain and spinal cord; however, the peripheral nervous system is much more complex, containing nervous tissue spread throughout the body, including cranial and spinal nerves. The peripheral nervous system is further divided into the automatic nervous system (ANS) and the somatic nervous system (SNS). The somatic nervous system responds to muscle activity and the automatic nervous system oversees visceral structures such as the body’s organs. The automatic nervous system is subdivided into the parasympathetic
nervous system (PNS), which is active while the body is at rest, and the sympathetic nervous system, which activates in situations requiring energy.

Early works in psychophysiology practiced a unitary view of how arousal impacts physiological response (Duffy, 1962); however, research later revealed not all nervous systems respond unilaterally to arousing material as Lacey (1967) discovered there are different indicators of arousal between the automatic and central nervous systems. For example, increased cardiac activity is not necessarily an indicator of elevated cortical activity, as one would assume, rather it is an indicator of decreased brain activity, a phenomenon known as directional fractionation. As a result, exposure to arousing stimuli (i.e. pornography or violence) produces separate physiological measures, causing some individuals activity to increase while others to decrease.

Zillmann (1982) suggested a three-dimensional concept of arousal: behavioral arousal, cognitive arousal, and physiological arousal. As this practice became more accepted, “measurement of arousal became ever more fractionated and psychophysioligist began to refer, not to overall levels of arousal, but more to the intensity of activation in individual physiological systems” (Lang, Potter, & Bolls, 2008, p. 194). An accepted approach to arousal is the association with activation of the sympathetic nervous system, commonly referred to as the “fight-or-flight” concept, which enables measurement of skin conductance - the only system that is solely activated by the sympathetic nervous system (Andreassi, 2007). A dense amount of eccrine glands, which are responsible for excretion of sweat when an individual is nervous or aroused, are present in the palms of human’s hands. As the gland becomes more active, a sudden increase in skin conductance response (SCR) occurs, allowing the opportunity to measure arousal levels.
The use of psychophysiology is not a new concept within the field of mass communications. Research using this type of data collection has been used to understand arousal and pleasure as early as the 1970s (Cantor, Zillmann, & Einsiedel, 1978; Zillmann, 1971), and is accepted for use in measuring media processing and indicators of cognitive and emotional events (Reeves, Thorson, & Schleuder, 1986). For the purpose of this study, focus is limited to the somatic nervous system, using EDA to measure arousal and activation of the sympathetic nervous system during phasic (short term) phases.

Activation is used to explain the relationship between changes in phasic behavior and physiological activity. Scholars have operated under the belief that “the intensity of behavior is most commonly called ‘activation’ or ‘arousal’” (Andreassi, 2007, p. 21). The use of physiological measures has been used to detect changes in arousal (Bryant & Zillmann, 1984; Zillmann, 1982). The pattern of physiological activation level and performance resembles similar cognitive responses related to arousal (Pham, 1992), producing a curvilinear relationship. Skin conductance remains an appropriate tool to measure intensity of activation in the phasic term by increasing in activation during negative media messages and decreasing in activation from the baseline during positive media messages (Potter, LaTour, LaTour, & Reichert, 2006; Lang, Bradley, Sparks, & Lee, 2007).

Psychophysiology in fan identification research. As with involvement, arousal may work in isolation or may be a factor of one’s knowledge of the event and identity with the sport/team. Although Branscombe and Wann (1992) found high levels of fan identity resulted in increased heart rate (HR), difficulty in using HR as a dependent measurement exists because of the paradoxical condition (Andreassi, 2007). Therefore, measuring arousal using skin conductance not only highlights the role fan identity has on arousal, but also the interaction with
involvement and sponsorship recognition. The amount of work produced regarding fan identity is limited to a handful of studies (Branscombe & Wann, 1992; Hillman et al., 2000; Hillman et al., 2004; Potter & Keene, 2012); and is completely absent in sponsorship-specific research.

Preliminary research in fan identification’s effect on physiological response showed increases in both diastolic and systolic blood pressure from pre-to-post exposure to a stimuli in highly identified individuals, but no significant change occurred for low identified fans (Branscombe & Wann, 1992). Later research examined how three levels of fan identity (high, moderate, or low) to a local university athletic team impacted startle probe and heart rate after exposure to five images from two categories (team-relevant sport and team-irrelevant sport) (Hillman et al., 2000). Self identified sport fans not only rated team-relevant pictures as more pleasant and arousing compared to team-irrelevant images, but also showed heart-rate deceleration during exposure to team relevant images but not for team-irrelevant images, suggesting that the images elicited motivated attention states. In the aforementioned study, participants viewed 10 slides from the International Affective Picture System (IAPS; Center for the Study of Emotion and Attention, 1995), depicting five scenes from two affective categories: team-relevant sport and team-irrelevant sport, incorporating the SSIS (Wann & Branscombe, 1993) to determine levels of fan identification.

Hillman, Cuthbert, Bradley, and Lang (2004) also found significant differences in self-reported arousal and pleasure, and physiological measures (startle probe-P3, startle eye-blink reflex, slow cortical potentials, orbicularis oculi EMG, and skin conductance) between highly identified fans and low identified fans after exposure to six pictures from six different categories: team-relevant pleasant sport, team-irrelevant sport, team-relevant unpleasant sport, erotica, household objects, and mutilation. Physiological measures differentiated for both appetitive and
aversive team-relevant categories from team-irrelevant pictures, suggesting differences between rival sport fans in response to pictures. Furthermore, skin conductance and EMG activity in the orbicularis oculi mirrored arousal ratings for the team-relevant images, but not for the team irrelevant images.

A more recent study (Potter & Keene, 2012) supported differences in emotional processing of sports-related news media between differing levels of fan identification. Following similar procedures as the previous studies, participants completed the SSIS fan identification scale and were divided into two groups using a median split: highly identified fans and moderately identified fans. Results showed higher levels of physiological arousal for highly identified fans compared to moderately identified fans. Although research suggests differences in physiological arousal and pleasure exists between highly identified fans, it is still uncertain what type of physiological responses occur when exposed to highly arousing images, such as those contained in the UFC. Therefore, the following research question is posited:

RQ₆: *To what extent will fan identification and physiological response impact awareness (unaided recall and recognition) of sponsors who are either functionally congruent or functionally incongruent?*
CHAPTER 3 – METHODOLOGY

This dissertation examines how one’s fan identity to a particular sport impacts physiological responses, thereby influencing cognition and evaluation of sports sponsorships present during exposure. As such, the dissertation investigates two overarching questions:

1) To what extent does fan identity with a highly arousing contact sport, such as MMA, influence an individual’s physiological responses?

2) To what extent does one’s fan identity impact evaluations of functionally congruent and functionally incongruent sponsorships?

Based on the preceding review of the literature, the following hypothesis and research questions were proposed.

**Fan Identity-Related Questions and Hypotheses**

Researchers examining the affective and behavioral effects of fan identification state that highly identified fans are more likely to attend events (Fisher & Wakefield, 1998; Wann & Branscombe, 1993), purchase group-related merchandise (Fisher & Wakefield, 1998; Madrigal, 2001) and program involvement (Lascu et al., 1995). Based on previous findings concerning the effects of fan identification, this study posits the following hypotheses:

- **H1a**: Levels of fan identification will positively correlate with consumption of MMA media.

- **H1b**: Levels of fan identification will significantly differ between men and women.

- **H2**: Fan identification will positively correlate with higher involvement scores.

- **H3**: Levels of fan identification will positively correlate with reported liking of UFC images.
Fan identification research has shown that highly identified fans exhibit greater levels of arousal during event consumption compared to those who are less identified. However, there is no research examining the influence of fan identification on reported arousal given the highly arousing nature of the UFC; therefore, the researcher posits the following question:

RQ₁₆: In what manner will fan identification impact self-reported levels of arousal after exposure to UFC related images?

**Mere Exposure-Related Hypotheses**

Mere exposure theory and the Perceptual Fluency/Misattribution Model (PF/M) posit that once an individual has been exposed to a stimulus, the individual will engage in subconscious and effortless processing of subsequent exposure, and misattribute the ease of processing as “liking” (Devlin & Zhou, 2011; Lee & Labroo, 2004; Reber et al., 2004; Winkielman & Schwarz, 1998; Winkielman et al., 2003). Based on empirical evidence supporting mere exposure and PF/M, the researcher posits the following hypotheses:

H₄₆: Individuals exposed to sponsors will report more positive attitudes towards sponsors than individuals not exposed to sponsors.

H₄₇: Individuals exposed to sponsors will report higher purchase intentions for sponsors than individuals not exposed to sponsors.

**Sponsorship-Related Hypotheses**

Sports-related research proposes that high involvement leads to greater cognitive processing because highly involved consumers are more willing to engage in active processing of information (Gwinner & Bennett, 2008; Olson, 2010; Wakefield, et al., 2007). Sponsorship research suggests that a curvilinear relationship between involvement and recall exists (Olson, 2010; Pham, 1992). At low levels of event involvement, limited attention is allocated towards the stimuli, and as a result, the sponsor receives limited attention; however, as involvement increases, so does an individual’s cognitive processing ability until maximum levels are reached,
at which point the individual becomes less concerned with peripheral targets (i.e. sponsorships), and more concerned with the event itself. Based on the research conducted on involvement’s affect on cognition, the following hypotheses are proposed:

- $H_{5a}$: *Involvement with a sponsored event has a curvilinear (inverted-U) effect on the unaided recall of sponsors.*

- $H_{5b}$: *Involvement with a sponsored event has a curvilinear (inverted-U) effect on the aided recall (recognition) of sponsors.*

Arousal refers to the activity of the automatic nervous system (Clark, 1982; Pavelchak, 1988; Pham, 1992). Research shows that when watching sports, limited processing is shared between the event and other sources of information, including sponsorships. Research detects a decrease in processing capacity with the increase of arousal (Pham, 1992; Worth & Mackie, 1987). Therefore, arousal induced by a sponsored sporting event will have a negative effect on the processing of embedded sponsorship stimuli, leading to the following hypotheses:

- $H_{6a}$: *Arousal induced by UFC-related images will have a negative effect on the unaided recall of the sponsors.*

- $H_{6b}$: *Arousal induced by UFC-related images will have a negative effect on the aided recall (recognition) of the sponsors.*

Research examining the effects of affect transfer report that one’s attitude toward an event will transfer to the brand without requiring cognitive elaboration (Crimmins & Horn, 1996; Stipp & Schiavone, 1996). Based on previous findings, the following hypotheses are formulated:

- $H_{7a}$: *There will be a positive relationship between self-reported liking of the UFC-related images and a positive attitude towards all sponsors.*

- $H_{7b}$: *There will be a positive relationship between self-reported liking of the UFC-related images and higher purchase intentions for all sponsors.*

Research examining the effects of fan identification on sponsorship outcomes has found that attitude and purchase intentions are positively influenced by ones level of identification.
(Madrigal, 2000; Madrigal, 2001; Meenaghan, 2001), therefore the following hypotheses are proposed:

\[ H_{8a} : \text{Highly identified fans will report higher attitude scores for all sponsors than low identified fans.} \]

\[ H_{8b} : \text{Highly identified fans will report higher purchase intention scores for sponsors than to low identified fans.} \]

Research regarding sponsorship outcomes have examined corresponding links between an event and sponsor (Cornwell, 1995; Cornwell et al., 2001; Cornwell et al., 2005; Devlin, Brown, Billings, 2012; Gwinner, 1997; Johar & Pham, 1999; Pham & Johar, 2001), consistently finding that sponsor congruency positively impacts sponsorship effectiveness, and suggests that sponsors should pursue opportunities of brand-event congruence to improve cognitive and affective outcomes. Based on principles of congruency between the event and the sponsor, the following hypotheses are posed:

\[ H_{9a} : \text{Individuals will freely recall more functionally congruent sponsors than non-functionally congruent sponsors.} \]

\[ H_{9b} : \text{Individuals will recognize more functionally congruent sponsors than non-functionally congruent sponsors.} \]

**Psychophysiology-Related Hypotheses**

Psychophysiological research indicates that higher levels of identification lead to higher levels of physiological arousal and liking during exposure to sports related media (Branscombe & Wann, 1992; Hillman et al., 2000; Hillman et al., 2004; Potter & Keene, 2012). However, there is no research examining the influence that fan identification has on reported arousal during exposure to highly arousing images, specifically those related to MMA. Therefore the researcher posits the following research question:

\[ \text{RQ}_{1b} : \text{To what degree will fan identification impact physiological arousal during exposure to UFC images?} \]
Individual factors may mediate effects of previously proposed hypotheses. For example, brand knowledge acquired from fan identification may play a role in congruency evaluation. Roy (2000) and Cornwell (2004) found that consumers with higher levels of knowledge of the brand and the event are able to make judgments regarding congruency than those who are less knowledgeable, thus eliciting more thoughts about the level of sponsor-event congruency. This finding was later supported by Devlin and colleagues (2012), who found that highly identified fans of a sport reported higher affective and behavior intentions towards congruent sponsors of specific sport, whereas less identified fans reported higher evaluations towards brands that were incongruent with the sport. Based on the various interactions between variables, the following research questions are formulated.

RQ$_{2a}$: To what extent will fan identification impact individual’s attitudes of functionally congruent and functionally incongruent sponsors?

RQ$_{2b}$: To what fan identification impact individual’s purchase intentions of functionally congruent and functionally incongruent sponsors?

RQ$_{3a}$: To what extent will fan identification impact individual’s unaided recall of functionally congruent and functionally incongruent sponsors?

RQ$_{3b}$: To what extent will fan identification impact individual’s aided recall (recognition) of functionally congruent and functionally incongruent sponsors?

Additionally, research supports the positive effect that exposure has on stimulus evaluations (Zajonc, 1968); however, sponsorship research posits the occurrence of an affect transfer, which may negate the positive affective response of mere exposure. The following research questions explore this occurrence:

RQ$_{4a}$: To what degree will exposure to a sponsor yield different attitudinal evaluations of sponsors between the high and low identified fans?
RQ₄b: To what degree will sponsorship congruency yield different attitudinal evaluations of sponsors between the high and low identified fans after exposure?

RQ₅a: To what degree will exposure to a sponsor yield different purchase intentions of sponsors between the high and low identified fans?

RQ₅b: To what degree will sponsorship congruency yield different purchase intentions of sponsors between the high and low identified fans after exposure?

Lastly, there is no published research measuring the impact that fan identification, physiological arousal and attention, and sponsorship congruency has on awareness, attitudes, and purchase intentions. Therefore, the research posits the following research question:

RQ₆: To what extent will fan identification and physiological response impact awareness (unaided recall and recognition) of sponsors who are either functionally congruent or functionally incongruent?

**Experimental Design**

An experiment was used to investigate the research questions and hypotheses, an approach previously used to assess sponsorship outcomes in terms of cognitive processing (Olson & Thjomoe, 2003; Pham, 1992), level of involvement (Petty, et al., 1983), and congruency between brand and event (Cornwell, et al., 2003; Johar & Pham, 1999). Psychophysiological measures and self-report methods were jointly used for data collection. Currently, no published studies utilize psychophysiological response to assess cognitive and evaluative outcomes, despite recommendations from scholars to do so (Kinney, 2006). Furthermore, psychophysiological studies have been used sparingly in fan identification literature (Branscombe & Wann, 1992; Hillman et al., 2000; Potter & Keene, 2012); however, more research in this area should be conducted given the depth of analysis capable of collecting physiological data.
Factorial designs involve the simultaneous analysis of two or more independent variables, allowing each level of independent variable to be tested in conjunction with other variables occurring at different levels. This study used a 2 (fan identity) X 2 (exposure) X 2 (sponsor type) mixed factor experimental design. First, fan identity was a between-subject variable based on each participant’s score on the modified combined SSIS and PCT questionnaire administered prior to the study and then re-administered at the conclusion of the study to confirm fan identity levels (high or low). The two levels were determined by labeling fans who scored above the median score (3.51) as highly identified UFC fans and those who scored below the median (3.50) as low identified fans of the UFC, a method similarly recently conducted by Potter and Keene (2012) in a study examining the effects of fan identity on physiological response. Second, exposure to stimuli was also a between-subject variable with participants either assigned to the exposure group, (containing specific sponsors within the images), or the non-exposure group (containing the same images with all sponsors removed). The third variable, sponsor type, was operationalized as either functionally congruent or functionally incongruent and was a within-subject variable. Subjects in the exposure condition were randomly assigned to one of four separate viewing orders to ensure that ordering effects were not present.

**Independent Variables**

This experiment examined the extent that ones’ fan identity impacted a) physiological response to arousing sports-related images and b) awareness and evaluation of either functionally congruent or functionally incongruent sponsors based on exposure using a 2 (fan identity) X 2 (exposure) X 2 (functional sponsor congruency) mixed-factorial design. Each independent variable will now be justified and explained in greater depth.
**Independent variable #1: Fan identity.** Fan identification is defined as “the extent to which a fan feels a psychological connection to a team and the team’s performances are viewed as self-relevant” (Wann, 2006, p. 332). Trail, Anderson, and Fink (2000) defined identification “as an orientation of the self in regard to other objects including a person or group that results in feelings or sentiments of close attachment” (p. 165-166), resulting in a sense of belonging and attachment to a larger social structure (Wann & Branscombe, 1991). Fan identity is operationalized for this study as one’s personal attachment to the UFC organization. This definition of fan identity has been utilized to accurately discover differing levels of fan identity among individuals in previous UFC-related studies (Brown et al., 2013; Devlin et al., 2012). To assess an individual’s level of fan identity, a modified questionnaire containing items from both the SSID and PCT scales was incorporated.

Although level of fan identity--included as an independent variable--is a non-manipulable attribute, it may be examined with a cause, such as exposure to a sponsorship, to detect changes between conditions. As suggested by Shadish, Cook, and Campbell (2001), “non-manipulable causes should be studied using whatever means are available and seem useful. This is true because such causes eventually help us to find manipulable agents that can then be used to ameliorate the problem at hand” (p. 8). Previous studies have employed the similar use of non-manipulable causes in similar experimental designs (Branscombe & Wann, 1992; Potter & Keene, 2012) to measure how fan identity impacts subject’s physiological response to sports-related stimuli.

**Independent variable #2: Exposure.** To measure the effects of mere exposure, the non-exposure group was exposed to a series of images with *all* sponsors digitally edited out of the image. The exposure group was exposed to the identical set of images with all sponsors digitally
removed except for the target sponsor, which was displayed in the lower right corner on a white background, as shown in Appendix C. All sponsors, functionally congruent or functionally incongruent, were equal to one another in terms of visual prominence defined by both size and clarity.

**Independent variable #3: Sponsor functional congruency.** Congruency (also referred to as fit, relatedness, or similarity) between the event and the sponsor has been a factor in numerous sponsorship studies (Cornwell, 1995; Cornwell et al., 2001; Devlin et al., 2012; Gwinner & Eaton, 1999; Johar & Pham, 1999; Pham & Johar, 2001; Musante et al., 1999). Such congruency (or lack thereof) has been defined and examined in two distinct areas, either functionally congruent or articulately congruent. Parallel to Pham and Johar’s (2001) definition of congruency, functional congruency is operationally defined as the *functional or useful* relationship that individuals assume would exist between the sporting event and the sponsoring companies’ products. In the case of the UFC, functionally congruent brands include athletic performance supplements (e.g. Xyience and MusclePharm), and equipment/apparel (e.g. Tapout and Venom). Functionally congruent brands are not limited to UFC athletes, but unlike non-functionally congruent brands, these products are perceived to be just as likely to be purchased by non-fans of the sport. Non-congruent brands include those that the average consumer not participating in MMA sports would recognize and possibly consider purchasing for average use with examples including Edge Shave Gel, Metro PCS, Bud Light, Burger King, and Electronic Arts.

**Dependent Variables**

Two sets of dependent measures were used to meet the study’s objectives: (a) psychophysiological measures for arousal and (b) self-report to measure emotion caused by
Psychophysiology is operationalized as “the study of relations between psychological manipulations and resulting physiological responses, measured in the living organism, to promote understanding of the relation between mental and bodily processes,” (Andreassi, 2007, p. 2). Arousal was recorded by electrodermal activity (also referred to as skin conductance).

Physiological arousal is conceptualized as activation in the sympathetic nervous system, most commonly associated with the fight or flight response (Lang, Potter, & Bolls, 2008). As Lang and colleagues write, “[f]rom a measurement point of view, this narrow conceptualization allows for easy measurement because skin conductance is completely and solely enervated by the sympathetic nervous system” (Lang et al., 2008, p. 194). Skin conductance is a measure of automatic arousal levels recognized as indexing participant emotional state while processing media (Potter & Bolls, 2011), occurring through the relaying of conductivity of electrodermal activity in the skin (Andreassi, 2007). A dense amount of eccrine glands, which are responsible for excretion of sweat when an individual is nervous or aroused, are present in the palms of human’s hands. As the gland becomes more active, a sudden increase in skin conductance response (SCR) occurs, and thus the frequency of such reactions can be used to determine arousal levels. To assess SCRs, electrodes are placed on forefinger and middle finger, and responses were recorded using Acqknowledge 4.1.1 software.

The second set of dependent variables measured self-reported emotion along with sponsorship outcomes. Participants were asked to complete the Affect Grid (as seen in Figure 3.1), to indicate their arousal and pleasure. All participants participated in both free recall and cued recall exercises measuring cognitive outcomes of sponsorship exposure in addition to a posttest questionnaire designed to measure knowledge, attitude, and purchase intentions of
Figure 3.1. Affect Grid

sponsors featured in the study. This brand evaluation scale has been used effectively in previous work (Devlin et al., 2012), with Cronbach’s alpha scores exceeding .90. Table 3.1 provides the complete list of questions used for the brand evaluations. Questions regarding attitude towards the brand are adapted from the Attitude Toward the Brand Scale (Sengupta & Johar, 2002), featuring four, 7-point Likert-type statements intended to measure a consumer’s opinion of a certain brand and have previously reported Cronbach’s alpha scores of .93 (Sengupta & Johar, 2002). The knowledge portion of the scale is comprised of two separate modified scales from Gurhan-Canli (2003) and Algesheimer, Dholakia, and Hermann (2005). The composite reliability scores by Gurhan-Canli (2003) reported Cronbach’s alpha scores of .92 and .96 and the reported reliability scores for Algesheimer and colleagues was .89. The purchase intent portion of the scale was developed by Devlin & Zhou (2012) with reported Cronbach’s alpha levels of .93.

Level of involvement with the eight UFC images was also measured. To assess this variable, participants completed the Involvement in the Message (Processing Effort) scale created by Wheeler, Petty, and Bizer (2005), which has reported alpha rating of .81. Question items are shown in Table 3.2. The four 5-point Likert statements measure the self-expressed
Table 3.1

*Knowledge, Attitude, and Purchase Intent Scale*

<table>
<thead>
<tr>
<th>Attitude</th>
<th>Knowledge</th>
<th>Purchase intent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I think _______ is a very good product</td>
<td>1. When compared to most people, I know about this brand.</td>
<td>1. I would be likely to purchase this product</td>
</tr>
<tr>
<td>2. I think _______ is a very useful product</td>
<td>2. I consider myself experienced with this brand</td>
<td>2. I prefer this product over its competitors</td>
</tr>
<tr>
<td>3. My opinion of _______ is very favorable</td>
<td>3. I do not know about this brand (r)</td>
<td>3. I have a desire to use/consume this product</td>
</tr>
<tr>
<td>4. I have a positive attitude towards _______</td>
<td>4. My knowledge of this brand is inferior (r)</td>
<td>4. I would not consider buying this product (r)</td>
</tr>
<tr>
<td>5. My knowledge of this brand is very good</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: (r) indicates question items that are reverse coded

amount of cognitive effort a person has placed on viewing a stimuli. While the origins of the scale were created for evaluations of a product, the scale designers stated that it was amenable for use with a variety of messages including politics, social issues, and the economy.
Table 3.2

Involvement in the Message Scale

1. I paid a lot of attention to the images I saw about mixed martial arts.
2. I thought deeply about the information presented in the mixed martial arts images.
3. I did NOT put much effort into comprehending the images of mixed martial arts. (r)
4. I felt personally involved with the images I saw of mixed martial arts.
5. I was NOT personally interested in the images I saw of mixed martial arts.

Note: (r) indicates question items that are reverse coded

Approach and Stimuli

To measure the effects of exposure to a sponsor of a highly arousing sporting event, the researcher used eight edited photographs from eight different UFC matches taking place in 2011-2013. Studies measuring psychophysiological response as a result of fan identity levels (Hillman et al., 2000; 2004) have utilized still images, finding significant differences between subjects. Previous experiments measuring the effects of sponsorship exposure have also utilized still images via press releases (Pham & Johar, 2001), print advertisements (Gwinner & Eaton, 1999: Olson & Thjomoe, 2003), and event flyers (Walker, Hall, Todd, & Kent, 2010).

Using still images rather than live-action video limits several confounding variables that may otherwise contaminate findings including: a) duration of exposure b) visual prominence of sponsor c) competition from overlapping sponsors and d) exposure occurring directly after a cut or edit in a video sequence. Limiting the preceding confounds enabled more accurate conclusions when measuring the effects of fan identity and exposure on sponsorship outcomes. The ability to control duration of exposure of the target sponsor is maximized using a still image, unlike during live-action event, where the pace and the movement of the action of the event...
dictates sponsorship exposure. Secondly, the use of advanced image-editing techniques allows for the removal of non-target sponsors while controlling for the visual prominence (size) of the target sponsor. This was necessary when attempting to control sponsorship exposure as well as visual dominance. Lastly, the use of still images eliminates physiological responses to video’s structural pacing (Lang et al., 2000), rather than valence and intensity of the stimuli.

Participants were exposed to eight UFC images; four images in the exposure group featured two different functionally congruent sponsors (MusclePharm and Xyience) and the other 4 images featured two different functionally incongruent sponsors (Harley-Davidson and Boost Mobile), jointly exposing subjects to four different sponsors (2 congruent/2 incongruent), two times each. The frequency of exposures to the sponsors were chosen due to the responses without tedium or satiation effects (Bornstein, 1989). The non-exposure group viewed the same 8 UFC images, which had all sponsors visually removed from the image.

In addition to the UFC images, all groups viewed 10 other color images from the International Affective Picture System (IAPS; Center for the Study of Emotion and Attention, 1997), depicting images pre-tested to be neutrally valanced. Six images were non-sport related and four images depicted the low-arousal sport of golf. For this study, golf was used as deception, as participants were told the nature of the study was to evaluate “sports-related images”. Images from the IAPS have been used in other studies measuring emotion (pleasure and arousal) (Yegiyan & Lang, 2010), as well as the effects of fan identity and psychophysiology (Hillman et al., 2000; 2004). Each image was presented for 10 seconds, similar to previous studies measuring physiological response (Hillman et al., 2004), and sponsorship effectiveness suggested that a low time interval would maintain the “somewhat hectic environment that most real ads are viewed in” (Olson & Thjomeo, 2003, p. 247). Each image preceded an inter-trial
interval of 6 to 18 seconds. This varying inter-trial time was necessary for allowing participants to fill out an Affect Grid for each image, and then cease extraneous movement to establish a new baseline for physiological analysis. All images were viewed on a 46 inch, LCD-television screen located in a psychophysiology lab.

Pre-test

Two separate pre-tests were conducted; one used a sample of undergraduate students from a large, public Southeastern university, and the other used volunteers from the social media website, Facebook. The first pre-test was conducted to select the eight most representative images of the UFC in terms of valence and arousal to address any limitations to the generalizability of images. The second pre-test was conducted with a separate sample to select four sponsors with the lowest pre-existing knowledge scores, two of which had the highest perceived functional congruency to UFC, and two of which had lowest perceived functional incongruence to the UFC. No other pre-tests on questionnaires or non-UFC related images were conducted. The use of SSID, PCT, and the marketing scales has been utilized in previous studies examining fan identity and sponsorship evaluations (Brown, et al., 2013; Devlin, et al., 2012) with high reliability. The IAPS has also been used by several previous studies (Lang, Bradley, & Cuthbert, 2008) making it an established and reliable content source for emotion based images, and pre-test for the valence of the non-UFC images unnecessary.

Pre-test #1. The first pre-test was conducted using 34 students from a large, public Southeastern university. The pre-test was conducted to select eight images of the UFC that were representative of the video in terms of valence and arousal. Using fightmetric.com, an online database of match statistics, a single 5-minute round was selected from a UFC match that most closely resembled the average number of strikes (hitting with the fist or feet) and wrestling take-
downs. Participants watched a complete 5-minute round from the UFC. Next, they were asked to complete an Affect Grid (Russell et al., 1989), a single-item scale for pleasure and arousal on a scale of 1-9 (1 being extremely unpleasant or extremely boring, and 9 being extremely pleasant or extremely arousing). Overall, the participants viewed the video as moderately arousing ($M = 6.06; SD = 1.43$) and unpleasant ($M = 3.94; SD = 2.19$).

Next, the same group of participants was shown 27 unedited, high-resolution images obtained from the Internet from previous UFC matches. Each image was displayed for 7 seconds with a 7-second inter-trial interval. For the pleasure dimension, means ranged from 1.91 to 6.26; for the arousal dimension, means ranged from 4.56 to 7.03. Eight images were selected that had the lowest difference in means compared to the video, as shown in Table 3.3. Overall, the average pleasure scores ($M = 4.08; SD = 1.32$) and arousal scores ($M = 6.06; SD = 0.99$) were highly representative of the video.

**Pre-test #2.** A second pre-test was conducted to assess and select the two most functionally congruent sponsors and two most functionally incongruent sponsors, as well as to select the sponsors with the lowest pre-existing knowledge scores in each respective category. Eight sponsors (four congruent and four incongruent) meeting the previously stated criteria were chosen for use in the pre-test. Congruent sponsors included performance and training supplements Xyience, MusclePharm, BSN, and Tapout (a clothing apparel line directed to UFC athletes and fans). Incongruent sponsors included Harley-Davidson, Boost Mobile, Bud Light, and Edge Shave Gel. Thirty-six participants were recruited online using Facebook. The online survey, hosted by Qualtrics, displayed the brands’ official logo followed by a 10-item questionnaire assessing knowledge and perceived congruency. Level of fan identity was asked at
the conclusion of the survey. Of the thirty-six participants who started the survey, 28 completed it.

Table 3.3

*Image and Video Pleasure and Arousal*

<table>
<thead>
<tr>
<th>Image #</th>
<th>Pleasure Score</th>
<th>Arousal Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>$M = 4.35; SD = 1.95$</td>
<td>$M = 6.00; SD = 1.74$</td>
</tr>
<tr>
<td>3</td>
<td>$M = 4.38; SD = 1.74$</td>
<td>$M = 5.68; SD = 1.52$</td>
</tr>
<tr>
<td>6</td>
<td>$M = 3.88; SD = 1.70$</td>
<td>$M = 6.21; SD = 1.32$</td>
</tr>
<tr>
<td>11</td>
<td>$M = 3.82; SD = 1.45$</td>
<td>$M = 5.79; SD = 1.60$</td>
</tr>
<tr>
<td>22</td>
<td>$M = 4.35; SD = 1.95$</td>
<td>$M = 6.12; SD = 1.34$</td>
</tr>
<tr>
<td>23</td>
<td>$M = 4.65; SD = 1.81$</td>
<td>$M = 6.12; SD = 1.53$</td>
</tr>
<tr>
<td>26</td>
<td>$M = 3.32; SD = 1.98$</td>
<td>$M = 6.03; SD = 1.68$</td>
</tr>
<tr>
<td>27</td>
<td>$M = 3.91; SD = 2.09$</td>
<td>$M = 6.53; SD = 1.58$</td>
</tr>
<tr>
<td><strong>Image Total</strong></td>
<td>$M = 4.08; SD = 1.32$</td>
<td>$M = 6.06; SD = 0.99$</td>
</tr>
<tr>
<td><strong>Video Means</strong></td>
<td>$M = 3.94; SD = 2.19$</td>
<td>$M = 6.06; SD = 1.43$</td>
</tr>
</tbody>
</table>

A four item, 7-point Likert scale was developed to assess the brand’s perceived functional congruency. Items included: “The sponsor makes products that are useful to UFC athletes,” “This sponsor makes products that are useful to individuals associated with MMA,” “The sponsor’s products are functionally congruent to the UFC,” and “People who are not associated with MMA or the UFC may find this product useful.” The scale was tested for reliability using Cronbach’s alpha, with all sponsors achieving high reliability scores ranging from $\alpha = .85$ to $\alpha = .97$. The brand knowledge scale featured 5-items and was tested for reliability using Cronbach’s alpha, with all items for all brands achieving high reliability scores.
ranging from $\alpha = .76$ to $\alpha = .97$. Fan identity was a single, nominal level measure (yes/no) asking if subjects if they were a fan of the UFC.

Two sets of analysis were run measuring the brands’ perceived functional congruency or incongruency: one assessing the entire sample’s response and the other comparing differences between fans ($n = 9$) and non-fans ($n = 19$) that completed the survey. Items on a scale ranged from 1 (extremely incongruent) to 7 (extremely congruent). All four congruent brands in the sample scored above the median score (4) for perceived congruency. As shown in Table 3.4, Tapout received the highest perceived congruency score among the whole sample ($n = 29; M = 5.50; SD = 1.04$), followed by BSN ($M = 4.43; SD = 1.14$), Xyience ($M = 4.23; SD = 1.21$), and MusclePharm ($M = 4.18; SD = 0.95$). Further analysis compared mean differences between fans and non-fans for each brand. Tapout was the only brand demonstrating statistically significant differences between the two groups, $t(26) = 2.17, p < .05$. Participants who were self-identified fans of the UFC ($n = 9$) reported Tapout as having higher perceived congruency ($M = 6.08; SD = 0.90$) than those who were self-identified non-fans ($n = 19; M = 5.21; SD = 1.03$).

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Knowledge</th>
<th>Congruency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xyience</td>
<td>2.29</td>
<td>4.23</td>
</tr>
<tr>
<td>MusclePharm</td>
<td>2.18</td>
<td>4.18</td>
</tr>
<tr>
<td>Tapout</td>
<td>4.55</td>
<td>5.50</td>
</tr>
<tr>
<td>BSN</td>
<td>2.58</td>
<td>4.43</td>
</tr>
</tbody>
</table>

*Note.* Dependent variables were measured on an 7-point Likert-scale with 1 being least knowledgeable/congruent and 7 being most knowledgeable/congruent. Comparisons are made between the entire sample.
The four selected incongruent brands all had means below the median score with the exception of Edge Shave Gel. As shown in Table 3.5, the brand with the lowest perceived congruency among the whole sample \((n = 35)\) was Harley-Davidson \((M = 2.35\ SD = 0.92)\), followed by Bud Light \((n = 29; M = 3.08; SD = 0.71)\), Boost Mobile \((M = 3.17; SD = 1.31; n = 30)\); and Edge Shave Gel \((M = 4.29; SD = 1.26; n = 30)\). A t-test comparing the perceived congruency between self-identified fans and non-fans yielded no significant differences among means.

The process for analyzing knowledge was conducted similarly to perceived congruency; first, analysis was measured among the whole sample to derive the means, then differences were compared in the means between fans and non-fans. Overall knowledge for the congruent brands was relatively low with the exception of Tapout \((M = 4.55; SD = 1.21; n = 30)\). As indicated by Table 3.5

**Functionally Incongruent Sponsors Pre-test**

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Knowledge</th>
<th>Congruency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harley-Davidson</td>
<td>5.73</td>
<td>2.35</td>
</tr>
<tr>
<td>Boost Mobile</td>
<td>3.99</td>
<td>3.17</td>
</tr>
<tr>
<td>Bud Light</td>
<td>6.08</td>
<td>3.08</td>
</tr>
<tr>
<td>Edge Shave</td>
<td>5.63</td>
<td>4.29</td>
</tr>
</tbody>
</table>

*Note.* Dependent variables were measured on an 7-point Likert-scale with 1 being least knowledgeable/congruent and 7 being most knowledgeable/congruent. Comparisons are made between the entire sample.

Table 3.4, the lowest congruent brand knowledge score was MusclePharm \((M = 2.18; SD = 1.42; n = 31)\), followed by Xyience \((M = 2.29; SD = 1.57; n = 36)\), and BSN \((M = 2.58; SD = 1.92; n = 30)\). An independent samples t-test between fans \((n = 9)\) and non-fans \((n = 19)\) revealed
significant difference between MusclePharm, $t(9.38) = 2.38, p < .05$, BSN, $t(9.78) = 2.93, p < .05$, and Tapout, $t(25.97) = 3.13, p < .05$. There was no statistically significant difference between fans and non-fans for Xyience. Overall, knowledge score means for the congruent brands were higher for fans of the UFC than non-fans of the UFC. Additionally, knowledge scores for the incongruent brands were higher than the congruent brands. Bud Light had the highest brand knowledge among the full sample ($M = 6.08; SD = .71; n = 29$), followed by Harley-Davidson ($M = 5.73; SD = .92; n = 36$), Edge ($M = 5.63; SD = .89; n = 30$), and lastly Boost ($M = 3.99; SD = 1.87; n = 30$). An independent samples t-test between fans and non-fans revealed no significant differences in brand knowledge.

Among the congruent brands, BSN and Tapout received the highest perceived functional congruent scores, with only Tapout yielding differences between fans and non-fans. Although Tapout had the highest perceived congruency, it also had the highest level of knowledge among the sample. Given that the focus of this study is to assess whether exposure to a brand in an experimental setting would influence evaluations, the researcher elected to use Xyience and MusclePharm as the congruent brands in the study and eliminate Tapout. The perceived congruency for Xyience and MusclePharm was above the median, with no difference in knowledge scores between fans and non-fans. Boost Mobile and Harley-Davidson were selected as the incongruent brands for this study based on composite knowledge scores. Although Edge Shave Gel had the second-lowest perceived knowledge score, its perceived congruency crossed the median and was viewed as one of the most highly functionally congruent sponsors to the UFC.
Participants

Participants were recruited using two different mechanisms to satisfy participant criteria for this study. Students from a large, public, Southeastern university represented the first group of participants recruited. Although the use of college students is often reported as a limitation because of its lack of generalizability as a sample, the largest television consumer of UFC related media is between the ages of 18-34 (King, 2011; UFC, 2012), and previous studies examining attendance at MMA events found that the youngest demographic (18-24) was the most representative demographic group for such investigations (Kim et al., 2008). In order to secure a greater number of highly-identified UFC fans, the second group of participants were recruited from public areas viewing a live, televised, UFC event. Individuals were asked if they would like to participate in a future experiment; if so, if they would provide an email where they could be reached to schedule a time to participate in the study. The researcher invited participants to take a fan identification survey online. Prior to participating, subjects agreed to leave follow-up contact information to participate in the study. In all, 206 of the individuals completing the fan identity survey online were then contacted with an invitation to participate in the experimental study. Participants were instructed that the study’s purpose was to assess reactions to still images of sports and non-sports related images for a psychophysiological study. Participants were not informed of the more focused nature of the study: measuring evaluations of sponsorships.

Selecting subjects. Matching by pairing subjects based on fan identity scores was used for comparability of experimental and control groups, limiting confounds and ensuring randomized quota samples so that each cell had a significant number of participants for statistical analysis. Scores were obtained from all participants completing the fan identity scale prior to the
experiment, a procedure similar to Branscombe and Wann (1992). Once an individual signed up for an experiment time, they were matched with another individual with a similar fan identity score. The pair’s first individual who attended the study was placed in one of the two experimental exposure conditions by random chance; the other half of the matched pair was automatically placed into the other condition. If their matched pair failed to attend, the attending subject was assigned a new match based on score similarity.

**Procedure**

Participants entered the psychophysiology lab and were instructed that the purpose of the study was to provide affective responses to sport-related and non-sport-related images. After the participant read and signed the consent form, they were seated in a comfortable chair and placed behind a small desk approximately four feet from a large television screen. The procedure for attaching physiological electrodes was then explained. Two electrodes were placed on the index and middle finger of the participant’s nondominant hand to measure skin conductance, and an electrode was placed on each antecubital fossa to monitor heart rate. The use of the arousal and valance dimensions on the Affect Grid were explained to the subject, and the experiment did not continue until the subject understood the instructions. Next, participants were instructed that images would appear on the television screen after a brief introductory period to establish a baseline. Participants were instructed to view the images the entire time they were presented and to limit all extraneous movement.

Next, participants listened to non-arousing, classical music for 2:50 minutes to establish physiological baselines. Subjects were then exposed to the 18 images for 10 seconds each. Participants were asked to place an “X” on the Affective Grid (Russell et al., 1989) that best matched their mood immediately following exposure to each image. Four separate viewing
orders were created to eliminate viewing order confounds; however, the first 2 images for each condition were always non-UFC related, allowing the subject an opportunity to become familiar with the Affect Grid. At the conclusion of slide show, a laptop computer was placed in front of the participant and each subject was instructed to complete the questionnaire.

The first item on the questionnaire featured the Involvement in the Message Scale. Not only did this serve as an opportunity to collect data on one’s involvement, but it also served as distraction before the free recall portion of the study. Next, participants were asked to write the name of any sponsors, brands, or products they recalled seeing in the sports-related images.

Next, participants were shown the logos of the four actual sponsors as well as four foil sponsors (Tapout, BSN, Bud Light, and Edge Shave Gel). Using Qualtrics, the researcher was able to present random placement of logos, limiting confounds from viewing order or placement of sponsors’ on the page. Following Pham and Johar (2001), foils were mixed in with actual sponsors to account for prominence bias. Next, subjects completed marketing scales for attitude, purchase intent, and knowledge for the four target brands (presented in random order to prevent response fatigue). Lastly, participants completed the fan identity scale before being debriefed and dismissed. The process took 20 to 25 minutes from the time entering to the time leaving the lab.

**Manipulation Checks**

Arousal and pleasure, two variables that may have been confounds on the dependent variables, were measured. A repeated measures ANOVA was run on the eight UFC images to ensure that there were no differences in pleasure or arousal for any individual image. Since each sponsor was linked specifically to one image, it was pivotal to ensure that each image was comparable to one another to prevent inaccurate affect or image transfers. As shown in Table
3.6, the repeated measures ANOVA showed no significant differences in the means for reported pleasure, justifying collapsing image-pleasure scores into one variable for data analysis. Two

Table 3.6

Arousal and Pleasure Means

<table>
<thead>
<tr>
<th>Image Number</th>
<th>Arousal Mean</th>
<th>SE</th>
<th>Pleasure Mean</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6.49</td>
<td>.18</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>6.35</td>
<td>.15</td>
<td>4.83</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>6.80</td>
<td>.13</td>
<td>4.71</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>6.38</td>
<td>.18</td>
<td>4.73</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>6.76</td>
<td>.18</td>
<td>4.80</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6.42</td>
<td>.15</td>
<td>4.90</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>6.61</td>
<td>.13</td>
<td>4.86</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>6.46</td>
<td>.15</td>
<td>4.66</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6.53</td>
<td>1.15</td>
<td>4.77</td>
<td>2.01</td>
</tr>
</tbody>
</table>

Note. Dependent variables were measured on an 7-point Likert-scale with 1 being low arousal/pleasure and 7 being high arousal/pleasure.

additional repeated measures ANOVAs were conducted to assess arousal. Self-reported arousal did have significant differences within the means; however the practical significance differed by less than 0.45.

Scale Reliability

Reliability is the ability for a scale to measure the same construct consistently over time. To measure reliability, Cronbach’s alpha was used to measure the reliability for each of the dependent variables in the questionnaire after the study was completed. Scales for (a) fan identity, (b) involvement (b) attitude for each sponsor, and (c) purchase intention for each sponsor were measured for reliability. After reliability was assessed for each sponsor, the scales were combined for each respective group (congruent/incongruent), and reliability analysis was
repeated. All scales has an alpha value of .7 or higher. Table 3.7 provides a complete list of scale reliabilities.

Two types of validity were assured during the process of the dissertation: face validity and content validity. Face validity is whether or not the measures appear to measure the constructs they intend to measure and were achievement was based previous studies and researcher experience/credibility. Meanwhile, content validity was achieved by rigorous pre-test of content prior to the experiment and approval of measures from the researchers’ dissertation committee.

**Data Cleaning**

Data cleaning was conducted on two separate measures, first on the questionnaire administered during the survey and next on psychophysiological data measuring arousal. All scales had an appropriate level of reliability, both as individual items and as collapsed items (i.e. congruent attitudes/incongruent attitude). Further analysis revealed non-normal data and limited variance for congruent brands’ attitudes. Upon further examination, it was revealed that a large frequency selected the value “4” on the 1-7 Likert scale, which was labeled as “Neither Disagree or Agree,” making the value “4” the representation of “no opinion” rather than an opinion greater than 1-3. Inclusion would have caused unreliable results; therefore, all values of “4” were removed from analysis for attitude and purchase intention related measures after collapsing the scale. Removing all “4”s from analysis yielded a fewer amount of responses capable of use in data analysis, yet provided a direct measure of attitude change. As a result, congruent brands had a combined amount of 37 attitude shifts (+ or – value of 4), and incongruent brands had a total of 97 attitude shifts. The process was repeated for purchase intentions, yielding 81 data points for congruent brands, and 96 for incongruent brands.
Table 3.7

*Scale Reliability for Dependent Measures*

<table>
<thead>
<tr>
<th>Scale</th>
<th>N of Items</th>
<th>Cronbach’s alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fan Identity</td>
<td>7</td>
<td>.970</td>
</tr>
<tr>
<td>Involvement</td>
<td>5</td>
<td>.761</td>
</tr>
<tr>
<td>Attitude MusclePharm</td>
<td>4</td>
<td>.936</td>
</tr>
<tr>
<td>Attitude Xyience</td>
<td>4</td>
<td>.905</td>
</tr>
<tr>
<td>Attitude Congruent</td>
<td>8</td>
<td>.919</td>
</tr>
<tr>
<td>Attitude Harley-Davidson</td>
<td>4</td>
<td>.888</td>
</tr>
<tr>
<td>Attitude Boost-Mobile</td>
<td>4</td>
<td>.913</td>
</tr>
<tr>
<td>Attitude Incongruent</td>
<td>8</td>
<td>.802</td>
</tr>
<tr>
<td>Purchase MusclePharm</td>
<td>4</td>
<td>.838</td>
</tr>
<tr>
<td>Purchase Xyience</td>
<td>4</td>
<td>.711</td>
</tr>
<tr>
<td>Purchase Congruent</td>
<td>8</td>
<td>.832</td>
</tr>
<tr>
<td>Purchase Harley-Davidson</td>
<td>4</td>
<td>.807</td>
</tr>
<tr>
<td>Purchase Boost-Mobile</td>
<td>4</td>
<td>.853</td>
</tr>
<tr>
<td>Purchase Incongruent</td>
<td>8</td>
<td>.792</td>
</tr>
</tbody>
</table>

Skin conductance was measured by locating the number of µmho – the unit abbreviation for microSiemens. First, event-related EDA Analysis transformation scripts were created by indicating the presence of exposure to each of the UFC images. The purpose was to derive the tonic EDA, continuous data acquired from an EDA electrode that includes all baseline offset, from Phasic EDA, a continuous signal indicative of localized changes in the tonic EDA signal.
AcqKnowledge pairs the stimulus event with the closest SCR event and the maximum allowable separation interval between the stimulus and the SCR response is automatically calculated. SCRs closer to the stimulus than the time interval are considered to be a response to the stimuli and not a non-specific SCR occurring simultaneously. Thus, the position, $t_{onset}$, is recorded at the start of a potential SCR and examined through $t_{end}$. The amplitude of the phasic EDA signal within all potential SCRs is calculated by constructing a threshold level T of P percent of the overall maximum phasic EDA signal occurring between $t_{onset}$ and $t_{end}$. All SCRs over the designated threshold are valid if $m > t$. For this study, a threshold level was set to .1 µmho and the time threshold levels was set to .02 µS from previous EDA to derive Event-related EDA. The number of Event-related SCRs were recorded for each stimuli.

**Statistical Analysis**

A mixed use of statistical analysis methods was used for this study. Due to the non-normality of the fan identity variable, when used as a continuous variable, a Spearman’s rho correlation was used for $H_{1a}, H_{2}, H_{3}, RQ_{1}, H_{6b}, H_{7a}$, and, $H_{7b}$. Because of the categorical levels of data for $H_{9a}, H_{9b}$, and $RQ_{2b}$, either a McNemar chi-square and omnibus test of model coefficients were used. Independent samples t-tests were used to measure $H_{4a}, H_{4b}, H_{6a}, H_{8a}, H_{8b}, RQ_{3a}$ because the independent variables have only two levels and the inquiries are not analyzing interaction effects between independent variables. Factorial ANOVAs were used to analyze $RQ_{4a}, RQ_{4b}, RQ_{5a}$ because two more independent variables were analyzed for interaction effects. No covariates were determined to be significant, therefore, the use of ANCOVAs was not required. Repeated measures ANOVAs were used to investigate $H_{3}, RQ_{1b}, RQ_{2}$, which predicted or inquired the effect of two or more independent variables within each participant. Lastly, a mixed-model ANOVA was used for $RQ_{4b}$ and $RQ_{5b}$ since two or more independent variables
were measured within each subject and two or more independent variables between the subjects were examined for interaction effects.
CHAPTER 4 - RESULTS

A total of 103 participants were involved in the experiment. As Table 4.1 shows, 63.1% of the participants were female while 36.9% were male. The average fan identity was low among the sample (\( M = 2.50; SD = 1.78 \)), with 26.2% \((n = 27)\) categorized as highly identified fans of UFC (scoring 3.5 or higher on the seven-point scale) while 73.8% \((n = 76)\) were categorized as low identified fans of UFC. As shown in Table 4.1, 53 individuals (51.5%) were in the non-exposure group and of those individuals 39 (73.6%) were low identified fans and 14 (26.4%) were highly identified fans. The exposure to a sponsor condition contained 50 individuals, 37 (74.0%) were low identified fans while 13 (26.0%) were highly identified fans. The average age of each participant was 20 years old.

Table 4.1

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Fan Identity</th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No-sponsor</td>
<td>High</td>
<td>10 (52.6%)</td>
<td>4 (11.8%)</td>
<td>14 (26.4%)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>9 (47.4%)</td>
<td>30 (88.2%)</td>
<td>39 (73.6%)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>19 (100%)</td>
<td>34 (100%)</td>
<td>53 (100%)</td>
</tr>
<tr>
<td>Sponsor</td>
<td>High</td>
<td>9 (47.4%)</td>
<td>4 (12.9%)</td>
<td>13 (26.0%)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>10 (52.6%)</td>
<td>27 (87.1%)</td>
<td>37 (74.0%)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>19 (100%)</td>
<td>31 (100%)</td>
<td>50 (100%)</td>
</tr>
<tr>
<td>Collapsed</td>
<td>High</td>
<td>19 (50.0%)</td>
<td>8 (12.3%)</td>
<td>27 (26.2%)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>19 (50.0%)</td>
<td>57 (87.7%)</td>
<td>76 (73.8%)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>38</td>
<td>65</td>
<td>103 (100%)</td>
</tr>
</tbody>
</table>

Hypotheses 1 was divided in two parts, predicting that fan identification would positively correlate with consumption of MMA media (\( H_{1a} \)), and predicting that differences between
genders would be recognized (H1b). The participants indicated their level of fan identity and media consumption habits using a 7-point Likert scale ranging from 1 (extremely low) to 7 (extremely high). Due to the non-normality of the fan identity variable, a Spearman’s rho was conducted, revealing both items as having strong, positive correlations: $r_s = .88$, $p < .001$, supporting H1a. To determine the differences between fan identity on gender a $t$ test was employed, revealing a significant difference between the groups, ($t(69.73) = 4.30$, $p < .001$). On average, males reported higher levels of fan identity towards the UFC ($M = 3.44; SD = 1.77$) than females ($M = 1.95; SD = 1.56$). H1b is supported.

Hypothesis 2 predicted a positive relationship between fan identification levels and involvement scores. A 7-point Likert scale was used for fan identity (1 = low fan, 7 = high fan), and a 5-point Likert scale was used for involvement (1 = low involvement, 5 = high involvement). A Spearman’s rho correlation revealed a significant, strong correlation between fan identity and involvement, ($r_s = .60$, $p < .001$). H2 is supported.

Hypothesis 3 and Research Question 1a evaluated an individual’s self-reported liking and arousal of the UFC related images, respectively. A repeated measures within-subject ANOVA was first conducted on the eight UFC-related images to measure differences between liking and arousal before computing a total liking and arousal score. The repeated measures ANOVA examining liking did not reveal any significant differences between the images: ($F(1, 102) = .709, p = .63, \eta^2 = .01$), justifying averaging reported liking scores of each image together. For arousal, however, a repeated measures ANOVA revealed significant differences, ($F(1,102) = 2.62, p < .05, \eta^2 = .03$). Although arousal scores were statistically different, further analysis revealed non-practical significance as means ranged from 6.80 and 6.35. Given the relative
small effect size and practical significance, arousal was subsequently computed as one variable to test Hypothesis 3 and Research Question 1a.

Hypothesis 3 stated that fan identification levels would positively correlate with self-reported liking of the UFC images. Results showed a significant, strong correlation between fan identity and liking of the UFC images \((r_s = .76, p < .001)\), lending support for H3. Due to the nature of the UFC sport, Research Question 1a asked if fan identity would positively correlate with self-reported arousal. A Spearman’s rho correlation concluded that a significant yet weak correlation exists, \((r_s = .34, p < .001)\). Further analysis between the arousal for highly identified fans and low identified fans was conducted using a \(t\)-test, revealing a significant difference \((t(71.79) = -3.31, p < .001, \eta^2 = .07)\). In addition, highly identified fans reported increased levels of arousal \((M = 7.03; SD = 0.77)\) when compared to low identified fans \((M = 6.35; SD = 1.22)\).

Hypothesis 4 was divided into two subcategories: the effects of exposure to sponsors on attitudes (H4a), and the effects of exposure to sponsors on purchase intentions (H4b). An independent samples \(t\)-test was conducted measuring attitudinal differences between exposure and non-exposure to the images containing sponsors. No significant differences were found between the exposure and non-exposure conditions for attitude \((t(101) = .46, p = .65)\), therefore H4a is not supported. An independent samples \(t\)-test was used to measure differences in purchase intentions between the exposure and non-exposure conditions. No significant differences between the two conditions were found for purchase intention, \((t(101) = -.38, p = .70)\), therefore H4b is not supported.

Quadratic curve estimation was used to test Hypotheses 5a and 5b, which predicted that an inverted-U would exist between involvement and recall and recognition respectively. However,
the proper statistical analysis to test the curvilinear relationship was unable to be conducted due to lack of available data. Therefore Hypothesis 5 in not answered.

Hypothesis 6a predicted that arousal induced by UFC-related images would have a negative effect on the unaided recall of the sponsors. Self-reported arousal and the number of correct responses were jointly used for analysis. Recall was categorized in the binary, either as “correct recall” or “no recall.” An independent samples t test was used to examine the relationship between self-reported arousal and correct recall/no recall on the exposure group (n = 50), with no significant differences found (t(48) = -.012, p = .99). Lastly, a t-test was used between individuals who correctly and incorrectly recalled sponsors, yielding no significant differences. A repeated measures ANOVA was used to examine the effects of physiological arousal and “correct recall” or “no recall”, yielding no significant interactions (F(7, 301) = 2.70, p = .059). Neither self-reported arousal or physiological arousal impacted correct recall. Hypothesis 6a is not supported.

Hypothesis 6b examined the effect of arousal on aided recall (recognition) of sponsors, predicting that high arousal would have a negative effect on correct recognition. Analysis was first conducted on only those exposed to sponsors. As indicated in Table 4.2, a Spearman’s rho correlation was used, yielding a significant yet weak correlation between self-reported arousal and number of incorrect sponsors recognized, (r_s = .371, p < .01). As arousal increased, the number of incorrect sponsors recognized also increased in the exposure group (n = 50). No significant correlation was found between correct recognition and self-reported arousal.

Additionally, a Spearman’s rho correlation was used for analysis on the entire sample (n = 103) to determine if arousal impacted incorrect recognition. The number of sponsors recognized by the non-exposure group was recorded as an incorrect response. Results yielded a
significant yet weak positive correlation between incorrect sponsor recognition and self-reported arousal, \(r_s = .28, p < .005\), but no significant correlation was found for correct recognition, \(r_s = .08, p = .41\). Additionally, there was a significant yet weak negative correlation between the number of incorrect and correct recognition responses, \(r_s = -.30, p < .005\). All correlations are found in Table 4.3. Given these results, Hypothesis 6b is partially supported, because as arousal increased, the number of incorrect recognitions increased, negatively affecting unaided recall.

Hypothesis 7a predicted that that a positive relationship would exist between self-reported liking of the UFC images and attitude towards all sponsors. Given that this analysis examined image liking and attitude toward brands, only the exposure group \((n = 50)\) was utilized for these
analyses. A significant, strong correlation between attitudes towards the brands and liking of the images was found, \( r_s = .82, p < .001 \). Further analysis examined image liking and attitudes towards sponsors, yielding significant positive correlations for both congruent \( (r_s = .56, p < .05) \) and incongruent \( (r_s = .30, p < .05) \) brands. Based on the correlations between attitudes and image liking, H7a was supported. As pleasure towards the images increased, so too did attitudes towards the sponsors.

Hypothesis 7b predicted a positive relationship between liking of the UFC images and purchase intentions towards sponsors. A Spearman’s rho correlation was conducted using only those exposed to the sponsors \( (n = 50) \) finding significant, moderate correlations between liking of the UFC images and purchase intentions for all sponsors \( (r_s = .39, p < .001) \), congruent sponsors \( (r_s = .36, p < .001) \), and incongruent sponsors \( (r_s = .38, p < .001) \). Based on the consistent correlations between image liking and purchase intent, Hypothesis 7b is supported, as liking of the UFC images increased, so too did reported purchase intention towards sponsors.

The next set of hypotheses predicted that highly identified fans would have more positive attitudes towards sponsors (H8a), and that highly identified fans would have enhanced purchase intentions towards all sponsors (H8b). After labeling all middle values of 4 as “no opinion” and recoding these as missing values, an independent samples \( t \) test revealed a significant difference, \( t(35) = (-3.67), p < .001 \), between highly identified fans \( (n = 12) \), and low identified fans \( (n = 25) \), supporting hypothesis 8a. As shown in Table 4.4, the results indicate that when high-identified fans reported a change in attitude, they were more likely to report this attitude as being favorable toward sponsors \( (M = 4.69; SD = .49) \); in contrast, when low identified fans reported a change in attitude, they were more likely to report this attitude as being negative toward sponsors \( (M = 3.87; SD = .69) \). An independent samples \( t \) test also revealed a significant difference
(t(101) = (-3.92), \( p < .001 \)) between highly identified fans \((n = 24)\) and low identified fans \((n = 73)\) in regard to purchase intentions, supporting hypothesis 8\(_b\). Results indicate that highly identified fans reported high purchase intentions \((M = 3.52; SD = .78)\), while low identified fans had substantially lower purchase intentions \((M = 2.87; SD = .72)\).

Table 4.4

<table>
<thead>
<tr>
<th>Fan ID</th>
<th>Attitude Mean (SD)</th>
<th>Purchase Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>4.69 (.49) ((n = 12)^1)</td>
<td>3.52 (.78) ((n = 24)^1)</td>
</tr>
<tr>
<td>Low</td>
<td>3.87 (.69) ((n = 25)^2)</td>
<td>2.87 (.72) ((n = 73)^2)</td>
</tr>
</tbody>
</table>

Note. Dependent variables were measured on an 7-point Likert-scale with 1 being lowest and 7 being highest. All values of 4, which indicated no opinion, were removed from analysis. By measure, values in vertical rows not sharing a similar-form superscript are significantly different at \( p < .001 \).

Hypothesis 9\(_a\) predicted that individuals exposed to the sponsors would recall more functionally-congruent sponsors than non-functionally congruent sponsors. A McNemar’s repeated measures chi-square test for change did not indicate any significant differences \((\chi^2(1, n = 50) = 1.35, p = .50)\) between correct recall of congruent sponsors \((n = 9)\) and correct recall of incongruent sponsors \((n = 17)\), therefore H9\(_a\) is not supported.

Hypothesis 9\(_b\) predicted that individuals exposed to the sponsors would recognize more functionally-congruent sponsors than functionally-incongruent sponsors. A McNemar’s repeated measures chi-square test for change did not indicate a significant difference \((\chi^2(1, n = 50) = 0.09, p = .77)\) between correctly recognizing a congruent sponsor \((N = 38)\) and correctly recognizing an incongruent sponsor \((N = 26)\). Hypothesis 9\(_b\) is not supported.
Research Question 1b inquired the extent to which fan identification impacts physiological arousal during exposure to UFC images. Linear trend analysis showed physiological arousal had a significant order effect \( F(5.96, 560.49) = 7.39, p < .001, \eta^2 = .07 \), revealing that the physiological arousal indicated by number of galvanized skin responses crossing the .1 \( \mu \)mho threshold decreased from the first UFC image \( M = .75; SD = .656 \) to the last UFC image \( M = .36; SD = .52 \), as shown in Figure 4.1.

![Figure 4.1](image)

**Figure 4.1.** Physiological arousal to UFC related images over time

To fully evaluate the research question, a repeated measures ANOVA examined the degree to which the within-subjects arousal interacted with fan identification. Sphericity was not assumed; therefore, Greenhouse-Geisser was used for analysis. Results indicated that fan identification significantly interacted with physiological arousal \( F(5.95, 557.49) = 2.40, p < .05, \eta^2 = .03 \). As shown in Figure 4.2, low identified fans generally decreased in physiological arousal over time, and were slightly higher than highly identified fans. Table 4.5 includes the average number of SCRs by fan type.
Figure 4.2. Physiological arousal between fan identity groups

Table 4.5

Physiological Arousal by Fan Identification

<table>
<thead>
<tr>
<th>Image #</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>.79</td>
<td>.25</td>
<td>.50</td>
<td>.08</td>
<td>.29</td>
<td>.38</td>
<td>.21</td>
<td>.17</td>
</tr>
<tr>
<td>Low</td>
<td>.73</td>
<td>.59</td>
<td>.48</td>
<td>.52</td>
<td>.49</td>
<td>.38</td>
<td>.31</td>
<td>.42</td>
</tr>
</tbody>
</table>

Note. Physiological arousal was measured by the average number of LCRs. By measure, values in vertical rows not sharing a similar-form superscript are significantly different at p < .05.

Research Question 2 examined how fan identification impacts attitude (RQ2a) and purchase intentions (RQ2b) of functionally-congruent and functionally-incongruent brands. To examine the effects of within-subjects attitude of congruent and incongruent brands between high and low identified fans, a repeated-measures ANOVA was employed. Results indicated significant differences for the main effects; however, interaction effects were not present. A significant difference was found within sponsor type ($F(1,101) = 16.98, p < .001, \eta^2 = .14$). As
indicated in Table 4.6, incongruent sponsors received lower attitude scores \((M = 4.10; SD = .06)\) than congruent sponsors \((M = 4.46; SD = .08)\). A main effect was also found for fan identity \((F(1, 101) = 9.54, p < .005, \eta^2 = .09)\). Highly identified fans reported significantly higher attitude scores \((M = 4.45; SD = .09)\) than low identified fans \((M = 4.11; SD = .06)\).

Table 4.6

*Fan Identity and Sponsor Type Attitudes*

<table>
<thead>
<tr>
<th>Fan ID</th>
<th>Attitude Congruent M (SD)</th>
<th>Attitude Incongruent M (SD)</th>
<th>Attitude Collapsed M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>4.30 (.61)</td>
<td>4.60 (.51)</td>
<td>4.45 (.09) (^1)</td>
</tr>
<tr>
<td>Low</td>
<td>3.90 (.52)</td>
<td>4.32 (.76)</td>
<td>4.11 (.06) (^2)</td>
</tr>
<tr>
<td>Collapsed</td>
<td>4.46 (.08) (^A)</td>
<td>4.10 (.06) (^B)</td>
<td></td>
</tr>
</tbody>
</table>

Note. Dependent variables were measured on an 7-point Likert-scale with 1 being lowest and 7 being highest. All values of 4, which indicated no opinion, were removed from analysis. By measure, values in vertical rows not sharing a similar-form superscript are significantly different at \(p < .001\). By measure, values in horizontal rows not sharing an uppercase superscript are significantly different at \(p < .01\).

To examine purchase intentions for either congruent or incongruent sponsors between fan level \((RQ_{2b})\), a repeated-measures ANOVA was also used. Results are shown in Table 4.7, indicating main effects for sponsor type and fan identification exist; however, no interaction effects were present. Significant differences were found for sponsor type \((F(1, 74) = 6.87, p < .01, \eta^2 = .09)\), with congruent sponsors having higher purchase intentions \((M = 3.20; SD = .12)\) than incongruent sponsors \((M = 2.87; SD = .11)\). Significant differences between fan identity \((F(1, 74) = 14.50, p < .001, \eta^2 = .17)\) revealed that highly identified fans were more likely to report a purchase intent of a sponsor \((M = 3.40; SD = .17)\) than low identified fans \((M = 2.67; SD = .10)\).
Table 4.7

*Fan Identity and Sponsor Type Purchase*

<table>
<thead>
<tr>
<th>Fan ID</th>
<th>Purchase Congruent M (SD)</th>
<th>Purchase Incongruent M (SD)</th>
<th>Purchase Collapsed M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>3.55 (1.10)</td>
<td>3.26 (.98)</td>
<td>3.40 (.17)</td>
</tr>
<tr>
<td>Low</td>
<td>2.86 (.79)</td>
<td>2.48 (.82)</td>
<td>2.67 (.10)</td>
</tr>
<tr>
<td>Collapsed</td>
<td>3.20 (.12)^A</td>
<td>2.87 (.11)^B</td>
<td></td>
</tr>
</tbody>
</table>

Note. Dependent variables were measured on an 7-point Likert-scale with 1 being lowest and 7 being highest. All values of 4, which indicated no opinion, were removed from analysis. By measure, values in vertical rows not sharing a similar-form superscript are significantly different at p < .005. By measure, values in horizontal rows not sharing an uppercase superscript are significantly different at p < .001.

Research Question 3a examined the extent to which fan identification impacts unaided recall of functionally congruent sponsors. Logistic regression was used to determine if highly identified fans exposed to a sponsor were more likely to correctly recall sponsors than a low identified fan. An omnibus test of model coefficients was significant ($\chi^2 (2, n = 103) = 52.36, p < .001$), explaining 40% to 60% of the variance. Analysis showed that highly identified fans exposed to a sponsorship were 10 times more likely than low-identified fans to correctly recall a congruent sponsor. Table 4.8 shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictors. Employing a .05 criterion of statistical significance, exposure and fan identity had significant effects. In sum, Research Questions 3a predicts that highly identified fans are more likely than low identified fans to correctly recognize a sponsor.

Research Question 3b queried the extent to which fan identification impacted aided recall of functionally congruent and functionally incongruent sponsors. An omnibus test of model coefficients were significant ($\chi^2 (2, n = 103) = 55.08, p < .001$), explaining approximately
41% to 56% of the variance. According to the model, highly identified fans exposed to a sponsorship were only 13.9 times more likely than low identified fans to correctly recognize a congruent sponsor. Table 4.9 shows the logistic regression coefficient, Wald test, and odds ratio for each of the predictors. Employing a .05 criterion of statistical significance, exposure and fan identity had significant effects.

Table 4.9

**Aided Recall by Fan Type for Congruent Sponsors**

<table>
<thead>
<tr>
<th>Predictor</th>
<th>β</th>
<th>Wald χ²</th>
<th>p</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fans ID</td>
<td>-2.63</td>
<td>11.29</td>
<td>.001</td>
<td>13.9</td>
</tr>
</tbody>
</table>

Because of the significant findings on fan identity and correctly and incorrectly recognizing a sponsor, a chi-square was conducted between exposure conditions and sponsor type to locate where differences existed. As shown in Table 4.10, for the brands that were shown, there were significant findings for, Xyience ($\chi^2(1, n = 103) = 42.02, p < .001$), Harley Davidson, ($\chi^2(1, n = 103) = 14.40, p < .001$), MusclePharm, ($\chi^2(1, n = 103) = 28.21, p < .001$), but not for Boost Mobile, ($\chi^2(2, n = 103) = 3.29, p < .07$). Quite oddly, significant findings existed for one of the brands not shown: Tapout, a clothing apparel line that has been closely associated with the sport, ($\chi^2(1, n = 103) = 11.92, p < .001$).
Table 4.10

*Frequency of Aided Recall by Sponsor*

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Exposure</th>
<th></th>
<th>No-Exposure</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Correct</td>
<td>Incorrect</td>
<td>Total</td>
<td>Incorrect</td>
<td>Correct</td>
<td>Total</td>
<td>Incorrect</td>
<td>Correct</td>
<td>Total</td>
<td>Incorrect</td>
<td>Correct</td>
</tr>
<tr>
<td>Actual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xyience</td>
<td>32(^a)</td>
<td>18(^b)</td>
<td>50</td>
<td>2(^a)</td>
<td>51(^b)</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harley</td>
<td>25(^a)</td>
<td>25(^b)</td>
<td>50</td>
<td>8(^a)</td>
<td>45(^b)</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MusclePharm</td>
<td>32(^a)</td>
<td>18(^b)</td>
<td>50</td>
<td>7(^a)</td>
<td>46(^b)</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BoostMobile</td>
<td>15</td>
<td>35</td>
<td>50</td>
<td>8</td>
<td>45</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sponsor       | Exposure |               | No-Exposure |               |               |               |               |               |               |               |               |               |               |
|---------------|----------|---------------|-------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Foils         |          | Incorrect     | Correct     | Total         | Incorrect     | Correct       | Total         | Incorrect     | Correct       | Total         | Incorrect     | Correct       | Total         |
| EdgeShaveGel  | 1        | 49            | 50          | 2             | 51            | 53            |               |               |               |               |               |               |
| BSN           | 5        | 45            | 50          | 1             | 52            | 53            |               |               |               |               |               |               |
| TapOut        | 16\(^a\) | 34\(^b\)      | 50          | 35\(^a\)      | 18\(^b\)      | 53            |               |               |               |               |               |               |
| Bud Light     | 3        | 47            | 50          | 7             | 46            | 53            |               |               |               |               |               |               |

Note. Each superscript letter denotes a subset of sponsor recognition whose column proportions differ significantly from each other at the .001 level.

Although Tapout was not shown in either the exposure group or non-exposure group, a near-majority of the individuals reported recalling the brand under aided recall (n = 51; 49%). Of the 51 participants in the exposure condition, 16 reported seeing the brand (15.5%), while 35 individuals (34%) not exposed to any sponsors reported seeing the brand under aided recall. Research Question 3\(_b\) states that highly identified fans are slightly more likely than low identified fans to correctly recall a sponsor. Furthermore, significant differences occur for both congruent brands and only for one incongruent brands, suggesting that heuristic cues played a significant role in predicting which sponsors were shown.
To test the effects of exposure on attitude evaluations between fan identity levels (RQ4a), a factorial ANOVA was conducted. The analysis for the main effect of exposure did not produce any significant differences ($F(1,35) = .02, p = .888$); however, main effects for fan identity were found ($F(1,35) = 5.92, p < .001, \eta^2 = .32$). No interaction effect for fan identity and exposure type was detected, ($F(1,35) = 3.92, p < .056, \eta^2 = .109$). As shown in Table 4.11, highly identified fans reported higher attitudes for sponsors ($M = 4.69; SD = .18$) than low identified fans ($M = 3.83; SD = .13$), regardless of exposure condition. Results of Research Question 4a conclude that exposure has no impact on attitude evaluations; however, fan identification is a significant predictor for enhanced evaluations despite immediate exposure.

Research Question 4b was evaluated using a mixed-model ANOVA examining the effects of exposure (exposure x no exposure) to sponsor types (congruent x incongruent) on different levels of fan identity. No interaction effects were found between the variables;
however, a main effect for fan identity was found \((F(1,30) = 20.25, p < .001, \eta^2 = .40)\). In this model, highly identified fans reported higher attitudes for sponsors \((M = 4.88; SD = .19)\) than low identified fans \((M = 3.84; SD = .12)\).

Further analysis was conducted to examine if another other variables attributed to differences in attitudes. Two separate factorial ANCOVAs were used to examined gender (male x female) and exposure (exposure x no exposure) on attitudes of sponsors, using fan identity as a covariate. No main effects were found for gender or exposure condition, but results did yield a significant interaction effect between gender and exposure condition \((F(1,36) = 5.83, p < .05, \eta^2 = .15)\), for congruent sponsors.

Additionally, males exposed to the sponsors reported the highest attitude evaluations for congruent sponsors \((M = 4.66; SD = .29)\), followed by females not exposed to the sponsor \((M = 4.08; SD = .28)\), males not exposed to a sponsor \((M = 3.80; SD = .23)\), and lastly females exposed to a sponsor \((M = 3.63; SD = .27)\). All means are included in Table 4.12. A factorial ANCOVA was also conducted for incongruent sponsors, yielding no significant main effects or interaction effects. The results of Research Question 4b conclude that fan identity is a significant predictor for positive attitudes towards sponsors and is not impacted by exposure. Further analysis show that exposure does impact evaluations however, but only between men and women and only for congruent brands, thus warranting further evaluation.

Research Question 5 measured purchase intentions, with RQ5a examining fan identity between exposure conditions on all sponsors, and RQ5b examining fan identity between exposure groups and within sponsor types. To evaluate exposure between fan identity levels on sponsor purchase intentions between exposure conditions, a factorial ANOVA was used. Only main effects for fan identity were found \((F(1,99) = 15.10, p < .001, \eta^2 = .14)\) as highly identified
Table 4.12

*Exposure and Gender Attitudes Towards Sponsor Type*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Gender</th>
<th>Sponsor Type Attitudes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Congruent</strong></td>
</tr>
<tr>
<td>No-exposure</td>
<td>Male</td>
<td>3.82 (.81)*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>4.08 (.28)*</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>3.94 (.99)A</td>
</tr>
<tr>
<td>Exposure</td>
<td>Male</td>
<td>4.66 (.29)*</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.46 (1.32)*</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>4.08 (.91)A</td>
</tr>
<tr>
<td>Collapsed</td>
<td>Male</td>
<td>4.21 (.85)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.76 (.82)</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>4.00 (.84)</td>
</tr>
</tbody>
</table>

Note.  Note.  Attitude was measured on an 7-point scale with 1 being lowest and 7 being highest. Measures with the superscript A are evaluated with the following covariate: fan id = 3.02.

* $p < .05$.

Fans were more likely to report purchasing a sponsor ($M = 3.49; SD = .14$) than low identified fans ($M = 2.84; SD .09$).

An additional factorial ANOVA was conducted evaluating the interaction of other variables on purchase intentions. Main effects were found for both gender ($F(1,99) = 7.56, p < .01, \eta^2 = .08$) and fan identity ($F(1,99) = 7.67, p < .01, \eta^2 = .08$). More specifically, males were more likely to report purchasing a sponsor ($M = 3.45; SD = .11$) than females ($M = 2.99; SD = .13$), and highly identified fans were more likely to purchase a sponsor ($M = 3.45; SD = .14$) than low identified fans ($M = 2.98; SD = .09$). Interaction effects were also found between the exposure group and gender ($F(1,99) = 8.68, p < .005, \eta^2 = .09$). As illustrated in Figure 4.3, males exposed to the sponsors yielded the highest purchase intent ($M = 3.55; SD = .16$), followed by males not exposed to a sponsor ($M = 3.34; SD = .15$), females not exposed to a sponsor ($M = 3.37; SD = .18$), and female exposed to a sponsor ($M = 2.30; SD = .18$).
Figure 4.3. Differences between gender, fan identity, and exposure plots

A three-way interaction was found between gender, exposure group, and fan identity ($F(1,99) = 6.48, p < .01, \eta^2 = .07$), explaining 31.4% of the variance. As shown in Table 4.13, females who were highly identified fans and not exposed to the sponsors reported the highest purchase intent ($M = 4.03; SD = .61$) whereas females who were highly identified fans and exposed to the sponsors reported the lowest purchase intent ($M = 2.53; SD = .25$).

To evaluate Research Question 5b, querying purchase intentions of congruent and incongruent sponsors between fan identity levels and exposure conditions, a repeated-measures ANCOVA was used. Main effects for sponsor type were found ($F(1,72) = 11.30, p < .001, \eta^2 = .14$), and for fan identity ($F(1,72) = 13.46, p < .001$). Congruent sponsors received the higher purchase intent scores ($M = 3.23; SD = .12$) than incongruent sponsors ($M = 2.81; SD = .12$), and highly identified fans reported higher purchase intent ($M = 3.37; SD = .17$) than low identified fans ($M = 2.66; SD = .10$). An interaction effect was found between sponsor type and identified fans ($M = 2.66; SD = .10$). An interaction effect was found between sponsor type and
Table 4.13

*Exposure, Gender, and Fan Category on All Sponsor Purchase*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Gender</th>
<th>Fan Cat</th>
<th>Sponsor Purchase Intent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total Sponsors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>M (SD)</td>
</tr>
<tr>
<td>No-exposure</td>
<td>Male</td>
<td>Low Fan</td>
<td>3.30 (.49)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Fan</td>
<td>3.44 (.82)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collapsed</td>
<td>3.35 (.68)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Low Fan</td>
<td>2.62 (.62)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Fan</td>
<td>4.03 (.61)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collapsed</td>
<td>2.87 (.78)</td>
</tr>
<tr>
<td>Exposure</td>
<td>Male</td>
<td>Low Fan</td>
<td>3.32 (.77)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Fan</td>
<td>3.79 (.60)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collapsed</td>
<td>3.53 (.72)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>Low Fan</td>
<td>2.73 (70)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Fan</td>
<td>2.53 (.25)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Collapsed</td>
<td>2.98 (.70)</td>
</tr>
<tr>
<td>Collapsed</td>
<td>Male</td>
<td>-</td>
<td>3.45 (.11)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>-</td>
<td>2.99 (.13)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High Fan</td>
<td>3.45 (.14)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low Fan</td>
<td>2.98 (.09)</td>
</tr>
</tbody>
</table>

*Note.* Appeal was measured on an 7-point scale with 1 being lowest and 7 being highest. By measure, values in vertical rows sharing a similar-form superscript are significantly different at \( p < .01 \).

exposure condition \( (F(1,72) = 8.29, p < .001, \eta^2 = .10) \). Individuals exposed to congruent sponsors had the highest intent for purchase \( (M = 3.34; SD = .19) \), followed by individuals not exposed to congruent sponsors \( (M = 3.12; SD = .15) \). Individuals not exposed to the sponsors reported the third highest purchase intentions for incongruent sponsors \( (M = 3.06; SD = .14) \), but lowest purchase intent after exposure \( (M = 2.55; SD = .18) \).

Final analysis revealed a three-way interaction between sponsor type, exposure group, and gender \( (F(1,68) = 8.64, p < .005, \eta^2 = .13) \). Overall, as shown in Table 4.14, females \( (M = 2.30; SD = .22) \) and males \( (M = 2.60; SD = .33) \) exposed to the incongruent sponsor reported the lowest purchase intentions. Males exposed to the congruent sponsors reported the highest
purchase intentions \((M = 4.35; \ SD = .32)\) followed by females’ purchase intent of congruent sponsors when they were not exposed \((M = 3.38; \ SD = .24)\). Research Question 5b shows that highly identified have higher purchase intentions, favoring congruent sponsors over incongruent sponsors. Unlike attitudes, purchase intentions and sponsor types were affected by exposure. Congruent brands fared better after exposure whereas incongruent brands’ purchase intentions declined after exposure. Further analysis revealed that males and females react differently after exposure, warranting further evaluation.

Table 4.14

\textit{Exposure and Gender Purchase Intentions of Sponsor Types}

<table>
<thead>
<tr>
<th>Condition</th>
<th>Gender</th>
<th>Sponsor Type Purchase</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Congruent</td>
</tr>
<tr>
<td>No-exposure</td>
<td>Male</td>
<td>3.29</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>3.38</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>3.12\textsuperscript{A1}</td>
</tr>
<tr>
<td>Exposure</td>
<td>Male</td>
<td>4.35</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>2.74</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>3.34\textsuperscript{A2}</td>
</tr>
<tr>
<td>Fan Identity</td>
<td>High Fans</td>
<td>3.59</td>
</tr>
<tr>
<td></td>
<td>Low Fan</td>
<td>2.86</td>
</tr>
<tr>
<td></td>
<td>Collapsed</td>
<td>3.23\textsuperscript{A}</td>
</tr>
</tbody>
</table>

Note. Purchase Intent was measured on an 7-point scale with 1 being lowest and 7 being highest. By measure, values in vertical columns not sharing a similar-form superscript are significantly different at \(p < .001\). By measure, values in horizontal rows not sharing an uppercase superscript are significantly different at \(p < .001\).

Research Question 6 evaluated the impact of physiological arousal on ability to correctly recall sponsors when accounting for level of fan identity. Because of the linear trend of physiological arousal over time, a repeated measures ANOVA was used to examine arousal and recall, yielding only interaction effects for arousal and fan identity \((\beta = 2.51), (F(7,280) = 2.79, p < .05, \eta^2 = .07)\). When accounting for fan identification, skin conductance decreased over time,
with initial LCRs occurring during the first exposure ($M = .64; SD = .09$) and decreasing in a linear direction to the later images ($M = .37; SD = .07$). However, this finding did not yield a significant difference on free recall. Further analysis examined physiological effect on recognition, yielding no significant differences. Thus, Research Question 6 is answered in that recall and recognition were not influenced by physiological arousal.

Appendix B provides a summary of findings, statistic tests used, and $p$-values.
CHAPTER 5 - DISCUSSION

The UFC is growing in mainstream viewership, yet sports journalists still label it as a niche sport (Doyle, 2013), providing an interesting paradox and making works in social identification and sponsorship literature both complex and interesting. This experiment empirically examined conceptualized models of sports sponsorship by understanding how key variables interact with one another to produce maximum benefit for marketing professionals while advancing theoretical scholarship. Several objectives were outlined and subsequently achieved. The first objective sought to understand how fan identity impacts physiological response during exposure to a highly arousing and novel sporting event, advancing both fan identity theory and providing empirical understanding as to how physiological changes impact cognition. The second objective sought to understand how fan identification, emotion, and mere exposure impacts sponsorship outcomes of sponsor-event functionally congruent and/or functionally incongruent sponsors. Unlike previous sponsorship studies relying upon field studies and surveys, this study tested several variables in a controlled, experimental setting, finding fan identification and sponsorship congruency to be strong predictors of sponsorship success. A new relationship between fan identification and physiological response is also identified, warranting further exploration. More importantly, these findings showed strong support for previous claims supporting the function of fan identity and affect transfer in sponsorship research while exposing limitations of mere exposure.
Summary of Results

The demographic profiles for the experiment were equally distributed between the two sponsorship exposure conditions. Although there were nearly three times as many low identified fans as compared to highly identified fans, both levels of fan identity were evenly distributed between the exposure and non-exposure conditions. A modified scale consisting of items from both the Sport Spectator Identification Scale (SSIS) (Wann & Branscombe, 1993) and the Psychological Connection to a Team Scale (PCT) (Mahony, et al., 2000) proved to be reliable with a Cronbach’s alpha of .90 and followed previous works that explored fan identity within the UFC (Brown, et al., 2013; Devlin, et al., 2012). There were slightly fewer males than females who participated in the experiment, which largely resulted from the demographic makeup of the large, public Southeastern university from which participants were recruited.

All other scales measuring the dependent variables resulted in a Cronbach’s alpha above 0.8, certifying the reliability of each scale. All self-reported manipulation checks were rigorously pre-tested to select images that were equally rated in terms of participants’ perceived arousal and liking. The equal dispersion of the sample between groups, control of stimuli used, controlled procedure, validity of constructs, and reliability of all scales added legitimacy to the method and comprehensive results.

Key findings from research questions and hypotheses. The first goal of the study was to examine differences in physiological arousal between the two levels of fan identity. Preliminary results confirmed differences between one’s self-reported arousal and physiological arousal. On average, highly identified fans rated the UFC images higher in terms of arousal as compared to low identified fans; however, physiological measures showed the inverse as low identified fans displayed higher levels of physiological arousal than high identified fans. This
finding is particularly interesting because it juxtaposes previous fan identification studies that observed higher levels of physiological arousal in highly identified fans when compared to their counterpart. There are a few potential causes of this effect. When acknowledging the apparent linear order effect that showed all participants became satiated and less aroused with the UFC images over time, it appears that the novelty of the sport may have heavily influenced low identified fans, evidenced by the higher physiological scores.

In addition to understanding differences between fan identification levels, this study also determined the effect of physiological arousal on one’s cognitive processing capabilities. A simple measure of correctly recalled and correctly recognized sponsorships provided an assessment of participants’ cognitive processing abilities. The findings showed that arousal impaired one’s ability to correctly recall and recognize sponsors; however, it was not in the predicted direction. Previous literature (Pham, 1992) suggested that a person’s arousal would positively correlate with the amount of correct responses; this study found that arousal positively correlated with the number of incorrect responses. Thus, variables other than physiological arousal may provide more important considerations for sponsorship effectiveness. A near majority of participants (49.5%) incorrectly reported seeing one particular sponsor, Tapout, within the images despite the fact that it was removed from all test conditions. Statistically, this single outlier may have led to the correlation between arousal and incorrect memory; however, this finding is worthy of more in-depth discussion as it demonstrates how individuals will seek heuristic cues when making assessments about sponsors, as suggested by previous research (Pham & Johar, 2001). It is worth noting that the individuals were only exposed to each sponsor for a total of 10 seconds for each image. The duration of the sponsorship is shorter in length.
compared to many other physiological studies (see Lang, 2000), which may account for why there was not significant finding between arousal and cognition.

The second set of research questions and hypotheses measuring sponsorship outcomes showed strong support for the effects of fan identity as a predictor for sponsorship success. All statistical analyses showed main effects for fan identity in terms of increased attitude and purchase intentions. Other factors, such as affect transfer, which possibly served as a function of fan identification, were also empirically supported as successful predictors. One particularly interesting facet of this study related to the effects of exposure. Initial results revealed that measurements between the sponsorship exposure and non-exposure groups yielded no significant differences, suggesting limitations for a mere exposure effect. However, exposure effects did interact with gender and sponsor type (functionally congruent/functionally incongruent), warranting a potential new direction for scholarly work.

**Theoretical Contributions**

This research contributes empirical findings to fan identity research, most specifically its role in sponsorship success. The limitations of exposure effects and the overwhelming support for fan identity as a predictor lend support to previous work in this area (see Cornwell et al., 2005; Madrigal, 2000; 2001; Meenaghan, 2001). Using an experimental method controlling for exposure between identification levels and sponsor type provides several theoretical and practical implications in the field of both fan identity and sports sponsorship literature. This section addresses those theoretical contributions as they apply to fan identity, mere exposure, and the other psychological mechanisms, followed by a discussion of this study’s contributions to practical sponsorship literature.
**Fan identity contributions.** This study compares levels of fan identity to measure different variables, including (a) consumption habits [and the ancillary pleasure derived], (b) arousal, and (c) sponsorship outcomes.

As predicted, fan identification strongly correlates with media consumption habits, including television, Internet, and social media. It is also notable that fan identity predicts *all* UFC-event consumption and is not limited simply to a favorite athlete (team). Given the unique model of the UFC as compared to other sports in terms of its lack of established league-teams, geographical locations, and regular seasons, the results show that consumption is not limited to a team (athlete) but can be applied to the sport as a whole. Early works in fan identification (Trail et al., 2003; Wann, et al., 1996. Wann et al., 2001) reveal antecedents for team fandom were predicted by influence from family, friends, geographical location, and community affiliation; however, the results of this study suggest other antecedents may emerge for non-geographical and non-team related sports.

The findings on involvement and liking further suggest that fan identity may not be limited to personal attachment to a team or a few teams, but *can* be applied to an entire sport in select instances. Branscombe and Wann (1992) found involvement could range from active to passive, producing predictable outcomes depending on one’s level of identity to the team more so than the sport itself. These results show that involvement is strongly correlated with fan identity without varying based on image selection. Likewise, no significant differences in self-reported liking of the UFC images were found, even though the images featured 16 different athletes from eight separate matches. Despite the unique nature of the UFC, tenets of fan identity theory hold true, showing a possible extension of the study into new areas and contexts.
Additionally, research in fan identification testing BIRGing and CORFing may further explore how the two function in a sporting context featuring several possible fan identity interactions.

The effects of fan identity on self-reported and physiological arousal present thought-provoking findings. A moderate, positive correlation exists between self-reported arousal and fan identification. Also, significant statistical differences are found between low identified fans and highly identified fans, with the latter reporting slightly higher scores ($\mu = 7.03$) than the former ($\mu = 6.35$). However, physiological scores contradict self-report, with low identified fans showing more arousal than highly identified fans. In addition, these physiological arousal responses contradict previous studies measuring physiological response and fan identity (Hillmann et al., 2004; Petter & Keene, 2012). Previous studies indicate higher levels of skin conductance, an indicator for arousal, for highly identified fans when showing team-relevant images, whereas this study showed increased levels of skin conductance for low identified fans which decreased linearly through time. SCRs declined over time for highly identified fans as well; however, their average physiological arousal was lower than the low identified group’s arousal. This finding may result more from the nature of UFC rather than as a function of fan identity. The linear decrease over time demonstrates a satiation effect, indicating that the onset of initial arousal may be impacted by the presentation of a novel or new stimuli or the ferocity of the sport itself. If this is true, highly identified fans would be somewhat desensitized by the violent nature of the sport or would find the images less novel, explaining the lower physiological arousal averages.

Overall, results of this study support seminal works in the area of fan identity showing that fan identity is a practical predictor for consumption and involvement. Perhaps of even greater importance, this study extends fan identity research from well-known mainstream sports
with established teams and seasons to presumed-to-be niche sports with no set schedule or geographic location, providing unique combinations of psychological connections resulting from a single event while identifying with several different fighters as compared to identifying with the sport as a whole. Future studies can benefit from these findings both by examining if they translate to other sports that function in a similar capacity and employing advanced approaches to fan identification theories. In this role, being a fan of the UFC as a sport provides a distinct group for one to identify, rather than relying on being part of a prestigious team. What this study does not directly address is how this impacts previous discussions of in-group versus out-group exploitation as the ability to be a fan of multiple fighters during the course of an event may create a revolving carousel of in-group and out-group formations.

**Mere exposure and psychological mechanisms.** Pracejus (2004) outlined seven psychological mechanisms impacting brand equity and sponsorship effectiveness: (a) simple awareness, (b) affect transfer, (c) image transfer, (d) affiliation, (e) implied size, (f) implied endorsement, and (g) reciprocity, stating, “[t]he mechanisms are not mutually exclusive, thus two or more may function in any given sponsorship association. Together, however, they represent a reasonably complete set of ways sponsorship works” (p. 175). Because of the controlling of exposure, this experiment advances certain tenets of Pracejus’ mechanisms while exposing some limitations of Zajonc’s (1968) mere exposure theory. The premise of mere exposure theory states that people prefer stimuli that are familiar and that prior exposure causes uncertainty reduction and subjective familiarity, which is incorrectly attributed to enhanced evaluations (Jacoby, et al., 1989; Lee, 2001; Reber et al., 1998). A primary goal of marketing is to increase consumers’ perceived “liking” of brands and products after simple exposure and awareness. Zajonc’s (1968) mere exposure theory has found significant results, demonstrating that simple
exposure to stimuli increases evaluations, mostly attributed to the Perceptual Fluency/Misattribution model (Lee & Labroo, 2004; Reber, et al., 2004, Winkielman, et al., 2003), yet this study found no evidence for such regarding sponsorship. The findings of previous studies predict that images featuring sponsor logos would yield enhanced evaluations for the exposure group; however, there was no difference between the exposure and non-exposure group positively or negatively. Differences in exposure were only found with intervening variables such as gender, and between congruent and incongruent sponsors, suggesting higher cognitive elaborations other than exposure and simple awareness are responsible for outcomes.

Logistic regression shows that individuals who are exposed to the sponsors are 200% more likely to correctly recall a sponsor than the ones who are not exposed. However, those odds of correctly recognizing a sponsor are significantly reduced to 38%. Not surprisingly, highly identified fans consume more UFC media than low identified fans, yet this only results in a highly identified fan being 33% more likely to correctly recall a sponsor than a low identified fan, and was further reduced when given the opportunity for aided recognition to a mere 3.5% suggesting that individuals seek heuristic cues when determining which sponsors were present, allowing some sponsors to incorrectly receive attribution. Overall, congruent brands were more likely to be recognized, implying affiliation plays a role in recognition. Perhaps most surprising and warranting of further discussion is that Tapout was incorrectly recognized 16 times by the exposure group (N = 50) and an astounding 35 times in the non-exposure group (N = 53). The amount of recognition received was higher than any other brand. Given the strong, tenured connection that Tapout possesses with the UFC, it is notable to suggest that simple awareness prior to the experiment may have aided in the incorrect recognition.
However, the lack of mere exposure effects and simple awareness measures demonstrated by recall and recognition tests support processes requiring cognitive elaboration, suggesting that they occur in the absence of cognitive awareness. First, affect transfer did occur, as individuals who reported liking the UFC images also reported higher attitude and purchase intention scores for the sponsors. Individuals could not cognitively recall sponsors, yet affect transfer remained. Affect transfer in sponsorship functions equivalently to proposed advertising models, as one’s feelings from the content are transferred onto the brand with little cognitive elaboration (MacKenzie & Lutz, 1989). The absence of recall and correct recognition coupled with strong effects for affects transfer show that judgments are made with little initial cognitive elaboration. The results of this study lend previously unestablished empirical evidence of affect transfer, showing that in the absence of recall and mitigating effects of mere exposure, brands do receive benefits (or punishment) by their association with an event that is pleasing (or unpleasant).

While clear support for an image transfer is not found in the current study, evidence of affiliation with functionally congruent brands received higher attitude scores and purchase intentions than functionally incongruent brands. Using functionally congruent and incongruent brands as a measurement proposes that the less cognitive elaboration required for a participant to find the perceived fit between the event and the sponsor yields favorable results. In this particular study, Harley-Davidson’s use as a target could arguably be seen as an articulate fit to the UFC –being described as both rugged and tough. But, the brand, when examined in isolation, did not yield more favorable results than the two functionally congruent brands (MusclePharm and Xyience), thereby minimizing the influence of image transfer. The results suggest that affiliation and fan identity are important variables used in ones evaluation processes
With higher identified fans reporting higher attitudes and purchase intentions for all sponsors than low fans, the primary impact of fan identity shows strong evidence for affiliation. The level of affiliation is not only explained by Pracejus’ (2004) psychological mechanisms, but also through suggestions made by Meenaghan (2001), that the “goodwill” effect will cause highly identified fans to favor sponsors. Favorability towards the functionally congruent brands shows that fans search for heuristic cues to make evaluations, and, if the event and the brands are “for people like me,” positive attitudes towards the brand will be facilitated, even toward the highest level of evaluation: reciprocity.

This study not only adds to the current literature of conceptualized models, but it also introduces new variables to be considered in future research, most notably the role of gender. There were no significant differences in exposure conditions between highly identified and low identified fans; however, gender played a significant role in attitudes towards congruent sponsors. Men showed a practically significant increase in attitudes for congruent sponsors after exposure; conversely, females showed a significant decrease in evaluations after exposure. It is unclear what psychological mechanisms best explain this result, but support for affect transfer research is substantiated. Although the initial findings seemingly discredit the phenomenon of mere exposure, they require additional study for elucidation.

**Sponsorship Communication Contributions**

This experiment was pivotal in supporting previously-conceptualized models of sponsorship outcomes. Many studies have found similar results; however, few have employed the use of an experiment to validate findings. Mirroring Madrigal’s arguments (2001; 2003), this study shows fan identity as a strong predictor for sponsorship success. This finding could result from several propositions supplied by earlier works, such as affiliation (Pracejus, 2004),
goodwill (Meenaghan, 2001), and social identity theory (Madrigal, 2000; 2001). The importance of sponsor type and functional congruency in the sports sponsorship model is also underscored. While previous studies measured congruency as “a semantic relationship between the event and sponsor” (Johar & Pham, 2001), this study focused on functional congruency, finding significant differences between congruent and incongruent brands. A second sponsorship implication was the amount of “false consciousness” occurring during the recall and recognition portion. All sponsors selected for the study were current, exclusive sponsors of the UFC. Because of the high knowledge pre-test scores, one sponsor (Tapout) was not featured in any of the stimuli. Instead, the brand was utilized as a foil during the recognition portion. Despite its absence from the stimuli materials, Tapout was incorrectly recalled and recognized substantially more than any other brand, with 49.5% of the sample reporting they saw the brand. Lastly, the results suggest that affect transfer is an area of further exploration when considering variables such as gender and brand type.

**Fan identity and sponsorship success.** Pracejus’ (2004) model identified simple awareness as the initial requirement for cognitive elaboration. There were no attitudinal differences between the sponsor exposure group and non-exposure group, but other variables—most notably fan identity and affiliation—impacted later stages of cognitive elaboration and were evident through highly identified fans’ evaluations of functionally congruent sponsors. In line with what several other researchers have found through other methodologies (Madrigal, 2001; 2004; Gwinner & Swanson, 2003) and conceptualized models (Cornwell et al., 2005), fan identification was a strong predictor for awareness, positive attitude formations, and reported purchase intentions.
Each statistical test revealed that highly identified fans rated sponsors of the UFC higher than low identified fans in both attitude and purchase intention. This was true even in the absence of recall and without significant differences between the exposure group and non-exposure group. Meenaghan (2001) reported that highly identified fans are more knowledgeable of sponsorship investments, making them more aware of the goodwill accompanying investment and impacting their evaluations. Using actual, recent UFC sponsors likely maintained a higher level of awareness among highly identified fans, supporting fan identity’s role in sponsorship evaluations. Social identity research concludes that individuals are more likely to support institutions that reinforce antecedents of the group, and support sponsors to display their accordance with organizational values (Madrigal, 2004) and reward them with patronage (Meenaghan, 2001).

This study does differ from previous work (Madrigal, 2001) by demonstrating that attitudes received higher scores than purchase intentions from both highly identified fans and low identified fans. Contrastingly, Madrigal (2001) found that highly identified fans reported higher purchase intentions than attitudes and low identified fans reported higher attitudes than purchase intentions, concluding that highly identified fans’ decisions were based on group norms consistent with the group rather than their personal attitude. However, Madrigal’s work neglected the type of sponsor, whether congruent or incongruent. Obviously, there is a great deal of difference when deciding between a low involved product category such as fast food, and a highly involved product category, such as a motorcycle (Harley-Davidson) or a long-term phone contract (Boost Mobile). Attitude and likeability of the sponsor emerges from highly identified fans; however, this study shows that the presence of these factors does not necessarily equate to reciprocity if one is simply not in the market for a particular product, or already owns the product.
and not in the market for a second. What this research does suggest is that when individuals choose to make a particular investment in a product, highly identified fans are still more likely than low identified fans to consider purchasing from a sponsor of their beloved team or sport, supporting reciprocity postulates.

**Congruence.** Main effects for sponsorship congruency were also found. Overall, each model—with the exception of the models involving gender and exposure—shows higher attitude and higher purchase intentions for functionally congruent than functionally incongruent sponsors. Previous models refer to congruency as a semantic fit or similarity between the event and the sponsor, identifying it as a significant predictor in numerous sponsorship studies (Cornwell, 1995; Cornwell et al., 2001, Pham & Johar, 2001). Utilizing functional congruency rather than articulate congruency advances scholarly models by showing that evaluations may not be strictly limited to the semantic relatedness, but also could incorporate functional relatedness. For semantic relatedness to be recognized, one must have prior knowledge of both the sponsor and the event, (Cornwell, 2004; Roy, 2000), often acquired from group identification (Tajfel & Turner, 1985) and requiring higher levels of cognitive elaboration (Pracejus, 2004). Functional congruency does not entirely dismiss the importance of knowledge in the model; however, less cognitive elaboration may be necessary to recognize perceived fit of a functionally congruent sponsor (i.e. Xyience and UFC) than an image congruent sponsor (Harley-Davidson and UFC). Not only were functionally congruent brands favored, but also both congruent brands were significantly recognized 60% more than the incongruent brands (64 times compared to 40 times), underscoring the reduced amount of cognitive processing necessary to enable storage and retrieval.
Thus, functional congruency may be used as an operational definition in future research examining the role that congruency plays in sponsorship evaluation as both attitudes and purchase intentions were higher. The role of congruency may factor into Pracejus’ model of psychological mechanisms, demonstrating that increased affiliation and congruency between the event and sponsor enhance evaluations.

**Prominence and false consciousness.** Heuristic cues such as market prominence and congruency are used as a source of information when inferring the identity of event sponsors (Johar & Pham, 1999; Pham & Johar, 2001). This study strongly supports this proposition. Unlike previous studies, the foils used in this study were neither direct competitors of one another nor were they based on market share (i.e. Coca-Cola versus Sam’s Choice Cola). Rather, the foils were all recent sponsors of the UFC, with some being more prominent (Bud Light) than others (Edge Shave Gel). When recalling or recognizing a sponsor they saw, the number of inaccurate responses towards one brand, Tapout, reveals a result worthy of discussion. It may be plausible to eliminate market prominence as a cause for this finding because of the fact that a very prominent brand, Bud Light—a long time, exclusive sponsor of the sport and sporting events in general—was only incorrectly recognized as a sponsor 10 times (less than 10%). What is applicable, however, is the influence that functional congruency and affiliation as a sponsorship outcome posses. Approximately 50% of the sample reported seeing Tapout ($n = 16$) in the exposure section and the non-exposure section ($n = 35$) despite its complete absence in the executed study. Results did not significantly differ between the high and low identified fans for recognition for the sponsor, suggesting that either group was as likely to inaccurately guess that they were exposed to the brand. The second brand to receive as much credit was MusclePharm; only 38% of sample reported seeing it, and it was a shown sponsor. Tapout has a long
established history with the sport of MMA, and notably the UFC (Tapout.com). In addition to sponsoring the UFC, the company sponsors several marquee fighters employed by the UFC. In terms of congruency, Tapout is not only a functionally congruent sponsor to MMA and the UFC, but also poses an image-based congruency to the sport. Compared to all other apparel lines involved with the sport (i.e. Venom, Dethroned, and recently Nike), it is one of the most prominent in terms of UFC market share. It is also worth mentioning that the word “tapout” is a verb associated with the sport, used when an athlete gives up or submits. Although the recognition portion of the questionnaire featured an image of the brand, and subjects were asked, which brands do you recognize seeing?” that individuals associated the word “tapout” on the logo with the sport. When all factors are amalgamated, sponsorship success for the brand achieved high potential, even in its absence of involvement. This finding warrants future attention, suggesting that functionally congruent brands with strong established relationships to one sport or event will receive a false consciousness bias.

**Affect transfer and gender.** Mere exposure may not have had any main effects; however, exposure and affect transfer were applicable when considering gender, a variable not substantiated or established in previous literature. This positions a new area of research worthy of investigation. Previous work incorporation the role of gender opinions in mood management theories (Devlin et al., 2011), found that women in negative moods evaluated advertisements more negatively than ones in positive moods. A similar trend was shown in this study regarding congruent sponsors. Women not exposed to the sponsors had higher attitudes than the males not exposed to the congruent sponsor. However, after exposure, females’ attitudes shifted negatively, whereas male attitudes shifted positively. Post hoc analysis confirmed that males rated the images as more pleasing ($M = 6.05; SD = 1.64$) than females ($M = 3.96; SD = 1.81$).
These findings show strong support for affect transfer, also highlighting a potential existence of a gender gap.

Implications

The primary goal of sponsorship is decrease the clutter of traditional advertising by exposing a vast array of audiences to a brand through less intrusive means. Sponsorships are said to function as an indirect form of persuasion, linking the brand to a property or event in which the audience already identifies (Crimmins & Horn, 1996). Previous models propose that mere exposure or simple awareness may achieve such a desired effect; however, this study counters such easy answers. The results do, however, reflect the previously recognized concepts of identification and congruency as predictors for awareness, enhanced attitudes, and probable purchase intentions. Although the focus of this study was on identification with a sport, the findings have broader implications that may be applicable in other event categories, specifically when acknowledging that arousal from the event had no direct impact on cognitive processing. For instance, highly arousing team sports, such as hockey, may produce similar results. The results suggest investors should increase focus upon the role of fan identity and the functional congruency of the brand to the event when making decisions.

Unlike previous research typically in the field study domain, this study strictly controlled for exposure, finding no significant results between the exposure and non-exposure conditions while eliminating the impact of mere exposure on awareness, attitude, and purchase intention. It is apt to conclude that sponsorships must not act in a silo, a stance previously endorsed by Crimmins and Horn(1996). Rather, sponsors should engage themselves as active participants in the event. Although measurements about attitudes or purchase intentions for Tapout were not taken, the fact that it had more awareness than any other sponsor despite not being actually
present in the stimuli provides evidence for this concept; Tapout’s long established history and functional congruency to the sport allowed them to receive fabricated credit.

These findings also lend further support to prominence bias theories (Pham & Johar, 2001) suggesting that when making awareness judgments, people search for heuristic cues to infer sponsor’s identities. Unlike Pham and Johar’s findings (2001), this study does not strictly adopt market prominence as a source of inferring a brand’s presence, but rather a congruency prominence. Bud Light, a well-known and prominent sponsor of the UFC that was not part of the current study, was only incorrectly recalled or recognized by either group less than 10% of the time. Furthermore, Harley-Davidson, a prominent and semantically congruent sponsor to the UFC had less awareness than the two functionally congruent brands (Xyience and MusclePharm), suggesting that individuals use heuristic cues such as functional congruency when assessing sponsorship participation. Ruling out exposure as a predictor for awareness, one can assume the individual was making an educated guess as to which sponsors they saw. The results infer that an established relationship and strong congruency with an event increases the likelihood of connecting a brand to an event, even if the brand is not part of a specific sponsored event. Consequently, relationships between the sponsor and the event are pleasing because of the lessened cognitive elaborations required to make the association—or perhaps congruent brands are evaluated on a different standard when it comes to image transfer, and therefore, evaluated more positively.

The findings of this study indicate that marketing professionals should seek out events that present both a semantic and functional relationship, and then should attempt to maintain an exclusive, comprehensive sponsorship contract. Sponsorship timing should also be explored, as it would have both scholarly and practical implications by explicating the ideal length and cost of
sponsorship agreements to determine when a sponsor can decrease spending without threatening its sponsorship position. In the case of this study, for instance, the absence of exposure did not threaten Tapout’s perceived connection with the UFC.

This study has implications on the understanding of fan identity in sponsorship, encouraging marketers to seek venues with which their target identifies. Sponsorship investments should be determined by whether the event’s core audience matches the company’s customer base rather than basing decisions on exposure potential from isolated cases. Investor success relies on fans’ (or strong identifiers’) ability to move beyond simple awareness and exposure. Thus, rather than simply tagging a logo onto an event, sponsorship investments should seek to acquire a fully integrated relationship for the association to be successful. Because exposure effects are lacking, sponsors should strive to connect with the highly identified fans over time to achieve optimal success.

Finally, regarding implications on the sub-discipline of sports marketing and physiology studies, arousal was not found to be a predictor for simple awareness. Sponsorship models that include cognitive processing effects (Cornwell et al., 2005; Pham, 1992) acknowledge the impact of arousal on one’s ability to process information. Highly identified fans showed lower physiological arousal than low identified fans; however, no causality from increased arousal was evident in aided or unaided recall measures. From a marketing standpoint, this should lessen the amount of decision making when choosing an event based on the level of activity. Most sporting events vary on their level of activity, from passive (golf) to very active (MMA), so seeking out partnerships based on the presence of high identifiers and brand-event congruency should still be privileged.
Strictly considering implications for fan identity and sports communication, the study provides data suggesting that differences in consumption habits, liking, and arousal exist, further validating the measurement of fan identity across other academic platforms, including, but not limited to, advertising, sponsorship, and public relations. In addition to identity and involvement, other variables such as novelty impact physiological arousal measures. As research in the field of identification grows, scholars should consider these variables, recognizing that fan identity alone is not an adequate isolated predictor of physiological arousal. The evidence provided in this study show a satiation effect as the images were repeatedly shown for both level of identifiers. However, the strong physiological measures--primarily from the low identifiers--signal that novelty (or perhaps violence) was the main factor leading to this finding, more so than identity-oriented influences.

Limitations and Directions for Future Research

Many confounds and limitations were reduced because of careful and thorough pre-testing of sponsor selection, stimuli creation, a carefully conducted procedure, and the use of reliable scales; nevertheless, a number of limitations must still be acknowledged including: (a) sample size and number of identifiers, (b) the use of actual brands, (c) the specific types of brands, (d) the type of stimuli, (e) the construction of the scales, and (f) limited amount of psychophysiological data to infer rich conclusions. None of the preceding limitations had negative implications on core findings or created unreliable or invalid results, however, they do introduce areas for future research. Recommendations on how future research should investigate these limitations will be addressed in the following section.

One must acknowledge the potential for a student sample to impact generalizability, as with any study in a university setting,. The UFC’s core audience is 18-25 year old males (King,
2011); therefore, the use of students is somewhat generalizable in that regard. However, in the broader scope, the selected sample poses a limitation for other events and sponsorship opportunities. An attempt to offset this limitation by recruiting outside individuals and highly identified fans proved to be advantageous. Although statistical significance was found for each measurement, the sample size for fan identification was not even, with low identifiers outnumbering the high identifiers by a nearly 3:1 ratio. Future researchers studying fan identity should seek to find sports or events with easy accessibility to both high and low identifiers.

Second, while previous research using actual brands found notable results (Johar & Pham, 1999; Pham & Johar, 2001), Keller’s (1993) suggestion that the inclusion of real brands may confound results should be noted and addressed in later studies. When acknowledging the amount of incorrect awareness Tapout received, using real brands did provide robust results and, since one focus of this study was favorability between congruent and incongruent sponsors, actual brands had to be used. However, future studies not focused specifically on functional congruency could test other effects using non-real brands, potentially amplifying the power of the findings in this research area.

Third, since this study measured intentions as an endpoint, but not actual behavior, it is likely that an additional factor influenced judgment: brand-involvement type. Consumer research discusses differences between high involvement and low involvement goods (Zaichkowsky, 1985). Low involvement goods are associated with lower costs and routine purchase habits, whereas high involvement goods are commonly associated with higher costs and less frequent purchases. This study did not control for this reality when selecting congruent and incongruent brands, resulting in both of the congruent brands being low involvement (over-the-counter supplements) and the two incongruent brands as high involvement goods (a
motorcycle and phone contract). Although the attitude scores are valid, it is reasonable to understand why the congruent brands received higher purchase scores than the incongruent brands. There is still strong support for identification as a predictor for reciprocity, with highly identified fans reporting higher overall purchase intentions than low identified fans.

Fourth, the use of still images provides a limitation in terms of generalizability, since most mediated consumption of sporting events are live-action. The stimuli was carefully selected to limit confounds between perceived arousal and pleasure, ensuring that no one image was more pleasing or arousing than another to limit potential carryover and affect transfer effects. Additionally, the use of images opposed to videos proved to limit several confounds that may otherwise have existed, such as visual prominence and duration of sponsors. Nevertheless, once considering that exposure had no impact on this study’s findings, future research should replicate this type of research between still photo and live-action to see if differences exist. This would not only address stimuli effects, but would also explore the degree to which simple awareness and image transfer impacts outcomes. Furthermore, still photos that were only displayed for 10 seconds may have also limited the effects found for physiological arousal. Future research can benefit from varying the length of the images, and measuring relationships between length of time, memory, and physiological arousal.

Fifth, the scales used received high reliability scores throughout the study; however, careful consideration must be made when cleaning the data set, primarily in the case of attitude scores for congruent brands. The 7-item Likert scales ranged from “Strongly Disagree – Strongly Agree.” However, the median value of “4” was labeled as Neither Disagree or Agree. As a result, several individuals selected “4” on the questionnaire, demonstrating that no opinion shift took place. However, the interval value of “4” would have impacted the data analysis by
artificially increasing or decreasing means. As a result, all values of 4 were removed from analysis and labeled as “missing data”. While this method of data cleaning was both useful and valid, it hindered data richness that would have otherwise been made available. Future research in this area should adjust scales accordingly to avoid such errors while still maintaining a comprehensive data set.

Lastly, this study is limited in its interpretation of physiological data because of the single measurement of skin conductance. Certainly inferences can and have been made on arousal from skin conductance alone (see Andreassi, 2007), the use of additional physiological measures would have provided richer data for interpreting the effects of exposure and fan identity. Additionally, the use of other measures such as echocardiogram (ECG) could provide further insight as to why sponsors were not correctly recalled by discovering if it could be attributed to attention, orienting responses, or cognitive overload. Further measures, such as electromyogram (EMG) may have elucidated stronger correlations between image pleasure and attitude response, rather than the single-item self report. The physiological arousal measures counter previously accepted findings showing that higher identified fans respond more actively than low identified fans, suggesting that more physiological measures should be employed to compare different sporting events with varying activity levels.

A number of other directions for future research emerge in addition to the previous recommendations directly associated with the limitations. For instance, most advertising and branding strategies use top-of-mind-awareness (TOMA) as a strong predictor of awareness and success. Therefore, it would make sense to include this level of measurement prior to exposure in sponsorship studies to assess any correlations between TOMA and the type of false consciousness occurring in this study.
Secondly, this study found that gender and exposure interacted for certain types of sponsors. It is still uncertain if this was because of causality or merely a correlation in association with other variables such as fan identity and liking. Therefore, research should examine this phenomenon by isolating and controlling for variables of exposure, gender, and sponsor type as recognizing consistent pattern differences in gender response and affect transfer may impact models utilizing affect transfer (Pracejus, 2004). This would provide marketing professionals with other important considerations when making sponsorship decisions.

Gender may also have a significant role in future fan identification research. In support of previous studies examining the UFC and fan identity (Brown, et al., 2013), the results of this study show fan identification differed by gender as males had higher fan identity scores than females, highlighting the obstacles and opportunities of growth this sport will encounter. Recognition of this opportunity has recently been recognized by the UFC by creating a female bantamweight division, airing two female bouts, and casting the next installment of its reality show, *The Ultimate Fighter*, with female coaches and female contestants (UFC, 2013). This brief, albeit noteworthy, finding suggests that those studying gender differences within fan identification may have an immediate and opportunistic time to examine how female participation in a sport can alter resulting fan identity scores.

Third, this study also reveals strong effects for type of congruency, functional compared to articulate. Future studies should measure if one type of congruency has more impact than the other, as well as whether they are impacted by affect and image transfer effects. As Pracejus (2004) proposed: “[a]ssociated factors, such as brand-event fit are likely to facilitate the functioning of some mechanisms but not others,” (p. 187). Building a hierarchy of congruency
effects will not only advance theory, but also provide further insights for marketing professionals.

Lastly, the differences in physiological response in the study as compared to other studies highlight the disparities that exist between sports types. Therefore, subsequent research should not only examine fan identity as a predictor of physiological response, but should also consider the context of the sport itself, such as whether it is active or passive in nature.

Conclusion

Sponsorships, particularly within the realm of sport, are a growing and attractive commodity to marketing professionals. Despite the growth of sponsorship as a form of marketing communication, many questions remain about overall effectiveness. The number of empirical studies is still meager, and the few existing empirical studies lacked undergirding within different theoretical frameworks. The present study adds to the current body of literature in a number of noteworthy ways, lending support to a number of conceptualized models through a controlled experiment in a laboratory setting and using greater theoretical integration in the form of mere exposure and fan identity. In an effort to influence brand attitudes and purchase intentions, companies engage in opportunities that attract audiences by creating associative links. Fan identification enhances evaluations of sponsors, even in the absence of correct awareness and recall. The ability to “connect” with an audience, particularly an identified audience, creates the unique opportunity to differentiate a sponsor from its competitors, elevating awareness while enhancing evaluations. The current study also underscores the importance of ensuring that the product not only fits semantically, but functionally as well.

As currently constituted, a body of literature is growing examining the effectiveness of sport sponsorship; as new sporting events such as the UFC emerge, such areas should be
continually revisited. This study highlights the interaction between immediate exposure, fan identity, and brand congruency on sponsorship evaluations, forging new ground in all areas. Highly identified fans reported more positive attitudes towards sponsors, especially those that were functionally congruent to the sport. As a result of the favored attitude, they also report higher purchase intentions—a primary goal for most sponsors.

The timing of this research allowed for a unique opportunity to analyze an emerging sport as it evolves from niche to mainstream, adding to the growing body of work examining MMA and the UFC. Future research analyzing this growing sport may utilize the findings from gender, involvement, and arousal on fan identification as the sport changes policies and fan tastes’ continually change. This study should prove a valuable heuristic for longitudinal research, drawing richer conclusions regarding the big business of sports sponsorship.
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## APPENDIX A – SUMMARY OF HYPOTHESES AND RESEARCH QUESTIONS

<table>
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<tr>
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<th>Hypotheses and Research Questions</th>
<th>Independent Variables</th>
<th>Dependent Variables</th>
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<tbody>
<tr>
<td>H1a</td>
<td>Levels of fan identification will positively correlate with consumption of MMA media.</td>
<td>Fan identification</td>
<td>Consumption of MMA</td>
</tr>
<tr>
<td>H1b</td>
<td>Levels of fan identification towards the UFC will significantly differ between men and women.</td>
<td>Gender</td>
<td>Fan identity</td>
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<tr>
<td>H2</td>
<td>Fan identification will positively correlate with higher involvement scores.</td>
<td>Fan identification</td>
<td>Involvement</td>
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<tr>
<td>H3</td>
<td>Levels of fan identification will positively correlate with reported liking of UFC images.</td>
<td>Fan identification</td>
<td>Self-reported liking</td>
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<tr>
<td>RQ1a</td>
<td>In what manner will fan identification impact self-reported levels of arousal after exposure to UFC related images?</td>
<td>Fan identification</td>
<td>Self-reported arousal</td>
</tr>
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<td>H4a</td>
<td>Individuals exposed to sponsors will report more positive attitudes towards sponsors than individuals not exposed to sponsors.</td>
<td>Exposure vs. non-exposure group</td>
<td>Attitude towards all sponsors</td>
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<tr>
<td>H4b</td>
<td>Individuals exposed to sponsors will report higher purchase intentions for sponsors than individuals not exposed to sponsors.</td>
<td>Exposure vs. non-exposure group</td>
<td>Purchase intent of all sponsor</td>
</tr>
<tr>
<td>H5a</td>
<td>Involvement with a sponsored event has a curvilinear (inverted-U) effect on the unaided recall of sponsors.</td>
<td>Involvement</td>
<td>Unaided recall</td>
</tr>
<tr>
<td>H5b</td>
<td>Involvement with a sponsored event has a curvilinear (inverted-U) effect on the aided recall (recognition) of sponsors.</td>
<td>Involvement</td>
<td>Aided recall</td>
</tr>
<tr>
<td>H6a</td>
<td>Arousal induced by sport related images will have a negative effect on the unaided recall of the sponsors.</td>
<td>Arousal of exposure groups</td>
<td>Unaided recall</td>
</tr>
<tr>
<td>H6b</td>
<td>Arousal induced by sport related images will have a negative effect on the aided recall (recognition) of sponsors.</td>
<td>Arousal of exposure groups</td>
<td>Aided recall</td>
</tr>
<tr>
<td>H7a</td>
<td>There will be a positive relationship between self-reported liking of the UFC images and a positive attitude towards sponsors.</td>
<td>Liking of UFC images</td>
<td>Attitudes towards sponsors</td>
</tr>
<tr>
<td>H7b</td>
<td>There will be a positive relationship between self-reported liking of the UFC images and higher purchase intentions for sponsors.</td>
<td>Liking of UFC images</td>
<td>Purchase Intention of all sponsors</td>
</tr>
<tr>
<td>H8a</td>
<td>Highly identified fans will have higher attitude scores for all sponsors than low identified fans.</td>
<td>Fan identity</td>
<td>Attitude towards all sponsors</td>
</tr>
<tr>
<td>H8b</td>
<td>Highly identified fans will have higher purchase intention scores for sponsors than to low identified fans.</td>
<td>Fan identity</td>
<td>Purchase intention towards all sponsors</td>
</tr>
<tr>
<td>H9a</td>
<td>Individuals will freely recall more Sponsor congruency</td>
<td>Sponsor congruency</td>
<td>Unaided recall</td>
</tr>
<tr>
<td>H_{9b}</td>
<td>Individuals will recognize more functionally congruent sponsors than non-functionally congruent sponsors.</td>
<td>Sponsor congruency (congruent vs. non-congruent)</td>
<td>Aided recall</td>
</tr>
<tr>
<td>RQ_{1b}</td>
<td>To what degree will fan identification impact physiological arousal during exposure to UFC images?</td>
<td>Fan identity</td>
<td>Physiological arousal</td>
</tr>
<tr>
<td>RQ_{2a}</td>
<td>To what fan identification impact individual's attitudes of functionally congruent and functionally incongruent sponsors?</td>
<td>Fan identity X Sponsor congruency</td>
<td>Attitude</td>
</tr>
<tr>
<td>RQ_{2b}</td>
<td>To what fan identification impact individual's purchase intentions of functionally congruent and functionally incongruent sponsors?</td>
<td>Fan identity X Sponsor congruency</td>
<td>Purchase intention</td>
</tr>
<tr>
<td>RQ_{3a}</td>
<td>To what extent will fan identification impact individual's unaided recall of functionally congruent and functionally incongruent sponsors?</td>
<td>Fan identity X Sponsor congruency</td>
<td>Unaided recall</td>
</tr>
<tr>
<td>RQ_{3b}</td>
<td>To what extent will fan identification impact individual's aided recall (recognition) of functionally congruent and functionally incongruent sponsors?</td>
<td>Fan identity X Sponsor congruency</td>
<td>Aided recall</td>
</tr>
<tr>
<td>RQ_{4a}</td>
<td>To what degree will exposure to a sponsor yield different attitudinal evaluations of sponsors between the high and low identified fans?</td>
<td>Fan identity X Exposure</td>
<td>Attitude</td>
</tr>
<tr>
<td>RQ_{4b}</td>
<td>To what degree will sponsorship congruency yield different attitudinal evaluations of sponsors between the high and low identified fans after exposure?</td>
<td>Fan identity X Exposure X Sponsor congruency</td>
<td>Attitude (continuous)</td>
</tr>
<tr>
<td>RQ_{5a}</td>
<td>To what degree will exposure to a sponsor yield different purchase intentions of sponsors between the high and low identified fans?</td>
<td>Fan identity X Exposure</td>
<td>Purchase intention</td>
</tr>
<tr>
<td>RQ_{5b}</td>
<td>To what degree will sponsorship congruency yield different purchase intentions of sponsors between the high and low identified fans after exposure?</td>
<td>Fan identity X Exposure X Sponsor congruency</td>
<td>Purchase Intention (continuous)</td>
</tr>
<tr>
<td>RQ_{6}</td>
<td>To what extent will fan identification and physiological arousal impact awareness of congruent or incongruent sponsors?</td>
<td>Fan identity x Sponsor congruency arousal as a covariate</td>
<td>Unaided Recall, Aided Recall</td>
</tr>
</tbody>
</table>
### APPENDIX B – SUMMARY OF STATISTICAL TESTS

<table>
<thead>
<tr>
<th>Findings</th>
<th>Statistical Test</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>H1a</strong> Fan identity strongly correlates with consumption (.88).</td>
<td>Spearman’s rho</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H1b</strong> Males higher fan identity scores ($M=3.44$) than females ($M=1.95$)</td>
<td>Independent samples $t$-test</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H2</strong> Fan identity strongly correlates with involvement (.60).</td>
<td>Spearman’s rho</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H3</strong> Fan identity strongly correlates with self-report liking (.76)</td>
<td>Spearman’s rho</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>RQ1</strong> Fan identity has a weak correlation with self-reported arousal (.34)</td>
<td>Spearman’s rho</td>
<td>0.001**</td>
</tr>
<tr>
<td>High identified fans report higher levels of self-reported arousal ($M=7.03$) than low fans ($M=6.35$)</td>
<td>Independent samples $t$-test</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H4a</strong> Exposure was not supported as having an effect on attitudes</td>
<td>Independent sample $t$-test</td>
<td>0.65</td>
</tr>
<tr>
<td><strong>H4b</strong> Exposure was not supported as having an effect on purchase intentions</td>
<td>Independent Samples $t$-test</td>
<td>0.70</td>
</tr>
<tr>
<td><strong>H6a</strong> Neither self-reported arousal or physiological arousal impacted unaided recall</td>
<td>Independent samples $t$-test</td>
<td>0.99</td>
</tr>
<tr>
<td><strong>H6b</strong> A moderate correlation (.37) between arousal and incorrect recognition for exposure only group (N=50)</td>
<td>Spearman’s rho</td>
<td>0.01*</td>
</tr>
<tr>
<td>A weak correlation (.28) between arousal and incorrect recognition for whole sample (N=103)</td>
<td>Spearman’s rho</td>
<td>0.05*</td>
</tr>
<tr>
<td><strong>H7a</strong> Self-reported liking of UFC correlates with attitude: .82 (all), .56 (congruent) and .30 (incongruent)</td>
<td>Spearman’s rho</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H7b</strong> Self-reported liking of UFC correlates with PI: .39 (all), .36 (congruent) and .38 (incongruent)</td>
<td>Spearman’s rho</td>
<td>.05*</td>
</tr>
<tr>
<td><strong>H8a</strong> Highly identified fans reported positive attitudes for all sponsors ($M &gt; 4.0$); low identified fans had negative attitudes ($M &lt; 4.0$)</td>
<td>Independent samples $t$-test</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H8b</strong> High fans report higher PI for all sponsors ($M = 3.52$) than low fans ($M = 2.87$)</td>
<td>Independent samples $t$-test</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>H9a</strong> Functionally congruent sponsors were not statistically recalled correctly more than incongruent sponsors</td>
<td>Chi-square</td>
<td>.50</td>
</tr>
<tr>
<td><strong>H9b</strong> Functionally congruent sponsors were not statistically recognized correctly more than incongruent sponsors</td>
<td>Chi-square</td>
<td>.77</td>
</tr>
<tr>
<td><strong>RQ1b</strong> Physiological arousal decreased over time.</td>
<td>Repeated measures ANOVA</td>
<td>0.001**</td>
</tr>
<tr>
<td>Low identified fans exhibit more SCRs than high identified fans</td>
<td>Repeated measures ANOVA</td>
<td>0.001**</td>
</tr>
<tr>
<td><strong>RQ2a</strong> Main effects for fan identity, w/ high identified fans</td>
<td>Repeated measures ANOVA</td>
<td>0.001**</td>
</tr>
<tr>
<td>higher attitudes ($M = 4.45$) than low identified fans ($M = 4.11$). and congruent sponsors ($M = 4.46$) than</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ</td>
<td>Description</td>
<td>Analysis</td>
</tr>
<tr>
<td>----</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>RQ\textsubscript{2b}</td>
<td>Main effects for fan identity, w/ high identified fans higher attitudes ($M = 3.40$) than low identified fans ($M = 2.67$). and congruent sponsors ($M = 3.20$) than incongruent ($M = 2.87$).</td>
<td>Repeated measures ANOVA</td>
</tr>
<tr>
<td>RQ\textsubscript{3a}</td>
<td>Highly identified fans are 33% more likely to correctly recall a sponsor than low identified fans</td>
<td>Omnibus test of model coefficients</td>
</tr>
<tr>
<td>RQ\textsubscript{3b}</td>
<td>Highly identified fans are 3.5% more likely to correctly recognize a sponsor than low identified fans Tapout was more likely to be improperly recognized than other sponsors</td>
<td>Omnibus test of model coefficients</td>
</tr>
<tr>
<td>RQ\textsubscript{4a}</td>
<td>Main effects only for fan identity, w/ high identified fans higher attitudes ($M = 4.69$) than low identified fans ($M = 3.83$).</td>
<td>Factorial ANOVA</td>
</tr>
<tr>
<td>RQ\textsubscript{4b}</td>
<td>Main effects for fan identity, w/ high identified fans higher attitudes ($M = 4.88$) than low identified fans ($M = 3.84$). Interaction between gender and exposure, with fan identity as a covariate, but only for congruent sponsors. Males exposed highest ($M = 4.78$), followed by females not exposed ($M = 4.11$), Males not exposed ($M = 3.82$) and then females exposed ($M = 3.46$)</td>
<td>Mixed model ANOVA</td>
</tr>
<tr>
<td>RQ\textsubscript{5a}</td>
<td>Main effects for fan identity, highly identified fans ($M = 3.49$) higher purchase intention than low identified fans ($M = 2.84$). Interaction effects for gender x exposure on PI</td>
<td>Factorial ANOVA</td>
</tr>
<tr>
<td>RQ\textsubscript{5b}</td>
<td>Main effects found for sponsor (congruent &gt; incongruent) and fan identity (high &gt; lower) Interaction effects between sponsor and exposure (exposed congruent &gt; not exposed to congruent &gt; incongruent not exposed &gt; incongruent exposed) 3 way interaction (gender, sponsor, and exposure) Females and Males exposed to incongruent &lt; females congruent not exposed &lt; males exposed to congruent</td>
<td>Mixed model ANOVA</td>
</tr>
<tr>
<td>RQ\textsubscript{6}</td>
<td>Recall and recognition were not influenced by physiological arousal</td>
<td>Repeated measures ANOVA</td>
</tr>
</tbody>
</table>
APPENDIX C – EXAMPLES OF STIMULI

Non-Exposure to sponsor stimuli

Exposure to incongruent sponsor stimuli example
Non-Exposure to sponsor stimuli

Exposure to congruent sponsor stimuli
January 14, 2013

Michael Devlin
College of Communication & Information Sciences
The University of Alabama
Box 870172

Re: IRB # 13-OR-015 “Measuring sponsorship effectiveness: Finding the connection between fan identification and physiological response to sports sponsorship evaluation”

Dear Mr. Devlin:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of informed consent. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Your application will expire on January 13, 2014. If the study continues beyond that date, you must complete the IRB Renewal Application. If you modify the application, please complete the Modification of an Approved Protocol form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure form.

Should you need to submit any further correspondence regarding this application, please include the assigned IRB application number.

Good luck with your research.

Sincerely,
Debriefing Script:

Thank you for your participation. You agreed to participate in a study to examine your perception of television content. However, we are obligated to inform you there was an additional measurement we were studying that we could not disclose prior to the experiment.

We were interested in your ability to notice and recall sponsorships that were present during the sporting event. If we were to inform you prior to the study that you would be tested for recalling sponsorships, we believe you would have tried to remember them. We were interested in how they were remembered without researcher influence.

If you feel that this study violated what you consented to, you may ask to withdraw your data from our collection. You will still receive full credit for participation and your data will not be used in our analysis. Your signature on the sign in sheet will be all that is needed to ensure your receive credit and your data answers will be destroyed.

At no time will your data be linked to you personally.

Results will be made available in the coming months and you may contact the researchers if you are interested in results. Thank you for your time and you may leave now.