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## Athletic identity and aggressive behavior: A cross-cultural analysis in contact and collision sports.

Amanda J. Visek

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Athletic Identity and Aggressive Behavior:  
A Cross-Cultural Analysis in Contact and Collision Sports

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Dissertation submitted to  
the School of Physical Education  
at West Virginia University  
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy  
In  
Sport & Exercise Psychology

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Morgantown, West Virginia  
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## ABSTRACT

### Athletic Identity and Aggressive Behavior: A Cross-Cultural Analysis in Contact and Collision Sports

Amanda J. Visek

Research independently examining athletic identity and aggressive sport behavior is quite extensive; however, the relationship between these variables has yet to be explored. Findings from the sport fandom literature regarding team identification and aggressive fan behavior provides a foundation on which to hypothesize about the potential role athletic identity may have in the expression of athlete aggression. Therefore, the purposes of the study were to: (a) further explore the utility and psychometric properties of the Athletic Identity Measurement Scale (AIMS) and the Competitive Aggressiveness and Anger Scale (CAAS), (b) examine the relationships between athletic identity, anger, and aggression in competitive athletes, (c) assess cross-cultural differences, and (d) test hypothesized pathways between variables predicted to contribute to sport aggression. A total of 569 male athletes participating in contact and collision sports in the United States ( $n = 362$ ) and Hong Kong ( $n = 207$ ) completed the AIMS, CAAS, and a modified version of the Context Modified Webb Scale. Results of the study showed support for future use of the AIMS and CAAS as sound measures of athletic identity, anger, and aggressiveness in both American and English-speaking Hong Kong Chinese athlete populations. Results also indicated small to moderate positive relationships between athletic identity, anger, and aggressiveness with differences in those variables found with respect to sport type (contact versus collision) and culture. Interestingly, group comparisons yielded significant differences between highly identified and lowly identified athletes in both anger and aggressiveness. Path analyses examined the influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger in aggressive sport behavior. Lastly, results indicated a good fit between the data and the proposed theoretical model accounting for 43.1% of the total variance in aggressiveness in American athletes and 56.5% of the variance in Hong Kong athletes.

## DEDICATION

To my mother and father –  
Whose love and support have never wavered.

To my younger brother –  
Your sport experiences inspired me not once, but twice!

I love you, Mom, Dad, and Mike.

## ACKNOWLEDGEMENTS

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## Introduction

There are well established lines of research that have independently examined athletic identity and aggressive behavior in the sport literature. Athletic identity has been defined as “the degree to which an individual identifies with the athlete role” (Brewer, Van Raalte, & Linder, 1993; p. 237) and has been measured extensively using the Athletic Identity Measurement Scale (AIMS). In an effort to build a more coherent body of knowledge and to operationalize “aggression” in the sport research literature, Silva (1978) defined aggression as a non-accidental overt verbal or physical act with the intent to psychologically or physically injure another person or one’s self. Silva further classified aggression as instrumental or hostile in nature. Instrumental aggression occurs as a means to an end (e.g., inflicting pain or injury on the opposition in the quest of a game-winning goal), while hostile aggression serves merely as an end (e.g., a retaliatory act simply to inflict pain or injury). It is important to note that sport is bound by a constitutive rule structure in which aggression is considered to be rule-violating; therefore, Silva suggests that neither instrumental nor hostile aggression should be encouraged. While the extant research regarding athletic identity and aggression is quite extensive, their relationship to one another has not yet been explored by sport scientists. Previous research has alluded to a possible relationship between these constructs (Wann & Porcher, 1998), but has only studied these variables independent of one another (Jackson, Keiper, Brown, Brown, & Manual, 2002).

Thus, there appears to be a lack of understanding regarding the potential role an athlete’s level of athletic identity may have on the degree to which she or he may or may not experience anger on the playing field and engage in aggressive sport behavior. With respect to athletic identity, sport scientists have primarily focused on the psychological and emotional difficulties that highly identified athletes experience regarding sport transitions, such as injury, deselection,

delayed career development, and retirement (Brewer, Van Raalte, Petitpas, 2000; Grove, Lavallee, & Gordon, 1997; Webb, Nasco, Riley, & Headrick, 1998). While athletic identity has been instrumental in better understanding the various sport transitions highly identified athletes may face within their competitive sport career, and anger has been identified as an antecedent to aggression (Averill, 1983; Berkowitz, 1990; Deffenbacher, Oetting, Lynch, & Morris, 1996; Maxwell, Moores, & Chow, 2007), the role athletic identity may play in anger and aggressive sport behavior remains unexplored in the sport science literature.

However, existing research has found statistically significant small to moderate positive relationships ( $r$ 's = .25 to .31) between the extent to which spectators' identify with a sport team and their aggressive behavior (Wann, Hayes, McLean, & Pullen, 2003; Wann, Peterson, Cothran, & Dykes, 1999). Team identification has been operationally defined as the extent to which one feels psychologically connected or an allegiance with a sport team and is measured by the Sport Spectator Identification Scale (SSIS; Wann and Branscombe, 1993). While athletic identity is a measure of the extent to which an athlete identifies with his or her role as an athlete, team identification examines spectators' identification with and commitment to specific sport teams. Therefore, with regard to identity, findings in the sport fandom literature provide a foundation on which to hypothesize about the relationship between athletic identity and sport aggression.

According to Branscombe and Wann (1994), a critical component of a highly identified fan's social identity is team performance. Thus, results of the aforementioned studies can best be explained theoretically by Wann's (1993) self-esteem maintenance model which is based on the premise that those who have strong allegiances with a sport team are more likely to experience lower self-esteem when their team performs poorly. Thus, in an attempt to restore their identity and self-esteem, they may aggress against opposing players, coaches, and fans (Branscombe &

Wann, 1992; Branscombe & Wann, 1994; Wann et al., 2005). Given that highly identified fans may use aggression to influence the outcome of the game in their favor (Wann, Hunter, Ryan, & Wright, 2001), in addition to aggressing in a reactive manner to restore their identity, perhaps the same is true for athletes whose identity is strongly tied to their role as an athlete. However, a theoretical explanation that would account for the role athletic identity may have in the expression of aggressive behavior does not yet exist.

Several prominent theoretical explanations have been espoused in an attempt to explain sport aggression. Social learning theory posits that the occurrence of aggression is a function of learning, which is influenced by operant conditioning and vicarious learning (Bandura, 1973). Dollard, Doob, Mowrer, and Sear's (1939) frustration aggression hypothesis posited that all aggression is the result of frustration and that frustration always leads to aggression. Bredemeier and colleagues' (1986) theoretical framework of moral reasoning and aggression attempts to understand aggressive sport behavior as a moral issue. Lastly, Berkowitz's (1989) cognitive neoassociation model is a reformulation of the original frustration-aggression hypothesis and postulates that frustration results in aggression only to the extent that it brings about negative affect and feelings (e.g., anger, hostility, irritation) when in the presence of socially learned aggressive environmental cues. Although feelings such as anger do not always lead directly to aggression, Berkowitz (1993) suggested that it may instigate the inclination to aggress.

While these renowned theories have been instrumental in laying the theoretical foundation on which to better understand human behavior, they are largely unidimensional. It has been suggested that a conceptual framework that attempts to bridge the gap between athletes' covert intentions, moral priorities, and overt behavior has the potential to provide a more thorough understanding of aggressive sport behavior (Visek & Watson, 2005). In addition, it

would appear that both scientists and practitioners are beginning to look more to interactional approaches to understanding human behavior (Weinberg & Gould, 2007). While the cognitive neoassociation model appears to be the most integrated of the aforementioned theories, it would appear that by exploring other plausible variables, such as athletic identity, we may begin to expand the cognitive neoassociation model to a more fully integrated, holistic model.

While theory provides a general framework for understanding human behavior, sport scientists have sought to investigate specific factors thought to contribute to the aggressive behavior of athletes. Such factors have been identified in the research literature. For instance, sport aggression on the part of athletes has been attributed to factors such as longer sport participation and more professionalized attitudes (McIntosh, 1979; Webb, 1969; Visek & Watson, 2005), the male gender (Gardner & Janelle, 2002; Silva, 1983), participation in contact and collision sports (Mintah, Huddleston, & Doody, 1999; Silva, 1983; Tucker & Parks, 2001), perceptions of masculinity (Bredemeier, Weiss, Shields, and Cooper, 1986; Smith, 1983), anger (Berkowitz, 1993; Maxwell, Moores, & Chow, 2007), lower levels of moral reasoning (Bredemeier & Shields, 1986; Bredemeier et al., 1986), ego-orientation (Duda, Olson, & Templin, 1991; Dunn & Dunn, 1999; Tod & Hodge, 2001), team norms (Stephens & Kavanagh, 2003), and influential others such as coaches (DeVries, 1998; Loughhead & Leith, 2001), parents (Smith, 1980), teammates (DeVries, 1998; Smith, 1979a; Smith, 1979b), and the media (Morra & Smith, 1995).

Another factor that warrants consideration is the potential impact an athlete's country of origin and culture has on his or her athletic identity and aggressive sport behavior. The previously mentioned research on those factors found to contribute to aggressive behavior were all conducted using athletes in either the United States or Canada. However, culture is an

element of one's socialization, which is believed to influence one's values, beliefs, social practices, customs, and subsequently behavior (Schwartz, 1999; Smith & Schwartz, 1997).

Therefore, when examining factors thought to influence athletic identity and sport aggression, sport scientists should begin to take into account more fully, the broader environmental context in which athletes' behavior occurs.

Given the differences in Eastern and Western cultures, cross-cultural comparisons of the athletic identities and aggressive behaviors of athletes in these respective regions of the world may provide evidence for the impact culture has on athletes. For example, Maxwell et al. (2007) recently investigated the cross cultural differences of British and Hong Kong Chinese athletes with respect to provocation, anger, and aggression. Despite reporting greater frequencies of provocation and anger than the British athletes, the Hong Kong athletes reported less aggression. Maxwell and colleagues concluded that Hong Kong athletes may be able to tolerate higher levels of abuse before responding aggressively. These findings are consistent with a recent (non-sport) meta-analysis that examined the cross national differences in aggression directed toward peers. Results of the meta-analysis revealed that the level of aggression in China was lower than that in the United States (Bergeron & Schneider, 2005). Similar findings were found for the Asian countries of Korea and Japan. Results were analyzed in the context of national culture and values with differences between the United States and Asian countries attributed to individualism and collectivism. Bergeron and Schneider noted that Americans place more emphasis on individual needs and wants, as well as on individual ambition and success than do collectivist cultures where importance is placed on the collective group rather than the individual. Results also revealed that those countries with a strong emphasis on Confucianism appear to be associated with lower levels of aggression. Bergeron and Schneider indicated that Confucian values

“emphasize the social order and the importance of the creation of responsible and dedicated individuals” (p. 132) and that aggression would not be compatible with such values.

Because of its history, culturally, Hong Kong China has aptly been referred to as a region where the East meets the West. Under British rule for more than a century, China did not actually resume sovereignty over Hong Kong until 1997 when it became a Special Administrative Region of China. It has been stated that Hong Kong is only westernized in a superficial sense and that most Hong Kong Chinese still adhere to traditional Chinese mores (Siu-lun, 1986), drawing on long traditions of Confucianism (Yee, 2001). On the other hand, others feel that Hong Kong’s entire culture has been created by conflicting Eastern and Western values (King, 1996). Hong Kong China may then serve as a unique cultural comparison to the United States, which is distinctly Western and individualistic in its ideals. Thus, in an effort to more fully understand the impact of culture on athletes, a comparison of American and Hong Kong Chinese athletes could provide a better understanding of the impact one’s culture may have on aggressive sport behavior. Additionally, such an investigation may also provide insight into how the competing East and West influences in Hong Kong have impacted the identity and behavior of its athletes.

As previously mentioned, many factors have been identified in the research literature as contributing to the likelihood and occurrence of aggression. In an effort to more fully understand sport aggression, its antecedents, and those variables that contribute to the likelihood of such behavior being exhibited, we must continue to explore other possible causal variables that have not yet been investigated by sport scientists. Therefore, the first purpose of the present investigation was to further evaluate the utility and psychometric properties of the Athletic Identity Measurement Scale (AIMS) and the Competitive Aggressiveness and Anger Scale



(CAAS). Using the self-esteem maintenance model and cognitive neoassociation model as a theoretical foundation, the second purpose of the present investigation was to explore the relationship between athletic identity, anger, and aggressiveness in male athletes participating in contact and collision sports. The third purpose was to assess the possible cross-cultural influence and potential differences of American versus Hong Kong Chinese athletes on athletic identity, anger, and aggressiveness. The fourth purpose was to test the influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger in aggressiveness by testing hypothesized pathways between these variables (see Figure 1).

The researcher generated five hypotheses. It was hypothesized that (a) there will be a positive relationship between athletic identity and aggressiveness and anger, with the strongest relationship between athletic identity and anger, (b) contact and collision sport athletes will not differ on athletic identity, (c) collision sport athletes will have higher aggressiveness than contact sport athletes, (d) American athletes will have higher athletic identity and report more anger and aggressiveness than Hong Kong Chinese athletes, and lastly (e) that years of sport participation and perceived athletic ability will impact athletic identity, professionalization, anger, and aggressiveness along the hypothesized theoretical path model.

## Method

### *Participants*

A total of 569 male athletes participated in the study. American varsity and club athletes ( $n = 362$ ) were drawn from intact teams from both a large Division I, mid-Atlantic university and from a smaller Division II, mid-west university via convenience sampling. In an effort to recruit samples that were of similar athletic ability and competitiveness to the American athletes, competitive university and club Hong Kong Chinese athletes ( $n = 207$ ) were drawn from intact

teams via convenience sampling to comprise the cross-cultural comparison group. All athletes were participating in either a contact sport (i.e., basketball, soccer, and wrestling) or collision sport (i.e., football and rugby).

Of the American sample, 33.5% were freshman, 25.4% were sophomores, 19.3% were juniors, 19.3% were seniors, and 2.2% were graduate students. Of the Hong Kong sample (in ascending order from lower competitive levels to higher competitive levels), 22.9% were participating at the university inter-hall competitive level, 63% at the university post-secondary level, 11.5% at the local league level, and 1.6% at the national level. Within the Hong Kong educational system, Secondary Form 5 implies that a student completed schooling up to the age of 16-17 years. Secondary Form 7 implies that a student completed schooling up to 18-19 years of age. Of the Hong Kong athletes sampled, education ranged from 11.5% at Secondary Form 5, 76.6% at Secondary Form 7, 11.5% a bachelor's degree, to .5% a master's degree.

### *Measures*

Four self-report questionnaires were used to assess athletes' demographic characteristics, athletic identity, anger, aggressiveness, and professionalization of attitudes. To prevent an order effect, all of the measures were counter-balanced within the questionnaire packets, with the exception of the demographic form which always appeared last. Demographic characteristics of the athletes are delineated by culture and are presented in Table 1.

*Athletic Identity.* The degree to which an individual identifies with the athlete role was assessed using the Athletic Identity Measurement Scale (AIMS; Brewer & Cornelius, 2001). The AIMS is a multidimensional measure with three first order factors (i.e., social identity, exclusivity, and negative affectivity) subordinate to one higher order athletic identity factor. The AIMS requires participants to respond to 7-items designed to assess various aspects of

identification with the athlete role on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Participants' athletic identity is measured by a total composite score generated by a summation of the scores for the 7 items. Higher AIMS scores indicate stronger identity with the athlete role. The 7-item AIMS is an abbreviated version of an original 10-item measure (Brewer, Van Raalte, & Linder, 1993). Brewer and Cornelius reported the 7-item AIMS as a sound psychometric derivative of the 10-item measure with an internal reliability coefficient of .81.

*Aggressiveness and Anger.* Participants' competitive aggressiveness and anger were assessed using the Competitive Aggressiveness and Anger Scale (CAAS; Maxwell & Moores, 2007). The CAAS is a 12-item measure with six of the items assessing aggressiveness and six assessing anger. Aggressiveness items are related to the acceptance and willingness to use both physical and verbal abuse to gain a competitive edge. Anger items describe incidences of irritation associated with losing and negative emotions directed at opponents and officials. Participants are asked to respond to each of the 12 items on a 5-point Likert type scale with anchors ranging from 1 (*almost never*) to 5 (*almost always*). In an effort to account for the severity of the CAAS items endorsed, participants' responses to each of the 12 items are multiplied by item severity scores and then summed to produce an aggressiveness subscale, anger subscale, and total CAAS score (see Maxwell and Moores (2007) for a list of the item severity scores). Item severity scores were calculated from the mean scores from a sample ( $n = 81$ ) of sport science researchers and masters students (with previous experience participating in competitive sport) that had rated each item's severity on a five-point Likert type scale with higher scores indicative of greater severity. Higher scores on the CAAS indicate greater degrees of aggressiveness and anger. Maxwell and Moores reported that exploratory factor analyses of the CAAS indicated sound internal reliability coefficients for the anger subscale (.78),

aggressiveness subscale (.84), and the total score (.87). Confirmatory factor analyses also indicated sound internal reliability coefficients for the anger subscale (.83), aggressiveness subscale (.83), and total score (.88). One month test-retest reliability coefficients were also sound for the anger subscale (.86), aggressiveness subscale (.84), and the total score (.88).

*Professionalization of Attitudes.* Participants' professionalization of attitudes towards play was assessed using an altered version of the Context Modified Webb (CMW-Modified; Visek & Watson, 2005). The CMW-Modified is a contextually altered version of Webb's (1969) original scale with the addition of three play contexts (playing a game in your neighborhood, playing on an organized sports team, and playing games during recess at school) with the "recess at school" context modified to "gym class/intramurals" so that it was age-appropriate for the sample. For each play context, participants are asked to rank order three force-choice alternatives: (1) to play as well as you can, (2) to beat the other player or team, and (3) to play the game fairly. Six permutations are derived and arranged along a continuum based on the differential rank ordering of the play, beat, and fair alternatives. Lower scores indicate a play orientation, middle scores indicate skill mastery, and higher scores are associated with a more professional orientation (i.e., winning is most important). Lastly, permutation scores for each of the three contexts are averaged to generate an overall professionalization of attitudes score. Although not a moral reasoning measure, it has been suggested that the CMW has the ability to offer insight into respondents' moral priorities (Bredemeier & Shields, 1998). Further, Webb's original scale, from which the CMW-Modified was altered, has been found to be sound with internal reliability coefficients ranging from .90 to .96 (Webb, 1969).

### *Procedures*

Institutional Review Board approval was granted and teams were contacted, informed of the purposes of the present study, and encouraged to participate. All of the data was collected while each of the teams were either participating in pre-season training or at the beginning of their respective competitive seasons by three independent researchers. Each researcher was responsible for data collection at a specific site/region of the world (i.e., one was assigned to the mid-Atlantic, one to the mid-west region of the U.S., and one was responsible for Hong Kong China). Athletes on the recruited teams gathered in a distraction-free environment that was convenient to the team (e.g., locker room, weight room, training field, or classroom). To standardize data collection across each of the data collection sites, a scripted explanation of the cover letter and instructions for completing the instruments was read. Questionnaire packets were then distributed, and participants were encouraged to provide honest responses.

### *Results*

The current results are primarily based upon data from 550 participants. Four cases were eliminated from the American sample and five cases from the Hong Kong sample due to incomplete data. Ten cases were also eliminated from the Hong Kong sample because participants' responses did not meet the minimum criteria with respect to ability/fluency to interpret and respond to the questionnaire items in the English language. Missing data values were non-existent with regard to the AIMS and minimal (2%) with respect to the CAAS; therefore, the researcher replaced missing values with the mean score of participants' distribution for the CAAS. Due to incomplete data for the CMW, some participants' professionalization scores could not be computed; therefore, data from only 352 American athletes and 185 Hong Kong athletes were used in analyses of the CMW. Also, specific information related to type of

sport (e.g., contact, collision) was collected in the American sample, but not collected in the Hong Kong sample; therefore, any statistical analyses involving “type of sport” could only be computed for the American sample. The alpha level was set at .05 for all analyses.

### *Psychometric Evaluation*

*Athletic Identity Measurement Scale.* Confirmatory factor analyses were used to confirm the overall structure of the AIMS with the American and Hong Kong athletes. Model fit was determined using chi-square, the RMSEA, GFI, and CFI. Results revealed the observed AIMS data to be a good fit for the American athletes relative to Brewer and Cornelius’s (2001) three first order factors (social identity, exclusivity, negative affectivity) subordinate to one higher order athletic identity factor (see Table 2). The observed model with standardized estimates and measurement error variances are presented in Figure 2. The internal consistency (Cronbach’s alpha) of the items for the AIMS was acceptable at .76.

Initial analyses of the AIMS in LISREL for the Hong Kong athletes indicated that the path coefficient between exclusivity and athletic identity had to be fixed to 1.00 to run the analysis. Iteration of the confirmatory factor analysis then indicated a good fit for the observed Hong Kong athletes (see Table 2). The observed model with standardized estimates and measurement error variances are presented in Figure 3. Internal consistency of the items for the AIMS was good at .83 for the Hong Kong sample.

*Competitive Aggressiveness and Anger Scale.* Confirmatory factor analyses were used to confirm the overall structure of the CAAS with American and Hong Kong athletes. Model fit was determined using chi-square, the RMSEA, GFI, and CFI. Results revealed the observed CAAS data to be a relatively poor fit for the American athletes (see Table 2) with respect to Maxwell and Moore’s (2007) model of aggressiveness and anger. The modification indices and

inter-item correlations indicated that items 3 and 4 of the CAAS had similar error variances and were highly correlated ( $r = .79, p < .01$ ). These results may indicate that these items are redundant, leading participants to respond similarly. Results suggested that by accounting for the error covariance between these two items, a better fitting model could likely be obtained. Therefore, the researcher tested the observed American data on this suggested factorial structure of the CAAS. With the error covariance added between items 3 and 4, results revealed the model to be a good fit with the American data (see Table 2). The initial observed model and respecified model with standardized estimates and measurement error variances are presented in Figures 4 and 5, respectively. Cronbach's alpha revealed sound internal reliability for the CAAS with the American sample with coefficients ranging from acceptable to good for the anger subscale (.76), aggressiveness subscale (.77), and the total score (.84).

With respect to the Hong Kong sample, results revealed the observed CAAS data to be a good fit (see Table 2) with respect to Maxwell and Moore's (2007) model of aggressiveness and anger. The observed model with standardized estimates and measurement error variances are presented in Figure 6. Cronbach's alpha revealed sound internal reliability for the CAAS with coefficients ranging from acceptable to good for the anger subscale (.72), aggressiveness subscale (.79), and the total score (.86). In addition, Cronbach's alpha indicated satisfactory internal consistency of the items for the CMW-Modified. Coefficients were .75 for the American sample and .68 for the Hong Kong sample, respectively.

### *Relationships Among Variables*

Athletic identity scores ranged from a low of 20 to a high of 49 in the American sample. Similar ranges were also obtained in the Hong Kong sample with athletic identity scores ranging from a low of 21 to a high of 49. A Pearson product moment correlation matrix indicated that

athletic identity was significantly correlated with anger and with aggressiveness in both the American and Hong Kong samples (see Table 3). Because a large sample size was obtained, the researcher sought to isolate the lowly and highly identified athletes to assess relationships amongst those athletes with the aforementioned variables. High and low athletic identity was defined as a ½ standard deviation above and below the athletic identity mean for both the American and Hong Kong samples, respectively. In doing so, athletic identity became a dichotomous qualitative variable to be correlated with quantitative data. To assess relationships between such data, a point biserial correlation matrix was utilized (Witte & Witte, 2004). Results of the point biserial correlation matrix indicated statistically significant small to moderate correlation coefficients between athletic identity and anger, and athletic identity and aggressiveness (see Table 4). The shared variance between anger and aggressiveness was 42.25% in the American sample and 56.25% in the Hong Kong sample, respectively.

A chi-square analysis was used to assess the relationship between nationality (i.e., American and Hong Kong) and whether athletes had been taught how to execute illegal behaviors within their respective sports. Results indicated that nationality and being taught how to execute illegal behaviors are independent of one another,  $\chi^2(1, N = 549) = 2.38, p > .05$ . Meaning, there is no relationship between nationality and whether an athlete is taught how to execute illegal sport behavior.

#### *Type of Sport Differences*

An independent samples t-test indicated that American contact ( $M = 39.76, SD = 5.77$ ) and collision athletes ( $M = 38.54, SD = 6.05$ ) were not significantly different from one another on athletic identity ( $p > .05$ ). To gain in efficiency and reduce the likelihood of Type-I error, a one-way MANOVA was conducted to assess differences in contact and collision sport athletes



on anger and aggressiveness. MANOVA analysis is noted to work acceptably well with moderately correlated dependent variables (Tabachnick & Fidell, 2001). Anger and aggressiveness correlated at .65 ( $p < .01$ ). Results of the analysis indicated an omnibus  $F$ -test, Wilks'  $\Lambda = .93$ ,  $F(2, 355) = 14.09$ ,  $p < .001$ ,  $\eta^2 = .07$ . Mean comparisons indicated that collision athletes ( $M = 30.46$ ,  $SD = 8.03$ ) reported significantly more anger than contact athletes ( $M = 28.33$ ,  $SD = 7.21$ ),  $F(1, 357) = 6.49$ ,  $p = .011$ ,  $\eta^2 = .02$ . Collision athletes ( $M = 37.64$ ,  $SD = 11.90$ ) also reported significantly more aggressiveness than contact athletes ( $M = 31.24$ ,  $SD = 10.39$ ),  $F(1, 357) = 27.24$ ,  $p < .001$ ,  $\eta^2 = .07$ .

### *Cross-Cultural Differences*

Independent samples  $t$ -tests were conducted to assess differences between American and Hong Kong athletes on years played, perceived athletic ability, professionalization, and athletic identity. Results indicated that American athletes had played sport longer ( $t(536) = 6.58$ ,  $p < .001$ ,  $d = .60$ ), had greater perceived athletic ability ( $t(546) = 2.40$ ,  $p = .02$ ,  $d = .21$ ), were more professionalized in their attitudes ( $t(430.71) = 11.41$ ,  $p < .001$ ,  $d = 1.00$ ), and had higher athletic identity ( $t(548) = 5.51$ ,  $p < .001$ ,  $d = .50$ ) than the Hong Kong athletes (see Table 5). Levene's test of homogeneity of variances was violated with respect to professionalization; therefore, results of the independent  $t$ -test on professionalization were interpreted with equal variances not assumed. Cohen's  $d$  was calculated using the following formula:  $d = M_1 - M_2 / \sigma_{\text{pooled}}$ .

Anger and aggressiveness correlated at .65 ( $p < .01$ ) for the American sample and at .75 ( $p < .01$ ) with the Hong Kong sample, respectively. Therefore, to gain in efficiency and reduce the likelihood of Type-I error, while accounting for the influence of athletic identity, a one-way MANCOVA was conducted to assess differences between American and Hong Kong athletes on anger and aggressiveness. Results of the analysis indicated an omnibus  $F$ -test, Pillai's Trace =

.02,  $F(2, 546) = 6.56, p = .002, \eta^2 = .02$ . Pillai's Trace was utilized rather than Wilks'  $\Lambda$  because of its robustness since Box's  $M$  suggested a violation of the homogeneity of variance-covariance matrices (Tabachnick & Fidell, 2001). Mean comparisons indicated that the Hong Kong athletes reported significantly more anger ( $F(1, 549) = 9.73, p = .002, \eta^2 = .02$ ), and aggressiveness ( $F(1, 549) = 11.88, p = .001, \eta^2 = .02$ ) than the American athletes (see Table 5). It is important to note that the analysis revealed a violation of Levene's test for homogeneity of variances for both anger and aggressiveness. This analysis was interpreted as-is given that no accommodation for this violation is available that would still account for the covariate.

#### *Differences in Lowly and Highly Identified Athletes*

Given that the researcher was able to recruit a sufficient sample size with appropriate power, additional analyses were conducted to assess differences in athletes based upon nationality and high versus low athletic identity on two dependent variables: anger and aggressiveness. First, a 2 (nationality) X 2 (high and low athletic identity) two-way MANOVA was conducted to assess interaction and main effects. Box's  $M$  suggested a violation of the homogeneity of variance-covariance matrices, therefore results were interpreted using Pillai's Trace. Results of the two-way MANOVA indicated no significant interaction between nationality and high and low athletic identity on anger and aggressiveness ( $p > .05$ ). Examination of the main effects indicated that there was no main effect for nationality ( $p > .05$ ); however, results did indicate a significant main effect for high and low athletic identity, Pillai's Trace = .08,  $F(2, 350) = 16.08, p < .001, \eta^2 = .08$ . Specifically, highly identified athletes ( $M = 32.12, SD = 6.91$ ) reported significantly more anger than did lowly identified athletes ( $M = 27.50, SD = 7.33$ ),  $F(1, 354) = 31.85, p < .001, \eta^2 = .08$ . Highly identified athletes ( $M = 38.44, SD = 10.56$ )

also reported significantly more aggressiveness than did lowly identified athletes, ( $M = 33.58$ ,  $SD = 10.71$ ),  $F(1, 354) = 16.03$ ,  $p < .001$ ,  $\eta^2 = .04$ .

Next, one-way MANOVA's were conducted to assess differences on anger and aggressiveness within each culture on highly and lowly identified athletes. With respect to the American sample, a one-way MANOVA indicated an omnibus  $F$ -test, Wilks'  $\Lambda = .91$ ,  $F(2, 224) = 11.73$ ,  $p < .001$ ,  $\eta^2 = .10$ . Mean comparisons indicated that highly identified American athletes experienced significantly more anger ( $F(1, 226) = 23.14$ ,  $p < .001$ ,  $\eta^2 = .09$ ), and aggressiveness,  $F(1, 226) = 10.87$ ,  $p = .001$ ,  $\eta^2 = .05$  (see Table 6) than lowly identified American athletes. A one-way MANCOVA was also conducted to assess differences between American contact and collision sport athletes on anger and aggressiveness, while adjusting for the influence of high and low athletic identity. Results indicated an omnibus  $F$ -test, Wilks'  $\Lambda = .94$ ,  $F(2, 223) = 7.13$ ,  $p = .001$ ,  $\eta^2 = .06$ . Mean comparisons indicated that American contact ( $M = 28.59$ ,  $SD = 7.85$ ) and collision sport athletes ( $M = 29.92$ ,  $SD = 8.05$ ) did not significantly differ on anger ( $p > .05$ ), but did differ on aggression,  $F(1, 226) = 14.15$ ,  $p < .001$ ,  $\eta^2 = .06$ . Specifically, collision sport athletes ( $M = 37.23$ ,  $SD = 11.49$ ) reported more aggressiveness than contact sport athletes ( $M = 32.14$ ,  $SD = 10.92$ ).

With respect to the Hong Kong sample, a one-way MANOVA indicated an omnibus  $F$ -test, Wilks'  $\Lambda = .90$ ,  $F(2, 125) = 6.92$ ,  $p = .001$ ,  $\eta^2 = .10$ . Mean comparisons indicated that highly identified Hong Kong athletes reported significantly more anger than lowly identified Hong Kong athletes  $F(1, 127) = 13.94$ ,  $p < .001$ ,  $\eta^2 = .10$  (see Table 6). Levene's test for homogeneity of variances was violated with respect to aggressiveness. Therefore, an independent samples  $t$ -test was conducted and the results were interpreted with equal variances not assumed to account

for this violation. Results revealed that highly identified athletes reported significantly more aggressiveness than lowly identified athletes ( $t(103.11) = -2.64, p = .01, d = .48$ ; see Table 6).

### *Path Analyses*

Path analysis is a special type of structural equation modeling (Ullman, 2001) and an extension of multiple regression that allows a researcher to test a theory of causal order among a set of variables (Klem, 1995). Based upon observed data, path analysis provides us with two types of results. The first is an estimate of the magnitude of the hypothesized effects which are represented by path coefficients. Path coefficients are simply standardized beta weights and are interpreted on the same scale as Pearson product moment correlations. The second type of result is model fit. After a model has been specified and then estimated, an index of model fit describes whether the observed data accurately fits the model. Often times, a good fit is indicated with a nonsignificant  $\chi^2$ . Because sample size affects  $\chi^2$  significantly, another measure of model fit is the  $\chi^2$  divided by the degrees of freedom with any value below 3 considered to be a good fit. However, because of numerous associated problems with data (i.e., sample size, violation of the assumptions of the  $\chi^2$  test) numerous measures of fit have been proposed and it is recommended that multiple indices be reported to best determine model fit (Ullman, 2001).

Of the fit indices, the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) are most reported (Ullman, 2001). The CFI is a measure of the goodness of fit with values greater than .95 indicative of a good-fitting model. RMSEA is an estimate of lack of fit, with values of .06 or less indicative of a good-fitting model relative to the degrees of freedom. An RMSEA value greater than .10 indicates a poor-fitting model. Often times, because of smaller sample sizes, the RMSEA will reject a true model (Hu & Bentler, 1999); therefore, it is less preferable with small samples (Ullman, 2001). Because of the smaller

Hong Kong sample size, in addition to reporting the chi-square, CFI, and RMSEA, the normed fit index (NFI) and the incremental fit index (IFI) is also reported to determine model fit. NFI and IFI values greater than .90 indicate a good-fitting model. The researcher hypothesized and specified a path model to test the influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger on aggressiveness in athletes (see Figure 1). Because previous statistical analyses revealed differences between the American and Hong Kong samples, the hypothesized path model was tested separately on the two samples.

*Observed American Path Model.* Overall, results of the path analysis revealed that the observed path model was a strong fit for American athletes (see Figure 7). Each of the goodness-of-fit indices of the model indicated a good fit between the model and the data: chi-square ( $\chi^2$  (6) = 7.47,  $p$  = .28), CFI (1.00), RMSEA (.03), NFI (1.0), IFI (1.0). Figure 7 indicates the standardized estimates of the path coefficients (beta weights). The broken line indicates that the path coefficient between years of sport participation and professionalization was not significant at  $p < .05$ . All other paths within the model were both positive and statistically significant (see Figure 7). Overall, the model accounted for 43.1% of the variance in aggressiveness.

*Observed Hong Kong Model.* Overall, results of the path analysis revealed that the observed path model was also a good fit for the Hong Kong athletes (see Figure 8). Although the chi-square ( $\chi^2$  (6) = 18.02,  $p$  = .006) and RMSEA (.10) indicated a poor fit, the remaining indices of the model indicated a strong fit between the model and the data: CFI (1.00), NFI (1.0), IFI (1.0). Again, chi-square tests of fit and the RMSEA are sensitive to small sample sizes. For structural equation modeling, in most cases a sample size of 200-300 is considered to be adequate for a small to medium model (Klem, 1995; Tabachnick & Fidell, 2001). However, the minimum 200 threshold was not quite obtained in the Hong Kong sample ( $n = 192$ ), which may

explain the poor fit values obtained for the  $\chi^2$  and RMSEA. Figure 8 indicates the standardized estimates of the path coefficients (beta weights). The broken lines indicate that the path coefficients were not significant at  $p < .05$ . All other paths within the model were both positive and statistically significant. Overall, the model accounted for 56.5% of the variance in aggressiveness. See Table 7 for a comparison of the American and Hong Kong path coefficients.

### Discussion

The purposes of this study were fourfold. The first purpose was to further evaluate the utility and psychometric properties of the Athletic Identity Measurement Scale (AIMS) and the Competitive Aggressiveness and Anger Scale (CAAS). The second purpose was to explore the relationship between athletic identity, anger, and aggressiveness in male athletes participating in contact and collision sports. The third purpose was to assess the possible cross-cultural influence and potential differences of American versus Hong Kong Chinese athletes on athletic identity, anger, and aggressiveness. The fourth purpose was to test hypothesized pathways between variables predicted to contribute to sport aggression. Results from the data: (a) further validated the sound psychometric properties of the Athletic Identity Measurement Scale (AIMS) and the Competitive Aggressiveness and Anger Scale (CAAS), (b) indicate relationships between athletic identity, anger, and aggressiveness with differences in those variables found with respect to type of sport (contact versus collision) and culture, and (c) was able to account for a good proportion of the variance in the hypothesized path models.

#### *Psychometric Evaluation of the AIMS and CAAS*

Brewer and Cornelius (2001) discussed the need for the factor structure of the abbreviated 7-item AIMS to be subjected to further testing, particularly in other cultures where English is not a primary language. Confirmatory factor analyses of the multi-dimensional

factorial structure of the AIMS indicated a good fit for both the American and Hong Kong samples. Results also revealed the AIMS to be internally consistent for both samples. Thus, results suggest that the abbreviated 7-item AIMS continues to be a valid and reliable means of assessing athletic identity in an American population, while also documenting its success cross-culturally in a Hong Kong sample where the official languages of this Special Administrative Region of China are both Chinese and English.

The CAAS was developed out of a need for an effective scale that could discriminate non-aggressive from aggressive athletes (Maxwell & Moores, 2007). While Maxwell and Moores were able to document its sound psychometric properties in a British population, they also noted that the CAAS would require additional testing in other sports and in different populations of athletes to further establish its utility. Confirmatory factor analyses of the CAAS in this study revealed the fit indices for the two factor model (anger and aggressiveness) to be an acceptable fit for the Hong Kong sample. This finding was not surprising given Hong Kong's long history of strong British influence. However, the CAAS did not perform as well on the American sample with two of the fit indices indicating a satisfactory fit and two suggesting a poor fit. Examination of the modification indices and inter-item correlations revealed item 3 (I taunt my opponents to make them lose concentration) and item 4 (I verbally insult opponents to distract them) to be highly correlated with similar error variances. Therefore, when accounting for this in the factor structure (see Figure 5), a much better fitting model with strong fit indices were obtained. Perhaps, unlike Hong Kong and British athletes, American athletes do not discriminate taunting from verbally insulting their opponents, which resulted in similar response patterns between the two items. Further analysis revealed the CAAS subscales and total score to be internally consistent across both the American and Hong Kong samples. Overall, results

support the use of both the AIMS and the CAAS as sound psychometric measures of athletic identity, anger, and aggressiveness in American and English-speaking Hong Kong Chinese populations.

*Relationships Between Athletic Identity, Anger, and Aggressiveness*

Consistent with the sport fandom literature, statistically significant small to moderate positive relationships were found between athletic identity and aggressiveness ( $r$ 's = .17 to .24), with stronger relationships found between athletic identity and anger ( $r$ 's = .26 to .32) as predicted by the researcher. Additionally, those athletes with higher athletic identity were also found to differ significantly from those athletes with lower levels of athletic identity in both the American and Hong Kong samples. Specifically, highly identified athletes reported more anger and more aggressiveness than did their lowly identified athlete counterparts. Moderate effect sizes were obtained in each of the analyses that intended to assess differences between highly and lowly identified athletes. Practically, these findings suggest that highly and lowly identified athletes differ from one another in self-reported anger and aggressiveness when competing in sport.

Until the present investigation, the relationship between athletic identity and athlete aggressiveness remained unexplored. Findings here suggest there is a positive association between male athletes' athletic identity and their aggressive sport behavior. The relationships found between athletic identity, anger, and aggressiveness would suggest that the more a male athlete identifies with his role as an athlete, there is an increased likelihood he will experience heightened levels of anger when he is frustrated, losing, or feels disadvantaged and may ultimately resort to aggression on the playing field. These findings are worthy of note given the



number of incidences of unsportsmanlike aggressive behavior that are seemingly broadcast in the popular media at increasing rates across various levels of competitive sport.

Additionally, these findings may provide evidence for the applicability of Wann's self-esteem maintenance model to account for aggressive behavior not just in sport fans, but on the part of athletes as well. Given the masculine nature of contact and collision sports, perhaps athletes that identify highly with their role as an athlete do so with great regard to the stereotyped images of athletes participating in these sports. It may be that when that identity is threatened during games, either by poor performances, losing points, or feeling disadvantaged, they aggress in a manner that is consistent with stereotyped images of what is perceived to be strong and masculine in an effort to restore their sense of identity as an athlete in their respective sport. Moreover, a theoretical integration of the self-esteem maintenance model and the cognitive neoassociation model would suggest that there is probably a greater chance that highly identified athletes are at greater risk for experiencing frustration, and thus anger, than their lowly identified counterparts and may resort to aggressive acts.

*Type of Sport Differences.* Over time, researchers have continually found that increasing levels of physical contact in a sport are related to aggressive behavior (Maxwell & Moores, 2007; Mintah et al., 1999; Silva, 1983; Tucker & Parks, 2001). Results of the present investigation continue to support previous research in this area with respect to American athletes. Collision athletes were found to experience more self-reported anger and aggression than contact athletes. However, when accounting for athletic identity as a covariate, contact and collision athletes did not differ on anger, but did differ on aggressiveness. Specifically, collision athletes reported significantly more aggressiveness than contact athletes with a moderate effect size. Practically, these results suggest that collision athletes differ from contact athletes with respect to

aggressive sport behavior. One may surmise that the heightened degree of physical contact in collision sports may be contributing to greater amounts of aggression. Additionally, given the greater degree of physical force exerted in collision sports, the lines between excessive and non-excessive force may become blurred. These results may also suggest that, despite being outside the constitutive rule structure of sport, aggressiveness in collision sports is instrumentally more valuable in dominating one's opponent and gaining a competitive edge than in contact sports.

### *Cross-Cultural Differences*

As predicted, American athletes had higher athletic identity than Hong Kong athletes. Demographically, although the American athletes were younger, they had played sport longer, perceived their athletic ability to be greater, and were more professionalized in their attitudes regarding sport than Hong Kong athletes. This is not surprising given the respective role sport plays within the two cultures. For example, sport is intimately threaded throughout American culture. American's enjoy record numbers of opportunities to consume sport either directly (through participation) or indirectly through various mediums (e.g., television, newspapers, magazines, books, and internet sites). However, the development and promotion of a similar sport culture in Hong Kong has faced challenges (Fu, 2006).

Historically, Hong Kong has accorded low status to sport in both society and in the school systems as evidenced by low levels of sport participation, lack of a national sports presence, and limited media coverage and available sport facilities (Fu, 2006; Shuttleworth & Chan, 1998). Fu notes that sport is perceived primarily as a leisure activity in Hong Kong and that greater emphasis is placed on education. Education is emphasized to such a degree that it is often perceived as the only indicator of success in Chinese culture (Yu, Chan, Cheng, Sung, & Hau, 2006). This over-emphasis on academic success is also the norm in Hong Kong (Yee,

2001). In fact, not only are Hong Kong Chinese less active in their chosen leisure activities (Tsai, 2005), but often times physical activity is discouraged because it is perceived to negatively affect academics by draining energy and disrupting concentration (Yu et al., 2006). Monetary gains and improved standards of living in Hong Kong are attainable through education and not through sport (Fu, 2006). Therefore, the lower athletic identities of the Hong Kong athletes sampled in this study may be evidenced by the low socio-economic class they belonged to during their childhood (see Table 1). In an effort to achieve a better quality of life and greater socio-economic status for themselves as adults, it makes sense that the identities of these athletes may be more tightly tied to their academics rather than their sports. Therefore, perhaps in the Hong Kong Chinese culture, not being as highly identified with the athlete role is perceived positively.

On the other hand, because of the greater status and role sport has in the United States, American athletes will often attempt to balance the roles of student and athlete concurrently. American collegiate student-athletes, particularly those participating in revenue-producing sports, may even foreclose on their athletic identity to the exclusion of other identities (Murphy et al, 1996). According to Watt and Moore (2001), for some college-student athletes, the student aspect of their identity takes a backseat to that of athlete. These same athletes may also invest well in excess of 20 hours per week in sport (Ferrante, Etzel, & Lantz, 1996). In the United States, education is not the only avenue by which American's measure their successes. In fact, some athletes may perceive sport as a mobility escalator and means of increasing their socio-economic status by pursuing professional sport opportunities or at the very least a higher education through collegiate sport (Eitzen & Sage, 2003). Additionally, the majority of the American athletes sampled belonged to middle to upper-middle socio-economic classes during their childhood (see Table 1). This may have afforded them greater opportunities to participate in

sport and invest themselves not only financially, but also psychologically and emotionally in the athlete role. Therefore, the differences found between the athletic identities of the American and Hong Kong athletes make sense given the stark contrasting sport cultures.

American and Hong Kong athletes also differed on anger and aggressiveness. However, the results were not as the researcher hypothesized. In fact, the findings were the opposite of what was expected. Hong Kong athletes reported more anger and aggressiveness than American athletes. This finding is surprising in light of the differences in both sport culture and Eastern and Western values. However, Hong Kong has been noted to represent an extreme case of competing Eastern and Western values (Yee, 2001). Its entire culture has been shaped by a struggle between these two competing values (King, 1996). Yee notes that despite more Hong Kong people identifying themselves as Chinese, generally most have a remarkable capacity for moving in and out of Chinese and Western traditions with ease. Interestingly, which value system trumps the other depends on the pragmatic or cost-benefit considerations of the situation, despite which they perceive to be true or not. Yee also points out that the Confucian ideals in Hong Kong are under threat because they often do not adequately fit with Hong Kong contexts; therefore, such ideals may be challenged by Western ideals. Given this, it is important to note that the Hong Kong athletes represented in this study were participating in Western sports (i.e., basketball, soccer, and rugby). It may be that while participating in these sports it is most beneficial to these athletes to concurrently adopt more Western ideals and styles of play. Or, similar to bracketed morality (Bredemeier & Shields, 1986), perhaps when participating in Western sports, these athletes experience a moral transformation and their Eastern ideals become suspended. Also, if most Hong Kong Chinese still adhere to traditional Chinese and Confucian mores, then participation in Western style sports may be the only socially accepted context in which to channel anger and

behave in ways that would otherwise be deemed inappropriate in more Eastern contexts.

Culturally, despite the paradoxical nature of the expression of aggressive behavior, the unexpectedly high anger and aggressiveness scores may be attributed to Hong Kong athletes' ability to adopt more Western styles of play.

From a social learning perspective, another explanation worthy of consideration is that it is probable that the role models Hong Kong athletes have of Western athletes are highly professionalized. Meaning, these athlete role models may not only be participating at their sport's highest competitive levels (e.g., National Basketball Association, Major League Soccer), but they may also be more likely to display acts of aggression when the benefit of doing so outweighs the associated costs. Therefore, given the deep Western influences present in Hong Kong, along with its own lack of a prominent sport culture, Hong Kong athletes may have a somewhat limited and very professionalized view of how to play these sports. Further, they may be attempting to emulate the big hits and aggressive plays that are often highlighted and glamorized in the media. Hong Kong athletes may also be displaying exaggerated or over dramatized attempts to model Western athletes and replicate their rough styles of play. Physically, these Hong Kong Chinese athletes are probably also smaller in stature than the American athletes that typically participate in contact and collision sports. Interestingly, a greater percentage of the Hong Kong athletes indicated having been taught illegal aggressive behavior (see Table 1). As such, the Hong Kong athletes may be attempting to overcompensate for their lack of physical size by exerting greater force and aggressiveness on the playing field to gain a competitive edge.

*Hypothesized and Observed Path Models*

The path model proposed by the researcher examined the influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger as predictors of athlete aggressiveness. The two observed path models indicated a good fit and accounted for 43.1% of the variance in American athletes and 56.5% of the variance in Hong Kong athletes. The path between years of sport participation and professionalization was the only insignificant direct effect (i.e., straight arrow from one variable to another, also called a pathway) in the American model. This finding is surprising given that past research has indicated that years of sport participation and subsequent increases in competitive levels are related to more professionalized attitudes (Visek & Watson, 2005). All other stated relationships among the variables and for the correlation between years of sport participation and perceived athletic ability were significant.

Four direct effects were non-significant in the Hong Kong model. The insignificant paths were found between years of sport participation and athletic identity, years of sport participation and professionalization, athletic identity and professionalization, and professionalization and aggressiveness, respectively. In addition to the various mean comparisons that were conducted using both t-tests and multivariate analysis of variance, path analysis provided further support for the cross-cultural differences found with respect to American and Hong Kong athletes. Specifically, comparison of the resultant Hong Kong path model and its insignificant pathways with the American model and its significant pathways, further empirically supports the mean differences that were found in years of sport participation, perceived athletic ability, athletic identity, professionalization, anger, and aggression. Findings from the study also appear to preliminarily support integration of variables from the cognitive neoassociation model (anger,

aggressiveness) and the self-esteem maintenance model (identity, aggressiveness) as a theoretical foundation because the directionality hypothesized within the model was observed as predicted, particularly with American athletes.

Additionally, two compound paths (i.e., also called indirect effects due to chains of arrows that traverse between one or more variables) within the observed path models also provide further evidence for the expression of hostile aggression and instrumental aggression. For example, in the path model, anger serves a mediating variable between athletic identity and aggressiveness, and may aid in predicting hostile aggression. Hostile aggression has aptly been referred to as “angry aggression” or “reactive aggression” (Silva, 1978). Because the aim of hostile aggression is simply to inflict pain and injury, and may be expressed as a retaliatory act when an athlete is angered, it appears to be best represented by the compound path including athletic identity, anger, and aggressiveness. This compound path was significant in both the American and Hong Kong models.

Whereas hostile aggression serves merely as an end, instrumental aggression serves as a means to an end other than simply pain and injury. For example, instrumental aggression may be used as a method for gaining a tactical advantage by gaining possession of the ball for a game-winning goal. The professionalization of attitudes literature states that the more professionalized an athlete is, the more he or she values winning at the expense of fair play and skill development (Webb, 1969), and the more likely they may be to engage in aggressive sport behavior (Visek & Watson, 2005). Therefore, instrumental aggression, which does not necessitate anger, may be predicted by the compound path including athletic identity, professionalization, and aggressiveness, where professionalization serves as the mediating variable. Interestingly, a

significant compound path between these variables was observed in the American model, but was not observed in the Hong Kong model.

In addition to providing further support of how American and Hong Kong sport cultures influence the behavior of athletes differently, findings here may also suggest that hostile aggression may be more prevalent in Hong Kong sport than instrumental aggression. While neither forms of aggression is consistent with traditional Chinese mores and Confucianism, of the two types, premeditated instrumental forms of aggression would probably be the least consistent. The observed Hong Kong path model may then suggest that while Hong Kong athletes may be somewhat more “Westernized” in the ways in which they react to frustration and anger on the playing field, their Eastern ideals may be restraining them from engaging in instrumental forms of aggression as a game-winning strategy.

#### Limitations

The present study is not without its limitations. For instance, given the nature of the sample that was utilized, results may not generalize to female athletes, non-contact athletes, athletes participating at competitive levels other than those represented, or to athletes in countries other than the United States and Hong Kong China. Also, despite participants’ being encouraged to provide honest answers, participants may have responded in a socially desirable way. For example, because of the manner in which aggressive behavior is glamorized in American media, American athletes may have over reported their anger and aggressive behaviors. In addition, there are several limitations with regard to path analysis. For instance, due to the limitations of path analysis, categorically measured variables such as age and socioeconomic status could not be accounted for in the model (Klem, 1995) and there may be other variables that were omitted from the path models which may further explain aggressiveness. Statistically significant



correlations between the path model variables should also be interpreted with caution. While path analysis attempts to understand the causal order among a set of variables, it does not imply causation and merely points to a relationship between the variables in an attempt to predict aggressiveness (Klem, 1995; Pyrczak, 2003). Lastly, type of sport data (e.g., contact and collision) was not gathered from the Hong Kong sample; therefore, differences between contact and collision sport athletes in Hong Kong could not be assessed.

#### Implications and Future Directions

There are both theoretical and practical implications based on the results of the present study. From a theoretical standpoint, results have indicated a good fitting theoretical model grounded in Berkowitz's (1989) cognitive neoassociation model and Wann's (1993) self-esteem maintenance model that may provide us with a more integrated approach to understanding and predicting sport aggression. This model performed well in predicting aggressiveness in both an American and Hong Kong sample, which attests to its versatility in these two distinct cultures. Nevertheless, further research is needed to determine the model's usefulness with female athletes and with athletes participating at other levels, in other sports, and in different cultures. Furthermore, because of differences found with respect to childhood socio-economic status within the American and Hong Kong samples, future research might consider how childhood socio-economic status impacts athletic identity and subsequently anger and aggressive behavior within the theoretical path model proposed by the researcher.

By assessing athletic identity, the researcher was not only able to identify a factor that may be contributing to sport aggression, but was also successful in discriminating differences in lowly and highly identified athletes in their anger and aggressiveness. Practically, the better able we are to understand aggressive sport behavior and its antecedents, the more sport psychology

practitioners will be able to provide interventions that utilize a more proactive approach to curbing and preventing aggressive sport behavior rather than a reactive approach. Researchers have recommended various sport psychology intervention approaches aimed at the athlete and sport leagues, coaches, and parents (Visek & Watson, 2005). Such interventions could be designed as a two-tiered approach targeting individuals at the macro and micro levels to address both instrumental and hostile aggression.

For instance, based upon the strong relationship between anger and aggressiveness, psychological skills training programs utilizing relaxation skills and both behavioral and cognitive-behavioral approaches may be more specifically tailored to teach athletes how to appropriately cope with negative feelings, such as anger, in a more humanistic and sportspersonlike manner without resorting to aggressive acts. Psychoeducational services could also be provided to league directors, coaches, and parents informing them of how they can be important agents in changing the aggressive, win-at-all costs sport culture inherent in many contact and collision sports. More broadly, sport organizations at all competitive levels could institute rule changes and policy changes so that the cost of aggressive behavior that infringes on the constitutive rule structure of the sport considerably outweighs any potential gains that may be derived by individual athletes, teams, and leagues. In order for these organizations to buy into these types of reform, especially at the professional level where monetary gain is the driving force of the industry, it may be necessary for sport psychology practitioners and scientists to begin informing these organizations of the cost-benefit analysis associated with aggressive behavior. For example, the injuries and rehabilitation of key athletes sustained by either hostile or instrumental aggressive plays comes not only at physical, psychological, and emotional costs to the individual athletes themselves, but may also come at the cost of the performance of the

team and its league standings. This may then ultimately result in both lost championships and lost revenue by both collegiate and professional sports teams and their organizations.

Lastly, from a social learning perspective, the fewer incidences of aggressive behavior to occur, the less opportunity there is for vicarious learning to take place and for athletes to become seriously injured. At the same time, it is important for the media to accurately portray the ramifications of and consequences associated with such behavior, rather than simply highlighting the acts themselves in the evening sports reels. It is essential that as research continues to inform practitioners about sport aggression, that these findings be implemented in the application and practice of appropriate interventions. By doing so, we may be able to then transform the self-concept, attitudes, and behaviors of what one identifies with being a contact and collision sport athlete.

Additionally, by assessing differences in American and Hong Kong athletes, we are able to infer how culture is impacting athletes both similarly and differently. From colonization by the British to becoming a Special Administrative Region of China a decade ago, Hong Kong remains a unique culture with both Eastern and Western influences. This dualism is evident in most aspects of Hong Kong life including its culture, economics, and political and legal systems (Yee, 2001). Results of the present study indicate that perhaps there is a greater Western influence in the sport culture in Hong Kong than might be expected. In an effort to further study the impact of this dualism, future research should consider sampling both Western sports and more traditional Eastern type sports (e.g., the various forms of martial arts) to assess how this dualism may be manifesting itself more broadly in Hong Kong's sport culture. On a more general note, because Hong Kong has been exposed to Western type sports for a longer period of time than Mainland Chinese, future research might also aim to compare and contrast Hong Kong athletes with

Mainland Chinese athletes on the same instruments employed in this study to further assess possible cultural differences. Sport scientists might also more closely examine the AIMS as a culturally specific measure of athletic identity, as well. While this study found that the athletic identities of the American athletes were stronger than the athletic identities of the Hong Kong athletes, it may be possible that the AIMS is a culturally specific measure of athletic identity. The items on the AIMS may be casting a cultural bias and thus not appropriately measuring Hong Kong Chinese athlete identity.

Moreover, consideration should be given to the item severity scores of the CAAS. Maxwell and Moores (2007) noted that the severity ratings used to generate subscale (i.e., anger and aggressiveness) and total CAAS scores are general and may vary across sports. When utilized in cultures for which the item severity scores have not been normed, the CAAS may inadvertently be casting a cultural bias on athletes' scores. Future research should consider developing both cultural and sport-specific norms for the item severity ratings. Such norms would enable both sport scientists and sport psychology practitioners to better assess the anger and aggressiveness in athletes relative to their respective culture and sport. Lastly, future studies should make efforts to measure differences in type of sport to assess if the levels of physical contact in contact and collision sports in countries other than North America are also related to aggressive behavior.

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Table 1.

*Sample Demographic Characteristics*

	American ( <i>n</i> = 358)		Hong Kong ( <i>n</i> = 192)	
	<i>n</i>	%	<i>n</i>	%
<b>Age</b>				
18-19	183	51.1	20	10.4
20-21	123	34.4	117	60.9
22-23	50	14.0	50	26.0
24+	1	.3	5	2.6
<b>Ethnicity</b>				
Asian/Pacific islander	3	.9	3	1.5
Black	73	20.4	0	0
Caucasian	249	69.6	1	.5
Chinese	0	0	185	96.4
Hispanic/Latino	10	2.8	0	0
Multiracial	11	3.1	1	.5
Other	8	2.3	2	1.0
<b>Childhood Income</b>				
Low	15	4.2	29	15.1
Lower middle	48	13.4	100	52.1
Middle	168	46.9	43	22.4
Upper middle	110	30.7	14	7.3
High	13	3.6	6	3.1
<b>Position</b>				
Offense	136	38.0	82	42.7
Defense	118	33.0	62	32.3
Both	4	1.1	3	1.6
Not applicable	98	27.4	45	23.4
<b>Have used excessive force</b>				
No	149	41.6	86	44.8
Yes	208	58.1	106	55.2
<b>Taught illegal behavior</b>				
No	192	53.6	90	46.9
Yes	165	46.1	102	53.1

*Note.* *N* = 550. Some demographic variable percentages may total to less than 100 percent due to missing data.

Table 2.

*Fit Indices for the AIMS and CAAS*

	$\chi^2$	<i>df</i>	RMSEA	CFI	GFI
American					
AIMS	37.77	11	.08	.97	.97
CAAS	477.79	53	.14	.88	.83
CAAS*	156.89	52	.07	.97	.94
Hong Kong					
AIMS	25.55	12	.08	.98	.96
CAAS	109.96	53	.08	.97	.91

*Note.* CFA = Confirmatory factor analyses; AIMS = Athletic Identity Measurement Scale; CAAS = Competitive Aggressiveness and Anger Scale; *df* = degrees of freedom; RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; GFI = Goodness-of-Fit Index; CAAS\* = CFA with the addition of the error covariance to items 3 and 4 for a better fitting model.

Table 3.

*Pearson-Product Moment Correlations*

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1. Athletic identity	---	.18**	.26**	.26**	.17**	.23**
2. Years played	.15*	---	.17**	.08	.04	.09
3. Perceived athletic ability	.28**	.34**	---	.15**	.16**	.15**
4. Anger	.28**	.06	.21**	---	.65**	.35**
5. Aggressiveness	.20**	-.13	.04	.75**	---	.34**
6. Professionalization	-.05	-.08	-.02	.23**	.22**	---

*Note.* Correlation coefficients for American athletes are above the diagonal (upper right triangle), and below the diagonal (lower left triangle) for the Hong Kong athletes. \*  $p < .05$ . \*\*  $p < .01$ .

Table 4.

*Point-Biserial Correlations*

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>
1. High and low AI	---	.13	.24**	.31**	.22**	.24**
2. Years played	.19*	---	.17**	.08	.04	.09
3. Perceived athletic ability	.20*	.34**	---	.15**	.16**	.15**
4. Anger	.32**	.06	.21**	---	.65**	.35**
5. Aggressiveness	.24**	-.13	.04	.75**	---	.34**
6. Professionalization	-.02	-.08	-.02	.23**	.22**	---

*Note.* Correlation coefficients for American athletes are above the diagonal (upper right triangle), and below the diagonal (lower left triangle) for the Hong Kong athletes. High and low athletic identity was defined as a ½ standard deviation above and below the athletic identity mean for both the American and Hong Kong samples. AI = athletic identity. \*  $p < .05$ . \*\*  $p < .01$ .



Table 5.

*Cross-Cultural Comparisons*

	American		Hong Kong		<i>d</i>	$\eta^2$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Years played	12.39	3.74	10.20	3.58	.60***	
Perceived athletic ability	7.37	1.64	7.02	1.62	.21*	
Professionalization	4.41	1.39	3.11	1.18	1.00***	
Athletic Identity	39.02	5.96	36.15	5.58	.50***	
Anger <sup>a</sup>	29.63	7.78	30.69	6.30		.02**
Aggressiveness <sup>a</sup>	35.14	11.74	37.60	9.38		.02**

*Note.* Perceived athletic ability was assessed on a 1 to 10 Likert-type scale with the anchors 1 (*very low*) to 10 (*very high*) with respect to participants' ability in their sport compared to others at their same level of competitive play. <sup>a</sup> Indicates that differences in these variables were assessed using athletic identity as a covariate. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 6.

*Anger and Aggressiveness Scores for High and Low Athletic Identity*

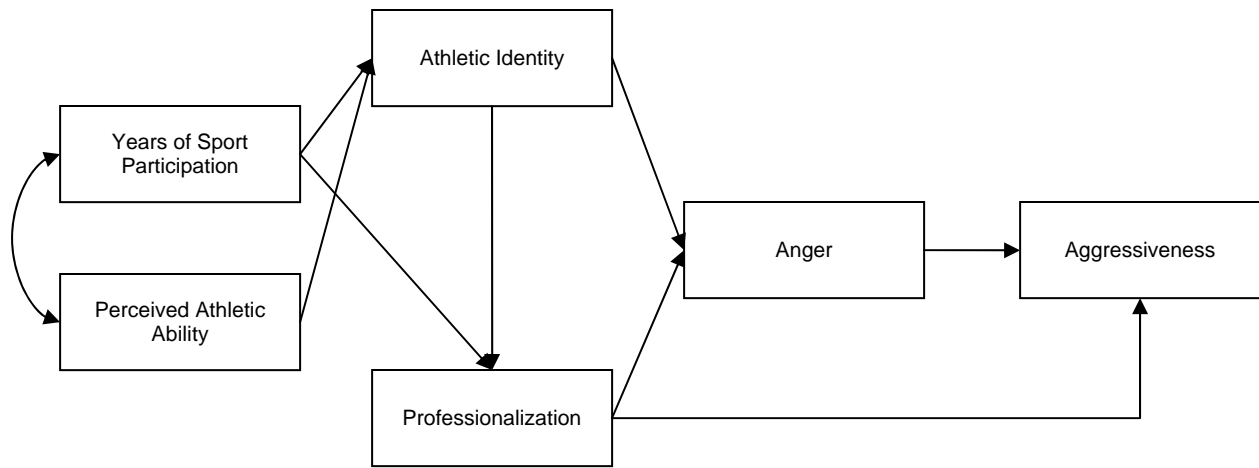
	American				$\eta^2$	Hong Kong				$\eta^2$
	Low AI ( <i>n</i> = 111)		High AI ( <i>n</i> = 116)			Low AI ( <i>n</i> = 57)		High AI ( <i>n</i> = 71)		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Anger	26.92	7.85	31.79	7.40	.09	28.62	6.12	32.65	6.03	.07
Aggressiveness	32.75	10.72	37.69	11.78	.05	35.19	10.60	39.68	8.14	.48*

*Note.* \* = Levene's test of homogeneity of variances was violated, therefore, an independent t-test was conducted with equal variances not assumed to account for the violation with effect size interpreted using Cohen's *d* rather than  $\eta^2$ . AI = Athletic Identity.

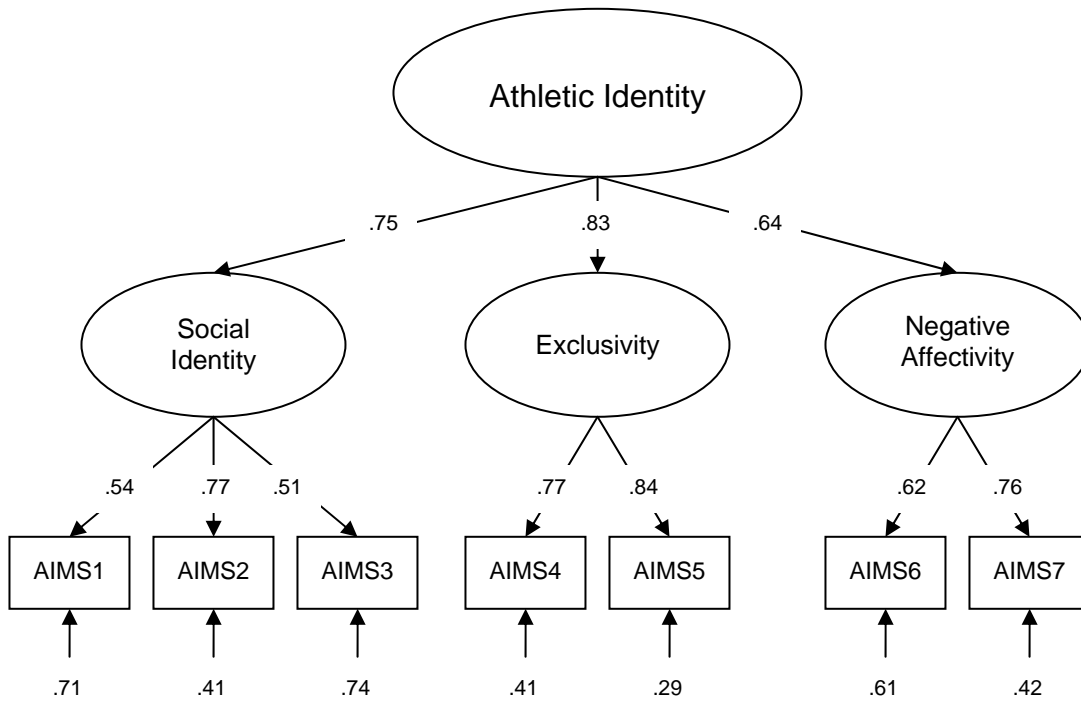
Table 7.

*Comparison of Path Model Analyses*

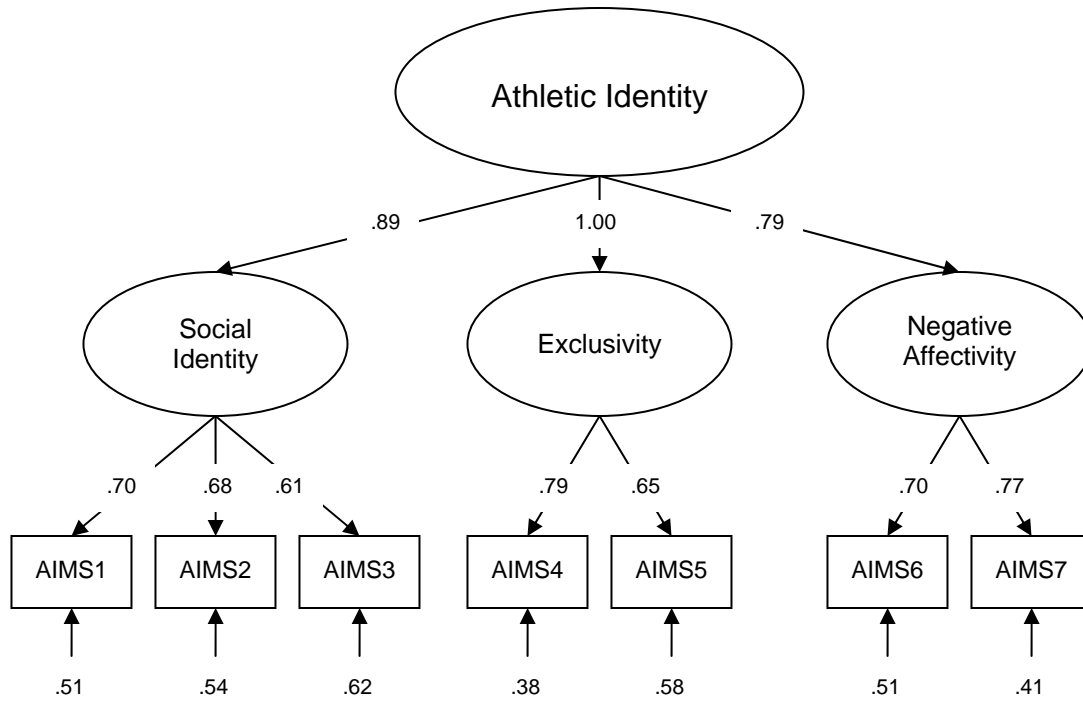
			<u>American</u>		<u>Hong Kong</u>	
			$\beta$	$p$	$\beta$	$p$
Direct effects						
Years	→	Athletic identity	.13	.011	.06	.419
Years	→	Professionalization	.05	.355	-.07	.334
Ability	→	Identity	.24	.000	.26	.001
Identity	→	Professionalization	.23	.000	-.04	.588
Identity	→	Anger	.20	.000	.28	.000
Professionalization	→	Anger	.31	.000	.24	.001
Professionalization	→	Aggression	.13	.003	.06	.254
Anger	→	Aggression	.60	.000	.74	.000



*Figure 1.* Hypothesized path model: The influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger on aggressiveness.



*Figure 2.* Confirmatory factor analysis of the Athletic Identity Measurement Scale (AIMS) with American athletes.



*Figure 3.* Confirmatory factor analysis of the Athletic Identity Measurement Scale (AIMS) with Hong Kong athletes.

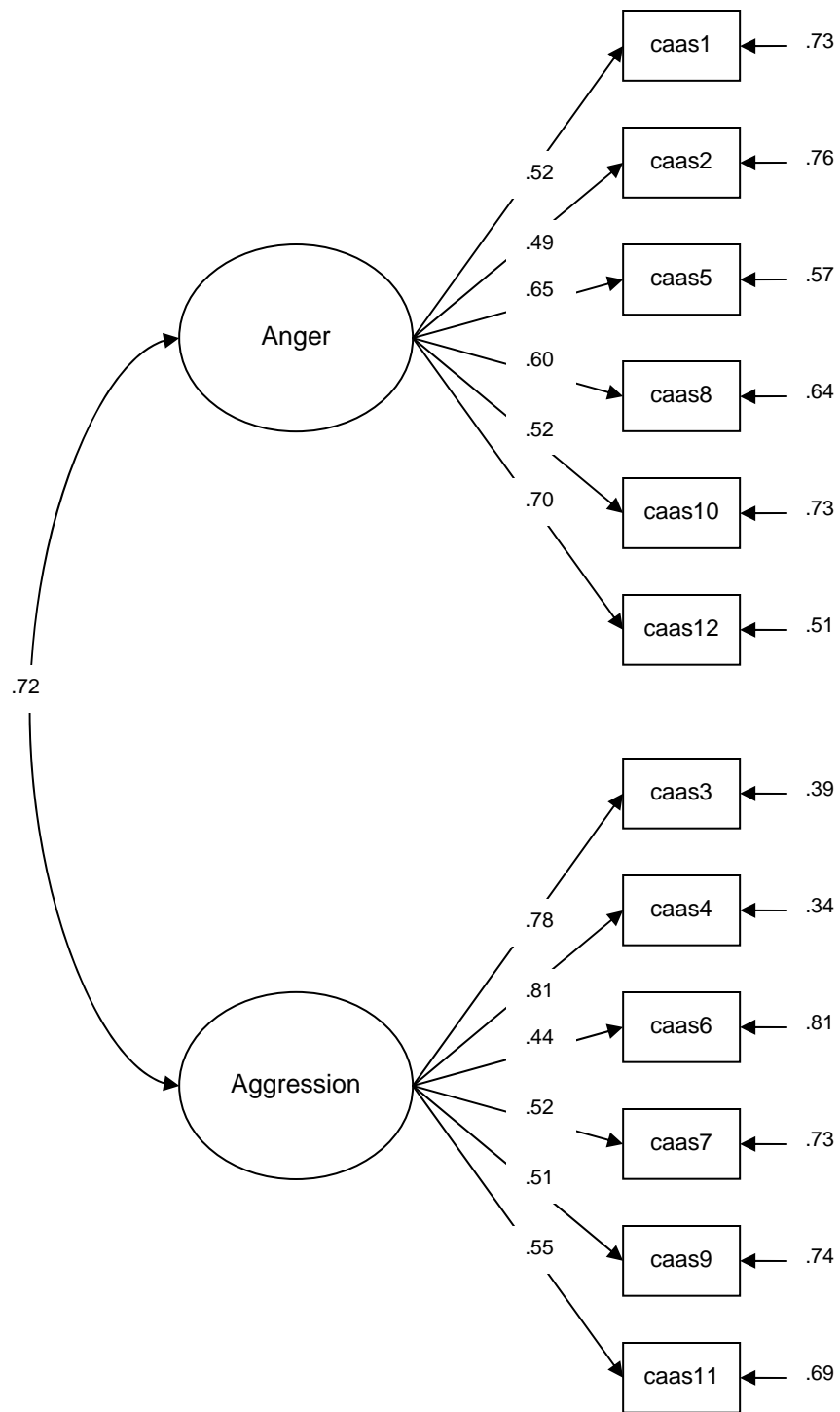


Figure 4. Confirmatory factor analysis of the Competitive Aggressiveness and Anger Scale (CAAS) with American athletes.

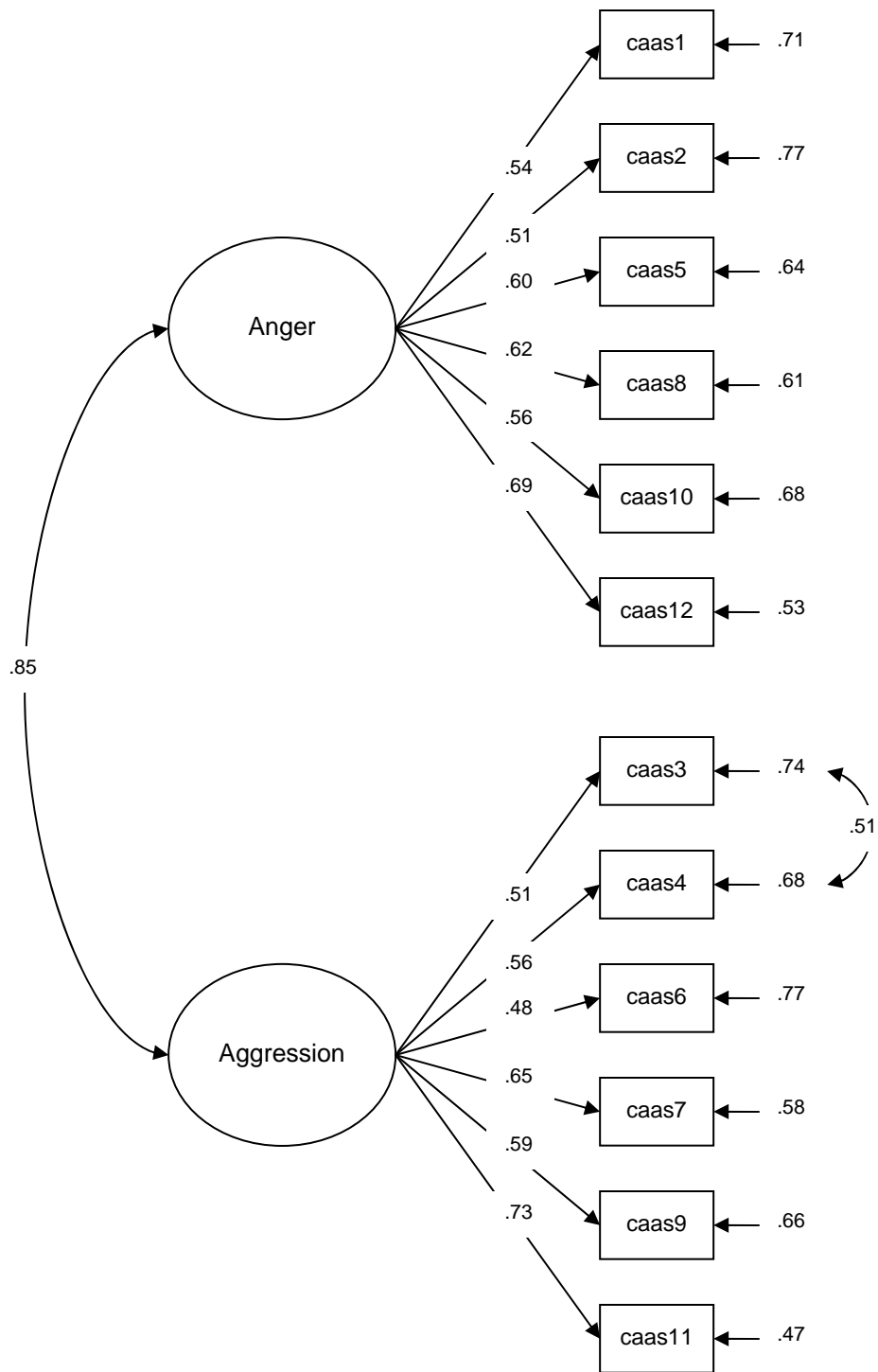


Figure 5. Confirmatory factor analysis of the Competitive Aggressiveness and Anger Scale (CAAS) respecified with the error covariance suggestion regarding CAAS items 3 and 4 with American athletes for a better fitting model.



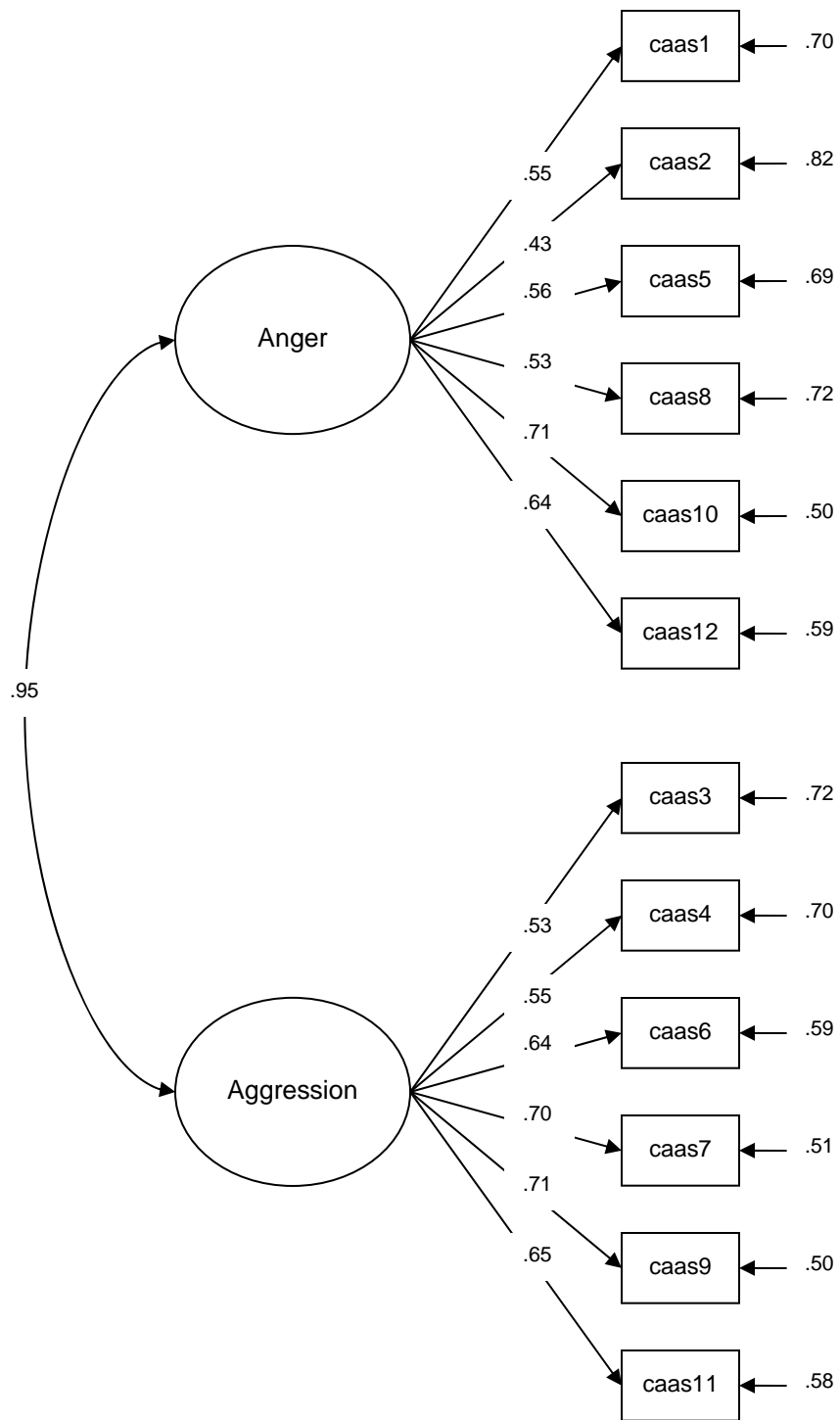
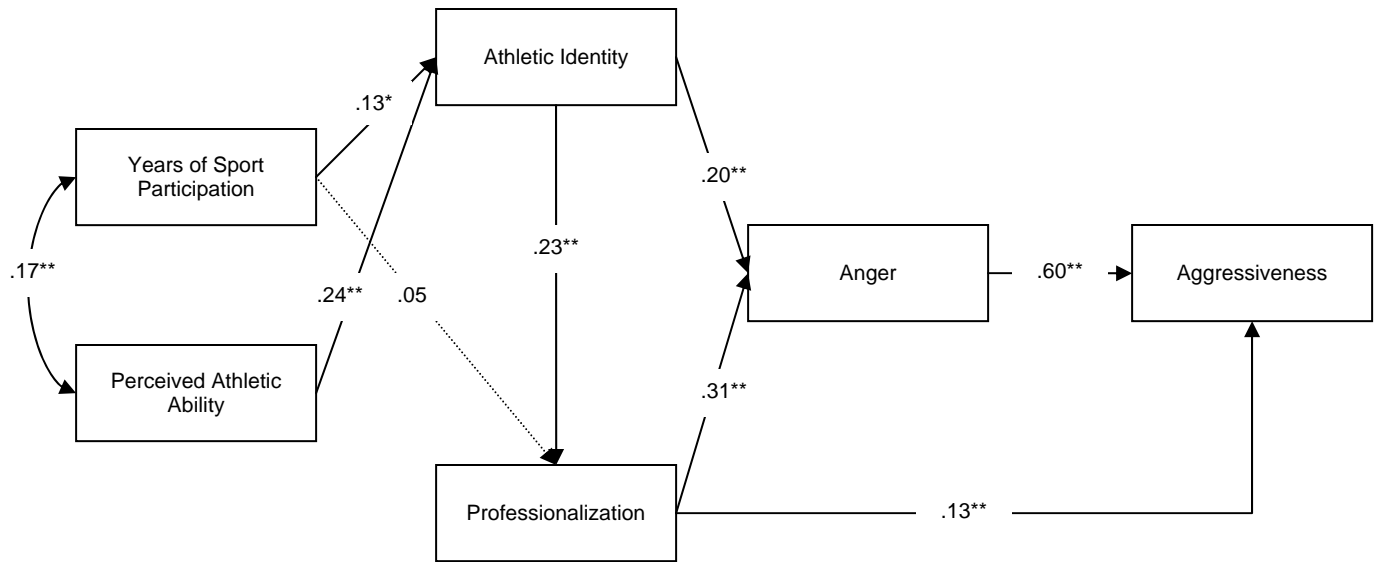
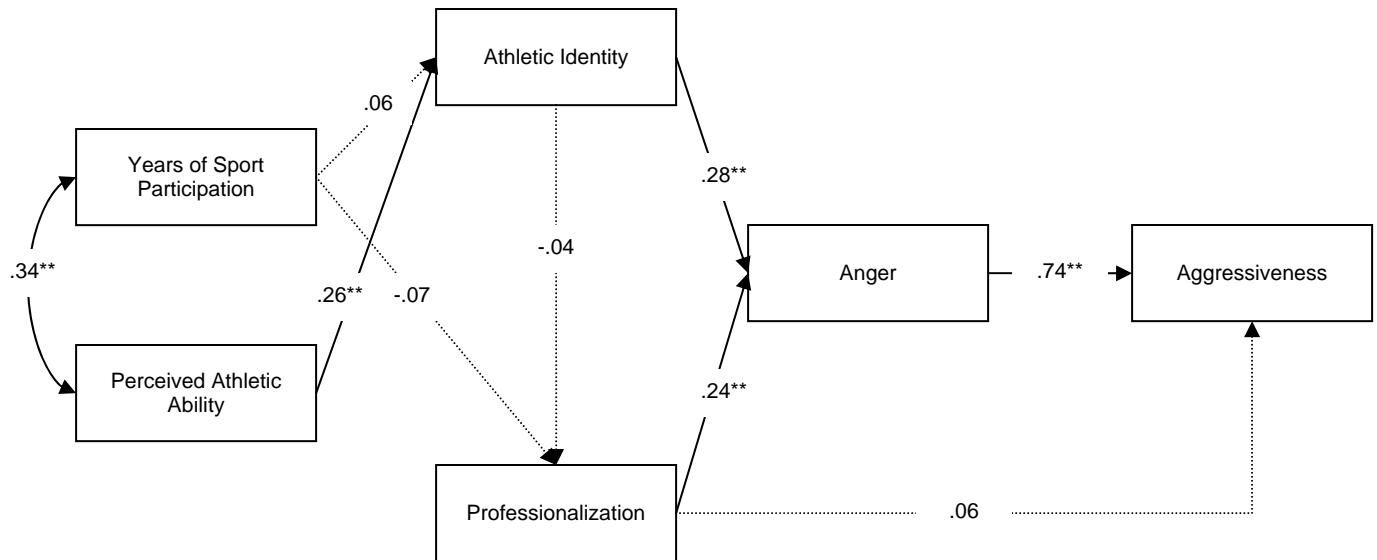


Figure 6. Confirmatory factor analysis of the Competitive Aggressiveness and Anger Scale (CAAS) with Hong Kong athletes.



*Figure 7.* Observed American path model: The influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger on aggressiveness with American athletes. Numbers reported along the paths are path weights which are interpreted as standardized regression (beta) weights. The number along the arc represents a correlation coefficient. Broken lines indicate the path was not statistically significant at  $p < .05$ .  $*p < .05$ .  $**p < .01$ .



*Figure 8.* Observed Hong Kong path model: The influence of years of sport participation, perceived athletic ability, athletic identity, professionalization, and anger on aggressiveness with Hong Kong athletes. Numbers reported along the paths are path weights which are interpreted as standardized regression (beta) weights. The number along the arc represents a correlation coefficient. Broken lines indicate the path was not statistically significant at  $p < .05$ .  $**p < .01$ .

APPENDIX A

IRB Approvals



May 16, 2006

MEMORANDUM

TO: Amanda Visek  
Jack Watson

FROM: Andrew Hawkins *A. Hawkins*  
School Reviewer for Exempt Research

RE: Application for Exemption

I have reviewed and approved your application for exemption for your research project entitled: Athletic Identity and Aggressive Behavior: An  
Exploratory Investigation of its Relationship in Contact and Collision Sports

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This exemption will remain in effect on the condition that the research is carried out exactly as described in the application.

Best wishes for the success of your research.

AH:cas

Athletic Coaching Education • Athletic Training • Sport Management  
Sport and Exercise Psychology • Physical Education Teacher Education

Phone: 304-293-3295  
Fax: 304-293-4641

PO Box 6116  
Morgantown, WV 26506-6116

Equal Opportunity/Affirmative Action Institution



July 14, 2006

MEMORANDUM

TO: Amanda Visek  
FROM: Andrew Hawkins *A. Hawkins*  
School Reviewer for Exempt Research  
RE: Application for Exemption

I have reviewed and approved your application for exemption for your research project entitled: Addendum Approval - Athletic Identity and  
Aggressive Behavior: An Exploratory Investigation of its Relationship in Contact  
and Collision Sports

This exemption will remain in effect on the condition that the research is carried out exactly as described in the application.

Best wishes for the success of your research.

AH:cas

APPENDIX B

Cover Letter



June 26, 2006

Dear Athlete,

This letter is a request for you to take part in a research study that may help us to assess the relationship between the athletic identity and the behavior of athletes participating in contact and collision sports. This study is being conducted by Ms. Amanda Visek to fulfill the requirements for a doctoral dissertation in Sport and Exercise Psychology in the School of Physical Education at West Virginia University, under the supervision of Dr. Jack Watson.

Your participation in this study is voluntary and would involve completing six short questionnaires that will take approximately 10-15 minutes to complete. You do not have to answer all of the questions if you decide to participate, and you may stop at any time. Refusal to participate or withdrawal from participation in the study will not affect your status on the team, class status, or grades, and will involve no penalty to you. Your involvement in this study will be kept confidential.

Your participation in this research study could be very beneficial to the field of sport and exercise psychology. The information gathered from the study may enable sport psychology professionals to help athletes deal more effectively with anger and aggression. However, if you are under the age of 18, you may not participate in this research project.

Should you have any questions about this letter or the research study, please feel free to contact Ms. Visek at [avisek@mix.wvu.edu](mailto:avisek@mix.wvu.edu) or by calling 304-284-9777.

Completion of the surveys will constitute your consent for participation in this research project. Thank you for your time and help with this project.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Amanda Visek', is written over a faint, larger version of the same signature.

Amanda Visek, M.S.  
Sport & Exercise Psychology  
Doctoral Candidate  
West Virginia University

Athletic Coaching Education • Athletic Training • Sport Management  
Sport and Exercise Psychology • Physical Education Teacher Education



APPENDIX C

Data Collection Script

### **Data Collection Script**

I would like to first thank you for volunteering to participate in this research. The goal of the study is to look at the relationship between athletic identity and the behavior of athletes.

Please make sure that you do not write your name or any other marks that could identify you on the packet you have been handed. You will be asked to complete several questionnaires that ask you about your experiences as an athlete. Your participation in this study will be kept confidential.

The cover letter before you explains your rights as a participant in this research (you must be 18 years of age in order to participate, you do not have to answer all of the questions, you may stop at any time, and your participation or refusal to participate will not affect your status on the team, academic standing, etc.).

The entire study will only take approximately 10-15 minutes to complete. Please be sure to read the instructions for each of the questionnaires carefully since the instructions are different for each questionnaire. Please take your time and respond to the questions honestly. If you have any questions that arise as you are completing the questionnaires, please let me (or the research assistant) know so that we may answer or clarify those questions for you.

#### ***Additional Reminders:***

**CMW:** clarify that for each context they are rank ordering the three lines (playing fairly, beating opponent, play as well as you can) in order of importance for EACH context. So, for each context the three lines should be numbered 1, 2, 3, in order of importance for that situation/context (neighborhood play, school, competitive sport).

APPENDIX D

Athletic Identity Measurement Scale (AIMS)

## Athletic Identity Measurement Scale

Please circle the number that best reflects the extent to which you agree or disagree with each statement regarding your sport participation.

1. I consider myself an athlete.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

2. I have many goals related to sport.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

3. Most of my friends are athletes.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

4. Sport is the most important part of my life.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

5. I spend more time thinking about sport than anything else.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

6. I feel bad about myself when I do poorly in sport.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

7. I would be very depressed if I were injured and could not compete in sport.

Strongly Disagree    1       2       3       4       5       6       7       Strongly Agree

APPENDIX E

Competitive Aggressiveness and Anger Scale (CAAS)

## Competitive Aggressiveness and Anger Scale

Written below are a number of statements made by competitive athletes about their behavior during matches. Please indicate how often you have displayed the same behavior while involved in competitive sport by **circling the respective number** in the columns on the right.

	Almost never	Occasionally	Sometimes	Quite often	Almost always
1) I become irritable if I am at a disadvantage during a match	1	2	3	4	5
2) I feel bitter towards my opponent if I lose	1	2	3	4	5
3) I taunt my opponents to make them lose concentration	1	2	3	4	5
4) I verbally insult opponents to distract them	1	2	3	4	5
5) I show my irritation when frustrated during a game	1	2	3	4	5
6) Opponents accept a certain degree of abuse	1	2	3	4	5
7) I use excessive force to gain an advantage	1	2	3	4	5
8) Official's mistakes make me angry	1	2	3	4	5
9) It is acceptable to use illegal physical force to gain an advantage	1	2	3	4	5
10) I get mad when I lose points	1	2	3	4	5
11) Violent behavior, directed towards an opponent, is acceptable	1	2	3	4	5
12) I find it difficult to control my temper during a match	1	2	3	4	5

APPENDIX F

Context Modified Webb – Modified (CMW-Modified)

**Instructions:** Please complete the following items below while thinking about all sports played at the level described.

**About Sports and Games in Your Neighborhood**

When playing a game in your neighborhood what do you think is MOST important?

Place a “1” next to the one you think is MOST important.

Now place a “3” next to the one you think is LEAST important...

- \_\_\_\_\_ to play as well as you can
- \_\_\_\_\_ to beat the other player or team
- \_\_\_\_\_ to play the game fairly

**About Playing on Organized Sports Teams**

When playing on an organized sports team what do you think is MOST important?

Place a “1” next to the one you think is MOST important.

Now place a “3” next to the one you think is LEAST important...

- \_\_\_\_\_ to play as well as you can
- \_\_\_\_\_ to beat the other player or team
- \_\_\_\_\_ to play the game fairly

**About Playing During Gym Class/Intramurals at School**

When playing during gym class or during intramurals at school what do you think is MOST important?

Place a “1” next to the one you think is MOST important.

Now place a “3” next to the one you think is LEAST important...

- \_\_\_\_\_ to play as well as you can
- \_\_\_\_\_ to beat the other player or team
- \_\_\_\_\_ to play the game fairly



APPENDIX G

Demographic Forms

**Demographic Questionnaire: USA**

1. What is your age?

- 18-19 years old
- 20-21 years old
- 22-23 years old
- 24+ years old

2. What is your class status?

- Freshman
- Sophomore
- Junior
- Senior
- Other: \_\_\_\_\_

3. What is your ethnicity/race?

- Asian
- Black
- Caucasian
- Hispanic
- Other: \_\_\_\_\_

4. How would you rate your family's economic status during your childhood?

- Low
- Lower middle
- Middle
- Upper middle
- High

5. What was the population size of the city/town in which you grew up?

- Less than 30,000
- 30,000 - 60,000
- 60,000 - 90,000
- 90,000 - 120,000
- 120,000 - 150,000
- 150,000 +



**Demographic Questionnaire: Hong Kong**

1. What is your age?

- 18-19 years old
- 20-21 years old
- 22-23 years old
- 24+ years old

2. What level of competitive sport do you play?

- University Inter-hall
- University post-secondary competitions
- Local League
- National

3. What is your ethnicity/race?

- Chinese
- Other Asian, please specify: \_\_\_\_\_
- Caucasian
- Other: \_\_\_\_\_

4. What is the highest level of education you have completed?

- Secondary Form 5
- Secondary Form 7
- Bachelor's
- Master's
- Doctoral

5. How would you rate your family's monthly income during your childhood?

- < HK\$10 000
- \$10 001 - \$20 000
- \$20 001 - \$30 000
- \$30 001 - \$40 000
- \$40 001 - \$50 000
- \$50 001 - \$60 000
- > HK\$60 000

6. In which district/city/town did you grow up? \_\_\_\_\_

7. What is the total number of years that you have been participating in sport? \_\_\_\_\_ years

8. How would you rate your athletic ability in your sport compared to others at the same level of competition? *Please rate yourself by **circling the appropriate number** on the 1 (very low) to 4 (very high) scale below.*

Very Low    1        2        3        4        5        6        7        8        9        10        Very High

9. What position do you primarily play on your team?

- Offense  
 Defense  
 Not applicable

10. Have you ever used excessive force against your opponent just for the sake of inflicting pain or injury?

- No  
 Yes

11. Have you been taught how to execute illegal behaviors against your opponent without being detected by officials?

- No  
 Yes

12. Please rate your ability to interpret the information on the questionnaires in this packet *by **circling the appropriate number** on the 1 (not at all) to 4 (fluently) scale below.*

Could not understand most questions    1        2        3        4        Could understand all questions

THANK YOU!

APPENDIX H

Review of Literature

## REVIEW OF THE LITERATURE

### Introduction

Physical interaction amongst athletes is an integral part of contact and collision sports. However, acts of aggression need not be an integral aspect of the game. Yet, one only needs to turn to local sport communities and the media to find instances of aggressive sport behavior now plaguing sport from its youth leagues to the professional ranks. Interestingly, aggression in sport no longer appears to simply be an on-the-field phenomenon taking place between opponents. Instead, it has found its way onto the sidelines, and into the seats and bleachers of overzealous parents and fans spectating at various sporting events.

In the review of literature to follow, various aspects of both athlete and fan aggression that link directly to the present investigation will be reviewed. These topical areas include: (a) operationally defining aggressive and assertive sport behavior, (b) an overview of the more prominent theories thought to explain athlete and crowd aggression, (c) factors found to contribute to athlete and crowd aggression, (d) cross-cultural differences in sport aggression, and (e) the role of team identification in aggressive behavior.

### Distinguishing Between Assertion and Aggression

Even as the research on aggression in sport continues to grow, the distinction between what constitutes assertive behavior and aggressive behavior continues to be unclear among athletes and much of the public. From a research standpoint, Silva (1978) has noted that the lack of congruence amongst what defines aggressive and assertive behavior has called into question the validity of many early studies attempting to examine aggression in sport. The term aggression has been used as an all-encompassing label of forceful behavior which has led to an inability on the part of athletes and coaches to distinguish appropriate force from inappropriate

force. Therefore, Silva has stated that in an effort to yield a coherent body of knowledge, it is necessary to clarify and distinguish the terms “aggression” and “assertion” from one another.

### *Aggressive Behavior*

Aggression is operationally defined as an overt verbal or physical act, not an attitude or emotion (Weinberg & Gould, 1995), that has the potential to psychologically (via intimidation) or physically injure another person or the self (Silva, 1978). Silva further clarifies aggression as behavior that is non-accidental with intent to injure. Maxwell (2004) expands the definitional clarification by stating that aggression in sport is “not recognized as legal within the official rules of conduct that is directed towards an opponent, official, teammate, or spectator that is motivated to avoid such behavior” (p. 280).

Aggression can also be further classified into either instrumental aggression or hostile aggression depending on the primary reinforcement sought by the aggressor (Husman & Silva, 1984; Silva, 1978). Instrumental aggression occurs as a means to an end. For example, behavior in which an athlete intentionally inflicts pain or injury on the opposition in the quest of some non-aggressive goal (e.g., to gain a tactical advantage, victory, praise, money) is classified as instrumental in nature. However, hostile aggression serves simply as an end rather than a means to an end. The primary reinforcement sought via hostile aggression is the pain and injury inflicted on an athlete’s opposing target. Despite the primary reinforcement sought, both forms of aggression – instrumental and hostile – involve the intent to injure. Silva (1978) noted that neither should be encouraged since sport is bound by a constitutive rule structure in which aggression is considered to be rule-violating. This is also consistent with Maxwell’s (2004) attempt to further clarify the definition of aggression.



### *Assertive Behavior*

Assertive behavior is operationally defined as goal-directed behavior that may, and often does, involve the use of legitimate verbal and physical force. Yet, distinct from aggressive behavior, assertive behavior is task-oriented, exhibits no intent to harm or injure, and does not violate the constitutively agreed upon rules of the sport (Silva, 1978). It is possible, however, that due to the unusual expenditure of forceful energy in many contact and collision sports for assertive behavior to appear as aggressive. Forceful, yet acceptable behaviors, within the rules of the game have been labeled as “proactive assertion” by Silva.

### Theoretical Explanations for the Occurrence of Aggression

In an effort to explain the occurrence of aggression, psychologists have advanced several prominent theoretical explanations regarding the causes of such behavior. Some of these have been espoused to explain both athlete aggression and crowd aggression, while others are specific to the athlete or the crowd.

### *Theories Thought to Explain Athlete Aggression*

The leading theories thought to account for athlete aggression include instinct theory, the frustration-aggression hypothesis, and social learning theory. Another line of research with early roots thought to account for the emphasis placed on winning at the expense of fair play in sport has been the professionalization of attitudes toward play. More contemporary explanations now include a theoretical framework of moral reasoning and aggression, and the cognitive neoassociation model. Each of the aforementioned theories will be briefly reviewed; however, particular emphasis will be given to the cognitive neoassociation model, which serves as a theoretical framework for the present study.

*Instinct Theory.* Instinct theory was originally proposed by Sigmund Freud (1925) and served as one of the earliest explanations for why humans engage in aggressive behavior. Freud believed aggressive behavior was an innate and natural response that must be regulated and released through catharsis (Cox, 1998). Intuitively, it seems that sport and exercise would provide individuals with a socially acceptable way in which to channel these aggressive instincts; however, research to substantiate instinct theory and the notion of catharsis remains almost nonexistent (Coakley, 1990; Weinberg & Gould, 2003). Instead, evidence would suggest that aggression tends to produce more aggression, rather than serve as a catharsis for its release following physical activity (Ryan, 1970; Snyder & Spreitzer, 1989; Zillman, Katcher, & Milavsky, 1972).

*Frustration-Aggression Hypothesis.* Originally proposed by Dollard, Doob, Mowrer, and Sears (1939), the frustration-aggression hypothesis was grounded on the principle that all aggression is the result of frustration, and subsequently that frustration always leads to aggression. Dollard and colleagues operationally defined frustration as a response to the environmental blocking of a goal. Soon after the frustration-aggression hypothesis was published, Miller (1941) noted empirical research was not supporting the premise that frustration always produces aggression, and acknowledged that other behaviors often resulted from frustration (such as depression).

*Social Learning Theory.* Social learning theory, proposed by Albert Bandura (1973), posits that the occurrence of aggression is a function of learning, which is influenced by modeling and reinforcement. Social learning theory was first popularized by Bandura's classic Bobo doll study in which children who watched adult models commit violent acts against the Bobo dolls, repeat those same acts more than children who were not exposed to such aggressive

models. Bandura found the aggressive effects to be more powerful when the children were rewarded for copying the adult model's actions, thus reinforcing the aggressive behavior and increasing the likelihood that such behavior would occur again. Unlike instinct theory and the frustration-aggression hypothesis, social learning theory has found considerable empirical support in the research literature (Bandura, 1977; Thirer, 1993) and remains one of the most popular explanations for sport aggression.

*Professionalization of Attitudes.* Stemming from Harry Webb's (1969) concern over the way in which early socialization experiences contribute to the transformation of attitudes and value in sport and game environments, a line of research concerning the professionalization of athletes' attitudes has emerged. According to Webb, becoming professionalized means that the emphasis on fair play and skill mastery found at earlier stages of development, are later substituted by a focus on winning. Essentially, findings over the years have found that males are more highly professionalized than females (Greer & Stewart, 1989; Lacy & Greer, 1992; Webb, 1969), and that professionalization tends to increase with competitive level (Greer & Stewart, 1989; Visek & Watson, 2005).

*Moral Reasoning and Aggression.* In an attempt to enhance our understanding of athletes' interpretations and evaluations of aggressive behavior, Bredemeier and colleagues have attempted to study the occurrence of aggression as a moral issue. From a theoretical standpoint, as individuals develop, they form increasingly sophisticated moral theories that define for them what behaviors count as moral, and what values are most likely to be sought (Shields & Bredemeier, 1996). In addition, Bredemeier and Shields (1986) purport that sport may encourage a temporary, partial adoption of an assimilative style of moral reasoning referred to as "bracketed morality." Recent research by Visek and Watson (2005) found evidence that ice hockey players

were more professionalized in the context of competitive sport than they were in the context of playing in the neighborhood and school yard at recess and in recreational intramurals. These findings may provide support for bracketed morality by illustrating that the moral reasoning used in everyday life contexts (neighborhood and school yard) becomes suspended during competitive sport.

To further substantiate the moral reasoning and aggression relationship, research has found that athletes that display less mature moral reasoning, accept as legitimate, a greater number of injurious sport acts than athletes that display higher levels of moral reasoning (Bredemeier, 1994; Bredemeier & Shields, 1986; Bredemeier, Weiss, Shields, & Cooper, 1986; Shields & Bredemeier, 1996; Shields, Bredemeier, Gardner, & Bostrom, 1995).

*Cognitive Neoassociation Model.* The cognitive-neoassociation model is a reformulation of Dollard, Doob, Mower, and Sears' (1939) frustration-aggression hypothesis (Berkowitz, 1989). According to Berkowitz, frustration is an aversive event that may generate aggressive inclinations, but only to the extent that it produces negative affect. Therefore, the cognitive-neoassociation model takes a stage approach to understanding the occurrence of aggression (see Figure 9 on pg. 124). For example, first an aversive event occurs that produces negative affect. Immediately thereafter, the negative affect automatically gives rise to a number of possible reactions, feelings, thoughts, and memories that one would associate with the tendency to escape the situation and or attack. An individual is then faced with a flight or fight decision. Berkowitz stated that the experience of fear would lead one to flee and escape, which is based on the ideas, memories, expressive-motor reactions, and physiological sensations that are associated with escape and avoidance tendencies. However, negative affect in the form of anger would theoretically give rise to aggressive behavior that is based on aggression-related ideas, memories,

expressive-motor responses, and bodily sensations. Although feelings such as anger do not *always* lead to aggression, it may instigate the inclination to aggress (Berkowitz, 1993).

Before either a fight or flight behavior ensues, cognitions occur which will ultimately influence the reaction to the initial aversive event. It is then during these higher order cognitive processes that the person's experience of that event becomes enriched, differentiated, suppressed, or perhaps even intensified based on one's assessment of his or her feelings, the causal attributions made about the aversive event, their ability to control their feelings and behaviors, and socially learned cues which may signal the appropriateness of aggression. It appears then that each person's experience is based, in part, on his or her schema as it relates to the situation and emotions that are transpiring (Berkowitz, 1989).

By accounting for various aspects of the individual and the environment, the cognitive-neoassociation model appears to take a more holistic approach than other theories at understanding the occurrence of aggression with considerable empirical support (Berkowitz, 1983; Berkowitz, 1989; Berkowitz, 1990; Berkowitz, 1993; Gustafson, 1989). It has taken elements of the original frustration-aggression hypothesis and bridged them with aspects of social learning theory (Weinberg & Gould, 2003) to provide researchers and practitioners with a more thorough understanding of the occurrence of aggressive behavior.

#### *Theories Thought to Explain Crowd Aggression*

Similar to athlete aggression, attempts have been made to understand the occurrence of crowd aggression. Classic theories such as instinct theory, frustration-aggression, and social learning theory have also been used to account for crowd behaviors. However, there have been more recent theories to emerge from both psychological and sociological perspectives specific to sport spectator and fan aggression. These are briefly reviewed next.

*Contagion Theory.* According to contagion theory, an idea, mood, attitude, and behavior can become initiated (e.g., booing, cheering, spectator waves) and rapidly communicated and manifested in others' behavior (Le Bon, 1946). While the theory appears to account for collective behavior amongst groups, its shortcomings have been acknowledged. For instance, Simons and Taylor (1992) note that contagion theory fails to account for the initial source of instigation and does not fully explain the circular reaction process (e.g., how the behavior becomes contagious amongst individuals), and does not account for how the person(s) originally responsible for the commencement of the behavior affects the contagion process.

*Convergence Theory.* Similar to contagion theory, convergence theory is another theoretical attempt to explain collective behavior. The bases of convergence theory stems from the composition of those persons that collectively make up the crowd (McKee, 1969). Convergence theory then posits that the more similar people are to one another in a group, the more arousal levels are heightened and inhibitions lessened among the group members. This then increases the likelihood of collective behavior (Wann, Melnick, Russell, & Pease, 2001). Convergence theory is also not without its shortcomings. For example, it is not yet known how large of a homogenous group is needed for collective behavior to occur, or how arousal is able to lessen one's inhibitions (Simons & Taylor, 1992).

*Deindividuation Theory & Emergent-Norms Theory.* In an attempt to account for aggressive crowd behavior, deindividuation theory predicts that the likelihood of such behavior occurring increases when one's identity is anonymous. Counter to deindividuation theory is emergent-norms theory. Emergent-norms theory states that aggressive behavior becomes increasingly likely among a group when the group has adopted such norms, and when group members are identifiable to one another (Turner & Killian, 1972). Deutsch and Gerard (1955)

noted that group conformity is greater when persons are identifiable to one another rather than when they are anonymous (e.g., deindividuation theory). However, a direct investigation of emergent norms theory with deindividuation theory found that anonymous participants aggressed by administering significantly louder noise levels in a laboratory experiment than did the identifiable participants (Mann, Newton, & Innes, 1982), thus supporting the theory of deindividuation rather than emergent-norms. Perhaps crowd aggression is situation-specific, meaning that in some instances persons are more likely to engage in aggressive behavior when they are recognizable amongst the crowds' members and in others only when their behavior is likely to go personally undetected.

*The Need for Excitement.* Apter (1992) proposed the need for excitement theory to account for many of the mindless acts of aggression that individuals have participated in around various sport venues. Apter posited that, violence prone individuals that are attracted to sports seek to fulfill a need for excitement and do so via aggression toward others and the destruction of property. Although this theory may appear to be too simplistic, it does aid in attempting to account for many of the seemingly senseless acts by spectators and fans (e.g., storming the field, destruction of goal-posts, couch burning, vehicle vandalism) following competitive sporting events (Wann et al., 2001).

*The Self-Esteem Maintenance Model.* According to the self-esteem maintenance model, individuals that strongly identify with a group or sport team will experience either a decrease in their social identity and self-esteem following their team's loss, or an increase in self-esteem and social identity following a win (Wann et al., 2001). In an effort to restore one's self-esteem following a loss, an individual will engage in aggressive behavior directed at the opposing team and its fans. It is important to note that engaging in the aggressive behavior is a means to

increasing one's self-esteem and regaining a positive self-image; therefore, the aggressive behavior is instrumental in value (Wann et al., 2001). By measuring a sport fan's level of identification with a team (i.e., team identification), Wann has found considerable support for the self-esteem maintenance model as a theoretical foundation by which to better understand the aggressive behavior of sport fans (Wann, Carlson, & Shrader, 1999; Wann et al., 2005; Wann, Dolan, McGeorge, & Allison, 1994; Wann, Haynes, McLean, & Pullen, 2003; Wann, Peterson, Cothran, & Dykes, 1999).

### Factors Contributing to Sport Aggression

Many theories have provided both researchers and practitioners with a framework for understanding human behavior. In particular, sport science researchers have attempted to explain the occurrence of aggression in the context of sport by examining variables specific to the person and his or her environment. Research over the years has revealed particular factors on the part of athletes, sport fans, and their respective environments.

#### *Aggression by Athletes*

Sport aggression on the part of athletes has been attributed to factors such as athletes' length of sport participation and competitive level, professionalization of their attitudes, and gender. Specifically, males more than females legitimize aggressive sport behavior (Gardner & Janelle, 2002; Silva, 1983; Tucker & Parks, 2001). Research has also indicated that as athletes' years of sport participation and level of competitive play increase (Conroy, Silva, Newcomer, Walker, Johnson, 2001; Silva, 1983; Visek & Watson, 2005) they become increasingly professionalized (McIntosh, 1979; Webb, 1969; Visek & Watson, 2005) within their sport and may legitimize aggression to a greater extent.



Degree of physical contact defined by the sport has also been found to influence the degree to which aggression is perceived to be legitimate. For instance, as the amount of contact and collision inherent in a particular sport increases, so does the amount of aggressive rule-violating behaviors that may be perceived as normative, legitimate behavior (Silva, 1983; Tucker & Parks, 2001). Early studies by Widmeyer and Birch (1979) and Vaz (1979) found evidence to suggest that the mere nature of the sport may potentially play a role in the social learning process of sport aggression. In the collision sport of ice hockey, these researchers found that aggression is often times perceived as a means of enhancing performance and gaining a tactical edge over one's opponent. Hence, aggression becomes functional and thus encouraged and fostered (Silva, 1983). Silva noted that perceptions of "legitimate behavior" may vary as a function of the degree of physical contact and collision inherent in a sport.

Later studies found that high school age boys participating in high contact sports emitted significantly more aggressive behavior than those participating in low contact sports (Huang & Cherek, 1999). The same was true in a study conducted by Tucker and Parks (2001) which revealed that athletes participating in collision sports were significantly more accepting of aggressive behavior than those participating in contact sports. It has been posited that athletes participating in full contact sports may view instrumental aggression as natural game behavior, and hostile aggression as a more appropriate means to the desired outcome of winning (Mintah, Huddleston, & Doody, 1999). Mintah and colleagues also theorized that contact sport athletes may agree with the use of hostile aggression more than semi-contact athletes. From a moral reasoning perspective, Bredemeier and Shields (1984) suggested that full-body contact sports (e.g., football and ice hockey) may require more of a moral reasoning adaptation than individualistic sports (e.g., gymnastics, tennis, figure skating). Therefore, they suggested that

athletes' concepts of acceptable competitive behavior may vary as a function of the degree of physical contact inherent in a sport. It appears that findings and inferences by sport science researchers have contributed to our understanding of why the same type and level of aggression that is implicit in collision sports (e.g., football, ice hockey, rugby), are not seen in other sports (e.g., basketball, soccer) that do not possess the same heightened degree of physical contact.

Perceptions of masculinity are yet another contributing variable to consider. In its broadest sense "masculinity" refers to the stereotyped characteristics thought to define males (Smith, 1983); and, high contact sports appear to be more congruent with the traditional male gender role (Bredemeier, Weiss, Shields, & Cooper, 1986). Across cultures, playing contact sports characterized by power and performance has increasingly become an important way for athletes to prove their masculinity (Coakley, 2001; Smith, 1983). Athletes that demonstrate masculine characteristics defined by aggression often gain a certain level of status in the community and amongst their peers (Pappas, McKenry, & Catlett, 2004; Smith, 1980). It would appear that male athletes participating at a competitive level in high contact sports with inherent masculine underpinnings may be at an increased risk for utilizing aggressive behavior on the field in both instrumental and hostile ways. This likelihood to legitimize or engage in aggressive behavior may also be confounded by team norms. Recent research has indicated that athletes' perceptions of team norms for aggressive behavior are a strong predictor for self-described likelihood to aggress (Stephens & Kavanagh, 2003) and approval of such behavior (DeVries, 1998).

Another contributing variable to consider is achievement goal orientation. According to Nicholls's (1989) achievement goal theory, the meaning of an activity, namely sport, and perceptions of acceptable behavior within that activity, is defined by one's goal orientation. Task

orientation is characterized by an emphasis on skill mastery and the intrinsic quality of the experience, whereas an ego orientation is characterized by a motivation to beat and surpass others which may also be defined by a lack of concern for the welfare of one's opponent. In particular, athletes high in ego orientation and low in task orientation have been found to significantly endorse a greater degree of aggressive sport behaviors (Duda, Olson, & Templin, 1991; Dunn & Dunn, 1999; Tod & Hodge, 2001). These findings have also been linked to athletes' levels of moral reasoning. In doing so, sport scientists have ascertained that perhaps an athlete's goal orientation, specifically ego-orientation, is related to lower levels of moral reasoning which then allow one to exert their superiority and dominance over others without any psychological or physical costs (Duda, Olson, & Templin, 1991). Such a hypothesis would be consistent with Bredemeier and colleagues (1986) empirical findings that athletes with lower levels of moral reasoning will legitimize a greater number of aggressive acts.

Lastly, specific socializing agents have also been implicated in the legitimization and expression of aggressive behavior by athletes. These include, but may not be limited to, influential others such as coaches (DeVries, 1998; Loughhead & Leith, 2001), parents (Smith, 1980), teammates (DeVries, 1998; Smith, 1979a; Smith, 1979b), and the media (Morra & Smith, 1995).

#### *Cross-Cultural Differences*

Another potential factor that warrants consideration in the context of sport aggression is an athlete's country of origin and subsequently its culture. Previously reviewed research on those factors pertaining specifically to aspects of the athlete and his or her sport environment were conducted using North American athletes in either the United States or Canada. However, culture is an element of one's socialization which is believed to influence one's values, beliefs,

social practices, customs, and subsequently behavior (Schwartz, 1999; Smith & Schwartz, 1997). Therefore, when examining factors thought to influence sport aggression, sport scientists should begin to take into account more fully the broader environmental context in which an athletes' behavior occurs. Moreover, cross-cultural comparisons of aggression in American athletes to those participating in sport in other countries may yield a more fluid comprehension of aggression in the context of sport and a greater understanding of a larger environmental influence – that of one's culture.

Few studies have examined differences in sport aggression cross culturally. Those few have included examining differences in Finish, Swedish, and English soccer players (Heinila, 1974 as cited in Smith, 1983), in North American versus Swedish ice hockey (Smith, 1983) and in National Hockey League (NHL) players with a North American versus European background (Grossman & Hines, 1996). However, research examining differences in other contact and collision sports across other cultures remains almost non-existent. Therefore, given the discrepancies between individualistic versus collectivist cultures, a comparison of American athletes to those in China could potentially be the beginning of a better understanding of sport aggression occurring at opposite ends of the world.

Although not specific to sport, a recent meta-analysis examined the cross-national differences in aggression directed towards peers. Thus, the meta-analysis provides a foundation on which to hypothesize aggressive behavior on the part of athletes cross-culturally. Conducted by Bergeron and Schneider (2005), the meta-analysis included a total of 36 studies and 42,517 participants. Twenty-eight different countries were represented in the analysis. Of the 36 studies included, 28 included the United States as a comparison group. Therefore, Bergeron and Schneider used the United States as a point of comparison given that it was overwhelmingly

represented in the total number of studies. Additionally, seven of the 28 studies included direct comparisons between the United States and China. Results of the meta-analysis revealed that the level of aggression in China was lower than that of the United States. Similar findings were found for the Asian countries of Korea and Japan. Countries with higher levels of aggression than the United States included Finland, Mexico, France, Puerto Rico, and Greece.

Results of the meta-analysis were analyzed in the context of various dimensions of national culture and national values. Individualism and collectivism are two of the more popular dimensions on which to examine cultural values. Independence, autonomy, and personal achievement are characteristic of individualistic cultures and are perceived as more Western values (Sue & Sue, 2003). Collectivism, on the other hand, places value on the group and others, rather than on the individual. Collectivist cultures appear to be more characteristic of Eastern countries. Bergeron and Schneider noted that the United States is largely perceived as a country dominated by both individualism and mastery. Therefore, Americans place more emphasis on individual needs and wants, as well as on individual ambition and success than do collectivist cultures (Bergeron & Schneider, 2005). Mastery was defined by Schwartz (1994) as the need to master and control the environment with an importance placed on getting ahead through self-assertion. Similar to individualism, the mastery dimension also appears to be in direct contrast to collectivism. Therefore, one might hypothesize that for Chinese athletes (e.g., with a collectivist culture) the team takes precedence over individual needs and wants. Results of the meta-analysis also revealed that those countries that have a strong emphasis on Confucianism also appear to be associated with low levels of aggression. They indicated that Confucian values “emphasize the social order and the importance of the creation of responsible and dedicated individuals” (p. 132) and that aggression would not be compatible with such values.

An analysis specific to sport among Asian and American athletes was conducted by Ferraro (1999). Based on questionnaire data gathered from Asia and the United States, Ferraro suggested that Asian athletes tend to be less aggressive and less angry, while American athletes tend to be more angry. Since this cross-cultural comparison study was conducted with athletes, the implications of the analyses are potentially large for the field of sport and exercise psychology. However, Ferraro's results and suggestions should be interpreted with extreme caution. Ferraro did not provide any details regarding the nature of the interview questionnaire used or the participants recruited for the analysis, except that they included American and Japanese athletes. Beyond that, no specific methodological, instrumentation, or data analyses information is provided. Additionally, Ferraro's cross-cultural investigation appears to be more theoretical rather than empirical. Much of his discussion of aggression in athletes was, by and large, discussed in the context of psychoanalysis, and was not necessarily grounded on any empirical data obtained.

The closest study to empirically look at cross-cultural differences in aggression and assess those differences with participants that are similar to those intended for the purposes of the proposed research study was reported by Maxwell, Moores, and Chow (2007). Maxwell and colleagues investigated the cross-cultural differences in anger rumination and self-reported aggression among British and Hong Kong (HK) Chinese athletes. Only two differences were found between the cultures. Specifically, HK Chinese athletes reported a greater frequency of provocation and rumination directed towards an understanding of the causes of anger. Maxwell and colleagues suggested that perhaps this finding was due to HK Chinese athletes' ability to tolerate higher levels of abuse before responding aggressively. Given that Hong Kong had been under British rule for a century, it was reported that perhaps the two cultures that were

investigated were more similar to one another than they were different. However, some differences were found within the samples. For instance, within the Chinese sample, a significant gender and type of sport effect was found. HK Chinese male athletes indicated higher frequencies of aggressive acts, provocation, and thoughts of revenge relative to their female counterparts; and, contact sport athletes perceived greater provocation than non-contact athletes. Similarly, British contact athletes also reported more aggression than the non-contact athletes. One might infer that factors such as masculinity and the nature of the sport are impacting these athletes. Given the cultural similarities between Britain and Hong Kong, it stands to reason that perhaps greater differences may be found between American versus HK Chinese athletes.

*Hong Kong China.* Interestingly, China did not resume sovereignty over Hong Kong until 1997 when it became a Special Administrative Region (SAR) of China after having been under British colonial rule for 155 years (Starr, 2001). Hong Kong is primarily comprised of Hong Kong Island, Kowloon Peninsula, New Territories, and Lantau Island and consists of 18 administrative districts within those geographical areas. The population of Kong Hong is predominately Chinese (Siu-lun, 1986). The Basic Law, which was drafted and signed by the British and Chinese governments back in 1984, provides Hong Kong with the freedom to retain its unique cultural, legal, and economic infrastructure independent of the People's Republic of China. Because of the Basic Law, Hong Kong and the People's Republic of China truly are "one country, two systems" (Starr, 2001; Yee, 2001). The Basic Law allows Hong Kong to continue with its way of life for a period of 50 years after the 1997 turnover.

Because of Hong Kong's unique history and British influence, culturally it has been popularly referred to as a region where the East meets the West. While Hong Kong may appear to be urban and Westernized on the surface, at its core lies a culture and tradition that is very

much Chinese (Macdonald, 2006). The official languages of Hong Kong are English and Chinese with a Cantonese dialect (Yee, 2001). Because of the Basic Law, the people of Hong Kong enjoy religious freedom with the majority of people practicing Buddhism. A number of other religions are also represented and include, but are not limited to, Taoism, Christianity, Protestant, Muslim, and Judaism. The Hong Kong culture is also strongly influenced by Confucianism, an East Asian ethical and philosophical system.

*Sport in Hong Kong China.* Sport in Hong Kong China is very different than sport as we know it in America. The development of sport in Hong Kong has faced many obstacles throughout its history. While America regards sports such as baseball as an American pastime, sport is still trying to find its way into Hong Kong culture.

In the early 1900s sport clubs were formed. At that time, because of British influence, Hong Kong residents were being introduced to sports such as cricket, badminton, rugby, tennis, and lawn bowls (Fu, 2006). During those early years, missionary schools were able to incorporate sport activities into the school curriculum as a means of encouraging discipline in the classroom and to improve the physical health of students. However, during 1949 due to the rapid increase in population and emphasis on academic success, Hong Kong people were not able to enjoy a British style sport delivery system, which would have supported sport in the school systems and through a network of clubs (Fu, 2006).

Fu notes that because of the low status accorded to sport both in society and in the school systems during Hong Kong's early history, a sport culture has not quite materialized to its full potential. Even today, greater emphasis is placed on education and sport is still regarded primarily as a leisure activity. However, through the development of the Amateur Sports Federation, the Olympic Committee of Hong Kong, the Hong Kong Sports Institute, and now



with government support, it appears that Hong Kong is increasingly making strides in its attempt to assimilate sport and recreation into Hong Kong culture. Yet, in doing so, Fu notes that Hong Kong continues to face challenges in its attempt to develop a sport culture. Some of the challenges include, but may not be limited to: the construction of more sport facilities, the establishment of more sport clubs and organized associations, an increase in media coverage (through radio, television, and newspapers), better coaching, more government funding, and the presence of more national sports with elite athletes. A cross cultural comparison of American and Hong Kong athletes may provide us with a better understanding of the role of athletic identity, anger, and aggressiveness in two regions of the world where sport culture differs remarkably. Additionally, by studying Hong Kong athletes we may begin to better understand how the East-West influences have impacted Hong Kong athletes. However, in an attempt to assess differences athletic identity, anger, and aggression in American athletes and Hong Kong athletes of similar athletic ability, it has been suggested that Hong Kong competitive club athletes may be more similar in athletic ability and thus serve as a better comparison group than Hong Kong university athletes (personal communication J. P. Maxwell, personal communication, April 13, 2006). Because of the heavy emphasis placed on academics, this may be largely due to a lack of support for sports within the university setting.

In an effort to continue to expand our knowledge of sport aggression exhibited by athletes, sport scientists may need to not only examine aggression cross-culturally, but also examine aggression in other sport venue contexts to discover if contributing factors in those realms also empirically aid in understanding aggression by athletes. For instance, perhaps there are aspects of sport crowds, and more specifically, aspects of sport fans, that have been identified in the research literature that contribute to aggressive behavior on the part of those individuals

and their environment that could also aid in understanding aggression expressed by athletes. A logical first step to making this transition is to explore the crowd and sport fan literature.

### *Aggression in Crowds*

Environmental factors found to influence the likelihood of aggression by spectators have been attributed to noise (Geen & McCown, 1984), temperature (Baron & Richardson, 1994; Dewar, 1979), ionization in the atmosphere (Baron, 1987; Baron, Russell, & Arms, 1985), and crowding (Freedman, Levy, Buchanan, & Price, 1972). Moreover, a factor that has seemingly become more salient at collegiate and professional sporting events is alcohol. While meta-analyses have found a positive relationship between alcohol and aggression (Bushman & Cooper, 1990; Ito, Miller, & Pollock, 1996), that same relationship relative to those attending or watching sporting events has not yet been substantiated (Koss & Gaines, 1993; Wann, 1998) and still remains anecdotal (Wann et al., 2001). In an effort to broaden our understanding of spectator aggression beyond environmental factors, research has begun to examine factors specific to the individual in the context of sport. One such factor is sport team identification.

### Team Identification and Aggressive Behavior

Existing research has found a relationship between one's level of identification with a sport team and likelihood to aggress in both an instrumental and hostile manner. Relevant research as it pertains to aggressive behavior and team identification are explored below. However, before a discussion of the role of team identification ensues, it is first important to distinguish between sport fans and sport spectators. The term "sport fan" is usually designated for those individuals that exhibit an interest in, and follow, a sport, team, or athlete (Wann, 1997). On the other hand, the term "sport spectator" is used to refer to those persons that actively witness or consume a sporting event via attendance at an event or through other media sources.

A sport fan can also concurrently be a sport spectator; however, a sport spectator need not necessarily be a sport fan. Therefore, the terms are not mutually exclusive (Wann, 1997; Wann et al., 2001); but, are often used interchangeably.

### *Team Identification*

In an attempt to better understand the role of sport fandom, a line of research examining an individual's identification with and commitment to a sport team has emerged. Team identification has been defined in the research literature as the extent to which one feels psychologically connected or an allegiance with a sport team (Wann, 1997). Wann and colleagues (2001) stated that for fans with a low level of identification, team identification is only a peripheral element of their self-concept; therefore, their reactions to performances by a sport team are only mildly affected. On the other hand, the role of team identifier/follower serves as a central component of self-concept for those individuals exhibiting high team identification; thus, such persons experience more intense reactions following the performances of their sport teams. Similar to team identification, the term "commitment" has also been used to refer to the psychological connectedness that is experienced by sport fans (Mahoney, Madrigal, & Howard, 2000).

### *Impact of Team Identification*

Research has shown the degree to which individuals identify with a sport team has implications for their psychological, affective, emotional, and physiological states in addition to influencing their overt behavior. Some of the more recent findings are reviewed here. For instance, Branscombe and Wann (1992a) investigated the physiological arousal and reactions of highly and lowly identified fans and found team identification to be a mediating variable in physiological arousal and reactions. Specifically, they found significant increases in diastolic and

systolic blood pressure measures from pre to post-sport film viewing. Low identified persons exhibited no change. Additionally, increases in arousal also predicted derogation directed toward outgroup members.

In a later study, researchers found persons high in team identification experienced an increase in positive emotions from pre to post-game following a win by their team, and an increase in negative emotions after a loss (Wann, Dolan, McGeorge, & Allison, 1994). Interestingly, they also found that high team identification was positively related to the perceived ability to influence the outcome of a game, to include actual behavioral attempts (e.g., yelling at the opposition and officials, yelling encouragement to favorite team) made on the part of highly identified persons. In addition, similar to the anxiety experienced by athletes prior to an important competitive event, spectators with high team identification report higher levels of cognitive and somatic anxiety as an important sporting event approached compared to those that did not identify as highly (Wann, Schrader, & Adamson, 1998).

Sport fans' willingness to aggress has also been at the forefront of research regarding the role of team identification. Wann, Peterson, Cothran, and Dykes (1999) assessed willingness to aggress instrumentally as a function of team identification and anonymity. Frequency distributions found that if ensured complete anonymity, 32% endorsed a willingness to break an opposing coach's leg and 48% a willingness to trip an opposing player *prior to a championship game*. Results revealed small, but significant relationships between team identification and tripping and breaking the leg of an opposing team's star player/coach with correlation coefficients ranging from .25 to .28.

In an attempt to build on the previous study, Wann, Haynes, McLean, and Pullen (2003) investigated highly identified persons' likelihood to engage in hostile aggression. This particular

study was similar to that conducted by Wann et al., (1999) except that the purpose was to measure hostile aggression rather than instrumental aggression, and did so by eliminating “prior to a championship game” from the aggression questionnaire items. Statistically significant, small to moderate relationships ( $r$ 's = .25 to .31) were found between team identification and hostile aggression. More specifically, males more than females were found to consider tripping an opposing player ( $p < .05$ ), tripping an opposing coach ( $p < .01$ ), breaking the leg of an opposing player ( $p < .001$ ), and breaking the leg of an opposing coach ( $p < .001$ ). Interestingly, compared to the Wann et al. (1999) study which assessed willingness to engage in instrumental aggression, Wann and colleagues (2003) found a lower percentage of respondents that endorsed instances of physical aggression that were entirely hostile in nature. Thus, findings would suggest that there is a greater likelihood for fans to endorse behavior that is instrumental (Wann et al., 2003).

However, a previous study by Wann, Carlson, and Schrader (1999) found that highly identified fans reported having engaged in higher levels of *both* hostile and instrumental aggression than fans with low identification during a university men's basketball game played against a conference rival ( $F(1, 194) = 56.02; p < .001$ ). Moreover, respondents indicated that they directed more aggression toward the officials than the opposing players ( $F(1, 194) = 27.52; p < .001$ ). Analyses also revealed a significant interaction between the target of the aggression and the type of aggression ( $F(1, 194) = 17.91; p < .001$ ). Specifically, aggression directed towards officials was more likely to be hostile than instrumental, but aggression directed toward opposing players was equally likely to be hostile and instrumental.

In a more recent study, Wann, Culver, Akanda, Daglar, De Divitis, and Shields (2005) investigated the effects of team identification and game outcome on willingness to consider anonymous acts of hostile aggression. This investigation was predicated on previous research

that had found persons high in team identification endorsed anonymous acts of hostile aggression. It was hypothesized that those high in team identification would be more likely to endorse acts of hostile aggression following a loss to a rival team than a win. In doing so they found a significant main effect for game outcome ( $F(1, 106) = 6.34; p < .02$ ) and level of team identification ( $F(1, 106) = 28.85; p < .001$ ). These main effects coalesced by a statistically significant interaction ( $F(1, 106) = 5.14; p < .03$ ) with post-hoc testing revealing respondents in the “lost” condition with high team identification indicating a greater willingness to anonymously aggress in a hostile manner.

According to Branscombe and Wann (1994), a critical component of a highly identified fan’s social identity is team performance. Thus, results of the aforementioned study suggest that when a highly identified fan’s team suffers a loss, they may be more likely to engage in aggressive behavior as a strategy for restoring the team identification that has been threatened (Wann et al., 2005). Research has not only shown that, similar to athletes, highly identified fans may use aggression to influence the outcome of a game in their favor, but may also aggress in a reactive manner to restore one’s identity. Perhaps the same is true for athletes whose identity is strongly tied to their role as an athlete, which is also being impacted by the masculine identity that is inherently a part of contact and collision sports.

Research has also attempted to understand the relationship between team identification and willingness to anonymously commit antisocial norms. Wann, Hunter, Ryan, and Wright (2001) found a moderately strong positive relationship ( $r = .45; p < .001$ ) between team identification and willingness to consider cheating. Willingness to consider cheating was measured by the Sport Fan Cheating Scale (SFCS) and included items such as, “Stealing a test for a player,” “Attempting to bribe referees,” “Stealing an opposing team’s playbook,” and

“Drugging an opposing team’s water.” Wann and colleagues suggested that due to the importance placed on the identity of highly identified sport fans, they are willing to consider instrumental, illegal, and immoral acts to aid their team, and subsequently their own identities. These findings are interesting in light of research conducted with athletes. For instance, in the collision sport of ice hockey, research has found that aggression is an effective strategy used to gain a tactical advantage (Dunn & Dunn, 1999; Smith, 1980; Widmeyer & Birch, 1984). Visek and Watson (2005) also found that athletes legitimized aggressive play to a greater degree when the game-winning goal and a championship game were on the line. Perhaps willingness to cheat and aggressive behavior are not only a function of team identification for sport fans, but are perhaps also a function of the degree to which athletes identify with their role as an athlete and thus legitimize and exhibit unsportsmanlike behavior to gain an advantage over one’s opponent.

#### *Threat to Team Identity*

Wann (1993) notes that sport sociologists have espoused theories of collective behavior that have aided in our understanding of fan behavior. However, Wann asserts that these approaches have failed to account for differences in individual variables. As an extension of his research regarding the role of team identification and aggressive fan behavior, Wann postulates that perhaps fan aggression emerges as a byproduct of one’s attempt to maintain a positive social identity when that identity (with a sport team) has been threatened. Thus, through Wann’s self-esteem maintenance model, which was briefly discussed earlier, an individual’s level of team identification serves as a function of his or her behavior (Wann, 1993; Wann et al., 2001).

Therefore, the degree to which one’s social identity and self-esteem are threatened are a function of the degree to which one is tied to a particular team. According to Wann (1993), those

that are only minimally tied to a team engage in CORFing (cutting off reflected failure) following a team's loss. Meaning, they protect their self-esteem and identity by psychologically distancing themselves and weakening their association with the sport team. In doing so, they have maintained their positive image and esteem. However, due to the strong allegiance with a team, Wann and colleagues (2001) note that CORFing does not appear to be available to highly identified persons. Instead of distancing one's self, a highly identified fan will engage in blasting or derogating out-group members (e.g., opposing players or fans) as a means of destroying others' identity and esteem when their team is being defeated and thus their identity and self-esteem threatened (Branscombe & Wann, 1992b, 1994).

#### Athletic Identity and Aggressive Behavior

As previously reviewed, extant research has found a relationship between one's identification with a sport team and various emotional, physiological, and behavioral reactions. Specifically, a relationship between team identification and likelihood to aggress in both an instrumental and hostile manner has been well established (Wann et al., 1999; Wann et al., 2005; Wann, Carlson, & Schrader, 1999). However, a similar relationship between athletic identity and likelihood to aggress has not yet been directly investigated. Therefore, research as it pertains to the role of athletic identity, aggressive behavior, and a potential relationship between the two variables are explored next.

#### *Athletic Identity*

Self-concept and self-identity can be thought of synonymously (Brewer, 1993) as a multi-dimensional conceptualization of an individual's perceptions of themselves. According to Shavelson, Hubner, and Stanton's (1976) self-concept model, self-perceptions are formed and influenced by a number of factors. Such factors may include one's experiences, environment,



evaluations by significant others, reinforcements, and accomplishments. Shavelson and colleagues further thought that self-concept was multifaceted and hierarchically organized. Similarly, Taylor and Taylor (1997) described self-identity as a pie with various “slices” of the pie comprising a person’s identity. These slices then represent specific domains or identities that make up a person’s overall self-identity. Taylor and Taylor noted that each slice of one’s pie symbolized a contribution to their self-worth and meaning. The significance in understanding various slices of one’s pie is that, depending on the value placed on a particular slice, we can better understand the relationship between one’s self-esteem, affect, motivation, and behavior in that domain (Harter, 1990; Rosenberg, 1979).

In an effort to better understand the psychological, emotional, and behavioral aspects of athletes in the sport domain, a line of research examining athletic identity has emerged. Athletic identity has been defined in the sport and exercise psychology literature as, “the degree to which an individual identifies with the athlete role” (Brewer, Van Raalte, & Linder, 1993; p. 237). Early literature suggested that perhaps persons that identified highly with being an athlete, did so at the risk of possible psychological distress when faced with injury (Deutsch, 1985; Ogilvie, 1989; Pearson & Petitpas, 1990) and sport disengagement (Orlick, 1980; Pearson & Petitpas, 1990; Werthner & Orlick, 1986), both of which are inherently threatening to such a highly identified athlete. Brewer’s (1992) interest was spawned by this literature and led him and his colleagues to develop the Athletic Identity Measurement Scale (AIMS; Brewer et al., 1993) as a means of assessing athletic identity. The AIMS appears to be the only measure of athletic identity utilized extensively in the sport and exercise psychology literature.

It has been posited that an athlete with a strong athletic identity is essentially seen to have foreclosed on the identity of “athlete” to the exclusion of other possible identities and roles.

Essentially, great importance has been ascribed to an athlete's involvement in sport, and as such, he or she may be particularly attuned to his or her self-perceptions in the sport domain (Brewer et al., 1993). Using the pie metaphor, Taylor and Taylor (1997) described this identity phenomenon as an athlete's pie primarily being dominated by a single slice that defines their identity as an athlete. However, when this slice is either removed from the pie (e.g., career-ending injury, sport termination) or threatened (acute or chronic injury), the athlete is then left with very few, if any, avenues for finding satisfaction, enjoyment, and validation of his or her self-worth. Yet, if the athletic slice of one's pie does not constitute the majority of the pie, Taylor and Taylor acknowledged that an athlete could derive self-worth, meaning, validation, and rewards from other slices that collectively make up the pie.

To date, research has found that a strong athletic identity may have both positive and negative implications. For instance, a strong athletic identity has been related to positive athletic performance (Danish, 1983; Horton & Mack, 2000; Werthner & Orlick, 1986) and enhanced development of life management skills (Cornelius, 1995). However, strong athletic identity has also been associated with psychological and emotional difficulties (e.g., anxiety, depression, hopelessness) when faced with injury (Brewer, 1993; Webb, Nasco, Riley, & Headrick, 1998), de-selection, and retirement from sport (Erpic, Wylleman, & Zupancic, 2004; Grove, Lavalley, & Gordon, 1997; Pearson & Petitpas, 1990). Another area of the sport domain that pertains directly to collegiate athletes is career development. Research has suggested that collegiate athletes high in athletic identity, participating in revenue-producing sports, may also be at an increased risk for delayed career development (Murphy, Petitpas, & Brewer, 1996). Generally, research would suggest that athletes with a strong athletic identity may then be more susceptible to negative emotional and psychological distress regarding various sport transitions. It may be interesting,

and perhaps enlightening, to begin to expand our understanding of the role of athletic identity in an athlete's life by investigating how that identity specifically impacts his or her behavior on the playing field.

### *Impact of Athletic Identity on Aggression*

An area of the sport domain that has not yet been explored by sport scientists is the relationship between athletic identity and aggressive sport behavior. Previous research has only alluded to a possible relationship between athletic identity and sport aggression, and has only studied these variables independent of one another. For example, Wann and Porcher (1998) suggested a possible relationship between the strong athletic identity of an athlete participating in an aggressive sport and the use of self-presentational strategies in the form of aggressive behavior as a means of presenting themselves in a manner that is consistent with their identity. One might infer that athletes participating in high contact and collision sports, where extreme forms of physical contact are an inherent part of the sport, and a means of gaining a tactical advantage, may then accept as legitimate, or express a willingness, to engage in aggressive behavior as a means of maintaining the athletic identity and norms that are consistent with their sport.

A more recent study independently assessed the athletic identity, racial attitudes, and perceived aggression on the field and in interpersonal relationships in first-year Black and White intercollegiate athletes (Jackson, Keiper, Brown, Brown, & Manuel, 2002). Yet, the athletic identity of these athletes was not correlated with their perceived aggression either on or off the field. Therefore, a direct relationship regarding athletic identity and aggressive sport behavior still has yet to be investigated.

Given the implications that athletic identity has on sport transitions, sport scientists may be overlooking a particularly important aspect of an athlete's sense of self and the role it may potentially play in the display of aggressive sport behavior. For instance, if athletic identity is dictating, to an extent, the manner in which an athlete adjusts to various sport transitions, is it not at least plausible to suggest that athletic identity may also be impacting athletes' behavior while competitively participating in sport? In an effort to more fully understand aggressive sport behavior and those athletes that are likely to engage in such behavior, an investigation into the possible relationship between athletic identity and sport aggression appears warranted.

#### *Threat to Athletic Identity*

Sport injuries, deselection from teams, and athletic retirement are inherently threatening to one's sense of self and specifically to one's athletic identity. As already mentioned, these threats have been associated in the research literature with both psychological and emotional difficulties. However, there appears to be a lack of understanding about an athlete's response as it relates to aggressive behavior when they perceive their athletic identity to be threatened on the playing field. Perhaps, when highly identified athletes are being defeated in the midst of competition, aggressed against or provoked by their opponent, or sense that calls made by officials are giving an advantage to an opposing team, they may perceive that their athletic identity and prowess, which is a central component of their self-concept, is being threatened. Similar to the negative psychological and emotional disturbances that are experienced when athletic identity is threatened in the context of sport injury and disengagement, an athlete that perceives that his or her sense of self as an athlete is being threatened may also experience similar psychological and emotional disturbances (e.g., anger, frustration). Thus, aggressive sport behavior may then be expressed as a self-presentational tactic.

Summary: Athletic Identity as One Potential Variable  
of a Future Interactional Model of Sport Aggression

The basis of the proposed relationships between athletic identity and aggression was initially predicated on the sport fandom literature which points to a relationship between a fan's level of identification with a sport team and aggressive behavior. Borrowing from those research findings, it was hypothesized that perhaps there also lies the existence of a relationship between the extent to which one identifies with the athlete role and his or her likelihood for, and propensity to, aggress against an opponent. Although research in the area of sport aggression is quite extensive, and its popularity among researchers is being reawakened as more anecdotal and media reports of aggressive sport behavior continue to arise, the role of athletic identity remains an untapped potentially contributing variable that deserves exploration.

Theoretical attempts to explain sport aggression usually do so from one perspective. Meaning, athletes aggress either because it is instinctual, or they have been frustrated, or perhaps have learned the behavior. Considering only a single theoretical underpinning vastly limits sport science researchers' and sport psychology practitioners' ability to predict an athlete's likelihood to aggress. It has been suggested that a conceptual framework that bridges the gap between athletes' aggressive overt behaviors and their covert intentions and moral priorities may have the potential to provide a more thorough understanding of aggressive sport behavior (Vissek & Watson, 2005). In expanding upon this suggestion, a more comprehensive potential future interactional model is in development, which accounts for various aspects of the person, the situation, and the environment, which may better enable us to understand sport aggression more holistically (see Figure 10 on page 125).

It is thought that there are precipitating events (e.g., a goal-directed behavior blocked, aggression by an opponent, provocation) that occur that could potentially threaten the self-concept of an athlete. That self-concept is then moderated by the extent to which an athlete identifies with his or her role as an athlete, which is also moderated by his or her achievement orientation. More specifically, it is thought that an athlete with a strong and well-defined athletic identity with an ego-orientation may perceive particular events as a threat to his or her self-concept. When that self-concept is threatened, it is thought that feelings of frustration, anger, or perhaps hostility are then evoked internally within the athlete. Those internal feelings then translate into negative affect, which may be observable by others. These negative feelings and affect transpire to a coping response by the athlete in response to the threatening event. It has been hypothesized that team norms (either for or against aggressive behavior), an athlete's level of moral reasoning (in the context of sport), and his or her coping style in competitive sport (passive versus active) may then moderate, along with the presence of aggressive cues, an athlete's likelihood to aggress.

According to social identity theory and the self-esteem maintenance model, perhaps aggressive behavior on the part of an athlete, in response to a perceived threat, serves to restore his or her sense of self as an athlete as it has been posited to with sport fans. This interactional model of sport aggression is based both on the intuition of the researcher and on various components of the cognitive neoassociation model, social identity theory, the self-esteem maintenance model, and already existing empirical research. Thus, the impetus for the present dissertation study is driven by both a theoretical and empirical need to explore select aspects of a potential future interactional model of sport aggression in which no empirical or theoretical evidence currently exists. It is important to stress that the purpose of the present study is not to

validate the hypothesized interactional model (see Figure 10 on page 121), but rather to test the relationships between select factors from the model. Thus, the hypothesized interactional model merely serves as a guide for generating and testing a hypothesized path model utilizing select variables (see Figure 1 on page 50).

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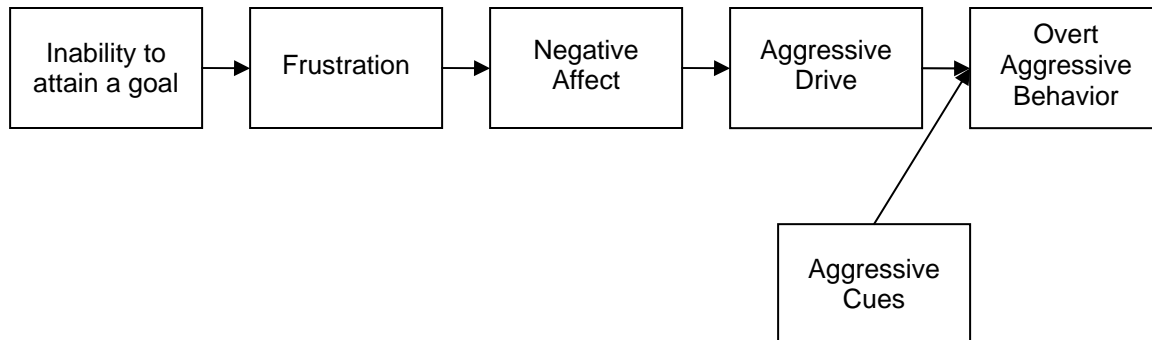
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*Figure 9.* The figure above is a reflection of the cognitive neoassociation model espoused by Leonard Berkowitz. The figure was adapted from Wann (1997).

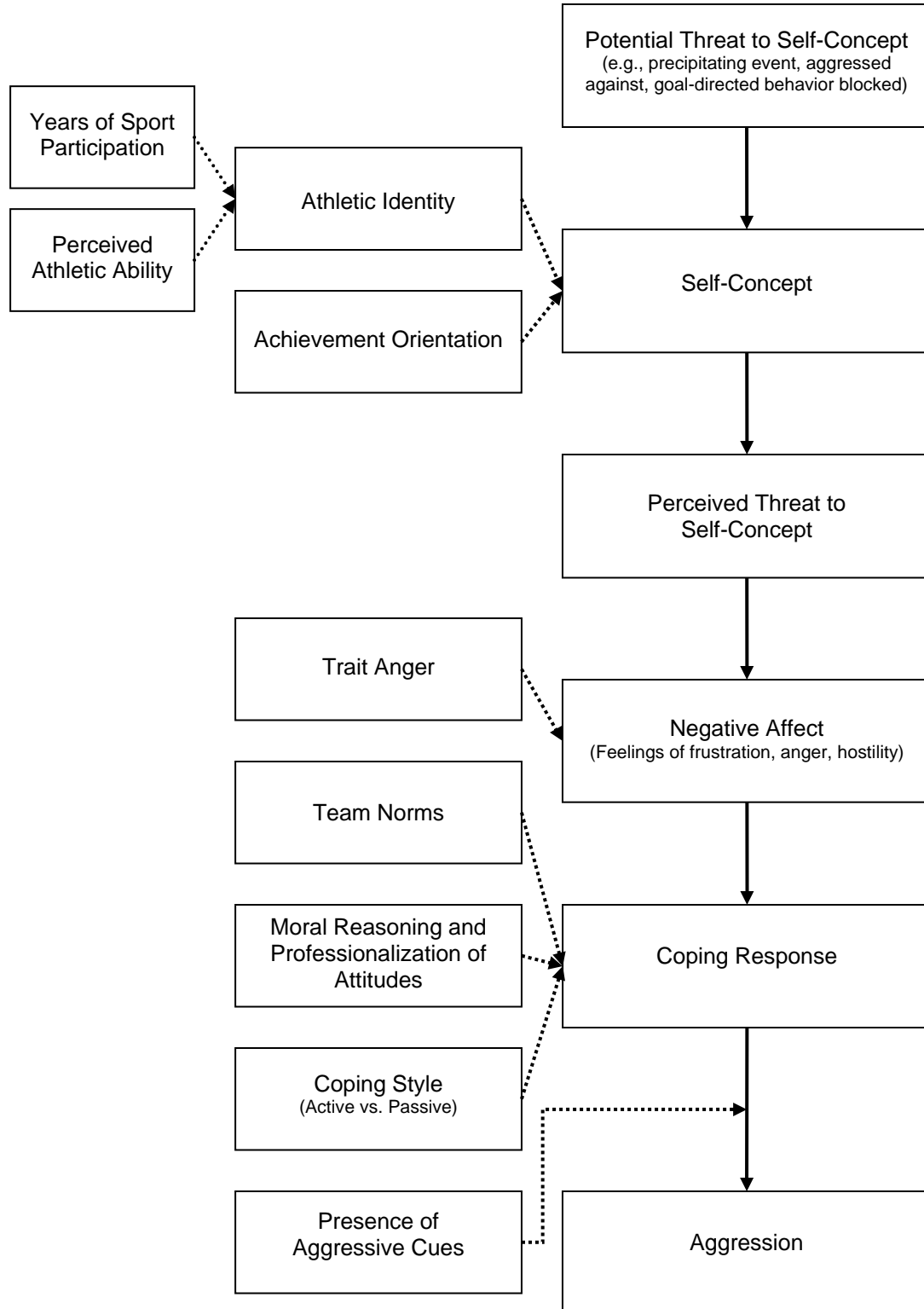


Figure 10. Hypothesized Interactional Model of Sport Aggression