

TEAM IDENTIFICATION AND COMPETITION OUTCOME ALTER ATTENTIONAL
BREADTH AND FLEXIBILITY: AFFECTIVE AND BEHAVIORAL CONSEQUENCES

By

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Abstract of Dissertation Presented to the Graduate School
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By

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The considerable consumption and importance of sport in the lives of Americans underscores the necessity to further understand the mechanisms and consequences of sport fandom and team identification. This study integrates what is known about emotion, motivation, and attention with current understanding of sport fandom to identify the affective and behavioral consequences of team identification.

I sought to determine how pleasant and unpleasant fan experiences influence attention and performance on tasks that are known to rely on appropriate attentional allocation. I hypothesized that the emotions evoked from positive and negative fan experiences would lead to differences in motivational orientation, thereby promoting changes in attentional breadth and flexibility. Imagery scripts were used to conjure images that resulted in pleasant and unpleasant emotional reactions among high and low identified fans. Performance differences in global-local target detection and Stroop tasks followed emotional imagery when other team relevant variables were statistically covaried. Specifically, faster response times to incongruent Stroop stimuli followed exposure to unpleasant imagery scripts compared with performance after a neutral, rest condition, suggesting that attentional flexibility was enhanced by the affective condition as a function of the general level of fandom. When accounting for the number of years as a fan of the

target team, as well as state anger and sadness reactivity, highly identified fans exhibited superior performance on both global and local target detection tasks compared to their less identified counterparts. Together, these findings suggest that highly identified fans experience a domain specific increase in arousal when presented with team relevant content (positive or negative), which in turn can facilitate performance. The affective and behavioral correlates of team identification therefore appear to be highly contextual, but are strongly tied to other related constructs such as general sport fandom, the number of years having been a fan, and general affective reactivity.

CHAPTER 1 INTRODUCTION

Two hundred million adults in the United States consider themselves “sports fans” (King, 2005). As an index of sports’ popularity, retail sales of sport merchandise exceeded \$13 billion in the United States and Canada in 2006 (Lefton, 2007). In a recent survey, avid sports fans reported rearranging their daily schedules to listen to, watch, or attend a sporting event, and nearly 40% of respondents reported choosing sporting events in lieu of other professional and personal obligations (Wann, Friedman, McHale, & Jaffe, 2003). Fans are not merely consumers of sport, they are psychologically invested in sports, teams, and athletes (Wann, Melnick, Russell, & Pease, 2001).

The label “sport fan” is often an important and central component of self-concept among highly identified fans. Highly identified fans possess a greater sense of belonging to and attachment with a particular team. Being a supporter of “their” team is a crucial element of who fans are (i.e., their identity), and the team is often perceived as an extension of themselves (Hirt, Zillmann, Erickson, & Kennedy, 1992). This strong identification among sports fans has been likened to the identification people possess in regards to their gender, nationality, and ethnicity. For less identified fans, the concept of team supporter is much less pertinent. These individuals are much less psychologically invested in and impacted by the team’s performance. While great variability exists in the factors that contribute to adopting the role of a fan (e.g., spending time with other people/family, appreciation of the aesthetic elements of sport, the experience of eustress, escape from their lives/responsibilities, enhancement of self-esteem, simple enjoyment as a pastime), all fans vicariously experience the thrill of victory and the agony of defeat (Wann et al., 2001).

Intense emotional reactions often accompany high levels of fan identification. In a study of 1,442 avid sports fans, 44% of the fans reported that they needed at least one day to emotionally “recover from a loss”, and approximately 64% of respondents noted that they had cried after their team lost a game (Wann et al., 2003). Participants also reported being similarly effected by positive outcomes, with 45% requiring at least one day to “come down from the excitement” and 68% reported having cried after a victory. This snapshot of fandom extends beyond merely highlighting the considerable consumption and importance of sport in the lives of Americans, it also illustrates the profound influence that sport can have on the lives of those who classify themselves as sports fans.

Correlates of Sport Fandom

Team identification has been repeatedly shown to be a key factor in predicting sport related behavior, including event attendance and purchasing team licensed merchandise (Kwon & Armstrong, 2002; Laverie & Arnett, 2000; Wakefield & Wann, 2006). Moreover, identification is significantly correlated with a variety of other, non-sport related variables. Team performance has been shown to have a significant influence on fans’ general outlook on life, well-being, overall life satisfaction (e.g., Schwarz, Strack, Kommer, & Wagner, 1987), perception of fearful future events (e.g., Schweitzer, Zillmann, Weaver, & Luttrell, 1992), and estimates of their own abilities (e.g., Hirt et al., 1992). For example, Schwarz et al. (1987) reported more positive evaluations of global well-being among fans after their national soccer team won, but less favorable evaluations following a tie. Schweitzer and colleagues (1992) documented increased enjoyment and happiness among fans of a winning team and decreased enjoyment and increased disappointment among the losing team’s fans. Following their team’s loss, participants also reported a greater perceived likelihood of war compared to those reported by the fans of the winning team. Highly identified fans also interpret their team’s successes and failures personally

(Hirt et al., 1992). Thus, not only do fans increase their expectations for future team success following a victory while reducing their expectations after a loss, highly identified fans also show a similar pattern of biased estimates of their own cognitive abilities and social skills. Research has clearly shown that sports fans are impacted emotionally by sport and these effects extend beyond the sporting context and into the daily lives of fans, implying that being a highly identified sports fan consists of more than simply “rooting for” and supporting one’s team.

For many fans, identification with a team is central to their self-concept. Team performance, however, is often inconsistent, and poor performance can promote a decrease in one’s self and public image. People therefore engage in various self-presentation and enhancement strategies. Specifically, Cialdini, Borden, Thorn, Walker, Freeman, and Sloan (1976) found that people tend to publicly emphasize their connection with successful others (regardless of the strength of their connectedness) and *bask in reflected glory* (BIRG) to increase their public image. Grounded in Heider’s (1958) balance theory, Cialdini et al. (1976) proposed that BIRGing occurs because people evaluate connected parties similarly in order to maintain “cognitive harmony”. As a result, public association with a successful team is perceived to promote positive evaluations (i.e., enhanced public image).

Conversely, Snyder, Higgins, and Stucky (1983) suggested that people will also engage in the protective behavior of decreasing the association between oneself and unsuccessful others by *cutting off reflected failure* (CORF). This tactic is not viable for everyone, however. Highly identified fans are unable and/or unwilling to distance themselves from their team when they are unsuccessful (i.e., CORF) because their affiliation is a significant component of their personal identity (Wann & Branscombe, 1990), yet they have the “natural” desire to maintain a positive self-image. Therefore, to cope with negative vicarious experiences while preserving their public

image and self-esteem, highly identified fans will engage in “blasting”, a defensive behavior where an individual publicly devalues those with whom they are negatively associated (i.e., the opposition) (Branscombe & Wann, 1992; Wann, 1993). Wann (1993) explained that blasting can extend beyond the verbal degradation of relevant out-groups (e.g., opposing team’s fans) and include physically aggressive behaviors (i.e., spectator violence) on the part of highly identified fans.

Although both CORFing and blasting are psychological strategies used by fans to protect their self-concept in the face of team failure, they are inherently different. When CORFing, the individual disconnects him/herself from the target group (i.e., exhibiting avoidant behavior), yet with blasting, the individual actively engages in the process of identity control. These divergent patterns of behavior have also been linked with the qualitatively different emotions that fans experience in the face of failure (Crisp, Heuston, Farr, & Turner, 2007). Although both high and low identified fans report negative emotions following their team’s loss, Crisp and colleagues (2007) have shown that highly identified fans feel angry, but not sad when their identity is threatened by a vicarious failure. Low identified fans in contrast, report sadness but not anger in response to the same experience. Together these findings suggest that the way a fan affectively appraises the situation is critical in determining how they will react behaviorally (i.e., engage/aggress or withdraw) and that their level of identification moderates their emotional experience [i.e., the higher the level of identification, the greater the level of affective engagement (Hillman, Cuthbert, Bradley, & Lang, 2004; Hillman, Cuthbert, Cauraugh, Schupp, Bradley, & Lang, 2000)].

Understanding the Highly Identified Fan

The emotional experiences and behavioral correlates found among highly identified sport fans are similar to those of individuals with various psychopathologies (e.g., affective disorders,

substance dependence). The first parallel that can be drawn between these two groups is how their daily lives are altered as a result of their identification/pathology. As mentioned, it is not uncommon for an avid sports fan to skip work, school, or important social engagements in favor of watching or attending a competition (St. John, 2004; Wann et al., 2003). Because the self-concept of such highly identified fans is rooted in the team and its performance (Wann et al., 2001), sport consumption has a tendency to take precedence over other life events, resulting in preoccupation with the team and excessive consumption of team related content (e.g., radio, internet, television), ultimately disrupting interpersonal and professional relationships (Quirk, 1997; St. John, 2004). Likewise, addicts will compulsively engage in a specific behavior (e.g., drug use, alcohol consumption) at the expense of other personal responsibilities, while phobics and individuals with chronic anxiety will alter their pattern of behavior and their surrounding environment in order to avoid potential exposure to threatening stimuli (Williams, Watts, MacLeod, & Mathews, 1997). For each of these populations, there is an intense emotional connection and reactivity to a particular target (e.g., sports team, narcotics, alcohol, spiders, social situations). While by no means are these groups identical, they do share similar affective reactions to specific stimuli and demonstrate comparable behaviors, suggesting that these similarities may be motivated by similar underlying factors.

Motivational orientation has recently gained much attention from researchers (e.g., Coombes, Cauraugh, & Janelle, 2007; Derryberry & Reed, 1998; Gable & Harmon-Jones, in press; Harmon-Jones, Lueck, Fearn, & Harmon-Jones, 2006) seeking to better understand the association between emotion, behavior, and psychological problems such as affective disorders and addictions. Similarly, the distinct emotional reactions and behavioral tendencies among fans

may also be explained through gaining understanding of the motivational orientation of highly identified fans.

Motivational Orientation

Given that attention drives subsequent behavior, of particular interest here are the catalysts that direct and moderate both the breadth and direction of attention. Motivational orientation can have an impact on both perceptual (i.e., the allocation of resources to central and peripheral environmental stimuli) and conceptual (i.e., the activation of cognitive representations) attention, as well as attentional flexibility (Derryberry & Tucker, 1994; Förster et al., 2006). Approach behavioral tendencies (i.e., engagement) have typically been associated with a broader scope of attention and greater attentional flexibility (i.e., “the ability to adaptably shift focus among cognitive operations using executive control” [p. 70, Friedman & Förster, 2005]), while avoidance (i.e., withdrawal) tendencies restrict the scope of attention (Friedman & Förster, 2005; Förster et al., 2006). Researchers initially suggested that this behavioral dichotomy mirrored affective valence, with unpleasant/negative affect being exclusively linked with an avoidance orientation and pleasant/positive affect with an approach orientation. However more recent research (e.g., Coombes et al., 2007; Davidson, 1995; Harmon-Jones et al., 2006) suggests that such a pairing is inaccurate, as it is the motivational orientation, not simply affective valence, which influences behavior. Of the core emotions, anger exemplifies an unpleasant affective state that promotes an approach motivational orientation rather than the typical avoidance pattern seen with other unpleasant emotions such as sadness (Harmon-Jones et al., 2006).

Gable and Harmon-Jones (in press) suggest that the *magnitude* of the ensuing approach motivation is critical in moderating the breadth of attention. Specifically, positive affect that is relatively low in approach (i.e., non-goal relevant emotions such as joy and amusement) has been tied to a broader scope of attention, as there is perception of a stable, safe environment. *Reduced*

attentional broadening, however, is evident following the induction of positive affect that is higher in approach motivation (e.g., desire and enthusiasm). In the latter case, it is necessary to disregard irrelevant stimuli when actively approaching a goal (Harmon & Jones, in press). The opportunity/expectancy to act in a manner that promotes goal attainment, therefore, reduces the scope of attention, despite being fostered by a positive, approach emotion. In sum, emotions alter the manner in which attention is allocated and information is extracted from the environment through the promotion of approach-avoidance motivational orientation and these changes are known to underlie behavioral variability.

As Hillman and colleagues (2000, 2004) have illustrated, highly identified sports fans exhibit motivated emotional reactivity to team relevant stimuli. Coupling this with our understanding of the relationship between motivational orientation, attention, and behavior, motivational orientation is likely a critical core mechanism that drives fan specific behaviors (e.g., BIRGing, CORFing, blasting, spectator violence) and influences the daily functioning of fans. To better understand the nature and consequences of fandom, it is essential to systematically examine the affective component of the fan experience, as the emotions evoked from sport spectating may underlie and alter the motivational orientation, attentional breadth and direction, and ultimately the behaviors of this population.

Limitations of Previous Work

Although our understanding of sport fandom has advanced over the last two decades, the existing body of literature is limited due to a number of theoretical, methodological, and interpretative shortcomings. First, there has been relative inconsistency in the operational definition of “fan” and the classification of high and low identified fans. Specifically, researchers have used divergent indices (e.g., measures of general fandom and sport/team specific identification, self-classification, consumption behaviors, and study specific questionnaires) to

conceptualize their target population. As a result of this variability, limited generalizations can be drawn from existing research, thereby leaving questions concerning the nature, correlates, and consequences of varying levels of identification unanswered.

Next, the majority of what is known about the psychology of sports fans is grounded in correlational evidence. As such, the direction of the relationship between identification and fans' thoughts, emotions, and behaviors is uncertain. Moreover, the data extracted from studies exploring the psychology of sports fans has been one-dimensional. That is, researchers have either taken a subjective approach using self-report assessments of thoughts, feelings, and behaviors (e.g., Schwarz et al., 1987; Schweitzer et al., 1992; Wann et al., 2003) or have employed more covert methods, monitoring physiological fluctuations in response to sports cues (e.g., Hillman et al., 2000, 2004). Although each approach has yielded valuable information pertaining to the correlates and consequences of fandom, an incomplete perspective of fandom exists. In particular, direct behavioral consequences associated with sport fandom have been largely ignored. More systematic exploration of the cognitive, behavioral, and affective factors associated with team identification in controlled environments can provide insight into how fans process information, and specifically, how sport relevant stimuli influence cognitive processing, attention, daily functioning, and factors associated with mental health issues.

Statement of the Purpose

Nearly 67% of the United States' population characterize themselves as sports fans (King, 2005). Understanding how fan identification impacts general well-being and functioning is therefore of broad importance. To date, our understanding of the psychology of sports fans is limited. While there are countless anecdotal reports about sports fanatics, there remains a lack of empirical understanding of this group due to the combination of relatively minimal research being carried out on this topic and the extant literature being hindered by theoretical and

methodological shortcomings. Therefore, the current study systematically explored the cognitive, behavioral, and affective factors associated with team identification in a controlled environment, with the purpose of identifying whether team identification and competition outcome alter attentional breadth and flexibility as indicated by performance on global-local target detection and Stroop tasks.

The Current Study

The considerable consumption and importance of sport in the lives of Americans underscores the necessity to further understand the nature and consequences of sport fandom and team identification, including delineation of the functional costs and benefits of high level of identification. I designed the present study to test the central hypothesis that the emotions evoked from positive and negative fan experiences lead to attentional changes (i.e., broadening/narrowing of attention) derived from differences in motivational orientation which are reflected in performance changes. Perceptual and conceptual attentional alterations were assessed through performance on global-local target detection (Förster et al., 2006; Navon, 1977) and Stroop tasks (Friedman & Förster, 2005; Stroop, 1935), respectively. The global-local target detection task assesses attentional scope (i.e., the breadth of attention) and the Stroop task measures attentional flexibility (i.e., the ability to shift attention).

Emotional imagery was used to induce pleasant (e.g., happy, elated, excited) and unpleasant (e.g., sad, angry, frustrated) emotional states among participants. In the pleasant conditions, participants listened to narratives that guided them through their most pleasant memories generated as a University of Florida football fan. While it was hypothesized that these imagery scripts would promote an increase in positive affect in both high and low identified fans, it was expected that the magnitude would differ, with the highly identified fans experiencing the largest increase in positive emotions. The resulting positive affect was expected to promote an

approach orientation, as research has shown both high and low identified fans exhibit a tendency to BIRG (Cialdini et al., 1976). Approach orientation was predicted to promote greater attentional flexibility thereby increasing the ability to shift between salient content while broadening the scope of attention (both conceptual and perceptual). These changes were predicted to enhance Stroop task performance as well as detection of global targets (Friedman & Förster, 2005; Förster et al., 2006). Moreover, approach orientation *magnitude* was manipulated and an expectancy to act was induced by providing fans with the opportunity to draft a brief statement about what it means to be a fan. Although pleasant/positive emotions and an approach orientation would be evoked through this manipulation, it is hypothesized that attentional scope would be less broad and flexible due to the propensity to ignore irrelevant stimuli, with the most notable changes expected among highly identified fans as they are more invested in the team and its performance compared to their less identified counterparts (Gable & Harmon-Jones, in press). Therefore, enhanced performance would not be evident on the Stroop and global target detection tasks, as approach motivated positive affect prompts a decreased broadening of attention.

In the unpleasant conditions, participants listened to narratives that guided them through their most unpleasant memories generated as a University of Florida football fan. It was hypothesized that the unpleasant imagery scripts would increase negative affect among fans, with highly identified fans reporting the largest increase in anger (i.e., approach), and less identified fans reporting a significant increase in sadness (i.e., avoidance) (Crisp et al., 2007). Because high and low identified fans have been shown to experience qualitatively different emotions and exhibit variable behavior when their identity is threatened (Branscombe & Wann, 1992; Crisp et al., 2007; Wann, 1993), I hypothesized that the two groups would have disparate underlying motivational tendencies. Highly identified fans were expected to manifest an

approach orientation because of their propensity to experience anger and blast in the face of failure/identity threat. Again, this approach orientation was hypothesized to improve performance on the Stroop task and the detection of global targets on the global-local target detection task due to the broadening of attentional scope and greater attentional flexibility. In contrast, research (e.g., Branscombe & Wann, 1992; Crisp et al., 2007; Wann 1993) has shown that less identified fans typically report sadness when their team fails, and engage in CORFing. It was therefore hypothesized that less identified fans would engage in an avoidance orientation, prompting decreased attentional flexibility and scope. These changes would be evident in decreased performance on the Stroop task (i.e., reduced attentional flexibility) and detection of global targets in the global-local target detection task, yet increased performance on the recognition of local targets in the same task (i.e., narrowed scope of attention).

Finally, although high and low identified fans were expected to react differently to emotionally evocative stimuli, these differences were hypothesized to be specific to varying levels of identification and not to differences on measures of personal psychological well-being (e.g., depression, anxiety, general affect) (Wann, 1994; Wann, Dunham, Byrd, & Keenan, 2004). Therefore, I hypothesized that differences would not emerge between high and low identified fans on measures of trait anxiety, depressive symptomology, trait approach-avoidance tendencies, and general experience of positive and negative affect (i.e., personal psychological well-being).

In sum, this study integrates what is known about emotion, motivation, and attention with our current understanding of sport fandom to fulfill my objective of identifying the functional consequences of team identification. While highly identified fans may possess psychologically healthy profiles, I predicted that their emotional reactivity and ensuing behaviors in sport specific

situations would manifest in a manner similar to those demonstrated by individuals with affective disorders. Attention is inherent in all aspects of daily functioning, as it drives how we extract and subsequently process, store, retrieve, and apply information. By gaining quantitative insight in to the affective significance of sport fandom we will be able to better understand the functional consequences of identification and develop an awareness of the personal, social, and behavioral effects that are tied to team performance.

CHAPTER 2 REVIEW OF LITERATURE

Sport is a multi-billion dollar business (Rascher, 2005) that has impacted contemporary society, with approximately 200 million adult Americans identifying themselves as “sports fans” (King, 2005). These numbers continue to increase as sports become more accessible to consumers through avenues such as team and league websites, fantasy leagues, all-sport television networks and radio stations, as well as mobile telephone services that provide the most up-to-the-minute sporting news and statistics. Recognizing the widespread prevalence of sport fandom, researchers have taken a keen interest in understanding the psychological correlates of this social phenomenon. This literature is summarized and critically reviewed below. Moreover, a conceptual link is made between the cognitive hallmarks of clinical disorders and the explicit actions of highly identified fans.

Identifying and Classifying Sports Fans

Both in the popular media and scientific reports, the terms “fan” and “spectator” are often used interchangeably. However the two terms represent orthogonal classifications. Spectators are consumers of sport (i.e., those who watch competitions live or otherwise), while fans (abbreviation for fanatics) are individuals who actively follow and are interested in sport, a team, and/or an athlete (Wann, Melnick, Russell, & Pease, 2001). There are, however, countless individuals who encapsulate elements of both spectators and fans (i.e., have an inherent interest in sport and attend competitions), yet vary in their level of psychological investment. That is, the degree to which one is interested in a sport, team, or athlete ranges across a continuum. At one end of the continuum are individuals who possess a distinct psychological connection to a team. For these *highly identified fans*, being a supporter of “their” team is a crucial element of who they are (i.e., their identity), and the team is often perceived as an extension of themselves. This

strong identification with a sports team has been likened to the identification people possess in regards to their gender, nationality, and ethnicity. In contrast, for less identified fans, the concept of team supporter is much less pertinent. These individuals are much less psychologically invested in and impacted by the team's performance (Wann et al., 2001).

Although sports fan research was prevalent prior to 1993, Wann and Branscombe's (1993) Sport Spectator Identification Scale (SSIS) was the first measure of team identification to be validated and published for widespread use. The SSIS is a 7-item, 8-point Likert-scale inventory designed to assess "individual allegiance or identification with a sports team" (Wann & Branscombe, 1993, p. 3). In initial validation studies, highly identified fans ($M = 7.15$) displayed greater involvement and investment in their team, more positive attributions regarding their team's performance, were more optimistic in their predictions for the team's future performance, perceived other fans of the same team as special, and reported that it was more important that their friends also be fans compared to those participants classified as moderately ($M = 5.88$) or low ($M = 3.55$) identified fans. Wann and Branscombe (1993) concluded that the SSIS is a "useful and predictive" tool for assessing fan's levels of identification with sports teams. Following its validation, the SSIS has become one of the primary tools used in sport fan identification research.

It is probable, however, that there are individuals who can be classified as highly identified *general* sports fans who do not identify with a specific team or player (Wann, 2002). Given that the SSIS is limited to measuring only identification with a specific team (or athlete) and does not quantify an individual's level of identification as a general sport fan (i.e., simply enjoys the sport itself), Wann (2002) developed the Sport Fandom Questionnaire (SFQ). The SFQ is a psychometrically valid five-item self-report questionnaire designed to assess an individual's self-

perception of being a sport fan and the degree to which one identifies him/herself as a fan of sports in general. Three independent investigations employing diverse sampling techniques and populations revealed that the SFQ is normally distributed, internally consistent, possesses concurrent and predictive validity, and strong test-retest reliability. Additionally, males reported consistently higher SFQ scores than females, however no relationship was evident between SFQ scores and age. The SSIS and SFQ have provided researchers with the ability to classify sports enthusiasts and as a result have further enabled researchers to more precisely explore the behavioral and psychological correlates associated with varying degrees of fandom and identification.

Psychological Correlates of Sport Fandom

Identification with a sports team has repeatedly been shown to be a key factor in predicting sport related behavior, including event attendance and the purchasing of team licensed merchandise (Kwon & Armstrong, 2002; Laverie & Arnett, 2000; Wakefield & Wann, 2006). A survey of 1,442 self-identified “die hard” (i.e., “watch most games and follow-up on scores and sports news several times a day”) and “avid” (i.e., watch many games and follow-up on scores and sports news once a day”) sports fans revealed that 70.2% of respondents reported rearranging their professional (i.e., work and school) schedules to listen, watch, or attend a sporting event, and 39.2% had skipped work/school to accommodate a sporting event (Wann, Friedman, McHale, & Jaffe, 2003). The emotional and psychological impact of sports fans’ affiliation is often manifested behaviorally. That is, both the covert thoughts and overt actions of fans can be the result of their appraisal of their connectedness to and affiliation with a sport, team, and/or athlete.

BIRGing, CORFing, and blasting

People's desire to be positively evaluated by others often moderates their behavior. Cialdini, Borden, Thorn, Walker, Freeman, and Sloan (1976) provided the first empirical evidence to support the notion that people use their affiliation with successful others to increase their public image. In the first of this seminal series of studies, Cialdini et al. (1976) observed the apparel choices of students at seven "major" football universities each Monday of the season, with the hypothesis that more students would display the school's insignia following a victory than after a loss or a tie. Data confirmed the anticipated trend that students would wear university apparel to show their affiliation with a victorious team.

In their second investigation, Cialdini et al. (1976) explored students' terminology when referring to a recent university football game. Results supported the hypothesis that participants would emphasize the association between themselves and a successful team through the use of the pronoun "we" to describe a recent victory (i.e., "we won") and "non-we" terminology to distance themselves from a non-victorious team (i.e., "they lost"). This effect was magnified after the students received personal failure feedback regarding their performance on a questionnaire; students' tendency to associate themselves (i.e., use the pronoun "we") with a successful team was exaggerated when their self-image was endangered.

In their final experiment, Cialdini et al. (1976) again found that students used self-referenced terminology when describing a victory twice as frequently than when discussing a non-victory. This tendency was amplified when participants first described a game when the university's football team was not victorious (i.e., lost or tied) and then spoke about a game when the team won. Cialdini et al. proposed that initially talking about a non-victory led participants to feel that their perceived "prestige" was reduced and therefore were more likely to

attempt to restore their image by increasing their public affiliation with the team when it was successful.

In sum, Cialdini et al. (1976) found empirical evidence to support the notion that individuals will publicly emphasize their connection with successful others and *bask in reflected glory* (BIRG), despite not producing the success themselves. Grounded in Heider's (1958) balance theory, Cialdini et al. (1976) proposed that BIRGing occurs because people want to maintain "cognitive harmony" and therefore evaluate connected parties similarly. As a result, public association with a successful team is perceived to promote positive evaluations (i.e., enhanced public image). Moreover, people have an increased tendency to BIRG when their esteem is threatened (either by personal failure or affiliation with a negative source), as a means of maintaining or increasing one's public image. However, despite acknowledging the existence of this distinct behavioral tendency, these initial investigations did not monitor affiliation tendencies during periods when the teams did not compete.

According to Cialdini et al. (1976), theoretically inherent in the concept of BIRGing is the act of distancing oneself from unsuccessful others. Snyder, Higgins, and Stucky (1983) believed that this tactic was distinct, and labeled the protective action of decreasing the association between oneself and unsuccessful others as *cutting off reflected failure* (CORF). Snyder, Lassegard, and Ford (1986) assessed both BIRGing and CORFing tendencies of participants who received success, failure, and no performance feedback concerning their group's performance on a problem-solving task. In addition to completing the task, participants were informed that their group would be making a presentation to a panel of judges and were asked to what degree they would prefer not to participate in the presentation (i.e., publicly distance themselves from the group), as well as to what degree they wanted to be a part of the group's public presentation (i.e.,

publicly associate themselves with their group). Finally, participants were given the opportunity to take and wear badges that displayed their group's name. CORFing was evident among members of the groups that received failure feedback, as these individuals reported a greater preference for not being included in the group presentation and were less likely than the members of the other groups to take and wear team badges, thereby avoiding additional damage to their self image. In comparison, those who receive success feedback had more interest in being present during the group's presentation than those who received failure feedback. Taken together, this evidence confirms that people use social distancing strategies (i.e., CORFing and BIRGing) to manipulate (i.e., maintain or increase) their image.

Cialdini and Richardson (1980) also explored another "image management" strategy commonly used when people's public esteem is damaged. Following an experimental manipulation of public image through failure feedback, participants engaged in one of two image-enhancement strategies: basking or *blasting*. Whereas basking serves to increase one's association with a successful source, blasting publicly devalues those with whom an individual is negatively associated (i.e., opposition). Specifically, participants reported more favorable evaluations of their university and less favorable evaluations of a rival university in an attempt to enhance their public image. Cialdini and Richardson (1980) explained that participants engaged in basking and/or blasting behaviors in an attempt to influence public appraisal of themselves. Because people have the propensity to evaluate positively connected groups similarly and negatively connected groups differently (Heider, 1958), people will emphasize the positive characteristics those which they are amicably associated with, while highlighting the negative attributes of those individuals/groups with which they are negatively affiliated.

As highlighted above, highly identified fans' affiliation with a team is a significant element of their self-concept. As a result, these individuals have a greater tendency to BIRG and to share in the triumphs experienced by their team, thereby instilling a sense of pride (Dalakas, Madrigal, & Anderson, 2004) and serving an ego-enhancing function. Alternatively, these highly identified fans are unable and/or unwilling to distance themselves from an unsuccessful team (i.e., CORF) (Wann & Branscombe, 1990), yet they have the "natural" desire to maintain a positive self-image. Therefore, to cope with the negative vicarious experience and preserve their public image and self-esteem, research has shown that highly identified fans will engage in "blasting" (e.g., Branscombe & Wann, 1992; Wann, 1993). Wann (1993) explained that blasting can extend beyond the verbal degradation of relevant out-groups (e.g., opposing team's fans) and include physically aggressive behaviors on the part of highly identified fans. As a whole, the success of others with whom one is affiliated has been linked to a variety of public behaviors intended to maintain and/or increase one's identity.

With an increased understanding of the strategies people employ to protect their self image and the growing prevalence of aggression among sport spectators, Dimmock and Grove (2005) sought to explore spectator aggression among fans of differing levels of identification. Level of identification (using the SSIS), attitudes towards spectator aggression (both physical and verbal), beliefs about subjective norms of spectator aggression, and perceived behavioral control at sporting competitions were collected from 181 fans of professional soccer, professional basketball, and Australian Rules football teams. It was hypothesized that fans with varying levels of identification would differ in their attitudes toward and belief about spectator aggression, as well as on their perceived subjective norms of spectator aggression.

The data from Dimmock and Grove's (2005) paper did not support the primary hypothesis. Notably, however, perceived behavioral control varied as a function of the fan's level of identification. That is, highly identified fans reported that they felt as if they had less control over their behaviors at competitions than both the moderately and low identified fans. Dimmock and Grove (2005) presented two potential explanations for why individuals of varying levels of identification differed in their perceptions of behavioral control. First, the perceived loss of behavioral control may be attributable to the strong emotions that highly identified fans have been shown to experience as a result of a exposure to sport (e.g., Wann, Dolan, McGeorge, & Allison, 1994). Specifically, they suggested, "fans who feel that their identity is threatened (or enhanced) are likely to experience emotions that could lead to a loss of behavioral control" (p.43). In the alternative explanation, Dimmock and Grove proposed that highly identified fans are more likely to deindividuate when in the presence of other fans (i.e., other in-group members), resulting in a reduced level of self-awareness and social restraint.

Although Dimmock and Grove's study did not find evidence to suggest that highly identified fans are more likely to support aggressive behavior, it is important to note that the data was collected in a neutral environment (i.e., not following or during a competition), and therefore may not have effectively assessed feelings or behaviors commonly related to competition environments and game outcome.

According to Cialdini and colleagues' (1976) original work, both BIRGing and CORFing related behaviors are public acts. Boen, Vanbeselaere, and Feys (2002), however, hypothesized that BIRGing and CORFing behaviors are not limited to public displays and may also occur in private as a way for individuals to draw personal connections between themselves and successful/positive others. To test if individuals have a tendency to BIRG and CORF in the

absence of an “audience”, Boen et al., (2002) monitored the number of visitors to Belgian and Dutch soccer teams’ websites the first work day following a match during the final weeks of the 1999-2000 championship. It was hypothesized that because of people’s drive to BIRG and CORF in private, more individuals would visit a team’s website following a victory than after a defeat. Individuals’ expectations were also predicted to moderate this relationship, with more individuals visiting a team’s site following an unexpected (vs. expected) victory. Significantly fewer individuals were anticipated to visit the site after a surprising defeat. Finally, it was hypothesized that the margin of victory/defeat would also influence private BIRGing and CORFing. Specifically, a positive correlation was expected between the number of visitors to a website and the margin of victory, whereas a negative correlation was expected between the number of visitors and the margin of defeat. In accord with the primary hypothesis, more individuals visited a team’s website following a victory while greater than average activity (i.e., visits to the website) was evident after a win. Less than average activity was noted after a loss. No evidence, however, was found to support the secondary hypotheses that outcome expectations and margin of victory /defeat would influence the number of visitors to the websites.

Boen et al. (2002) successfully extended the seminal work of Cialdini et al. (1976) to reveal that not only do individuals strive to increase associations between successful others and distance themselves from less successful others when in public, but they also engage in similar patterns of behavior when in private. According to Boen et al. (2002), private BIRGing and CORFing are additional techniques for maintaining a positive self-concept. The tendency for fans of all identification levels to engage in various tactics to maintain and increase their

perceived esteem is one example of the psychological impact that fandom can have on an individual.

Identification and Perception

The self-protective behaviors of fans not only underscore the importance of their affiliation, but also highlight the potential implications of identification. Recognizing that the involvement and attachment of fans is “real, strong, and that widespread and the goals, achievements and failures of sports teams are taken very seriously by the fans, perhaps in many cases, as seriously as they are by the sports’ participants themselves” (Sloan, 1979, p.221), researchers have sought to capture how team identification and sport fandom are associated with various psychological variables.

For example, Schweitzer, Zillmann, Weaver, and Luttrell (1992) probed whether game outcome and the resulting emotional states altered judgments regarding the probability of threatening events. Students from two rival universities watched the annual football game between the two schools and completed a series of questionnaires relevant to their experience. The surveys assessed their enjoyment of the game, support for each of the teams competing, their mood at halftime and their mood end of the game. Additionally, participants completed the “World Events Inventory”, which asked participants to estimate the likelihood of a war occurring between Iraq and the United States, the duration of such a war, and the number of casualties that could be expected.

As predicted, Schweitzer and colleagues (1992) found that although the two groups of supporters did not differ in their ratings of enjoyment at halftime (i.e., when there was only a difference of three points between the teams), there was an increase in enjoyment among the winning team’s fans and a decrease in enjoyment ratings among the losing team’s fans at the end of the game. Similarly, at the conclusion of the game, greater disappointment was reported by

losing team's fans, whereas greater happiness was reported by winning team's fans. Additionally, following their team's loss, students reported greater estimates of war (i.e., more casualties and longer duration) compared to those reported by the fans of the winning team. Moreover, these post-game estimates of war were greater than the estimates provided by the control participants from the same school five days following the competition. No time of assessment differences were evident for students from the victorious school; participants did not report lower estimates of war after their team's victory when compared to the control assessment. In sum, the "gloom" (i.e., negative affect) rather than "exultation" (i.e., positive affect) appears to play a larger role in influencing perceptions and appraisal.

Highly identified fans are more likely to attend "their" team's home and away competitions than non-identified fans (Wann & Branscombe, 1993). As a result, Wann, Dolan, McGeorge, and Allison (1994) proposed that highly identified fans associate team/player performance with cheering and other forms of fan support and consequently feel as though they are able to influence the outcome of competitions. Therefore, Wann et al. (1994) hypothesized that a positive relationship would be evident between identification level and perceived ability to influence sporting competitions. They tested the proposed relationship between identification and perceived influence using 104 undergraduate students who identified their favorite college basketball, college football, professional basketball, professional football, and professional baseball teams and completed the SSIS for each team. Participants also identified the number of games they attended for each team, the degree to which they feel that spectators influence the outcome of competitions (i.e., general influence), how much they personally feel they are able influence a competition (i.e., personal influence), and how frequently they exhibit specific behaviors (e.g., yelling) at games. Results revealed varying levels of identification by

sport, with individuals reporting greatest identification with college and professional football teams, followed by college basketball and professional baseball teams. Additionally, differences in identification were noted between males and females, with males reporting greater identification for all sports except college football. There were no other gender-based differences on measures of interest (e.g., perceptions of influence).

Wann et al.'s (1994) data revealed that perceptions of influence (general and personal) varied by sport, with participants reporting that spectators in general had the largest amount of influence on college basketball and football competitions, and that they personally were most likely to try to impact the outcome of college football games. Level of identification was also found to be associated with perceptions of control, with more highly identified fans reporting greater perceptions of influence across sports than their less identified counterparts. Fans were only more likely to attend sporting competitions if they felt that they personally were able to influence the competition. Despite this finding, "identification was more strongly related to perceptions of influence than was attendance" (p. 352). Importantly, perceptions of general influence were higher across all sports than perceptions of personal influence; the highest rating of personal perception of influence was less than the lowest rating of perception of general influence.

Because more highly identified fans are more invested and involved in the game (e.g., attempt to personally influence the outcome), Wann et al. (1994) hypothesized that such fans would be more affected (both positively and negatively) by the outcome. To investigate this question, a second study was conducted. College students completed the SSIS and a mood assessment scale, prior to, during halftime, and following, one of three NCAA men's basketball games with varying outcomes (i.e., home team easy win, home team difficult win, and home team loss). Participants were separated into high and low identified groups based on SSIS scores.

Data showed that highly identified fans reported the largest increase in positive mood following the difficult win and the largest decrease in positive mood following the loss. However, the high identification group only experienced changes in positive mood that were different from the low identification group after viewing a loss. Additionally, the highly identified fans exhibited both the largest increase in negative mood following a loss, and the largest decrease in negative mood after a difficult win, but high and low identified groups only experienced different emotional reactions after a loss. In sum and as expected, fans low in identification experienced less intense negative emotions following a team's loss than highly identified fans, suggesting that mood states evoked in response to a competition are able to successfully discriminate between high and low identified fans.

In a final study, Wann and colleagues (1994) addressed the influence of competition outcome on reported levels of identification. Social identity theory (Tajfel & Turner, 1979) suggests that the outcome of competitions should not modulate identification levels. Wann et al. (1994), therefore, hypothesized that self-report levels of identification would not fluctuate following a victory or defeat. It was however, hypothesized that fans of "traditionally more successful teams" would report higher levels of identification. Following four collegiate basketball games, spectators completed the SSIS and indicate which team they supported in the game they attended. Results confirmed both hypotheses; game outcome was not related to identification level, however fans of more traditionally successful teams reported higher identification levels than fans of less successful teams. In conclusion, the sequence of studies conducted by Wann and colleagues (1994) revealed that team identification is related to fans' perceptions of influence over competition outcome, as well as their affective reactions to competition outcomes.

Perceptions of Self

The personal investment and emotional experiences of fans have been associated with changes in the way that these individuals perceive their surroundings. Furthermore, Schwarz, Strack, Kommer, and Wagner (1987) proposed that identification also has an impact on more self-relevant perceptions. Specifically, Schwarz et al. (1987) sought to explore the effects of mood on judgments of satisfaction with life using the outcome of two Soccer World Championship Games (a victory and a tie for the German team) to induce various mood states. A total of 55 German males were interviewed before and after two Soccer World Championship games, one that Germany won and the other Germany tied. Participants reported their general life satisfaction (i.e., global well-being), their satisfaction with their employment and income, and their satisfaction with the level of national prestige. Differences were noted between before and after competition assessments of global well-being as a function of competition outcome. Participants reported greater general life satisfaction after the German soccer team won than before the competition, and less favorable evaluations following the team's tie. The temporary fluctuations in mood resulting from the outcome of the soccer match, however, did not alter the participants' evaluations of specific elements of their life (i.e., employment and income). In sum, results illustrated that not only can the outcome of a sporting competition alter one's mood, but also that the resulting mood can influence one's general perceptions about his/her well-being and satisfaction with life.

It has been proposed that as a result of fans' high level of identification, their team's successes and failures are interpreted personally. Hirt, Zillmann, Erickson, and Kennedy (1992) tested this assumption by having fans watch a live televised basketball game that featured their school's team or two other universities. Prior to the game, participants completed a brief questionnaire that assessed their interest in and fanship toward the their university's basketball

team. Following the competition, participants assessed their current mood state, rated the performance of each team and selected players, and made predictions about the team's success next season. Under the guise of a second experiment, participants were asked to estimate how well they could perform a variety of tasks, including motor skill, mental skill, social skill, and chance tasks and then complete each task. Results indicated that the games were successful in inducing different mood states; participants who watched their team win reported more positive mood states than those in both the loss and control conditions. Additionally, game condition influenced participants' expectations for future success of the team; participants in the win and control conditions predicted better performance by the team next season than the participants in the loss condition. With respect to estimates of their own ability, game condition influenced ratings of mental skill ability. Specifically, in accord with their estimations of team performance, individuals in the win and control conditions estimated that they could solve more anagrams than those in the loss condition. Differences were also noted between those individuals in the win and loss conditions with respect to their estimations for the social skill task. No differences however were found in participants' estimates on either the motor skill or chance task. Although, differences in performance estimates were evident across conditions, actual performance did not differ between conditions.

Taking into account level of identification (i.e., fanship), Hirt et al. (1992) found differences in mood and estimates of team and personal performance between the win and loss game conditions only among individuals with high levels of identification. Highly identified fans are not willing/able to distance (i.e., CORF) themselves from an unsuccessful team because being a fan is an important element of their self-concept, and therefore holding an allegiance to a

team becomes a gamble, with “gains accrued from team victories and costs incurred from team defeats” (Hirt et al., 1992, p.730).

Hirt and colleagues (1992) selected male college students who scored high on the fanship survey to participate in a follow-up study that directly addressed the relationship between personal and team performance and subsequent affective reactions. Data indicated that individuals in both the team and personal success conditions experienced similar levels of low negative affect, yet team failure produced greater negative affect than did personal failure. Similarly, individuals in both the team and personal success conditions experienced comparably high levels of positive affect, however individuals in the personal failure condition reported more positive affect than did the individuals in the team failure condition. Collectively, team failure had a larger impact on participant’s mood than personal failure.

Hirt et al., (1992) did not find differences self-esteem between personal and team outcome conditions when examined independently. However, differences emerged when the data was collapsed across personal and team conditions; participants in the positive outcome and control conditions reported higher self-esteem levels than participants who experienced negative outcomes. Because the participants in the failure conditions consistently reported mood and self-esteem scores that were different from the control group, and only one difference was noted between the control and success groups, the authors suggested “that the negative effects suffered by failure appear to be greater than the benefits accrued by success” (p.733).

Outcome also influenced participants’ estimates of team performance in Hirt et al.’s (1992) study. Participants in the positive outcome and control conditions estimated that the target team would perform better than the individuals who experienced negative outcomes. Differences were also noted in participants’ estimates of their performance on the motor task and social

skills. Additionally, participants in the positive outcome conditions predicted better performance compared with individuals in both the control group and negative outcome conditions. Moreover, no differences were noted between groups in their estimates of performance on a chance task. Although the groups varied in their perceived abilities, task performance did not vary between groups. In fact, most individuals, including those individuals who were in the negative outcome conditions, overestimated how they would perform on the various tasks. Therefore, it appears that experiencing failure reduces one's level of optimism.

In sum, Hirt and colleagues (1992) provided empirical evidence to support the contention that the performance of sports teams can prompt cognitions and affective reactions, which resemble the reactions of individuals to personal performance; fans perceive themselves to be less competent after their team losses. According to Hirt et al. (1992, p.725) "fanship, like any other important social identity...constitutes an affiliation in which a great deal of emotional significance and value are derived from group membership". Furthermore, "threats to identities of such importance and prominence are treated as a threat to self" (p.725). In essence, team successes and failures are as significant as personal successes and failures in impacting a highly identified fan's identity.

The extension of social identity theory to understanding sport fans is a natural extension, as many fans base their identity and sense of self in their affiliation with sports teams. While individuals have the desire to maintain a positive social identity, the identity of sports fans becomes threatened whenever "their" team loses (Dietz-Uhler & Murrell, 1999). To explore the reactions of sport fans to game outcomes, Dietz-Uhler and Murrell (1999) assessed whether participants who were highly identified with their university would evaluate their team more favorably (i.e., make "group-based reactions") when evaluating the outcome of competitions

more so than participants who did not identify strongly with their university. In this longitudinal study, the authors were also interested in how contextual factors (i.e., game outcome, expectations of success/failure, and media attention) influenced both the perceptions and reactions of sport fans.

To assess fluctuations in appraisals over the course of one football season Dietz-Uhler and Murrell (1999) administered weekly questionnaires to 74 university students that assessed reactions to the previous weekend's football game, and their perceptions of the football team (i.e., "goodness, successfulness, intelligence, and skillfulness"). Additionally, prior to the first game of the season, participants completed the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992), to measure their identification with their university. Scores on the Collective Self-Esteem Scale were used to dichotomize participants into distinct groups with either strong or weak university identification. Results revealed that strongly identified participants evaluated the team more favorably as the season progressed and weakly identified participants maintained similar team evaluations over the course of the season. In addition, the university football team was evaluated more favorably by participants who identified more strongly with the university than those who were weakly identified; strongly identified fans aim to maintain positive social identities, as indicated by their tendency to view the university football team in a more positive light than weakly identified participants, regardless of game outcome. Data also indicated that strongly identified participants rated the team more favorably than weakly identified participants, especially when the team was favored to win and when the team received positive media attention. In sum, the results of Dietz-Uhler and Murrell's (1999) study indicate that highly identified fans' reactions to competition are influenced by a number of factors, including competition outcome, media attention, and expectations of success. Strongly identified fans

evaluated the team more favorably after victories (compared to losses), when the outcome was expected (versus unexpected) and after the team received positive media attention.

Emotional Experience of Fans

Wann and colleagues' (2003) study of sport fanatics not only captured the behavioral influence of high identification; it also provided anecdotal insight into the emotions experienced by fans. Participants reported being significantly impacted emotionally by a team's performance, with 44% requiring at least one day to emotionally "recover from a loss" and 64.3% noting that they had cried after a defeat. Likewise, 45.4% of participants required at least one day to "come down from the excitement" and 68% reported crying after a victory. These findings highlight the notion that fans readily recognize that they are emotionally captivated by their team's performance, win or lose.

In an experimental design, Wann and Branscombe (1992) explored if reading about a team's victory or defeat was able to trigger an emotional reaction among fans. High and low identified fans read one version of a newspaper article that summarized either a victory by or defeat of the target basketball team. The article was either written by a loyal supporter of "their" team (ingroup), a loyal supporter of the opposing team (outgroup), and a "bandwagon" supporter of target team, or a supporter of the opposition. Data confirmed the hypothesis that the most positive emotions would be elicited among highly identified fans after reading an article that summarized a victory by the target team, which was written by a loyal fan of the team. Moreover, highly identified participants reported the most negative emotions after reading an article written by a "bandwagon" fan of the target team that highlighted the team's defeat. As predicted, there were no differences in the emotions of low identified participants as a function game outcome, the author's affiliation, or the author's team loyalty. Wann and Branscombe

(1992) concluded that, “level of identification is critical in determining spectators’ emotional reactions to information concerning their team” (p.58).

For highly identified fans, identification with a sports team is a primary component of their identity (Wann, Schrader, & Adamson, 1998). Moreover, research has indicated that individuals who are highly identified with specific sports teams experience emotional reactions that are similar to athletes, yet different from less identified spectators (e.g., Gantz & Wenner, 1995; Sloan, 1989; Wann, 1993; Wann, Dolan, McGeorge, & Allison, 1994). Two explanations have been put forth to account for the intense reactions experienced by highly identified fans. First, people are generally motivated to maintain and protect their self-identity (Tajfel, 1981; Tajfel & Turner, 1979). How one’s team performs therefore, influences one’s perceptions about his/her own self-worth. Such a link between one’s identity and team success does not exist for those who do not avidly support or identify with a sports team, as their self- concept is not tied to their affiliation with an athletic team (Wann et al., 1998). Second, being a fan is central to highly identified fans’ sense of self and therefore they are unable and unwilling to distance themselves from their team when the team performs poorly, thereby allowing their self-identity to be threatened (i.e., the self-concept of highly identified fans is reduced when their team is unsuccessful). In contrast, fans with low levels of identification do not have such personally relevant and strong ties to a team, and therefore are able to “protect themselves” (i.e., their self-concept) by distancing themselves from the target team. As a result, team performance moderates the self-identity of highly identified fans more so than “traditional” fans (Wann et al., 1998).

Recognizing the significance of competition outcome to fans, Wann et al. (1998) hypothesized that fans would experience cognitive and somatic anxiety related to their team’s

competitions, but highly identified fans would experience more intense competition related anxiety than less identified fans. Additionally, it was hypothesized that the level of anxiety reported would be influenced by the temporal proximity of the competition, with higher levels of anxiety anticipated closer to the competition. The importance of the competition was also proposed to influence fluctuations in anxiety, with anxious responses only being evoked when the target team faced a skilled opponent. Thirty one college-aged participants completed the SSIS and a modified Competitive State Anxiety Inventory-2 (Martens et al., 1990; Competitive State Anxiety Inventory-Fans, CSAI-F) three days, twelve hours, three hours, and immediately before two target competitions (one important and difficult game and one less important and less difficult game), as well as at halftime during each of the competitions. Using a median-split, participants were classified as possessing high ($M = 6.03$) or low ($M = 2.66$) levels of team identification.

Wann and colleagues (1998) found that across time intervals for both games, all participants reported higher levels of cognitive anxiety than somatic anxiety. As the important/difficult competition approached, cognitive anxiety scores increased and ultimately peaked at halftime. Additionally, highly identified fans reported higher levels of cognitive anxiety than low identified fans. A similar pattern of results was found for somatic anxiety; highly identified fans experienced a more striking increase in somatic anxiety compared with less identified fans, although both groups experienced increases in somatic anxiety that peaked at halftime during the more challenging competition. Cognitive anxiety did not vary across assessment periods for the less important/difficult game, but counter to expectations, somatic anxiety increased as the less difficult/important competition approached and was highest at halftime during the competition. Moreover, highly identified fans experienced a unique and

marked increase in somatic anxiety during halftime that was not present among the low identified fans or during the previous four assessment periods. Wann et al. (1998) explained that regardless of the significance of the competition, highly identified fans become aroused whenever their team is engaged in competition.

To further extend the parallel between the emotional experiences of athletes and sport fans, Wann et al. (1998) in a second study assessed if sport spectators, like athletes, were able to recall their competition related anxiety states one week after the competition. Participants completed the CSAI-F immediately prior to a regular season collegiate basketball game between two conference rivals, as well as during halftime of the game and were asked to complete the CSAI-F recalling the feelings that they experienced during halftime of the game one week later. SSIS scores were used to classify participants as high or low identified fans. Replicating the findings of study one, participants reported greater cognitive anxiety than somatic anxiety and highly identified fans reported both more cognitive and somatic anxiety than their less identified counterparts.

Wann and colleagues (1998) also reported that all participants were able to accurately recall the magnitude of the anxiety (both cognitive and somatic) they experienced during halftime of the target game one week earlier. Further exploration of the data, however, indicated that the highly identified fans were not able to recall their anxiety levels with great accuracy, and the low identified fans were in fact able to recall their anxiety levels with more accuracy than those high in identification. Wann et al. (1998) speculated that the game time anxiety experienced by highly identified fans impeded their ability to encode information about their emotional state or that their lack of recall was due to state dependent learning. In other words, during the game highly identified participants experienced elevated anxiety levels, but during the

follow-up assessment however, they were in a non-anxious state, thereby creating a discrepancy in the emotional states when the CSAI-F was completed reducing recall ability. In sum, the Wann et al. (1998) studies provide evidence to suggest that fans experience anxiety responses that mirror those of athletes, showing an increase in both cognitive and somatic anxiety levels as important competitions approach.

Kerr, Wilson, Nakamura, and Sudo (2005) sought to address the emotional experiences of soccer fans as a function of competition outcome. In the study, Japanese soccer fans completed a modified state version of the Tension and Effort Stress Inventory (TESI; Svebak, Ursin, Endresen, Hjelmen, & Apter, 1991) prior to, at halftime, or following one of two selected professional J-League soccer games. Results indicated that fans of the winning team experienced less anger than supporters of losing team, and that the losing team's fans reported increases in anger from the pre-game assessment to the halftime and post-game assessments. A similar pattern also emerged for the other negative emotions of humiliation, sullenness, and resentment. The data however was unable to support the hypothesis that fans of the winning team would report an increase in the positive emotions of relaxation and excitement at halftime and following the game. Despite this, the increase in negative emotions among soccer fans in Kerr and colleagues' 2005 study parallel the emotional reactions experienced by fans of a losing basketball team revealed in Wann, Dolan, McGeorge, and Allison's (1994) investigation.

Physiological Fluctuations and Fan Identification

As reviewed above, the affective states and behaviors of fans are often related to their level of identification with a sport team. Identification has also been shown to manifest itself in terms of physiological changes. For example, evidence has shown that fans experience increased adrenal gland stimulation (Lawther, 1951) and heart rate (Corbin, 1973) when watching a

competition, reactions which mirror changes experienced by the athletes themselves (Sloan, 1979).

Branscombe and Wann (1992) proposed that both arousal and aggressive behavior can be mediated by identification with an individual/group, and therefore sought to provide an empirical link between physiological arousal, social identity, and aggressive behavior. Because of increased personal investment in a team, highly identified fans have a greater tendency to become vicariously involved in competitions and are more likely to view themselves as involved in the competition, prompting them to experience emotions similar to the participants. Similarly, highly identified fans experience increased threats to their self-esteem and public image when their team performs poorly. Therefore, Branscombe and Wann (1992) hypothesized that perceptions of arousal and pleasantness would be moderated by participant's level of identification with a target and the target's performance.

In Branscombe and Wann's (1992) study, 41 college-aged females that had little interest in the sport of boxing, but variable levels of American identification (i.e., frequency of feeling proud to be an American) viewed both a neutral video depicting the construction of zoos and a six-minute video clip of either an American boxer defeating a Russian boxer or a similar clip in which the Russian boxer defeated the American boxer. Blood pressure was measured prior to and following both the viewing of the neutral video and the experimental video as an index of arousal. Additionally, after watching the experimental video clip, participants completed a questionnaire that assessed their feelings about the fight, the competitors, and the outcome of the fight, as well as Russians and other "out-groups" (i.e., non-Americans). Data indicated that high and low identified Americans did not differ in their baseline blood pressure (i.e., pre and post viewing the neutral film), however participants who were highly identified experienced an

increase in both systolic and diastolic blood pressure after viewing the experimental film.

Additionally, highly identified fans reported more enjoyment watching the American boxer win than lose; no differences in enjoyment were noted between the conditions for participants low in identification. Moreover, regardless of the video clip watched, the highly identified participants appraised the Russian boxer more negatively than the low identified participants. Branscombe and Wann (1992) concluded that “identification with a group that a sports figure represents influences physiological processes during exposure to a competition involving that group” (p.91).

An overwhelming majority of the sport fandom research has focused on the psychological correlates of team identification/fandom. However, Bernhardt, Dabbs, Fielden, and Luttet (1998) sought to identify physiological changes associated with the viewing of a favorite team succeed or fail. Specifically, Bernhardt and colleagues (1998) assessed changes in pre and post-competition testosterone levels among sport fans. Testosterone level was selected as an index of physiological modulation because previous research has shown increases in testosterone levels among males following successful performance on both physical (Booth, Shelley, Mazur, Tharp, & Kittok, 1989; Elias, 1981) and cognitive tasks (McCaul, Gladue, & Joppa, 1992; Mazur, Booth, & Dabbs, 1992). Because the authors proposed that “fans who identify with a team will feel its success or failures as their own, giving rise in them to vicarious experiences of success or failure” (p.59), it was hypothesized that the testosterone levels of the fans whose team had won would increase more relative to pre-competition levels than those fans whose team lost.

Data from Bernhardt and colleagues’ (1998) two studies (attendants of a college basketball game between two rival schools and fans watching a World Cup soccer match between two rivals on television in two separate taverns) reflected an increase in post-competition testosterone

levels among the fans of the victorious teams and a decrease in testosterone among the fans of the losing team. Bernhardt et al. speculated that the alterations in testosterone levels may have widespread implications, possibly influencing fan related emotions (e.g., enthusiasm, dejection) and behaviors (e.g., violence, aggression), as well as other more general thoughts and behaviors (e.g., group interaction, mood).

Because of the high level of investment of sport spectators and their often strong emotional reactions, Hillman, Cuthbert, Cauraugh, Schupp, Bradley, and Lang (2000) adapted an affective picture viewing paradigm and incorporated physiological indices to better understand the biological mechanisms underlying emotional responses of identified fans. The authors approached the issue from a biphasic perspective (Lang, 1985), which views emotions as “action dispositions” that facilitate either approach or withdrawal related behaviors. According to Lang, people are information processors who direct their attention (i.e., selectively attend) towards motivationally salient information (compared to affectively neutral stimuli) and respond along the two dimensions of emotional valence (i.e., pleasant-unpleasant) and arousal (i.e., intensity of response). Fluctuations in psychophysiology (e.g., electromyographic activity, cortical event-related potentials, eyeblink magnitude, and heart rate) are reliably coupled with changes in affective valence and arousal ratings of stimuli. Recognizing this association, Hillman and colleagues (2000) integrated psychophysiological indices and self-report measures of affect within a picture-viewing paradigm with sport fans as their population of interest.

Hillman et al. (2000) used the SSIS to categorize 40 university students into different levels of identification: low, moderate, and high. Participants viewed two slide sets: one that depicted the target university’s team in competition and either one that included pictures of other university/professional teams or one that included images of various individual sports (e.g.,

downhill skiing). While viewing the slides, heart rate, subjective ratings of pleasantness and arousal, eyeblink responses to startle probes, and event-related potentials (ERPs) to both image onset and startle probes were recorded. Hillman et al. (2000) hypothesized that the images depicting the university's team would elicit emotional engagement among highly identified fans. Moreover, the highly identified participants were hypothesized to rate team-relevant pictures as more pleasant and arousing, show more positive cortical slow waves at stimulus onset, produce smaller P3 responses and eyeblinks with less magnitude in response to startle probes, and show greater heart rate deceleration when viewing team-relevant images compared to control images (i.e., images of other teams or individual sports).

Hillman et al. (2000) found that highly identified fans rated team relevant images to be more arousing than team irrelevant images, while low and moderately identified fans did not appraise relevant and irrelevant images to differ in arousal. With respect to valence ratings, highly identified fans rated both team relevant and irrelevant images more pleasurable than lower identified fans; a finding that may be attributed to the tendency of highly identified fans to be more captivated by sport in general than low identified participants. Additionally, all participants rated team-relevant images to be more pleasurable than team irrelevant images.

Hillman and colleagues (2000) also noted variability in participants' cardiac responses. Highly identified fans experienced greater heart rate deceleration when viewing team relevant images compared to team irrelevant images. In comparison, a reverse pattern of cardiac response was noted for fans low in identification; low identified fans exhibited greater heart rate deceleration when viewing team irrelevant images. The deceleration found among highly identified fans when viewing team relevant images was expected and is consistent with the "interpretation of heart-rate change as indexing attentional engagement with a stimulus" (p.27),

suggesting that highly identified fans exhibit an increased degree of motivational engagement when viewing images that depict their team. Additionally, smaller P3 amplitudes were noted for both high and moderately identified fans when viewing team relevant images, compared to team irrelevant images. Such findings are in accord with the theory of motivated attention, which suggests that individuals are “primed” to react more to “motivationally significant” events/stimuli compared with neutral events/stimuli (Lang, Bradley, & Cuthbert, 1998). Based on this data, it is probable that high and moderately identified fans devoted more attention to team relevant material, and therefore had fewer cognitive resources available to delegate to the secondary probe, thereby prompting an attenuated P3 response. However, startle blink reflex did not vary across picture types or level of identification. In hindsight, the authors noted that this finding was not particularly surprising since the stimuli (both team relevant and irrelevant) included in the study did not vary considerably in valence ratings and therefore were insufficient in modulating the startle responses of participants.

In a follow-up study by Hillman, Cuthbert, Bradley, and Lang (2004), fans from two rival teams viewed and rated images from six picture categories (i.e., team-relevant pleasant and unpleasant, team-irrelevant sport, neutral, mutilation, and erotica) while physiological indices of arousal (i.e., ERP, skin conductance) and valence (i.e., startle eye-blink) were monitored. It was hypothesized that team-relevant pleasant images (i.e., their team winning) would evoke smaller startle eye-blink responses and higher ratings of pleasantness than team-relevant unpleasant images (i.e., their team losing), yet no differences in arousal were expected between team relevant pleasant and unpleasant images. However, arousal was anticipated to vary between both team-relevant (i.e., pleasant and unpleasant) image categories and team-irrelevant sports images. No physiological or subjective differences were expected to emerge between the groups of rival

fans when presented with images from the three control categories (i.e., neutral, mutilation, and erotica).

As hypothesized, Hillman and colleagues (2004) found “increased affective engagement” among highly identified sport fans when they were exposed to images depicting their team compared with general sport stimuli. Specifically, fans rated images of their team winning as more pleasant and images of their team losing as more unpleasant than team-irrelevant sport images. Both categories of team-relevant images were perceived to be more arousing than team-irrelevant images. Similarly, both categories of team-relevant images elicited smaller startle probe-P3 (ERP) peaks than team-irrelevant images, suggesting that fans had fewer cognitive/attentional resources available for processing the startle probe when viewing emotional sport pictures (i.e., more attention is allocated towards the motivationally salient team content by highly identified fans). Moreover, reduced startle eye-blink responses were found during exposure to team-relevant images, compared to team-irrelevant images, as was increased EEG positivity, a trend that suggests participants were processing the emotional stimuli. Skin conductivity levels also successfully differentiated between the relevant and irrelevant images, with greater activity when participants viewed team-relevant images, providing an additional index of increased attentional engagement by highly identified fans. In sum, Hillman and colleagues (2000, 2004) provide strong evidence that highly identified sports fans exhibit motivated emotional reactivity to team relevant stimuli, a finding which provides a preliminary mechanistic link between sport fandom and mental health.

Collectively, the extant literature confirms that there is much more to being a fan than simply attending sporting events and “rooting” for one’s team. As a result, researchers have

recently directed their interests to exploring the implications of the affective and behavioral engagement of fans on their psychological well-being.

The Connection Between Team Identification and Psychological Health

Earlier in the review, the tactics of BIRGing, CORFing, and blasting were highlighted as means by which fans maintain or enhance their self-perceptions so as to improve their psychological health. Recently, researchers have sought to further explore the suggestion that sports fans exhibit more mentally healthy profiles and to identify the factors that contribute to these enhancements.

Wann, Inman, Ensor, Gates, and Cladwell (1999) used the Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971) to assess the psychological health of sports fans. They hypothesized that highly identified fans would report higher levels of vigor and self-esteem and lower levels of tension, depression, anger, fatigue, and confusion, a pattern reflective of a more psychologically healthy profile and commonly found among athletes. This “iceberg profile” was only expected to emerge among highly identified fans of geographically local sports teams, and not among general sports fans or fans of distant teams. In the first of two studies, 74 college students completed a demographic questionnaire that included questions about their gender, age, general level of sport fandom, a modified version of the POMS, and the SSIS using the university’s basketball team as the target. Participants were classified according to the SSIS data as either high or low identified fans.

Wann et al. (1999) found evidence to support the contention that highly identified fans possess more psychologically healthy profiles (i.e., iceberg profiles), and proposed that the psychological benefits result from the social camaraderie and feelings of belonging experienced by highly identified fans of local sports teams. From their affiliation with a local team, many fans develop social connections with likeminded fans. To discern if the more psychologically

healthy profiles of highly identified fans can be attributed to increased social interactions with other highly identified fans of the same team, Wann and colleagues (1999) compared the mental health profiles of fans that identified with teams that were geographically close and distant.

In their second study, Wann et al. (1999) had college students complete the same battery of questionnaires used in the preliminary project, however the target team for the SSIS was a geographically distant team that was located within the same state as the participants' university. No relationship was found between level of identification and POMS subscale scores, suggesting that identification with a geographically distant team does not afford the same psychological benefits associated with being a fan of a geographically close team. The results of both studies led Wann et al. (1999) to conclude that increased identification with a local sports team is related to psychological health, but general sports fandom or identification with a non-local team are not. Wann et al. (1999), however, cautioned that personal situations and connections with other fans may moderate the relationship between identification, team location, and psychological well-being.

The psychological benefits of fandom were also assessed among fans of Australian Rules Football by Wann, Dimmock, and Grove (2003). Psychological health was conceptualized and assessed along two dimensions, personal and social well-being. Personal psychological health was measured using the 14-item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) and the 10-item Rosenberg Personal Self-Esteem Scale (Rosenberg, 1979). Social psychological well-being was quantified using the 16-item Collective Self-Esteem Scale (Luhtanen & Crocker, 1991) and the 20-item UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). The number of sports teams that participants reported closely following determined the participant's level of general sport fandom and the SSIS assessed team identification for both the local football team

and their favorite football team. Data revealed that not all dimensions of psychological well-being are related to identification with a local sports team. A positive relationship was evident between level of identification with a *local* sports team and loneliness (an index of social well-being with higher scores representing better psychological health). A similar pattern was not evident for collective self-esteem (social well-being), nor was a relationship found between either index of personal psychological health (i.e., personal self-esteem and perceived stress) and local team identification. However, the hypothesized associations between social psychological health and the location of the target team were confirmed. Although both the fans of local and geographically distant teams reported similar levels of identification, only those fans that identified with a local team reported higher levels of psychological well-being. Specifically, fans of local teams reported less loneliness and higher levels of collective self-esteem compared to fans of more distant teams. No differences in personal psychological well-being were noted between the two groups.

The lack of association between personal elements of psychological health was also evident in Wann, Pierce, Padgett, Evans, Krill, and Romay's study (2003.) Specifically, no relationship was found between identification (as indicated by scores on the SSIS) and optimism (assessed with the Revised Life Orientation Test; Scheier, Carver, & Bridges, 1994). Therefore, the increased psychological well-being associated with sport team identification can be attributed to the social associations that result from identifying with a local team, and are not the direct result of one's identification with a sports team (Wann et al., 2003). To clarify, when an individual supports a local team, he/she is surrounded by fans of the same team, and is expected to experience a sense of camaraderie and social connectedness. These factors are believed to be at the root of the psychological benefits associated with team identification. In contrast, being a

fan of a relatively distant team does not afford such psychological benefits, as the proximity to significant, team-related social support is also distant.

In a subsequent study, Wann, Dunham, Byrd, and Keenan (2004) were able to provide novel connections between psychological health and identification with a local sports team. Specifically, positive correlations between team identification and Extroversion, Openness, and Conscientiousness subscales of the revised NEO Personality Inventory were noted. However, the predicted negative association between identification and Neuroticism was not supported. Taken together, the findings from these two studies further emphasize that the mental-health benefits drawn from team affiliation are tied to increased social interactions with likeminded others; optimism, as well as the components of Neuroticism (e.g., anxiety, depression, hostility, and anger,) are more closely related to personal well-being.

In a more recent investigation Wann and Pierce (2005) included the modified Satisfaction with “Social” Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) as an index of social well-being. One hundred fifty-five university students completed a battery of questionnaires that assessed basic demographic information, level of sport fandom (SFQ), level of team identification (for both local and distant teams) (SSIS), and psychological health (i.e., social self-esteem [Collective Self-esteem Scale; Luhtanen & Crocker, 1991] and social life satisfaction [modified Satisfaction with “Social” Life Scale; Diener et al., 1985]). The combined effect of fandom, identification with the local team, and identification with a distant team, was a predictor of social psychological health. However, independently, identification with the local team accounted for the largest proportion of variance in psychological health scores, with neither general sport fandom nor identification with a distant team contributing independently. In sum,

level of identification with a local team was a predictor of social psychological well-being, whereas identification with a distant team and mere sport fandom were not.

Taken together, the extant data indicated that: 1) higher levels of identification with a local sport team are associated with positive psychological health, 2) there is no relationship between identification with a distant sport team and psychological health due to the lack of readily available societal connections, and 3) high levels of general fandom are not related to psychological health, again due to the lack of valued social connections. However, support for these three tenets has been garnered primarily from correlational data, therefore limiting the confirmation of a causal (e.g., directional) relationship between the variables.

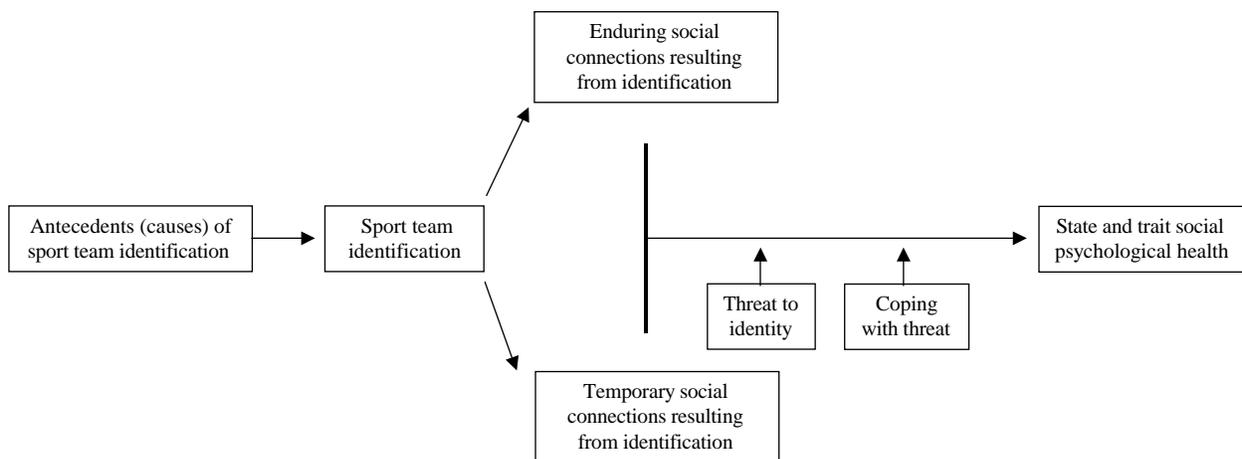
Recognizing this limitation, Wann (2006a), implemented a cross-lagged, longitudinal design to document the association between team identification and psychological well-being. The central hypothesis was that a chronological association would be found between team identification at Time 1 and psychological well-being at Time 2. Moreover, no relationship was anticipated between Time 1 psychological well-being and Time 2 team identification. To reiterate, the positive association between team identification and psychological well-being was expected because one's identification with a local sport team allows for the individual to become part of a larger social group, which in turn aids in the reduction of feelings of isolation and loneliness.

During the first testing interval (i.e., Time 1) of Wann's (2006a) investigation, 214 university students completed a demographic questionnaire, the SSIS, and four measures of various components of psychological health (i.e., personal self-esteem, collective self-esteem, loneliness, and perceived stress). Twenty-one percent of the original sample participated in a second identical assessment three months following the initial session. As predicted, a positive

path was evident between team identification at Time 1 and psychological well-being at Time 2, providing evidence to suggest a temporal pattern between identification and well-being. Wann (2006a) however cautioned, that although the results of this investigation support the idea that identification with a local team generates numerous psychological benefits, these fans are also subjected to negative consequences such as increased negative emotion (e.g., Bernhardt et al., 1998; Wann et al., 1994), depression (e.g., Schwarz et al., 1987; Schweitzer et al., 1992), and reduced perceptions of personal ability (e.g., Hirt et al., 1992) following a poor performance by their team. Fortunately, in general, highly identified fans are able to cope with threats to their identity (e.g., blasting) and continue to reap the social-psychological benefits of their identification. In sum, Wann's 2006(a) study is the most recent attempt by researchers to reveal a directional relationship between identification with a sport team and psychological health.

As suggested throughout this review, identification with a sports team holds a significant place in the lives of millions of people worldwide, and “the emotional impact that sports provides is the most important measure of its size and value” (Rascher, 2005, p. 2). Based on the extant literature, it is clear that there are numerous behavioral and psychological correlates of identification with a sports team. Wann (2006b) developed a theoretical model to formally explain the association between identification with a team and social psychological health (see Figure 1). According to the Team Identification-Social Psychological Health Model, enhanced psychological well-being is the result of team identification, social connectedness, and coping mechanisms. Wann asserts that as an individual develops an affiliation with a sports team and he/she embraces the identity of being a team supporter, social connections are developed with other fans (i.e., a sense of belonging and solidarity). The social connections that are derived from one's identification with a team can be either enduring or temporary. The enduring connections

result when the presence of other fans is clearly evident (i.e., other supporters are easy to find/readily available). In contrast, temporary social connections are not permanent and only arise when an individual enters an environment in which his/her connection with a team and similar others is made salient. As an identified fan, threats to one's identity are abundant and it is one's ability to cope with such threats (e.g., team's loss/poor performance) which will moderate their level of social well-being. Like the social connections resulting from identification, enhancements in social psychological well-being are both long term (trait) and transitory (state) in nature; fans acquire the psychological benefits from engagement in social interactions with



fellow team supporters.

Figure 2-1. The Team Identification-Social Psychological Health Model (adapted from Wann, 2006b).

Despite the recent development of a model of psychological health pertaining to sports fans (Wann, 2006b), numerous questions remain regarding the psychological implications of identification. For example, several negative consequences have been tied to high levels of identification (e.g., aggression [Bernhardt et al., 1998], abandonment of responsibilities [Wann et al., 2003], extreme emotion [Wann et al., 1994]), yet there remains uncertainty regarding factors

that may moderate the association among the components of the model. Furthermore, there is a lack of conceptual clarity with respect to temporary and enduring social connections and their interactive effects on psychological health (Wann, 2006b). In light of this, Wann (2006b) has urged researchers to employ approaches to study “both the positive and negative consequences of sport fandom and identification” (p.288) in order to develop a more balanced and complete perspective of the effects of team identification.

As noted by Wann (2006b), it would be imprudent to ignore the numerous negative consequences that have been correlated with high levels of team identification. It is especially important to further explore the foundation for these negative effects, since a number of the behavioral and emotional experiences of fans parallel those encountered by individuals with various psychopathologies. Individuals with affective disorders and substance abuse problems, for example, exhibit similar “macro-behaviors” (e.g., preoccupation with or avoidance of people, places, and things) that are specific to their given situation. Highly identified fans exhibit similar behavioral tendencies such as compulsively seeking the latest team related news (e.g., statistics, scores, trades). This need is often met through “ritualistic” (e.g., daily or hourly) consumption of sports media, a behavioral trend that has become more popular with the increased prevalence and accessibility of media outlets that cater to the avid sports fan (e.g., numerous 24-hour sports television networks, countless websites, and radio programming) (Wann & Branscombe, 1992). In other words, highly identified fans exhibit a distinct “need” (or at a minimum, a strong perceived need or desire) for team related information, and will often plan their schedules around retrieving the information, as it is a critical component of their daily routine. In addition to actively seeking team insight and watching competitions, highly identified fans experience elevated emotional reactions (both positive and negative) to game outcome and sporting news, as

their self-concept is directly linked with their target team and its performance (Wann et al., 2001). As such, sport consumption often takes precedence over other commitments and responsibilities. Moreover, addicts continue to use drugs and/or alcohol despite the fact that it detracts from personal responsibilities, while individuals with chronic anxiety and phobias actively avoid potential exposure to threatening stimuli through behavioral and environmental changes (Williams et al., 1997). The explicit behavioral parallels that exist between highly identified fans and such clinical populations suggest that the two groups may also engage in similar “micro-behaviors” (e.g., information processing, functional alterations in the allocation of attention).

At the most basic level, each of these groups share an intense emotional connection and reactivity to a distinct stimulus (e.g., highly identified sports fans: their team; addicts: narcotics, alcohol, caffeine; phobics: spiders, snakes; clinically anxious: social situations). For these individuals, such stimuli possess motivational salience and according to Lang, Bradley, and Cuthbert (1997), it is motivation that drives attention. These micro-behavioral tendencies, therefore, should be reflected in environmental conditions that index differential allocation of attention to stimuli that are differentially salient as a function of affective disposition.

Attentional Bias

Attention is a fundamental component of cognition, is a significant mediator of human behavior, and is associated, in various forms, with mental health. By developing an understanding of the factors, both internal and external, which influence the direction and maintenance of attention, insight is gained into the cognitive mechanisms that drive behavior and potential psychopathology. As reviewed, much research has explored the behavioral and psychological correlates of fandom; however, the cognitive factors that drive the thoughts, emotions, and behaviors of highly identified sports fans have been relatively ignored. Therefore,

by adopting a cognitive orientation and exploring variations in attentional allocation, we can gain insight into the micro-behaviors of fans, which can aid in understanding their explicit actions.

As Williams and colleagues (1997) noted, people have a tendency to be drawn to content that is important to them. For example, “if one is buying a house, one seems to notice “For Sale” signs. If one buys a new car, the number of people driving just that type of car suddenly seems to increase.” (p.74) In other words, an increased sensitivity to elements in the environment that are personally relevant/motivationally salient is reflected in an attentional bias towards these meaningful stimuli. Williams and colleagues outlined a number of assumptions with respect to the nature of attentional bias. First, a distinct shift in the direction of attentional focus occurs and the individual becomes aware of a particular element of his/her surrounding environment. This awareness can occur via any of the senses and is often initiated by an environmental (internal or external) change. Although, this shift is generally regarded as involuntary, it can be voluntarily driven. Moreover, the salience of environmental cues can vary, thereby increasing/decreasing the degree of bias. Finally, the bias can facilitate and/or inhibit behavior.

Parkinson and Rachman (1981) conducted an early experiment that illustrated the facilitatory effects of attentional bias. In their study, two groups of mothers (one group who had children scheduled for a tonsillectomy on the day of the study and another that had children, but were not scheduled for a surgical procedure) listened to music. The music was coupled with: medically-related, “auditorily confusable neutral”, or neutral/dissimilar terms that were presented at increasing volume. The mothers were asked to repeat the words they heard. During all but the loudest condition, mothers whose children were having surgery repeated more medically-related (i.e., concern relevant) terms than the control group. Although no differences were noted between the groups for the neutral/dissimilar terms, differences did emerge for auditorily

confusable neutral terms when presented at the lowest volumes. Despite some methodological criticisms, Parkinson and Rachman's study provides an example of how the presence of motivationally salient material can alter cognitive processes.

Numerous protocols have been developed to explore the nature of attentional bias among individuals with emotional disorders, and have been more recently extended to better understand the cognitive mechanisms associated with substance abuse. For example, the emotional Stroop paradigm and subsequent design modifications (e.g., counting, masked presentation, pictorial) have been used to assess attentional bias by measuring interference on color naming/identification task performance when affective stimuli (words or pictures) are used (e.g., Lim & Kim, 2005; Moradi, Taghavi, Heshat Doost, Yule, & Dalgleish, 1999; Williams, Mathews, & MacLeod, 1996). Other researchers (e.g., Öhman, Flykt, & Esteves, 2001; Öhman, Lundqvist, & Esteves, 2001; Rinck, Reinecke, Ellwart, Heuer, & Becker, 2005) have employed visual search tasks, using the time taken to detect a target image among distracters as an index of bias. Additionally, MacLeod, Mathews, and Tata (1986) developed one of the leading protocols used by researchers of attentional bias, the dot-probe task.

The dot-probe task is grounded in the assumption that individuals respond more quickly to stimuli that appear in areas of the display where attention is directed (Posner, Snyder, & Davidson, 1980). In a typical task design, attentional allocation is assessed using briefly presented (i.e., 500ms) pairs of stimuli (neutral or affective), which are immediately followed, on selected trials, by the appearance of a small dot. Participants respond to the appearance of the dot by rapidly pressing a button. If a bias exists, individuals will potentially respond faster to probes that replace affective rather than neutral stimuli, given that attention should be attracted by the

most salient material. In general, the dot-probe task has been able to successfully discriminate between clinical and control populations.

Affective Disorders

In the seminal dot-probe study, MacLeod et al. (1986) sought to explore an attentional mechanism underlying anxious individuals' cognitive bias. Clinically anxious and nonanxious controls completed the task, which consisted of 288 word pairs, including 24 words related to physical threat and 24 related to social threat. Although participants responded to neutral stimuli (i.e., dots) with neutral responses (i.e., button press), analysis of response latency indicated that the anxious group's attention shifted toward the threat terms. When probes were presented in both the upper and lower portions of the display, anxious participants responded faster when they were preceded by a threat word (both social and physical). An opposite pattern was evident among the controls; faster responses time were evident when the probes followed neutral words. The original protocol was rerun with a group of clinically depressed participants to identify whether the anxious group's bias was moderated by depression. The response latencies of the depressed participants did not reveal the presence of a bias towards threat content. Together these results support the notion that "high anxiety leads to a bias in selective attention that favors the pickup of emotionally threatening information" (MacLeod et al., 1986, p. 18), suggesting that the cognitive system may functioning differently in anxious and nonanxious populations and that such a processing bias favoring emotionally threatening stimuli may facilitate the maintenance of affective disorders.

The pattern of faster reactions to the presence of probes presented in the location previously occupied by threat-related cues exhibited by anxious individuals revealed in MacLeod and colleagues' (1986) seminal investigation has been replicated in numerous other studies. These subsequent experiments have revealed similar trends among individuals diagnosed with:

Generalized Anxiety Disorder (GAD) (e.g., Bradley, Mogg, White, Groom, & de Bono, 1999; Dalglish, Taghavi, Neshat-Doost, Moradi, Canterbury, & Yule, 2003), social anxiety disorder (e.g., Musa, Lépine, Clark, Mansell, Ehlers, 2003; Pishyar, Harris, & Menzies, 2004; Stirling, Eley, & Clark, 2006), Post Traumatic Stress Disorder (PTSD) (e.g., Bryant & Harvey, 1997; Elsesser, Sartory, & Tackenberg, 2004), and Obsessive Compulsive Disorder (OCD) (e.g., Muller & Roberts, 2005; Tata, Leibowitz, Prunty, Cameron, & Pickering, 1996). This collective body of evidence suggests that bias to negative information is a key feature of anxiety disorders (Williams et al., 1997; Mogg & Bradley, 1998). However cognitive biases are not exclusive to emotional disorders. Recent research has linked chemical dependence (illicit and legal) with biased attention.

Chemical Use and Dependence

The application of the dot-probe paradigm was further extended by Lubman, Peters, Mogg, Bradley, and Deakin (2000), who implemented a pictorial dot probe task to explore attentional biases in individuals with opiate dependence. It was hypothesized that individuals addicted to opiates would have faster response times to probes that replaced drug-relevant stimuli than to those that replaced neutral images. Sixteen methadone-maintained heroin addicts and 16 non-drug using controls viewed 160 pairs of images that included drug-relevant images paired with neutral images and pairs of neutral images. Following the presentation of each image pair, a probe appeared in the location previously occupied by one of the images and the participants were asked to identify the location of the probe (i.e., right or left area on the display) as quickly as possible. Participants also completed a variety of questionnaires assessing numerous psychological attributes.

Lubman et al.'s (2000) analysis of response times revealed that only the addicts were faster to respond when the drug image and probe appeared in the same location. Moreover, a bias

score (positive scores reflect faster reactions) calculated based on response time to only probes presented after the relevant-neutral pairs indicated that opiate addicts exhibited faster response times to probes that followed the drug-relevant images compared with the control group.

Although an attentional bias toward drug-relevant stimuli was evident, no relationship was found between bias and depressive symptomology or anxiety for either the controls or addicts. Lubman and colleagues (2000) suggested that the presence of such a bias can increase the “visibility” of drug paraphernalia in their environment, prompt concentration problems, increase conscious thoughts about drug use, and potentially aid in the maintenance of the addiction.

Ehrman, Robbins, Bromwell, Lankford, Monterosso, and O’Brien (2002) conducted a similar investigation. In addition to including current nicotine addicts and controls, they also tested a group of former smokers. A difference in bias was evident between current and non-smokers. As predicted, the current smokers exhibited a greater bias (i.e., enhanced attention) toward smoking-related stimuli than both former and non-smokers, suggesting that smoking-related cues capture the attention of smokers.

Townshend and Duka (2001) studied the selective attention of heavy non-dependent and occasional social drinkers using alcohol related words and images in a dot-probe task. It was anticipated that the alcohol related stimuli would be perceived as motivationally salient for the heavy drinkers and thereby promote reduced response latencies to probes presented after such cues. Data supported the hypothesis with respect to the pictorial stimuli; heavy drinkers exhibited an attentional bias for alcohol related images. Townsend and Duka proposed that the lexical stimuli were more abstract than the images and therefore were unable to elicit sufficient emotional reaction and subsequent bias in attentional allocation.

Yeomans, Javaherian, Tovey, and Stafford (2005) also used a dot-probe task to test the hypothesis that high and moderate caffeine consumers exhibit greater bias toward caffeine-related lexical stimuli than non-consumers, with high consumers displaying the largest bias. Results partially confirmed the hypothesis; high caffeine consumers displayed an attentional bias toward caffeine-related stimuli, yet no differences were noted for moderate or non-consumers as a function of stimuli-probe location. As such, Yeomans and colleagues (2005) demonstrated the presence of attentional bias for caffeine-related words among individuals who consume large amounts of caffeine, but not among individuals who do not to have strong personal association with caffeine and the effects of caffeine. They reasoned that because the presence of caffeine-related stimuli has little relevance to moderate and non-consumers, it consequently does not capture their attention.

In sum, the dot-probe paradigm has been used successfully to gain insight into the cognitive underpinnings of anxiety disorders and various chemical addictions. The findings are generally consistent in showing that cognitive biases toward motivationally salient (e.g., threatening, state/dependence relevant) stimuli influence how individuals allocate their attention, and subsequently how they function. For highly identified fans, the concept of “fan” is central to their identity, and therefore team relevant material is personally meaningful and salient to these individuals. As such, fans may possess an increased sensitivity and exhibit increased emotional reactivity to elements in the environment that are related to their team and the team’s performance. This elevated emotional investment may manifest itself through fluctuations in their attention and subsequent behavior.

Attentional Breadth and Flexibility

The ability to appropriately allocate and manage attentional focus is vital for effective engagement within one’s surroundings and as a result, researchers have been driven to

understand the factors that alter attentional flexibility and scope. Of particular interest to the current investigation is the dynamic interplay among emotion, motivation, and attention.

While considerable research has linked positive affect with broader, more flexible cognition as evidenced by increased creativity and elevated problem solving ability (e.g., Isen (1987, 2000), a more recent line of research has explored the attentional alterations that are tied to affective and motivational changes. Grounded in Isen's work (1987, 2000), Friedman and Förster (2005) proposed that approach motivational states also promote greater attentional flexibility, an "ability to adaptably shift focus among cognitive operations using executive control" (p.70). They suggest that positive affect allows for more information to be available for processing, while increasing the amount of relevant content that can be attended to. Taken together these changes are proposed to facilitate attentional shifting.

Preliminary work by Kuhl and Kazén (1999) provided empirical and theoretical grounds for Friedman and Förster's (2005) hypotheses. They found that relative to negative affective states, experimentally induced positive affective states were able to significantly increase attentional flexibility as evident by reduced response times when the word and ink color were incongruent. The Stroop task (Stroop, 1935) is commonly employed as an index of attentional flexibility because participants are presented with color words that are printed in a variety of ink colors and are then asked to identify the color ink that the word is printed in rather than the word itself. Because the typical response is to read the printed word, participants must shift their task focus to naming the ink color when the word and ink are incongruent. With that said, the task of naming the ink color is easier under states of elevated attentional flexibility. In sum, this classic task provides a quantitative index of the ease with which one is able to shift focus.

Friedman and Förster (2005) were able to extend the previous work of Kuhl and Kazén (1999) to the experience of motivational states outside of conscious awareness using maze tasks (i.e., seeking reward/avoiding threat) (Experiment 1) and motor actions (i.e., flexion/extension) (Experiment 2) to activate the approach and avoidance motivational systems. In their two experiments they showed that approach motivation (compared to avoidance motivation) increased attentional flexibility (e.g., reduced incongruent ink color naming response time) . They concluded, “approach-related motivational states enhance the flexibility of human behavior” (p.79, Friedman & Förster, 2005).

In addition to emotion and motivational orientation influencing the ability to shift attentional focus, these affective variables also have been shown to significantly alter the *breadth* of attention (e.g., Derryberry & Tucker, 1994; Easterbrook, 1959). Förster, Friedman, Özelsel, & Denzler (2006) synthesized the current state of the literature, stating that “avoidance-related states such as anxiety (i.e., tense arousal) narrow the focus of attention...and approach-related states such as joy (i.e., elated arousal) broaden the focus of attention, leading to increased responsiveness to peripheral cues on the perceptual level and increased activation of relatively inaccessible mental representations on the conceptual level” (p. 134).

In line with Förster and colleagues’ (2006) assertions, Gasper and Clore (2002) showed that state affect influences the processing of global and local information, with happiness (i.e., approach motivational state) stimulating a global rather than local perceptual focus. Moreover, participants in the approach condition of Förster and colleagues (2006) study demonstrated faster response times to global targets compared to local targets and participants in the avoidance condition responded faster to local, compared to global targets. The global-local target detection task is commonly used to capture the breadth of attention as it simultaneously presents

participants with both global and local targets (e.g., Förster et al., 2006; Gable & Harmon-Jones, in press; Navon, 1977). Specifically, response times to target letters presented within composite stimuli (i.e., large letters formed by smaller letters) are used as a gauge of the scope of attention, with faster times to the large targets indicative of a global focus and faster response times to the smaller targets as a local (i.e., narrow) focus of attention. In general, global features are processed more quickly than local features, as the general affective state of most people is typically positive, yet changes in emotion, and consequently motivational state, influence the scope of attention (Gable & Harmon-Jones, in press; Gasper & Clore, 2002).

The interrelationship among emotion, motivation, and attention signifies the functional importance of understanding the factors that influence each individual component in order to better understand the nature of behavior. These variables are of particular interest to understanding the growing population of highly identified sport fans as they experience a myriad of emotions resulting from their affiliation with a team.

Limitations in the Literature

In recent years, there has been a surge in the number of studies exploring the various correlates of sport fandom, which have yielded important information concerning the psychological costs and benefits of team identification. However, the existing body of literature is limited due to a number of theoretical, methodological, and interpretative shortcomings.

First, there has been relative inconsistency in the operational definition of “fan” and the classification of high and low identified fans. Specifically, researchers have unsystematically used the SSIS (e.g., Wann & Branscombe, 1992; Wann, Dimmock, & Grove, 2003), the SFQ (e.g., Wann & Pierce, 2005), consumption behaviors (e.g., Kerr et al., 2005), and self-classification (e.g., Wann, Friedman et al., 2003; Wann et al., 2004), along with non-validated assessments of identification (e.g., Hirt et al., 1992) to classify fans. As a result of this

variability, the generalizations that can be drawn from existing research are limited, and thereby leave questions concerning the nature, correlates, and consequences of varying levels of identification unanswered.

Next, the majority of what is known about the psychology of sports fans is grounded in correlational evidence. As such, the direction of the relationship between identification and fans' thoughts, emotions, and behaviors is uncertain. Moreover, the data extracted from studies exploring the psychology of sports fans has been largely one-dimensional. That is, researchers have either taken a subjective approach using self-report assessments of thoughts, feelings, and behaviors (e.g., Branscombe & Wann, 1991; Schwarz et al., 1987; Schweitzer et al., 1992; Wann et al., 2004) or have employed more covert methods monitoring physiological fluctuations in response to sports cues (e.g., Hillman et al., 2000, 2004). Although each approach has yielded valuable information pertaining to the correlates and consequences of fandom, a gap in extant knowledge exists. Namely, there is presently no evidence linking the physiological changes fans experience in response to sport stimuli to their thoughts and behaviors, nor is there data to indicate if/how increased social-psychological health impacts cognitive *processing* (e.g., how attention is allocated, where attention is directed). Likewise, there is no evidence to connect extreme sport fandom with what is known about other dependencies/pathologies.

Third, a majority of the existing research (e.g., Branscombe & Wann, 1991; Wann, Dimmock, & Grove, 2003; Wann & Steele, 1998) has relied solely on subjective report assessment techniques (e.g., questionnaires and interviews) that are unable to tap the mechanisms that drive fan behavior and emotion. Additionally, the current perspectives on identification and psychological well-being have been primarily founded on data collected from homogeneous populations (e.g., college students who were fan's of their school's basketball

team). However, the conclusions drawn from this research have been broadly applied to fans in general. Researchers have recognized this limitation and more recent work has become more diverse, exploring if the existing trends in the data are maintained across various fan demographics and sport characteristics.

The conceptual and methodological concerns discussed above highlight the modifications necessary to advance the current state of the literature. More systematic exploration of the cognitive, behavioral, and affective factors associated with team identification in controlled environments can provide insight into how fans process information, and specifically, how sport relevant stimuli influence cognitive processing, attention, daily functioning, and mental health.

Conclusion

Sport is an essential element of many people's social and personal lives. Unfortunately to date, research has failed to adequately consider the cognitive and emotional processes that drive sport fans, especially those fans that define themselves by their affiliation with a specific team. While there are countless anecdotes and supporting empirical evidence that highlight the extreme behaviors of highly identified fans, our knowledge has not progressed beyond description of the superficial actions and reactions of fans. That is, in order to truly understand "the fan" researchers must look to identify cognitive hallmarks that distinguish highly identified fans from their less identified counterparts.

While highly identified fans may possess psychologically healthy profiles, I propose that fans' emotional reactivity (e.g., Hillman et al., 2000, 2004) and ensuing behaviors (e.g., Kerr et al., 2005) in sport specific situations manifest in maladaptive ways that are similar to those demonstrated by individuals with affective disorders (e.g., excessive consumption, aggression/violence, impaired daily functioning). By inducing pleasant and unpleasant emotions through the recall of game specific memories and assessing consequential attentional and

behavioral alterations, we can advance our understanding of the cognitive basis and consequences of identification. These findings will aid in discovering the cognitive, affective, and behavioral characteristics of highly identified sports fans. Extending this line of research will help to identify the cognitive processes that play a role in promoting both adaptive and maladaptive behaviors among highly identified sports fans.

CHAPTER 3 METHODS

Participants

To determine an adequate sample size for the repeated measures analysis, an a priori power analysis was conducted using the G*Power general power analysis program (Erdfelder, Faul, & Buchner, 1996). Alpha level was set at 0.05 with a corresponding power of .80 to detect a medium effect size. A medium effect size was selected according to the convention established by Cohen (1988) for estimating effect size in the absence of existing data. Based on these requirements, a total sample size of 110 was determined to be adequate.

One-hundred and forty three participants (111 females and 32 males) were recruited from the University of Florida and the surrounding local community. Undergraduate students participated in this study for extra credit. All participants were at least 18 years of age ($M = 20.71$, $SD = 2.17$).

Materials

Self-Report Measures

Demographic questionnaire

A questionnaire was developed to acquire basic demographic information including age, sex, ethnicity, and affiliation with the University of Florida (see Appendix A).

Sport Spectator Identification Scale

The Sport Spectator Identification Scale (SSIS; Wann & Branscombe, 1993) is a valid and internally consistent (Cronbach's $\alpha = .91$) seven-item, eight-point Likert scale inventory developed to assess identification (i.e., one's psychological connection) with a specific sport team. In the current investigation, the SSIS was phrased to reflect one's identification with the University of Florida football team. An individual's score on the SSIS is obtained by summing

the responses to all seven questions and dividing the total by seven; the lowest identification score is one and the highest identification score is eight.

Sport Fandom Questionnaire

The Sport Fandom Questionnaire (SFQ; Wann, 2002) is a psychometrically sound (i.e., valid, internally consistent: Cronbach's $\alpha = .96$, and reliable: $r = .94$) five-item self-report questionnaire designed to assess an individual's identification with his/her role as a sport fan and self-perception as a sport fan (i.e., not the fan of a specific team or player). The SFQ Likert scale is anchored by the statements Strongly Disagree (1) and Strongly Agree (8). Similar to the SSIS, an individual's SFQ score is reported as the average of five responses, with a score of eight representing the highest level of general fandom and a score of one representing the lowest level of fandom.

State-Trait Anxiety Inventory

The trait subscale (TAI) of the State-Trait Anxiety Inventory (STAI; Spielberger, 1983) is a twenty-item Likert-scale inventory that assesses how people generally feel. For each question participants respond on a scale ranging from 1 (Almost Never) to 4 (Almost Always). The TAI has a long history of use in the social sciences, including sport psychology, and has been reported to have a strong internal consistency ($r = .90$), and test-retest reliability ($r = .75$ across 104 days) (Spielberger, 1983). In the current study the TAI was used to assess whether or not trait anxiety is associated with level of fan identification.

Positive and Negative Affect Schedule

The Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) is a brief 20-item inventory that assesses two dimensions of mood, positive affect (PA) (i.e., the degree to which an individual feels excited, alert, etc) and negative affect (NA) (i.e., the degree to which an individual feels upset, nervous, etc). The two 10-item orthogonal scales (i.e., PA

and NA) that constitute the PANAS are both internally consistent (Cronbach's $\alpha = .88$ (PA) and Cronbach's $\alpha = .87$ (NA)) and valid. Although the PANAS can be used to assess mood across various time periods (e.g., momentary, daily, weekly, yearly), the general directions (i.e., "indicate to what extent you generally feel this way, that is, how you feel on average") were used for this application.

Behavioral Inhibition System / Behavioral Activation System Scales

The Behavioral Inhibition System / Behavioral Activation System Scales (BIS/BAS; Carver & White, 1994) is a 24-question, four-scale inventory, developed to assess differences in personality related to variations in the sensitivity of two motivational systems, behavioral inhibition (BIS) (i.e., aversive motivation – avoid something unpleasant) and behavioral activation (BAS) (i.e., appetitive motivation – approach something that is desired). Specifically, the single BIS scale is concerned with responsiveness to cues of punishment and anxiety, whereas the three BAS scales focus on: drive (i.e., persistence toward goal attainment), fun seeking (i.e., desire for new rewards), and reward responsiveness (i.e., positive reactions to actual rewards or the anticipation of a reward). The behavioral inhibition and behavioral activation systems were explored to further understand the relationship between personality (i.e., anxiety and impulsivity) and fandom, as well as the relationship between state motivational orientation and trait system activation.

Beck Depression Inventory

The Beck Depression Inventory (BDI; Beck & Steer, 1987) is a 21-item inventory with high internal consistency (Cronbach's $\alpha = .81$ for nonpsychiatric patients; Beck, Steer, & Carbin, 1988) and acceptable concurrent validity ($r = .60$ to $.74$ with nonpsychiatric patients; Beck et al., 1988) that measures the typical symptoms and manifestations of depression (e.g., sadness, guilt,

sense of failure). For each item of the inventory, participants read a group of four statements and select the one statement that best describes the way that he/she has been feeling in the past week. Statement values range from zero to three and the responses for all 21-items are tallied to calculate an overall BDI score. It is suggested that scores ranging from five to thirteen are “normal” (i.e., no or minimal depression), whereas scores greater than or equal to 14 may be indicative of some form of depression (i.e., 14-19 = mild, 20-28 = moderate, and 29-63 = severe) (Groth-Marnat, 2003).

Movement Imagery Questionnaire-Revised

The Movement Imagery Questionnaire-Revised (MIQ-R; Hall & Martin, 1997) is an eight-item inventory designed to assess an individual’s ability to see (visual imagery) and feel (kinesthetic imagery) movements. For each question, the participant is instructed to produce a described movement and then to either feel or see themselves executing that same movement again, without actually moving. The participant then rates the ease/difficulty with which the image was created using a 1 (very hard) to 7 (very easy) Likert scale. Scores from each of the dimensions are summed to provide an index of visual and kinesthetic imagery ability.

Visual analog scales

Two visual analog scales were developed to assess immediate affective experiences following the emotional imagery sessions. Visual analog scales are brief, simple scales that place minimal cognitive demands on the respondent and minimally disrupt the completion of other tasks. The scales are 100 unit horizontal lines without unit markers and include anchor words at each end to identify the maximal and minimal levels of the state being assessed (Brown, 1994). Descriptive anchors (sad-happy, angry-calm) (Crisp et al., 2007) were selected to capture how the participants are feeling at a given instance (Figure 3-1). Scores on the scale range from zero to 100, with the scores increasing in value from left to right along the scale.

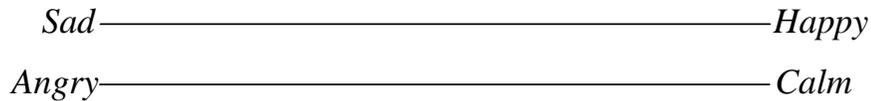


Figure 3-1. Visual analog scales.

Experimental Stimuli and Task

Emotional imagery scripts

Personalized, script driven imagery has been used successfully to evoke emotion and affective responses (e.g., Miller, Patrick, & Levinson, 2002; McNally, Lasko, Clancy, Macklin, Pitman, & Orr, 2004; Velasco & Bond, 1998). In the typical design, participants provide a detailed description of a situation they have previously experienced, emphasizing the sensations and feelings they had during the actual experience. In the current study, participants were asked to identify their three best and two worst experiences as a University of Florida fan from a list of 33 team wins and 18 team losses representing championships, rivalries, and other significant competitions. The participant also had the option of selecting games not provided on the lists by simply providing the year of the game, the opponent, and outcome. For each game, participants were prompted to identify their thoughts and feelings they experienced during the game, as well as any other information they deem relevant to their experience. Based on the information provided and game descriptions acquired from University of Florida Athletic Association press releases, a total of five scripts were developed for each participant, with scripts across participants being matched in length (30-seconds) and quality (5 stimulus and 5 response propositions). All scripts were read and recorded by the primary researcher for playback in the laboratory to induce two pleasant conditions, two unpleasant conditions, and one pleasant-expectancy condition (see Appendix B for sample scripts). Visual analog scale ratings were used as a manipulation check.

Stroop task

The classic Stroop task (Friedman & Förster, 2005; Stroop, 1935) is a measure of attentional flexibility (i.e., *the ease with which one is able to shift focus*). In this task, participants are presented with color words that are printed in variety of ink colors and are asked to identify the color ink that the word is printed in rather than the word itself. Because the typical response is to read the printed word, participants must shift their task focus to naming to the ink color when the word and ink are incongruent. With that said, the task of naming the ink color is easier when attention is more flexible (i.e., better ability to shift between attending to the meaning of the word and the color of the text). This increased flexibility promotes faster response times to stimuli that are incongruent.

In the current study, a modified Stroop task was created in which four color words (red, blue, green, yellow) were each presented 12 times, with the ink color and word meaning matching on half the trials. On the remaining trials the word meaning and ink color were incongruent (e.g., the word “blue” was printed in red ink). All color words were displayed in each incongruent color twice. Additionally, eight catch trials (i.e., “XXXX”) were included, with each ink color being presented twice. Participants identified the ink color of the stimulus using the “V” (red), “B” (yellow), “N” (green), and “M” (blue) keys on the keyboard that were labeled with each color word printed in black ink. Each trial was preceded by a centrally positioned fixation cross that was presented for 500ms and each color word remained on the screen until a response was made. A program run on the E-Prime 2.0 Professional platform (Psychology Software Tools, Inc., Pittsburgh, PA) managed stimulus presentation and data collection.

Global-local target detection task

Breadth of attention was assessed using composite stimuli that consist of large letters formed by smaller letters. In the task, participants were asked to respond as quickly as possible

to the presence of target letter, which was presented within a composite stimulus (i.e., a large letter formed by smaller letters) (Förster et al., 2006; Gable & Harmon-Jones, in press; Navon, 1977). Under “normal” processing conditions, global features are processed more quickly than local features, yet motivational state (approach-avoidance) has been shown to alter attentional focus and the processing hierarchy. In general, approach (i.e., pleasant) states promote a global focus (i.e., attending to more general information), whereas avoidance (i.e., unpleasant) states promote a more narrow scope of attention (i.e., attending to more specific details) (Förster et al., 2006; Gasper & Clore, 2002). However, *high* approach motivational states (i.e., states tied to *active* goal attainment) have been associated with a reduced scope of attention, as Gable and Harmon-Jones (in press) suggest that information not relevant to goal attainment must be disregarded.

In the current study, a program running on the E-Prime 2.0 Professional platform (Psychology Software Tools, Inc., Pittsburgh, PA) randomly presented participants with 32 global-local target detection trials. A centrally positioned fixation cross was presented for 500ms and signaled the impending stimulus presentation. One of eight composite letters then replaced the fixation cross and participants were instructed to identify as quickly and accurately as possible if the stimulus contained the letter “H” or the letter “L”, whether globally or locally portrayed, by pressing the corresponding letter on the keyboard. Global targets are those in which the “H” or “L” was composed of an arrangement of smaller letters (“T” or “F”) and local targets are those where the large “T” or “F” was made up of smaller letters (“H” or “L”) (see Figure 3-1). Sixteen local and 16 global trials were randomly presented. Faster responses to the global targets indicate a broader, more global focus, whereas faster responses to the small (i.e.,

local) targets reflect a more narrow attentional focus (Förster et al., 2006; Gable & Harmon-Jones, in press).

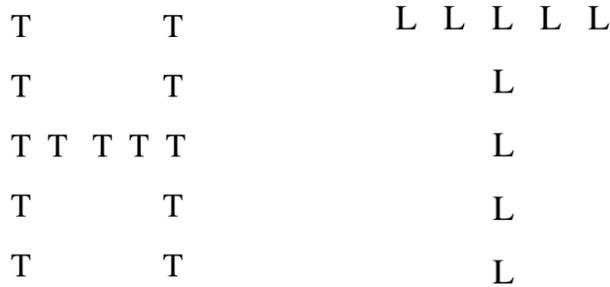


Figure 3-1. Example of composite stimuli depicting global (left) and local (right) targets.

Procedure

Participants were recruited from the University of Florida and the surrounding local community and directed to a secure website that contained the informed consent document and questionnaires. Upon providing consent (see Appendix C), participants electronically completed a demographic questionnaire, SSIS, SFQ PANAS, BIS/BAS, BDI, and MIQ-R (see Figure 3-2). They then were asked to briefly describe their three best (i.e., most pleasant) and two worst (i.e., most negative/ unpleasant) experiences as a University of Florida football fan and rate how they feel when they think about the selected game using the two VAS. Following completion of the initial assessment, a second, laboratory-based session was scheduled.

Upon entering the laboratory for the second session, participants were escorted to a designated testing room and were seated comfortably in front of a 19-inch Dell Ultra Sharp flat panel monitor (Dell Inc., Austin, TX) and Dell Optiplex GX620 computer (Pentium D processor; Dell Inc., Austin, TX) equipped with a standard keyboard and mouse. Once acclimated, participants were introduced to the two VAS and were instructed to indicate how they felt at that moment (see Figure 3-2). These ratings served as baseline affective data. Next, the Stroop and global-local target detection tasks were described and participants were provided with 32 global-

local target detection practice trials and 56 Stroop practice trials (i.e., one trial block of each task) administered via E-Prime 2.0 Professional software (Psychology Software Tools, Inc., Pittsburgh, PA) to familiarize themselves with the task demands. After successful completion of the practice phase, the task sequence was randomized and counterbalanced across participants (see Figure 3-2).

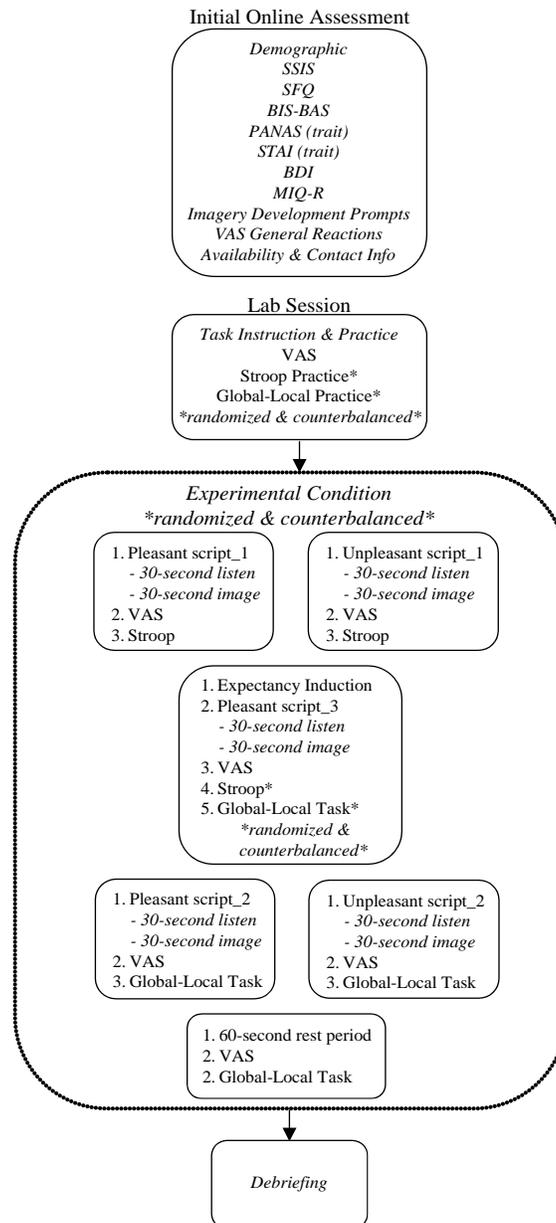


Figure 3-2. Experimental design.

In the experimental portion of the laboratory session, participants were instructed to carefully listen to a 30-second audio recording that described one of their personal (pleasant/unpleasant) experiences as a University of Florida football fan (listening stage), and create a vivid mental representation of the experience while listening to the narrative. Following the 30-second listening stage, participants were prompted to again mentally recreate the experience as vividly and accurately as possible for another 30-second period (imaging stage) (McNally et al., 2004; Velasco & Bond, 1998). A tone sounded at the conclusion of the imaging stage and participants immediately rated their current affective state (i.e., anger, sadness, happiness) using the VAS. After their ratings were given, participants were presented with either the global-local target detection task or the Stroop task. Task presentation was randomized and counterbalanced across participants. This sequence was repeated three times, with the participant completing both the global-local target detection and Stroop tasks twice, with each trial block being paired with a new pleasant and unpleasant narrative. Participants were also presented with two neutral conditions that did not contain emotional imagery prompts, but instead allowed participants to rest quietly for 60-seconds prior to completing the VAS and subsequent task. These two conditions were randomly integrated into the experimental sequence. Finally, participants were randomly presented with an electronic message notifying them that after completing the next two tasks, they would be asked to share “what it means to be a Gator football fan” and that responses from all study participants would to be compiled and provided to the University’s Athletic Association to be used in a new marketing campaign launching in the fall. Moreover, they were informed that the author of the entry which best captured the Gator spirit would receive two tickets to a friends and family team dinner. Participants were then presented with a third pleasant narrative (i.e., the expectancy condition) that was immediately

followed by a 30-second imaging stage, completion of the VAS, the Stroop task, the global-local target detection task (task order was randomized and counterbalanced across participants), and the opportunity to draft a statement addressing what it means to be a Gator football fan. Once the participant completed all six experimental conditions, they were debriefed and any questions were answered (see Figure 3-2).

CHAPTER 4
RESULTS

I assessed changes in attentional breadth and flexibility among high and low identified fans to identify affective and behavioral consequences associated with team identification and competition outcome. One hundred and forty-three participants (111 females and 32 males) completed the online assessments, and then participated in the follow-up laboratory session. Only data from participants with low (SSIS 3 - 5; $N = 32$ [3 males, 29 females]) and high (SSIS > 6 ; $N = 73$ [23 males, 50 females]) levels of identification with the University of Florida football team were retained for subsequent analysis. These two remaining groups were significantly different in their level of reported team identification ($F(1, 104) = 419.20, p < .001$; see Table 4-1).

Table 4-1. Descriptive statistics and results of univariate analysis of variance of self-report measures. Asterisks (*) denote significant differences ($p < .05$) between groups.

Measure	Low ID	High ID	Statistics
Age	20.97 (2.02)	20.81 (2.30)	$F(1, 104) = .117, p = .73$
SSIS	4.25 (.61)	6.95 (.63)	$F(1, 104) = 419.20, p < .001^*$
Years a Fan	4.00 (3.09)	7.45 (6.31)	$F(1, 104) = 8.60, p = .004^*$
SFQ	3.72 (1.40)	6.38 (1.34)	$F(1, 104) = 86.07, p < .001^*$
STAI	39.50 (8.07)	37.85 (6.68)	$F(1, 103) = 1.19, p = .28$
BDI	6.28 (5.59)	5.86 (4.31)	$F(1, 103) = .17, p = .68$
Drive	2.88 (.53)	2.91 (.60)	$F(1, 103) = .07, p = .80$
Fun	3.16 (.41)	3.22 (.54)	$F(1, 103) = .31, p = .58$
Reward	3.59 (.34)	3.61 (.30)	$F(1, 103) = .12, p = .73$
BIS	2.96 (.44)	2.93 (.44)	$F(1, 103) = .10, p = .75$
PA	34.8 (5.40)	36.59 (5.25)	$F(1, 103) = 2.50, p = .12$
NA	19.75 (6.63)	18.22 (5.02)	$F(1, 103) = 1.69, p = .20$
Kinesthetic	5.18 (1.55)	5.24 (1.34)	$F(1, 103) = .05, p = .83$
Visual	5.66 (1.13)	5.95 (.95)	$F(1, 103) = 1.82, p = .18$

Psychological Variables

High and low identified fans were assessed for general psychological well-being as indexed by trait anxiety (STAI), depressive symptomology (BDI), approach-avoidance tendencies (BIS-BAS), and affect (PANAS). Group differences were compared using a multivariate analysis of variance (MANOVA) to minimize Type I Error (Schutz, Smoll, & Gessaroli, 1983). The Box's Test was not significant, indicating that the assumption of homogeneity of variance was met ($F(36, 13063.1) = 1.37, p = .07$). An overall significant difference was not found between high and low identified fans on measures of personal psychological well-being (Wilk's Lambda = .96, $F(8, 96) = .51, p = .85, \eta^2 = .04$: see Table 4-1). However, to account for variance attributed to level of general sport fandom, the number of years as a fan of the target team or to any of psychological variables of interest (e.g., trait anxiety, depressive symptomology, general affect), covariate analyses were also conducted for the dependent measures of attentional flexibility (i.e., response time to incongruent Stroop conditions) and breadth (i.e., response time to global and local targets). The application of covariate analyses are susceptible to reduction in cell size due to listwise deletion resulting from response omission. However in the current study, the covariate analyses were not compromised because complete response sets were recorded across participants.

Changes in Emotion

The ability of participants to create vivid and realistic images depicting five personal experiences as a University of Florida football fan was crucial to the experimental design as mental imagery was the means for evoking team relevant affective responses. Researchers (e.g., Callow, Hardy, & Hall, 2001; Callow & Waters, 2005) have recommended that a score of four or greater on each subscale of the MIQ-R is necessary in order to demonstrate adequate imagery ability requisite for effective imagery based interventions. Participants in the current study

reported acceptable visual ($M = 5.86, SD = 1.01$) and kinesthetic ($M = 5.22, SD = 1.40$) imagery ability, suggesting a relative ease in being able to see and feel imagined movements. A multivariate analysis of variance (MANOVA) indicated that high and low identified fans reported similar kinesthetic and visual imagery abilities (Wilks' Lambda = .98, $F(2, 102) = .95, p = .39$; see Table 4-1) as measured by the MIQ-R (Hall & Martin, 1997). Additionally, a 2 (identification: low, high) x 4 (condition: neutral, pleasant, expectancy, unpleasant) mixed model multivariate analysis of variance (MM MANOVA) was conducted as a manipulation check to ensure that the personal imagery scripts were effective in inducing distinct pleasant and unpleasant emotional states among high and low identified fans. Significant differences in affect were noted across conditions (Wilks' Lambda = .33, $F(6, 96) = 32.46, p < .001, \eta^2 = .67$). Significant differences were noted for both anger ($F(3, 303) = 78.78, p < .001, \eta^2 = .44$) and sadness ($F(3, 303) = 124.53, p < .001, \eta^2 = .55$) across conditions. A series of follow-up paired samples *t*-tests with adjusted alpha levels ($\alpha = .008$) to prevent inflation of the Type I error rate were used to identify affective differences (Liu, 2002). Pairwise analyses revealed increased anger and sadness (i.e., lower VAS scores) following the unpleasant condition compared with the neutral, pleasant, and expectancy conditions ($p < .001$) (Figure 4-1). No significant differences in anger or sadness were noted between the neutral and pleasant or expectancy conditions ($p > .30$).

The multivariate analysis did not reveal a significant identification x condition interaction (Wilks' Lambda = .93, $F(6, 96) = 1.27, p = .28, \eta^2 = .07$), nor was there a significant main effect for identification (Wilks' Lambda = .98, $F(2, 100) = .40, p = .84, \eta^2 = .02$). However a significant identification x condition interaction was noted for sadness ratings ($F(3, 303) = 3.28, p = .02, \eta^2 = .03$), indicating that highly identified fans reported lower levels of sadness (i.e.,

higher VAS scores) following neutral, pleasant, and expectancy conditions, yet reported greater levels of sadness following unpleasant conditions, compared to low identified fans (Figure 4-2).

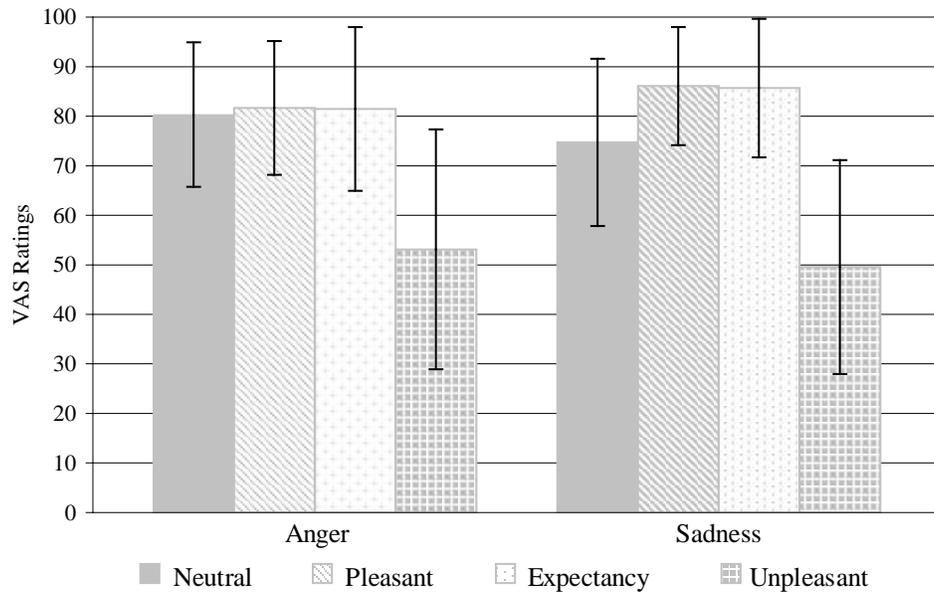


Figure 4-1. VAS ratings by condition across participants.

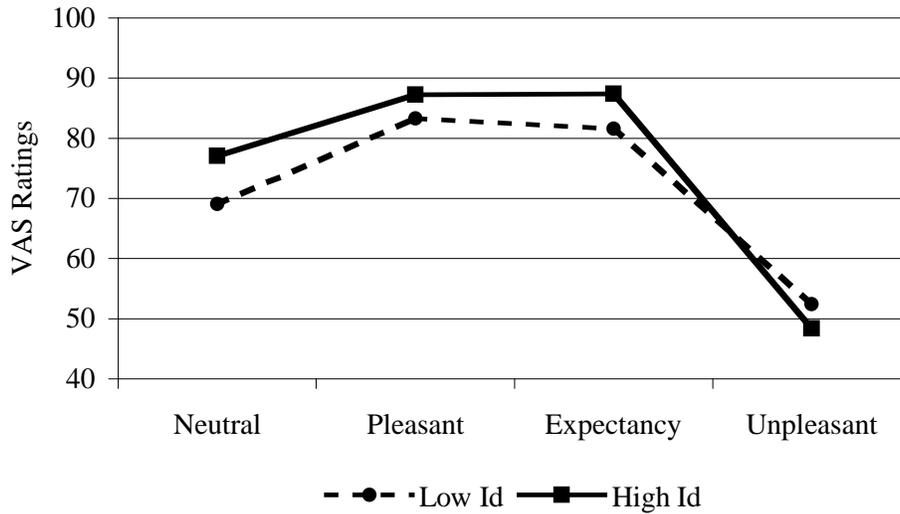


Figure 4-2. Identification by condition VAS sadness ratings.

Changes in Attention

Stroop Task

An initial 2 (identification: low, high) x 4 (condition: neutral, pleasant, expectancy, unpleasant) mixed model analysis of variance (MM ANOVA) was conducted to assess changes

in attentional flexibility among fans with varying levels of identification across various affective conditions. Only data for accurate responses were included in the analysis and a minimum of 80% accuracy was required. The mean response accuracy across affective conditions was 96.43% and data from two participants were removed from the analysis. The response times to incongruent stimuli met the assumption of sphericity ($\chi^2(5) = 11.17, p = .05$), therefore no adjustments were necessary. The identification x condition interaction was not significant ($F(3, 300) = .24, p = .87, \eta^2 = .002$) and the response times did not vary across the four conditions ($F(3, 300) = .31, p = .82, \eta^2 = .003$), indicating that attentional flexibility was not influenced by the participants' affective state. Moreover, Stroop task performance did not vary as function of level of identification ($F(1, 100) = .83, p = .37, \eta^2 = .008$; Figure 4-3).

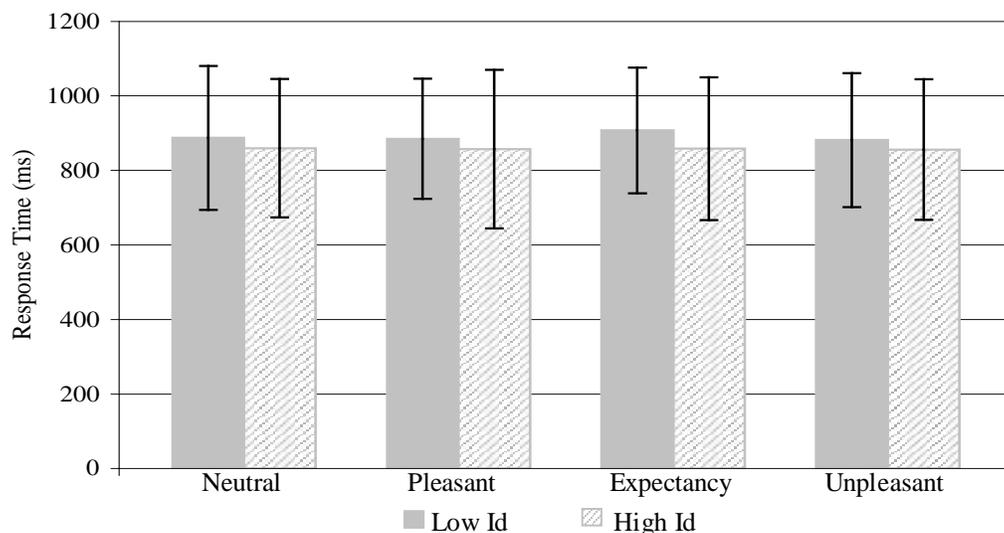


Figure 4-3. Stroop task response times on incongruent trials.

When controlling for participants' general level of sport fandom (i.e., SFQ) through a repeated measures analysis of covariance (RM ANCOVA), however, a significant condition main effect ($F(3, 297) = 3.22, p = .02, \eta^2 = .03$) and condition x identification interaction ($F(3, 297) = 2.73, p = .04, \eta^2 = .03$) emerged (Figure 4-4). The significant interaction was followed up by a series of 2 (identification) x 2 (condition) RM ANCOVAs, each with an alpha level adjusted

to .008 in order to prevent the inflation of Type I error. A significant interaction was noted for the pleasant-expectancy comparison, indicating that low identified fans responded faster to incongruent Stroop stimuli following the pleasant condition (i.e., demonstrated greater attentional flexibility), whereas highly identified fans responded faster following the expectancy condition ($F(1, 101) = 7.57, p = .007, \eta^2 = .07$). Additionally, the neutral-unpleasant analysis produced a significant condition main effect ($F(1, 102) = 7.65, p = .007, \eta^2 = .07$), demonstrating that the unpleasant condition evoked greater attentional flexibility (i.e., reduced response times) across participants, compared to the neutral condition.

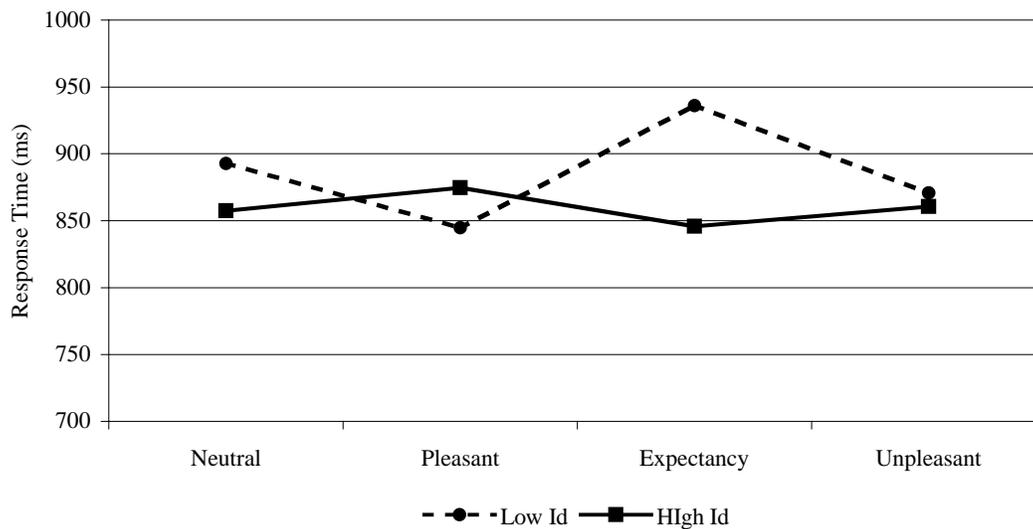


Figure 4-4. Stroop task performance marginal means by condition accounting for SFQ.

No significant differences in Stroop task performance were noted within or between groups when accounting for the covariates of general anger, state anger, general sadness, state sadness, trait anxiety, positive affect, negative affect, or years as a fan of the target team.

Global-Local Target Detection Task

An initial 2 (identification: low, high) x 4 (condition: neutral, pleasant, expectancy, unpleasant) mixed model multivariate analysis of variance (MM MANOVA) was conducted to

assess if high and low identified fans' breadth of attention changed under varying emotional states. Response times to the presence of global and local targets were used to index breadth of attention. Only data for accurate responses were included in the analysis and a minimum of 80% accuracy was required. The mean response accuracy across affective conditions was 98.14% for global targets and 98.29% for local targets and data from one participant was removed from the analysis.

Task performance on the global-local target detection task did not vary as a function of condition (Wilks' Lambda = .97, $F(6, 97) = .44, p = .85, \eta^2 = .03$: see Figure 4-5) or identification (Wilks' Lambda = .96, $F(2, 101) = 1.93, p = .15, \eta^2 = .04$: see Figure 4-6). The identification x condition interaction (Wilks' Lambda = .92, $F(6, 97) = 1.42, p = .22, \eta^2 = .08$) was also non-significant (Figure 4-7).

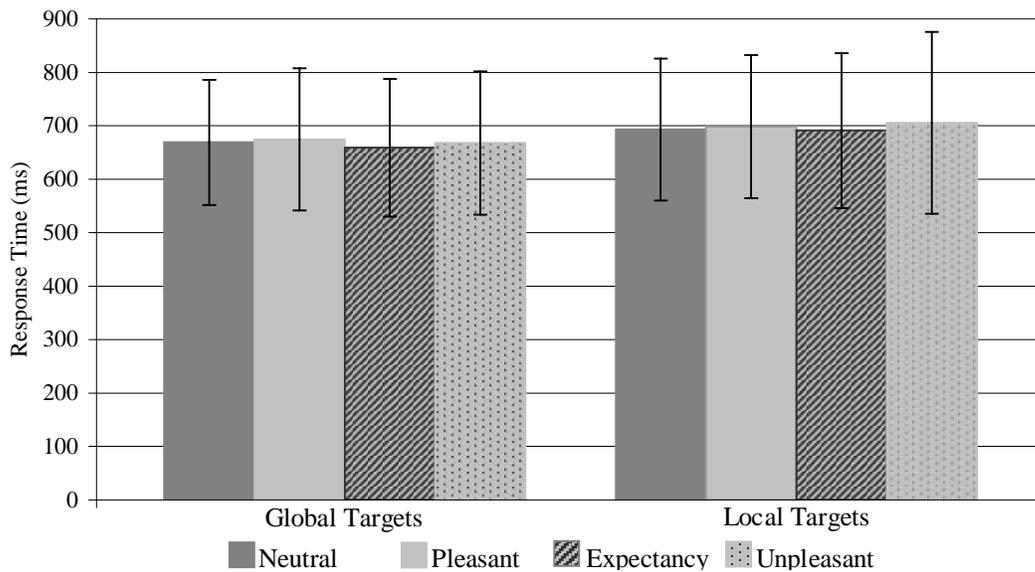


Figure 4-5. Global and local target detection response times by condition.

Significant differences, however, were found both between and within groups across several of the repeated measures multivariate analyses of covariance (RM MANCOVA). First, when accounting for general level of fandom (i.e., SFQ), a significant condition main effect

emerged for both global ($F(3, 303) = 2.87, p = .037, \eta^2 = .028$) and local ($F(3, 303) = 2.71, p = .045, \eta^2 = .026$) response times across participants (Figure 4-8). Follow-up analyses, with adjusted alpha levels ($\alpha = .008$), only revealed significant differences on local target detection times between the neutral and pleasant conditions ($F(1, 102) = 8.96, p = .003, \eta^2 = .081$), with faster response times being evident following the neutral condition.

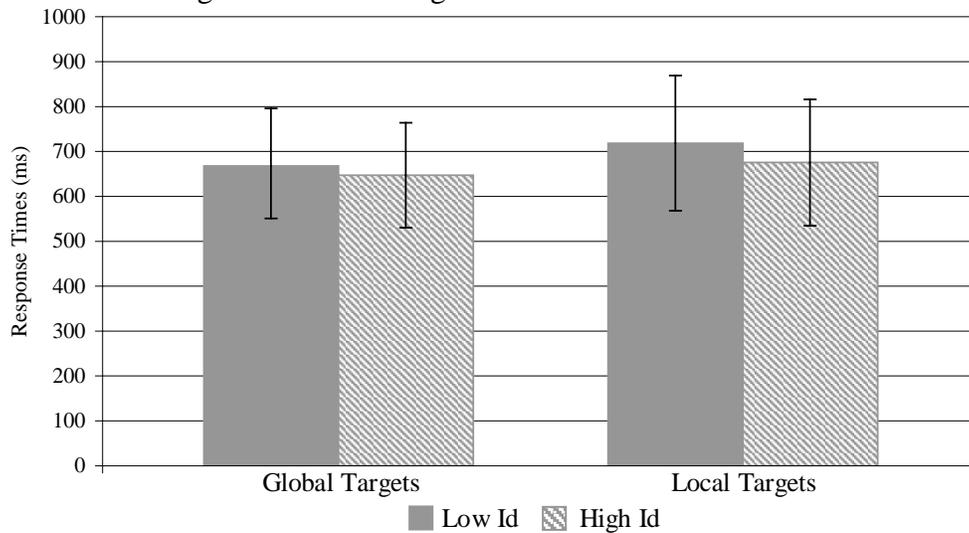


Figure 4-6. Global and local target detection response times by identification.

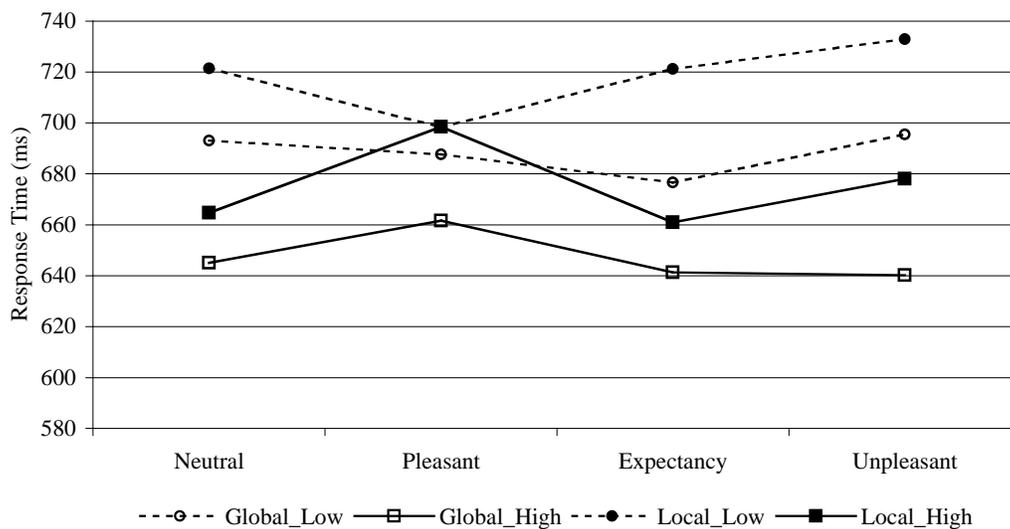


Figure 4-7. Condition by identification global-local target detection task performance.

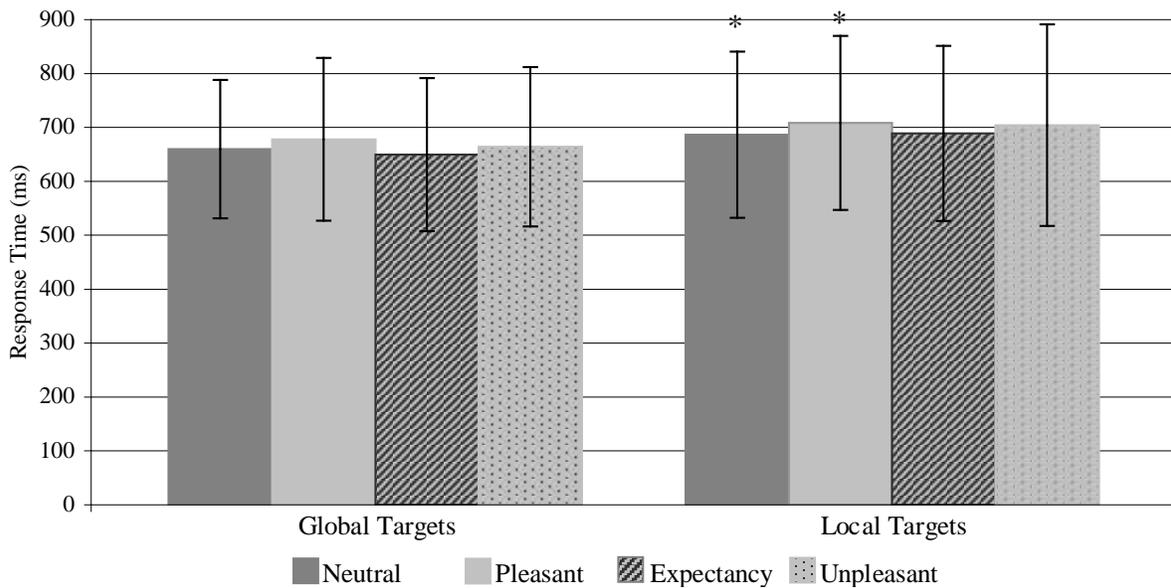


Figure 4-8. Global-local task performance marginal means by condition accounting for SFQ. Asterisks (*) denote significant differences ($p < .008$) between conditions.

Next, taking into consideration the number of years that participants were a fan of the target team, a significant identification main effect emerged for local task performance across affective conditions ($F(1, 101) = 4.41, p = .038, \eta^2 = .042$; Figure 4-9). Highly identified participants responded significantly faster to the local targets than their less identified counterparts, indicating a more narrow scope of attentional focus.

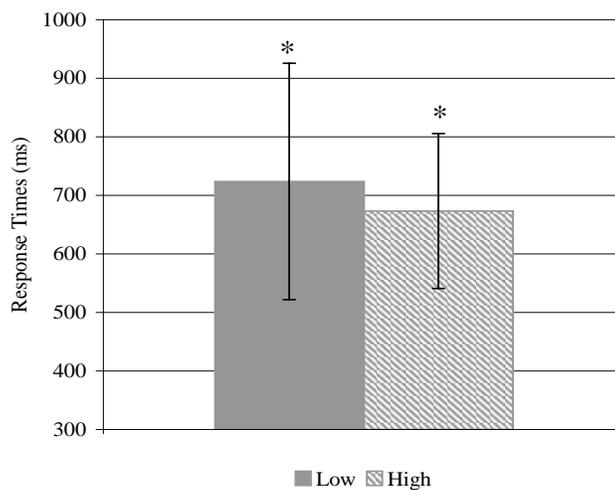


Figure 4-9. Local task performance marginal means by identification accounting for number of years a fan. Asterisks (*) denote significant differences ($p < .05$) between groups.

Additionally, when accounting for participants' state level of anger, as well as state level of sadness, significant differences emerged between high and low identified fans across conditions on global (anger: $F(1, 101) = 4.32, p = .040, \eta^2 = .041$: Figure 4-10; sadness: $F(1, 101) = 4.63, p = .034, \eta^2 = .044$: Figure 4-11) and local target detection times (anger: $F(1, 101) = 4.12, p = .045, \eta^2 = .039$: Figure 4-10; sadness: $F(1, 101) = 4.46, p = .037, \eta^2 = .042$: Figure 4-11) with less identified fans demonstrating an overall delayed response time to both targets compared to highly identified fans. Finally, when negative affect was used a covariate, a significant main effect for identification was evident for global task performance ($F(1, 101) = 4.13, p = .045, \eta^2 = .039$), with high identified fans responding faster than their less identified counterparts (Figure 4-12).

The analyses that included the covariates of general anger, general sadness, trait anxiety, and positive affect were not significant.

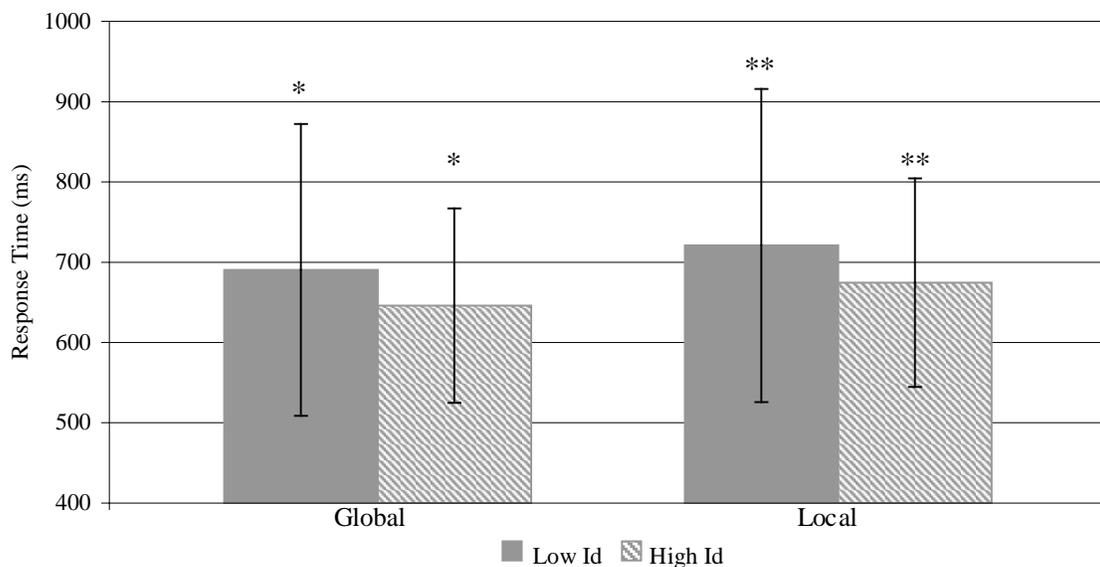


Figure 4-10. Global-local task performance marginal means by identification accounting for state level of anger. Asterisks (* and **) denote significant differences ($p < .05$) between groups.

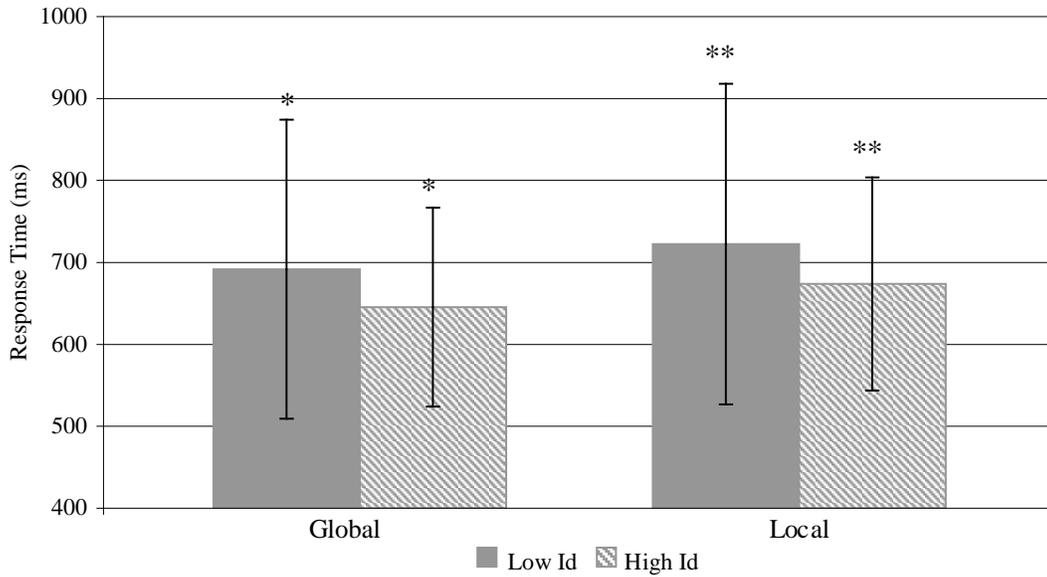


Figure 4-11. Global-local task performance marginal means by identification accounting for state level of sadness. Asterisks (* and **) denote significant differences ($p < .05$) between groups.

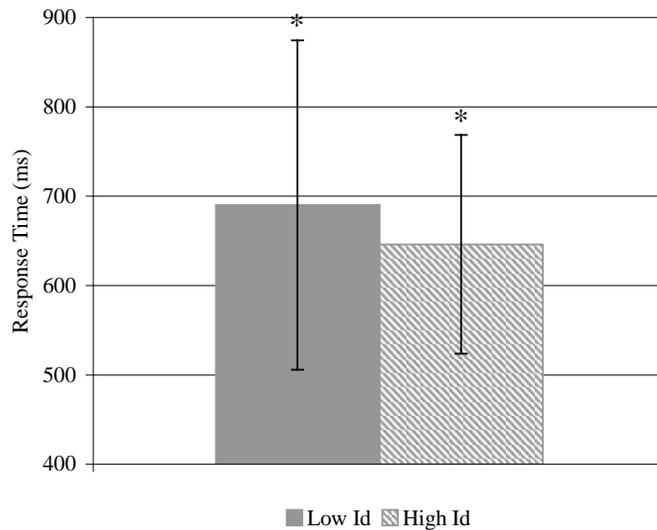


Figure 4-12. Global task performance marginal means by identification accounting for general negative affect. Asterisks (*) denote significant differences ($p < .05$) between groups.

Supplemental Exploratory Analyses

Several supplementary analyses were conducted to explore other factors that may have influenced attentional breadth and flexibility.

Temporal Effects

To ensure that the affective changes induced by the emotional imagery scripts did not dissipate over the course of the task and thereby promote additional attentional changes, each task was divided into eight trial blocks, with each Stroop task consisting of three trials and each global-local target detection task consisting of two trials. Trial block data was not available for the expectancy condition due to limitations in the coding script used in E-Prime, therefore the following analyses of temporal effects only examine differences among the neutral, pleasant, and unpleasant conditions.

Stroop task performance across trial blocks

A 2 (identification: low, high) x 8 (trial block: 1 - 8) x 3 (condition: neutral, pleasant, unpleasant) mixed model analysis of variance (MM ANOVA) was conducted to assess fluctuations in Stroop task performance. The condition data met the assumption of sphericity, therefore no adjustments were necessary ($\chi^2(2) = 4.05, p = .13$). The assumption of sphericity, however, was not met for the trial block or condition x trial block interaction data (trial block: $\chi^2(27) = 41.38, p = .04$; condition x trial: $\chi^2(104) = 189.47, p < .001$), therefore the Greenhouse-Geisser adjustment was used. The only significant difference that emerged was the identification x trial block x condition interaction ($F(10.65, 1043.68) = 2.32, p = .009, \eta^2 = .023$). This three-way interaction was followed up with individual 2 (identification) x 8 (trial block) mixed model analysis of variance (MM ANOVA) for each affective condition to isolate if the identification x trial block interaction varied across affective condition. The assumption of sphericity was violated for trial block data for both the neutral ($\chi^2(27) = 89.46, p < .001$) and pleasant ($\chi^2(27) = 60.40, p < .001$) conditions, therefore the Greenhouse-Geisser adjustment was used. Significant identification x trial block interactions were evident for both the neutral ($F(5.24, 529.53) = 2.21,$

$p = .049, \eta^2 = .021$) and unpleasant ($F(7, 693) = 2.54, p = .014, \eta^2 = .025$) conditions (Figures 4-13 and 4-14, respectively). Based on the plotted data, high and low identified fans' Stroop task performance with both the neutral and unpleasant conditions were analyzed with a series of one-way analysis of variance with adjusted alpha levels ($\alpha = .01$). No significant differences in response time were noted between high and low identified fans during the neutral condition on trial blocks 1, 5, 6, 7, and 8 ($p > .01$) or between the groups during the unpleasant condition on trial blocks 2, 3, 5, 7, and 8 ($p > .01$).

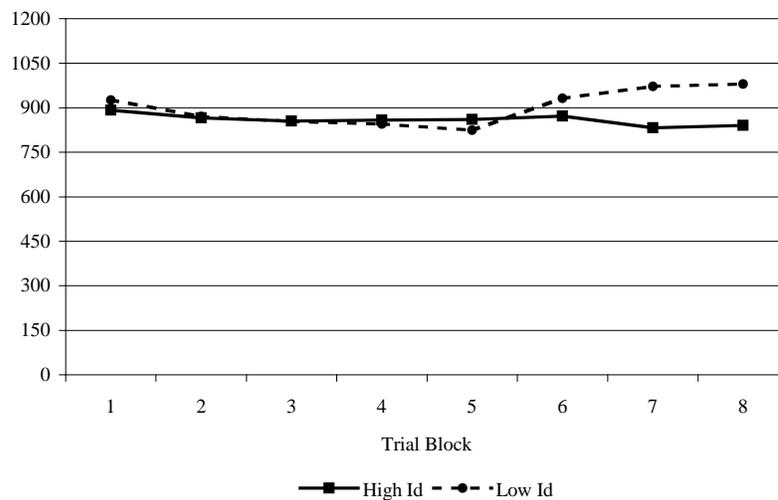


Figure 4-13. High and low identified fan's Stroop task response times during the neutral condition across trial blocks.

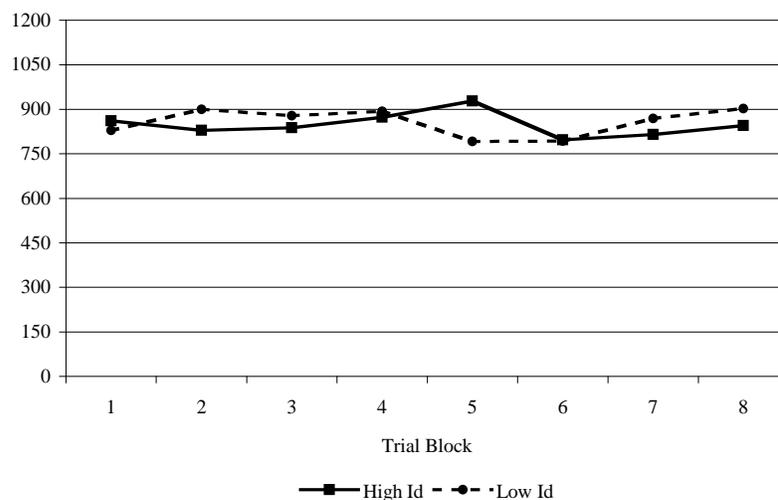


Figure 4-14. High and low identified fans' Stroop task response times during the unpleasant condition across trial blocks.

Global-local task performance across trial blocks

A 2 (identification: low, high) x 8 (trial block: 1 - 8) x 3 (condition: neutral, pleasant, unpleasant) mixed model multivariate analysis of variance (MM MANOVA) was conducted to assess fluctuations in global-local task performance. The multivariate analysis revealed a significant trial block main effect (Wilks' Lambda = .48, $F(14, 83) = 6.45, p < .001, \eta^2 = .52$), that was supported by significant univariate trial block main effects for both global ($F(7, 672) = 11.50, p < .001, \eta^2 = .11$) and local ($F(7, 672) = 11.16, p < .001, \eta^2 = .10$) task performance (Figure 4-15). Additionally, the identification x trial block interaction was significant for global task performance ($F(7, 672) = 2.14, p = .04, \eta^2 = .02$: Figure 4-16).

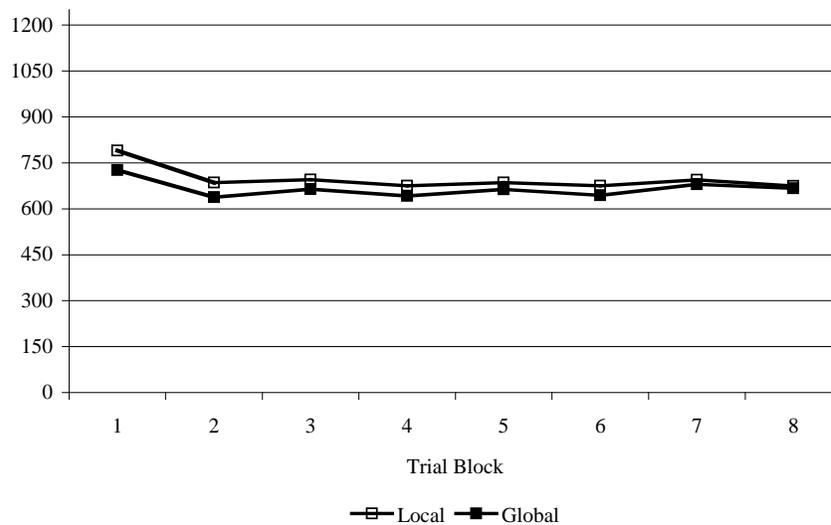


Figure 4-15. Response times by trial block to global and local stimuli across affective conditions.

Based on the trends evident in the plotted data, global task performance on trial blocks 1 and 2 were compared with performance on trial blocks 3 through 8 using pairwise analyses with adjusted alpha levels ($\alpha = .003$). Trial block 1 response times were significantly slower compared to all other trials blocks ($p < .001$), except for trial block 7 ($t(102) = 2.88, p = .005$).

Also, response times to global targets during trial block 2 were significantly faster than response times elicited during trial block 7 ($t(101) = -3.56, p = .001$).

Local task performance between trial block 1 and all other trial blocks was compared using pairwise analyses with adjusted alpha levels ($\alpha = .007$). Response times to local stimuli during trial block 1 were significantly slower than response times to local stimuli in all other trial blocks ($p < .001$).

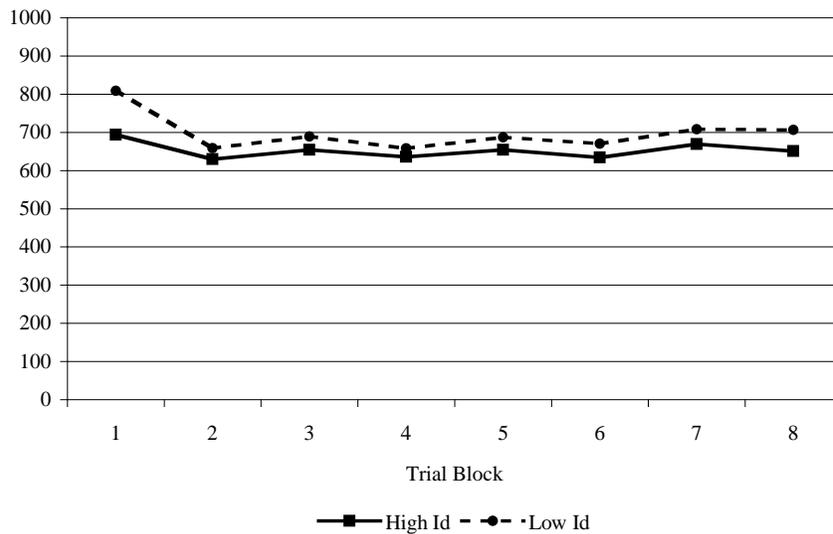


Figure 4-16. High and low identified fans' response times by trial block to global stimuli across affective conditions.

The significant identification x trial block interaction for global target detection was followed up with a series of eight one-way analyses of variance with adjusted alpha levels ($\alpha = .006$) comparing response times of high and low identified fans. No significant differences in the detection speed of global targets ($p > .009$) were noted between the groups for any of the eight trial blocks.

Anger

According to the original hypotheses, the specific negative emotion (i.e., sadness/anger) evoked by unpleasant team content was proposed to vary as a function of level of team

identification, and was hypothesized to be a significant factor in influencing motivational orientation and subsequent attentional changes. Therefore, participants were dichotomized according to the intensity of their anger response to unpleasant team scenarios. That is, all participants who reported some level of identification ($SSIS \geq 3$) with the target team were then classified according to their anger ratings ($VAS > 25 = \text{low anger}$, $VAS \leq 25 = \text{high anger}$). As predicted, those participants who reacted with more intense anger, also reported higher levels of team identification ($F(1, 135) = 21.16, p < .001$).

Anger reactivity and Stroop task performance

A 2 (anger: low, high) x 4 (condition: neutral, pleasant, expectancy, unpleasant) mixed model analysis of variance (MM ANOVA) was conducted to assess changes in attentional flexibility among participants with differing anger reactivity across affective conditions. The data met the assumption of sphericity ($\chi^2(5) = 9.19, p = .10$), therefore no adjustments were necessary. The anger x condition interaction was not significant ($F(3, 387) = 1.49, p = .22, \eta^2 = .01$), and the response times did not vary across the four conditions ($F(3, 387) = .34, p = .80, \eta^2 = .003$), indicating that attentional flexibility was not influenced by the participants' affective state (Figure 4-17). Stroop task performance did not vary as function of anger reactivity ($F(1, 129) = .86, p = .35, \eta^2 = .007$).

Anger reactivity and global-local target detection task performance

A 2 (anger: low, high) x 4 (condition: neutral, pleasant, expectancy, unpleasant) mixed model multivariate analysis of variance (MM MANOVA) was conducted to assess if participants with high and low anger tendencies experience changes in attentional breadth under varying emotional states.

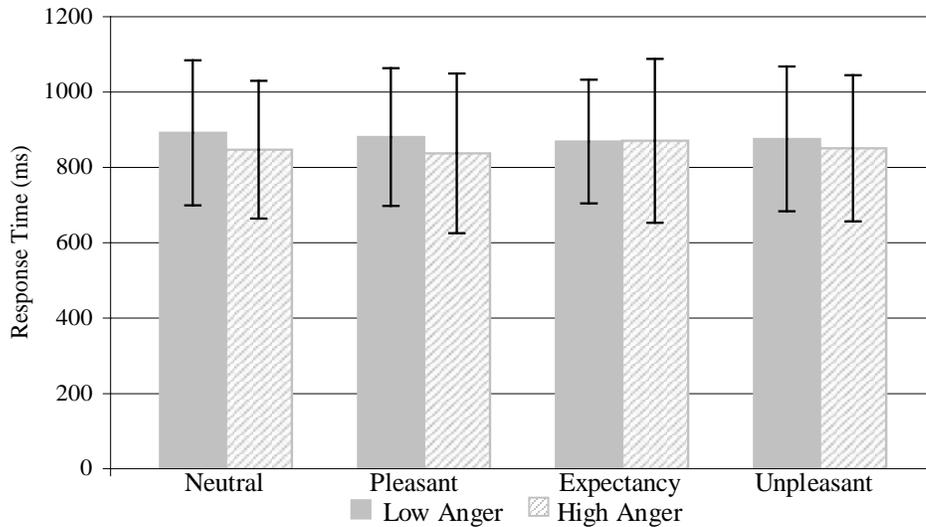


Figure 4-17. Anger group by condition Stroop task response times.

Task performance on the global-local target detection task did not vary as a function of condition (Wilks' Lambda = .97, $F(6, 124) = .62, p = .72, \eta^2 = .03$: Figure 4-18) or anger classification (Wilks' Lambda = .98, $F(2, 128) = 1.25, p = .29, \eta^2 = .02$: Figure 4-19). The identification x condition interaction (Wilks' Lambda = .93, $F(6, 124) = 1.56, p = .16, \eta^2 = .07$) was also non-significant.

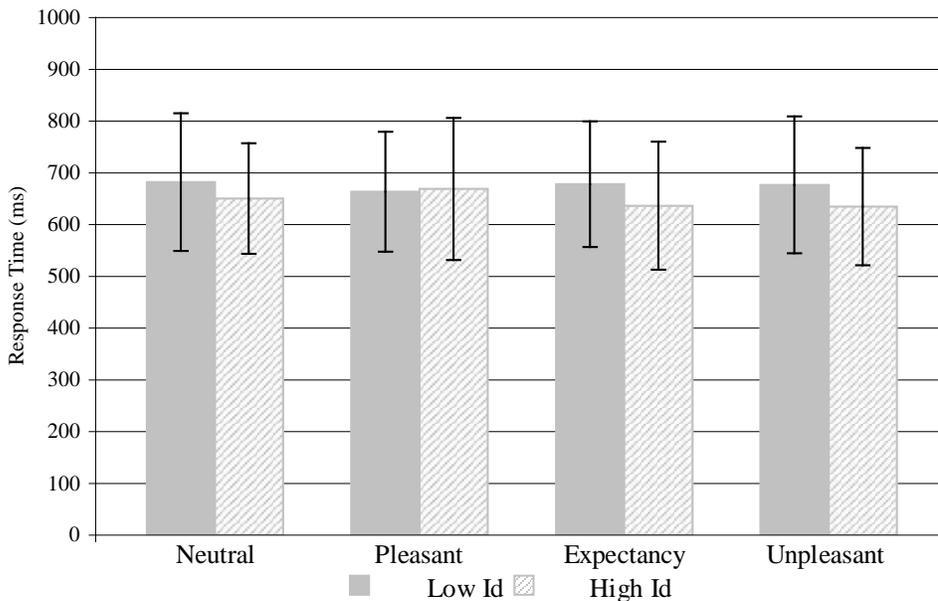


Figure 4-18. Anger group by condition global target detection task performance.

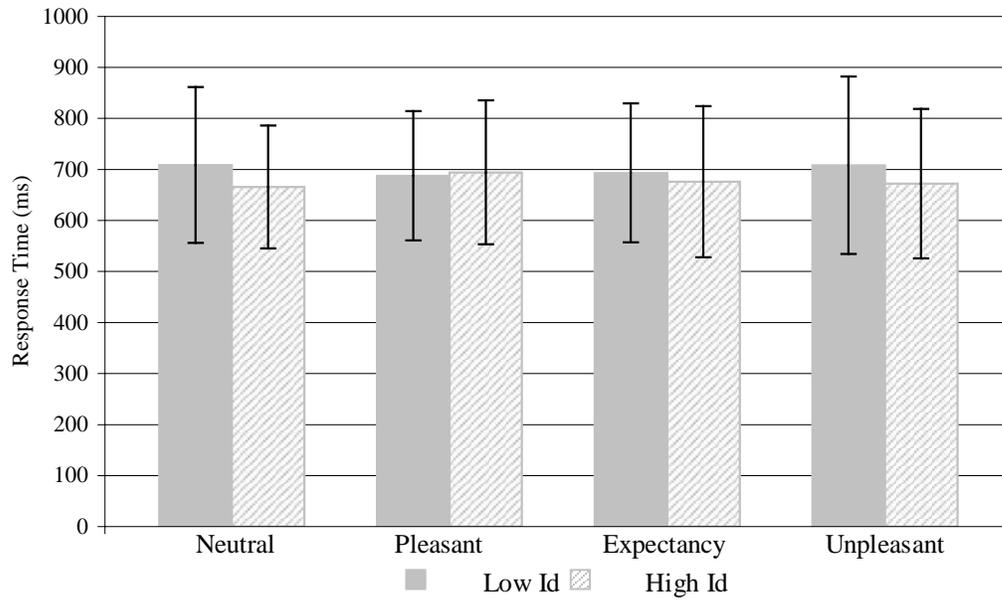


Figure 4-19. Anger group by condition local target detection task performance

CHAPTER 5 DISCUSSION

As the number of individuals identifying themselves as sport fans continues to surge, there becomes a heightened interest in understanding this population, with both the popular media and researchers attempting to understand the role of sport in contemporary life. To date, research has yielded data that has provided insight into the emotional experiences (e.g., Branscombe & Wann, 1991; Wann et al., 2003), cognitions (e.g., Hirt et al., 1992; Schweitzer et al. 1992), and behaviors (e.g., Wann et al., 2003) of highly identified fans. Yet, there has been minimal progress made in understanding the relationship among the elements that characterize high fan identification. In an effort to gain inferences toward the cognitive and affective mechanisms that underlie fan behavior, the primary purpose of this project was to empirically investigate fluctuations in attentional allocation among high and low identified fans as a function of the emotional state elicited following imagery of pleasant and unpleasant sport experiences. Specific findings are discussed, strengths and limitations of the investigation are addressed, directions for future research are proposed, and applied implications are suggested.

Review of the Findings

Psychological Variables

Both high and low identified fans demonstrated healthy psychological profiles that were not significantly different from each other. Specifically, both groups reported trait anxiety scores that were within the mean range of scores for college populations (Spielberger, 1983) and demonstrated minimal depressive symptomology (Groth-Marnat, 2003). Not only are these findings consistent with the work of Wann and colleagues (Wann et al., 2003; Wann et al., 2004; Wann, 2006a; Wann, 2006b), they further demonstrate that high and low identified fans do not

inherently differ in psychological health using previously ignored measures of personal psychological well-being (i.e., PANAS, STAI, and BDI).

Emotion Induction

The use of emotional imagery scripts was effective in altering participants' emotional states. Specifically, unpleasant memories increased all participants' rating of anger and sadness beyond their neutral state and the data showed a trend of reduced anger and sadness following both pleasant and expectancy conditions across participants as hypothesized. The participants' relatively positive affective state revealed during the neutral condition may have promoted a ceiling effect which mitigated statistical significance from emerging, as their neutral ratings considerably exceeded the midpoint on the visual analog scale. Previous research (e.g., Diener & Diener, 1996; Gasper & Clore, 2002) has found similar trends, with the typical mood of people being predominately positive.

It was unexpected that the level of identification did not interact with the affective condition to promote changes in ratings of anger. I hypothesized that the intense psychological connection highly identified fans have with the target team would influence the magnitude of their affective reactions while imaging, with the highly identified fans reporting more intense positive (i.e., higher VAS ratings) and negative (i.e., lower VAS ratings) emotions following the pleasant and unpleasant scripts, respectively. Highly identified fans did, however, report lower ratings of sadness following the neutral, pleasant, and expectancy conditions (i.e., they were happier than the less identified fans), and higher ratings of sadness following the unpleasant condition (i.e., they were more sad). These differences were not, however, statistically significant.

The comparable positive reactions among high and low identified fans were not surprising as previous research (e.g., Cialdini et al., 1976) has shown that both high and low identified fans

exhibit a tendency to bask in the reflected glory (i.e., BIRG), thereby reaping the benefits of team success (i.e., increased positive affect). Yet, the high and low identified fans were hypothesized to experience distinct negative emotions following exposure to unpleasant scenarios (e.g., Branscombe & Wann, 1992; Crisp et al., 2007; Wann, 1993). When the team performs poorly, highly identified fans perceive that their identity is threatened because the team is viewed as an extension of them and is a meaningful component of their self-concept. Therefore, highly identified fans have a propensity to experience anger and subsequently engage behaviors that degrade the opposition and are aggressive in nature (i.e., blast) (Branscombe & Wann, 1992; Wann, 1993). The current data however does not support the anger-sadness distinction revealed by previous work. Although personalized imagery scripts were used to modulate emotional states, the mental images may not have evoked emotions comparable to those originally experienced when the event took place, and therefore motivational orientation and attentional allocation were not affected to the same extent as in the sporting context.

While mental imagery has been used in a variety of domains to recreate experiences and evoke affective and physiological reactions, the *magnitude* of such reactions are diminished (e.g., Jacobson, 1930). Previous research (e.g., Gable & Harmon-Jones, in press) has emphasized that both emotion type *and* magnitude are influential factors in producing changes in motivational orientation. The current study may not have evoked sufficient changes in the type and/or magnitude of emotions (i.e., valence and arousal) experienced by participants beyond their neutral state to warrant discernable differences in attentional breadth and flexibility. To confirm this postulate, it would be necessary to assess affective reactions (subjective or physiological) during or immediately after watching a competition and compare the magnitude with those evoked through emotional imagery scripts.

In addition to the inherent limitations of mental imagery, the controlled laboratory environment removed the social (e.g., likeminded fans, camaraderie) and environmental (e.g., temperature, noise, crowding) elements of sport spectator experience, which may have reduced or altered the type and magnitude of emotions experienced by participants. Similarly, when recalling fan experiences during the laboratory session, participants knew the eventual outcome, both of the game and the season. When initially experiencing the event there is uncertainty regarding the consequences and benefits associated with the outcome. Yet when reflecting back on the experience, participants have a different understanding of its significance and relevance. As such, they may have experienced reduced or even distinct emotions in the laboratory relative to those originally experienced.

Finally, to ensure that affective salience did not decrease from the end of the imagery period to the conclusion of each task, response times from the eight trial blocks were compared across affective conditions and level of identification. Although response consistency was evident for Stroop task performance, global and local target detection times were influenced by trial block. Specifically, a speeding of responses was only noted after the first trial block (i.e., first two trials), suggesting that all participants required a brief period to re-acclimate to the task demands and did not experience a lessening of emotion over the time required for task completion (ranging from one to two minutes). Because both high and low identified fans exhibited complementary response patterns that were consistent across affective conditions, the effects of the first trial block did not compromise interpretation of the data.

In sum, the emotional imagery scripts were successful in modulating the affective reactions of all fans. However, the reactions of both high and low identified fans were relatively homogeneous, a pattern which may be attributed to the experimental context. Specifically, the

data from the current study illustrate that high and low identified fans do not differ on general measures of psychological well-being, but instead only on sport relevant measures. As such, removing participants from the context in which their group differences emerge may have promoted comparable performance differences between the groups. Accordingly, subsequent analyses accounted for the variables that further distinguished these groups (e.g., number of years a fan of the target team, general level of sport fandom) in order to illuminate changes in motivational orientations and attentional fluctuations related to high levels of team identification.

Changes in Attention

Stroop task

Counter to expectations, changes in attentional flexibility, as indicated by response times to incongruent Stroop stimuli, were not evident between groups or affective conditions. This finding is particularly surprising, considering the unpleasant scripts evoked significant changes in ratings of anger and sadness. Additionally, although the pleasant scripts did not significantly enhance positive affect among participants, research has consistently shown that both high and low identified fans exhibit a tendency to bask in reflected glory (BIRG; Cialdini et al., 1976), a behavioral pattern consistent with an approach motivational orientation.

A number of plausible arguments may account for the lack of discernable performance difference between the two groups. First, the emotional imagery manipulation was unable to evoke emotions of comparable magnitude and valence to those originally experienced by participants as outlined above. Additionally, the magnitude of the effects evoked in the current study may have been reduced because the Stroop task was completed in a neutral environment and the team's success/failure was inconsequential to participants' self-concept. More specifically, there was no public forum by which the participants' sense of self could be enhanced or reduced such that the feelings and behaviors typically evoked by competition

environments were absent (Dimmock & Grove, 2005). Next, the comparison groups (i.e., high and low identified fans) may have been too similar, as they all were residents of the local community and/or students at the target university. Although the two groups were partitioned into different groups based on their level of identification with the University's football team, their affiliation with the University as a whole may have augmented their sport team identification. Both high and low identified fans reported comparable anger experiences following all affective conditions suggesting that even the low identified fans reacted to the emotional scripts because of their personal relevance and/or because of repeated exposure to team relevant content (e.g., paraphernalia, news media) (Branscombe & Wann, 1991; Dietz-Uhler & Murrell, 1999).

Participants may also have over-represented their affiliation with the University's football team and as a result may have been falsely classified as highly identified fans. As Gibson, Willming, and Holnak (2002) note, "Gator football and its fans are a major source of community identity and pride" (p.422), both within the University population and among residents of the surrounding areas. Therefore, participants in the current study may possess a sense of relative obligation to be avid supporters of the University and its football program, as they are members of the community. For example, although neither level of identification nor affective condition prompted changes in attentional flexibility, group differences emerged when participants' general level of sport fandom was considered.

When general level of fandom was covaried, the results indicated that low identified fans responded faster to incongruent Stroop stimuli following the pleasant condition (i.e., demonstrated greater attentional flexibility), and highly identified fans responded faster following the expectancy condition. Despite the significance of these findings, they are counter

to the initial hypotheses, which proposed that positive affect would promote an approach orientation, and consequently enhance Stroop task performance. Moreover, it was hypothesized that the highly identified fans would experience the most notable reduction in response times following pleasant scripts because of their intense connection with the target team (Hirt et al., 1992). Alternatively, the expectancy condition was predicted to reduce attentional flexibility among the highly identified fans because of the necessity to ignore irrelevant stimuli under conditions of heightened approach orientation (i.e., the expectancy to act) (Gable & Harm-Jones, in press). Recognizing that the manipulation of emotion through imagery may have been inadequate, it is plausible that the addition of the expectancy to act manipulation with the pleasant imagery script was necessary to evoke a basic positive affective experience and approach orientation among highly identified fans.

Importantly, when general level of fandom was accounted for, greater attentional flexibility was evident across participants, following the unpleasant condition, compared with the neutral condition. This trend indicates that all participants demonstrated greater attentional flexibility and an approach motivational orientation. Therefore, although participants reported both an increase in sadness and anger following exposure to unpleasant fan memories, the anger response was apparently more dominant. In support of this notion, review of the personalized scripts indicates that the opposition, officials, and/or supporters of the other team were often deemed responsible for their team's loss (i.e., the unpleasant fan experience) by participants. This tendency to devalue those with whom one is negatively associated with is characteristic of blasting, a defensive behavior that is highly approach orientated.

In sum, differences in attentional flexibility were not evident across affective conditions or between high and low identified fans until participants' general level of fandom was statistically

controlled. When accounting for general fandom, a greater percentage of Stroop task performance variability was explained by the interaction between level of team identification and affective condition.

Global-local target detection task

Neither affective condition nor level of identification influenced attentional breadth as indicated by response times to global and local targets. The lack of variability in performance across factors suggests that motivational orientation remained stable across the manipulations. Performance differences on the global-local target detection task emerged, however, when other related factors were controlled.

When participants' general level of sport fandom was considered, differences in response time to local targets were faster following the neutral condition compared with the pleasant condition across participants, indicating attentional narrowing following the neutral, rest condition. Likewise, the number of years that participants were a fan exerted an influence on the association among the factors of level of identification and task performance; highly identified fans exhibited a more narrow scope of attention across all affective conditions compared to low identified fans. When controlling for participants' state levels of anger and sadness, highly identified fans responded faster to all targets across affective conditions. The facilitation of performance on tasks with varying attentional demands (i.e., broad versus narrow breadth of attention) suggest that it is not the hedonic valence of the fans' emotional experience which is driving performance in the current study, but instead the emotional arousal; the faster response times exhibited by highly identified fans are the result of increases in arousal after mentally recreating fan experiences (both positive and negative). To this point, Hillman and colleagues (2000, 2004) have clearly illustrated that highly identified fans perceive team relevant content, depicting both success and failure, to be more arousing than irrelevant content and that this

heightened arousal appraisal is exclusive to highly identified fans; low and moderately identified fans do not perceive team relevant and irrelevant images differently. Moreover, according to Easterbrook (1959), under normal task conditions (i.e., low stress/anxiety, as in the current study), moderate arousal facilitates task performance. Although arousal was not directly assessed in the current design, the performance differences between high and low identified fans are representative of increased attentional and motivational engagement (Easterbrook, 1959; Hillman et al., 2000, 2004).

In sum, when the two groups of fans were parsed using relevant covariates, performance differences emerged between the high and low identified fans. Specifically, the trends in the global-local task performance data highlight the integral role of identification related factors in understanding the nature and consequences of team identification. Additionally, these findings suggest that it is the intensity of the emotional experience (e.g., arousal) which promotes behavioral differences between high and low identified fans.

Strengths, Limitations, and Directions for Future Research

Despite the failure to find support for the original hypotheses, the data from the current study illuminate several important facets of team identification. First, team identification is not a global construct. That is, the affective and behavioral correlates of team identification appear to be highly contextual. The mere observation of spectators at a competition reveals distinct behavioral patterns among those who are assumed to be the allegiant and highly identified (St. John, 2004). The traits, characteristics, and mechanisms underlying these distinct affective and behavioral reactions however remain somewhat illusive to researchers who are tied exclusively to laboratory based methodologies, as was the case with the current investigation. To clarify, this study suggests that high and low identified fans may only be distinct *within* the sport

environment and that by removing the highly identified fan from the context where both his/her identification is most salient (and emotional reactions are most naturally elicited) we may also have neutralized the factors responsible for the differences between high and low identified fans.

The contextual specificity explanation for why our hypotheses were not supported is congruent with the finding that our two comparison groups do not differ in measures of personal psychological well-being. It appears that at their core, high and low identified fans are more similar than they are distinct, and that differences between these two groups may only emerge in the context of sport spectating. With that said, future research exploring the consequences and mechanisms of team identification should be conducted within a sport context, and incorporate commonly employed laboratory based measures. Equipping sport spectators with heart rate monitors and personal digital assistants (PDAs; handheld computers) would allow for the time-locked tracking of fans' arousal, as well as the monitoring of cognitive and affective changes through performance differences on basic cognitive tasks (e.g., Stroop task, Global-local target detection task) and brief self-report measures (e.g., VAS) which could be completed during stoppages of play. By immersing the design within the sporting context, researchers will be able to directly compare the experiences of high and low identified fans and chronicle changes in emotion and attention. Moreover, the incorporation of physiological indices of arousal would provide support for the proposal that fans' emotional intensity (e.g., arousal) primes subsequent attentional and behavioral changes. This methodology would also facilitate the understanding of the temporal endurance of the physiological and psychological changes experienced by fans, as this design would enable extension beyond the competition venue and incorporation into fans' daily routine.

Similarly, it is reasonable to conclude that team identification is a complex construct that should not be examined in isolation. As indicated by the covariate analyses conducted in the current study, general interest in sport, the number of years as a fan, and state specific reactions are influential factors when exploring the association among level of identification, affective reactions, motivational orientation, and attentional allocation. As such, it is strongly recommended that future researchers account for these factors, both from methodological, as well as statistical/analytical perspectives.

Structural Equation Modeling (SEM) may provide additional insight into the complex nature of team identification. SEM is a statistical technique that illustrates “how sets of variables define constructs and how these constructs are related to each other”, while providing an index of how well the data set satisfies the proposed theoretical model. The two primary variables of interest in SEM are *latent/construct variables*, which are “indirectly observed or measured, and hence are inferred from a set of variables that we do measure using test, surveys”, and *observed/indicator variables*, which are used “to define or infer the latent variable or construct” and are able to be measured directly. Typically, several observed variables are used to define a single latent variable in order to reduce measurement error and add to the strength of the technique. In sum, SEM “permits complex phenomena to be statically modeled and tested”...allowing for “confirming (or disconfirming) theoretical models in a quantitative fashion” (Schumacker & Lomax, 2004, p.2-7).

The initial stage of SEM is *model specification* and consists of incorporating pertinent theory and the extant literature to determine which variables to include in the theoretical model to be tested. Accordingly, based on the synthesis of previous research and theory from sport and general psychology, as well as the fields of sport marketing and management, it is proposed,

using the current sample, that affective disposition (i.e., positive affect, negative affect, depressive symptomology, trait anxiety, behavioral inhibition, behavioral activation), coupled with fanship (i.e., number of years a fan, level of team identification, general sport fandom) influence emotional reactivity and attention. Figure 5-1 depicts the proposed preliminary model.

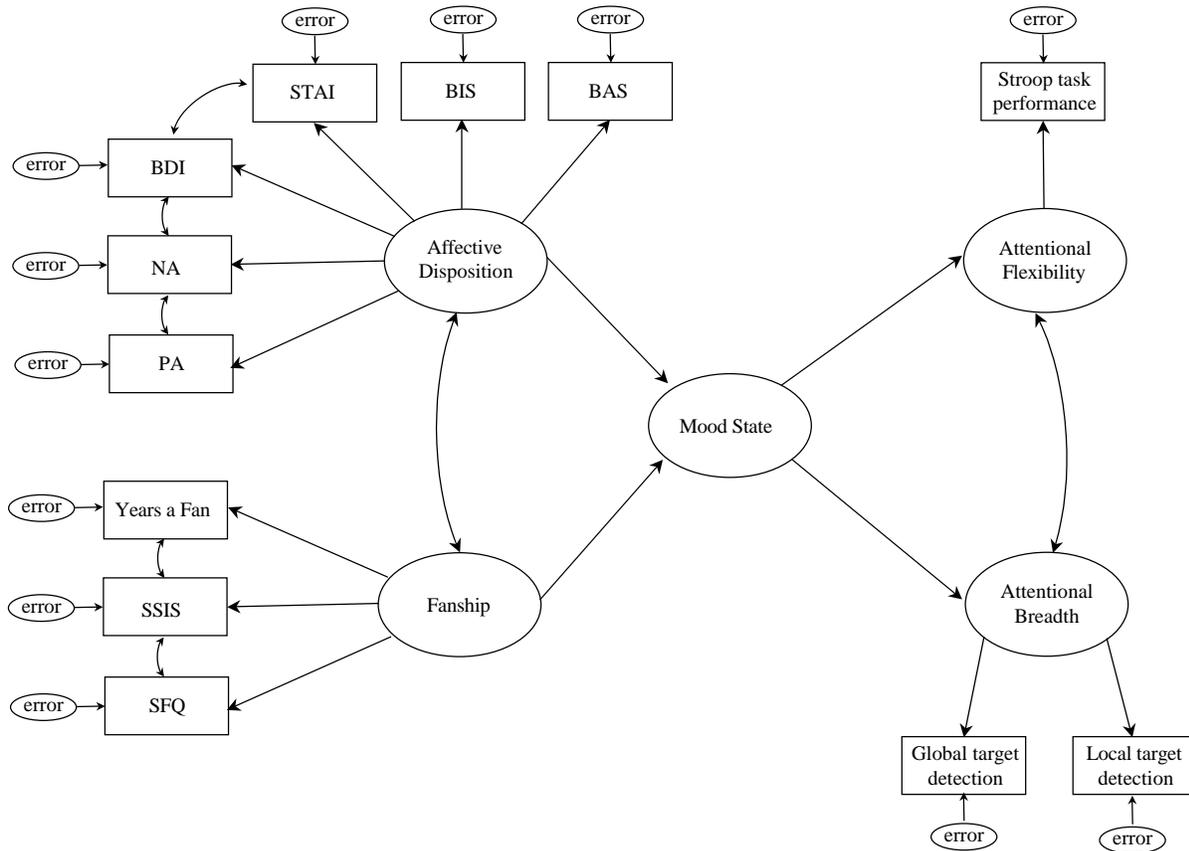


Figure 5-1. The proposed SEM model demonstrates that attentional breadth and flexibility will vary as a function of mood state. Fans’ mood states are linked to their affective dispositions and fanship characteristics. Fans’ personal experiences of positive affect, negative affect, depressive symptomology, trait anxiety, behavioral inhibition, and behavioral activation collectively represent one’s affective disposition. The number of years a fan, level of team identification, and magnitude of general sport fandom characterize one’s fanship.

An additional factor that was not included in the current investigation, but that may increase our understanding of the nature of team identification, is the motives/antecedents for fanship, as the majority of the motives for team identification are “based on social and

psychological needs” (Trail & James, 2001, p.109). The classification of all highly identified fans together may be inappropriate, as this subset of the population may be quite heterogeneous and require further sub-classification. Research (e.g., Fink, Trail, & Anderson, 2002; Trail & James, 2001) has identified numerous reasons why people adopt the role of fan and examination of these factors suggest that the motives for sport consumption may play a significant role in emotional experience of fans. For example, two fans may report comparable levels of identification with a target team (i.e., it is very important to them that they are a fan of the target team, they very much dislike the target team’s greatest rival, they always display the target team’s logo at home or work, their friends see them very much as a fan of the target team), but may be a fan for distinct reasons (e.g., they enjoy spending time with others, it is a simple pastime, increased self-esteem/vicarious achievement). As such it is plausible that those individuals who possess motives that are more closely linked to competition outcome may react more intensely than those whose motives are more social in nature. As such, motives for fanship may aid in further distinguishing among high identified fans, permitting factors associated with functional and dysfunctional behavioral patterns to be isolated.

Implications and Conclusions

Two hundred million adults in the United States consider themselves “sports fans” (King, 2005) and this growing population invests significant amounts of time and money into following their sport teams. The aim of this study was to systematically explore the affective, cognitive, and behavioral factors associated with team identification in a controlled environment and to gain insight into how pleasant and unpleasant fan experiences influence attention. Attention is inherent in all aspects of daily functioning, as it drives how we extract and subsequently process, store, retrieve, and apply information. By exploring the associations among team identification,

emotion, arousal, and attentional fluctuations, we are able to gain inferences towards the mechanisms that foster the overt differences between high and low identified fans.

However, in order to ascertain the *implications* of the interactive effects of level of identification, emotion, and behavior, future research must explore this question contextually, assessing the type and magnitude of emotions experienced *during* competition. Researchers can then determine the functional costs and/or benefits of noted changes, and monitor how long the effects may endure. Also, researchers should manipulate the sport context to assess if fan engagement activities or post-competition affective buffer zones can be used effectively to neutralize any adverse effects. Although it would be premature and inappropriate based on the current study's findings to make recommendations for how this data may be used in an applied context, the trends in the data suggest that moderating spectators' arousal will influence their behavior. The concept of attempting to alter fans' arousal has already been adopted by many sport organizations in an effort to reduce spectator violence. Specifically, research and policies have focused on limiting or banning the sale of alcoholic beverages, as alcohol has been shown to influence spectators' arousal levels and consequently their tendency to engage in aggressive and other socially unacceptable behaviors (Russell, 2008; Wann et al., 2001). Additionally, attention is being paid to environmental factors such as heat, noise, and overcrowding which have been shown to elevate fans' arousal levels (e.g., Branscombe & Wann, 1992). The implications, however, for arousal regulation may extend beyond public safety issues to include implications for functional behavior.

In conclusion, fans are not merely consumers of sport, but rather they are psychologically invested (Wann et al., 2001). The current study clearly supports this affective engagement of

highly identified fans and reveals that fans' level of identification interacts with personal and contextual variables to influence attentional breadth and flexibility.

APPENDIX A
DEMOGRAPHIC QUESTIONNAIRE

Please complete the following information about yourself.

Name: _____

E-mail address (*this will be used to contact you to schedule your second session*):
_____ @ _____

Age: _____

Sex: _____

Marital Status:

- ___ Single
- ___ Married
- ___ Domestic Partnership
- ___ Divorced
- ___ Widowed
- ___ Other (please specify) _____

Please select all of the following that currently describe your affiliation with the University of Florida (UF). Select as many classifications as appropriate:

- ___ Alumni
- ___ Current student
- ___ Donor/financial supporter
- ___ Fan of athletic teams
- ___ Spouse/sibling of current student
- ___ University of Florida faculty
- ___ University of Florida staff
- ___ I have no relationship with the University of Florida
- ___ Other (please specify) _____

How did you find out about this study:

- ___ Campus flyer
- ___ Community flyer
- ___ Instructor
- ___ Word of mouth
- ___ Other (please specify) _____

APPENDIX B SAMPLE IMAGERY SCRIPTS

Sample Pleasant Scripts

It was a hot and sticky evening in September of 2006 and we were crammed in my living room. I was so excited to be with my friends to watch the Florida-Tennessee game, the first SEC game of my college career. The Gators wore their white tops as they took on the Vols. I couldn't help but to feel nervous in the 4th quarter as Tim Tebow needed to gain one yard on a 4th and one. I was overjoyed when not only did he get one yard, but he got two! That play gave us a first down and led us to a touchdown and we won 21-20 win! We were so psyched and gave each other hugs and high fives.

It was about 6:45pm on a breezy, but warm Saturday in November when the Florida-South Carolina game was coming to an end and I could feel the knot in my stomach grow. I was at Ben Hill Griffin Stadium with my family and friends and you could feel the tension building. With only 8 second left in the game South Carolina had a field goal chance. My hands were shaking and I could not help but to think what if we lose? But Jarvis Moss blocked the kick and secured the Gator win. I was so overcome with joy that I jumped up and down, cried and screamed...it was amazing!

It is was cool, dreary October evening at Alltel Stadium in Jasonville and I was excited to be with my brother and friends at the Florida-Georgia game, but it was a frustrating game, as we could not seem to make a field goal the entire game! And in the last seconds of the game Florida had another field goal opportunity. I was nervous as I anxiously stood praying to see the refs signal that it was good. It was! And I was so excited...It felt so satisfying to beat our rival UGA.

Sample Unpleasant Scripts

The Gators were battling Auburn at Florida Field in September of 2007. In the second half, Auburn came out fighting and the game rested on the shoulders' of the Auburn kicker. Thankfully, Urban Meyer called a timeout just as he made his kick and I was relieved. But as he took his second kick, I clenched my fists, held my breath, and prayed that they'd block the kick. My heart sank as I saw the ball sail through the uprights, giving Auburn the 20-17 win. Silence fell over the Swamp, it was the Gators' first loss of the season and I was so disappointed.

It was a bright, sunny afternoon in November of 2003 and I was in the Super Gator Block in Ben Hill Griffin Stadium for the annual Florida-Florida State Game. The entire game was full of awful, one-sided calls by the ACC refs that made my blood boil. I was amazed that the refs could blow a game. To add to my frustration, Chris Rix threw a bomb of a pass down the right side of the field and the Gators lost 34-38. All I could do was scream and boo – I was so angry!

APPENDIX C INFORMED CONSENT

Protocol Title: Understanding the effects of emotion on cognitive task performance.

You are being asked to participate in a research study. Before you give your consent to volunteer, it is important that you read the following information and ask as many questions as necessary to be sure you understand what you will be asked to do.

Investigators:

Melanie Mousseau, MESS
University of Florida
Department of Applied Physiology and Kinesiology

Christopher Janelle, Ph.D.
University of Florida
Department of Applied Physiology and Kinesiology

Purpose of the research study: To compare how performance varies among individuals on two cognitive tasks.

What you will be asked to do in the study:

In the first session, you will be asked to:

- complete a demographic questionnaire. You have the right to withhold any information you do not wish to share.
- complete a series of brief questionnaires pertaining to your attitudes, feelings, and behaviors. Please note that some of the questions deal with rather personal feelings, issues of well-being, and mental health.
- perform basic movements and answer questions regarding the movement. You should not perform any of the behaviors if you have injury or medical conditions that could make the movements painful or damaging. If you are uncertain, you should refrain or contact your primary care physician before doing the physical action.
- describe experiences you have had as a University of Florida football spectator/fan.
- provide contact information so that a second, in-lab session can be scheduled.

In the second session, you will be asked to:

- complete a series of brief questionnaires pertaining to your feelings.
- listen to several brief narratives.
- complete letter and color identification tasks.

At the conclusion of your participation you will have the opportunity to ask any additional questions pertaining to the experiment.

Time required: Session 1 - 30 minutes maximum
Session 2 - 45 minutes maximum

Risks and Discomforts: There are no anticipated risks or discomforts associated with your participation, however you are given the option to stop or withdraw from the study at any time

with no consequence. If however, as a result of any activities in the research you would like to discuss your responses and reactions with a counselor, you can contact Student Counseling Services located in 301 Peabody Hall at 352.392.1575 (<http://www.counsel.ufl.edu/>).

Benefits: Benefits include an awareness of how emotions are evoked by mental imagery.

Compensation: Participation is voluntary and the investigators *will not* compensate you. However, if extra credit is offered by an instructor for your participation you *may* earn up to 2% extra credit.

Confidentiality: Your identity will be kept confidential to the extent provided by law; any information obtained through this testing that can be identified with you will remain confidential.

Voluntary Nature of Participation: Your participation in this study is completely voluntary. Your choice of whether or not to participate will not influence your future relations with the University of Florida. If you decide to participate, you are free to withdraw your consent and to stop your participation at any time without penalty or loss of benefits to which you are entitled.

Questions about the Study: If you have any questions about the study or results, please ask or contact:

MELANIE MOUSSEAU, MESS; Doctoral Student – Department of Applied Physiology and Kinesiology, 004H Yon Hall, PO Box 118205, 392.7520 x1426, mousseau@ufl.edu

OR

CHRISTOPHER M. JANELLE, Ph.D.; Director - Performance Psychology Laboratory, College of Health and Human Performance, Department of Applied Physiology and Kinesiology, Florida Gym Room 132E, PO Box 118206, 392.0584 x1270, cjanelle@hhp.ufl.edu

Student Counseling Services: 301 Peabody Hall, 352.392.1575, <http://www.counsel.ufl.edu/>

Whom to Contact about your Rights as a Research Participant:

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; phone 392.0433

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have printed a copy of this description.

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BIOGRAPHICAL SKETCH

Melanie B. Mousseau was born and raised in North Smithfield, RI and began her quest for higher education in 1997 at Mary Washington College located in Fredericksburg, VA, where she majored in psychology. Pursuing her interest in sport psychology, Melanie completed an honors senior thesis entitled, “Home Advantage: Does Anxiety Contribute?” and was awarded the distinction of “outstanding senior psychology major.” After receiving her BS in May 2001, Melanie continued her trek south, enrolling in the graduate program in exercise and sport sciences at the University of Florida, specializing in sport and exercise psychology under Dr. Christopher Janelle. During her tenure as a master’s student Melanie worked as a tennis instructor within the Sport and Fitness Program at UF and pursued various research interests including cognitive fatigue and mental imagery in sport. Following completion of her master’s degree Melanie began pursuing her Ph.D. at UF as an Alumni fellow. While Melanie reconceptualized her line of research she taught both sport psychology and exercise psychology within the College of Health and Human Performance and actively pursued her interest in consulting, establishing the Performance Psychology Group, LLC in July 2007. Following completion of her doctoral degree in 2009, Melanie plans on further developing the Performance Psychology Group’s client list to include sport leagues and organizations interested in learning more about their fans, so that they can maximize the fan experience while implementing effective marketing and outreach strategies that are grounded in cutting edge research.