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The Relationship between Superstitious Behaviors of Sports Fans, Team Identification, Team Location, and Game Outcome

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THE RELATIONSHIP BETWEEN SUPERSTITIOUS BEHAVIORS OF SPORTS FANS, TEAM IDENTIFICATION, TEAM LOCATION, AND GAME OUTCOME

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The present study examined how a fan's desire to participate in superstitious behaviors depends on team identification, team location, and game outcome. The study is a 2 (team identification: high vs. low) x 2 (game outcome: close game vs. blowout) x 2 (location of team: local vs. distant) between subjects factorial design. Participants for the current study included 234 students, recruited from undergraduate psychology classes at Western Kentucky University. Participants completed the Sport Spectator Identification Scale, read a randomly assigned vignette differing in team location and game outcome, and filled out the Superstition Questionnaire to measure their desire to complete superstitious behaviors based on the vignette. They also filled out the Desirability of Control Scale, and the Depression Anxiety Stress Scales to account for the possible covariates of desirability of control and anxiety level. An analysis of the covariates showed that there were no significant correlations between desirability of control or anxiety level and the desire to complete superstitious behaviors. Results indicated that highly identified fans reported wanting to perform more superstitious behaviors than low identified fans. However, no main effect was found for game outcome or team location, and there were no interactions. This finding reiterated the importance of team identification and its effects on the fan. The study also brought new variables to the table, game type and team type, that could be used in future research.

Introduction

Superstitions in sport is a topic that has been researched to some degree from the perspective of the athlete. Do athletes perform superstitions because they feel it gives them a performance or competitive edge? Has performing superstitions simply been molded into a habit? Where did the superstitions originate? Media outlets such as ESPN, ABC, and CBC Sports Online have chronicled specific superstitions of athletes, from Major League Baseball's Wade Boggs eating poultry before every game to the National Hockey League's Patrick Roy talking to the goalposts while on the ice (Cox, 2010; Murdoch, 2005). Superstitious behaviors among athletes have long been associated with the uncertainty hypothesis. This hypothesis says that, in superstitious people, uncertainty leads to a desire for control, which leads to an engagement in superstitious behavior. The uncertainty hypothesis postulates that the outcome of an event is a result of the combination of controllable and uncontrollable forces (Burger & Lynn, 2005). Athletes who hold a strong belief that uncontrollable forces have a greater influence on an event's outcome are more likely to engage in superstitions.

However extensive the research of superstitious behaviors in sports has been up to this point, it has always excluded a central element to every sporting event: sport fans. The portrayal of dedicated fans through media outlets leads to the expectation that fans experience superstitions similarly to athletes, but little research has been done in this area. What kinds of superstitions do fans experience? Does a fan's identification with a particular sport team influence his or her likelihood to perform certain superstitions? Does the quality of the game the fan is watching (for example, a close game between two rivals as opposed to a blowout between two teams from different conferences) impact

whether or not he or she will perform superstitions? What influence does the proximity of the fan to the home team have? In other words, will fans be more likely to perform superstitions if they are watching a "hometown" team rather than two teams from a different state? These are all issues that have yet to be intricately addressed.

In the review of sport fan behaviors, it is imperative to differentiate between the terms "sport fan" and "sport spectator," as these terms should not be used interchangeably. Fandom can be primarily separated from spectating by its association with a devotion to an athlete or team. Pooley (1978) explained that a spectator observes an event but soon forgets it, while a fan continues his or her interest far beyond the competition. Spinrad (1981) similarly asserts that a fan is a person who is engrossed in sport even outside of the particular sports event. Wann, Melnick, Russell, and Pease (2001) define a fan as a person with significant interest in and willingness to follow a particular team or athlete.

Superstitions

Superstitions are often described as irrational beliefs or practices thought to influence the outcome of a course of events (Damisch, Stoberock, & Mussweller, 2010). Our society is full of causal determinists, or persons who assume outcomes are caused by preceding events. These persons are on a continuous search for the reasons behind the outcomes. Wann et al. (2010) describe superstitious behavior as an action or series of actions believed to lead to or cause a specified, generally desirable, outcome.

Brooks (2009) explains that people engage in superstitious behaviors when they feel as if they are losing control over their own lives and their brains are searching for order and structure. Cultural and environmental factors also play a role. For example, it

has been found that persons in high risk areas in the Middle East, currently in a state of disarray, are more likely to carry a lucky charm in hopes of regaining some order and structure and reducing some of their internal chaos (Brooks, 2009).

Keinan (2002) postulates that exposure to stress and the desire for control increases the frequency that people engage in superstitions. In one study, she found that individuals with a higher desire for control were more likely to knock on wood than individuals with a low desire for control (Keinan, 2002). Similar to the study with persons from the Middle East, Keinan (1994) found that persons living in high-risk areas during the Gulf War, especially those exposed to missile attacks, were more likely to engage in superstitious behaviors. This serves to give them artificial control over the likelihood of future events. While these are large-scale examples of the loss of control leading to superstitious behaviors, everyday stressors may also lead to the search for regaining control through the engagement in superstitions.

Additionally, we are more likely to engage in superstitions when faced with a situation that makes us anxious. Magyar and Chase (1996) conducted qualitative research on a group of competitive female gymnasts faced with a fear of injury. The results of the study found that performing superstitions was one of the most popular psychological strategies used by the athletes to combat the anxiety associated with their sport. For example, many athletes suggested that keeping a routine, including eating the same foods daily, helped them to concentrate, focus, and relax before and during competition (Magyar & Chase, 1996).

Finally, there has been research demonstrating a link between Obsessive-Compulsive Disorder (OCD) and the participation in superstitious behaviors. A study

conducted by Katerberg et al. (2010) identified superstitions/rituals as one of the factors found to be heritable in OCD subjects. Additionally, McKay, Piacentini, Greisberg, Graae, Jaffer, and Miller (2006) found superstitions to be a factor in children with an OCD diagnosis.

Superstitious Behaviors of Sports Fans

Researchers must be sure to distinguish superstitious behavior from ritualistic behavior. Wann et al. (2010) describe rituals as actions thought to have symbolic value. For example, consider a sport fan that sits in the same seat in the same section for each game. If this is done simply out of habit, the action is ritualistic in nature. Superstitions are actions thought to lead to or cause a specified result (Wann et al., 2010). If the aforementioned fan sits in the same seat each game because he or she believes there is a causal relationship between him or her sitting in the section and the outcome of the game, the action is considered a superstition. For many sport fans, participating in certain superstitions before, during, or after an athletic event has become part of their routine, due to an expectation that their behavior is having a direct, positive effect on their team. At the same time, this superstitious behavior is relieving stress on the part of the sports fan. In other words, the uncertainty in sport, derived from the chance element that is part of the event, leads to anxiety on the part of the sports fan. Further, this anxiety may be derived from their significant investment of interest in the sport, and ultimately leads to a superstitious behavior in an attempt to reduce this anxiety (Burger & Lynn, 2005).

Team Identification

Team identification is defined as a fan's psychological connection to a team (Wann et al., 2001). Studies have repeatedly demonstrated that level of identification is

positively correlated with psychological well-being (Branscombe & Wann, 1991; Melnick, 1993; Wann, 2006a; Wann, 2006b; Wann, Dimmock, & Grove, 2003; Wann, Dunham, Byrd, & Keenan, 2004). Furthermore, a recent study by Wann and Grieve (2008) suggested that high team identification leads to psychological health, including lower levels of loneliness, higher frequencies of positive emotions, and higher levels of self-esteem, that lasts far beyond the athletic setting.

Wann and his colleagues have conducted numerous studies looking at the effects of team identification. In one of his earliest studies, Wann found that participants' level of identification to a college men's basketball team was positively correlated with levels of self-esteem and positive emotions and negatively correlated with levels of depression, negative emotions, and alienation (Branscombe & Wann, 1991). In a similar, though more extensive examination, Wann and his colleagues found students with high levels of identification with their college men's basketball team had high levels of self-esteem and vigor, and low levels of depression, anger, confusion, tension, and fatigue (Wann, Inman, Ensor, Gates & Caldwell, 1999).

Research findings suggest that high team identification coincides with social well-being. It is a facilitator for developing and maintaining social connections (Wann, 2006b). Wann and Branscombe (1993) discovered that highly identified fans viewed other fans of the team with which they are identified as possessing special qualities, and thus felt it important that their friends were also fans of this team. Wann and Grieve (2005) found that fans also denigrate the out-group. They see behaviors of fans of the out-group as much more negative than those of the in-group.

The literature continues to support the notion that team identification is strongly correlated with emotional responses to watching one's team perform. Highly identified fans are more likely than those fans who are not highly identified to experience post-game positive affect after a team win (Wann, Royalty, & Rochelle, 2002). High identification is also associated with higher levels of openness, conscientiousness, and extraversion – three of the Big Five personality dimensions (Costa & McRae, 1992).

Wann, Royalty, and Roberts (2000) explained the significance of the role of team follower to highly identified fans. Highly identified fans see this role as a central part of their self-identity. Conversely, lowly identified fans only see this role as a peripheral part of their identity. They have motives for attending games other than cheering on their team, such as group affiliation and entertainment (Wann, et al., 2002). Fans high in team identification are more likely to attend games, pay higher prices for tickets and team merchandise, and stay loyal to the team during periods of poor performance (Fink, Trail, & Anderson, 2002). Similarly, Branscombe and Wann (1992) found that fans low in team identification distance themselves from a team when it fails.

Feeling like one is losing control is a major precipitant to the participation in superstitious behavior. Dimmock and Grove (2005) looked at the connection between level of team identification and perception of control over one's behavior. As hypothesized, fans high in identification, classified by their responses on the Sport Spectator Identification Scale (Wann & Branscombe, 1993), felt less control over their behavior at games (based on a questionnaire that measured attitudes toward spectator aggression and behavioral control at games) than fans low in identification. Additionally, this loss of control can be brought on by a perceived threat of one's identity. The Social

Identity Theory (Ashforth & Mael, 1989) states that the combination of high identification with identity threat leads to the use of coping strategies, including the engagement in superstitious behaviors. The effectiveness of the coping strategies, in most cases, is not as important as the action itself, which leads to the sense of regaining an artificial control.

Up to this point, a limited amount of literature has existed on the superstitions of sports fans. However, one in-depth research report by Wann et al. (2010) looked at the superstitious behaviors of 675 sports fans, examining the types of superstitions and the fans' perceptions of their impact. Further, Wann and his colleagues looked at the relationship between number of superstitions listed, levels of sport fandom, and degree of team identification. The authors broke their research down into specific sports and looked at superstitions both in and out of the arena.

Participants were asked to describe superstitious behaviors they engaged in when watching their favorite sports team. The study found that participants reporting zero superstitions indicated significantly lower scores on the Sport Spectator Identification Scale (Wann & Branscombe, 1993) than those participants reporting at least one superstition. Additionally, participants' levels of team identification influenced their perceptions of importance and impact of their superstitions (Wann et al., 2010). Five sports emerged from this study as the most popular: professional baseball, professional football, professional men's basketball, college men's basketball, and college football. Team identification scores for college men's basketball and college football were significantly higher than the other three sports, and college men's basketball fans reported the highest number of superstitions (2.08, on average) of fans of any of the five

sports. Apparel superstitions were most frequently listed, including wearing certain jerseys, socks, and underwear during the game. Other frequently listed superstitions included vocalizations during the game, sitting in certain seats, closing one's eyes at certain points in the game, and getting up at specific points in the game to purchase food or use the restroom (Wann et al., 2010).

How Proximity Shapes a Sports Fan

We all have our "hometown teams." These are the teams after which local sports bars are named, the teams whose mascots are on our license plates, the teams whose flags we wave outside our homes. There are several advantages to cheering for the local team: the stadium is close enough that taking in home games is a viable option, stores at the town mall have the team's memorabilia, and finding other fans who cheer for the same team is not a daunting task. Some research has been done looking at how the proximity of a team relates to the fan's level of identification and well-being. Wann (2006a) found that a high level of identification is not enough to facilitate psychological well-being with a distant sport team. Identification with a distant team does not build the social connections that serve as a buffer for loneliness and isolation. These social connections are much easier to build in a person identifying with a local sport team and spending ample time with that larger social group. These connections are considered enduring connections, compared to the temporary connections that can be formed when a highly identified fan does not reside in close proximity to the team. These temporary connections are only formed in such instances when the highly identified fan happens to come in contact with other fans of the team, such as when the identified team is playing the local team (Wann, 2006a). In such cases, though, the fan is still seen as the outsider. Furthermore, Wann and

his colleagues found that the high levels of extraversion, openness, and conscientiousness related to high identification was only true when looking at the relationship with a local team (Wann et al., 2004).

In identifying and examining factors that shape the creation of a sports fan, Kolbe and James (2000) note the importance of proximity. They emphasize that following a local sport team leads to more opportunities to read, hear about, and follow that team. For example, in Bowling Green, Kentucky, there are many University of Kentucky college men's basketball fans, as every game is televised, the team has its own radio station, and the campus is within driving distance.

Effects of Game Outcome on the Sports Fan

There has been some literature surrounding the impact of the game outcome on fans' allegiance to their sport team. Bizman and Yinon (2002) found that, in the short-term, both high and low identified fans may distance themselves from a team after a poor performance. However, in the long-term, only highly identified fans will continue to support their team regardless of team performance (Bizman & Yinon, 2002).

A study by Wann et al. (2005) measured situational variables, such as game outcome, in comparison with the fan's willingness to consider violent acts of aggression. These acts of aggression included tripping the opposing player or coach and breaking the leg of the opposing player or coach. Wann and his colleagues found that highly identified fans whose team had just "lost" were especially likely to consider these acts of aggression.

Consistent with predictions, research has shown that game outcome has a greater affect on fans that are highly identified with a particular sport team. This was looked at

more closely by Grieve and his colleagues (Grieve et al., 2009), who found that a person who is highly identified finds it difficult to dissociate with his or her team when that team is unsuccessful. This lack of success by the identified team leads to a decrease in the highly identified sport fan's perceived self-competencies and self-esteem. Conversely, a team's loss does not have a long-lasting effect on low-identified fans, as the loss is not meaningful to them.

A recent study by Wann and Zaichkowsky (2009) sought to make the connection between team performance and engagement in magical thinking, such as belief in curses. The study determined that high-identified fans experience a threat to their identity when their identified team performs poorly. As a result of this threat, and as a way to regain their self-identity, some of these fans have turned to the belief in curses and other forms of magical thinking.

Limitations of Previous Research

While there is a good amount of literature on superstitions in general and superstitions of athletes, research is lacking on superstitions of sport fans. Additionally, this is an experimental evaluation of superstitious behavior, while past studies have mostly been self-report or correlational studies. There is a wealth of information on team identification, but little that examines the relationship between team identification and engagement in superstitious behavior. Most previous research on game outcome has looked at the differences between fans' reactions to a team win versus a team loss, but little exists on the fan's reaction to their team's participation in a close game versus a blowout game.

Current Study

The purpose of the current study is to determine the relationship between superstitious behaviors of sports fans, team identification, location of team, and game outcome. To do this, participants' team identification and desire to participate in superstitious behaviors will be measured, and the relationships between these factors, game outcome, and team location will be examined. Hypothesis 1 states that highly identified fans are more likely to report the desire to engage in superstitious behaviors than those fans that are not highly identified. This prediction is derived from the assumption that persons who have a psychological connection to a team (and, therefore, by definition, are highly identified) will do more in hopes of helping that team win, including engaging in superstitious behaviors. Hypothesis 2 states that fans who are reading about a close game are more likely to report a desire to engage in superstitious behaviors than those fans reading about a blowout. This prediction stems from the assumption that a close game would produce more anxiety in the sports fan, who would engage in superstitious behavior to cope with the anxiety of the moment. Also, those fans reading about a close game may engage in more superstitious behaviors if they feel these behaviors are necessary to gain artificial control over a tense situation. Hypothesis 3 states that fans who are reading about a local team are more likely to report a desire to engage in superstitious behaviors than those fans reading about a distant team. This prediction is based off of the common sense assumption that most people cheer for teams close in distance, which may also lead to a higher level of engagement in superstitious behaviors with these close teams. Hypothesis 4 states that highly identified fans who are reading about a close game involving a local team are more likely to report a desire to

engage in superstitious behaviors than any of the other groups. This final hypothesis is a culmination of the previous three hypotheses.

Method

Participants

Participants for this study were 234 students recruited from undergraduate Psychology courses at Western Kentucky University. Of these participants, 81 (34.6%) were male, 152 (65.0%) were female, and 1 (0.4%) participant did not report gender. The participants ranged in age from 18 to 59, with a mean age of 21.34 (*SD* = 7.10 years). The ethnicity of the sample was 194 (82.9%) Caucasian, 29 (12.4%) African-American, and 11 (4.7%) participants who classified themselves as another ethnicity. Of the 234 participants, 41 (17.5%) indicated that they graduated from high school, 163 (69.7%) said they had some college, 4 (1.7%) had an associate's degree, 17 (7.3%) indicated having a bachelor's degree, and 9 (3.8%) said they have done post-bachelor's work. Of the participating sample, 182 (77.8%) reported some level of participation in sports, while 52 (22.2%) said they had no participation in sports. The mean number of years of sport participation was 10.49 (*SD* = 6.93).

Design

The design for this study is a 2 (team identification: high vs. low) x 2 (game outcome: close game vs. blowout) x 2 (location of team: local vs. distant) between subjects factorial design. Participants in the two team identification conditions were determined by doing a median split. A team was considered distant if the school is located more than 500 miles away. A game was considered a blowout if a team wins by more than 20 points, and was considered a close game if a team wins by less than five points. The dependent variable was the desire to complete certain superstitions. The independent variables were team identification, the game outcome, and the team in the

vignette. The potential covariates were the need for control and the level of anxiety of the participants.

Measures

Demographics. Participants completed a demographics form that included questions on gender, age, ethnicity, and education level (see Appendix A).

Need for Control. The Desirability of Control Scale (DC scale; Burger & Cooper, 1979; see Appendix B) is a 20-item measure that assesses a person's need to feel control in his or her life. Participants respond to each item using a Likert-type scale, from 1 (*the statement does not apply to me at all*) to 7 (*the statement always applies to me*). An example of an item on the DC scale is, "I try to avoid situations where someone else tells me what to do." Higher ratings on the individual items as well as a higher overall score reflects more need for control. Current research has shown that the scale's internal consistency (alpha = .78) has not diminished over time (McCutcheon, 2000).

Anxiety. The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995; see Appendix C) is a 42-item self-report scale measures the participants' level of depression, anxiety, and stress. Participants respond to each item using a Likert-type scale, from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). An example of an item on the DASS is "Over the past week, I found it difficult to relax." There are 14 questions from each scale (depression, anxiety, and stress) and higher ratings indicate elevations. For this study, the anxiety scale was of particular interest. The DASS has an overall internal consistency of alpha = .97, and the anxiety scale has an internal consistency of alpha = .92 (Page, Hooke, & Morrison, 1997).

Team Identification. The Sport Spectator Identification Scale (SSIS; Wann & Branscombe, 1993; see Appendix D) is a seven-item measure that assesses the level of identification a participant has with an identified team. In this study, the SSIS was completed in relation to the University of Kentucky Men's Basketball Team. Participants respond to each item using a Likert-type scale, from 1 (*low identification*) to 8 (*high identification*). An example item on the SSIS is, "How important to you is it that this team wins?" Higher ratings on the individual items as well as a higher overall score reflect a higher level of identification with the indicated team. The SSIS has an internal consistency of alpha = .91 (Wann & Branscombe, 1993).

Superstitions. The Superstition Questionnaire (see Appendix E) is a ten-item measure created for the current study that assesses the propensity of the participant to perform specific superstitions. The questionnaire was created based on data from Wann et al. (2010). Specifically, the questionnaire used the ten superstitions most likely performed by college basketball fans in the previous study. Participants responded to each item using a Likert-type scale, from 1 (*not at all likely*) to 8 (*very likely*). An example item on the Superstition Questionnaire is, "How likely would you be to wear an item of clothing with your team's logo to help the home team win?" Higher ratings on the individual items as well as a higher overall score indicate a higher propensity to perform superstitions.

Vignettes

The vignettes were created to describe the last few minutes of a college basketball game, and they were randomly assigned to participants. They were created using the online play-by-play of games from the 2009-2010 college basketball season. Vignettes

were used instead of actual footage to decrease the likelihood of participants remembering the games in question. The vignettes include: The University of Kentucky in a close game, The University of Kentucky in a blowout, a distant team in a close game, and a distant team in a blowout (see Appendices F-I). The distant team was the same in both scenarios. Both vignettes of a particular category (e.g., blowout) describe similar actions; however, the school names and the names of specific players were varied accordingly.

Procedure

After obtaining Human Subjects Review Board (HSRB) approval, participants were recruited from undergraduate Psychology classes via Study Board to participate in a sports fan study. The participants were informed that their participation was strictly voluntary and their responses were anonymous. After completing a demographics questionnaire, the participants completed the Desirability of Control Scale and the Depression, Anxiety, and Stress Scales (DASS). Then, they completed the Sport Spectator Identification Scale. Next, the participants were presented with one of four randomly assigned scenarios containing play-by-play details of the last few minutes of a college basketball game. Participants then completed the Superstition Questionnaire and rated how likely they would be to perform specific superstitions. Upon completion of the questionnaire, participants were presented with a debriefing statement (see Appendix K). The completion time of the study took approximately 20-30 minutes.

Results

Preliminary Analyses

Scores from each of the seven items included in the SSIS (Cronbach's alpha = .96) were combined to create a single index of team identification (M = 24.28, SD = 15.87, actual range = 7 to 56, potential range = 7 to 56). Scores from each of the ten items forming the Superstition Questionnaire (Cronbach's alpha = .84) were combined to create a single index of superstitious behaviors (M = 47.81, SD = 14.94, actual range = 10 to 80, potential range = 10 to 80).

For the covariate measures, scores from the 14 anxiety items in the DASS (Cronbach's alpha = .88) were combined to create a single index of anxiety level (M = 6.96, SD = 6.64, actual range = 0 to 35, potential range = 0 to 42). Scores from each of the 20 items included in the Desirability of Control Scale (Cronbach's alpha = .80) were combined to create a single index of desirability of control (M = 100.75, SD = 12.23, actual range = 33 to 130, potential range = 20 to 140).

A manipulation check was performed via insertion of an open-ended question immediately following the vignettes. More specifically, the participants were instructed to describe what they had just read in the vignette. These responses were scored by independent readers on a scale where 0 = *did not pay attention*, 1 = *paid some attention*, and 2 = *paid close attention*. Additionally, to achieve interrater reliability, 20 randomly selected responses (five from each condition) were read and scored by two different readers. The interrater reliability for this was r = 1.0. The manipulation check resulted in 19 participants scoring a 0, and they were dropped from subsequent analyses.

An analysis of the covariates showed that there were no significant correlations between desirability of control and the desire to complete superstitious behaviors (r = -

.02, p = .83). Similarly, there was not a significant correlation between anxiety level and the desire to complete superstitious behaviors (r = .12, p = .07). Since there were no significant correlations, the covariates were not used in subsequent analyses.

A median split on the SSIS scores (median = 18) served to differentiate between high and low identification groups. An independent samples t-test showed significant differences in SSIS scores between low (M = 10.99, SD = 3.68) and high (M = 38.52, SD = 11.22) identification groups, t (214) = -24.32, p = .00. A comparison of identification levels with demographic data showed that participants in the low identification group were older (M = 23.00, SD = 9.38) than participants in the high identification group *(*M = 19.60, SD = 2.36), t (214) = 3.84, p = .00. Additionally, participants in the low identification group had more education (M = 3.29, SD = 1.04) than participants in the high identification group (M = 2.91, SD = .73), t (214) = 3.19, p = .00. Please note that education level was coded on a 1 (*lowest level of education)* to 6 (*highest level of education)* scale. No differences existed between groups in terms of gender or number of years of participation in sports. Finally, a separate analysis found that there were no significant differences between whether or not the participant had participated in sports and their desire to complete superstitions.

Hypothesis Testing

To evaluate the hypotheses, a 2 (level of identification: high vs. low) x 2 (game outcome: close game vs. blowout) x 2 (location of team: local vs. distant) Analysis of Variance (ANOVA) was used. There were no three-way interactions noted, F (1, 207) = .12, p = .73. There was not a two-way interaction found between game outcome and location of team, F (1, 207) = 2.03, p = .16, level of identification and game outcome, F

(1, 207) = .06, p = .81, or level of identification and team location, F (1, 207) = .01, p = .92. No main effect was found for game outcome, F (1, 207) = .07, p = .79, or team location, F (1, 207) = .35, p = .55. There was a main effect found for team identification such that highly identified fans reported wanting to perform more superstitious behaviors (M = 53.00, SD = 1.39) than low identified fans (M = 43.29, SD = 1.39), F (1, 207) = 24.41, p < .001, eta^2 = .11 (see Appendix L for means and standard deviations of all conditions).

Exploratory Analyses

To evaluate the effect of desirability of control on the conditions, a 2 (level of identification: high vs. low) x 2 (game outcome: close game vs. blowout) x 2 (location of team: local vs. distant) Analysis of Variance (ANOVA) was used. There was a three-way interaction noted, F (1, 208) = 4.41, p = .04. There was not a two-way interaction found between game outcome and location of team, F (1, 208) = 1.41, p = .24, level of identification and game outcome, F (1, 208) = .57, p = .45, or level of identification and team location, F (1, 208) = .27, p = .60. No main effect was found for game outcome, F (1, 208) =.88, p = .35, team location, F (1, 208) = 3.29, p = .07, or team identification, F (1, 208) = 2.85, p = .09 (see Appendix M for means and standard deviations of all conditions).

To evaluate the effect of anxiety on the conditions, a 2 (level of identification: high vs. low) x 2 (game outcome: close game vs. blowout) x 2 (location of team: local vs. distant) Analysis of Variance (ANOVA) was used. No three-way interaction, two-way interactions or main effects were found (see Appendix N for means and standard deviations of all conditions).

Discussion

The current study sought to examine the relationship between superstitious behaviors of sports fans, team identification, team location, and game outcome. Examining superstitious behaviors of sports fans is a fairly new line of research, as most of the previous sport superstition research has focused on superstitions of athletes. Previous research on team identification has shown that fans that are highly identified with a team show more positive emotions after a team win and more negative emotions after a team loss (Bizman & Yinon, 2002). Experiencing a lack of control can lead to an engagement in superstitious behaviors. Therefore, the fluctuations of emotions experienced by highly identified fans during a game can influence their perceptions of control and make them take part in such behaviors. It was expected that these fluctuations of emotions of highly identified fans would occur more during a close game involving a local team. The current study examined these variables.

The first hypothesis stated that highly identified fans are more likely to engage in superstitious behaviors than those fans that are not highly identified. Results supported this hypothesis: highly identified fans reported wanting to engage in more superstitious behaviors than low identified fans. This finding supports Wann et al.'s (2010) results in which participants reporting zero superstitions reported significantly lower team identification scores than those reporting at least one superstition.

The second hypothesis stated that fans who are reading about a close game are more likely to engage in superstitious behaviors than those fans reading about a blowout. This hypothesis was not supported by the results. This finding is surprising, especially based on what we know about combating anxiety and the need for control. Remember,

Keinan (2002) suggested that the desire for control increases the frequency that people engage in superstitions. Additionally, Magyar and Chase (1996) found that increasing anxiety levels of athletes led to them performing superstitions. However, since most previous research on game outcome has looked at the differences between fans' reactions to a team win versus a team loss, more research needs to be done on the fans' reaction to their team's participation in a close game versus a blowout game.

The third hypothesis stated that fans who are reading about a local team are more likely to engage in superstitious behaviors than those fans reading about a distant team. Results did not support this hypothesis. While studies have examined the relationship between identification with a local team and the Big Five personality traits, social interactions, and psychological well-being, more needs to be done on contrasting the experience of watching a local team with watching a distant team and the perceived experience of the fan (Wann, 2006a; Wann et al., 2004).

The fourth hypothesis was a combination of the previous three and stated that highly identified fans who are reading about a close game involving a local team are more likely to engage in superstitious behaviors than any of the other groups. Analyses did not provide support for this hypothesis. Participants reading each of the four randomly assigned vignettes responded similarly in their level of willingness to engage in superstitions, differing only by their level of identification.

The first overarching limitation of the present study is its lack of generalizability to the entire population. Participants selected for the study came from a university, and the average age of participants was 21. This makes it difficult to generalize to other age groups and education levels. The study also lacked diversity, and differences may be

found if this research was done with participants of different ethnic and racial backgrounds.

Another limitation is the removal of the emotional aspect of a basketball game by presenting vignettes, rather than having participants watch a game in person or on tape. In other words, reading about a University of Kentucky men's basketball game on paper is not going to elicit the emotional response that one would experience in the arena. Therefore, the self-reported superstitious behavior in this study may be skewed.

Additionally, the Superstition Questionnaire was created for this study based solely off the most frequently reported superstitions in the Wann et al. (2010) study. This may not have been the most effective method for creating such an instrument, but seemed the most feasible based on the limited amount of sport fan superstition research available. For example, questions such as "How likely would you be to watch the game in a group, with other fans of the home team, to help the home team win?" elicited a positive response regardless of game type or team type. Questions such as this may have gotten more at importance of social interaction than engagement in superstitious behavior.

The median level of team identification used to introduce the median split (18) is lower than what we would expect for the University of Kentucky Men's Basketball Team's fans. This median level should possibly be described more as "moderately identified" than "highly identified". As a reference point, a study by Wann et al. (2000) that also looked at team identification for the University of Kentucky Men's Basketball Team found a mean team identification of 24.92, based on 73 participants. This suggests the median number used by the current study is somewhat low. However, since team identification still had a significant effect on the willingness to participate in superstitious

behaviors, this limitation is not as profound. Additionally, younger participants and participants with less education were found to be higher in identification than older participants and participants with higher levels of education. These factors may or may not have contributed to the differences between the groups.

It is difficult to interpret the results of this study without reiterating the fact that participants were self-reporting their superstitious behaviors. This type of study provides the opportunity for participants to answer the questions dishonestly, fail to read some or all of the questions, or misread the questions. For future research, it would be crucial to perform *in vivo* research, or examining the participants in person. Keinan (2002) examined the "knock-on-wood" phenomenon by studying participants' superstitious behavior in person. She split participants into high-stress and low-stress conditions, and found that participants were more likely to knock on wood under the high-stress conditions. This study could be used as a template for understanding ways to perform a study of superstitious behaviors in person.

This study has implications in the research area of sport psychology. Its results reiterated the importance of team identification and its effects on the fan. The study brought new variables to the table, game type and team type, that could be used in future research. Hopefully, this study will help to pave the way for an emerging line of research and more research focus will be put on superstitious behaviors of sports fans.

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Appendix A

Demographics

Demographics

Directions: Please answer the following questions in an honest manner. **DO NOT** include your name or any other identifying information.

1. AGE: _____ **Prefer not to Respond**

2. GENDER: **Male** **Female** **Prefer not to Respond**

3. ETHNICITY: **African American** **Asian** **Caucasian** **Hispanic**

Native American **Pacific Islander** **Bi-Racial** **Other**

Prefer not to Respond

4. EDUCATION LEVEL: **Less Than High School Degree**

High School Graduate **Some College** **Associates Degree**

Bachelors Degree **Post Bachelors** **Prefer not to Respond**

5. PARTICIPATION IN SPORTS: **Yes** **No**

If so, how many years?

Appendix B

Desirability of Control Scale (DC scale)

Desirability of Control Scale

Below you will find a series of statements. Please read each statement carefully and respond to it by expressing the extent to which you believe the statement applies to you. For all items, a response from 1 to 7 is required. Use the number that best reflects your belief when the scale is defined as follows:

1 = The statement does not apply to me at all
2 = The statement usually does not apply to me
3 = Most often, the statement does not apply
4 = I am unsure about whether or not the statement applies to me, or it applies to me about half the time
5 = The statement applies more often than not
6 = The statement usually applies to me
7 = The statement always applies to me

1. I prefer a job where I have a lot of control over what I do and when I do it.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

2. I enjoy political participation because I want to have as much of a say in running government as possible.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

3. I try to avoid situations where someone else tells me what to do.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

4. I would prefer to be a leader than a follower.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

5. I enjoy being able to influence the actions of others.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

6. I am careful to check everything on an automobile before I leave for a long trip.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

7. Others usually know what is best for me.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

8. I enjoy making my own decisions.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

9. I enjoy having control over my own destiny.

___ ___ ___ ___ ___ ___ ___
1 2 3 4 5 6 7

10. I would rather someone else take over the leadership role when I'm involved in a group project.

1 2 3 4 5 6 7

11. I consider myself to be generally more capable of handling situations than others are.

1 2 3 4 5 6 7

12. I'd rather run my own business and make my own mistakes than listen to someone else's orders.

1 2 3 4 5 6 7

13. I like to get a good idea of what a job is all about before I begin.

1 2 3 4 5 6 7

14. When I see a problem, I prefer to do something about it rather than sit by and let it continue.

1 2 3 4 5 6 7

15. When it comes to orders, I would rather give them than receive them.

1 2 3 4 5 6 7

16. I wish I could push many of life's daily decisions off on someone else.

1 2 3 4 5 6 7

17. When driving, I try to avoid putting myself in a situation where I could be hurt by another person's mistake.

1 2 3 4 5 6 7

18. I prefer to avoid situations where someone else has to tell me what it is I should be doing.

1 2 3 4 5 6 7

19. There are many situations in which I would prefer only one choice rather than having to make a decision.

1 2 3 4 5 6 7

20. I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered with it.

1 2 3 4 5 6 7

Appendix C

Depression Anxiety Stress Scales (DASS)

Please read each statement and circle a number 0, 1, 2 or 3 that indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

1	I found myself getting upset by quite trivial things	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I just couldn't seem to get going	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I had a feeling of shakiness (eg, legs going to give way)	0	1	2	3
8	I found it difficult to relax	0	1	2	3
9	I found myself in situations that made me so anxious I was most relieved when they ended	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting upset rather easily	0	1	2	3
12	I felt that I was using a lot of nervous energy	0	1	2	3
13	I felt sad and depressed	0	1	2	3
14	I found myself getting impatient when I was delayed in any way (eg, elevators, traffic lights, being kept waiting)	0	1	2	3
15	I had a feeling of faintness	0	1	2	3
16	I felt that I had lost interest in just about everything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I perspired noticeably (eg, hands sweaty) in the absence of high temperatures or physical exertion	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life wasn't worthwhile	0	1	2	3

Reminder of rating scale:

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

22	I found it hard to wind down	0	1	2	3
23	I had difficulty in swallowing	0	1	2	3
24	I couldn't seem to get any enjoyment out of the things I did	0	1	2	3
25	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
26	I felt down-hearted and blue	0	1	2	3
27	I found that I was very irritable	0	1	2	3
28	I felt I was close to panic	0	1	2	3
29	I found it hard to calm down after something upset me	0	1	2	3
30	I feared that I would be "thrown" by some trivial but unfamiliar task	0	1	2	3
31	I was unable to become enthusiastic about anything	0	1	2	3
32	I found it difficult to tolerate interruptions to what I was doing	0	1	2	3
33	I was in a state of nervous tension	0	1	2	3
34	I felt I was pretty worthless	0	1	2	3
35	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
36	I felt terrified	0	1	2	3
37	I could see nothing in the future to be hopeful about	0	1	2	3
38	I felt that life was meaningless	0	1	2	3
39	I found myself getting agitated	0	1	2	3
40	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
41	I experienced trembling (eg, in the hands)	0	1	2	3
42	I found it difficult to work up the initiative to do things	0	1	2	3

Appendix D

Modified Sport Spectator Identification Scale (SSIS)

SSIS

Directions: Answer the following questions based on how you feel about the University of Kentucky Men's Basketball Team. There are no "right" or "wrong" answers, simply be honest in your responses. (Circle your answer)

1. How important to YOU is it that the University of Kentucky Men's Basketball Team wins?

Not important 1 2 3 4 5 6 7 8 Very important

2. How strongly do YOU see YOURSELF as a fan of the University of Kentucky Men's Basketball Team?

Not at all a fan 1 2 3 4 5 6 7 8 Very much a fan

3. How strongly do your FRIENDS see YOU as a fan of the University of Kentucky Men's Basketball Team?

Not at all a fan 1 2 3 4 5 6 7 8 Very much a fan

4. During the season, how closely do you follow the University of Kentucky Men's Basketball Team via ANY of the following: a) in person or on television, b) on the radio, c) television news or a newspaper, and/or d) the Internet?

Never 1 2 3 4 5 6 7 8 Almost everyday

5. How important is being a fan of the University of Kentucky Men's Basketball Team to YOU?

Not important 1 2 3 4 5 6 7 8 Very important

6. How much do YOU dislike the University of Kentucky Men's Basketball Team's greatest rivals?

Do not dislike 1 2 3 4 5 6 7 8 Dislike very much

7. How often do YOU display the University of Kentucky Men's Basketball Team's name or insignia at your place of work, where you live, or on your clothing?

Never 1 2 3 4 5 6 7 8 Always

Appendix E

Superstition Questionnaire

Superstition Questionnaire

Assume you were watching the given college basketball game in person and cheering for the home team. Please answer the following questions based on what you would do during the game. There are no "right" or "wrong" answers, but please be honest in your responses. (Circle your answer)

1. How likely would you be to wear an item of clothing with the home team's logo to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

2. How likely would you be to get up for a bathroom, food, etc. break during some pivotal point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

3. How likely would you be to close your eyes during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

4. How likely would you be to yell at the home team in some way (cheering, chanting, etc.) during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

5. How likely would you be to bring a good luck charm to the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

6. How likely would you be to watch the game in a group, with other fans of the home team, to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

7. How likely would you be to pray for the home team's victory during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

8. How likely would you be to make a body movement or gesture (raise hands in air during free throws, cross fingers, etc.) during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

9. How likely would you be to hold up or wave an object (display sign, poster, towel, flag, etc.) during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

10. How likely would you be to switch seats during some point of the game to help the home team win?

Not at all likely 1 2 3 4 5 6 7 8 Very likely

Appendix F

Vignette 1

Assume you are watching the given college basketball game in person and cheering for the home team. Please read carefully and answer the question to follow.

It is late in the game at Rupp Arena in Lexington, Kentucky. The Wildcat faithful are on their feet, attempting to drown out the sounds of the Tar Heel followers. John Wall, freshman phenom, puts up a jumper, but is blocked by North Carolina's Ed Davis. The University of Kentucky holds a slim five-point lead with under five minutes to play. Will Graves gets the ball for the University of North Carolina and puts up a mid-range jumper that misses left. However, Marcus Ginyard grabs the offensive board and quickly dishes to Tyler Zeller who connects for two. Kentucky's lead is quickly cut to three. The Wildcats inbound the ball to Wall, who takes it the length of the court and drives to the basket. A charge is called and the ball is given back to UNC! On the ensuing play, Larry Drew attempts to tie the score with a three-pointer, but comes up short. Darius Miller grabs the rebound for the 'Cats and puts up a three of his own, but it misses as well. He caroms his own rebound and gets the ball to Darnell Dodson outside the arc, but his three-point attempt is off the mark. Ed Davis gets the defensive rebound and the Tar Heels regain possession down by three with under four minutes to play. Eric Bledsoe enters the game to replace Dodson for Kentucky. David Wear and Deon Thompson replace Zeller and Graves for the Tar Heels.

Following the substitutions, Bledsoe fires a three, but it rims out. Thompson grabs the board for North Carolina and gets the ball to Ginyard, who launches a three, but it is no good. Wall gets the ball to Bledsoe who goes in strong and is fouled hard by Ginyard. Bledsoe goes to the line to shoot two. The first is up, and good! Bledsoe takes his time and hits the second as well, extending the lead back to five. The Tar Heels grab the inbounds and drive the ball up the court. They do not want to get too far behind one of the best teams in the country. Drew puts up a three, but it hits the iron and rims out. The rebound comes to the 'Cats, who immediately get the ball to their point guard, Wall, who pushes it up the court. Bledsoe scores again, and the Cats' lead is up to seven with less than two minutes to play! Graves quickly attempts a three-pointer for North Carolina and hits, and Coach Williams immediately calls a 30-second timeout.

Following the timeout, the Wildcats utilize most of the shot clock until Bledsoe has an open jumper, but it is no good! With 30 seconds left in the game, Deon Thompson's runner cuts the 'Cats' lead to two! The ball is inbounded to Bledsoe, who is quickly fouled. He hits them both, and the 'Cats' lead is extended to four! The arena is roaring, as fans from both teams attempt to out-chant their opponents.

Graves, who has returned to the game, attempts a three for the Tar Heels, but it is no good. Ginyard, of the Heels, is forced to foul Bledsoe to stop the clock with only 16

seconds left in the game. Bledsoe hits one of two, and things are beginning to look bleak for North Carolina. However, on the ensuing play, Thompson lays it in to cut the lead to three. Not going down without a fight, the Tar Heels immediately foul Wall with five seconds to play. With everything on the line, the player touted as one of the best in the country converts them both for Kentucky! Graves hits a three at the buzzer for the Tar Heels but it is too little too late, and the Wildcats win, 68-66.

In your own words, what happened in the game?

Appendix G

Vignette 2

Assume you are watching the given college basketball game in person and cheering for the home team. Please read carefully and answer the question to follow.

The Kentucky fans did not think it would be this easy. With five minutes to go in the game at Rupp Arena, the Wildcats hold a double digit lead over the University of South Carolina Gamecocks. Daniel Orton has just converted a pair of free throws to increase the 'Cats lead to 14. Devan Downey, standout for the Gamecocks, puts up a jumper on the other end, but misses right. However, Lakeem Jackson grabs the offensive rebound and scores for South Carolina. After an uncharacteristic sloppy play by John Wall, Kentucky's point guard and freshman phenom, leads to a turnover, Jackson converts again, cutting the Wildcats' lead to ten. The run is short-lived, though, as Wall gets the ball to Orton who goes in for a thunderous dunk! On the ensuing play, Downey hits a shot of his own. Not to be outdone, Patrick Patterson takes the ball in for a dunk for Kentucky, who hold a 12-point lead with under three minutes left in the game.

Downey, attempting to orchestrate a comeback for the Gamecocks, heaves up a three, but it misses. DeMarcus Cousins, a presence for Kentucky on the inside, goes up strong and is fouled. He makes both free throws to give the Wildcats a 14-point lead. Following a Downey turnover, South Carolina commits their tenth team foul, and puts Wall on the line for two. He hits them both. After another miss by the Gamecocks, Patterson is good from the block. Kentucky has increased their lead to 18 with a minute to play.

Brandis Raley-Ross continues the string of misses for South Carolina, as his jumper hits the iron and rims out. Cousins grabs the rebound, gets the ball up the court to Eric Bledsoe, whose dunk is the icing on the cake for Kentucky. South Carolina calls a 30-second timeout and Coach Calipari makes his substitutions, pulling out all five starters and inserting the reserves. The Gamecock faithful start to file out of the arena.

Following the timeout, Downey attempts a three, but it is no good. To further put salt in their wounds, DeAndre Liggins connects from three for Kentucky, giving the 'Cats an impressive 23-point lead with seconds to play. As Kentucky began to celebrate, Jackson hit a shot for South Carolina, making the final a decisive 82-61 Wildcats victory.

In your own words, what happened in the game?

Appendix H

Vignette 3

Assume you are watching the given college basketball game in person and cheering for the home team. Please read carefully and answer the question to follow.

It is late in the game at the Carrier Dome in Syracuse, New York. The Orange faithful are on their feet, attempting to drown out the sounds of the West Virginia Mountaineer followers. Brandon Triche, freshman point guard for Syracuse, puts up a jumper, but is blocked by West Virginia's Da'Sean Butler. Syracuse University holds a slim five-point lead with under five minutes to play. Darryl Bryant gets the ball for West Virginia and puts up a mid-range jumper that misses left. However, Butler grabs the offensive board and quickly dishes to Kevin Jones who connects for two. The Syracuse lead is quickly cut to three. The Orange inbound the ball to Triche, who takes it the length of the court and drives to the basket. A charge is called and the ball is given back to West Virginia! On the ensuing play, Bryant attempts to tie the score with a three-pointer, but comes up short. Andy Rautins grabs the rebound for the Orange and puts up a three of his own, but it misses as well. He caroms his own rebound and gets the ball to Wesley Johnson outside the arc, but his three-point attempt is off the mark. Dalton Pepper gets the defensive rebound and the Mountaineers regain possession down by three with under four minutes to play. Kris Joseph enters the game for Syracuse. Casey Mitchell and Devin Ebanks come in for the Mountaineers.

Following the substitutions, Rautins fires a three, but it rims out. Ebanks grabs the board for West Virginia and gets the ball to Butler, who launches a three, but it is no good. Triche gets the ball to Joseph who goes in strong and is fouled hard by Mitchell. Joseph goes to the line to shoot two. The first is up, and good! Joseph takes his time and hits the second as well, extending the lead back to five. The Mountaineers grab the inbounds and drive the ball up the court. They do not want to get too far behind one of the best teams in the country. Butler puts up a three, but it hits the iron and rims out. The rebound comes to the Orange, who immediately get the ball to their point guard, Triche, who pushes it up the court. Joseph scores again, and the Orange lead is up to seven with less than two minutes to play! Mitchell quickly attempts a three-pointer for West Virginia and hits, and Coach Huggins immediately calls a 30-second timeout.

Following the timeout, the Orange utilize most of the shot clock until Rautins has an open jumper, but it is no good! With 30 seconds left in the game, Butler's runner cuts the Mountaineers' lead to two! The ball is inbounded to Johnson, who is quickly fouled. He hits them both, and the Orange lead is extended to four! The arena is roaring, as fans from both teams attempt to out-chant their opponents.

Bryant, who has returned to the game, attempts a three for the Mountaineers, but it is no good. Butler is forced to foul Rautins to stop the clock with only 16 seconds left

in the game. Rautins hits one of two, and things are beginning to look bleak for West Virginia. However, on the ensuing play, Ebanks lays it in to cut the lead to three. Not going down without a fight, the Mountaineers immediately foul Johnson with five seconds to play. With everything on the line, the player touted as one of the best in the country converts them both for Syracuse! Butler hits a three at the buzzer for the Mountaineers but it is too little too late, and the Orange win, 68-66.

In your own words, what happened in the game?

Appendix I

Vignette 4

Assume you are watching the given college basketball game in person and cheering for the home team. Please read carefully and answer the question to follow.

The Syracuse fans did not think it would be this easy. With five minutes to go in the game at the Carrier Dome in Syracuse, New York, the Orange hold a double digit lead over the Georgetown Hoyas. Wesley Johnson has just converted a pair of free throws to increase the Orange lead to 14. Jason Clark puts up a jumper on the other end, but misses right. However, Austin Freeman grabs the offensive rebound and scores for Georgetown. After an uncharacteristic sloppy play by Brandon Triche, Syracuse's freshman point guard, leads to a turnover, Freeman converts again, cutting the Orange lead to ten. The run is short-lived, though, as Triche gets the ball to Arinze Onuaku who goes in for a thunderous dunk! On the ensuing play, Clark hits a shot of his own. Not to be outdone, Rick Jackson takes the ball in for a dunk for Syracuse, who hold a 12-point lead with under three minutes left in the game.

Clark, attempting to orchestrate a comeback for the Hoyas, heaves up a three, but it misses. Onuaku, a presence for Syracuse on the inside, goes up strong and is fouled. He makes both free throws to give the Orange a 14-point lead. Following a Clark turnover, Georgetown commits their tenth team foul, and puts Andy Rautins on the line for two. He hits them both. After another miss by the Hoyas, Jackson is good from the block. Syracuse has increased their lead to 18 with a minute to play.

Hollis Thompson continues the string of misses for Georgetown, as his jumper hits the iron and rims out. Onuaku grabs the rebound, gets the ball up the court to Johnson, whose dunk is the icing on the cake for Syracuse. Georgetown calls a 30-second timeout and Coach Boeheim makes his substitutions, pulling out all five starters and inserting the reserves. The Hoya faithful start to file out of the arena.

Following the timeout, Chris Wright attempts a three for Georgetown, but it is no good. To further put salt in their wounds, Scoop Jardine connects from three for Syracuse, giving the Orange an impressive 23-point lead with seconds to play. As Syracuse began to celebrate, Freeman hit a shot for Georgetown, making the final a decisive 82-61 Orange victory.

In your own words, what happened in the game?

Appendix J

Informed Consent

Informed Consent

You are being asked to participate in a survey research project. Before verbally giving your permission to participate we would like to explain the following.

1. Your participation is completely voluntary. This means you have the right to not answer any question you do not want to, or to quit at any time without any penalty.
2. For this study, you will remain completely anonymous. That is, you will not be asked to write down any identifying information, such as your name.
3. This study appears to have minimal risks and discomfort. However, there is always a chance that a question could cause discomfort or problems. Please let the researchers know if any questions are upsetting.
4. Benefits of this study include a sense of well being for contributing to scientific research, helping a WKU graduate student, and providing information that will be used to help better understand sport spectators.
5. During participation you will be asked to complete a section asking about age, education, ethnicity, gender, and sport participation. Also, you will be asked to complete four short measures (20 items, 42 items, 7 items, 10 items) that evaluate need for control, level of anxiety, team identification, and desire to perform superstitions. These surveys collectively should take about 20-30 minutes to complete.
6. Although your individual responses will remain anonymous, your data will be combined with the data of others and may be submitted for publication in scholarly journals or presented at conventions.

Professor Rick Grieve, Ph.D., is the Faculty Sponsor for this research project and can be contacted at (270) 745-4417, with any questions in regards to the study, Monday through Friday from 9:00 am until 4:00 pm. Dr. Grieves' office is located in Gary Ransdell Hall room 3028. Questions or complaints about research participants' rights can be directed to the Institutional Review Board, Western Kentucky University, Bowling Green, KY 42101, or by phone at (270)-745-4652.

Appendix K

Debriefing Statement

Thank you for taking part in this study. This study examines individuals' desire to participate in superstitions. You first completed a questionnaire which provided us with basic information about yourself. Then, you completed questionnaires assessing your need for control and overall anxiety levels. Next, you completed a questionnaire used to measure your level of team identification. You were then asked to read a vignette, imagining that you were watching the game in the arena. Finally, you were asked to complete a questionnaire measuring your desire to complete superstitions based on the vignette. The results of this study will be used to examine how team identification, game outcome, and location of the team influences desire to complete superstitions. I want to remind you that your responses in this study will remain anonymous. If you have any questions regarding your participation, you may contact the primary investigator, Shana Wilson, at shana.wilson628@wku.edu, or my supervising professor, Dr. Rick Grieve, at (270) 745-4417. Also, if you feel any discomfort from participating in this study, you may contact the Western Kentucky University Counseling and Testing Center at (270)-745-3195

Appendix L

Means and Standard Deviations for Superstitious Behaviors by Condition

Means and Standard Deviations by Condition

SSIS Group	Game Type	Team Type	Mean	Std. Dev.
.00	1	1	41.10	14.97
		2	45.54	16.80
	2	1	44.52	12.36
		2	42.00	17.88
1.00	1	1	51.75	15.92
		2	55.24	11.49
	2	1	52.87	13.51
		2	52.13	9.65

SSIS Group: .00 = Low ID, 1.00 = High ID

Game Type: 1 = Close, 2 = Blowout

Team Type: 1 = Close, 2 = Distant

Appendix M

Means and Standard Deviations for Desirability of Control by Condition

Desirability of Control Means and Standard Deviations by Condition

SSIS Group	Game Type	Team Type	Mean	Std. Dev.
.00	1	1	99.55	14.01
		2	104.89	12.17
	2	1	100.75	12.10
		2	103.08	11.88
1.00	1	1	102.32	10.77
		2	99.04	10.10
	2	1	94.13	15.10
		2	101.67	7.50

SSIS Group: .00 = Low ID, 1.00 = High ID

Game Type: 1 = Close, 2 = Blowout

Team Type: 1 = Close, 2 = Distant

Appendix N

Means and Standard Deviations for Anxiety by Condition

Anxiety Means and Standard Deviations by Condition

SSIS Group	Game Type	Team Type	Mean	Std. Dev.
.00	1	1	7.07	7.06
		2	5.04	4.89
	2	1	5.75	5.28
		2	7.58	6.70
1.00	1	1	6.89	6.44
		2	9.16	8.68
	2	1	6.50	4.20
		2	6.17	6.60

SSIS Group: .00 = Low ID, 1.00 = High ID

Game Type: 1 = Close, 2 = Blowout

Team Type: 1 = Close, 2 = Distant