The Role of Sport Fan Curiosity: A New Conceptual Approach to the Understanding of Sport Fan Behavior

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Most literature on sport fan behaviors has focused on highly identified or loyal sport fans. While the literature has found that factors influencing current sport fans and their behaviors are related to, and based on, various psychological, social, and cultural factors, only a limited number of studies have investigated what factors initially attract individuals to consume sport. Curiosity has been found to be one of the crucial motivators that initially influence human exploratory behaviors in many domains. Using theories of curiosity, the present review aims to shed light on the role of curiosity in explaining various sport fan behaviors.

“I have no special talents. I am only passionately curious”—Albert Einstein

In 1961, ABC Sports introduced a new and unique sport program called the *Wide World of Sports*. While the show did broadcast sport events that were popular in the United States, such as professional boxing, its signature was clearly laid out in its famous introduction: “spanning the globe to bring you the constant variety of sport.” *Wide World of Sports* was broadcast from 55 countries and showed 120 different sports, which ranged from frog jumping to Evil Knievel jumping cars on his motorcycle ("It’s a wide,” 2009). While the producers certainly understood the popularity of the traditional American sports like baseball and football, they also understood that some people, enough people to generate good ratings, would be curious in novel sport events to give up 90 min on a Saturday to watch this program. The show was very popular and as a result, lasted for 37 years.

In the years since ABC’s *Wide World of Sports* was in its prime, the sport industry has become increasingly meaningful in our society (Wann, Melnick, Russel, & Pease, 2001) and the number of sport entertainment options have increased. Because the sport industry has become bigger and more popular, it comes as no surprise that there is serious competition in the current sport marketplace (Mahony & Howard, 2001). Therefore, developing loyalty in existing sport fans and creating new sport fans to expand the fan base are important goals for sport marketers. To fulfill their goals and survive in this industry, practitioners need to identify initial psychological factors that impact sport fan behaviors and help generate sport fans (Park, Andrew, & Mahony, 2008).

Despite the large number of previous studies on sport fan behaviors, most of the literature has attempted to investigate how highly identified or loyal sport fans are generated or influenced. In other words, only limited research has examined the initial psychological motivational factors that lead nonfans of sports to become initially attracted to sport (Park et al., 2008). Therefore, investigating initial factors is meaningful to better understand various sport fan behaviors and for increasing interest in various sports. In fact, it is a necessity in a highly competitive marketplace (Mahony & Howard, 2001).

Prior research has suggested that many individual, social, and psychological factors influence sport fan behaviors (e.g., Funk, Mahony, & Ridinger, 2002; James, 2001; Madrigal & Chen, 2008; McDonald & Rascher, 2000; Park et al., 2008; Trail & Robinson, 2005, Wann & Pierce, 2003). Another new factor that has potential to explain cognitive, sensory, psychological, and situational effects on sport fan behaviors is sport fan curiosity. There have been many definitions of curiosity. Litman and Spielberger (2003) argued that curiosity is a reaction and desire that motivates human exploratory behaviors. Voss and Keller (1983) also noted that “curiosity is a motivational prerequisite for exploratory behavior” (p. 17). Thus, curiosity has been regarded as the one of the crucial motivators that influences human exploratory behaviors in many domains including the educational.
occupational, and recreational sectors (Reio, Petrosko, Wiswell, & Thongsukmag, 2006).

Although it seems unlikely that curiosity alone can explain all the behaviors of sport fans, we argue there might be a meaningful relationship between curiosity and various sport consumption behavior for the following reasons. First, sport consumption behaviors have an exploratory aspect (Park et al., 2008). As discussed above, previous research (Reio et al., 2006; Voss & Keller, 1983) suggested that curiosity is a main driver of human exploratory behavior, which can be broadly defined as “behavior, aimed at modifying stimulation from environment” (Raju, 1980, p. 272). Second, the uncertainty of the sport context (Mullin, Hardy, & Sutton, 2007) may provoke sport fans’ curiosity. This uncertainty would increase curiosity levels in people or keep them curious or stimulated. Third, the variety within sport (Irwin, Sutton, & McCarthy, 2008) may also elicit sport fans’ curiosity. Each sport has different rules, each game has different players and strategies, and every game, contest, or competition ends with a different result. Consequently, it would be expected that the inherent characteristics of sport are closely related to the nature of curiosity.

The primary purpose of this review is to explain the role of curiosity and discuss how the various concepts of curiosity can be incorporated in a sport context and be used to predict sport fan behavior. To fulfill this purpose, the authors critically reviewed prior research on curiosity in several domains, including psychology, education, business, and sport. Because there is a limited number of studies on curiosity in sport (Park, 2007b), the article will first review the general curiosity literature and then will discuss the possible application in a sport context.

**Berlyne’s Curiosity Concept**

The literature in curiosity has shown that curiosity is a “critical motive that influences human behavior” (Loewenstein, 1994, p. 75). Berlyne (1960) was the main author of the early work on curiosity and he insisted that curiosity has a multifaceted classification with two distinct dimensions: (a) perceptual curiosity and (b) specific and diversive curiosity. Perceptual curiosity is the state of high arousal “evoked by uncertain or ambiguous patterns of sensory stimulation (e.g., sights, sounds)” (Collins, Litman, & Spielberger, 2004, p. 1128) that motivates exploratory behaviors, such as visual inspection, to acquire new information that reduces arousal generated by perceptual uncertainty (Berlyne, 1966). Thus, individuals may feel perceptual discomforts or uncertainty when they are exposed to “novel, surprising, highly complex, or ambiguous stimuli patterns” (Berlyne, 1966, p. 30), and those having high perceptual curiosity would be more likely to be motivated to seek the source of stimulus. Epistemic curiosity is the quest or desire to “gain knowledge” (Rossing & Long, 1981, p. 25) that motivates intelligence and cognitive information seeking behaviors. Due to its characteristic, epistemic curiosity plays a key role in learning; those having high epistemic curiosity would be more likely to explore the novel object to learn the characteristics of the object (Carlin, 1999). For example, asking questions is an example of how individuals reduce conceptual complexity as efficiently as possible (Moch, 1987).

Similarly, the second dimension of Berlyne’s (1960) curiosity concept, diversive and specific curiosity, would also be likely influenced by the degree to which individual concentrates on curiosity-arousing objects. Thus, the dimension would be closely related to the optimal level of stimulation theory, which suggests there is an appropriate level of stimulus that generates curiosity. For example, Berlyne (1960) argued that an organism has a desire to maintain certain levels of preferred stimulation and at those levels curiosity is generated. However, if individuals have too much information about the object, it would no longer be interesting or new. In this case, the state of arousal is below the optimal level at which human exploratory behavior is generated, and organisms may experience boredom (Berlyne, 1971; Zuckerman, 1994). In ideal conditions, diversive curiosity is evoked by this boredom and this motivates individuals to seek out varied sources of exploration “regardless of source or content” (Berlyne, 1960, p. 26) to increase the level of arousal to the optimal level (Berlyne, 1960, 1966; Edelman, 1997; Fowler, 1965).

In contrast to diversive curiosity, specific curiosity exists when the state of arousal is higher than the optimal level. Specific curiosity is defined as “actively seeking depth in one’s knowledge and experience with a particular stimulus or activity” (Kashdan, Rose, & Fincham, 2004, p. 291). In other words, individuals would be over-stimulated if they had limited information about a novel object. Therefore, specific curiosity motivates specific exploration for more information to lower the level of stimulation to the optimal level (Berlyne, 1960, 1966; Cyr, 1996). To sum up, Berlyne’s (1960, 1966, 1971) works on curiosity suggested it is a strong motivational drive that encourages individuals to explore their environments for multiple reasons.

**Trait and State Curiosity**

Day’s (1971) distinction between trait and state curiosity has been also important in understanding the construct of curiosity. While Berlyne (1949, 1950, 1954, 1960) has significantly contributed to the literature on curiosity, a limitation in his work was it did not clearly explain an individual’s inborn curiosity (Park et al., 2008; Reio, 1997). Day classified curiosity into two categories: (a) trait curiosity and (b) state curiosity. This distinction has been one of the most frequently examined in the literature (Loewenstein, 1994).

Trait curiosity is a “a stable individual preference for either becoming curious under more conditions, more readily becoming curious, and/or possibly remaining in a state of curiosity for longer periods of time” (Day, 1971, p. 102). In other words, trait curiosity reflects an individual’s tendency to be curious over time. Spielberger (1975) and Spielberger, Ritterband, Sydeman, Reheiser, and Unger (1995) also supported the definition by finding
that trait curiosity is a relatively stable dispositional tendency. In contrast, state curiosity refers to transitory curiosity that reflects how unique and interesting a situation is to an individual (Cyr, 1996; Naylor, 1981). Loewenstein (1994) argued that the concept of state curiosity is somewhat related to Berlyne’s (1954, 1960) concept of curiosity (i.e., specific curiosity) in that both could possibly influence individuals to explore external curiosity-arousing stimuli. In summary, Day’s (1971) concept is important because it has helped in investigating the multifaceted construct of curiosity and offers a meaningful lens through which we understand individuals’ behaviors (Reio et al., 2006).

**Optimal Level Theory**

As mentioned previously, optimal level theory is closely related to Berlyne’s (1960) concept of divisive and specific curiosity in that the level of curiosity is related to the level of the information gap between what people know and what they want to know. Studies on this theory include Berlyne’s (1960) Optimal Stimulation Theory, Day’s (1982) Zone of Curiosity, Loewenstein’s (1994) Curiosity Knowledge Gap Theory, and Spielberger, Peters, and Frain’s (1981) Duel Process Theory of Exploratory Behaviors. One of the essential commonalities among these theories is that there is an optimal level of stimulation in which human exploratory behavior and curiosity are maximized.

For example, Spielberger et al.’s (1981) theory suggested that two contradictory concepts, pleasure and aversion, would be meaningful motivational drivers of human behaviors. According to them, curiosity would stimulate people to become involved in exploratory behaviors in which their pleasure would increase (Gentry et al., 2002; Hebb, 1949). This is somewhat similar to Day’s (1982) “zone of curiosity,” in which people would be motivated to behave exploratively most when in the middle zone (see Day, 1982). Day (1982) also argued that people would not engage in exploratory behavior when in a “zone of anxiety” when too much uncertainty is experienced by an individual or when in the “zone of relaxation” in which there is too little stimulation.

Curiosity knowledge (or information) gap by Loewenstein (1994) is also one of the most recent theories relative to the optimal stimulation for curiosity. As previously discussed, the knowledge gap generally refers to the difference between what individuals want to know and what they know (Menon & Soman, 2002). Loewenstein (1994) argued that “the intensity of one’s curiosity directed to a particular item of information is related positively to its ability to resolve uncertainty” (p. 88), and, as discussed previously, the ability or motivation to resolve uncertainty is closely associated with the level or amount of stimulation (Collins, 2000; Day, 1982).

In summary, it is plausible that curiosity motivates individual exploratory behaviors and is intensified when a moderate or manageable knowledge gap between individuals’ current level of knowledge and their desired state of knowledge exists (Gentry et al., 2002). Therefore, individuals aroused by a curiosity knowledge gap are motivated to fill and close the knowledge gap (Gentry et al., 2002). It might also be true that “the more curious one is, the more knowledge one acquires, making other information gaps more manageable and thus creating higher levels of curiosity” (Gentry et al., 2002, p. 68). Finally, it is also likely that when trait and state curiosity are both at high levels, a very high level of curiosity would be reached. As discussed, prior studies in the fields of psychology, business, and education have consistently shown that curiosity is an important psychological motivational drive (Reio, 1997; Reio et al., 2006). In other words, because curiosity is a primary drive that provides “the motivation for stimulus seeking, which is exploratory behavior aimed at increasing arousal” (Collins, 2000, p. 9), curious individuals would be likely to have more motivation to explore environments to obtain various perceptual, cognitive, and sensational information to satisfy their curiosity (Kashdan et al., 2005; Pearson, 1970; Zuckerman, 1994). Because the two major goals of sport practitioners are to cultivate new sport fans and maintain existing sport fans (Park et al., 2008), the curiosity gap model is particularly important in that manipulated levels of newness or information (i.e., moderate level of curiosity gap) may help practitioners develop several strategies using promotional or advertising mediums.

**Sensation and Novelty Seeking**

Zuckerman (1965) regarded sensation seeking as a personality trait and developed the Sensation Seeking Scale (SSS) to measure an individual’s level of sensation seeking. Zuckerman (1979) defined sensation seeking as a trait that leads to the pursuit of new, diverse, and complex feelings and experiences, and the willingness to accept the uncertainty of undesirable physical, social, legal, and financial outcomes to have such feelings and experiences. The most representative and frequently used version of the SSS is Form V that consists of four factors: (a) Thrill and Adventure Seeking (TAS) that measures individual preference to participate in adventurous and risky physical activities, (b) Experiencing Seeking (ES) that measures individual desire to explore novel experiences related to art, music, and travel, (c) Disinhibition (DIS) that measures individual social sensation seeking behaviors through drinking or sex, and (d) Boredom Susceptibility (BS) that measure individual abhorrence at repetitive or routine experiences (Zuckerman, 1979). Because the literature has shown curiosity to be related to various novel stimuli, it seemed likely that curiosity would have a relationship with sensation seeking. Therefore, a number of studies have investigated the relationship between sensation seeking and curiosity (cf. Berlyne, 1960, 1971, 1973; Loewenstein, 1994; Pearson, 1970; Zuckerman, Kolin, Price, & Zoob, 1964) and found that both TAS and ES were positively correlated with divisive curiosity (Collins, 2000; Collins et al., 2004; Litman, 1998; Litman & Spielberger, 2003; Olson, Camp, & Fuller, 1984; Starr,
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In addition to sensation seeking, novelty experience seeking has also been examined related to curiosity. Novelty experience seeking is defined as “a tendency to approach . . . a disposition toward changing new or unexpected experiences” (Pearson, 1970, p. 199) and “a disposition to approach, instead of avoid, novel experiences” (Collins, 2000, p. 13). Because Zuckerman (1994) insisted that “sensation seeking was primarily related to the seeking of novelty through the senses rather than through cognition” (p. 57), the difference between novelty experience seeking and sensation seeking is that novelty experience seeking is influenced by internal and external sensation as well as internal and external cognition. Therefore, Pearson (1970) argued that novelty experience seeking would exist and increase based on the source of stimulation (i.e., internal or external source) and the type of subjective experiences (i.e., sensation or cognition). He developed the Novelty Experiences Scales (NES) to better measure an individual’s tendency to seek or avoid novelty experiences. The NES has four factors labeled (a) Internal Sensation (IS) that measures individual disposition to experience sensation through imagination, dream, or virtual reality, (b) External Sensation (ES) that measures individual disposition to experience sensation through physical activities, (c) Internal Cognition (IC) that measures individual disposition to experience cognition through figuring out reactions, analyzing situations, and thinking about ideas, and (d) External Cognition (EC) that measures individual disposition to experience cognition through reading books, learning historical facts, and solving historical puzzles or quizzes (Pearson, 1970).

Because novelty seeking is a meaningful individual trait would appear to have a strong relationship with curiosity (Loewenstein, 1994), some studies examined the relationship between measures of curiosity and novelty experience seeking (Spielberger & Starr, 1994; Voss & Keller, 1983). The results showed that IC and EC of the NES have significant relationships with trait and specific curiosity that are consistent with Berlyne’s (1954) notion of information seeking in epistemic curiosity. Collins et al. (2004) also found that ES of the NES was significantly related to Experience Seeking (ES) and Thrill-and Adventure Seeking (TAS) of the SSS (Loewenstein, 1994; Spielberger & Starr, 1994; Starr, 1992).

In summary, curiosity, sensation seeking, and novelty seeking have common characteristics in that these concepts illuminate how individuals engage in exploratory behaviors in response to various novel stimuli (Litman & Spielberger, 2003; Voss & Keller, 1983). Therefore, understanding the concept of curiosity through an examination of sensation or novelty seeking would be also meaningful in explaining sport fans’ various exploratory behaviors. Based on a detailed review of literature, relationships among curiosity, and the theoretical similarity among curiosity-related theories are identified in Figure 1. The figure also explains how levels of arousal could influence the way an individual feels.

**Figure 1** — A relationship between curiosity theories and research questions.
**Curiosity in a Sport Context**

Considerable research has investigated various factors influencing the sport consumption behaviors. For example, motives, constraints, identification, commitment, involvement, attitude, loyalty, socialization, and environmental factors have been widely studied and knowledge of these constructs has provided valuable insights into understanding of how and why individuals are driven toward the various sport consumption behaviors (Funk et al., 2002; James, 2001; Madrigal & Chen, 2008; McDonald & Rascher, 2000; Park et al., 2008; Trail & Robinson, 2005; Trail, Robison, & Kim, 2008; Wann & Pierce, 2003). However, despite the substantial amount of the research on the numerous drivers of sport consumption behaviors, there has been limited research identifying what factors engender the initial interest in sport consumption (Funk & James, 2001).

There might be several factors might lead to an initial interest in sport consumption. For instance, Funk and James (2001), in their PCM (Psychological Continuum Model), argued that the change of individuals’ attitude toward a certain sport, team, or player would be influenced by various factors such as psychology, knowledge, socialization, and promotion that might play critical role in developing initial interest. Similarly, James (2001) also found a number of socializing agents, including family members and television, influenced early fan behavior and this could lead to the development of long term attachment to teams, players, and sports by around ages 8–9. While a number of factors here may impact initial sport fan behavior, it is intuitive that curiosity, because of its impact on exploratory behaviors, may also be a key factor in explaining how sport consumers become interested in sport consumption (Litman & Spielberer, 2003; Reio et al., 2006; Voss & Keller, 1983). Therefore, curiosity and the other variables addressed would share some similar attributes in that both could explain the development or, at least, affect the change of sport consumers’ attitude toward sport. If curiosity would work in the development or change of sport consumers’ behaviors and attitude, it could be integrated with other variables and conceptually placed before the other variables as a major intrinsic drive (Park, 2007b) because curiosity would be particularly meaningful in explaining a sport fan’s attraction to novel sports or in understanding how people are initially attracted to sport in general (see Park et al., 2008). Consequently, more studies are needed to ascertain the relationship between curiosity and the theories on sport fan behaviors and attitude and to incorporate curiosity into those theories that would help both researcher and practitioner better understand various sport fan behaviors.

**Relationships Between Curiosity and Sport Fan Behaviors**

Even though curiosity influences various human exploratory behaviors in many domains, there has been limited research on curiosity in the sport context (Park, 2007b; Park, Mahony, & Greenwell, 2009; Park et al., 2008). Park and his colleagues argued that curiosity could be used in the sport context to help explain diverse sport fan behaviors. Specifically, they believed that understanding the link between curiosity and sport fan behaviors is essential in establishing a strong body of knowledge for understanding one’s initial attraction to sport.

The first study to examine the function of curiosity in a sport context was Park et al.’s (2008) study on the impact of trait curiosity on fans’ initial interest in novel sports. They selected ten novel sports (cricket, e-sport, field hockey, lacrosse, taekwondo, mountain biking, rowing, ultimate fighting, and wakeboarding), which did not have a long history of fan interest in the United States and developed the Novel Sport Index (NSI) to measure individuals’ intentions to watch ten novel sports and whether the “individual already considered him/herself a fan of those particular novel sports” (p. 6). The Melbourne Curiosity Inventory (MCI; Naylor, 1981) was used to measure trait curiosity. The intentions of respondents to watch these novel sports was used as a dependent variable. A simple linear regression showed that trait curiosity was a statistically significant predictor of the individual’s interest in novel sport spectatorship. While the results were an important first step, this study is limited in that the effects of other aspects of curiosity, such as state curiosity, were not examined. Therefore, to improve the examination of curiosity in a sport context, a new measurement scale was needed. In addition, further examination was needed to distinguish the impact of trait and state curiosity on sport fan behaviors.

The second study on curiosity in sport setting investigated the curiosity knowledge gap model (Park et al., 2009). To generate state curiosity in a sport context, Park and his colleagues developed three simulated advertisements (e.g., high knowledge gap, moderate knowledge gap, low knowledge gap) containing different levels of content about a novel sport, Taekwondo. This sport was chosen because it had among the lowest number of fans in the previous study (see Park et al., 2009). Three different simulated advertisements containing different levels of curiosity gaps were used as predictors, and generated state curiosity and the intention to watch the novel sport were chosen as outcome variables. Trait curiosity was controlled as a covariate because it was a significant predictor of sport fans’ novel sport spectatorship in the prior study (Park et al., 2008). The results showed that generated curiosity was significantly greater for the group exposed to the moderate curiosity gap. Results also indicated that generated state curiosity was a statistically significant predictor of the intention to watch the novel sport. Additional analysis indicated that generated state curiosity completely mediated the relationship between the knowledge gap and intention to watch the novel sport. In other words, the moderated knowledge gap increased generated state curiosity, which then increased intention to watch Taekwondo.
Therefore, it was concluded that manipulations of the curiosity knowledge gap for a novel sport may significantly influence sport fan behavior.

The studies above, however, have some limitations that warrant discussion and offer future research direction. Park and his colleagues (2008, 2009) did not examine curiosity together with other potential drivers of the intention to watch novel sports. This poses two limitations on understanding the link between curiosity and novel sport consumption behavior. It cannot be clearly determined how much variance in intention to watch novel sports was really accounted for by curiosity because the impacts of other potential causes were not controlled. One cannot discount the possibility that individuals are attracted to a novel sport because of other factors such as general interest in sport rather than curiosity. More research is needed to determine whether curiosity has an additive impact when predicting sport behavior.

However, it is also possible that prior research may have underestimated the impact of curiosity. There might be some factors suppressing the strength of relationship between curiosity and intention to watch novel sports. That is, suppressors behind curiosity might mask the actual strength of the relationship between curiosity and intention to watch novel sports. Existence of the suppressor would indicate the actual impact of curiosity is even stronger than it appeared in the Park studies. Second, it is unrealistic to believe that curiosity influences the intention to watch novel sports without interactions with various psychological and environmental factors. The sport consumption decision making process is highly complex and numerous elements in the process interact with each other to reach the final decision. Therefore, the role of curiosity should be understood as a part of the whole process and this cannot be done without identifying other components of the process and the role of each component.

Third, the later study (Park et al., 2009) was not consistent with the previous study (Park et al., 2008) regarding the impact of trait curiosity in a sport context. Park et al. (2008) found trait curiosity was a significant motivator for sport fan behaviors, but it was not a significant covariate in the second study. Fourth, the later study did not clearly distinguish the distinct relationship between trait and state curiosity (r = .08). Even though the literature has found there is a clear distinction between trait and state curiosity (r = .08). Even though the literature has found there is a clear distinction between trait and state curiosity, Weinberg & Gould, 1999, it is also true that there have been some debate in curiosity literature with regard to the distinction between trait and state curiosity in that both types of curiosity are quasi-similar factors (see Loewenstein, 1994).

Lastly, the authors did not examine the relationship between intended behavior and actual exploratory behavior in both studies. Therefore, more studies in similar settings on the relationship between trait and state curiosity and its impact on sport fans’ actual exploratory behaviors are needed to better clarify and generalize the findings in a sport context.

### Measurement of Sport Fan Curiosity

Even though these two studies introduced the concept of curiosity and applied it into a sport context for the first time, these attempts had a similar limitation in that they did not clarify the structure of sport fan curiosity. Thus, these attempts leave researchers needing a new measurement scale to precisely assess sport fan curiosity. Considering that the research on curiosity in a sport context is in its initial stage, the development of an effective, valid, and reliable measurement scale is a crucial step in establishing and undergirding a strong body of knowledge for any scientific research (Churchill, 1979; Netemeyer, Bearden, & Sharma, 2003). Therefore, Park (2007a) developed a reliable and valid measurement scale for sport fan curiosity strongly. He incorporated various concepts of curiosity in sport and developed two different scales (sport fan exploratory curiosity scale: SFSCS; sport fan specific curiosity scale: SFSCS) measuring constructs of sport fan curiosity largely based on the literature.

Sport fan exploratory curiosity refers to seeking sensational and novel stimulation from sports, players, teams, or any sport-derived products by engaging in exploratory behaviors. Sport fan specific curiosity refers to seeking specific novel and cognitive information about sports, players, teams, or any sport-derived products. Through various statistical analyses and reliability and validity procedures, Park (2007a) developed the 10-item SFSCS with three factors (Excitement, New Sport Events, Sport Facility) and the 11-item SFSCS with three factors (Specific Information, General Information, Sport Facility Information). The results of the study indicated that both SFSCS and SFSCS successfully measured sport fan curiosity and also predicted various sport fan behaviors. For example, the SFSCS scales significantly explained sport fans’ interest in watching novel sports. Similarly, the SFSCS significantly predicted sport fans’ tendency to search for information related to sport via the Internet as well as television.

As with any research, this study also had some limitations such as the use of college student samples. One of the important limitations, however, is that, due to the fact it was the first attempt to measure sport fan curiosity and develop a measurement scale, this study did not examine convergent validity with other similar measures. Because the literature has shown that some curiosity measures are related to other psychological motivational factors, it is possible that sport fan curiosity may have similar relationships with other scales measuring various sport fan behaviors or their psychological traits (i.e., motivation, identification, or socialization). To reconfirm the structure of sport fan curiosity and extend future research, further study is needed.

In summary, Park and his colleagues examined curiosity as an intrinsic (i.e., trait curiosity) and extrinsic (i.e., state curiosity) motivational drive impacting sport fan behaviors. Their studies offered a new perspective and potential for better understanding individuals’ attraction to a sport. A curiosity oriented approach to understanding
sport fan behaviors could help practitioners develop pragmatic strategies that will assist them in maintaining and developing highly identified sport fans (Park, 2007b; Park et al., 2008).

**Future Research**

Curiosity has been defined as a “desire for acquiring new knowledge and new sensory experience that motivates explorative behavior” (Litman & Spielberger, 2003, p. 75) and a “motivational prerequisite for exploratory behavior” (Voss & Keller, 1983, p. 17). Thus, curiosity may play an important role in explaining behavior in a sport setting (Park et al., 2008). This paper is one of the first attempts in a sport context to conceptually understand the role of curiosity as a possible motivator of sport fan behavior through a thorough literature review in psychology and sport. Based on this detailed review of literature, various implications for future research emerge.

First, Berlyne’s (1971) concepts of curiosity (i.e., diversive curiosity, specific curiosity, epistemic curiosity, and perceptual curiosity) could possibly explain how individuals react to novel information or stimulation related to sports, teams, players, or any sport-derived products. For example, specific perceptual curiosity could lead sport fans to search for exciting scenes, such as slam dunk contests or ‘must-see’ highlights of plays on a sport network. Specific epistemic curiosity could lead sport fans to search for information, statistics, and history about her/his favorite team or player or the answer to a particular sport quiz question. Diversive perceptual curiosity could lead sport fans to explore sport facilities without particular purpose. Finally, diversive epistemic curiosity could lead sport fans to flip through sport network channels or browse through sport magazines or newspapers to avoid boredom or seek new intellectual stimuli. It is believed, therefore, that future research on Berlyne’s concepts of curiosity in sport may help us to improve our understanding of how to attract individuals to a sport. The following research propositions were developed related to various sport fan behaviors.

**Research Proposition 1**

Various types of curiosity (i.e., diversive, specific, epistemic, and perceptual curiosity) will stimulate sport fans’ exploratory behaviors in seeking out various sources (i.e., novel, perceptual, and cognitive) of stimulation.

Second, Day’s concepts trait and state curiosity are also worth examining in a sport context. This concept is of particular importance in explaining various sport fan behaviors because it provides both researchers and practitioners in sport with insight into sport fans and why they progress from casual sport fans to loyal sport fans, as well as the evidence into understanding sport fans’ diverse reactions when exposed to unique sport situations. In addition, a particular sport situation (i.e., high state curiosity) may also influence an individual’s exploratory behavior in certain ways. Therefore, the following research propositions can be made:

**Research Proposition 2**

An individual’s level of trait curiosity can provide the foundation for the development of a sport fan. For example, if an individual has a curious personality (i.e., high trait curiosity), he or she would be more likely to seek information and knowledge related to a specific team or player and perhaps attend games and events.

**Research Proposition 3**

Examining state curiosity among individuals can be helpful in explaining the effect of the sport environment on consumptive decisions. For example, Park et al. (2008) argued that “a highly introverted individual may behave to the contrary when in a crowded college football stadium in support of his/her alma mater’s team” (p. 3). In addition, because of the impact of state curiosity on sport fan behaviors, sport fans would be likely to watch a game or support a team in a stadium they do not like or to purchase sport-related products (e.g., licensed product) they really do not need.

As discussed previously, there has been some debate in psychology regarding the distinction between trait and state curiosity as they are considered to be somewhat quasi-similar concepts (see Loewenstein, 1994). While prior research has indicated that the correlation between the trait and state curiosity is weak (Park et al., 2009), the trait-state distinction is still somewhat unclear (Weinberg & Gould, 1999) and may vary based on situations and contexts. In addition, because the previous study has found that both trait and state curiosity influence sport fan behaviors (see Park et al., 2008; Park et al., 2009), it would be plausible that both trait and state curiosity have an interaction in a sport context. Therefore, following research propositions are presented:

**Research Proposition 4**

Sport fan’s trait curiosity and state curiosity may interact with each other in various curiosity-arousing sport situations.

**Research Proposition 5**

Sport fan’s trait curiosity and state curiosity are conceptually and empirically different concepts.

In addition to more thoroughly examining trait and state curiosity, understanding sensation and novelty experience seeking in sport is also important. Various sport fan behaviors that might hold some exploratory characteristics (e.g., participating in sports or physical activities or seeking diverse stimuli in a sport context) may be influenced by a combination of these concepts. The literature on sensation seeking has found that sensation seeking positively influences sport fans’ participation in various sports (see Breivik, 1996, Campbell, Tyrrell, &
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Zingaro, 1993; Wagner & Houlihan, 1994). In addition, the literature has also shown that curiosity, sensation seeking, and novelty seeking commonly influence individuals’ involvement in exploratory behaviors when various novel stimuli are given (Litman & Spielberger, 2003; Voss & Keller, 1983). Due to the relationships between curiosity and sensation and novelty seeking, sport fans’ participation in sport influenced by both sensation and novelty seeking would also have a relationship with, or be affected by, curiosity as well.

Prior study has found that watching sports related with sensational seeking (e.g., sand boarding, canyoning, ice climbing, skysurfing, wingsuit flying, and yamakasi) would stimulate individuals to display aggressive behaviors in their spectating (Watson, 2002; Zillmann, 1983). In addition, by participating in sport, individuals are provided knowledge that helps them understand and enjoy the sport (Geertz, 1973). Furthermore, the understanding and enjoyment of sports does not only impact sport fans’ behaviors but also their characteristics (McDonald, Milne, & Hong, 2002). Therefore, study on sensation seeking and novelty experience seeking in relation to curiosity in sport would serve to illuminate how individuals show different behaviors in their participating and spectating as well. Thus, the following research propositions are proposed:

Research Proposition 6
Sensation or novelty seeking in sport will help to explain how an individual becomes involved in sport participation.

Research Proposition 7
Sensation or novelty seeking in sport will help to explain how individuals become sport spectators.

As a follow up to Park et al.’s (2009) study, future research should investigate the impact of a moderate level of information in the sport advertisement on sport fans’ curiosity and behavior. While Park et al. (2009) examined the impact of a moderate level of information on sport fans’ behaviors, they did not examine the relationship between a moderate level of information and level of sport fans’ curiosity. Therefore, it would be interesting to examine how sport fan curiosity (i.e., high or low scores on curiosity) may result in different behaviors when a moderate level of information is provided in an advertisement. In addition, because Park et al. (2009) simply examined the participants’ intention to watch novel sports, many other types of sports and sport fans’ consumptive behaviors need to be examined.

With regard to some existing studies (e.g., trait curiosity and curiosity knowledge gap) on curiosity in a sport context, the following research propositions are also provided:

Research Proposition 8
Given a moderate level of information, sport fans with higher level of curiosity would be more likely to watch novel sports as compared with fans with lower level of curiosity.

Research Proposition 9
Given a moderate level of information, sport fans with higher level of curiosity would be more likely to watch popular sports as compared with having lower level of curiosity.

While Park et al. (2009) found a moderate curiosity knowledge gap increases intentions to watch a novel sport, they did not investigate the impact on actual behaviors. Furthermore, they did not investigate which type of sport advertisement arouses sport fan curiosity in relation to curiosity knowledge gap. In other words, because the study only dealt with the amount of information given, more research on the effect of advertising on generating curiosity and on the curiosity knowledge gap is still needed. Therefore, possible extensions of this study would be to examine the effect of sport advertisement on both curiosity and curiosity knowledge gap and to compare the impact of different levels of the curiosity knowledge gap among different sports or sport-related products. For example, a study on the difference between popular sports and novel sports would be helpful in clarifying when and under what conditions practitioners could manipulate the curiosity knowledge gap most effectively (Park et al., 2009). Based on Park et al.’s study (2009) regarding the impact of sport advertising on sport fans’ spectatorship, the possible research propositions are presented:

Research Proposition 10
A sport advertisement providing individuals with evidence on the subject (i.e., sport, team, player, or other sport-related information) would more effectively arouse curiosity than the one possessing and directly exposing the subject.

Research Proposition 11
The impact of the curiosity knowledge gap on sport fans’ actual behaviors should be examined.

Research Proposition 12
The different levels of curiosity knowledge gap would differently influence sport fans’ consumptive behaviors based on the popularity or newness of sports (i.e., popular sport vs. novel sport).

Research Proposition 13
The different levels of curiosity knowledge gap would differently influence sport fans’ consumptive behaviors based on types of sport products.

When curiosity is triggered by various stimuli, individuals may want to explore and reveal the source of stimuli that help them satisfy their curiosity (cf. Day,
While a number of studies have investigated the process by which curiosity is generated, there has been limited research on the mechanism for satisfying curiosity (Park, 2007a). Because individuals may have different ways and characteristics to approach the origin of curiosity-arousing stimuli, it would be important to empirically investigate scientific process of how to satisfy curiosity. To fulfill this need, different research processes such as ‘fMRI(functional Magnetic Resonance Imaging)’ that scans brain or spinal cord to investigate neural activity (Buxton, 2002) could be used. Given that sport is a context where various stimuli exist and sport fans have different characteristics relative to nonfans of sport (Park, 2007a), it could be hypothesized that sport fans have different processes or neural activity. Therefore, the following research propositions can be made:

Research Proposition 14

Individuals’ process for satisfying curiosity would be different based on their trait or state.

Research Proposition 15

Sport fans will have different neural process in satisfying their curiosity from nonfans of sport.

With regard to how to satisfy curiosity, it would also be interesting to examine whether individuals’ behaviors change after their curiosity is satisfied. This can be investigated by using one of the latest curiosity theories, Loewenstein’s (2000) ‘hot’ state and ‘cold’ state of curiosity. He examined how individuals predict their future behaviors based on their current emotional status. He argued that their future behaviors will be influenced by the changes in visceral states, such as hunger, sexual desire, or thirst (cf. Loewenstein, 1999). The hot state is the state of anticipation in which individuals cannot rationally judge the current situation and predict future behaviors due to the curiosity aroused by their current emotional disequilibrium. For example, shoppers who are hungry are more likely to buy foods they want rather than foods they need. In contrast, the cold state is the state of tranquility resulting from satisfaction of curiosity. The “cold” is not “dissatisfaction” but “calmness” (Bernard & Schulze, 2005). In this state, individuals sometimes underestimate the effect of visceral drives when predicting their future behaviors. For example, Loewenstein (2005) argued that “when one is not hungry, afraid, or in pain, it is difficult to imagine what it would feel like to experience one of these states, or to fully appreciate the motivational power such states could have over one’s own behavior” (p. 449).

Understanding these concepts may explain why people behave differently under various emotional states. Consequently, the hot state and cold state of curiosity may help sport marketers develop various marketing strategies to retain current sport fans. By keeping fans in the hot state of curiosity or offering novel curiosity-arousing stimuli to fans in the cold state of curiosity, it could help sport marketers maintain fan interest. The following research propositions can be developed:

Research Proposition 16

Sport fans in the hot state (i.e., when curiosity-arousing information about sport is provided through an advertisement) will have strong levels of intention to consume sport-related products or watch sport events.

Research Proposition 17

Sport fans in the cold state (i.e., after their curiosity about sport is satisfied) will be interested in consuming sport-related products or watching sport events if novel stimuli or curiosity-arousing stimuli are present.

Another line of future research derived from the hot-cold state of curiosity would be an examination of impulsive purchases by sport fans. Because impulsive purchase refers to the immediate tendency to engage in unplanned buying (Kwon & Armstrong, 2002), the hot state may lead sport consumers to make impulsive purchases because they do not rationally judge their current needs and wants or predict their future behaviors and emotions. Therefore, the following research proposition is offered:

Research Proposition 18

The hot state will increase sport fans’ tendency to make impulsive purchases.

Finally, the measurement of sport fans’ curiosity is important for helping to examine the way in which curiosity works as a potential motivational factor for sport fan behavior. However, because Park’s (2007a) study was the first attempt to measure sport fan curiosity, refining the measurement scale would help to apply the concept of curiosity to sport situations and more fully establish the construct of curiosity in a sport context. Thus, the following research proposition could be investigated:

Research Proposition 19

Both sport fan exploratory curiosity scale (SFEC) and sport fan specific curiosity (SFSCS) will show convergent validity with other similar measures.

In summary, curiosity has been considered a major motivator of human exploratory behavior. Thus it is believed that curiosity can be helpful in understanding sport fans and may provide new perspectives on curiosity because sport situations elicit more curiosity by their nature (see Park, 2007b; Park et al., 2008). However, the research on curiosity in sport is in its initial stage. Because there have only been a limited number of studies, future research needs to focus on the clarification of the curiosity concept and the role curiosity plays in various sport settings based on the research propositions identified above. This article reviewed several studies that have explored the impact of curiosity in areas such as psychology, education, and business, as well as sport. This paper also presented a series
of propositions for future research to extend the curiosity literature and undergird the construct of curiosity in sport. Therefore, it is hoped that this article provides a theoretical basis and conceptual framework on which future research can be based and ultimately provide researchers and practitioners with a better understanding of their fans and how to meet their goals.

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