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Superstitious Behavior and Ritualistic Practices among Former Athletes

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Abstract

Superstitious and ritualistic behaviors in sport have been well documented (Brevers, Dan, Noel, & Nils, 2011a, 2011b; Buhrmann & Zaugg, 1983; Foster, Weigand, & Baines, 2006). Studies have identified several benefits athletes gain from these practices such as: reduction of "sport anxiety" (Jackson, Ashford, & Norsworthy, 2006), and reaching "peak performance" (Krane & Williams, 2010). Other research has studied the effects that personality antecedents, such as locus of control (LOC) and Athletic Identity (AI), might have on these practices (Griffith & Johnson, 2002). To date however, there has been little to no research done on whether former athletes would continue ritualistic or superstitious practices once out of organized sport. Accordingly, the present study evaluated the relationship between athletic career ritual/superstition (ACR/S) and post-athletic career ritual/ superstition (PACR/S); in addition to looking for any moderating variables using an adaptation of the Athletic Identity Measurement Scale (Brewer, van Raalte, & Linder, 1993), an adaptation of the Exhausted Eligibility Transition Scale (Moreland-Bishop, 2009), and the Religion Subscale from the Personal Life Values Questionnaire (Hyde & Weathington, 2006). Analysis of the data showed a positive correlation between "ACR/S" and "PACR/S". "Perceived success in sport" was shown to moderate the relationship between "ACR/S" and "PACR/S", while "Athletic Identity," "transition out of sport" and "religious importance" had no significant effect on the relationship.

Introduction

Athletic participation is prevalent in modern society and is associated with eccentric or "odd" behaviors, often referenced as rituals or superstitions, which are almost as common. In today's sport culture, stories persist that range from famous athletes eating an exact food before game time to high school athletes not shaving for the entirety of a season; and even media networks will occasionally cover the pre-game practices of a professional athlete (Lustberg, 2010). Superstitions and rituals themselves have been prevalent aspects of many cultures ranging from various religious ceremonies, to the luck assigned to the number "8" in Chinese culture, to the fear of black cats in many Western cultures (Carlson, Mowen, & Fang, 2009; Wang, Hernandez, Minor, & Wei, 2009; Yang, 2011). There have been numerous attempts at explaining the reason behind these practices, such as: emotional and social benefits, coping with uncertainty, coping with anxiety (Wang, et al, 2009), associations of behaviors with reinforcers or punishers, attempts to understand inexplicable phenomena, and establishing an illusion of control (Carlson, et al, 2009). The wide range of these various explanations points to an overall ubiquity among peoples

in viewing rituals and superstitions as important aspects of culture.

Sport itself is a type of cultural and societal expression (Frey & Eitzen, 1991); and therefore, it has been argued that there should be no surprise that superstitious and ritualistic behaviors would arise in this competitive atmosphere (Obare, 2000). Over the past decades, many studies have dealt with athletes practicing rituals or superstitions and have even been able to separate sport superstition from general superstition (Brevers, Dan, Noel, & Nils, 2011b; Foster, Weigand, & Baines, 2006; McClearn, 2004). In other words, sport superstition can be seen as its own entity; so much so that athletes will assign superstitious value to any ritual they may practice (Brevers, et al, 2011b). The purpose of the present study is to look into the possibility of former athletes continuing such practices after they call an end to their athletic career. If there is a connection between practicing superstition or ritual both during and after an athletic career, then there may be moderating factors that would lead to a higher probability for a former athlete to continue those practices. To see if these possibilities are a reality, this review will first look into the benefits of practicing superstitions or rituals that may have a hand

in a continuation of such practices, before searching for possible personality antecedents that would lead to a greater propensity for an athlete to transfer these practices into future life.

Benefits of an athlete practicing a ritual or superstition

A ritual can be defined as: “actions which are repetitive, formal, sequential, distinct from technical performance, and which is believed to be powerful in controlling luck or other external factors” (Womack, 1992, 192); and superstition as a fetish, revered action or object used to obtain a desired end, or a taboo, action or object that is punishable by luck or fate (Buhrmann & Hans, 1983). Practices such as wearing the same headband for every game (Becker, 1975), avoiding the lines of the field (Lustberg, 2010), and even avoiding certain words (Buhrmann & Hans, 1983) have been recorded as practices held dearly by some athletes. Looking at the literature up to now, the major uses of superstitions and rituals are: combating psychological tension, gaining a sense of control, and reaching peak performance (Krane & Williams, 2010; Jackson, 2008)

Psychological tension in athletes has been identified as a detrimental effect in terms of performance that is found in the competitive atmosphere of sports (Schippers, & van Lange, 2006). This psychological tension reveals itself in restlessness, trembling, fidgeting, and potentially lowered self-confidence. For various reasons, the effects of psychological tension will detract from the performance of an athlete; especially if such tension results in lowered confidence (Schippers & van Lange, 2006). Several studies regarding the use of ritual and superstition have focused on how athletes deal with this psychological

tension, which is also called “sports anxiety” (Buhrmann & Hans, 1983; Schippers & van Lange, 2006; Jackson & Baker, 2006). Brevers, Dan, Noel, & Nils (2011a) and Schippers & van Lange (2006) found a positive correlation between athletes who experience said psychological tension and who practice pre-game rituals. Becker (1975) also observed a positive relationship between athletes who experience sports anxiety and fetishes/ taboos. Basically, athletes have been noted to practice pre-game rituals and adhere to superstitions for the purpose of reducing “pre-game jitters” so that they may gather confidence and focus. Some specific effects of practicing rituals to combat this sports anxiety include: applied relaxation, of both mind and body; cued attention so that athletes do not give a disproportionate amount of focus to well-learned movements or inappropriate stimuli; and decreased negative thoughts that are associated with tension (Jackson, Ashford, & Norsworthy, 2006; Williams, Zinsser, & Bunker, 2010). On top of these findings Brevers, et al (2011a) noted that as importance of a game increased, and therefore tension, athletes would regard their rituals or superstitions with more importance. Such rituals have even been proven to reduce an athlete’s heart rate and assist the athlete in reaching a more preferable psychological and physiological state (Jackson, et al, 2006).

Other than just combating anxiety, athletes desire to have a level of control in the variable environment of sport (Schippers & van Lange, 2006). Individuals like to be in as much control of a situation as they can be (Ross & Mirowski, 2002) and rituals help athletes feel as if they have gained that control, or at least a semblance of control (Schippers & van Lange, 2006). Besides practicing rituals for this sense of control, athletes have also been observed holding to

items of clothing, food, or jewelry as an attempt to have luck in their favor (van Raalte, Brewer, Nemeroff, & Linder, 1991). Athletes practicing rituals and holding to superstitions can be seen as attempts to control the external variables so that the only variable is their own performance. The idea is that consistency before a game will lend a hand to consistency of performances (Jackson & Baker, 2006).

The aforementioned uses of rituals and superstitions lend a mental calmness to athletes, a state that is heavily associated with “peak performance” in sport (Krane & Williams, 2010). Attempts at reaching a calm mental state filters into the overarching benefit of any pre-game practices with the idea “resonance” as defined by Doell, Durand- Bush, & Newburg (2002). “Resonance” is where the dream state of performance meets the actual performance and is highly influenced by a feeling of well-being. In their study, they found that, in order to reach this feeling of well-being, athletes would attempt to feel positivity toward their skill (Doell, et al., 2002); and in order to reach this state of positivity, they also observed athletes practicing a ritual or superstition. Another term similar to this state of resonance is known as the *ideal performance state* (IPS); which is noted by athletes as feeling relaxed, full of energy, extraordinarily aware, in control, and totally focused on the task at hand (Garfield & Bennet, 1984). For numerous reasons, an athlete wishes to reach this IPS in each and every contest, which lends to the “ritualistic” aspect of these athletes’ practices. Hogg & Keating (1995) found a positive relationship between ritual commitment and IPS, but Buhrmann, Brown, & Zaugg (1982) would contend that the individual athlete must believe in the effectiveness of their particular superstition or ritual in order for that relationship to

work. In other words, Buhrmann, et al (1982) noted that any effects of a ritual would only take hold if the athlete regarded said ritual with emotional importance.

Potential Determinates of Sport Superstition and Ritual

This review will now look into potential antecedents and environmental factors that may lead to a heightened propensity for an athlete to practice a ritual or superstition. Out of the current literature there are a number of factors that may affect these practices, those being: athletic identity, level of competition, success in sport, and religion (Becker, 1975; Buhrmann & Zaugg, 1983; Jackson, 2008; Jackson, Ashford, & Norsworthy, 2006).

One antecedent that may determine likelihood of practicing rituals or superstitions is called Athletic Identity, or AI (Griffith & Johnson, 2002; Ofori, Biddle, & Lavalley, 2012). Described as “the way you perceive and feel about your sporting role, compromising your goals, values, thoughts, and sensations related to your sport” (International Olympic Committee, retrieved 2013, p.1), researchers have attempted to measure both AI itself, and the effects it has on the athlete’s life. Many of the studies done regarding AI have approached practicing rituals or superstitions, many of which have found a positive correlation between a high AI and adherence to superstitions or rituals related with the sport (Brevers, et al, 2011a; Todd & Brown, 2003). In fact, Brevers, et al.’s (2011a) study found 75.8% of a large sample of non-professional athletes, including regional and national- level youth players, reported superstitious beliefs. At a certain point the world outside sport begins to exert an influence at a point in an athlete’s life as they move further and

further along in their sporting careers; essentially, all will eventually come to realize that life as they know it will effectively end (Moreland-Bishop, 2009). With this in mind, Griffith and Johnson (2002) conducted a Life Roles Inventory-based study among Division I and Division III collegiate athletes to compare how important the AI is to their individual lives in respect to the rest of their personality. Griffin & Johnson (2002) and Li (2010) found that AI tended to lower in importance as athletes prepare for life after their athletic careers. In spite of this effect, both studies found that athletes continued to adhere to the superstitions they adopted at the beginning of their careers; basically, they gave their pre-game behaviors the same emotional importance even as their careers were coming to a close (Griffith & Johnson, 2002; Li, 2010). All together, the present research points to the conclusion that an individual's AI has no significant bearing on the practice of superstition or rituals after the original acquisition of those practices.

Athletic Identity and its effects on the practice of rituals and superstitions have been well identified by various researchers, but are there *external* factors that could influence the use of superstitions? One factor researchers have found in response to this question is the overall athletic success an individual experiences, which may include the success of the team as a whole (Jackson, 2008; Buhrmann & Hans, 1983). Indeed, such variables as overall team and individual success have been shown to have a positive correlation with adherence to superstitious belief (Buhrmann & Hans, 1983). This finding harkens to the thoughts that "if there is failure, who cares about superstition?" against that of "if there is success, why change the routine?"; a dichotomy also highlighted by Becker (1975). These two questions fall along

similar lines as the ideas of positive and negative reinforcement (Smith, 2010) in that an individual performance or competitive result may reinforce the practice of rituals or superstition for athletes. This train of thought leads to the idea that with more personal success in sports, an athlete will be more likely to stay in the sport (Burger & Lynn, 2005); and therefore, there should be a greater percentage of superstitious athletes in higher levels of competition (Buhrmann & Hans, 1983). However, in a more recent comparison of a variety of sports in Division I and Division III college-athletic programs, there was no significant difference between the two levels in terms of adherence to superstitious (Griffith & Johnson, 2002). The label "Division I" signifies a higher level of competition in college athletics. Evidence of a further dissociation between the level of competition and adherence to superstitious rituals grew when van Raalte, et al. (1991) and Wright & Erdal's (2006) research revealed a positive correlation between these superstitious rituals and how the athlete compared themselves directly to the difficulty of the task. In other words, a low-skilled athlete would be more likely to perform a ritual for a low-difficulty task while a high-skilled athlete would be more likely to do so for a high-difficulty task. Burke, et al (2006) did find that athletes involved in a sport for longer time demonstrate an increased belief in superstition. However, when they broke down their results further, they found this relationship only held true to a certain point in an athlete's career; after that length of time in athletics, they found no increased propensity to practice a ritual or superstition as time continued. Taking a step back and looking at the research as a whole reveals that yes, individual success in sports is required to initiate the belief in the effectiveness of superstitions and rituals; but after that belief is gained, it is the amount of

time individuals participate in athletics, and not the level of competition, that reaffirms those beliefs.

Taking from the argument that sport is a cultural and societal expression (Frey & Eitzen, 1991), there has often been an association between religious individuals and sports (Kelley, Hoffman, & Gill, 1990; Obare, 2002). But are religious athletes more likely to practice superstitious rituals? There is a surprising dearth of research when it comes to superstitious rituals and religious athletes, but Buhrmann & Zaugg's (1983) research failed to find any significant difference in adherence to superstitious rituals between religious and non-religious athletes. These results connect back to the earlier statement that sport superstition is an entity in and of itself, rather than being part of a greater ideal (McClearn, 2004).

The Present Research

A "former athlete" is operationalized as: "an individual who has participated in organized athletics as an athlete for a minimum of four (4) consecutive years and no longer does." The first part of the present study looks at the potential of the previously mentioned benefits and individual antecedents affecting a person who was once a part of organized athletics to the point that they retain their ritualistic or superstitious practices in later life. Research has been scant in terms of former athletes and rituals or superstitions, with most of the research approaching one-time athletes and their gambling habits (Weiss & Loubier, 2008, 2010). But even Weiss & Loubier's research has a thin connection with ritualistic and superstitious behaviors as they were examining pathological gamblers and simply noticed a number of their former athlete participants holding to particular superstitions. Mowen & Carlson (2003) and

Carlson, et al. (2009) attempted to find personality factors that would reveal a pre-disposition toward adherence to superstitions; and although there were no consistently significant findings in terms of overall personality, those studies did find a heavy connection between situational factors and belief in superstitions. Especially in Mowen & Carlson's (2003) study there is a positive correlation between factors such as "belief in fate," "sport fanship," and "gambling" with superstitious practices. These correlations were found again in Carlson, et al.'s (2009) study, but slightly muted. Such findings fit with the culturally permeating uses of superstitions as: a coping mechanism, for the "illusion of control," or as a magical solution for the uncertain (Wang, et al, 2009; Yang, 2011). These uses are all in response to a situation and not as a result of personality.

In light of the findings that adherence to superstitions is dependent on situational factors and remembering the situational benefits gained by an athlete practicing rituals or superstitions, the current research proposes a number of hypotheses with regards to former athletes exhibiting ritualistic or superstitious behaviors. To maintain a parallel with athletic rituals or superstitions and their pre-competitive nature, the focus of the present research will be on a former athlete's likelihood to practice rituals or superstition before a test of ability (e.g. job interview, surgery, examination, etc.). The current hypotheses are:

1. An athlete who choose to practice a ritual or superstition will be likely to continue some semblance of those practices in their current path
2. If an individual practiced a ritual or superstition during her/his athletic

- career and had a successful transition out of sport, s/he will be more likely to exhibit similar practices before a test of ability in her/his current path.
3. If an individual practiced a ritual or superstition during her/his athletic career and had a high AI, s/he will be less likely to exhibit similar practices before a test of ability in her/his current path.
 4. If an individual practiced a ritual or superstition during her/his athletic career and had a high "perceived success in sport," s/he will be more likely to exhibit similar practices before a test of ability in her/his current path.

As previously mentioned, several researchers on the subject of athletic superstitious ritual posit that the level of competition in which an athlete participates is a major determinate (Buhrmann & Zaugg, 1983; Ciborowski, 1997; Schipper & van Lange, 2006). However, further studies have shown that athletes will practice a ritual or superstition in response to how they view their own ability as compared to the difficulty of the task (Todd & Brown, 2003; van Raalte, et al, 1991; Wright & Erdal, 2008). In addition, while gender has been shown to affect the *type* of ritual or superstition practiced, there is a general consensus across research that gender does not affect adherence to such practices (Bleak & Frederick, 1998; Buhrmann, et al, 1982; Wright & Erdal, 2008). This same effect can be seen in terms of locus of control (LOC) as various researchers have found that internal and external LOC personalities will practice different types of superstitious ritual without finding an increased propensity to do so for either personality type (Burke, et al, 2006; Jackson, et al., 2006; Schipper & van Lange, 2006; van Raalt, et al, 1991). And finally, neither cultural upbringing nor

sport played has been shown to have a significant effect on an athlete's practicing of superstition or ritual (Bleak & Frederick, 1998; Burger & Lynn, 2005; Burke, et al, 2006; Ofori, et al, 2012; Schippers & van Lange, 2006). These various findings leave the current study confident in excluding the variables "gender," "cultural upbringing," "sport played," "locus of control," and "level of competition" from the presented hypotheses in terms of the potential for an individual to transfer ritualistic or superstitious practices during an athletic career to a future path.

The second part of the present study will approach the association between religion and athletics. Some attributes of religious expression include: the assignment of supernatural significance to objects, it is rooted in emotional faith, and some of the rituals are meant to revere the order in the world (Chan, 1963; Hood, Hill, & Spilka, 2009; Obare, 2000). Several research attempts have been made to find a correlation between athletes who profess religion as an important aspect of their lives and an increased propensity to practice superstitious rituals, but results have been generally non-significant (Buhrmann & Zaugg, 1981, 1983; Burke, et al, 2006; McClearn, 2004). However, with religion known to be a prevalent aspect of the athletic world (Obare, 2000; Kretschmann & Benz, 2012; Rohrbaugh & Jesser, 1975; Watson & Czech, 2005), and the aforementioned benefits of practicing rituals/ superstitions (e.g. reducing tension, feelings of control), there may be an increased likelihood for religious athletes to transfer any superstitious rituals garnered during their sports career to their life after athletics. Combining the above information with Watson & Czech's (2005) findings that an athlete will practice superstitious rituals

whether they profess religion for personal or social reasons makes the hypothesis as such:

5. Former athletes will demonstrate a higher probability of continuing to practice superstitious rituals if they regard religion with high emotional importance.

Method

Participants

Sixty-four participants responded to the survey with ages ranging from 18 to 62 and an average age of 27, $SD = 10.6$. Of the participants 69% were female while 57 were Caucasian (89%), 3 were African-American (5%), 2 were Hispanic (3%), 1 was Asian-Pacific Islander (1.5%), and 1 answered Other (1.5%). Twenty-five (39%) participants had completed a college degree of some form (e.g. Associate's, Master's).

Measures

A survey was developed that assesses success in sport, practice of rituals, adherence to superstitions, emotional importance of ritualistic/superstitious practices, potential effects of having or not having completed individual rituals/superstitions on athletic performance, and potential continuation of ritualistic/superstitious practices. Six (6) of the questions are scored along a 5 point Likert-scale ranging from "none" to "high"; seven (7) of the questions are open-ended and answers are given a score according to a positive or negative response in relation to the practice and importance of rituals/superstitions. The questions score "athletic career ritual/superstitions" ("ACR/S"), and "post-athletic career ritual/superstitions" ("PACR/S"), with a higher score in both signifying positive adherence to the practice

of rituals or superstitions. Alpha coefficients for internal reliability were .71 and .61 respectively. Additionally, the questions scored "perceived success in sport," with a high score designating higher success ($\alpha = .70$).

The "Athletic Identity Measurement Scale" (AIMS) was adapted for applicability to former athletes. The answers are on a Likert-scale ranging from 1-7; "1" designates "strongly disagree," and "7" designates "strongly agree." In this particular survey, there are 6 statements from the AIMS such as "I considered myself an athlete" and "Other people saw me mainly as an athlete," with the total score ranging from 6-42; thus, a high score signifies the participant had a high athletic identity during their sporting career. The alpha coefficient for internal reliability was .91. (Brewer, van Raalte, & Linder, 1993)

The "Exhausted Eligibility Transition Scale" was adapted for generalization toward a wider range of athletic competitiveness as the original scale was developed for collegiate athletes only. The answers to the statements fall along a Likert-scale ranging from 1-5; "1" designates "strongly disagree," and "5" designates "strongly agree." Responding to the statements such as "Before I left my sport, I could easily see myself having an identity other than an athlete" and "I felt satisfied with the achievement of the athletic goals I had set myself" leads to a score ranging from 6-30. A high score in this section signifies that the athlete's transition out of athletics was good in nature and not detrimental to their life as a whole. The alpha coefficient for reliability was .52. (Moreland-Bishop, 2009)

The "Religion Subscale" from the "Personal Life Values Questionnaire" was

used to measure importance of a participant's religion in life. In the scale, there are 6 sets of 5 statements that approach the potential effect a religion has on the participant's life. There is a hierarchy of responses in each set with the statements ranging from "My religion is my highest priority" to "Religion is not a priority to me;" participants are asked to check the statement that most applies to them. Scores were assigned to each statement with a high score signifying a high importance of religion to the participant. The alpha coefficient for reliability was .98. (Hyde & Weathington, 2006)

Procedure

Participants were contacted in two ways: first, snowball sampling was attempted through email with limited success; second, classes of students at UT Chattanooga were given the link to the survey. The rate of response was low, although the number of contacted individuals was not taken. The link brought participants to the questions original to this project, the adaptation of the AIMS, the adaptation of the "Exhausted Eligibility Transition Scale," the "Religion Subscale," and several voluntary demographic questions. Participants were instructed of their anonymity and that consent was implied with completion of the online survey. Eighteen participants were not counted due to ineligibility.

Results

Several regression analyses were conducted to determine the individual effects of the variables "athletic identity," "transition out of sports," "importance of religion," and "perceived success in sport" on the potential transference of "ACR/S" into "PACR/S". Because this research was attempting to find a relationship between

"ACR/S" and "PACR/S," only those participants with a positive "ACR/S" score were considered in the regressions. An α -level of .05 was used to determine significance.

Table 1 shows the descriptive statistics and correlations between the variables "PACR/S" (post-athletic career ritual/superstition), "ACR/S" (athletic career ritual/superstition), "transition out of sport," "AI" (Athletic Identity), "perceived success in sport," and "religious importance." There were 4 significant correlations in this study ($p < .05$). AI was positively correlated with "ACR/S" ($r = .44$), "perceived success in sport" ($r = .39$), and "religious importance" ($r = .41$), with the first two relationships supporting previous research results (Griffith & Johnson, 2011). Most important for the present research was the positive correlation between "ACR/S" and "PACR/S" ($r = .44$), a result which supports H-1.

Moderated regression analyses were used to test H-2 – H-5 with AI, "transition out of sport," "perceived success in sport," and "religious importance" as the moderating variables, "ACR/S" as the independent variable, and "PACR/S" as the dependent or outcome variable. A moderating variable is defined as: "an independent variable that affects the strength and/or direction of the association between another independent variable and an outcome variable" (Bennett, 2000, p. 416). Figure 1 is a conceptual model for a moderated relationship.

There are two steps in a moderated regression analysis. First, "PACR/S" was entered as the outcome variable with "ACR/S" and the potential moderating variables as predictors. In Step Two, an interaction variable between "ACR/S" and

an individual moderating variable was created for each moderating variable to determine if each had an effect on the relationship between “ACR/S” and “PACR/S”. A moderator effect will reveal itself if there is significant interaction between the predictor and the moderator (Hayes & Weathington, 2007).

Of the potential moderating variables, only “perceived success in sport” had a significant effect (see Table2). H-4 was supported with “perceived success in sport” having a positive effect on the relationship between “ACR/S” and “PACR/S” ($\beta = -.998$, $\Delta R^2 = .112$, $p < .05$). H-2, 3, and 5 were not supported as “AI” ($\beta = -.537$, $\Delta R^2 = .06$, $p > .05$), “transition out of sport” ($\beta = .834$, $\Delta R^2 = .019$, $p > .05$) and “religious importance” ($\beta = -.078$, $\Delta R^2 = .002$, $p > .05$) had insignificant moderator effects on the relationship between “ACR/S” and “PACR/S”. Graph1 is a 2-way interaction that represents the effect “perceived success in sport” has on the relationship between “ACR/S” and PACR/S”.

Discussion

The results of the present research indicate a positive relationship between practicing ritual or superstition during and after an athletic career, results that support H-1. One of the potential moderating values, “perceived success in sport,” had a positive moderating effect on the relationship between “ACR/S” and “PACR/S”. This finding supports H-4, which deals with the potential effect of “perceived success in sport;” a result which continues along the lines of Burhman & Zaugg’s (1982) findings that athletes who experience more success in sport have a higher propensity to practice a superstition or ritual. In other words, if an athlete practiced a superstition or ritual in addition to having had a successful athletic

career, that athlete has an increased likelihood to continue similar practices. “Athletic Identity” seems to have a strong relationship with both “ACR/S”, and “perceived success of sport;” therefore, based off of these results, Figure2 was adapted from Figure1. Figure2 is a conceptual model that has “perceived success in sport” remaining solely as a moderating variable in the relationship between “ACR/S” and “PACR/S” while “Athletic Identity” acts as a mediating variable. There is the possibility that some athletes may not continue their ritualistic or superstitious practices without the presence of a high Athletic Identity, giving “AI” a potential mediator effect on the relationship between “ACR/S” and “PACR/S”. The potential for “AI” having a mediating effect continues along the lines of Griffith & Johnson’s (2002) and Li’s (2011) findings; namely, that a decrease in an athlete’s “AI” near the end of a career has no real effect on that athlete’s practice of ritual or superstition.

“AI,” “transition out of sport,” and “religious importance” all had insignificant moderating effects on the transference of “ACR/S” into “PACR/S”. While the possibility of “AI” existing as a mediator in the relationship is there, it is evident that it has no moderator effect. A number of the questions in Moreland- Bishop’s (2009) “Exhausted Eligibility Transition Scale” dealt with learning career skills and preparing for the future during an athletic career, and so the hypothesis was that a good-natured transition would positively affect the likelihood of transferring any successful methods used during that career into future life. However, this hypothesis was not upheld. These results also establish the lack of an effect of “religious importance” may have “ACR/S” and “PACR/S”, going against H-5. These

findings do however hearken back to Tam & Shiah's (2004) inability to find any significant relationship between religious faithfulness and paranormal belief, belief that is essential in assigning superstitious value (Mowen & Carlson, 2003).

Limitations to the present research are the numbers of participants, at only 46, and generalizability, with the great percentage being Caucasian. An increase in the sample size could very well change the observed relationships in the present research. In addition, the validities of the "ACR/S", "PACR/S", and "perceived success in sport" measures have not been truly tested and further administering of the survey would be required to do so. The reliabilities of the adapted "Exhausted Eligibility Transition Scale" and "PACR/S" score were lower than desired and a reformatting of those questions may be needed. Different methods to measure the practice of ritual or superstition could be used in future research.

Taken in totality, the present results support the idea of positive reinforcement in psychology. Many athletes found the practice of a ritual or superstition a good method in reaching a calm mental state so that they may focus on the task at hand (Newburg, et al, 2002); and whether or not they are consciously attempting to continue these practices, it does not surprise that some of these former athletes would use a similar method to reach that same calm of mind before a test of ability in their current path. The results that "transition out of sport" did not moderate the relationship between "ACR/S" and "PACR/S" is slightly perplexing given Moreland-Bishop's (2009) findings that a high "AI" score was positively correlated with a high score on the Transition Scale in combination with "AI's" potential mediating effect (see Figure2). Possible explanations for a lack of

relationship could be the following: as athletes prepare for the future, they learn to separate their athletic-gear activities from everyday ones; or having been successful in finding a path independent from playing a sport, an athlete may find no need in transferring their previous practices to that path. Also, the lack of effect "religious importance" seen on "ACR/S" and "PACR/S" further separates sports superstition from generalized superstition given religion's association with superstition and ritual (Obare, 2002). This result points to a possible effect that some people may practice rituals or superstitions associated with their active role, regardless of religious influence or orientation. Due to the separate entity that is sport superstition, it can be inferred that former athletes who continue to practice a ritual or superstition may do so because of their experiences during their athletic career. Another explanation of former athletes adhering to a superstition or ritual after their athletic careers may be due to a *noncontingent schedule of reinforcement*, an effect that sees individuals super-imposing a cause-effect relationship when in fact there is none (Powell, Hoeny, & Symbaluk, 2013); although, this might also be the driving effect behind an athlete gaining those superstitions during an athletic career.

The growing field of sport psychology in the United States (Williams & Straub, 2010) could support or even encourage the use of rituals and superstition to assist athletes in reaching their *individual zone of optimal functioning* (IZOF), a term that describes an individual's mental state associated with "peak performance" (Krane & Williams, 2010). Encouraging these athletes to uptake a ritual or superstition could benefit that athlete throughout life in light of the possibility of that individual transferring any successful practices to future life as seen in

this research. In the end, fully acknowledging the potential benefits of practicing a ritual or holding to a superstition in preparation for a skill-based activity would do no harm for those attempting to raise their performance.

As possible future research, individual interviews of former athletes that practice superstition or ritual is a method future research could use in an attempt to find the reason behind these practices as the present study only makes inferences based from the literature. Time since participating in sports may be an additional factor that could affect post-athletic career practice of superstition or ritual, making it another variable worth looking into with future research. The positive correlation seen between AI and "religious importance" is another relationship calling for further research. Lastly, much recent research has been geared toward an athlete's transition out of sports, but it is generally accepted that this field is limited as of yet (Goodger, Lavallee, Gorely, & Harwood, 2010; Taylor & Lavallee, 2010). In light of the insignificant moderation "transition out of sport" has on "ACR/S" turning into "PACR/S", future research could look into what, if any, methods learned during a sporting career an athlete chooses to continue during the transition and how they choose to do so.

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Appendix A

Table 1- Descriptive Statistics and Intercorrelations between Variable

Descriptive Statistics and Intercorrelations among Variables

Measure	M	SD	1	2	3	4	5
1. Post-athletic career ritual/superstition	4.15	2.12	-				
2. Athletic career ritual/superstition	9.02	3.68	.44 **	-			
3. Transition out of sport	20.91	5.84	-.22	-.23	-		
4. Athletic Identity	28.85	10.14	-.18	.44 **	.23	-	
5. Percieved Success in sport	12.22	1.91	-.20	.11	-.09	.40 **	-
6. Religious Importance	16.67	9.47	-.10	-.11	.27	.41 **	.13

n=46

*p<.05. **p<.01

Table 2- Hierarchical Multiple Regressions Analyses Predicting PACR/S” from the Interaction of “ACR/S” with Perceived Success in Sport, Transition out of Sport, and Religious Importance

<i>Hierarchical Multiple Regressions Analyses Predicting PACR/S” from the Interaction Between “ACR/S” with Perceived Success in Sport, Transition out of Sport, Athletic Identity, and Religious Importance</i>				
Predictor	“PACR/S”			
	ΔR^2		β	
Step 1				
“ACR/S”	.408	*	.719	**
Transition out of Sport			.005	
Athletic Identity			-.549	**
Perceived Success in Sport			-.084	
Religious Importance			.219	
Step 2				
a. “ACR/S” x Transition out of Sport	.019		.834	
b. “ACR/S” x Athletic Identity	.006		-.537	*
c. “ACR/S” x Perceived Success in Sport	.068	*	-1.845	*
d. “ACR/S” x Religious Importance	.002		-.078	

n=46
*p<.05, **p<.001

Figure 1- Conceptual model of moderator effect

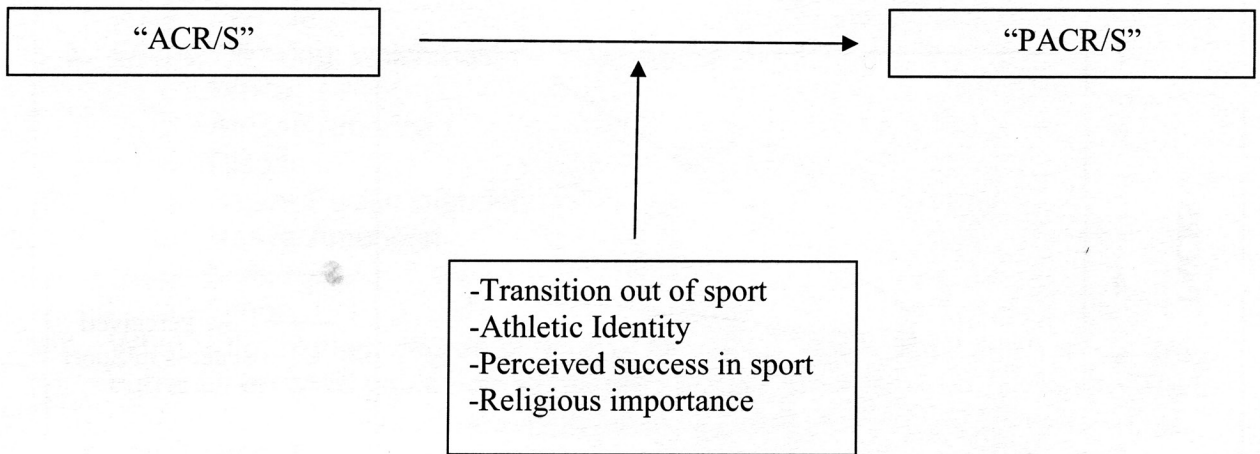
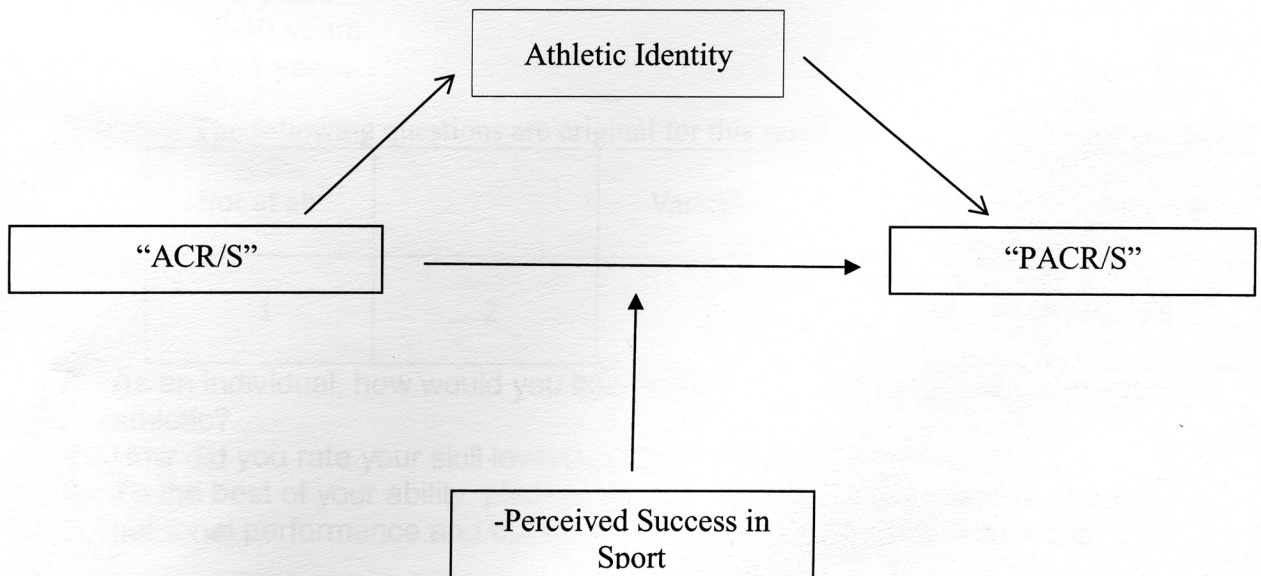
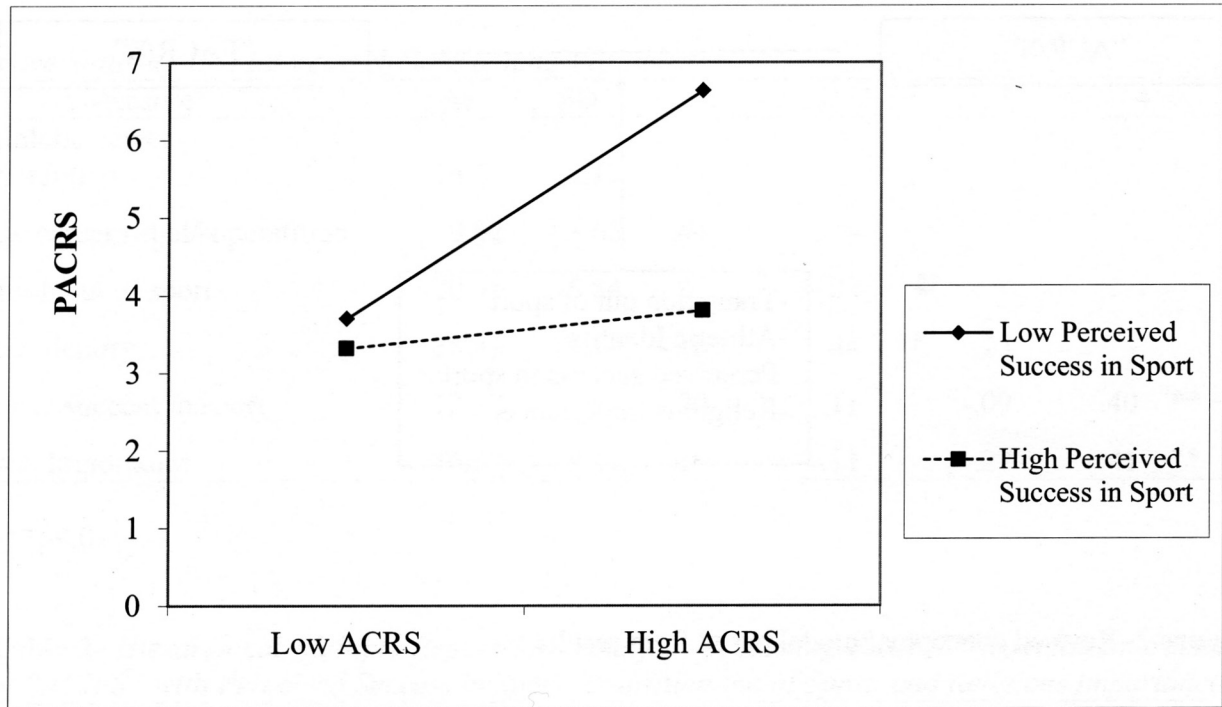


Figure 2- Revised conceptual model based from results



Graph 1: 2-way interaction of “perceived success in sport” on the relationship between “ACR/S” and PACR/S”



Appendix B

1. Age:
2. Gender:
 - Male
 - Female
3. Of the following, which best defines your race?
 - White
 - African American
 - Hispanic
 - Asian- Pacific islander
 - Native American
 - Multi-racial
 - Other
4. What is the highest degree or level of school you have completed? If you are currently enrolled please circle the *previous* grade or highest degree received.
 - High school graduate- high school diploma or equivalent (for example: GED)
 - Some college credit, but less than 1 year
 - 1 or more years of college, no degree
 - Associate degree (for example: AA, AS)
 - Bachelor's degree (for example: BA, AB, BS)
 - Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)
 - Professional degree (for example: MD, DDS, DVM, LLB, JD)
 - Doctorate degree (for example, PhD, EdD)
5. How many years since you last participated in an organized club or school sport as an athlete?
 - <6 years
 - 6-10 years
 - >11 years

The following questions are original for this research¹ and will be scored as such:

Not at all ²		Variable ²		Very high ²
1	2	3	4	5

6. As an individual, how would you best rate your overall performance in your athletic?
7. How did you rate your skill level in relation to your peers?
8. To the best of your ability, please describe the relationship between your personal performance and the team's performance in game situations:

¹ The original question for this research have been put in this order for the appendix, it will change in the administered survey

² The descriptive words used will be based off the questions

9. How much emotional importance do you assign to any step-by-step procedures you currently practice before a performance oriented task (e.g. interview, surgery, examinations, etc.)?
10. How important was it to you to perform your pre-game ritual?
11. If you had an emotional response to whether or not your ritual was completed, how much of an effect do you believe it had on your individual performance come game time?

The following questions are original for this research³ and will be scored qualitatively based on the type of answer given.

12. To the best of your ability, please describe any item you saw as "lucky" or "unlucky":
13. To the best of your ability, please describe any action or word you viewed as "lucky" or "unlucky": open
14. Please describe, to the best of your ability, any step-by-step procedures you followed before competition in you sport:
15. Please describe any emotions you had in either completing or failing to complete this step-by-step procedure come game time (e.g. "After I did my ritual, I felt confident I would perform well):
16. Please describe any independent procedures you may follow before a performance oriented task (e.g. interview, surgery, examinations, etc.):
17. Please describe any item that you assign as "lucky" or "unlucky":
18. Please describe any action or word you feel is "lucky" or "unlucky":

Adaptation of the Athletic Identity Measurement Scale (Brewer, van Raalte, & Linder, 1993)

Strongly disagree	Moderately disagree	Disagree	Unsure	Agree	Moderately Agree	Strongly agree
1	2	3	4	5	6	7

19. I considered myself an athlete.
20. During my athletic career, most of my friends were athletes.
21. Sport had been the most important part of my life.
22. Other people saw me mainly as an athlete.
23. I had spent more time thinking about sport than anything else.
24. During my athletic career, I had many goals related to sports.

Adaptation of the Exhausted Eligibility Transition Scale (Moreland- Bishop, 2009)

Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
1	2	3	4	5

25. I felt satisfied with the achievement of the athletic goals I had set for myself.

³ See footnote "1" on previous page

26. I had thought about what I would do the first 2-3 years following the end of my athletic career.
27. Before I left my sport, I could easily see myself having an identity other than athlete.
28. I thought it was difficult for others to see me as something other than an athlete during the transition. R
29. I believe that the career skills I had then aided in my transition from athlete to non-athlete.
30. It was difficult to replace the athletic experience because I had invested so much physical and mental energy into my sport. R

Personal Life Values Questionnaire, Religion Subscale (Hyde & Weathington, 2006)

In each of the following, place a check beside the one statement that best describes you.

1.	<input type="checkbox"/> My religion is my highest priority.
	<input type="checkbox"/> My religion is one of my top priorities.
	<input type="checkbox"/> My religion is sometimes a priority to me.
	<input type="checkbox"/> My religion is rarely a priority to me.
	<input type="checkbox"/> Religion is not a priority to me.

2.	<input type="checkbox"/> My religion rules my life activities.
	<input type="checkbox"/> My religion usually rules my life activities.
	<input type="checkbox"/> My religion sometimes rules my life activities.
	<input type="checkbox"/> My religion rarely rules my life activities.
	<input type="checkbox"/> Religion does not rule my life activities.

3.	<input type="checkbox"/> My religion effects how I see this world.
	<input type="checkbox"/> My religion usually effects how I see this world.
	<input type="checkbox"/> My religion sometimes effects how I see this world.
	<input type="checkbox"/> My religion seldom effects how I see this world.
	<input type="checkbox"/> Religion never effects how I see this world.

4.	<input type="checkbox"/> I value my religion more than anything.
	<input type="checkbox"/> I usually value my religion more than anything.
	<input type="checkbox"/> I sometimes value my religion more than anything.
	<input type="checkbox"/> I rarely value my religion more than anything.
	<input type="checkbox"/> I do not value religion.

5.	<input type="checkbox"/> I consider myself to be a very religious person.
	<input type="checkbox"/> I usually consider myself to be a religious person.
	<input type="checkbox"/> I sometimes consider myself to be a religious person.
	<input type="checkbox"/> I rarely consider myself to be a religious person.
	<input type="checkbox"/> I do not consider myself to be a religious person.

6.	<input type="checkbox"/> I believe in some higher being greater than myself and it makes a significant impact on my life.
	<input type="checkbox"/> I believe in some higher being greater than myself and it makes somewhat of an impact on my life.
	<input type="checkbox"/> I believe in some higher being greater than myself, but it does not make a significant difference in my life.
	<input type="checkbox"/> I believe in some higher being greater than myself, but I do not care who/what it is.
	<input type="checkbox"/> I do not believe in some higher being greater than myself.