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Investigating the Moderating Role of Athlete Leadership on Leadership Behaviors and Perceptions of Cohesion

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INVESTIGATING THE MODERATING ROLE OF ATHLETE LEADERSHIP ON LEADERSHIP BEHAVIORS AND PERCEPTIONS OF COHESION

By

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Abstract

Athlete leadership has been defined as an athlete occupying a formal or informal role within the team, who influences a group of team members towards achieving a common goal (Loughead et al., 2006). The purpose of the present study was to examine whether an athlete's leadership status (i.e., formal athlete leader, informal athlete leader, athlete non-leader) moderated the leadership behavior to cohesion relationship. Overall, four moderation results were found. The relationship between Positive Feedback and ATG-T, ATG-S, and GI-T differed between informal athlete leaders and athlete non-leaders. In addition, Positive Feedback to GI-T differed between formal athlete leaders and athlete non-leaders. In all cases, the relationship between Positive Feedback and cohesion was in a positive direction for athlete leaders, and in a negative direction for athlete non-leaders. For all other relationships, no differences were found between leadership statuses, indicating a sense of shared leadership amongst teammates. Practical implications of these results are discussed.

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RESEARCH ARTICLE

Introduction

Typically in sport, leadership has been examined from the perspective of the coach and his/her influence on the athlete (see Chelladurai, 2007, for a review). However recently, it has been argued that leadership can include multiple leaders that form a leadership team (Mael & Alderks, 1993; Northouse, 2010). In sport, this perspective would suggest that not only coaches serve in a leadership capacity but also the athletes. The notion that athletes serve in a leadership role, known as athlete leadership, has been defined as an athlete occupying a formal or informal role within a team who influences a group of team members to achieve a common goal (Loughead, Hardy, & Eys, 2006). Contained in this definition are two types of athlete leaders based on their role within the team. The first are formal athlete leaders, who are individuals that are designated as leaders by the organization or team. The second are informal athlete leaders, who are individuals that emerge as leaders through experience and interactions with other team members.

In determining how many athletes would be ideal on a team, Crozier, Loughead, and Munroe-Chandler (2010) found that 19% of athletes on a team should occupy a formal athlete leadership role, while 66% of athletes should occupy an informal leadership role. Overall, the results suggest that 85% of athletes on a team should fulfill a leadership role. Taken together, the findings indicate that the majority of athletes on a team provide some type of leadership to their teammates. Moreover in an examination of the characteristics of athlete leaders competing at the intercollegiate level, Loughead et al. (2006) found that formal leaders (e.g., captains) were more likely to be identified as team leaders (viewed by the majority of teammates as providing leadership), while informal leaders were more likely to be identified as peer leaders (providing

leadership a some teammates). In addition, the majority of athlete leaders were in their third year playing on their team and were more likely to be identified as a starting player, indicating experience and athletic ability were factors contributing to the emergence of leadership in athletes.

In an examination on the benefits of formal and informal athlete leaders, Crozier et al. (2010) surveyed 104 varsity athletes. Using an open-ended questionnaire, the participants were asked to list the benefits of having athlete leaders on their team. While the results showed that having athlete leaders present on teams is beneficial in relation to several individual and team related variables, one of the most important noted by the participants was team cohesion. That is, athlete leaders have the ability to influence the cohesiveness amongst teammates. Specifically, athletes indicated that when the ideal numbers of formal and informal athlete leaders were present on teams, the amount of unity and team bonding perceived among team members is enhanced (e.g., there would be greater opportunities to work together as a group, thereby improving team cohesion). The finding that cohesion emerged as a central factor in relation to athlete leadership is not surprising. In fact, it has been suggested that cohesion is *the* most important small group variable (Golembiewski, 1962; Lott & Lott, 1965) and is defined as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213).

In an examination of team captains in hockey, Dupuis, Bloom, and Loughead (2006) conducted semi-structured interviews to examine how they perceived their own leadership role within the team. Overall, the findings revealed that these formal leaders possessed good interpersonal characteristics (e.g., skilled in their sport), strong verbal interactions with

teammates (e.g., communicating well with teammates), and displayed task-related behaviors (e.g., getting the team motivated for a game). By possessing these qualities, captains believed that one of their most significant roles was to foster a strong sense of team cohesiveness by remaining positive when faced with adversity, communicating effectively, and by being considerate of fellow teammates.

Given the evidence concerning the influence of athlete leadership on team cohesion through qualitative methods (e.g., Crozier et al., 2010; Dupuis et al., 2006), recent research has also examined the nature of the athlete leadership-cohesion relationship using quantitative methodologies. In fact, there have been two approaches used when quantitatively examining athlete leadership and its relation to cohesion. The first approach has examined how the number of athlete leaders influenced perceptions of cohesion. For instance, Hardy, Eys, and Loughead (2008) examined the number of athlete leaders that exhibited task, social, and external leadership functions in relation to cohesion. Task leaders were considered those that helped focus the team on its goals and clarified team members' responsibilities, social leaders involved other teammates in team social events and ensured everyone was maintaining a positive attitude, and external leaders promoted the team within the community and represented the team in meetings with the coaching staff. After surveying 254 varsity athletes, the results indicated that as the number of task athlete leaders increased, perceptions of Group Integration-Task (e.g., closeness within the group as a whole around the group's task) decreased, leading the authors to suggest that in order to enhance cohesion a small core of task leaders should be established within sport teams.

The second approach has examined the relationship between athlete leader behaviors and perceptions of cohesion. Using a variety of interdependent sport teams (e.g., ice hockey, soccer,

basketball, volleyball) competing at the intercollegiate and club level, Vincer and Loughead (2010) found that athlete leader behaviors were related to perceptions of cohesion. Specifically, the athlete leader behaviors of Training and Instruction (e.g., technical and tactical teaching) and Social Support (e.g., concern for the welfare of teammates) were positively related to all four dimensions of cohesion: Group Integration-Task (GI-T), Group Integration-Social (GI-S; bonding within the team as a whole around the group as a social unit), Individual Attractions to the Group-Task (ATG-T; an individual's feeling about his/her personal involvement concerning the group's task), and Individual Attractions to the Group-Social (ATG-S; an individual's feeling about his/her social interactions with the team). Whereas Autocratic Behavior (e.g., authoritative decision making) was negatively associated with all four dimensions of cohesion. Furthermore, Democratic Behavior (e.g., gaining consensus among teammates when making decisions) was positively related to the cohesion dimension of ATG-T. It should be noted that while the definition of athlete leadership distinguishes between two types of athlete leaders (i.e., formal and informal), Vincer and Loughead (2010) did not distinguish between these two types of athletes leaders in their research. Instead, these authors examined all athlete leaders, regardless of their role (i.e., formal or informal athlete leader).

Although previous research has provided some insights into the relationship between athlete leadership and perceptions of cohesion, there are still gaps to this body of knowledge. First, research has not examined whether an athlete leader's role (e.g., formal, informal) moderates the athlete leadership-cohesion relationship. Research has shown the leadership role athletes possess is one of the most important attributes that influences an individual's status within a sport team (Jacob & Carron, 1996). Status is defined as "the amount of importance or prestige possessed by or accorded to individuals by virtue of their position in relation to others"

(Jacob & Carron, 1994, p. S67). Given that an athlete's status can be influenced by his/her leadership role, Carron, Hausenblas, and Eys (2005) proposed a status hierarchy for sport teams that is based on the formal structure of sport teams (see Figure 1). The head coach occupies the top spot in the hierarchy, while the assistant coach(es) assume the position directly under the head coach. The assistant coach(es) are followed by the team captain, and then the assistant captains. Veteran athletes are located below the assistant captains, and are followed by rookie athletes. Given that the focus of the present study is on athlete leadership, further detail will be provided on this portion of the hierarchy.

The status hierarchy suggests that captains and assistant captains (i.e., formal athlete leaders) have greater status than veteran athletes (i.e., informal athlete leaders) within the team (Carron et al., 2005). To highlight this structure within teams, Dupuis et al. (2006) indicated that formal athlete leaders are a key communication liaison between the coaches and teammates. Additionally, research has documented that captains assume considerably more responsibility than their teammates (Lee, Coburn, & Partridge, 1983), supporting the placement of formal athlete leaders above informal leaders. However, much less research in sport has examined informal athlete leadership than formal athlete leadership. Nevertheless, research from organizational psychology has shown that informal leaders behave differently than formal leaders (Wheelan & Johnston, 1996). In addition, informal leaders have the ability to counterbalance the authority of formal leaders and are capable of influencing the team's activities, albeit to a lesser extent than the formal designated leader (Wheelan & Johnston, 1996). The last athlete leader status position is the rookie athlete, of which an example may be the athlete non-leader. In the present study, individuals were considered athlete non-leaders when they are a member of the team, however they do not influence their fellow teammates,

substantiating their position at the base of the leadership status hierarchy. Given that a rookie is new to a team and may experience decreased amount of playing time opportunities compared to veteran athletes, they are more likely to rely on others for a supportive environment and guidance (Bruner, Munroe-Chandler, & Spink, 2008). Though this hierarchy highlights the different statuses of athletes on a sports team, it remains unclear whether the different athlete statuses within the status hierarchy moderate the athlete leader behavior to cohesion relationship.

Another shortcoming in the literature pertains to the measurement of athlete leadership. That is, the majority of research on athlete leadership has examined team members' perceptions of the athlete leader behaviors that occur within the team as a whole (Loughead & Hardy, 2005; Vincer & Loughead, 2010), with one study examining the preferred behaviors of athlete leaders (Holmes, McNeil, Adorna, & Procaccino, 2008). Within these aforementioned studies, an average calculation of the leadership that occurs within their team is computed, whereas there is no indication of each individual's leadership contributions to the team. Therefore, in order to calculate an athlete's personal leadership behavior, it would be important to measure an athlete's perceptions of one's own perceived leadership behavior and its relationship to cohesion.

Thus, the purpose of the present study was to investigate whether athlete leadership status serves as a moderator between athlete leader behaviors and cohesion. As mentioned previously, research has shown a relationship between athlete leader behaviors and cohesion (e.g., Vincer & Loughead, 2010). In conjunction with this previous research and the status hierarchy advanced by Carron et al. (2005), it was hypothesized that individuals who occupied a formal athlete leadership role (e.g., captains, assistant captains) would perceive themselves as displaying greater amounts of leader behaviors and perceptions of cohesion than informal athlete leaders (e.g., veteran athletes) and athlete non-leaders (e.g., rookies). Similarly, it was predicted that

informal athlete leaders would indicate higher levels of leader behaviors and cohesion than athlete non-leaders.

Method

Participants

The current study required a minimum of 216 athletes. The sample size required was computed using G*Power 3.0 (Faul, Erdfelder, Lang, & Buchner, 2007) and this program is designed as a general stand-alone power analysis program for statistical tests commonly used in social and behavioral research. In order to obtain this minimum required sample size, the parameters that were inputted into the program included an effect size of .30, alpha error probability of .05, and a power value of .80, using five predictor variables.

A total of 299 varsity athletes (90 male, 209 female) from both college and university varsity teams volunteered for the study. All participants were members competing in the Ontario University Athletics (OUA) Association or the Ontario Colleges Athletic Association (OCAA). There are a total of 19 member institutions in the OUA and 30 in the OCAA. Both of these associations represent varsity sport in the province of Ontario. Further, participants were members of interdependent sports teams, including basketball (n = 43), hockey (n = 122), and volleyball (n = 134). The mean age of the participants was 20.71 years (SD = 2.07). The participants had been, on average, involved with their current team for 2.17 years (SD = 1.19) (see Appendix A).

Measures

Athlete leadership status. The participants self-identified to the leadership role that they occupied in order to determine their athlete leader status. Athletes were given the following two options from which to choose: formal leader (e.g., an athlete that is selected by the team or coach to be in a leadership position, such as captain, co-captain or assistant captain), or informal leader

(e.g., established through interactions with team members, not formally appointed by coach or team). The participants were asked to choose one of these options, if applicable. However, if both these options did not apply to them, they were asked to move on to the next section. If an athlete did not choose either of these two options, they were classified as an athlete non-leader (Appendix B). Overall, 67 (22.4%) participants identified themselves as a formal athlete leader, 135 (45.1%) as an informal athlete leader, and 98 (32.5%) were classified as an athlete non-leader.

Athlete leader behaviors. The participants assessed their own leadership behaviors using a modified version of the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980, see Appendix C). The LSS is the most used inventory to assess leadership behaviors in sport. The LSS has typically been utilized to measure coaching behaviors but more recently has been used to assess athlete leadership behaviors (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2010). In fact, the modified version of the LSS for athlete leadership has shown good psychometric properties. For instance, research has reported adequate internal consistency values (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2010). Furthermore, Vincer and Loughead (2010) conducted a confirmatory factor analysis to determine the factorial validity of the athlete leadership version of the LSS. Results concluded that the five-factor model (i.e., Training and Instruction, Positive Feedback, Social Support, Democratic Behavior, and Autocratic Behavior) provided a reasonably good fit when measuring athlete leadership as a whole within the team (CFI = .99, TLI = .98, RMSEA = .05). Similarly, Paradis and Loughead (2009) found that the five-factor model provided reasonably good fit for both formal athlete leadership (CFI = .97, NFI = .92, RMSEA = .066) and informal athlete leadership (CFI = .96, NFI = .91, RMSEA = .069) behaviors.

The LSS for athlete leadership is a 40-item inventory that measures five types of behaviors. In order to measure personal leadership behaviors, the stem that precedes the items is "On my team, I…". The Training and Instruction dimension consists of 13 items and assesses leadership behavior aimed at improving athletic performance. An example item is "Explain to team members the techniques and tactics of the sport". Positive Feedback contains five items and reflects the leader's tendency to reinforce behavior by recognizing and rewarding good performances. An example item includes "Express appreciation when a team member performs well". The dimension of Social Support consists of eight items and reflects the degree to which a leader shows concern for the welfare of his/her teammates'. An example item is "Help team members with their personal problems". The Democratic Behavior dimension reflects the extent a leader allows participation from teammates in decision-making. It consists of eight items and a sample item is "Let fellow team members share in decision making". Autocratic Behavior includes five items and represents the tendency of the leader to make decisions independently from the team. An example item is "Work relatively independent of other team members". All items are scored on a 5-point Likert type scale and are scored as: 1 = *never*, 2 = *seldom* (25% of the time), 3 = *occasionally* (50% of the time), 4 = *often* (75% of the time), and 5 = *always*. The items for each dimension of leadership behavior are summed and then an average is computed for each dimension. Consequently, scores can range from 1 to 5 with higher scores indicating higher use of that leadership dimension.

Cohesion. Perceptions of cohesion were measured using a modified version of the Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985, see Appendix D). The GEQ is an 18-item inventory that assesses four dimensions of cohesion: ATG-T, ATG-S, GI-T, and GI-S. ATG-T consists of four items and assesses an individual's feelings towards his/her

personal involvement with the group's tasks, goals, and productivity. An example item is "This team gives me enough opportunities to improve my personal performance". The statement "Some of my best friends are on this team" is an example item from the ATG-S dimension, which contains five items and reflects an individual's desire to stay a member of the group for social reasons. The dimension of GI-T also has five items, and represents the closeness and similarity around group tasks. An example item is "Our team is united in trying to reach its goals for performance". Finally, the dimension GI-S contains four items that reflects the bonding between team members in social situations. A sample item includes "Members of our team would like to spend time together in the off season".

The GEQ is the most widely used measure of cohesion (Paskevich, Estabrooks, Brawley, & Carron, 2001) and research has shown that it is internally consistent (Carron et al., 1985; Li & Harmer, 1996), demonstrates content (Carron et al., 1985), concurrent (Brawley, Carron, & Widmeyer, 1987; Paskevich et al., 2001), predictive (Carron, Widmeyer, & Brawley, 1988), and factorial (Carron et al., 1985) validity. However, some studies (e.g., Westre & Weiss, 1991) have reported less than acceptable values of internal consistency ($\alpha < .70$). This discrepancy may be due to the presence of both positively and negatively worded items within the GEQ. Eys, Carron, Bray, and Brawley (2007) revised the original GEQ to contain all positively worded items and compared it to the original version of the GEQ (with its 12 negatively worded items). Results indicated that the positively worded version had greater internal consistency values on three of the four dimensions of cohesion (ATG-T, GI-T, GI-S) than on the original version. Therefore, the participants in the present study completed the GEQ version consisting of all positively worded items. All of the items are scored on a 9-point Likert type scale with anchored at 1 (*strongly disagree*) and 9 (*strongly agree*). The items for each dimension of cohesion are

summed and then an average is taken for each dimension. Thus, scores can range from 1 to 9 with higher scores indicating higher perceptions of cohesion.

Procedure

Ethical approval was obtained from the University of Windsor's Research Ethics Board. Once ethics approval was obtained, coaches were contacted via e-mail (see Appendix E) at least four weeks into their competition season, to ensure there was enough time for perceptions of leadership and cohesion to develop (e.g., Patterson, Carron, & Loughead, 2005). A description of the study was provided and permission was sought for the players on their team to participate in the study. If the coach agreed, the primary researcher and coach decided on a convenient time to attend a practice to recruit the athletes (see Appendix F). While meeting with the players, the primary researcher administered the questionnaires in separate unmarked envelopes. The questionnaires that athletes received were counterbalanced. The athletes completed the questionnaires and placed them back into the envelope to ensure anonymity. The return of the questionnaires signified consent to participate in the study. The completion of the questionnaires took approximately 15 minutes. In addition, all participants were given the opportunity to fill out a ballet for a chance to win a $50 gift certificate to a sporting goods store as an incentive to participate in the study.

Results

Descriptive Statistics

Means, standard deviations, and internal consistency scores for the five athlete leadership behaviors and the four dimensions of cohesion are presented in Table 1. In general, the four dimensions of cohesion had high values with a range of 7.07 to 7.67 on a 9-point scale. Similarly, athlete leadership behaviors were also high with a range of 2.59 to 4.24 on a 5-point

scale. In addition, the majority of the cohesion and athlete leadership dimensions were in the hypothesized direction, with formal athlete leaders rating themselves the highest, followed by informal athlete leaders, and then athlete non-leaders. The results for the internal consistency values indicated that all of the variables had acceptable Cronbach alpha values greater than .70 (Nunnally & Bernstein, 1994) except for the athlete leadership dimension of Autocratic Behavior ($\alpha = .61$). As a result, this athlete leadership dimension was removed from further analyses. It should be noted that the cohesion dimension of ATG-T had an original internal consistency value of .64. However, with the removal of one item (i.e., I am happy with the amount of playing time I get), the internal consistency score increased to a value of .71. Therefore, the decision was made to delete this item.

As shown in Table 2, the bivariate correlations showed a pattern of positive relationships amongst perceptions of cohesion and athlete leadership behaviors. A significance level of $p < .25$ was used to determine which variables were included in the data analysis. This liberal p value was used to avoid the unnecessary deletion of potentially significant variables from the final analysis (Hosmer & Lemshow, 1989). All of the relationships between athlete leader behaviors and cohesion had a significance level of $p < .25$; therefore all variables were retained for the data analysis.

Preliminary Analyses

Prior to conducting tests of moderation, the assumptions regarding multiple regression were analyzed (Tabachnick & Fidell, 2007). First, the data were analyzed to determine how much of the data were missing and if the missing data were scattered at random. Tabachnick and Fidell (2007) recommended less than 10% of the data be missing and it be scattered at random. The results of this analysis showed that 0.3% of data were missing and they were scattered at

random. Box plots and Mahalanobis distance were plotted to examine potential outliers. Outliers that were found were transformed to bring them closer to the center of distributions for that particular variable. In addition, normality was assessed by plotting the residuals against a normal distribution line, homoscedacity was assessed by creating scatter plots of the residual against the predicted value, and linearity was assessed by plotting the residuals against each independent variable. All these tests appeared to be normal and therefore all assumptions of multiple regression were met.

Testing for Moderation

In order to examine athlete leadership status as a possible moderator of the athlete leadership behavior-cohesion relationship, the analytic framework outlined by Baron and Kenny (1986) was followed (see Figure 2). This framework has three paths that feed into the outcome variable of cohesion. The first path is the influence of athlete leader behaviors as a predictor (Path *a*), the second is the influence of athlete leadership status as a moderator (Path *b*), and the third is the interaction of both athlete leader behaviors and athlete leadership status as a moderator (Path *c*). The moderator hypothesis is supported if the interaction term is significant (Path *c*).

To facilitate the analysis of moderation, procedures suggested by Frazier, Tix, and Barron (2004) were followed. Given that the moderator variable (athlete leadership status) is categorical, the first step was to represent this variable with code variables. Since the moderator in the present study had three categorical groups, the first step was to form three dichotomous groups. More specifically, the first group included formal athlete leaders and informal athlete leaders, the second group contained informal athlete leaders and athlete non-leaders, and the third group

consisted of formal athlete leaders and athlete non-leaders. The groups were then coded using dummy coding, where one group was coded as 0, and the other as 1.

The next step in formulating the regression equation involved centering the predictor variable (athlete leader behaviors) as it was measured on a continuous scale. To center a variable, the sample mean was subtracted from each individual score, in order to produce a revised mean of zero (Frazier et al., 2004). This procedure was used to prevent the trend that the predictor (athlete leader behaviors) and moderator (athlete leadership status) variables are generally highly correlated, thereby reducing the chance of multicollinearity. Next, product terms were created to represent the interaction between the predictor and moderator. To form product terms, the predictor and moderator variables were multiplied.

Once the variables were centered and product terms were created, the next step involved entering the variables into the regression equation through a series of specified blocks (Aiken & West, 1991; Cohen, Cohen, West, & Aiken, 2003; West, Aiken, & Krull, 1996). The first step included entering the predictor variables (athlete leader behaviors). The second step included both the predictor variables along with the moderator variable (athlete leadership status). The final block contained the product terms. Lastly, it should be noted that cohesion was entered as the dependent variable.

When interpreting the results, it is recommended to examine the unstandardized (*B*) rather than standardized (β) regression coefficient because in equations that include interaction terms the β coefficients for the interaction terms are not properly standardized and thus are not interpretable (Aiken & West, 1991; Cohen et al., 2003; West et al., 1996). Therefore, only the unstandardized *B* coefficients are reported in the present study. Given that the moderator effect is composed of a continuous predictor and a categorical moderator, the single degree of freedom *F*

test was reported in order to test the significance of the moderator effect. This test represents the stepwise change in variance explained as a result of the addition of the product term (Aiken & West, 1991; Jaccard, Turrisi, & Wan, 1990; West et al., 1996). If the interaction term is significant, it is important to inspect its particular form. However, if the interaction term is not significant, the researcher must decide whether to remove the term from the model so that the first-order effects are not conditional effects (Frazier et al., 2004). Aiken and West (1991) reviewed the issues associated with this decision and recommended keeping the non-significant interaction term if there are strong theoretical reasons for expecting an interaction and removing the interaction if there is not a strong theoretical rationale for the moderator effect. For the purposes of the present study, non-significant interaction terms were removed and all first-order effects were analyzed.

As stated in the introduction, it was hypothesized that formal athlete leaders would perceive themselves as displaying greater amounts of leadership behaviors and have greater perceptions of cohesion than informal athlete leaders and athlete non-leaders. In addition, it was predicted that informal athlete leaders would perceive greater amounts of leadership behaviors and cohesion that athlete non-leaders. Moderation results will be presented based on the dichotomous groupings explained earlier.

Formal athlete leaders versus informal athlete leaders. The results indicated that there was no moderating effect when examining the difference between formal and informal athlete leaders. Therefore, whether an athlete is a formal or an informal leader does not influence the leadership behavior-cohesion relationship, indicating no hierarchy exists between formal and informal athlete leaders.

After removing the interaction terms that were non-significant, the following significant first-order effects were found (see Table 3). Specifically, Training and Instruction was associated with ATG-T (R^2 = .06, F(2, 197) = 5.89, p < .01), ATG-S (R^2 = .04, F(2, 197) = 3.89, p < .05), GI-T (R^2 = .15, F(2, 197) = 17.20, p < .01), and GI-S (R^2 = .05, F(2, 197) = 4.99, p < .01). Democratic Behavior was related to ATG-T (R^2 = .0.06, F(2, 197) = 5.86, p < .01), ATG-S (R^2 = .08, F(2, 197) = 8.31, p < .01), GI-T (R^2 = .17, F(2, 197) = 19.97, p < .01), and GI-S (R^2 = .07, F(2, 197) = 7.60, p < .01). As for Positive Feedback, it was related to ATG-T (R^2 = .07, F(2, 197) = 7.02, p < .01), ATG-S (R^2 = .06, F(2, 197) = 6.03, p < .01), and GI-T (R^2 = .10, F(2, 197) = 10.56, p < .01). Finally, Social Support was related to ATG-T (R^2 = .11, F(2, 197) = 12.06, p < .01), ATG-S (R^2 = .29, F(2, 197) = 39.43, p < .01), GI-T (R^2 = .17, F(2, 197) = 20.60, p < .01), and GI-S (R^2 = .16, F(2, 197) = 18.99, p < .01).

Informal athlete leaders versus athlete non-leaders. The results showed that there were moderating effects between informal athlete leaders and athlete non-leaders (see Table 4). Overall, three moderating effects were found between Positive Feedback and perceptions of cohesion. In particular, athlete leadership status (informal versus non-leader) influenced the Positive Feedback to ATG-T relationship (ΔR^2 = .03, F(3, 228) = 3.82, p < .05), the Positive Feedback to ATG-S relationship (ΔR^2 = .02, F(3, 228) = 2.23, p < .05), and the Positive Feedback to GI-T relationship (ΔR^2 = .02, F(3, 288) = 3.64, p < .05). More specifically, the slope regressing Positive Feedback on cohesion was negative for athlete non-leaders and positive for informal athlete leaders (see Figure 3a-3c). In other words, for informal athlete leaders, providing greater amounts of Positive Feedback influenced cohesion positively, while for athlete non-leaders, displaying more Positive Feedback was negatively associated with perceptions of cohesion.

After removing the interaction terms that were non-significant, the following significant first-order effects were found (see Table 5). Training and Instruction was related to ATG-T (R^2 = .05, F(2, 229) = 6.01, p < .01), GI-T (R^2 = .08, F(2, 229) = 9.91, p < .01), and GI-S (R^2 = .03, F(2, 229) = 3.73, p < .05). As for Democratic Behavior, it was associated with ATG-T (R^2 = .04, F(2, 229) = 5.20, p < .01), ATG-S (R^2 = .03, F(2, 229) = 3.86, p < .05), GI-T (R^2 = .10, F(2, 229) = 11.99, p < .01), and GI-S (R^2 = .05, F(2, 229) = 5.82, p < .01). Finally, Social Support was related to ATG-T (R^2 = .10, F(2, 229) = 12.11, p < .01), ATG-S (R^2 = .27, F(2, 229) = 42.50, p < .01), GI-T (R^2 = .122, F(2, 229) = 15.97, p < .01), and GI-S (R^2 = .20, F(2, 229) = 28.69, p < .01).

Formal athlete leaders versus athlete non-leaders. The results showed that athlete leadership status was a moderator between formal athlete leaders and athlete non-leaders (see Table 6). In particular, athlete leadership status (formal versus non-leader) influenced the Positive Feedback to GI-T relationship (ΔR^2 = .04, F(3, 288) = 2.67, p < .05). More specifically, the slope regressing Positive Feedback on GI-T was negative for athlete non-leaders compared to positive for formal athlete leaders (see Figure 4). That is, formal athlete leaders who perceived themselves as providing greater amounts of Positive Feedback influenced cohesion positively, while for athlete non-leaders displaying more Positive Feedback negatively influenced perceptions of cohesion.

After removing the interaction terms from the results that were non-significant, the following significant first-order effects were found (see Table 7). Training and Instruction was related to ATG-T (R^2 = .05, F(2, 163) = 4.23, p < .05), ATG-S (R^2 = .04, F(2, 163) = 3.79, p < .05), and GI-T (R^2 = .07, F(2, 163) = 6.46, p < .01). Democratic Behavior was associated with ATG-T (R^2 = .04, F(2, 163) = 3.15, p < .05), and GI-T (R^2 = .07, F(2, 163) = 6.06, p < .01). Social Support was related to ATG-T (R^2 = .10, F(2, 163) = 8.55, p < .01), ATG-S (R^2 = .23, F(2,

163) = 24.00, $p < .01$), GI-T ($R^2 = .10$, $F(2, 163) = 8.65$, $p < .01$), and GI-S ($R^2 = .16$, $F(2, 163) = 16.02$, $p < .01$).

Discussion

The purpose of the present study was to examine whether athlete leadership status (i.e., formal, informal, non-leader) would serve as a moderator between athlete leader behaviors and cohesion. Based on previous research and the status hierarchy, it was hypothesized that individuals who occupied a formal athlete leadership status would perceive themselves as displaying greater amounts of leader behaviors and hold higher perceptions of cohesion than informal athlete leaders and athlete non-leaders. It was also hypothesized that informal athlete leaders would indicate higher levels of leader behaviors and cohesion than athlete non-leaders.

Overall, the results of the present study do not fully support the hypotheses. In general, the majority of the moderation analyses indicated that leadership status was not associated with one's frequency of leadership behaviors or with one's perceptions of cohesion. As a result, the results from the present study question the status hierarchy advanced by Carron et al. (2005) as it pertains to athlete leadership. Instead, the findings indicate that leadership is shared amongst athletes, whereby formal athlete leaders, informal athlete leaders, and athlete non-leaders all demonstrate leadership behaviors. One model that may help explain the current findings is Locke's (2003) Integrated Model of Leadership. This model, originally stemming from organizational psychology, views leadership as a *shared* endeavour instead of as a hierarchy amongst the different levels of leadership. Within this model, there are three types of leadership occurring. First, this model suggests a top-down approach to leadership, where the manager influences his/her subordinates. Second, upward influence occurs, whereby the subordinates provide ideas to their manager. Third, between the subordinates there is teamwork and team

members influence each other. When applied to sport, this model would hypothesize a hierarchy between the coach and athletes. That is, the coach would hold a top position exerting authority and influence over all athletes. However, when examining the athlete portion of the model, there is no hierarchy amongst teammates and leadership can be displayed by all athletes. The current results support this notion, such that regardless of leadership status, all athletes can contribute to the leadership of the team. When leadership is viewed in this manner, Pearce and Conger (2003) suggest that this is evidence of *shared leadership* and define it as a dynamic, interactive influence process among individuals in groups for which the objective is to lead one another to the achievement of group goals. It has been suggested that this group-level approach to leadership would have important theoretical and practical links between leadership research and research on group processes and teamwork (Fletcher & Käufer, 2003). In relation to the present study, the results support this concept of shared leadership, such that all athletes perceived themselves to display leadership behaviors. Furthermore, these behaviors exhibited by all athletes were seen to influence cohesion, enhancing the link found between athlete leadership and team outcomes.

The lone athlete leadership behavior that was significant in moderation was Positive Feedback. It was found that formal and informal athlete leaders had positive relationships between Positive Feedback and certain dimensions of cohesion (i.e., ATG-T, ATG-S, and GI-T), while these relationships were found to be negative for athlete non-leaders. Previous research has found that coaches who used high amounts of Positive Feedback had athletes who were better able to develop their physical skills (Alfermann, Lee, & Würth, 2005), more satisfied with their coach's leadership style (Chelladurai, 1984), more likely to continue with their sport participation (Casey, Eime, Payne, & Harvey, 2009), and positively influenced both task and

social cohesion within their teams (Murray, 2006; Westre & Weiss, 1991). In relation to athlete leadership, the current results contrast those of Vincer and Loughead (2010), who found that there was no relationship between Positive Feedback and cohesion. The incongruence may be due to the method of measuring athlete leader behaviors. In the current study, athletes measured their own perceived leadership behaviors, whereas previous studies (Loughead & Hardy, 2005; Vincer & Loughead, 2010) examined athletes' perceptions of the leadership behaviors that occurred within the team as a whole. Therefore, this study found that when athlete leaders believed they displayed more Positive Feedback behaviors perceptions of cohesion increased.

Moreover, for informal athlete leaders, the leadership behavior of Positive Feedback was associated with task (i.e., ATG-T and GI-T) and social cohesion (i.e., ATG-S), while for formal athlete leaders Positive Feedback was significant with only task cohesion (i.e., GI-T). These results may be due to the specific nature of these leadership roles. For example, formal athlete leaders typically assume more responsibility than their teammates, such as administrative duties and communicating with the coach (Dupuis et al., 2006; Lee et al., 1983). Therefore, when formal athlete leaders display Positive Feedback behaviors, they may perceive this as being expected from them as captain and therefore is related to the task dimensions of cohesion. However, informal athlete leaders do not have formalized prescribed duties to fulfill (Loughead et al., 2006) and therefore would provide these behaviors volitionally, thus influencing both task and social cohesion.

Previous qualitative research found that captains believed one of their roles was to foster a sense of cohesion within the team environment (Dupuis et al., 2006). Results of the present study support this claim by suggesting that when Positive Feedback is displayed by formal athlete leaders, GI-T is enhanced. Furthermore, utilizing open-ended questionnaires, Crozier et

al. (2010) found that a benefit of having both formal and informal athlete leaders was enhanced team cohesion. The results of the present study support and confirm these benefits, such that behaviors exhibited by both formal and informal athlete leaders were related to enhanced perceptions of cohesion. Furthermore, the results of the present study suggest that athlete non-leaders also have this ability to influence the cohesiveness of the team by engaging in leadership behaviors. Taken together, the quantitative results of the present study confirm and extend previous qualitative research, and further strengthen the link found between athlete leadership and cohesion.

The results of the present study showed that when athlete non-leaders exhibited high amounts of Positive Feedback, a negative relationship to cohesion was found. This negative association found between Positive Feedback and cohesion for athlete non-leaders was surprising. Yet, this negative relationship may be a function of their status. Given that an athlete non-leader was classified in the current study as an individual who perceived himself/herself as not occupying a leadership role, these individuals may view themselves as less important than their athlete leader counterparts. Research from organizational psychology on leadership characteristics found that non-leaders perceived themselves to be less skilled and less mature than both formal and informal leaders (Martin, Gross, & Darley, 1952). In addition, non-leaders have been found to communicate less than their peer leaders (Burke, 1974; Crosbie, 1975; Golembiewski, 1962; Mullen, Salas, & Driskel, 1989; Wheelan & Johnston, 1996). For instance, non-leaders were found to demonstrate fewer expressions of warmth, friendship, and support when compared to the leader (Wheelan & Johnston, 1996). Similarly, research in sport has found that captains had high talent levels in their sport (Dupuis et al., 2006). Furthermore, athlete leaders were more likely to be identified as starters, along with athletic ability as being important

contributors to an athlete's leadership status (Loughead et al., 2006). In addition, Hardy et al. (2008) found that communication was related to perceptions of cohesion in sport teams. Therefore, in relation to the current study, when athlete non-leaders provided greater amounts of Positive Feedback behavior, a form of communicating to their teammates, they may perceive that their behaviors are undervalued and inferior to their athlete leader counterparts, therefore hindering perceptions of team unity.

Surprisingly, the athlete leader behavior dimensions of Training and Instruction, Democratic Behavior, and Social Support and their relationships to cohesion were not moderated by an athlete's leadership status. This lends further support to the notion that leadership is shared within sport teams, and that all athletes, not just the formally designated leaders, have the potential to exhibit leadership behaviors (Mael & Alderks, 1993; Northouse, 2010). However, when examining the first-order effects, these leadership behaviors were found to be related to cohesion. These results further support previous research that suggests having athlete leaders is beneficial, such that positive behaviors emerge (i.e., Positive Feedback, Democratic Behavior, Training and Instruction), and cohesion is enhanced (Crozier et al., 2010). Thus, having these athlete leaders is integral to enhancing cohesiveness among team members. Furthermore, given that previous research has also found athlete leadership to be positively related to cohesion (Hardy et al., 2008; Vincer & Loughead, 2010), and that cohesion has been found to be related to enhanced team performance (Carron, Colman, Wheeler, & Stevens, 2002), improved athletic satisfaction (Widmeyer & Williams, 1991), intention to return the following season (Spink, 1998), increased satisfaction with team goals (Brawley, Carron, & Widmeyer, 1993), collective efficacy (Heuzé, Raimbault, & Fontayne, 2006), greater effort (Prapavessis & Carron, 1997a), decreased self-handicapping (Hausenblas & Carron, 1996), and conformity to group norms

(Prapavessis & Carron, 1997b), it would be essential to foster these leadership behaviors in all athletes in order to enhance cohesion. From an applied perspective, the results suggest that coaches and sport psychology consultants should provide opportunities for all athletes to develop their leadership skills (e.g., attending leadership workshops, providing opportunities to lead within practice). In fact, leadership programs have been implemented by the Institute for the Study of Youth Sports at Michigan State University that target leadership development in team captains. In collaboration with the Michigan High School Athletic Association, current and future high school sport captains are attending clinics aimed at educating them about leadership. Though this project is novel to the athlete leadership field, it solely targets formal athlete leaders; whereas the current results would suggest that all athletes be given the opportunity to develop their leadership skills. Furthermore, Crozier et al. (2010) found that when the ideal number of formal and informal athlete leaders were present within a team, many team-related variables were influenced positively, such as enhanced performance, increased knowledge of normative behavior, a greater ability to set goals, and enhanced cohesion. The current study suggests that athlete non-leaders may also have the ability to influence these variables, as they viewed themselves as displaying these leadership behaviors. Therefore, leadership is shared amongst the athletes and all athletes should be given the chance to develop their own leadership skills in order to influence the team environment in a positive way.

While the current study contributes to the athlete leadership literature, it is not without its limitations. The first limitation revolves around the use of self-report inventories. The use of self-report may result in response bias in terms of social desirability. However, to minimize this limitation, the questionnaires were distributed and returned to the investigator in unmarked

envelopes and were completed independently by the athletes. Participants were ensured anonymity and confidentiality to diminish any response bias effects.

Secondly, since data was collected at one time-point, no cause-effect relationship can be inferred. Therefore, the relationships found in the current study are correlational in nature. In order to determine the direction of the athlete leadership-cohesion relationship, a longitudinal study design would be necessary. For example, in order to observe if leadership behaviors at the beginning of the season predicts cohesion at the end of the season, athlete leader behaviors would need to be assessed at time 1 (i.e., beginning of the season), and cohesion at time 2 (i.e., end of the season). This would allow researchers to examine whether athlete leadership behaviors predict perceptions of cohesion.

A third limitation was the low internal consistency value found for the athlete leadership behavior of Autocratic Behavior. This low value has been reported in previous coaching leadership research (Murray, 2006; Westre & Weiss, 1991) and athlete leadership research (e.g., Paradis, 2010). A low alpha value for the current study may be the result of utilizing an inventory (i.e., LSS) that was originally designed to examine coaching leadership behaviors (Chelladurai & Saleh, 1980). Although the athlete leader version of the LSS has been found valid and reliable (e.g., Vincer & Loughead, 2010), previous studies examined the behaviors of all athlete leaders within the team, whereas the current study measured athletes' perceptions of their own leadership behaviors. Therefore, in the current study, the items reflecting the dimension of Autocratic Behavior may have been perceived as a negative behavior and participants did not want to identify themselves as engaging in those behaviors, potentially biasing the results. Conversely, the dimension of Autocratic Behavior simply may not correctly reflect leadership

behaviors displayed by athletes. . Therefore, future research should examine whether the Autocratic Behavior dimension of the LSS is relevant to athlete leaders.

A fourth limitation of the present study is that only three sports were examined (i.e., basketball, hockey, and volleyball) at the varsity level. Therefore, the results lack generalizability across individualized sports (e.g., cross-country running, swimming) and competitive levels (e.g., high school, club, national, international). Future studies should examine these moderating effects with athletes of all ages, from all sports, and all competition levels.

Given that the present study was the first to examine athletes' self-identified leadership role and its association to the team environment, future directions can be suggested. First, given that the hierarchical nature of athlete leaders was generally not supported in the present study, there seems to be the need to examine this hierarchy in greater detail. For instance, researchers could conduct in-depth interviews with athletes to determine qualitatively whether athletes perceive this status hierarchy to exist in sports. Secondly, research should examine athletes' perceptions of their own leadership behaviors in comparison to what other athletes perceive, as this would provide insight into the behaviors that athletes feel they are providing and the congruency to what others observe. Examining this congruency in relation to other team variables may provide additional insight into the influence athletes have within their team environment. Furthermore, given that previous research has found athlete leaders were more likely to be starters and had been on their team for multiple years (Loughead et al., 2006), future research should examine other potential moderator variables that may influence the athlete leadership-cohesion relationship, such as gender, starting status, tenure on their current team, and type of sport.

In conclusion, the results of the present study support the notion that athlete leadership is widespread and available to all individuals within a group, and not only the designated leader (Northouse, 2010). This notion of shared leadership indicates that all athletes should be given the opportunity to develop and implement leadership skills, potentially influencing the cohesiveness of their team.

References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions.* Newbury Park, CA: Sage.

Alfermann, D., Lee, M. J., & Würth, S. (2005). Perceived leadership behavior and motivational climate as antecedents of adolescent athletes' skill development. *Athletic Insight: The Online Journal of Sport Psychology, 7,* 14-36.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *Journal of Sport Psychology, 9,* 275-294.

Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1993). The influence of the group and its cohesiveness on perceptions of group goal-related variables. *Journal of Sport & Exercise Psychology, 15,* 245-260.

Bruner, M. W., Munroe-Chandler, K. J., & Spink, K. S. (2008). Entry into elite sport: A preliminary investigation into the transition experiences of rookie athletes. *Journal of Applied Sport Psychology, 20,* 236-252.

Burke, P. J. (1974). Participation and leadership in small groups. *American Sociological Review, 35,* 832-843.

Carron, A. V., Brawley, L. R., & Widmeyer, W. N. (1998). The measurement of cohesiveness in sport groups. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.

Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta analysis. *Journal of Sport & Exercise Psychology, 24,* 168-188.

Carron, A. V., Hausenblas, H. A., & Eys, M. A. (2005). *Group dynamics in sport* (3rd ed.). Morgantown, WV: Fitness Information Technology.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport Psychology, 7,* 244-266.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1988). Group cohesion and individual adherence to physical activity. *Journal of Sport Psychology, 10,* 119-126.

Casey, M. M., Eime, R. M., Payne, W. R., & Harvey, J. T. (2009). Using a socioecological approach to examine participation in sport and physical activity among rural adolescent girls. *Qualitative Health Research, 19,* 881-893.

Chelladurai, P. (2007). Leadership in sports. In G. Tenenbaum & R. C. Eklund (Eds.), *The sport psychology handbook* (pp. 113-135). Indianapolis, IN: Wiley Publishing Inc.

Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. *Journal of Sport Psychology, 2,* 34-45.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioural sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Crosbie, P. V. (1975). *A social psychology of group process for decision making.* New York: Wiley.

Crozier, A. J., Loughead, T. M., Munroe-Chandler, K. J. (2010). Exploring the advantages of informal athlete leadership in team sports. *Journal of Sport & Exercise Psychology, 32,* S154.

Dupuis, M., Bloom, G. A., & Loughead, T. M. (2006). Team captains' perceptions of athlete leadership. *Journal of Sport Behavior, 29,* 60-78.

Eys, M. A., Carron, A. V., Bray, S. R., & Brawley, L. R. (2007). Item wording and internal consistency of a measure of cohesion: The Group Environment Questionnaire. *Journal of Sport & Exercise Psychology, 29,* 395-402.

Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioural, and biomedical sciences. *Behavior Research Methods, 39,* 175-191.

Fletcher, J. K., & Käufer, K. (2003). Shared Leadership: Paradox and possibility. In C. L. Pearce & J. A. Conger (Eds.), *Shared leadership: Reframing the hows and whys of leadership.* (pp. 21-47). Thousand Oaks, California: Sage Publications, Inc.

Frazier, P. A., Tix, A., P., & Barron, K. E. (2004). Testing moderator and mediator effects in counselling psychology research. *Journal of Counseling Psychology, 51,* 115-134.

Golembiewski, R. (1962). *The small group.* Chicago: University of Chicago Press.

Hardy, J., Eys, M. A., & Loughead, T. M. (2008). Does communication mediate the athlete leadership to cohesion relationship? *International Journal of Sport Psychology, 39,* 329-345.

Hausenblas, H. A., & Carron, A. V. (1996). Group cohesion and self-handicapping in female and male athletes. *Journal of Sport & Exercise Psychology, 18,* 132-143.

Heuzé, J. P., Raimbault, N., & Fontayne, P. (2006). Relationships between cohesion, collective efficacy and performance in professional basketball teams: An examination of mediating effects. *Journal of Sport Sciences, 24,* 59-68.

Hosmer, D., & Lemshow, S. (Eds.). (2000). *Applied logistic regression*. New York: John Wiley & Sons.

Holmes, R. M., McNeil, M., Adorna, P, & Procaccino, J. K. (2008). Collegiate student athletes' preferences and perceptions regarding peer relationships. *Journal of Sport Behavior, 31,* 338-351.

Jaccard, J., Turrisi, R., & Wan, C. K. (1990). *Interaction effects in multiple regression.* Newbury Park, CA: Sage.

Jacob, C. S., & Carron, A. V. (1994). Sources of status in intercollegiate sport teams. *Journal of Sport & Exercise Psychology, 16,* S67.

Jacob C. S., & Carron, A. V. (1996). Sources of status in sport teams. *International Journal of Sport Psychology, 27,* 369-382.

Lee, M. J., Coburn, T., & Partridge, R. (1983). The influence of team structure in determining leadership function in association football. *Journal of Sport Behavior, 6,* 59-66.

Li, F., & Harmer, P. (1996). Confirmatory factor analysis of the Group Environment Questionnaire with an intercollegiate sample. *Journal of Sport & Exercise Psychology, 18,* 49-63.

Locke, E. A. (2003). Leadership: Starting at the Top. In C. L. Pearce & J. A. Conger (Eds.), *Shared Leadership: Reframing the hows and whys of leadership* (pp. 271-284). Thousand Oaks, California: Sage Publications, Inc.

Lott, A. J., & Lott, B. D. (1965). Group cohesiveness as interpersonal attraction: A review of relationships with antecedent and consequent variables. *Psychological Bulletin, 64,* 259-309.

Loughead, T. M., & Hardy, J. (2005). An examination of coach and peer leader behaviors in sport. *Psychology of Sport and Exercise, 6,* 303-312.

Loughead, T. M., Hardy, J., & Eys, M. A. (2006). The nature of athlete leadership. *Journal of Sport Behavior, 29,* 145-158.

Mael, F. A., & Alderks, C. E. (1993). Leadership team cohesion and subordinate work unit morale and performance. *Military Psychology, 5,* 141-158.

Martin, W. E., Gross, N., & Darley, J. G. (1952). Studies of group behavior: Leaders, followers, and isolates in small organized groups. *Journal of Abnormal and Social Psychology, 47,* 838-842.

Mullen, B., Salas, E., & Driskell, J. E. (1989). Salience motivation and artifact as contribution to the relation between participation rate and leadership. *Journal of Experimental Social Psychology, 25,* 545-559.

Murray, N. P. (2006). The differential effect of team cohesion and leadership behavior in high school sports. *Individual Differences Research, 4,* 216-225.

Northouse, P. G. (2010). *Leadership: Theory and practice* (5th ed.). Thousand Oaks, CA: Sage.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.

Paradis, K. F. (2010*). Investigating the mediating role of cohesion in the relationship between athlete leadership and athlete satisfaction in youth sport.* (Unpublished Masters' thesis). University of Windsor, Windsor, Ontario, Canada.

Paradis, K. F., & Loughead, T. M. (2009, November). *Follow the (athlete) leader: Examining the factorial validity of two leadership inventories in youth sport*. Presented at the meeting

of Canadian Society for Psychomotor Learning and Sport Psychology, Toronto, Ontario, Canada.

Paskevich, D. M., Estabrooks, P. A., Brawley, L. R., & Carron, A. V. (2001). Group cohesion in sport and exercise. In R. N. Singer, H. A. Hausenblas, & C. M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 472-494). New York: Wiley.

Patterson, M. M., Carron, A. V., & Loughead, T. M. (2005). The influence of team norms on the cohesion-self-reported performance relationship: A multi-level analysis. *Psychology of Sport and Exercise, 6,* 479-493.

Pearce, C. L., & Conger, J. A. (2003). All those years ago: The historical underpinnings of shared leadership. In C. L. Pearce & J. A. Conger (Eds.), *Shared Leadership: Reframing the Hows and Whys of Leadership.* (pp. 1-18). Thousand Oaks, California: Sage Publications, Inc.

Prapavessis, H., & Carron, A. V. (1997a). Cohesion and work output. *Small Group Research, 28,* 294-301.

Prapavessis, H., & Carron, A. V. (1997b). Sacrifice, cohesion, and conformity to norms in sport teams. *Group Dynamics: Theory, Research, and Practice, 1*, 231-240.

Spink, K. S. (1998). Mediational effects of social cohesion on the leadership behavior-intention to return relationship in sport. *Group Dynamics, 2*, 92-100.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson.

Vincer, D. J. E., & Loughead, T. M. (2010). The relationship between athlete leadership behaviors and cohesion in team sports. *The Sport Psychologist, 24,* 448-467.

West, S. G., Aiken, L. S., & Krull, J. L. (1996). Experimental personality designs: Analyzing categorical by continuous variable interactions. *Journal of Personality, 64,* 1-49.

Westre, K. R., & Weiss, M. R. (1991). The relationship between perceived coaching behaviors and group cohesion in high school football teams. *The Sport Psychologist, 5,* 41-54.

Wheelan, S. A., & Johnston, F. (1996). The role of informal member leaders in a system containing formal leaders. *Small Group Research, 27,* 33-55.

Widmeyer, W. N., & Williams, J. M. (1991). Predicting cohesion in a coacting sport. *Small Group Research, 22,* 548-570.

Table 1

Descriptive Statistics for Athlete Leadership and Cohesion

Variable	Mean	*SD*	*α*
1. Training and Instruction Overall[a]	3.26	0.68	.90
Formal Athlete Leader	3.26	0.65	
Informal Athlete Leader	3.61	0.63	
Athlete Non-Leader	3.28	0.67	
2. Democratic Behavior Overall[a]	3.61	0.55	.70
Formal Athlete Leader	3.76	0.53	
Informal Athlete Leader	3.59	0.57	
Athlete Non-Leader	3.53	0.54	
3. Social Support Overall[a]	3.92	0.59	.79
Formal Athlete Leader	4.13	0.51	
Informal Athlete Leader	3.97	0.59	
Athlete Non-Leader	3.72	0.59	
4. Positive Feedback Overall[a]	4.24	0.52	.76
Formal Athlete Leader	4.27	0.57	
Informal Athlete Leader	4.29	0.49	
Athlete Non-Leader	4.16	0.53	
5. Autocratic Feedback Overall[a]	2.59	0.66	.61*
Formal Athlete Leader	2.62	0.67	
Informal Athlete Leader	2.62	0.67	
Athlete Non-Leader	2.55	0.66	
6. Individual Attractions to the Group-Task (ATG-T) Overall[b]	7.07	1.24	.71
Formal Athlete Leader	7.18	0.92	
Informal Athlete Leader	7.10	1.24	

	Athlete Non-Leader	6.96	1.43	
7.	Individual Attractions to the Group-Social (ATG-S) Overall[b]	7.67	1.22	.80
	Formal Athlete Leader	8.01	0.87	
	Informal Athlete Leader	7.68	1.15	
	Athlete Non-Leader	7.45	1.46	
8.	Group Integration-Task (GI-T) Overall[b]	7.16	1.20	.85
	Formal Athlete Leader	7.12	0.98	
	Informal Athlete Leader	7.31	1.06	
	Athlete Non-Leader	6.99	1.46	
9.	Group Integration-Social (GI-S) Overall[b]	7.18	1.36	.83
	Formal Athlete Leader	7.36	1.15	
	Informal Athlete Leader	7.25	1.30	
	Athlete Non-Leader	6.97	1.55	

Note. [a]Scores for the leadership dimensions range from 1-5.
[b]Scores for the cohesion dimensions range from 1-9.
*Dimension was deleted from further analyses due to unacceptable alpha values

Table 2

Bivariate Correlations Between Athlete Leadership Behaviors and Cohesion Dimensions

Variable	2.	3.	4.	5.	6.	7.	8.
1. Training and Instruction	.496**	.452**	.314**	.228**	.148*	.290**	.189**
2. Democratic Behavior	-	.423**	.406**	.212**	.186**	.308**	.216**
3. Social Support		-	.406**	.316**	.511**	.349**	.424**
4. Positive Feedback			-	.138*	.088	.155**	.084
5. Individual Attractions to the Group-Task				-	459**	.702**	.506**
6. Individual Attractions to the Group-Social					-	.443**	.657**
7. Group Integration-Task						-	.653**
8. Group Integration-Social							-

Note. * $p < .05$; ** $p < .01$

Table 3

First Order Effects of Formal and Informal Athlete Leader Behaviors on Cohesion

Independent Variable	*B*	*SE B*	95% CI	R^2
DV = Individual Attractions to the Group-Task				
Training and Instruction	.42	.12	[.18, .67]	.06**
Democratic Behavior	.48	.14	[.20, .76]	.06**
Positive Feedback	.56	.15	[.26, .86]	.07**
Social Support	.67	.14	[.40, .93]	.11**
DV = Individual Attractions to the Group-Social				
Training and Instruction	.21	.12	[-.02, .44]	.04*
Democratic Behavior	.46	.13	[.20, .72]	.08**
Positive Feedback	.39	.14	[.11, .67]	.06**
Social Support	.98	.12	[.75, 1.20]	.29**
DV = Group Integration-Task				
Training and Instruction	.61	.11	[.40, .82]	.15**
Democratic Behavior	.75	.12	[.51, .99]	.17**
Positive Feedback	.60	.14	[.33, .87]	.10**
Social Support	.75	.12	[.52, .99]	.17**

DV = Group Integration-Social

Training and Instruction	.42	.14	[.15, .69]	.05**
Democratic Behavior	.60	.16	[.29, .90]	.07**
Social Support	.89	.15	[.60, 1.17]	.16**

Note. CI = Confidence Interval; DV = Dependent Variable
* $p < .05$, ** $p < .01$

Table 4

Hierarchical Regression Analysis for the Moderator Effects of Athlete Leader Status (Informal Athlete Leader versus Athlete Non-Leader) on Positive Feedback and Cohesion

Step and Variable Entered	*B*	*SE B*	95% CI	R^2	ΔR^2
DV = Individual Attractions to the Group-Task					
Step 1				.02	.02
Positive Feedback	.74	.23	[.29, 1.20]		
Leader Status	-.13	.17	[-.47, .22]		
Step 2				.05*	.03*
Positive Feedback X Leader Status	-.90	.34	[-1.57, -.24]		
DV = Individual Attractions to the Group-Social					
Step 1				.01	.01
Positive Feedback	.45	.22	[.01, .90]		
Leader Status	-.23	.17	[-.57, .11]		
Step 2				.03*	.02*
Positive Feedback X Leader Status	-.69	.34	[-1.35, -.03]		
DV = Group Integration-Task					
Step 1				.02	.02
Positive Feedback	.56	.22	[.13, .99]		
Leader Status	-.30	.17	[-.63, .02]		
Step 2				.05*	.03*
Positive Feedback X Leader Status	-.75	.32	[-1.39, -.12]		

Note. CI = confidence interval; DV = dependent variable
* $p < .05$

Table 5

First Order Effects of Informal Athlete Leader and Athlete Non-Leader Behaviors and Leader Status on Cohesion

Independent Variable	*B*	*SE B*	95% CI	R^2
DV = Individual Attractions to the Group-Task				
Training and Instruction	.44	.13	[.18, .70]	.05**
Democratic Behavior	.48	.15	[.18, .78]	.04**
Social Support	.68	.14	[.41, .96]	.10**
DV = Individual Attractions to the Group-Social				
Democratic Behavior	.37	.15	[.18, .78]	.04**
Social Support	1.12	.12	[.89, 1.67]	.27**
DV = Group Integration-Task				
Training and Instruction	.49	.12	[.25, .73]	.08**
Democratic Behavior	.37	.15	[.07, .67]	.03*
Social Support	.69	.13	[.43, .95]	.12**
DV = Group Integration-Social				
Training and Instruction	.33	.14	[.05, .61]	.03**
Democratic Behavior	.51	.17	[.18, .83]	.05**
Social Support	1.05	.14	[.77, 1.33]	.20**

Note. CI = Confidence Interval; DV = Dependent Variable
* $p < .05$, ** $p < .01$

Table 6

Hierarchical Regression Analysis for the Moderator Effects of Athlete Leader Status (Formal Athlete Leader versus Athlete Non-Leader) on Positive Feedback and Cohesion

Step and Variable Entered	*B*	*SE B*	95% CI	R^2	ΔR^2
DV = Group Integration-Task					
Step 1				.01	.01
Positive Feedback	.81	.30	[.21, 1.41]		
Leader Status	-.07	.21	[-.48, .34]		
Step 2				.05*	.04*
Positive Feedback X Leader Status	-.99	.38	[-1.74, -.24]		

Note. CI = Confidence Interval; DV = Dependent Variable; Formal athlete leaders coded as 0, athlete non-leaders coded as 1

* $p < .05$

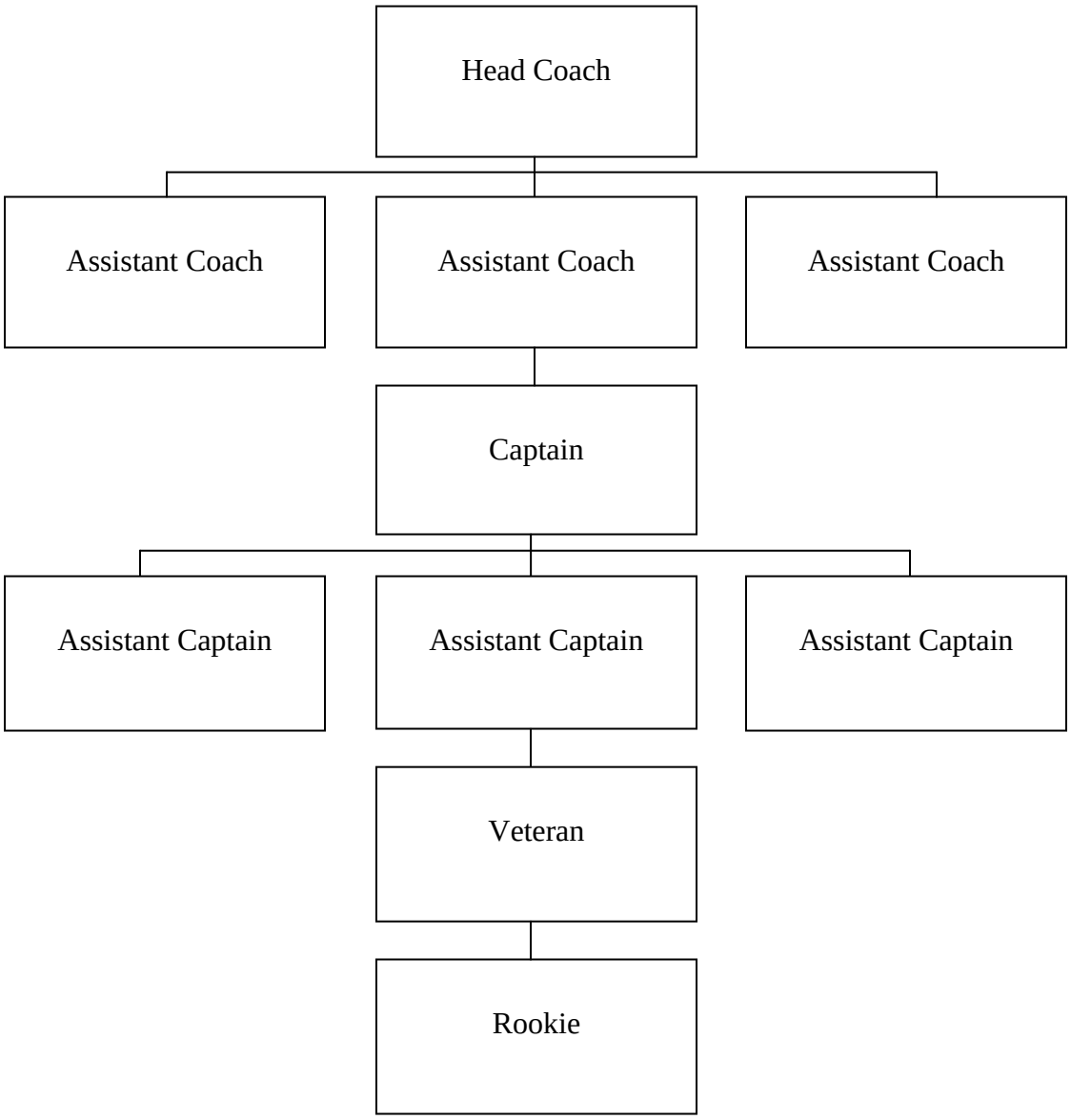
Table 7
First Order Effects of Formal Athlete Leader and Athlete Non-Leader Behaviors and Leader Status on Cohesion

Independent Variable	*B*	*SE B*	95% CI	R^2
DV = Individual Attractions to the Group-Task				
Training and Instruction	.41	.14	[.12, .69]	.05*
Democratic Behavior	.43	.18	[.08, .79]	.04*
Social Support	.67	.16	[.34, .99]	.10**
DV = Individual Attractions to the Group-Social				
Training and Instruction	.20	.15	[-.10, .49]	.04*
Democratic Behavior	.25	.19	[-.12, .61]	.05*
Social Support	.99	.16	[.68, 1.30]	.23**
DV = Group Integration-Task				
Training and Instruction	.52	.15	[.23, .81]	.07**
Democratic Behavior	.63	.18	[.27, .99]	.07**
Social Support	.69	.17	[.36, 1.03]	.10**
DV = Group Integration-Social				
Social Support	.97	.18	[.61, 1.32]	.16**

Note. Only significant results are listed; CI = Confidence Interval; DV = Dependent Variable
* $p < .05$, ** $p < .01$

Figures

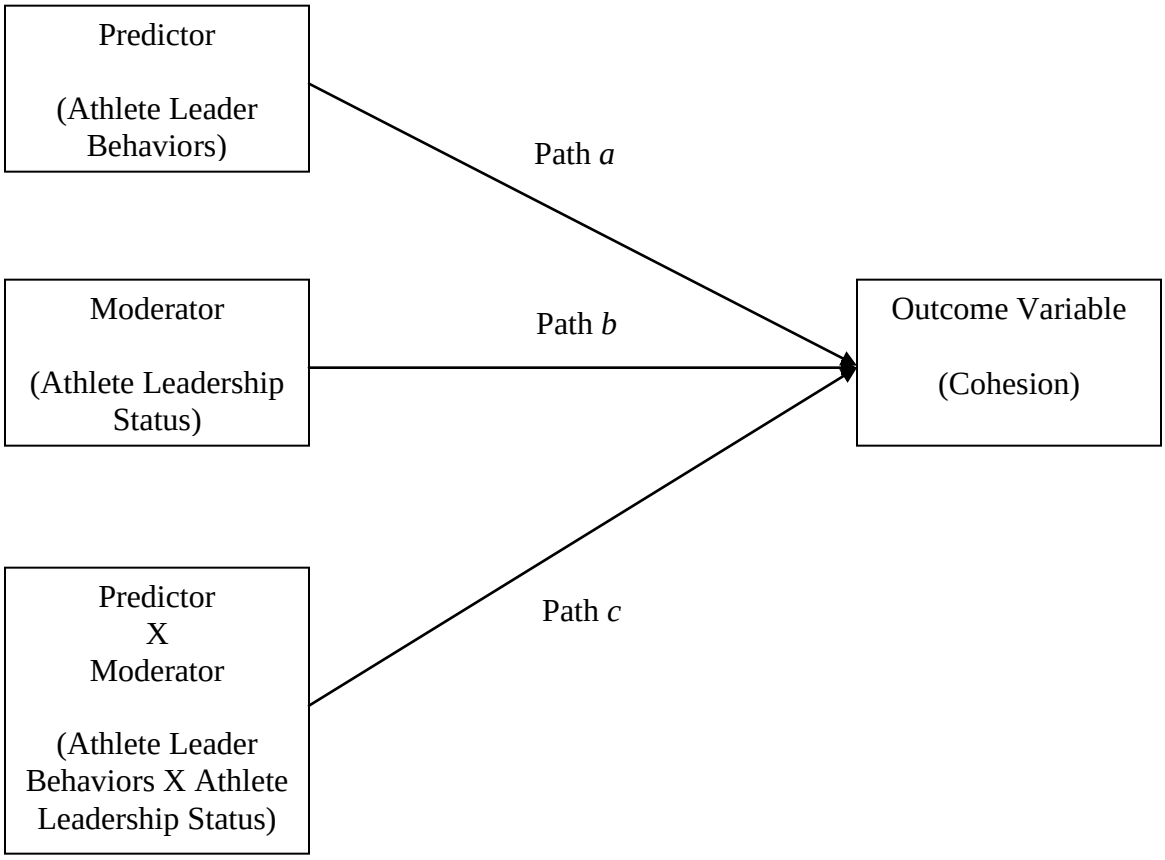
Figure 1



Adapted from:

Carron, A. V., Hausenblas, H. A., & Eys, M. A. (2005). *Group dynamics in sport* (3rd ed.). Morgantown, WV: Fitness Information Technology.

Figure 2



Adapted from:

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychology research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*, 1173-1182.

Figure 3.1. Interaction Between Positive Feedback and ATG-T

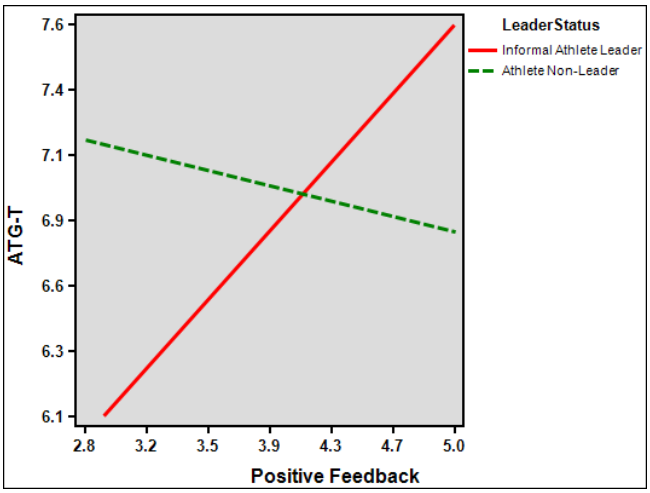


Figure 3.2. Interaction Between Positive Feedback and ATG-S

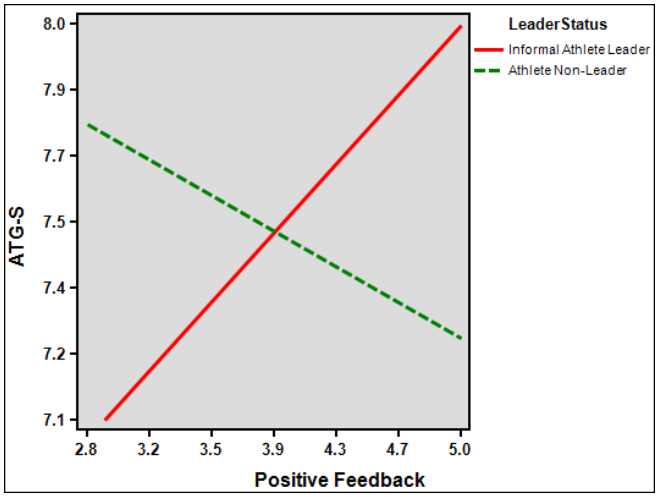


Figure 3.3. Interaction Between Positive Feedback and GI-T

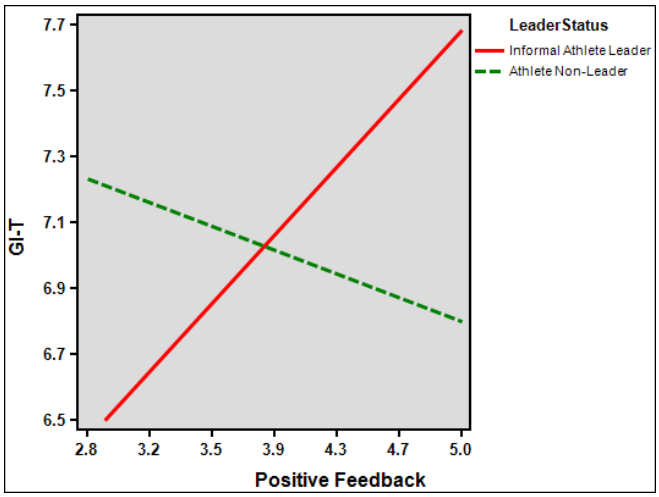


Figure 4. Interaction Between Positive Feedback and GI-T

LITERATURE REVIEW

The purpose of the present thesis is to investigate whether athlete leadership role moderates the leadership-cohesion relationship. The review of literature will be divided into three parts (a) leadership, (b) cohesion, (c) and status of athletes.

Leadership

Initially, the construct of leadership will be defined and its characteristics examined. Next, leadership in sports will be conceptualized and a sport leadership status hierarchy will be explained. Subsequently, a model for the study of leadership in sport will be described and measurement tools to assess athlete leadership will be discussed. Finally, an examination of literature on athlete leadership will be provided.

Leadership Definition and Characteristics

A fundamental component to organizations, such as sport teams, is having effective leadership because it creates, maintains, and redirects a group's culture (Wheelan & Johnston, 1996). In addition, leadership is a highly sought-after and esteemed commodity since individuals in leadership roles have the capacity to influence others (Northouse, 2010). Historically, it has been widely believed that when effective leadership is present, it can drive an organization in new directions and promote change towards achieving its goals (Bennis & Nanus, 1985). In the past 60 years, there have been over 65 different classification systems developed to define and conceptualize the construct of leadership (Fleishman et al., 1991). For example, Hollander (1978) defined leadership as "a process of influence between a leader and those that are followers" (p. 1). Smircich and Morgan (1982) expanded Hollander's (1978) definition to include leadership as a process whereby one or more individuals attempt to influence the reality

of others. Another definition states that leadership is effort aimed at influencing the activities of followers through the communication process and toward the achievement of specified goals (Donnelly, Ivancevich, & Gibson, 1985).

Taking into account the various definitions, Northouse (2010) defined leadership as "a process whereby an individual influences a group of individuals to achieve a common goal" (p. 3). Central to this definition are four key characteristics of leadership. The first characteristic indicates that leadership is not a trait that an individual is born with, but rather is *a process* involving a transactional and interactive event that occurs between the leader and follower. The second characteristic of leadership is that it involves *influencing* other individuals. Without influencing others, leadership does not exist. The third characteristic highlights that leadership occurs within a *group context*, which requires others in order for leadership to arise. Lastly, leadership involves *common goals*, having a common purpose to direct a group's efforts. Based on these four characteristics, Northouse (2010) argued that theoretically every group member can display leadership qualities.

Leadership in Sports

Within sport, leadership has traditionally been assigned great value by spectators, coaches, and athletes (Chelladurai & Riemer, 1998). Historically, the coach has been viewed as the main source of leadership on a sport team (Chelladurai, 1993; Chelladurai & Riemer, 1998). This is not surprising since a coach offers a vision of what to strive for while also providing day-to-day structure, motivation, and support to translate this vision into reality (Weinberg & Gould, 2007). Coaches are usually prescribed their position by

someone with greater authority, such as an athletic director at the university or college level (Weinberg & Gould, 2007).

Though the majority of leadership research in sport has focused on the coach (Chelladurai, 1993; Chelladurai & Riemer, 1998), coaches also believe that athlete leadership is essential for successful team performance (Gould, Hodge, Peterson, & Petlichkoff, 1987). Athlete leadership has been defined as an athlete occupying a formal or informal role that influences a group of team members towards a common goal (Loughead, Hardy, & Eys, 2006). Within this definition, there are two types of leadership roles that exist: (a) formal athlete leadership (e.g., captains/co-captains), a role which is prescribed by the organization (e.g., coach) or the team (e.g., team elections); and (b) informal athlete leadership, which includes the emergence of leaders based on interactions with team members. Recent research has suggested that approximately 27% of athletes were nominated as athlete leaders by their teammates (Loughead & Hardy, 2005). These results suggest that while theoretically every team member has the potential to be a leader (Northouse, 2010), not everyone assumes a leadership role on their team. Athletes that do not assume leadership roles have been considered as athlete non-leaders (Crozier, Loughead, & Munroe-Chandler, 2010), in that they are members of the team, yet they do not provide any guidance to influence their fellow teammates.

To highlight the different types of leadership, Carron, Hausenblas, and Eys (2005) advanced a leadership status hierarchy indicating the position of team members based on the formal structure of sport teams. As illustrated in Figure 1, there are six status positions that are established within sport teams. At the top of the hierarchy is the head coach, then the assistant coach(es), followed by four athlete roles: captain, assistant

captain(s), veteran athletes, and rookie athletes. Thus, the hierarchy suggests that team members differ in their ability to influence the group and provide leadership to others based on their status (Bednarek, Benson, & Mustafa, 1976). Furthermore, some athletes' influence will be more dominant than others, allowing them to influence a larger number of teammates (Loughead et al., 2006). For example, Loughead et al. (2006) found that captains and assistant captains (i.e., formal athlete leaders) were identified by more than 50% of their teammates as providers of leadership, whereas veteran athletes (i.e., informal athlete leaders) were more likely to be recognized as leaders by less than half of their teammates. In other words, the amount of individuals an athlete can influence differs based on their leadership role.

In relation to athlete leadership, the leadership status hierarchy suggests that formal athlete leaders (i.e., captains and assistant captains) have greater influence than informal athlete leaders (i.e., veteran athletes) based on their status within the team (Carron et al., 2005). Research has indicated that formal athlete leaders are seen as part of both the coaching staff and the team, strategically positioned to serve as a communication liaison between coaches and teammates (Dupuis, Bloom, & Loughead, 2006). Furthermore, it has been documented that captains assume considerable amounts of responsibility compared to their fellow teammates (Lee, Coburn, & Partridge, 1983), as they have a prescribed leadership position and are expected to fulfill certain tasks. Based on these findings, formal athlete leaders (i.e., captains followed by assistant captains) were placed directly under the coach in the leadership status hierarchy.

Next in the hierarchy, informal athlete leaders (i.e., veteran athletes) provide influence though they are not formally designated to this leadership role. Using open-

ended questionnaires, Crozier et al. (2010) found that informal athlete leaders influenced similar group dynamic constructs (e.g., role clarity, communication) when compared to formal athlete leaders. It is important to note that these researchers were not able to determine whether the influence of informal athlete leaders was greater, equal, or less than that of formal athlete leaders. Within organizational psychology research, informal leaders were found to behave differently than formal leaders and were not seen merely as extensions of the formal leaders (Wheelan & Johnston, 1996). As seen in business, it can be argued that informal athlete leaders counterbalance the authority of the formal leader and are influential in directing the team's activities (Wheelan & Johnston, 1996), suggesting their place under formal athlete leaders in the hierarchy is justified.

The last athlete source of leadership is the athlete non-leader, with rookie athletes being an example. To date, there has been no research examining the athlete non-leader within sport. Stemming from business, research has shown that leaders and non-leaders did not differ in the amount of effort and productivity contributed to the team; though non-leaders were found to influence others the least (Wheelan & Johnston, 1996). Based on this research, it can be thought that athlete non-leaders would be positioned at the bottom of the leadership status hierarchy in sports. Though they do not have a leadership role within the team, it is possible that athlete non-leaders still engage in leadership behaviors while their influence to affect other team members is minimal (Crozier et al., 2010).

Model for the Study of Leadership in Sport

In the late seventies and the early eighties, several authors (e.g., Chelladurai & Carron, 1978; Terry & Howe, 1984) argued that a sport specific leadership model would

be more appropriate when examining leadership in sport, compared to other general leadership models from disciplines such as business or organizational psychology, as sport teams possess unique characteristics. For instance, sports provide real-time drama, are often connected to a place or institution, and emphasize all of the following: strategy and skill, beauty and talent, competition and teamwork, winners and losers (Kahle & Riley, 2004). None of these characteristics exist solely in sports, but the combination of all these features in one setting provides sports with a distinctive environment. Consequently, Chelladurai (1978, 1993) advanced a model for the study of leadership in sports. To date, the Multidimensional Model of Leadership is one of the most widely used models for the examination of leadership in sport.

As seen in Figure 5, the Multidimensional Model of Leadership (Chelladurai, 1978, 1993) is a linear model composed of antecedents, leadership behaviors, and outcomes. The antecedents consist of situational, leader, and member characteristics. Situational characteristics refer to specific demands within the situation, such as group goals and the type of task (e.g., individual versus team sport). Leader characteristics are the leader's personal features, such as their personality, age, or experience in sport. Finally, member characteristics consist of the team members personal characteristics, such as cultural background and maturity.

The throughput of leadership behavior is categorized into three types of behaviors: required, preferred, and perceived. Required behaviors are the leadership behaviors that the leader should engage in. These required behaviors may differ for each team and depends on the situation at hand. Preferred behaviors are leadership behaviors the group members desire from the leader. Both required and preferred behaviors are

influenced by the antecedents of situational and member characteristics (Chelladurai, 2007). Finally, perceived behaviors are viewed as how the leader actually behaves through the combined influence of leader characteristics, required leader behaviors, and preferred leader behaviors (Chelladurai & Carron, 1978).

Finally, Chelladurai (1978) in his original conceptualization of the model outlined two outcomes: team member satisfaction and performance. However, researchers have identified numerous outcomes that were not included in Chelladurai's (1978) original model, including, commitment and motivation (Todd & Kent, 2004), cohesion (Hardy, Eys, & Loughead, 2008; Turman, 2003;), skill development (Alfermann, Lee, & Würth, 2005), intention to return (Spink, 1998), and athlete burnout (Vealey, Armstrong, Comar, & Greenleaf, 1998). It is important to note that the outcomes are hypothesized to provide feedback to the leader that will influence the perceived leader behaviors.

Measuring Athlete Leadership

Approximately one decade ago, researchers began examining the construct of athlete leadership. In order to measure athlete leadership, Kozub and Pease (2001) advanced a measurement tool, the Player Leadership Scale, utilizing items contained in the Leadership Scale for Sports (Chelladurai & Saleh, 1980) and the Leader Behavior Description Questionnaire (Halpin, 1957). The Player Leadership Scale contained 12 items representing two dimensions of leadership: task and social. The task dimension reflected leadership concerned with facilitating the attainment of the team's goals, whereas the social dimension reflected leadership aimed at developing and maintaining good relationships among team members. Each dimension contained six items, which were slightly modified from their original context to make them appropriate for the

assessment of athlete leadership. An example item reflecting task leadership behavior is "Expects a high level of performance from self and teammates" and an example item of social leadership behavior is "Compliments teammates for good performance". The scale was preceded by the following question: "How often does each player on your team exhibit the characteristics or behaviors listed below?" Items were rated using a 5-point Likert scale with response options ranging from 1 (*almost never*) to 5 (*almost always*). Participants were asked to rate each of their teammates, with an average score calculated for each player on the team. The internal consistencies of the Player Leadership Scale were adequate for both task and social dimensions (task, $\alpha = .86$; social, $\alpha = .88$).

Although the Player Leadership Scale (Kozub & Pease, 2001) was the first to measure the construct of athlete leadership, the generalization of athlete leadership into only task and social leadership scales limited researchers' abilities to determine the specific behaviors athlete leaders exhibited (Loughead & Hardy, 2005). Therefore, Loughead and Hardy utilized the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980) in order to examine specific athlete leader behaviors. The LSS consists of 40 items representing five dimensions of leadership behaviors: Training and Instruction, Positive Feedback, Democratic Behavior, Autocratic Behavior, and Social Support. The dimensions of Training and Instruction and Positive Feedback are constructs that measure task-oriented behaviors (Chelladurai, 2007). Training and Instruction refers to leadership behavior that is aimed at improving team members' performance by emphasizing strenuous training, while also instructing others in the skills, techniques and tactics of the sport. There are 13 items, with an example item, "Instructs team members individually in the skills of the sport". Positive Feedback is leadership behavior that reinforces an athlete

by praising and recognizing good performance. Positive Feedback consists of five items, with an example item being, “Tells a team member when he/she does a particularly good job”. The dimensions of Democratic Behavior and Autocratic Behavior refer to the style of decision making. That is, it refers to the amount an athlete contributes to team decisions (Chelladurai, 2007). Democratic Behavior involves greater participation by team members in the decisions made within the team, while Autocratic Behavior involves leader independence when making team decisions. There are nine items on the Democratic Behavior dimension, an example item being, “Asks for the opinion of team members on strategies for specific competitions”. Autocratic Behavior includes five items, with an example item, “Speaks in a manner not to be questioned”. The last dimension, Social Support, is oriented toward creating a positive group environment (Chelladurai, 2007). Social Support contains eight items and an example item is, “Encourages team members to confide in him/her”. Responses are given on a 5-point Likert scale, ranging from 1 (*never*) to 5 (*always*). Thus, higher scores reflect greater amounts of leadership behaviors.

In order to measure athlete leadership, two different stems have been used in previous research. The first stem uses a general approach whereby participants are asked to rate all the athlete leaders on their team (i.e., “The athlete leaders on my team...”). This version has shown good psychometric properties (Loughead & Hardy, 2005; Vincer & Loughead, 2010). More specifically, both Loughead and Hardy (2005), and Vincer and Loughead (2010) found acceptable internal consistency values for all five leader behaviors: Training and Instruction, α =.87, .88; Positive Feedback, α = .85, .84; Social Support, α = .86, .86; Democratic Behavior, α = .81, .79; and Autocratic Behavior, α =

.75, .74, respectively. Furthermore, Vincer and Loughead conducted a confirmatory factor analysis to examine the factorial validity of a five-factor model (i.e., Training and Instruction, Positive Feedback, Social Support, Democratic Behavior, and Autocratic Behavior). Results concluded that the five-factor model provided a reasonably good fit to the data (CFI = .99, TLI = .98, and RMSEA = .05).

The second stem asked the participants to rate both their formal and informal athlete leaders. As a result, the second stem read, "The formal and informal athlete leaders on my team..." (Bakker, 2010; Paradis, 2010; Paradis & Loughead, 2009; Spalding, 2010). These studies employed two separate Likert scales to keep athletes' responses for formal and informal athlete leaders distinct. All five dimensions of athlete leader behaviors have demonstrated acceptable internal consistency values for both formal and informal athlete leaders, with values in the following ranges: Training and Instruction (formal, α = .90-.94; informal, α = .89-.91), Positive Feedback (formal, α = .83-.90; informal, α = .78-.88), Social Support (formal, α = .82-.89; informal, α = .84-.85), Democratic Behavior (formal, α = .81-.86; informal, α = .81-.82), and Autocratic Behavior (formal, α = .70-.78; informal, α = .75-.79). In addition, to test for factorial validity, Paradis and Loughead (2009) conducted a confirmatory factor analysis of two separate five-factor models (i.e., Training and Instruction, Positive Feedback, Social Support, Democratic Behavior, and Autocratic Behavior) for formal and informal athlete leadership. Results concluded that the five-factor models provided reasonably good fit for both formal (CFI = .97, NFI = .92, RMSEA = .066) and informal (CFI = .96, NFI = .91, RMSEA = .069) athlete leadership.

Athlete Leadership Research

Athlete leadership research is in its infancy. The research that has been conducted to date can be divided into three sections: early research, which examines some initial research looking at the characteristics of athlete leaders; quantity of athlete leadership, which illustrates research examining the number of athlete leaders within teams; and athlete leadership behaviors, exploring the behaviors exhibited by athlete leaders.

Early research. Early athlete leadership research was mostly descriptive in nature. For instance, Yukelson, Weinberg, Richardson, and Jackson (1983) compared the characteristics of athletes rated by their peers as being high and low in leadership status. In order to assess leadership status, individuals nominated those on their team who they perceived were providers of leadership. The results indicated that athletes with a higher leadership status (i.e., those nominated as a leader by more individuals) tended to be better performers, had more seniority on the team, and had a greater internal locus of control than those athletes who had a lower leadership status (i.e., those nominated by few or no individuals). In regards to playing position and leadership status, Lee et al. (1983) found that male captains playing English Football were most frequently found occupying important playing positions (i.e., center fullback, midfield). In contrast, Tropp and Landers (1979) found female captains on field hockey teams were not more likely to be playing in a high-interaction position.

More recently, Kozub and Pease (2001) examined the relationship between coaching leadership behaviors and athlete leadership. Results suggested that Social Support behaviors exhibited by the coach were the strongest predictor of players' social leadership (e.g., being concerned with maintaining friendships among team members). In

other words, coaches who were friendly and were concerned about the well-being of their players were more apt have athletes who behaved similarly.

Quantity of athlete leaders. Athlete leadership research has primarily focused on determining the quantity of athlete leaders on sport teams and the influence of the number of athlete leaders on the team environment. Loughead and Hardy (2005) provided some of the initial research examining who was acting as athlete leaders. Participants included 238 Canadian athletes who were engaged in both independent (e.g., track and field) and interactive (e.g., soccer) team sports. Specifically, these authors asked participants to name the athletes from their teams who provided leadership to them. Findings indicated that 32.4% of athletes (n = 77) viewed formal leaders (i.e., captains) as the only source of athlete leadership within a team, 2.5% of athletes (n = 6) specified that only informal athletes (i.e., teammates other than captains) served as athlete leaders, while the majority of athletes (65.1%; n = 155) listed both formal and informal athlete leaders as providers of leadership. In addition, the authors also calculated how widespread athlete leadership was on teams and found a leadership dispersion ratio of .27 (calculated by taking the ratio of the number of athlete leaders and dividing by the team size), suggesting that 27% of athletes on sport teams served as an athlete leader.

To expand the findings of Loughead and Hardy (2005), Loughead et al. (2006) sampled 258 varsity athletes from a variety of interdependent team sports (e.g., lacrosse, volleyball) at two separate time periods: the beginning and end of the regular season. The purpose of the study was to determine the characteristics of those athletes who were acting as athlete leaders. Athletes were asked to list the names of individuals on their team they felt were athlete leaders fulfilling three leadership functions (i.e., task, social,

and external). Task leaders were considered as those that engaged in helping the team to focus on its goal, clarifying teammate's responsibilities, offering technical and tactical instruction when needed, and aiding the team to achieve their peak performance levels. Social leaders contributed to team harmony, by ensuring teammates are included in group events, and offering support to teammates. External leaders were viewed to be individuals that promote the team within the community, represent the team's interests in meetings with the coaches, and buffers team members from distractions that occur outside of the team environment. In addition, the authors distinguished between two kinds of athlete leaders: team leaders and peer leaders. First, team leaders were classified if at least half of their team members endorsed them as a leader. Second, peer leaders were those who were identified as leaders by at least two team members but with less than 50% of team members endorsing them as an athlete leader. Results indicated for team leadership that 15% of athletes emerged as task leaders, 11.5% were social leaders, while 9% were external leaders. For peer leadership, 35.5% of athletes held task functions, 46% held social functions, and 30% held external functions. Furthermore, those individuals seen as holding a leadership role seemed to remain stable throughout the season. Regardless of function (task, social, external), formal leaders (e.g., captains) were more likely to be identified as team leaders, while informal leaders were more likely identified as peer leaders. In addition, the majority of team and peer leaders were in their third year playing on their varsity team, indicating experience on the current team was important to becoming an athlete leader. Finally, it was found that athletes nominated as a team leader were more likely to be a starter, demonstrating that athletic ability was a factor for the emergence of athlete leadership.

To assess the influence of athlete leadership on the team environment, Eys, Loughead, and Hardy (2007) examined the relationship between the number of athlete leaders (across task, social, and external leadership functions) and athlete satisfaction. Overall, it was found that approximately 17.5%, 17.7%, and 13.2% of athletes fulfilled task, social, and external functions, respectively. In addition, findings suggested that individuals who perceived a relatively equal number of leaders (e.g., five task leaders, five social leaders, and five external leaders) across all three functions indicated greater satisfaction than those who perceived an uneven number of athlete leaders (e.g., ten task leaders, three social leaders, and seven external leaders). Therefore, athletes who perceived uneven amounts of athlete leadership across task, social, and external functions felt less satisfied with their athletic experience.

More recently, Hardy et al. (2008) examined the influence of communication on the athlete leadership-cohesion relationship. Using 254 varsity athletes on interdependent team sports, 18%, 18%, and 13% of athletes on a team were viewed as performing task, social, and external leadership functions, respectively. In regards to this dispersion on the team environment, it was found that communication negatively mediated the relationship between task leadership dispersion and task cohesion. In other words, higher task athlete leader dispersion was correlated with lower perceptions of team cohesion and communication. Therefore, the authors suggested that having a core of task team leaders would contribute to more effective communication and enhanced perceptions of task cohesion. However, it is important to note that this core of task team leaders may differ in composition for each team in order for it to be effective.

Although the number of athlete leaders has been examined, Loughead and colleagues (Eys et al., 2008; Hardy et al., 2008; Loughead & Hardy, 2005; Loughead et al., 2006) reported on the number of athlete leaders perceived by athletes and not whether these dispersion ratios reflected the *ideal* number of athlete leaders on sport teams. As a result, Crozier et al. (2010) examined athletes' perceptions of what constitutes the ideal number of formal and informal athlete leaders on sport teams. Participants included 104 university varsity athletes involved on interdependent sport teams (e.g., basketball, hockey). In general, the results showed that athletes believed 85.5% of individuals on a team should ideally occupy some form of a leadership role. Specifically, 19% of athletes on a roster should be prescribed a formal athlete leadership position, while it would be ideal if 66.5% of athletes emerged into an informal athlete leadership role. For example, a hockey team with 22 players, the ideal number of formal leaders would be 4, while 14 individuals should emerge as informal athlete leaders. Therefore, 18 out of the 22 players on the roster would be considered athlete leaders. Additionally, 57% of athletes indicated that everybody on the team should, in some form, lead others informally. This finding supported Northouse's (2010) conceptualization that leadership is available to all team members, while not all team members emerge into leadership roles.

Athlete leadership behaviors. Some of the research examining athlete leadership has focused on the behaviors of these individuals. One of the first studies to examine the behaviors of athlete leaders was conducted by Loughead and Hardy (2005), who examined whether athlete leaders and coaches differed on their leadership behaviors. Leadership behaviors were operationalized using the Leadership Scale for Sports (Chelladurai & Saleh, 1980) to measure athletes' perceptions of their coaches' behaviors,

as well as the behaviors exhibited by athlete leaders. Results indicated that coaches and athletes significantly differed in their leadership behaviors. In particular, coaches exhibited greater amounts of Training and Instruction and Autocratic Behavior compared to athlete leaders. In contrast, athlete leaders displayed the leadership behaviors of Social Support, Positive Feedback, and Democratic Behavior to a greater extent than coaches.

Holmes, McNeil, Adorna, and Procaccino (2008) examined athletes' preferred athlete leadership behaviors. Similar to Loughead and Hardy (2005), the authors used a revised stem in order to assess athlete leadership preferences, with the preceding stem before each item reading "I prefer my peer leader to...". A peer leader was considered any team member that occupied a position of leadership, including players that were not designated as the team captain. Participants included 79 athletes (46 female, 33 male), with an average age of 19.45 years. Additionally, the authors wanted to investigate the effects of participant characteristics (e.g., gender, ethnicity) on preferences for athlete leader behaviors. Results revealed that the only significant difference occurred based on gender: male athletes preferred more Autocratic Behavior in their athlete leaders than female athletes.

Using a qualitative methodology, Dupuis et al. (2006) interviewed six former university ice hockey captains to examine the characteristics and behaviors they felt were important for formal leaders to possess and demonstrate. Three higher-order categories emerged from the qualitative analyses: interpersonal characteristics, verbal interactions, and task behaviors. Interpersonal characteristics included the qualities, skills, and experiences of team captains, such as acquiring knowledge about being a captain from previous captains. Verbal interactions involved relating with other individuals on the

team. An example of an important verbal interaction was that the timing and quality of communication was more important than the quantity of feedback given to teammates. Finally, task behaviors were geared towards enhancing the team climate and coordinating team members' activities. In addition, these formal athlete leaders believed one of their main responsibilities was to foster strong cohesion amongst the team.

Additionally, Crozier et al. (2010) explored the benefits of having athlete leaders present on sport teams using an open-ended questionnaire. The authors developed the questionnaire specifically for their study by having athletes answer the following questions: What are the benefits of having the ideal number of formal athlete leaders, and what are the benefits of having the ideal number of informal athlete leaders. Answers were coded and analyzed into text units using an inductive approach. Higher order categories were created by grouping similar text units together. Interestingly, the results indicated that the responses could be grouped in relation to several group dynamic constructs. For instance, athletes suggested that a benefit of having the right number of athlete leaders provided the team with enough resources to divide responsibilities amongst the leaders. Athlete leaders' presence on teams was also beneficial in clarifying team members' roles and increased the knowledge of what was expected from team members (i.e., team norms). Additionally, cohesion and teamwork can be enhanced as having the optimal number of athlete leaders fostered an environment whereby teammates could work together and focus on the task more effectively. Athletes indicated another benefit was that goals would be set to guide the team in the right direction. Greater amounts of motivation, social support, and role modelling behavior were suggested as an added advantage when athlete leaders were present. All of these concepts

were seen to enhance individual and team outcomes, including satisfaction and greater performance. In conclusion, Crozier et al. (2010) proposed that formal and informal athlete leaders impact a wide variety of group dynamic constructs and additional research examining the various constructs quantitatively is warranted.

Cohesion

For this next section, the concept of cohesion will be examined. Initially, the construct of cohesion will be defined and its characteristics explored. Next, a conceptual model of cohesion will be assessed, followed by an examination of a measurement tool utilized to evaluate perceptions of cohesion. In addition, the framework for studying cohesion in sport will be discussed. Finally, research examining the relationship between athlete leadership and cohesion will be reviewed.

Definition and Characteristics of Cohesion

One of the earliest definitions of cohesion was advanced by Moreno and Jennings (1937) describing cohesion as "the forces holding the individuals within the groupings in which they are" (p. 371). A few years later, French (1941) discussed how a group exists as a balance between cohesion and disruptive forces. Another early definition identified cohesion as "the total field of forces which act on members to remain in the group" (Festinger, Schacter, & Back, 1950, p. 164). Festinger et al. (1950) illustrated two distinct forces that act on members to remain in the group: (1) the individual's desire for interpersonal relations with other group members, in addition to a need to be involved in group activities, labelled attractiveness of the group; and (2) means control, which encompasses the benefits obtained by being linked to the group. Several researchers highlighted that the "total field of forces" reflected all possible forces and each force

needed to be identified and measured (Gross & Martin, 1952; Mudrack, 1989), which not only limited the generalizability of the instrument but also its practical use in research. Consequently another definition was advanced by Gross and Martin (1952), who suggested that cohesion was a group's resistance to disruptive forces. However, both the Festinger et al.'s (1950) and Gross and Martin's (1952) definitions suffered from similar problems. That is, these definitions did not allow researchers to measure cohesion as a multidimensional construct and, therefore, the generalizability of the results was limited (Loughead & Hardy, 2005).

Carron (1982) argued that historically previous definitions of cohesion did not take into account both task and interpersonal behaviors of individuals, thereby failing to view cohesion as a multidimensional construct. Instead of viewing cohesion as a unidimensional construct, Carron (1982) advocated that any definition of cohesion should reflect its multidimensional nature. Consequently, Carron (1982) defined cohesion as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives" (p. 124). Several years later, Carron, Brawley, and Widmeyer (1998) modified the original definition to include an affective component. Therefore, cohesion was defined as "a dynamic process that is reflected in the tendency for a group to stick together and remain united in pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron et al., 1998, p. 213).

Within the Carron et al. (1998) definition, four characteristics of cohesion were present. The first characteristic is that cohesion is *multidimensional* in nature, in that many factors are related to the reasons why a group sticks together. The second

characteristic describes cohesion as *dynamic*, such that cohesion can change over the lifespan of a group. The third characteristic reflects that groups are created for an *instrumental purpose*. Lastly, cohesion involves *affect*. Members' social interactions create emotions and feelings among group members.

Conceptual Model and Measurement of Cohesion

Once an operational definition of cohesion was advanced by Carron (1982), it was also essential to develop a conceptual model of cohesion that highlighted its multidimensional nature. Carron, Widmeyer, and Brawley (1985) argued that perceptions of cohesion can be divided into two categories: a member's perceptions of the group as a totality, labelled Group Integration, and a member's personal attractions to the group, labelled Individual Attractions to the Group. In addition, these two perceptions can focus on either a task or social aspect. A task focus would reflect more attention placed on achieving the group's goals or objectives, whereas a social focus is aimed at developing and maintaining relationships within the group. Based on these distinctions, four dimensions emerged in the conceptual model of cohesion (see Figure 6).

In conjunction with the conceptualization of cohesion, Carron et al. (1985) developed an 18-item measurement tool to assess these four dimensions of cohesion, entitled the Group Environment Questionnaire (GEQ). The first dimension, Group Integration-Task (GI-T), reflects the closeness and similarity within the group towards the task at hand. It consists of five items, with an example being, "Our team is united in trying to reach its goal for performance". The second dimension, Group Integration-Social (GI-S), contains four items and represents the bonding and likeness between members in social situations. An example item of GI-S includes, "Members of our team

do not stick together outside of practices and games". Third, the Individual Attractions to the Group-Task (ATG-T) dimension is characterized by the individuals reasoning to remain in the group for task purposes. ATG-T has four items, with the item "I do not like the style of play on this team" as an example. The last dimension, Individual Attractions to the Group-Social (ATG-S), reflects an individual's desire to stay a member of the group for social reasons. It includes five items, an example item being, "Some of my best friends are on this team".

All of the items in the GEQ are scored on a 9-point Likert scale, ranging from 1 (*strongly disagree*) to 9 (*strongly agree*). That is, higher scores on the GEQ represent greater perceptions of cohesion. However, 12 of the 18 items are negatively worded (e.g., "I do not like the style of play on this team") and thus are reverse scored. Research has shown the GEQ to demonstrate adequate reliability. For example, Patterson, Carron, and Loughead (2005) found acceptable internal consistency values: ATG-T, $\alpha = .75$; ATG-S, $\alpha = .70$; GI-T, $\alpha = .72$; and GI-S, $\alpha = .76$. Additionally, during the initial development of the GEQ, Carron et al. (1985) demonstrated content validity, which assesses the degree to which scale items reflect the construct being measured. The following procedures were undertaken by Carron et al. (1985) to ensure content validity: (a) a broad literature search, (b) participants used to help create concept definitions, (c) use of the conceptual model to provide rationale for development of items, (d) assessment of item content made by five independent experts, and (e) intercorrelations of each item.

Furthermore, concurrent validity is found when an instrument (e.g., GEQ) correlates moderately well (i.e., $r = .35$ to $.60$) with other similar instruments. Brawley, Carron, and Widmeyer (1987) correlated the GEQ with the Sport Cohesiveness

Questionnaire (SCQ; Martens, Landers, & Loy, 1971), and the Team Climate Questionnaire (TCQ; Carron, 1986; Grand & Carron, 1982). All four cohesion scales correlated well with the SCQ. Additionally, the task dimensions (ATG-T, GI-T) correlated well with the TCQ measures. Taken together, the results supported that the GEQ possessed concurrent validity.

Predictive validity involves using an instrument to predict a theoretically related outcome. Many studies have shown the predictive validity of the GEQ (for reviews see Carron et al., 1998). As an example, Carron, Widmeyer, and Brawley (1988) examined whether cohesion influenced individual adherence in sport programs, physical recreation programs, and physical exercise programs. Results for elite sport teams indicated that adherers were more attracted to the group's task (ATG-T), and perceived the group as more assimilated around social and task dimensions (GI-T, GI-S). Furthermore, in fitness classes, ATG-T and ATG-S were significantly higher for those who adhere compared to nonadherers. Lastly, for sport recreation leagues, members who adhered had significantly higher perceptions of GI-S than nonadherer participants.

Lastly, Carron et al. (1985) examined the GEQ's factorial validity, to ensure that the four constructs (ATG-T, ATG-S, GI-T, GI-S) were indeed distinct dimensions. Utilizing an oblique rotation factor analysis, results revealed a factor structure that was representative of the conceptual model of cohesion with four dimensions. Additionally, Li and Harmer (1996) conducted two separate tests that found the GEQ to have factorial validity in intercollegiate sport teams. Furthermore, Leeson and Fletcher (2005) used structural equation modelling to determine whether a four-factor structure best

represented the GEQ. Overall, the four-factor model of cohesion (ATG-T, ATG-S, GI-T, GI-S) provided a reasonably good fit (CFI = .98, TLI = .97, RMSEA = .08).

More recently, Eys, Carron, Bray, and Brawley (2007) examined the effect of having both positively and negatively worded items on the internal reliability values of the Group Environment Questionnaire. Specifically, Eys et al. (2007) modified the GEQ measure to have all positively worded items and compared it to the original GEQ. Results demonstrated that the revised version (containing all positively worded items) had significantly higher Cronbach alpha (α) values for three of the four dimensions of cohesion (i.e., ATG-S, GI-T, GI-S). Eys et al. hypothesized that ATG-T did not significantly increase as the original version had all negatively worded items. More specifically, changing the items to be all positively worded had no influence on the internal reliability. Overall, the revised version containing all positively worded items attained higher internal consistency values than the original Group Environment Questionnaire. Furthermore, recent research using the positively worded GEQ has found internal consistencies in the following ranges: ATG-T, α =.67-.83; ATG-S, α = .71-.78, GI-T, α = .78-.85, GI-S, α = .81-.86 (Baker, 2008; Bakker, 2010; Eys et al., 2007; Spalding, 2010).

Framework for the Study of Cohesion in Sport

In order to guide research on cohesion in sports, Carron (1982) advanced a linear framework that consists of antecedents, throughputs, and consequences (see Figure 7). As the throughput of cohesion refers to its operationalization (i.e., GI-T, GI-S, ATG-T, GI-S) which has already been described, the antecedents and consequences of cohesion will now be discussed. The antecedents of cohesion are categorized into four factors:

environmental, personal, team, and leadership. Environmental factors are the most general in nature and refer to aspects related to the organization of a team, including contractual responsibilities, group size, and geographical restrictions. Personal factors consist of the individual characteristics of group members, such as gender, age, and personality. Team factors refer to the orientation of the group; for example, whether the team is task or socially oriented. Lastly, the leadership factor represents characteristics of the leader and their interactions with team members. For instance, leadership behaviors and leadership styles (Gardner, Shields, Bredemeier, & Bostrom, 1996; Shields, Gardner, Bredemeier, & Bostrom, 1997), the coach-athlete relationship (Jowett & Chaundy, 2004), and athlete leadership (Loughead et al., 2006) all fall under the leadership factor. Given that athlete leadership is a main focus of this study, research examining athlete leadership and cohesion will be discussed later in this section.

The consequences of cohesion that have been the most studied include athlete satisfaction (Widmeyer & Williams, 1991) and performance (Carron, Colman, Wheeler, & Stevens, 2002). More specifically, Widmeyer and Williams (1991) found that all four dimensions of cohesion were a significant predictor of athlete satisfaction. Additionally, Carron et al. (2002) performed a meta-analysis to examine the cohesion-performance relationship in sport. The results indicated a moderate positive (ES = .66) cohesion-performance relationship. Furthermore, when examining the four dimensions of cohesion independently, ATG-T, ATG-S, GI-T, and GI-S showed statistically similar small to moderate relationships to performance in sport.

Research Examining the Athlete Leadership-Cohesion Relationship

The majority of research examining the leadership factor from Carron's (1982) model has focused on the relationship between coaching and cohesion (e.g., Carron & Chelladurai, 1981; Gardner et al., 1996; Jowett & Chaundy, 2004; Pease & Kozub, 1994; Spink, 1998; Turman, 2003; Westre & Weiss, 1991). However, recently researchers have begun to examine the impact of athlete leadership on perceptions of cohesion in sports (Bakker, 2010; Spalding, 2010; Vincer & Loughead, 2010).

Vincer and Loughead (2010) were the first to examine the relationship between athlete leader behaviors and cohesion. Three hundred and twelve athletes competing in a variety of interdependent sport teams (e.g., hockey, soccer) participated in the study. Athletes completed the LSS (Chelladurai & Saleh, 1980) to measure athlete leader behaviors, and the GEQ (Carron et al., 1985) to measure perceptions of cohesion. Generally, results indicated that athlete leader behaviors were related to cohesion. Specifically, all four dimensions of cohesion were positively related to Training and Instruction and Social Support, whereas all four dimensions of cohesion were negatively related to Autocratic Behavior. Additionally, ATG-T was positively related to Democratic Behavior. Surprisingly, Positive Feedback was not significantly related to any of the four dimensions of cohesion, suggesting that positive reinforcement coming from athlete leaders has little impact on team members (Vincer & Loughead, 2010). Overall, the results indicated that athlete leaders who demonstrated leadership behaviors towards improving performance through instructing teammates, and showing a concern for their team member's well-being, had teammates who perceived higher levels of both task and social cohesion.

In an examination of both formal and informal athlete leaders, Spalding (2010) examined whether athlete leadership moderated the cohesion-performance relationship. Participants included 190 athletes from both university and college level athletics competing on interdependent sport teams. Cohesion was assessed using the positively worded GEQ (Eys et al., 2007), while athlete leader behaviors were measured using the LSS (Chelladurai & Saleh, 1980), that employed a modified stem to assess both formal and informal athlete leadership. Performance was measured along two dimensions: Performance Commitment and Performance Achievement. Performance Commitment reflected the degree to which team members were persistent and motivated to perform, whereas Performance Achievement referred to team member's feelings of their team's productivity. Overall, the results indicated that athlete leadership was positively related to cohesion. Specifically, the formal athlete leader behaviors of Democratic Behavior, Positive Feedback, Social Support, and Training and Instruction were related to the four dimensions of cohesion. In addition, the informal athlete leader behaviors of Social Support was related to the social dimensions of cohesion (ATG-S and GI-S), whereas Training and Instruction was related to the task dimensions of cohesion (ATG-T and GI-T). Two moderating effects were found for informal athlete leadership in the cohesion-performance relationship. In particular, Social Support moderated the GI-T to Performance Commitment relationship, while Training and Instruction moderated the ATG-S to Performance Commitment relationship. In other words, those who perceived high levels of GI-T or ATG-S were more likely to report high levels of Performance Commitment if their informal athlete leaders exhibited Social Support or Training and Instruction behaviors.

In another study examining athlete leadership and cohesion, Bakker (2010) examined the mediating effect of team cohesion on athlete leadership behavior and collective efficacy. Collective efficacy is defined as a team's "shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainments" (Bandura, 1997, p. 477). Using a sample of 207 male ice hockey players, participants completed the LSS (Chelladurai & Saleh, 1980) for both formal and informal athlete leaders, the GEQ (Eys et al., 2007), and a collective efficacy measure for hockey (Feltz & Lirgg, 1998). When examining the relationship between athlete leadership and cohesion independently, results indicated that the formal and informal athlete leader behaviors of Training and Instruction, Social Support, and Positive Feedback were positively related to cohesion. In addition, for informal athlete leadership, the behavior of Democratic Behavior was positively related to cohesion, while Autocratic Behavior was negatively related to cohesion. In regards to the mediating effect of cohesion, results indicated that cohesion mediated the relationship between athlete leadership and collective efficacy. In particular, for formal athlete leadership, ATG-T, GI-T, and GI-S served to mediate the relationship between the behavior of Positive Feedback and collective efficacy. For informal athlete leadership, GI-T mediated the relationship between Democratic Behavior and collective efficacy, while the relationship between Positive Feedback and collective efficacy was mediated by ATG-T. Bakker (2010) suggested that the athlete leader-cohesion relationship differs based on the leadership role that an athlete occupies, and therefore is contingent on whether an athlete emerges as a formal or informal leader.

Status

The last section of the literature review will examine status within sport teams. Initially, status will be defined. The conceptualization of status will then be examined. Finally, research on athlete status in sport will be reviewed.

Definition of Status

Status has been defined as "the amount of importance or prestige possessed by or accorded to individuals by virtue of their position in relation to others" (Jacob & Carron, 1994, p. S67). Furthermore, the emergence of status is based on the evaluation of and beliefs about certain attributes that are considered most important in particular situations (Jacob & Carron, 1998). In other words, the importance associated with various attributes can differ based on the situation, group, or culture (Berger, Fisek, Norman, & Zelditch, 1977; Berger, Norman, Balkwell, & Smith, 1992; Jacob & Carron, 1996). For instance, social psychology research has found 17 different attributes that are related to an individual's status within a group: education, income, experience, occupation, language, religion, group role, task ability, urbanity, marital status, race, and parents' occupation (Berger et al., 1977; Berger et al., 1992; Jacob & Carron, 1996; Turner, 1988). These attributes identified in the general society have also been found to be present in sport (e.g., Beamish, 1990; Hasbrook, 1986).

Conceptualization of Status

Within organizational psychology research, status has been conceptualized using two approaches. The first approach is based on the degree of personal effort involved (Berger et al., 1977; Marshall, 1963). This perception assumes that status can be gained through *achieved attributes*, which is viewed as a source of status that requires effort on

the part of the individual (e.g., experience, leadership role). On the other hand, *ascribed attributes* are sources of status possessed by an individual without involving personal effort (e.g., religion, age). In sport teams, ability would represent an achieved status attribute, whereas parents' income would represent an ascribed status attribute (Jacob & Carron, 1998).

The second approach suggests a dichotomy of *specific* versus *diffuse* status attributes, which is based on the relevance of an attribute to the task at hand (Berger et al., 1977). Specific status attributes reflect the characteristics that are directly relevant to the group's functioning. For a sport team, this might include an athlete's ability and experience. In contrast, diffuse status attributes are those that are not directly related to the function of the group. In sport, examples of diffuse status attributes include an individual`s education or parent's income.

Research on Athlete Status

Early research on athlete status in sports examined the similarity of attributes within groups to determine its effect on the team environment. Eitzen (1973) found that similarity of social class characteristics (i.e., family prestige within the community) was strongly related to success in high school basketball. More specifically, the greater the number of social characteristics that were homogenous among team members, the greater the success of the team. In contrast, Williams and Widmeyer (1991) found that heterogeneity of playing experience among female golfers made the group more socially attractive. In addition, a golfer's background had little effect on how much they liked each other.

More recently, Jacob and Carron (1996) investigated the 17 status attributes commonly seen in social psychology research in order to determine their importance to an athlete's status rank. Participants included 65 varsity athletes competing in basketball, volleyball, ice hockey, and indoor hockey. The purpose of the study was to identify sources of status in sports and their relative importance as endorsed by athletes. Overall, results indicated that *experience* and being an *athlete leader* gave athletes the highest amount of status on their teams. Furthermore, status attributes that were achieved and directly related to sports (i.e., experience, leadership role, team position) were perceived to be significantly more important to athletes than the ones that were ascribed and unrelated to sport (i.e., marital status, parent's income).

To expand on their previous work, Jacob and Carron (1998) examined the relationship between status and cohesion. One hundred and twelve intercollegiate athletes and 64 secondary school athletes participated in the study. The main objective of the study was to examine whether a relationship existed between the importance attached to status attributes and cohesion. The only significant finding was the relationship between ATG-T and status. In other words, the higher the athletes' perceptions of task cohesion, the smaller the degree to which they deemed status as important. The authors suggested that athletes who believed their team to be highly united may have a desire to downplay any circumstance (i.e., having status) that may divide the members.

To further explore the nature of sources of status in sport, Jacob Johnson (2004) utilized an open-ended questionnaire to determine what status attributes athletes believed to be important. Participants were asked to "indicate the conditions associated with having importance/prestige among your team members" (p. 57), in addition to rating each

conditions importance on a 9-point scale, anchored with 1 (*not at all important*) and 9 (*important*). Four main categories of attributes were derived: physical, psychology, demographic, and relationship with external others. Physical attributes were associated with the tangible attributes considered essential to attaining the team's goal. This physical attributes category was divided into five subcategories, which consisted of performance (e.g., leading scorer), experience (e.g., seniority), appearance (e.g., physical stature), role (e.g., captain), and position (e.g., defence/offence). Psychological attributes pertained to the mental capabilities of athletes and was subdivided into individual (e.g., positive attitude) and group (e.g., team spirit) aspects. Demographic attributes referred to the social characteristics of the population (e.g., age, income, family status), whereas relationship with external others explored the relationship of athletes to individuals other than their teammates (e.g., parents' support). Similar to previous studies, performance, age, role, and education were identified as status attributes, with performance being rated as the most important contributor to an athlete's status.

References

Alfermann, D., Lee, M. J., & Würth, S. (2005). Perceived leadership behavior and motivational climate as antecendents of adolescent athletes' skill development. *Athletic Insight: The Online Journal of Sport Psychology, 7,* 14-36.

Baker, A. (2008). *The influence of coaching efficacy on team cohesion and performance* (Unpublished master's thesis). University of Windsor, Windsor, Ontario, Canada.

Bakker, A. M. (2010). *Team cohesion in hockey: Its effect on the athlete leadership behavior-collective efficacy relationship* (Unpublished master's thesis). University of Windsor, Windsor, Ontario, Canada.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York: Freeman.

Beamish, R. (1990). The persistence of inequality: An analysis of participation patterns among Canada's high performance athletes. *International Review for the Sociology of Sport, 25,* 144-152.

Bednarek, F., Benson, L., & Mustafa, H. (1976). Identifying peer leadership in small work groups. *Small Group Behavior, 7,* 307-316.

Bennis, W., & Nanus, B. (1985). *Leaders.* New York: Harper & Row.

Berger, J., Fisek, H., Norman, R. Z., & Zelditch, M. (1977). *Status characteristics and social interaction: An expectation states approach.* New York: Elsevier.

Berger, J., Norman, R. Z., Balkwell, J. W., & Smith, R. F. (1992). Status inconsistency in task situations: A test of four status processing principles. *American Sociological Review, 57,* 843-855.

Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *Journal of Sport Psychology, 9,* 275-294.

Carron, A. V. (1982). Cohesiveness in sport groups: Implications and considerations. *Journal of Sport Psychology, 4,* 123-138.

Carron, A. V. (1986). The sport team as an effective group. In J. M. Williams (Ed.), *Applied sport psychology* (pp. 75-91). Palo Alto, CA: Mayfield.

Carron, A. V., Brawley, L. R., & Widmeyer, W. N. (1998). The measurement of cohesiveness in sport groups. In J. L. Duda (Ed.), *Advances in Sport and Exercise Psychology Measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.

Carron, A. V., & Chelladurai, P. (1981). The dynamics of group cohesion in sport. *Journal of Sport Psychology, 3,* 123-139.

Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta-analysis. *Journal of Sport & Exercise Psychology, 24,* 168-188.

Carron, A. V., Hausenblas, H. A., & Eys, M. A. (2005). *Group dynamics in sport* (3rd ed.). Morgantown, WV: Fitness Information Technology.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport Psychology, 7,* 244-266.

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1988). Group cohesion and individual adherence to physical activity. *Journal of Sport Psychology, 10,* 127-138.

Chelladurai, P. (1978). *A contingency model of leadership in athletics* (Unpublished doctoral dissertation). University of Waterloo, Department of Management Sciences, Ontario, Canada.

Chelladurai, P. (1993). Leadership. In R. N. Singer, M. Murphey, & L. K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 647-671). New York: Macmillan.

Chelladurai, P. (2007). Leadership in sports. In G. Tenenbaum, & R. C. Eklund (Eds.), *The sport psychology handbook* (pp. 113-135). Indianapolis, IN: Wiley Publishing Inc.

Chelladurai, P., & Carron, A. V. (1978). *Leadership*. Ottawa: Canadian Association for Health, Physical Education and Recreation (Sociology of Sport Monograph Series).

Chelladurai, P., & Riemer, H. A. (1998). Measurement of leadership in sport. In J. L. Duda (Ed.), *Advancements in sport and exercise psychology measurement* (pp. 227-253). Morgantown, WV: Fitness Information Technology.

Chelladurai, P., & Saleh, S. D. (1980). Dimensions of leader behavior in sports: Development of a leadership scale. *Journal of Sport Psychology, 2,* 34-45.

Crozier, A. J., Loughead, T. M., & Munroe-Chandler, K. J. (2010). Exploring the advantages of informal athlete leadership in team sports [Abstract]. *Journal of Sport & Exercise Psychology, 32,* S154.

Donnelly, J. H., Ivancevich, J. M., & Gibson, J. L. (1985). *Organizations: Behavior, structure, processes* (5th ed.). Plano, TX: Business Publications.

Dupuis, M., Bloom, G. A., & Loughead, T. M. (2006). Team captains' perceptions of athlete leadership. *Journal of Sport Behavior, 29,* 60-78.

Eitzen, D. S. (1973). The effect of group structure on the success of athletic teams. *International Review of Sport Sociology, 8,* 7-17.

Eys, M. A., Carron, A. V., Bray, S. R., & Brawley, L. R. (2007). Item wording and internal consistency of a measure of cohesion: The Group Environment Questionnaire. *Journal of Sport & Exercise Psychology*, *29,* 395-402.

Eys, M. A., Loughead, T. M., & Hardy, J. (2007). Athlete leadership dispersion and satisfaction in interactive sport teams. *Psychology of Sport and Exercise, 8,* 281-296.

Feltz, D. L., & Lirgg, C. D. (1998). Perceived team and player efficacy in hocky. *Journal of Applied Sport Psychology, 83,* 557-564.

Festinger, L., Schachter, S., and Back, K. W. (1950). *Social Pressures in Informal Groups: A Study of Human Factors in Housing.* New York: Harper & Row.

Fleishman, E. A., Mumford, M. D., Zaccaro, S. J., Levin, K. Y., Korotkin, A. L., & Hein, M. B. (1991). Taxonomic efforts in the description of leader behavior: A synthesis and functional interpretation. *Leadership Quarterly, 2,* 245-287.

French, J. R. P., Jr. (1941). The disruption and cohesion of groups. *Journal of Abnormal and Social Psychology, 36,* 361-377.

Gardner, D. E., Shields, D. L. L., Bredemeier, B. J. L., & Bostrom, A. (1996). The relationship between perceived coaching behaviors and team cohesion among baseball and softball players. *The Sport Psychologist, 10,* 367-381.

Gould, D., Hodge, K., Peterson, K., & Petlichkoff, L. (1987). Psychological foundations of coaching: Similarities and differences among intercollegiate wrestling coaches. *The Sport Psychologist, 1,* 293-308.

Grand, R. R., & Carron, A. V. (1982). Development of a Team Climate Questionnaire. In L. M. Wankel & R. B. Wilberg (Eds.), *Psychology of sport and motor behaviour: Research and practice* (pp. 217-229). Edmonton: University of Alberta, Department of Recreation and Leisure Studies.

Gross, N., & Martin, W. E. (1952). On group cohesiveness. *American Journal of Sociology, 52,* 546-554.

Halpin, A. W. (1957). *Manual for the Leadership Behavior Description Questionnaire.* Unpublished manuscript, Fisher College of Business, The Ohio State University, Columbus, Ohio.

Hardy, J., Eys, M. A., & Loughead, T. M. (2008). Does communication mediate the athlete leadership to cohesion relationship? *International Journal of Sport Psychology, 39,* 329-345.

Hasbrook, C. A. (1986). The sport participation-social class relationship: Some recent youth sport participation data. *Sociology of Sport Journal, 3,* 154-159.

Hollander, E. P. (1978). *Leadership dynamics: A practical guide to effective relationships.* New York: Free Press.

Holmes, R. M., McNeil, M., Adorna, P, & Procaccino, J. K. (2008). Collegiate student athletes' preferences and perceptions regarding peer relationships. *Journal of Sport Behavior, 31,* 338-351.

Jacob, C. S., & Carron, A. V. (1994). Sources of status in intercollegiate sport teams [Abstract]. *Journal of Sport & Exercise Psychology, 16,* S67.

Jacob C. S., & Carron, A. V. (1996). Sources of status in sport teams. *International Journal of Sport Psychology, 27,* 369-382.

Jacob, C. S., & Carron, A. V. (1998). The association between status and cohesion in sport teams. *Journal of Sport Sciences, 16,* 187-198.

Jacob Johnson, C. S. (2004). Status in sport teams: Myth or reality? *International Sports Journal, 8,* 55-64.

Jowett, S., & Chaundy, V. (2004). An investigation into the impact of coach leadership and coach-athlete relationship on group cohesion. *Group Dynamics: Theory, Research, and Practice, 8,* 302-311.

Kahle, L. R., & Riley, C. (2004). *Sports marketing and the psychology of marketing communication.* New Jersey: Lawrence Erlbaum Associates.

Kozub, S. A., & Pease, D. G. (2001). Coach and player leadership in high school basketball. *Journal of Sport Pedagogy: Teaching and Coaching in Sport, 7,* 1-15.

Lee, M. J., Coburn, T., & Partridge, R. (1983). The influence of team structure in determining leadership function in association football. *Journal of Sport Behavior, 6,* 59-66.

Leeson, H., & Fletcher, R. B. (2005). Longitudinal stability of the Group Environment Questionnaire with elite female athletes. *Group Dynamics: Theory, Research, and Practice, 9,* 147-160.

Li, F., & Harmer, P. (1996). Confirmatory factor analysis of the Group Environment Questionnaire with an intercollegiate sample. *Journal of Sport & Exercise Psychology, 18,* 49-63.

Loughead, T. M., & Hardy, J. (2005). An examination of coach and peer leader behaviors in sport. *Psychology of Sport and Exercise, 6,* 303-312.

Loughead, T. M., Hardy, J., & Eys, M. A. (2006). The nature of athlete leadership. *Journal of Sport Behavior, 29,* 145-158.

Marshall, T. H. (1963). *Sociology at the crossroads.* London: Heinemann.

Martens, R., Landers, D. M., & Loy, J. W. (1971). *Sport cohesiveness questionnaire.* Champaign: University of Illinois, Department of Physical Education.

Moreno, J. L., & Jennings, H. H. (1937). Statistics of social configurations. *Sociometry, 1,* 342-374.

Mudrack, P. E. (1989). Defining group cohesiveness. *Small Group Behavior, 20,* 37-49.

Northouse, P. G. (2010). *Leadership: Theory and practice* (5th ed.). Thousand Oaks, CA: Sage.

Paradis, K. F. (2010). *Investigating the mediating role of cohesion in the relationship between athlete leadership and athlete satisfaction in youth sport* (Unpublished master's thesis). University of Windsor, Windsor, Ontario, Canada.

Paradis, K. F., & Loughead, T. M. (2009, November). *Follow the (athlete) leader: Examining the factorial validity of two leadership inventories in youth sport*. Poster

session presented at the meeting of Canadian Society for Psychomotor Learning and Sport Psychology, Toronto, Ontario, Canada.

Patterson, M. M., Carron, A. V., & Loughead, T. M. (2005). The influence of team norms on the cohesion—self-reported performance relationship: A meta-analysis. *Psychology of Sport and Exercise, 6,* 479-493.

Pease, D. G., & Kozub, S. A. (1994). Perceived coaching behaviors and team cohesion in high school basketball teams [Abstract]. *Journal of Sport & Exercise Psychology, 16,* S93.

Shields, D. L. L., Gardner, D. E., Bredemeier, B. J. L., & Bostrom, A. (1997). The relationship between leadership behaviors and group cohesion in team sports. *The Journal of Psychology, 131,* 196-210.

Smircich, L., & Morgan, G. (1982). Leadership: The management of meaning. *Journal of Applied Behavioral Science, 18,* 257-273.

Spalding, S. (2010). *Exploring the effect of athlete leadership on the cohesion-performance relationship* (Unpublished master's thesis). University of Windsor, Windsor, Ontario, Canada.

Spink, K. S. (1998). Mediational effects of social cohesion on the leadership behavior-intention to return in sport. *Group Dynamics: Theory, Research, and Practice, 2,* 92-100.

Terry, P. C., & Howe, B. L. (1984). Coaching preferences of athletes. *Canadian Journal of Applied Sport Sciences, 9,* 188-193.

Todd, S. Y., & Kent, A. (2004). Perceptions of the role differentiation behaviors of ideal peer leaders: A study of adolescent athletes. *International Sports Journal, 8,* 105-118.

Tropp, K. J., & Landers, D. M. (1979). Team interaction and the emergence of leadership and interpersonal attraction in field hockey. *Journal of Sport Psychology, 1,* 228-240.

Turman, P. D. (2003). Coaches and cohesion: The impact of coaching techniques on team cohesion in the small group sport setting. *Journal of Sport Behavior, 26,* 86-103.

Turner, B. S. (1988). *Status*. Minneapolis, Minnesota: University of Minnesota Press.

Vealey, R. S., Armstrong, L., Comar, W., & Greenleaf, C. A. (1998). Influence of perceived coaching behaviors on burnout and competitive anxiety in female college athletes. *Journal of Applied Sport Psychology, 10,* 297- 318.

Vincer, D. J. E., & Loughead, T. M. (2010). The relationship between athlete leadership behaviors and cohesion in team sports. *The Sport Psychologist, 24,* 448-467.

Weinberg, R. S., & Gould, D. (2007). *Foundations of sport and exercise psychology* (4th ed.). Champaign, IL: Human Kinetics.

Westre, K. R., & Weiss, M. R. (1991). The relationship between perceived coaching behaviors and group cohesion in high school football teams. *The Sport Psychologist, 5,* 41-54.

Wheelan, S. A., & Johnston, F. (1996). The role of informal member leaders in a system containing formal leaders. *Small Group Research, 27,* 33-55.

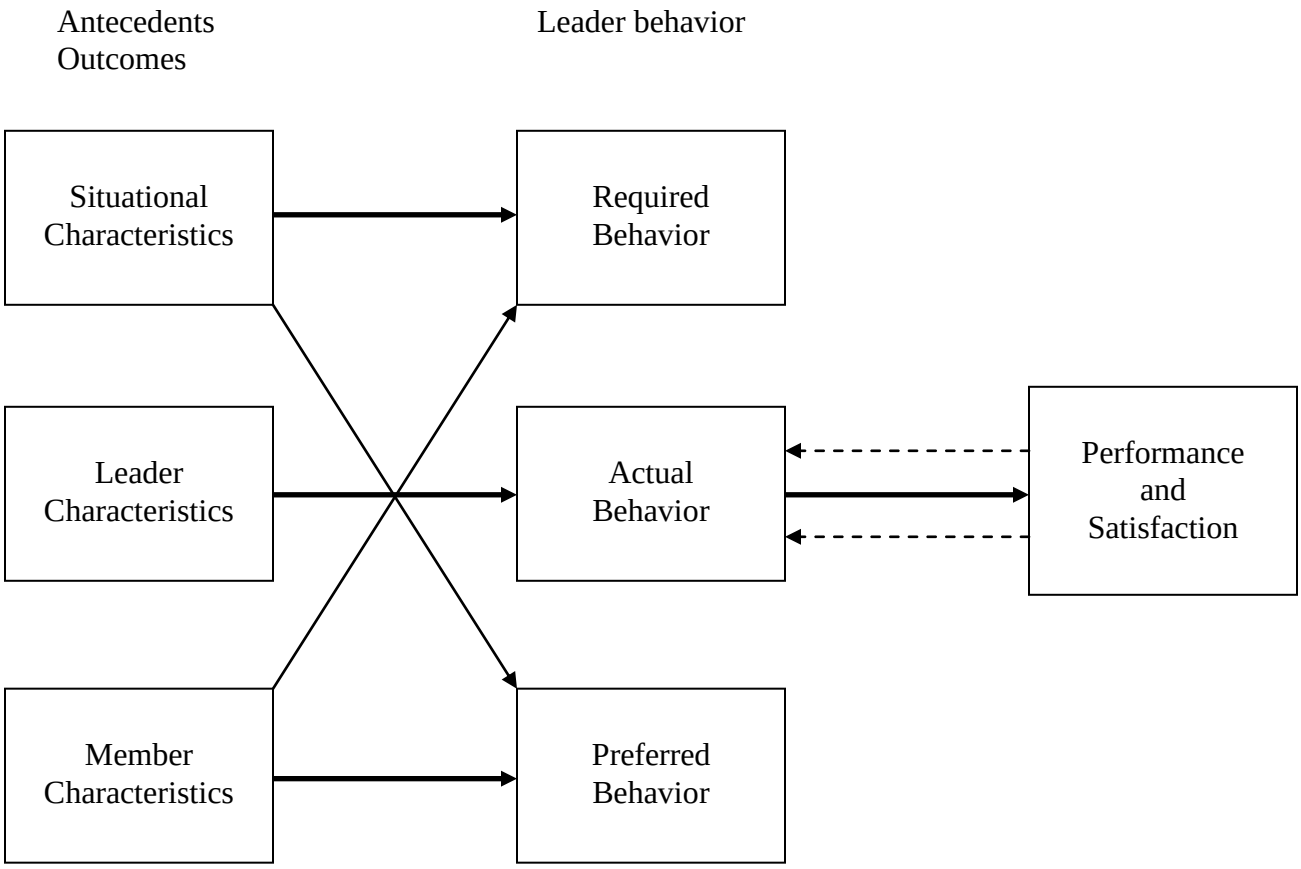
Widmeyer, W. N., & Williams, J. M. (1991). Predicting cohesion in a coacting sport. *Small Group Research, 22,* 548-570.

Williams, J. M., & Widmeyer, W. N. (1991). The cohesion-performance outcome relationship in a coacting sport. *Journal of Sport & Exercise Psychology, 13,* 364-371.

Yukelson, D., Weinberg, R., Richardson, P., & Jackson, A. (1983). Interpersonal attraction and leadership within collegiate sport teams. *Journal of Sport Behavior, 6,* 28-36.

FIGURES

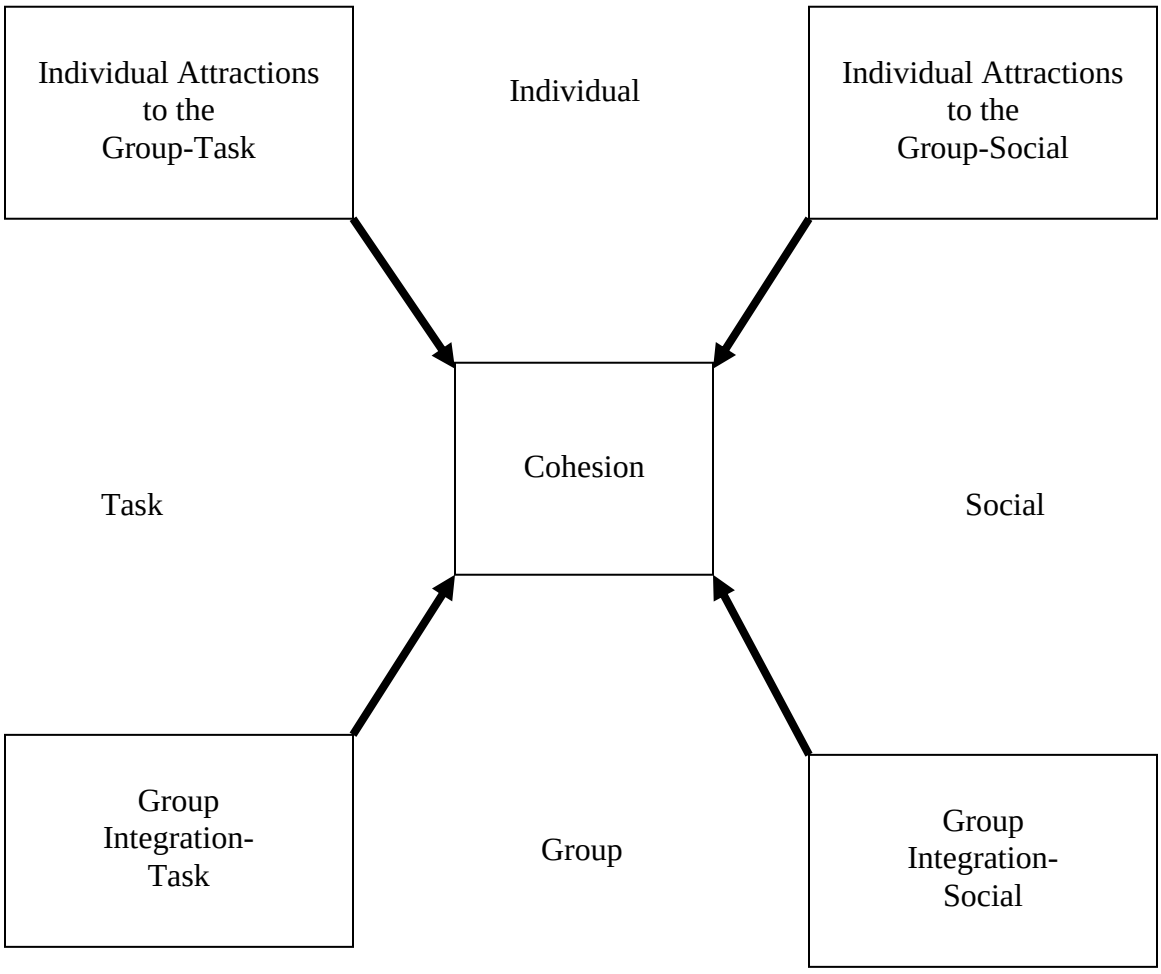
Figure 5



Adapted from:

Chelladurai, P. (2007). Leadership in sports. In G. Tenenbaum, & R. C. Eklund (Eds.), *The sport psychology handbook* (pp. 113-135). Indianapolis, IN: Wiley Publishing Inc.

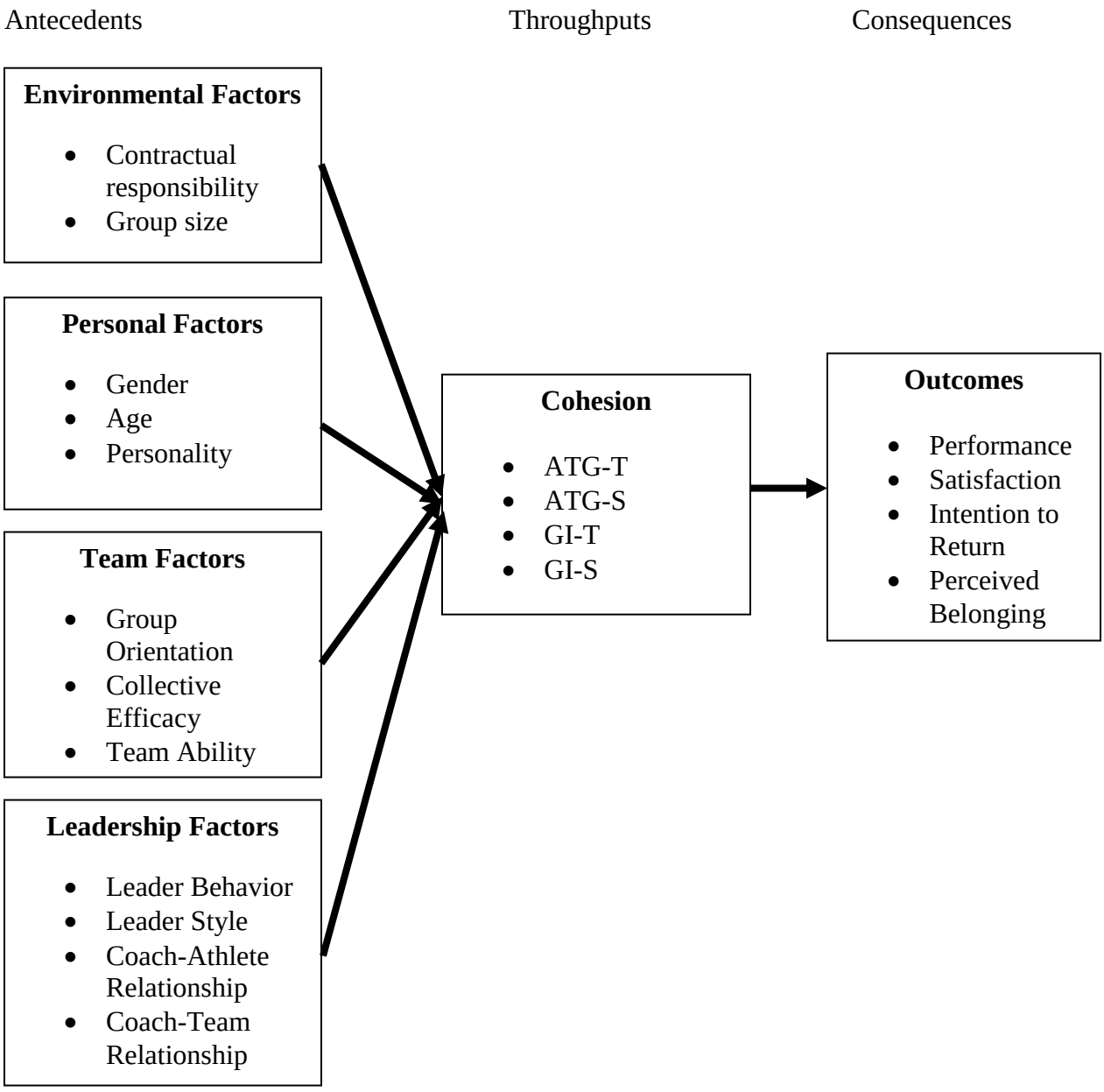
Figure 6



Adapted from:

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport Psychology, 7,* 244-266.

Figure 7



Adapted from:

Carron, A. V. (1982). Cohesiveness in sport groups: Implications and considerations. *Journal of Sport Psychology, 4,* 123-138.

APPENDICES

APPENDIX A

Demographic Questionnaire

SECTION A

Tell me a little bit about yourself:

Age _____ yrs.

Gender: Male ☐ Female ☐

Current Sport (e.g., volleyball, hockey) _____

Number of years with current team _____

APPENDIX B

Athlete Leadership Status

This section deals with the leadership you provide. Read the description below and select **ONLY** if it applies to you. If it doesn't, go on to the next section.

Formal Leader ☐

(An athlete that is selected by the team or coach to be in a leadership position. Such as captain, co-captain or assistant captain)

If yes, check one:

Captain ☐ or Assistant Captain ☐

Informal Leader ☐

(Established through interactions with team members, not formally appointed by coach or team)

APPENDIX C

The Leadership Scale for Sports

Using the following scale, please circle a number from 1 to 5 to indicate your level of agreement with each of the statements regarding YOURSELF on your team.

1 **Never**	2 **Seldom** 25% of the time	3 **Occasionally** 50% of the time	4 **Often** 75% of the time	5 **Always**

On my team, I…

	Never				Always
1. See to it that every team member is working to his/her capacity.	1	2	3	4	5
2. Ask for the opinion of team members.	1	2	3	4	5
3. Work relatively independent of other team members.	1	2	3	4	5
4. Help team members with their personal problems.	1	2	3	4	5
5. Complement a team member for his/her performance in front of others.	1	2	3	4	5
6. Explain to team members the techniques and tactics of the sport.	1	2	3	4	5
7. Tell a team member when he/she does a particularly good job.	1	2	3	4	5
8. Get team members approval on important matters before going ahead.	1	2	3	4	5
9. See that a team member is rewarded for good performance.	1	2	3	4	5
10. Pay attention to correcting team members' mistakes.	1	2	3	4	5
11. Help team members settle their conflicts.	1	2	3	4	5
12. Do not explain my actions.	1	2	3	4	5
13. Let fellow team members share in decision making.	1	2	3	4	5
14. Make sure that team members roles on the team are understood.	1	2	3	4	5
15. Look out for the personal welfare of team members.	1	2	3	4	5
16. Express appreciation when a team member performs well.	1	2	3	4	5
17. Instruct team members individually in the skills of the sport.	1	2	3	4	5
18. Encourage team members to make suggestions for ways of conducting practices.	1	2	3	4	5

19. Figure ahead on what should be done.	1	2	3	4	5
20. Refuse to compromise a point.	1	2	3	4	5
21. Do favors for team members.	1	2	3	4	5
22. Explain to team members what they should and should not do.	1	2	3	4	5
23. Let team members share in discussion about goals for the team as a whole (e.g., the number of wins over the following month).	1	2	3	4	5
24. Expect team members to carry out their assignment to the last detail.	1	2	3	4	5
25. Keep to myself.	1	2	3	4	5
26. Point out team members' strengths and weaknesses.	1	2	3	4	5
27. Let team members try their own way even if they make mistakes.	1	2	3	4	5
28. Express care for other team members.	1	2	3	4	5
29. Give specific instructions to team members as to what they should do in every situation.	1	2	3	4	5
30. Encourage team members to confide in me.	1	2	3	4	5
31. Ask for the opinion of team members on important team matters.	1	2	3	4	5
32. Encourage close and informal relations with team members.	1	2	3	4	5
33. See to it that efforts are coordinated.	1	2	3	4	5
34. Let team members work at their own speed.	1	2	3	4	5
35. Speak in a manner not to be questioned.	1	2	3	4	5
36. Explain how team members contributions fit into the total picture.	1	2	3	4	5
37. Invite team members to my home.	1	2	3	4	5
38. Let team members decide on the plays to be used in a game.	1	2	3	4	5
39. Specify in detail what is expected of team members.	1	2	3	4	5
40. Give credit when credit is due.	1	2	3	4	5

APPENDIX D

The Group Environment Questionnaire

This questionnaire is designed to assess your perceptions of your team. There are no wrong or right answers, so please give your immediate reaction. Some of the questions may seem repetitive, but please answer ALL questions. Your personal responses will be kept in strictest confidence.

The following statements are designed to assess your feelings about YOUR PERSONAL INVOLVEMENT with this team. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of these statements.

1. I enjoy being a part of the social activities of this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

2. I am happy with the amount of playing time I get.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

3. I am going to miss my teammates when the season ends.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

4. I am happy with my team's level of desire to win.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

5. Some of my best friends are on this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

6. This team gives me enough opportunities to improve my personal performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

7. I enjoy team parties more than other parties.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

8. My team is not cohesive.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

9. I like the style of play on this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

10. For me, this team is one of the most important social groups to which I belong.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

The following statements are designed to assess your perceptions of YOUR TEAM AS A WHOLE. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of these statements.

11. Our team is united in trying to reach its goals for performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

12. Members of our team would rather get together as a team than hang out on their own.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

13. We all take responsibility for any loss or poor performance by our team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

14. Our team members party together often.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

15. Our team members have the same aspirations regarding the team's performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

16. Members of our team would like to spend time together in the off season.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

17. If members of our team have problems in practice, everyone wants to help them so we can get back together again.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

18. Members of our team stick together outside of practices and games.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

19. Members of our team communicate freely about each athlete's responsibilities during competition or practice.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

APPENDIX E

Recruitment Letter to Coaches

Hi _____,

My name is Alyson Crozier and I am currently Masters student at the University of Windsor in the Faculty of Human Kinetics. My area of research involves athletes on sport teams and we were hoping we could set up a time before or after one of your practices allowing us to petition the athletes on your team to participate in our study. If they choose to participate in our study, they will fill out a questionnaire package which will take approximately 15 minutes to complete. They will also have the opportunity to enter into a draw to win a gift certificate at a local sporting goods store.

Your assistance is greatly appreciated.
Take care,
Alyson Crozier

APPENDIX F

Recruitment Script to Athletes

Hi,

My name is Alyson and I am a Masters students at the University of Windsor. I am completing a research project looking at athlete leadership and its influence on the team environment. The questionnaire takes approximately 15 minutes to complete and your participation is voluntary. All information obtained will be confidential and anonymous. Responses should be independently answered and when completed place package back into envelope. If you choose not to participate, please place the unanswered package back into the envelope. The last page of the package is a ballot to enter a draw for gift certificate at a local sporting goods store, please detach and submit it separately in this other envelop.

Thanks in advance for your participation.

APPENDIX G

Letter of Information

LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

An Examination of Athlete Leadership on the Team Environment

You are asked to participate in a research study conducted by Alyson Crozier (Masters Student) under the direction of Dr. Todd Loughead (Faculty), from the department of Kinesiology at the University of Windsor. This research is being conducted as fulfilment of the requirements for an independent study course for credit towards a Masters Degree in Human Kinetics

If you have any questions or concerns about the research, please feel to contact either Ms. Alyson Crozier at 519-253-3000 ext. 4058 or croziera@uwindsor.ca, or Dr. Todd Loughead at 519-253-3000 ext. 2450 or loughead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine the influence of athlete leadership on the team environment.

PROCEDURES

If you volunteer to participate in this study, you will be asked to complete a survey/questionnaire that may take up to 15 minutes to complete.

POTENTIAL RISKS AND DISCOMFORTS

There are no foreseeable psychological or physical risks or discomforts associated with participation in this study.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

The information gained from this study will help advance knowledge in the field of sport psychology. The results will help to better understand how athlete leaders influence member behaviours and perceptions of cohesion. This knowledge can be used by sport psychology consultants to enhance the development of athlete leaders.

PAYMENT FOR PARTICIPATION

You will not be compensated for your participation in this study. However, if you choose, you can enter your name into a draw for a $50 Gift Certificate to Sportchek.

CONFIDENTIALITY

Responses to the questionnaires will remain anonymous while the information from the ballots will remain confidential. All data will be kept in a locked cabinet which will only be accessible by the primary investigators. Data will be kept secured for five years when it will then be destroy. Although we are not asking for your name as the responses are anonymous, there may be some

information collected by which one might be able to identify you. However, all published reports will use the aggregate of scores when presenting the results. Therefore, it is highly unlikely that the public will know your identity.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time while you are filling out the surveys. However, once you have handed in the completed survey, this will be accepted as your consent to participate and it is not possible to withdraw because the surveys are anonymous, hence one cannot withdraw after submitting the questionnaire package. You may also refuse to answer any questions and still remain in the study.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results will be posted at the University of Windsor's Research Ethics Board website by November 2011 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can call the investigators at the numbers above.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

You may withdraw your consent at any time and discontinue participation without penalty. If you have questions regarding your rights as a research subject, contact: Research Ethics Coordinator, University of Windsor, Windsor, Ontario N9B 3P4; Telephone: 519-253-3000, ext. 3948; e-mail: ethics@uwindsor.ca

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

_____ _____

Signature of Investigator Date

_____ _____

Signature of Investigator Date

VITA AUCTORIS

NAME:	Alyson Crozier
PLACE OF BIRTH:	Richmond Hill, Ontario, Canada
YEAR OF BIRTH:	1987
EDUCATION:	University of Windsor, Windsor, Ontario, 2009-2011, M.H.K. University of Windsor, Windsor, Ontario, 2005-2009, B.H.K Honours with Distinction, Minor in Biology Markville Secondary School, Markham, Ontario, 2001-2005