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Investigating the Mediating Role of Cohesion in the Relationship between Athlete Leadership and Athlete Satisfaction in Youth Sport

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INVESTIGATING THE MEDIATING ROLE OF COHESION IN THE RELATIONSHIP BETWEEN ATHLETE LEADERSHIP AND ATHLETE SATISFACTION IN YOUTH SPORT

by

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ABSTRACT

The purpose was to examine whether cohesion served as a mediator between athlete leadership and athlete satisfaction in youth sport. Participants were 205 competitive youth sport athletes ranging from 13-17 years old (M_{age} = 15.01 years). Participants completed the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980), the Youth Sport Environment Questionnaire (YSEQ; Eys, Loughead, Bray, & Carron, 2009), and the Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998). Structural equation modelling was used to test for mediation. Overall results indicated that task cohesion mediated the relationships between formal and informal task athlete leadership behaviours and task athlete satisfaction outcomes, while social cohesion mediated the relationship between formal and informal social athlete leadership behaviours and social athlete satisfaction outcomes. Findings from the present study augment the group dynamics literature as theoretical, methodological, and practical implications are discussed.

DEDICATION

This thesis and my academic career thus far is dedicated to my parents

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RESEARCH ARTICLE

Introduction

Cohesion has been one of the most researched small group constructs across a variety of disciplines such as social psychology, organizational psychology, military psychology, and sport psychology (Carron & Brawley, 2000). In fact, cohesion has been considered one of the most important small group variables (Golembiewski, 1962; Lott & Lott, 1965). Cohesion has been 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 for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). This definition implicitly conveys the assumption concerning cohesion and satisfaction; that higher perceptions of cohesion are related to higher levels of satisfaction (e.g., Spink, Nickel, Wilson, & Odonokon, 2005). Cohesion has also been operationalized as multidimensional in nature (Carron, Widmeyer, & Brawley, 1985; see Figure 1). Hence, not surprisingly, in addition to satisfaction, Carron and Chelladurai (1981) noted that a number of other factors contribute to perceptions of cohesion. For instance, leadership behaviours have been shown to be related to cohesion in sport (e.g., Hardy, Eys, & Loughead, 2008; Jowett & Chaundy, 2004; Westre & Weiss, 1991).

One model that allows for the examination of cohesion, leadership, and satisfaction is Carron's (1982) conceptual model for the study of cohesion in sport (see Figure 2). Carron's conceptual model is a linear model comprised of inputs, throughputs, and outputs. The inputs are the antecedents of cohesion, the throughputs are the types of cohesion present on sport teams, and the outputs are the consequences of cohesion. According to the model, the antecedents that are related to perceptions of cohesion fall

into four categories: environmental, personal, team, and leadership. Environmental factors refer to the general organization system of the team. Carron noted there are two types of environmental factors: organizational orientation and contractual responsibilities. Organizational orientation refers to variables such as team goals, strategies for achieving team goals, and the maturity of team members. Contractual responsibility refers to such factors as the eligibility and contractual obligations of the athletes. Personal factors refer to individual differences that exist among teammates. While it is difficult to outline an all inclusive list, some of these include constructs such as motivation (e.g., task, affiliation, and self-motivation), and individual differences (e.g., sex, race, religion, socio-economic status). Team factors refer to aspects that impact the team as a whole. Some team factors include but are not limited to such constructs as team norms (i.e., the expected and assumed behaviours of all members of the team), team stability (i.e., the strength of the team and the amount of time team members have been together), and team orientation (i.e., level of congruence among team members' goals and strategies). Finally, leadership factors may refer to leadership behaviours, leadership style, the coach-athlete relationship, and the coach-team relationship.

The throughputs of cohesion refer to the different types of cohesion. Carron et al. (1998) noted that theoreticians in the area of group dynamics emphasized the need to distinguish between task- and social-orientation of groups. Carron et al. defined task cohesion as the general orientation of a team towards its goals and objectives. Social cohesion is viewed as the general orientation towards developing and maintaining social relationships within the team.

Finally, the consequences of cohesion are viewed as the outcomes of cohesion and include but are not limited to such outcomes as performance (Carron, Colman, Wheeler, & Stevens, 2002), athlete satisfaction (Spink et al., 2005), intention to return (Spink, 1995; 1998), perceived belonging (Allen, 2006), collective efficacy (Spink, 1990), and role involvement (Eys & Carron, 2001).

Carron's (1982) conceptual model for the study of cohesion in sport can be viewed as a mediational model whereby cohesion serves to mediate the relationship between the antecedents and consequences of cohesion. Testing for mediation is important since these variables (cohesion in the present study) establish "how" and "why" one variable predicts an outcome variable (MacKinnon, 2008). In essence, a mediator is a variable that explains the relationship between a predictor and an outcome (Baron & Kenny, 1986). Not surprisingly, there are many benefits from conducting mediational research. One benefit of mediational research is that it is theory driven and helps to test theoretical models (Frazier, Tix, & Barron, 2004). Another benefit of mediational research is that it aids in the development of practical and applied interventions. That is, the identification of mediators is important since it indicates which variables should be targeted for intervention (Baron & Kenny, 1986).

Given the importance of mediational research, a few studies have examined whether cohesion serves as a mediator in sport and exercise domains. In the sport setting, Spink (1998) examined whether social cohesion mediated the relationship between the leadership behaviour of *training and instruction* and an athlete's intention to return to their team the following season in female ringette players. Results indicated that social cohesion was a mediator between the coaching leadership behaviour of *training and*

instruction and the athlete's intention to return. However, it should be noted that this study only examined the leader behaviour of *training and instruction* as a predictor and only social cohesion as a mediator and did not explore any other leader behaviours as predictors nor whether task cohesion served as a mediating variable. Additionally, a trio of studies in the exercise domain have examined the mediating role of cohesion with fitness instructor leadership and various exercise-related outcomes. Specifically, task cohesion served to mediate the relationship between the fitness leader behaviour of task interaction and the affective states of positive affect and negative affect (Loughead, Patterson, & Carron, 2008). Task cohesion has also been shown to act as a mediator in the relationship between fitness leader behaviours, operationalized as commitment to service quality and task interaction, and an exerciser's satisfaction with the service provided by the fitness leader (Loughead & Carron, 2004). Finally, task cohesion was found to mediate the relationship between fitness leadership behaviours, operationalized as the ability to motivate, leader availability outside of the exercise class, and leader enthusiasm, and exerciser adherence, operationalized as attendance and perceived exertion (Loughead, Colman, & Carron, 2001).

While research has examined cohesion as a mediator in relation to the antecedent of leadership, operationalized as coaching and fitness leader behaviours, and several consequences (i.e., intention to return, affect, exerciser satisfaction, adherence to exercise), it is important to investigate additional antecedents and consequences. Carron and Chelladurai (1981) have suggested that teammates represent another significant aspect of the team environment. In fact, the importance of teammates, and in particular, the leadership provided amongst teammates has garnered some research attention.

Loughead, Hardy, and Eys (2006) have labelled this athlete leadership and have defined it as “an athlete occupying a formal or informal role within a team who influences team members to achieve a common goal” (p. 144). This definition highlights two types of athlete leaders. First, formal athlete leaders are those that are appointed by the team, such as team captains. Second, informal athlete leaders are those who emerge as a result of interactions that occur amongst team members and an example is a veteran player who is viewed as a leader by the team. Recently, several studies have highlighted the importance of athlete leaders. First, Loughead and Hardy (2005) compared whether coaches and athlete leaders differed in their leadership behaviours. Using a sample of 238 athletes from a variety of interdependent team sports (e.g., hockey, soccer, basketball), the results showed that coaches provided the leadership behaviours of *training and instruction* and *autocratic behaviour* to a greater extent than athlete leaders, while athlete leaders displayed to a greater extent the leadership behaviours of *democratic behaviour*, *positive feedback,* and *social support* than coaches. The significance of these findings was the fact that athlete leaders and coaches tended to use varying amounts of certain leadership behaviours indicating that athlete leaders were not merely an extension of the coach (Loughead & Hardy, 2005).

Research has also examined the relationship between athlete leadership and cohesion. Dupuis, Bloom, and Loughead (2006) conducted qualitative interviews with six ice hockey team captains to determine the functions of these captains. Results showed that team captains enhanced perceptions of cohesion by remaining positive despite obstacles faced by the team, controlling their own emotions, being an effective communicator, and by being respectful to fellow teammates. Building on these results,

Vincer and Loughead (2009) quantitatively examined the relationship between athlete leadership behaviours and cohesion in a variety of intercollegiate varsity and club level sport teams. The findings indicated that the athlete leader behaviours of *training and instruction* and *social support* positively influenced both task and social cohesion. Furthermore, the athlete leader behaviour of *democratic behaviour* was found to positively influence only task cohesion, while *autocratic behaviour* was shown to negatively influence both task and social cohesion.

In terms of the consequences of cohesion, the present study examined the outcome of athlete satisfaction. Chelladurai and Riemer (1997) defined athlete satisfaction as "a positive affective state resulting from a complex evaluation of the structures, processes, and outcomes associated with the athletic experience" (p. 135). The consequence of athlete satisfaction was selected for a number of reasons. First, research has shown that the level of athlete satisfaction influences sport participation; that is, those athletes who are more satisfied with their overall athletic experiences are less likely to dropout of sport (Fraser-Thomas, Côté, & Deakin, 2008). Second, in addition to cohesion, athlete satisfaction has also been shown to be a consequence of leadership (Chelladurai, 1978; see Figure 3). Empirically, research has shown athlete satisfaction to be related to both leadership (e.g., Chelladurai, 1984; Eys, Loughead, & Hardy, 2007; Price & Weiss, 2000; Riemer & Toon, 2001 Weiss & Friedrichs, 1986) and cohesion (e.g., Spink et al., 2005). Specifically, a positive relationship has been shown between the coaching behaviours of *training and instruction, positive feedback, democratic behaviour*, and *social support* (Chelladurai, 1984; Price & Weiss, 2000; Riemer & Chelladurai, 1995; Riemer & Toon, 2001; Weiss & Friedrichs, 1986). Of interest to the

present study, Eys et al. (2007) examined the relationship between the number of athlete leaders on a team and an athlete's perceived level of satisfaction. In particular, they examined the number of athlete leaders across three leadership functions: task leadership (e.g., helps focus the team on its goals), social (e.g., contributes to team harmony), and external (e.g., represents the team at media conferences and team fundraisers). The results indicated that athletes who perceived to have an equal number of athlete leaders across the three leadership functions displayed greater satisfaction while athletes who perceived an imbalance across the three functions reported lower satisfaction with their athletic experience. Finally, a relationship has been shown to exist between task cohesion and athlete satisfaction (Spink et al., 2005). Using a sample of 194 male ice hockey players, task cohesion and one aspect of athlete satisfaction (i.e., satisfaction with team integration) was assessed. The results indicated a significant relationship between task cohesion and an athlete's satisfaction with *team integration*.

Although previous research does provide some insights into the associations amongst athlete leadership, cohesion, and athlete satisfaction, these bodies of research do have their shortcomings. One of these pertains to the assessment of athlete leadership. To date, the majority of research measuring athlete leadership behaviours (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2009) has utilized the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980). While the LSS has demonstrated strong internal consistency values for the five dimensions of athlete leadership behaviours (i.e., *training and instruction*, *positive feedback*, *social support*, *democratic behaviour*, and *autocratic behaviour*) and has demonstrated factorial validity (Vincer & Loughead, 2009), the aforementioned studies did not distinguish between formal and informal athlete

leadership as highlighted in the definition by Loughead et al. (2006). Therefore, it would be beneficial to examine these two types of athlete leaders independently to determine how their leadership behaviours influence cohesion and athlete satisfaction separately.

Another shortcoming in the literature pertains to the measurement of cohesion in regard to youth sport. That is, the majority of research on cohesion has examined adult samples with a few exceptions that have used a youth sample (e.g., Senécal, Loughead, & Bloom, 2008). The main reason for the research on cohesion emanating from an adult population stemmed from the Carron et al. (1985) operationalization of cohesion called the Group Environment Questionnaire (GEQ), which was designed for participants over the age of 18 years. However, some researchers (e.g., Schutz, Eom, Smoll, & Smith, 1994) have found a lack of factorial validity for the GEQ in a youth sample of high school athletes. In response to the Schutz et al. findings, the developers of the GEQ even noted that these results were not surprising given that the inventory was not originally designed for youth (Carron, Brawley, & Widmeyer, 2002). There are a few reasons why the GEQ is not appropriate for a youth sample. First, when the GEQ was developed it assumed that cohesion be examined in relation to both task- and social-oriented concerns about the group, and that individuals can generate perceptions from an individual-level and group-level perspective. These assumptions lead to the development of a conceptual model of cohesion being comprised on four separate but related dimensions: *Individual Attractions to the Group-Task* (ATG-T), *Individual Attractions to the Group-Social* (ATG-S), *Group Integration-Task* (GI-T), and *Group Integration-Social* (GI-S). *Individual Attractions to the Group-Task* is defined as the attractiveness of the group's task, productivity and goals for the individual personally. *Individual Attractions to the*

Group-Social is defined as each group member's feelings on their personal acceptance and social interaction with the group. *Group Integration-Task* refers as an individual's perceptions of the similarity, closeness, and bonding within the group as a whole pertaining to the group's task. *Group Integration-Social* is viewed as an individual's perceptions about the similarity, closeness, and bonding within the group as a social unit (Carron et al., 1998). However, Rubin, Bukowski, and Parker (2006) noted that children's perceptions of a particular phenomenon, such as cohesion, may not be as developed as their adult counterparts. Therefore, it is not reasonable to assume that the four dimensions of cohesion will be relevant to a youth sample. The second reason concerns the use of mixed stems (i.e., negative and positive) item wording of the GEQ. That is, the GEQ contains 18-items with 12 of them being negatively worded. Eys, Carron, Bray, and Brawley (2007) noted that age may influence an individual's ability to understand or interpret negatively worded items within the GEQ.

Based on these limitations embedded in the GEQ, Eys, Loughead, Bray, and Carron (2009) developed a measure of cohesion for youth samples called the Youth Sport Environment Questionnaire (YSEQ). The YSEQ was developed in four phases using a mixed method approach. Specifically, phase one included a series of focus group interviews with a variety of youth athletes to gain an understanding of how they perceived the concept of cohesion. The second phase included item generation for the new questionnaire based on how athletes perceived cohesion in the first phase. Phase three consisted of further item analyses using principal component analysis leading to a refined measure of cohesion for youth. The purpose of the fourth phase was to provide additional psychometric support for the newly developed inventory through the use of

confirmatory factor analysis. It should be noted that unlike the GEQ, there was no factorial support for a four factor model instead a two factor model emerged consisting simply of task and social cohesion. Given that this study will be assessing a youth sample, this newly developed instrument will be utilised as the measure for cohesion.

A final point should be noted concerning the operationalization of athlete satisfaction. The construct of athlete satisfaction has been conceptualized as a multidimensional construct (Chelladurai & Riemer, 1994; see Figure 4) and is measured by the Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998). Specifically, the ASQ measures 15 dimensions of athlete satisfaction. While all dimensions of athlete satisfaction are important in sport, they may not be all relevant to a youth sport sample. Using previous research examining athlete satisfaction in youth sport (Jeffery-Tosoni, Eys, & Shinke, 2009), the following eight dimensions of athlete satisfaction were examined: *individual performance*, *team performance*, *personal treatment*, *training and instruction*, *team task contribution*, *team social contribution*, *team integration*, and *personal dedication*.

Therefore, the purpose of the present study was to investigate whether cohesion served as a mediator between athlete leadership behaviours and relevant facets of athlete satisfaction in youth sport. As was pointed out above, research has shown that both leader behaviours (e.g., Eys et al., 2007; Price & Weiss, 2000; Riemer & Chelladurai, 1995; Riemer & Toon, 2001; Weiss & Friedrichs, 1986) and cohesion (e.g., Spink et al., 2005) are related to athlete satisfaction. Using this body of evidence as a basis, it was predicted that athlete leadership behaviours are associated to perceptions of cohesion and perceptions of cohesion, in turn, are related to an athlete's level of satisfaction in the

context of youth sport. That is, a mediational relationship was expected between athlete leader behaviours, cohesion, and athlete satisfaction.

A common theme across the three constructs of athlete leadership, cohesion, and athlete satisfaction is that they all contain task and social aspects. Thus, it could be hypothesized that that task cohesion would mediate the relationship between the task related behaviours of athlete leadership and the task related aspects of athlete satisfaction. Similarly, social cohesion would mediate the relationship between the social related behaviours of athlete leadership and the social related aspects of athlete satisfaction. This begs the question in terms of which specific athlete leadership behaviours and dimensions of athlete satisfaction are considered task and social oriented? In terms of athlete leader behaviours, Chelladurai (2007) has suggested that the leader behaviour dimension of *training and instruction* would be considered task oriented, while the dimension of *social support* would be considered socially oriented. The dimension of *positive feedback* could be considered either task or socially oriented as it alludes to rewarding behaviour pertaining to a successful task performance, as well as providing psychological benefits on a social level. Likewise, the leader dimensions of *autocratic behaviour* and *democratic behaviour* refer to the decision making styles of the leader and thus could also have either task and/or social implications. As for athlete satisfaction, Chelladurai and Riemer (1997) noted that these dimensions could be classified into task and social outcomes. Pertaining to the eight satisfaction dimensions assessed in the current study, six of them would be considered task related: satisfaction with *training and instruction*, *individual performance*, *team performance*, *team task contribution*, *team integration,* and *personal dedication*. The remaining two dimensions would be considered socially

oriented: satisfaction with *personal treatment*, and *team social contribution*. In addition to the task and socially related dimensions, Chelladurai and Riemer also suggested that the dimensions of athlete satisfaction could also be classified into individual and team level. As such, the team level satisfaction dimensions would be *team integration, team performance,* and *team task contribution*. While the individual level dimensions would be *personal dedication, personal treatment, individual performance, team social contribution,* and satisfaction with *training and instruction*. Therefore, athlete satisfaction was examined from both a task and social perspective, and an individual and team level perspective. Therefore, it was hypothesized that task cohesion would mediate the relationship between the task dimensions of athlete leadership (operationalized as *training and instruction, democratic behaviour, autocratic behaviour,* and *positive feedback*) and two levels of task athlete satisfaction: team level satisfaction (operationalized as *team integration, team task contribution,* and *team performance*) and individual level satisfaction (operationalized as *training and instruction, personal dedication,* and *individual performance*). Similarly, it was hypothesized that social cohesion would mediate the relationship between the social dimensions of athlete leadership (operationalized as *social support, democratic behaviour, autocratic behaviour,* and *positive feedback*) and the social dimensions of athlete satisfaction (operationalized as *personal treatment,* and *team social contribution*).

Method

Participants

The participants were 205 competitive youth athletes from 20 teams in the sports of soccer (n = 153) and basketball (n = 48). There were a total of 86 males (from 8 teams)

and 119 females (from 12 teams) with a mean age of 15.01 years (*SD* = 1.27). The athletes had been on their current team for 3.33 years (*SD* = 2.03) and were involved in their current sport on average for 8.44 years (*SD* = 2.98). With regards to leadership status, 19% (*n* = 39) of the athletes identified themselves as a formal athlete leader, 47% (*n* = 97) as an informal athlete leader, and 34% (*n* = 69) considered themselves as not occupying a leadership role within their team. In terms of starting status, the majority of athletes, 75% (*n* = 153) considered themselves as a starter, while 25% (*n* = 52) viewed themselves as a non-starter. Competitive youth athletes competed at regional (*n* = 108) and provincial (*n* = 97) levels. Competitive youth athletes were defined as those athletes participating on a team that is at a level higher than house league. House league is typically a recreational based sport environment where fun and participation are emphasized. In contrast, competitive level athletes refer to those that have gone through a selection process (e.g., tryouts) in order to represent that particular team.

Measures

Cohesion. Cohesion was measured using the Youth Sport Environment Questionnaire (YSEQ; Eys et al., 2009, see Appendix A). The YSEQ is a recently developed inventory to assess cohesion in youths between the ages of 13 to 17 years. The YSEQ is a 16-item inventory that assesses two dimensions of cohesion; task and social. Task cohesion refers to an individual's perception about the closeness, bonding, and similarity around the team's task, as well as the individual's feelings about his or her personal involvement with the group task and goals. This dimension contains 8-items and a sample item is "We all share the same commitment to our team's goals." Social cohesion reflects an individual's perception about the closeness, bonding, and similarity

around the team as a social unit, as well as the individual's feelings about his or her personal acceptance and social interaction with the team. This dimension contains 8-items and a sample item is "I spend time with my teammates." All items are scored on a 9-point Likert-type scale anchored at the extremes of 1 (*strongly disagree*) and 9 (*strongly agree*). Therefore, higher scores reflect stronger perceptions of cohesion. Initial research using the YSEQ has provided evidence that the inventory is valid and reliable. In particular, the YSEQ has demonstrated content validity, factorial validity, and adequate internal consistency for both *task* ($\alpha = .89$) and *social* ($\alpha = .94$) cohesion (Eys et al., 2009). Finally, the items of the YSEQ ranged in readability scores from 0.0-9.0 grade levels with an average score of 3.8 using the Flesch-Kincaid assessment of readability (Kincaid, Fishburne, Rogers, & Chissom, 1975).

Athlete leadership. Athlete leader behaviours were assessed using a modified version of the Leadership Scale for Sports (LSS; Chelladurai & Saleh, 1980, see Appendix B). The modified version has been used in previous athlete leadership research (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2009). The only modification from the original LSS concerned the stem which preceded the items. In the original version, the stem reads "My coach" whereas in the athlete leader version the stem reads "The formal and informal athlete leader(s) on my team". The LSS is a 40-item inventory that assesses five dimensions of athlete leader behaviours: *training and instruction*, *democratic behaviour*, *autocratic behaviour*, *social support*, and *positive feedback*. The *training and instruction* dimension consists of 13-items and refers to behaviours aimed at helping athletes improve their skill level and performance. A sample item from the *training and instruction* dimension is "Explains to each athlete the techniques and tactics

of the sport." *Democratic behaviour* consists of 8-items and refers to leadership behaviours that allows for participation in decision making. A sample item from the *democratic behaviour* dimension is "Lets the athletes share in decision making." *Autocratic behaviour* consists of 5-items and reflects leader behaviours that involve independence in decision making. A sample item from the *autocratic behaviour* dimension is "Does not explain their actions." The *social support* dimension contains 9-items and alludes to the leader's concern for the welfare of teammates, and developing a positive group atmosphere and warm interpersonal relationships with teammates. A sample item from the *social support* dimension is "Helps the athletes with their personal problems." The p*ositive feedback* dimension contains 5-items and reflects the leader behaviour recognizing and rewarding good performance. A sample item from the *positive feedback* dimension is "Gives credit where credit is due." Responses are provided on a 5-point Likert-type scale anchored at the extremes of 1 (*never*) to 5 (*always*). Therefore, higher scores reflect stronger perceptions of athlete leader behaviours. In addition, athletes evaluated both the formal and informal athlete leadership behaviours on their team for each item. Chelladurai and Carron (1981) have suggested that the LSS is applicable to youth sport. Readability statistics were calculated for each item of this inventory and ranged from 2.2 to 9.0 grade levels with an overall average Flesh-Kincaid 6.8 grade level (Kincaid et al., 1975).

To date, very little research has used the LSS (Chelladurai & Saleh, 1980) to assess athlete leadership behaviours in youth sport. Paradis and Loughead (2009) tested some of the psychometric properties of the LSS in a youth sport context. Using a sample of 150 competitive youth male and female athletes (13-17 year olds), a confirmatory

factor analysis was conducted on the LSS to test the factorial validity of the measure for assessing both formal and informal athlete leadership in youth sport. The fit indices used to test the models were the Comparative Fit Index (CFI), the Normative Fit Index (NFI), the Root Mean Square Error (RMSEA), and the Akaike Information Criteria (AIC). When values are of .90 or greater for the CFI and NFI values, then the model has satisfied these criteria and is of reasonable good fit (Bentler, 1990). When the values are of .10 or less for the RMSEA then the model has satisfied the criteria for this measure and is of reasonable good fit (Browne & Cudeck, 1993). Finally, when comparing the competing models, the model with the lowest AIC in comparison is said to indicate the model of best fit for the data (Akaike, 1987).

Chelladurai (2007) has suggested that three theoretical models are plausible when using the LSS to examine leadership in sport. In particular, there are two three-factor models and a five factor model. The first three-factor model consists of the first factor being *training and instruction* dimension on its own, the second factor being the combination of the *autocratic behaviour* and *democratic behaviour* dimensions, and the third factor being the combination of the *positive feedback* and *social support* dimensions. The second three-factor model consists of the combination of *training and instruction* and *positive feedback*, as the first factor, the combination of *autocratic behaviour* and *democratic behaviour*, as the second factor, and s*ocial support* on its own as the third factor. Finally, the five-factor model consists of each dimension on its own: *training and instruction, autocratic behaviour, democratic behaviour, positive feedback, and social support.*

As for formal athlete leadership for the LSS, the first three-factor model comprised of *training and instruction, democratic/autocratic behaviour* and *positive feedback/social support* yielded values of CFI = .96, NFI = .91, RMSEA = .072, AIC = 1487. The second three-factor model of *training and instruction/positive feedback, autocratic/democratic behaviour,* and *social support*, yielded scores of CFI = .96, NFI = .91, RMSEA = .077, AIC = 1560. Finally the five factor model of *training and instruction, autocratic behaviour, democratic behaviour, positive feedback* and *social support* yielded scores of CFI = .97, NFI = .92, RMSEA = .066, AIC = 1462. Thus, the five-factor model for the LSS was the model of best fit for formal athlete leadership.

As for informal athlete leadership for the LSS, the first three-factor model comprised of *training and instruction, democratic/autocratic behaviour* and *positive feedback/social support* yielded values of CFI = .96 NFI = .91, RMSEA = .074, AIC = 1525. The second three-factor model of *training and instruction/positive feedback, autocratic/democratic behaviour,* and *social support*, yielded scores of CFI = .95, NFI = .90, RMSEA = .080, AIC = 1629. Finally, the five-factor model of *training and instruction, autocratic behaviour, democratic behaviour, positive feedback* and *social support* yielded scores of CFI = .96, NFI = .91, RMSEA = .069, AIC = 1455. Therefore, the five-factor model for the LSS was the model of best fit for informal athlete leadership.

Based on the recommendations of Bentler (1990), all of the models tested were deemed to be of adequate fit. However, the best fit indices were for the five-factor model for both informal and formal athlete leadership. Paradis and Loughead (2009) also reported acceptable internal consistency scores (> .70, Nunnally & Berstein, 1994) for all

athlete leader dimensions: *training and instruction* (formal, α = .90; informal, α = .88) *autocratic behaviour* (formal, α = .72; informal, α = .76), *democratic behaviour* (formal, α = .85; informal, α = .84), *positive feedback* (formal, α = .83; informal, α = .81), and *social support* (formal, α = .86; informal, α = .84).

Athlete satisfaction. An athlete's level of satisfaction was measured using the Athlete Satisfaction Questionnaire (ASQ; Riemer & Chelladurai, 1998, see Appendix C). The ASQ is the most comprehensive measure of athlete satisfaction. The ASQ is a 56-item inventory that assesses 15 different dimensions of athlete satisfaction that relate to satisfaction concerning performance, leadership, the team, the organization, and the athlete. Specifically, these include satisfaction with *individual performance, team performance, ability utilization, strategy, personal treatment, training and instruction, team task contribution, team social contribution, team ethics, team integration, personal dedication, budget, medical personnel, academic support services,* and *external agents*.

Not surprisingly, not all of these dimensions are relevant to the youth sport context (e.g., satisfaction with medical personnel). As noted above the ASQ assesses satisfaction concerning leadership and was originally designed to evaluate satisfaction with coaching leadership. Since the focus of the present study deals with athlete leadership, some of the items referring to coaches have been modified to reflect satisfaction with athlete leaders. Consequently, an examination of the dimensions revealed that eight of them were relevant to youth sport containing 28-items: *individual performance, team performance, personal treatment, training and instruction, team task contribution, team social contribution, team integration,* and *personal dedication*. *Individual performance* is measured by 3-items and reflects an athlete's satisfaction with

his/her task performance (e.g., “I am satisfied with the improvement in my skill level”). *Team performance* is assessed by 3-items and refers to an athlete’s satisfaction with the team’s level of performance (e.g., “I am satisfied with the team’s win/loss record this season”). P*ersonal treatment* is evaluated by 5-items and reflects how satisfied athletes are with leadership behaviours that directly influence them (e.g., I am satisfied with the extent to which the athlete leaders are behind me”). T*raining and instruction* is measured by 3-items and refers to the satisfaction with the training and instruction provided by athlete leaders (e.g., “I am satisfied with the instruction I receive from my athlete leaders”). T*eam task contribution* is assessed using 3-items and is related to the satisfaction from the actions provided by the athlete leaders (e.g., “I am satisfied with the constructive feedback I receive from my athlete leaders”). T*eam social contribution* is evaluated by 3-items and measures the satisfaction with how athlete leaders contribute to the athlete as an individual (e.g., “I am satisfied with the degree to which my athlete leaders accept me on a social level”). T*eam integration* is evaluated by 4-items and refers to the athlete’s contribution towards the team’s task (e.g., “I am satisfied with how the team works to be the best”). Finally, *personal dedication* is evaluated by 4-items and refers to the athlete’s own personal contribution to the team (e.g., “I am satisfied with my dedication during practices”).

All of the responses from the ASQ are provided on a 7-point Likert-type scale anchored at the extremes by 1 (*not at all satisfied*) to 7 (*extremely satisfied*). Riemer and Chelladurai (1998) provided evidence of construct and predictive validity. In terms of internal consistency reliability, Jeffery (2008) reported acceptable internal consistency values in a youth sport sample: *individual performance* ($\alpha = .85$), *team performance* ($\alpha =$

.95), *personal treatment* (α = .96), *training and instruction* (α = .84), *team task contribution* (α = .83), *team social contribution* (α = .91), *team integration* (α = .83), and *personal dedication* (α = .79). Finally, readability statistics were assessed for the items and ranged from 0.0-8.4 grade level with an average of a Flesch-Kincaid 5.2 grade level (Kincaid et al., 1975).

Procedure

First, ethics approval was obtained from the University of Windsor‘s Research Ethics Board. Once ethics approval was granted, the investigator then began the recruitment process (see Appendix D for recruitment script) by contacting youth sport associations to request permission to contact their coaches (via email and telephone). Coaches were then contacted requesting permission to survey their athletes. If the coach agreed, letters of information were sent prior to data collection to the coach (see Appendix E), parents (see Appendix F), and athletes (see Appendix G) describing the study. Following this, the investigator and coach agreed upon a date and time that was convenient in order to collect data, which was typically before or after a practice session. Each athlete was then distributed a questionnaire package and given a brief explanation of the study prior to completing the questionnaire package. The investigator remained present to answer any questions. Completion of the questionnaires signified consent, and anonymity and confidentiality was maintained as the questionnaires were anonymous and returned in a separate envelope. The completion of the questionnaire package took approximately 20 minutes. After the questionnaire package was returned, participants were thanked for their time and given the opportunity to complete a ballot to be entered into a draw for a gift certificate at a local sporting goods store.

Results

Descriptive Statistics

Means, standard deviations, and internal consistency values were calculated for the five dimensions of athlete leader behaviours for both formal and informal leadership, the two dimensions of cohesion, and the eight dimensions of athlete satisfaction (see Table 1). As for formal athlete leadership, *positive feedback* was rated the highest on a 5-point scale (M = 3.94, SD = 0.88), followed by *democratic behaviour* (M = 3.60, SD = 0.68), followed by *training and instruction* (M = 3.46, SD = 0.66), then *social support* (M = 3.38, SD = 0.83), and finally a*utocratic behaviour* (M = 2.68, SD = 0.89). As for informal athlete leader behaviours, *positive feedback* was again rated the highest on a 5-point scale (M = 3.88, SD = 0.81), followed by *democratic behaviour* (M = 3.43, SD = 0.66), followed by *social support* (M = 3.36, SD = 0.75), then *training and instruction* (M = 3.12, SD = 0.64), and lastly *autocratic behaviour* (M = 2.56, SD = 0.77). As for cohesion, perceptions were relatively high on a 9-point scale for both *task* (M = 7.12, SD = 1.38) and *social* (M = 6.76, SD = 1.65). In terms of athlete satisfaction, perceptions of their overall athletic experiences were fairly high with participants satisfied with their athlete leaders and being most satisfied with the dimension of *personal dedication* rated on a 7-point scale (M = 5.89, SD = 0.92), *personal treatment* (M = 5.69, SD = 1.06), *individual performance* (M = 5.65, SD = 0.96), *team social contribution* (M = 5.64, SD = 1.10), *team integration* (M = 5.63, SD = 1.00), *team performance* (M = 5.55, SD = 1.06), *team task contribution* (M = 5.50, SD = 1.17), and satisfaction with *training and instruction* (M = 5.45, SD = 1.24).

Internal consistencies were also calculated for each dimension of formal and informal athlete leader behaviours, cohesion, and athlete satisfaction. Nunnally and Bernstein (1994) recommended internal consistencies greater than .70 to demonstrate adequate reliability. All of the dimensions were over the .70 threshold except for the informal athlete leadership dimension of a*utocratic behaviour* ($\alpha = .67$) and thus was omitted from further analysis.

Bivariate correlations are presented in Table 2. Almost all of the dimensions were significantly positively related to one another ($.14 \geq r \geq 83$) with the exception of formal and informal *autocratic behaviour*. On the one hand formal *autocratic behaviour* was only positively related to informal *autocratic behaviour* ($r = .79$). On the other hand, informal *autocratic behaviour* was negatively related to only formal ($r = -.20$) and informal ($r = -.15$) *positive feedback.*

Testing for Mediation

Mediation was tested using structural equation modelling (*SEM*) using the maximum likelihood method of parameter estimation in AMOS 18.0 (Arbuckle, 2009). Holmbeck (1997) outlined the steps in testing for mediation when using *SEM*. The first step is to test the direct effects model (i.e., athlete leadership→ athlete satisfaction); that is whether the independent variable (i.e., athlete leadership) predicts the outcome variable (i.e., athlete satisfaction). Assuming an adequate fit, the second step is to test the mediator model (i.e., athlete leadership→ cohesion → athlete satisfaction); that is whether the mediator variable (i.e., cohesion) is related to the predictor variable (i.e., athlete leadership) and the outcome variable (i.e., athlete satisfaction). Assuming an adequate fit, the third step is to test a combined effects model that contains both the direct

effects and mediated effects. The final step is to conduct a χ^2 difference test to determine whether the model in step 2 fit significantly better than the model in step 3. If the step 2 model is of the best fit than full mediation is supported. However, if the step 3 model is of best fit than this suggests partial mediation. It is important to note that the direct path coefficients in step 3 should be reduced to non-significance compared to those in the step 1 model to support full mediation, or significantly reduced for partial mediation. When assessing model fit, the following fit indices were examined: the Comparative Fit Index (CFI; Bentler, 1990), the Normative Fit Index (NFI; Bentler & Bonett; 1980), the Tucker-Lewis Index (TLI; Tucker & Lewis, 1973), the Root-Mean-Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), and the Standardized Root-Mean-Square Residual (SRMR; Bentler, 1995).

When assessing model fit, cut off values for the CFI, NFI, and TLI are said to be adequate above .90 (Bentler, 1990). Cut off values for the RMSEA and the SRMR are said to be adequate if the values are below .10 (Browne & Cudeck, 1993).

As stated in the introduction, it was hypothesized that task cohesion would mediate the relationship between the task dimensions of athlete leadership behaviours and the task dimensions of athlete satisfaction. While, social cohesion was predicted to mediate the relationship between the social dimensions of athlete leadership behaviours and the social dimensions of athlete satisfaction. Mediation results for formal athlete leadership are found in Table 3, while mediation results for informal athlete leadership are found in Table 4.

Formal Task Athlete Leadership, Task Cohesion, and Team Task Athlete Satisfaction

Measurement model. Prior to evaluating the structural models, a confirmatory factor analysis (CFA) was first conducted examining the fit of the subscales of the YSEQ (*task cohesion*), LSS (*training and instruction, democratic behaviour, autocratic behaviour, positive feedback*), and ASQ (*team integration, team task contribution, team performance*) to their hypothesized constructs. All latent variables were allowed to correlate with one another and their variances were fixed at a value of one. The CFA indicated a less than desirable fit for the model, CFI = .92, NFI = .87, TLI = .90, RMSEA = .09, and SRMR = .12. All factor loadings were significant except for the path from formal task athlete leadership and *autocratic behaviour*. Due to its non-significance within the model and non-significant bivariate correlations with other variables within the study (see Table 2), the formal athlete leadership behaviour of *autocratic behaviour* was removed from the model and the measurement model was reanalyzed. The revised measurement model displayed a better fit that was deemed acceptable, CFI = .94, NFI = .90, TLI = .92, RMSEA = .08, and SRMR = .11. All of the factor loadings were significant indicating that each of the indicators was an important contributor to the latent variable. Given the positive improvement of the model, this revised measurement model was used in the testing of mediation.

Structural models. The direct effects model showed an acceptable fit, CFI = .98, NFI = .96, TLI = .95, RMSEA = .08, SRMR = .04, and predicted 27% of the variance in team task athlete satisfaction. The path from formal task athlete leadership and team task athlete satisfaction was significant with a standardized parameter estimate (SPE) of .52.

The mediator model provided an acceptable fit, CFI = .98, NFI = .96, TLI = .95, RMSEA = .08, and SRMR = .05. This model predicted 31% of the variance in task cohesion and 66% of the variance in team task athlete satisfaction. The paths from formal task athlete leadership to task cohesion (SPE = .55), and task cohesion to team task athlete satisfaction (SPE = .81) were significant, indicating that task cohesion was a possible mediator.

The combined effects model also showed an acceptable fit, CFI = .98, NFI = .97, TLI = .97, RMSEA = .07, and SRMR = .03. This model predicted 31% of the variance in task cohesion and 68% of the variance in team task athlete satisfaction. The path from formal task athlete leadership to task cohesion was significant (SPE = .56) and the path from task cohesion to team task athlete satisfaction was significant (SPE = .74). Finally, the path from formal task athlete leadership to team task athlete satisfaction was significant but reduced (SPE = .14) suggesting that partial mediation may be present. In order to determine whether the combined effects or the mediator model fit the best, a χ^2 difference test was performed by subtracting the χ^2 value of the combined effects model from the χ^2 value of the mediator model. The results showed that the combined effects model fit the data better than the mediator model, $\Delta \chi^2$ (-1) = -4.22, suggesting that task cohesion partially mediated the relationship between formal athlete leadership and team task athlete satisfaction.

Formal Task Athlete Leadership, Task Cohesion, and Individual Task Athlete Satisfaction

Measurement model. A measurement model tested the subscales of the YSEQ (*task cohesion*), LSS (*training and instruction, democratic behaviour, autocratic behaviour, positive feedback*), and ASQ (*training and instruction, personal dedication,*

individual performance) with their hypothesized constructs prior to running any structural models. Once again the first measurement model yielded less than desirable fit indices, CFI = .88, NFI = .84, TLI = .86, RMSEA = .10, and SRMR = 12. All factor loadings were significant except for the path from formal task athlete leadership and *autocratic behaviour*. As a result, the formal athlete leader behaviour of *autocratic behaviour* was removed. The revised measurement model yielded improved fit indices from the original model, CFI = .90, NFI = .86, TLI = .88, RMSEA = .09, and SRMR = 12. Given the improved fit, the revised model was accepted as the best measurement model.

Structural models. The direct effects model showed a mediocre fit, CFI = .92, NFI = .91, TLI = .85, RMSEA = .14, SRMR = .06, and predicted 23% of the variance in individual task athlete satisfaction. The path from formal task athlete leadership and individual task athlete satisfaction was significant (SPE = .48).

The mediator model provided a better fit, CFI = .94, NFI = .92, TLI = .90, RMSEA = .11, SRMR = .05, and predicted 31% if the variance in task cohesion and 61% of the variance in individual task athlete satisfaction. The path from formal task athlete leadership to task cohesion was significant (SPE = .55) as well as the path from task cohesion to individual task athlete satisfaction (SPE = .78) indicating that task cohesion was a possible mediator.

The combined effects model also showed mediocre fit, CFI = .94, NFI = .92, TLI = .89, RMSEA = .12, SRMR = .06, and predicted 31% of the variance in task cohesion and 63% of the variance in individual task athlete satisfaction. The path from formal task athlete leadership to task cohesion was significant (SPE = .56), the path from task cohesion to individual task athlete satisfaction was significant (SPE = .73). However the

path from formal task athlete leadership to individual task athlete satisfaction was reduced to non significance (SPE = .11) suggesting that full mediation may be present. The results of the χ^2 difference test yielded a non-significant difference of $\Delta \chi^2$ (-1) = -1.72, suggesting that the full mediation model was the best fit and that task cohesion fully mediated the relationship between formal task athlete leadership and individual task athlete satisfaction.

Formal Social Athlete Leadership, Social Cohesion, and Social Athlete Satisfaction

Measurement model. A measurement model for social athlete leadership, social cohesion, and social athlete satisfaction was tested with their appropriate subscales from the YSEQ (*social cohesion*), LSS (*social support, democratic behaviour, autocratic behaviour, positive feedback*), and ASQ (*personal treatment, team social contribution*) prior to testing the structural models. The measurement model yielded less than desirable fit indices, CFI = .93, NFI = .89, TLI = .92, RMSEA = .09, and SRMR = 13. All factor loadings were significant with the exception of formal social athlete leadership and *autocratic behaviour*. Consequently, the formal athlete leadership dimension of *autocratic behaviour* was eliminated from the model. The revised measurement model demonstrated improved fit, CFI = .94, NFI = .90, TLI = .92, RMSEA = .08, and SRMR = 12. Given the positive improvement of fit in this model, the revised model was used in the testing of the structural models.

Structural models. The direct effects model showed an acceptable fit, CFI = .98, NFI = .97, TLI = .95, RMSEA = .09, SRMR = .02, and predicted 37% of the variance in social athlete satisfaction. The path from social athlete leadership to social athlete satisfaction was significant (SPE = .61).

The mediator model demonstrated mediocre fit, CFI = .95, NFI = .93, TLI = .90, RMSEA = .13, SRMR = .09, and predicted 20% of the variance in social cohesion and 52% of the variance in social athlete satisfaction. The paths were significant from formal social athlete leadership to social cohesion (SPE = .44) and social cohesion to social athlete satisfaction (SPE = .72).

The combined effects model demonstrated acceptable fit and the best fit to the data, CFI = .98, NFI = .97, TLI = .97, RMSEA = .07, SRMR = .02, and predicted 20% of the variance in social cohesion and 62% of the variance in social athlete satisfaction. The paths from formal social athlete leadership to social cohesion (SPE = .44), and social cohesion to social athlete satisfaction (SPE = .59) were significant. The path from formal social athlete leadership to social athlete satisfaction was significant but reduced (SPE = .32) thus suggesting that partial mediation would be present. Results of the χ^2 difference test showed a significant difference of $\Delta\ \chi^2$ (-1) = -20.03, confirming that the combined effects model was the best fit for the data indicating that social cohesion partially mediated the relationship between formal social athlete leadership and social athlete satisfaction.

Informal Task Athlete Leadership, Task Cohesion, and Team Task Athlete Satisfaction

Measurement model. A measurement model was tested for the appropriate constructs of the YSEQ (*task cohesion*), LSS (*training and instruction, democratic behaviour, positive feedback*), and ASQ (*team integration, team task contribution, team performance*). The measurement model demonstrated acceptable fit indices, CFI = .93, NFI = .89, TLI = .92, RMSEA = .08, SRMR = .11. All factor loadings were significant suggesting that the subscales of the latent variables were important components in the

model. Given that the measurement model showed an adequate fit, the structural models were tested without any additional modifications.

Structural models. The direct effects model showed mediocre fit, CFI = .94, NFI = .93, TLI = .89, RMSEA = .12, SRMR = .05, and predicted 28% of the variance in team task athlete satisfaction. The path form informal task athlete leadership and team task athlete satisfaction was significant (SPE = .53).

The mediator model also demonstrated mediocre fit, CFI = .95, NFI = .93, TLI = .92, RMSEA = .11, SRMR = .07, and predicted 28% of the variance in task cohesion and 66% of the variance in team task athlete satisfaction. The paths from informal athlete leadership to task cohesion (SPE = .53) and from task cohesion to team task athlete satisfaction (SPE = .81) were significant.

The combined effects model demonstrated acceptable fit, CFI = .96, NFI = .94, TLI = .93, RMSEA = .10, SRMR = .04, and predicted 30% of the variance in task cohesion and 69% of the variance in team task athlete satisfaction. The paths were significant from informal task athlete leadership to task cohesion (SPE = .55) and from task cohesion to team task athlete satisfaction (SPE = .73). The path from informal task athlete leadership to team task athlete satisfaction was significant but were reduced (SPE = .17), suggesting that partial mediation may be present. The χ^2 difference test yielded a significant difference of $\Delta \chi^2$ (-1) = -5.20, indicating that the combined effects model was the best fit to the data, and that task cohesion partially mediated the relationship between informal task athlete leadership and team task athlete satisfaction.

Informal Task Athlete Leadership, Task Cohesion, and Individual Task Athlete Satisfaction

Measurement model. The measurement model was tested with all corresponding constructs of the YSEQ (*task cohesion*), LSS (*training and instruction, democratic behaviour, positive feedback*), and ASQ (*training and instruction, personal dedication, individual performance*). This model yielded adequate fit indices, CFI = .91, NFI = .86, TLI = .88, RMSEA = .09, SRMR = .13. All factor loadings were significant suggesting the indicators were important components of the latent variables in the model. Given the acceptable fit and significant factor loadings, this measurement model was deemed acceptable for further analysis.

Structural models. The direct effects model showed mediocre fit, CFI = .92, NFI = .91, TLI = .86, RMSEA = .13, SRMR = .06, and predicted 22% of the variance in individual task athlete satisfaction. The path from informal task athlete leadership to individual task athlete satisfaction was significant (SPE = .47).

The mediation model provided a better fit, CFI = .93, NFI = .91, TLI = .88, RMSEA = .11, SRMR = .06, and predicted 28% of the variance in task cohesion and 61% of the variance in individual task athlete satisfaction. The paths were significant from informal task athlete leadership to task cohesion (SPE = .53) and from task cohesion to individual task athlete satisfaction (SPE = .78) indicating that task cohesion was a possible mediator.

The combined effects model demonstrated mediocre fit, CFI = .93, NFI = .91, TLI = .88, RMSEA = .12, SRMR = .06 and predicted 29% of the variance in task cohesion and 62% of the variance in individual task athlete satisfaction. The path from

informal task athlete leadership to task cohesion was significant (SPE = .54) as well as the path from task cohesion to individual task athlete satisfaction was significant (SPE = .72). However the path from informal task athlete leadership to individual task athlete satisfaction was reduced to non-significance (SPE = .12) suggesting that full mediation may be present. Results of the χ^2 difference test confirmed this and yielded a non-significant difference of $\Delta \chi^2$ (-1) = -1.96 suggesting that task cohesion fully mediated the relationship between informal task athlete leadership and individual task athlete satisfaction.

Informal Social Athlete Leadership, Social Cohesion, and Social Athlete Satisfaction

Measurement model. A CFA was once again conducted to test the measurement model of informal social athlete leadership, social cohesion and social athlete satisfaction with the appropriate subscales of the YSEQ (s*ocial cohesion*), LSS (*social support, democratic behaviour, positive feedback*), and ASQ (*personal treatment, team social contribution*). The measurement model yielded acceptable fit indices, CFI = .93, NFI = .90, TLI = .91, RMSEA = .09, and SRMR = .13. All factor loadings were significant suggesting that the subscales were key components of the latent variables in the model. Given the acceptable fit indices and the significant factor loadings, the measurement model was deemed acceptable for further analysis of the structural models.

Structural models. The direct effects model demonstrated acceptable fit, CFI = .99, NFI = .98, TLI = .97, RMSEA = .07, SRMR = .02 and predicted 40% of the variance in social athlete satisfaction. The path from informal social athlete leadership and social athlete satisfaction was significant (SPE = .64).

The mediation model also demonstrated adequate fit, CFI = .96, NFI = .94, TLI = .92, RMSEA = .10, SRMR = .07, and predicted 28% of the variance in social cohesion, and 52% of the variance in social athlete satisfaction. The paths were significant from informal social athlete leadership to social cohesion (SPE = .53), and from social cohesion to social athlete satisfaction (SPE = .72).

The combined effects model demonstrated the best fit, CFI = .99, NFI = .98, TLI = .98, RMSEA = .05, SRMR = .02, and predicted 28% of the variance in social cohesion, and 60% of the variance in social athlete satisfaction. The path from informal social athlete leadership to social cohesion was significant (SPE = .53) and the path from social cohesion to social athlete satisfaction was significant (SPE = .57). The path from informal social athlete leadership to social athlete satisfaction was significant but reduced (SPE = .31), suggesting that partial mediation may be present. The χ^2 difference test yielded a significant difference of $\Delta \chi^2$ (-1) = -15.60, suggesting that the combined effects model was the best fit for the data whereby social cohesion partially mediated the relationship between informal social athlete leadership and social athlete satisfaction.

To recap, task cohesion served as a partial mediator in the relationship between formal and informal task athlete leadership and team task athlete satisfaction, while task cohesion served as a full mediator between formal and informal task athlete leadership and individual task athlete satisfaction. Social cohesion served as a partial mediator between formal and informal social athlete leadership and social athlete satisfaction.

Discussion

The general purpose of this study was to determine whether cohesion served as a mediator between athlete leadership behaviours and relevant facets of athlete satisfaction

in a competitive youth sport setting. Specifically, two hypotheses were advanced for this study. First, it was hypothesized that task cohesion would mediate the relationship between task athlete leadership behaviours and task facets of athlete satisfaction. Second, it was hypothesized that social cohesion would mediate the relationship between social athlete leadership behaviours and social facets of athlete satisfaction. In order to examine these hypotheses, a series of six structural equation model sequences were tested. In general, the results supported the mediational hypothesis and showed that both task and social cohesion served as a mediator between athlete leadership and athlete satisfaction.

It has been suggested that one of the benefits of mediational research is that it helps to test theoretical models (Frazier et al., 2004). The results of this study add further support that Carron's (1982) model is mediational in nature. In addition, the results from this study also expand Carron's (1982) theoretical model in two ways. First in his original conceptualization, Carron highlighted that leader behaviour, leadership style, the coach-athlete relationship, and coach-team relationship would be related to cohesion. All of these were in reference to coaching. The present study offers some empirical evidence that athlete leadership is another source of leadership that can be added to the model. Second, Carron's model implies that cohesion serves to fully mediate the relationship between the antecedents and outcomes specified in the model. That is, the antecedents must first pass through cohesion before they can influence the outcomes. However, it should be noted that it is common in the social sciences to yield research findings that indicate the presence of partial mediation as opposed to full mediation (Baron & Kenny, 1986). The results of the present study support this proposition with four of the six mediational relationships indicating that cohesion partially mediated the relationship. As

such, group dynamic theoreticians may consider modifying Carron's model to determine whether a direct link should be established between the antecedents and outcomes. It appears that no other published work (e.g., Loughead & Carron, 2004; Loughead et al., 2001; Loughead et al., 2008; Spink, 1998) has compared the direct effects, mediation effects, and combined effects models; hence these findings are unique and provide new directions for future research.

The results of this study are similar to what has been found in previous research in that athlete leadership is related to both cohesion (e.g., Hardy et al., 2008; Vincer & Loughead, 2009), and athlete satisfaction (e.g., Eys et al., 2007), and that cohesion is related to athlete satisfaction (e.g., Spink et al., 2005). In terms of the mediational nature of cohesion, the results are supported through previous literature in both sport (e.g., Spink, 1998) and exercise settings (e.g., Loughead & Carron, 2004; Loughead et al., 2001; Loughead et al., 2008). However, the results of this study also help to improve on some of the limitations in previous cohesion mediation research. First, the results of this study expand the knowledge base by examining cohesion as a mediator in youth sport. These findings are important given that satisfaction in the youth sport context has been shown to have implications on adherence in sport and on the development and socialization of youth (Fraser-Thomas et al., 2008). Second, it expands on previous cohesion mediation research in sport by examining multiple leader behaviours and both task and social cohesion. Previous research in sport (e.g., Spink, 1998) focused only on one leader behaviour (i.e., *training and instruction*) and on one dimension of cohesion (i.e., social cohesion).

The results of the present study also have important practical implications. One of the benefits of mediational research is to identify variables to target for intervention (Baron & Kenny, 1986). The findings that cohesion was both a partial and full mediator suggest both the mediator of cohesion and the antecedent of athlete leadership should be targeted for intervention to help athletes be more satisfied with their athletic experience. In particular, the results would suggest that it is important to target task cohesion through team building (e.g., teamwork activities, team goal setting) and to focus on leadership development by encouraging the development of effective task athlete leaders (i.e., fostering democratic behaviour and shared decision making, encouraging positive feedback amongst athletes and providing training and instruction to one another). One way of improving task cohesion may be for the coach to establish a recognized group of athlete leaders elected to act as a liaison between the coach and teammates. Another useful intervention to improve task cohesion is to implement team goal setting. Previous research in youth sport has found team goal setting to be an effective method to maintain high levels of group cohesiveness over the course of the season (Senécal et al., 2008). In terms of fostering task athlete leadership, one method could be the use of an athlete leadership workshop. Previous leadership (coaching) workshops have used two techniques in developing more effective leader behaviours: self-monitoring and behavioural feedback (Smith & Smoll, 1997). Self-monitoring refers to the observing and recording of one's own behaviour. Consequently, self-monitoring may increase the awareness of behavioural patterns among athlete leaders. For example, during one practice an athlete may want to consciously monitor how often they provide training and instruction to their teammates. Another practice they may want to focus on positive

feedback and another practice on democratic behaviour and so on. At the end of these practices the athletes will then record how often they displayed these behaviours and determine with the coach if this is sufficient and helpful for team functioning. The second technique suggested by Smith and Smoll is behavioural feedback. Here, the athlete leaders can obtain feedback from their coach and from other athlete leaders at the end of each practice and gain feedback on the behaviours monitored. This technique promotes interaction and communication within the team to improve overall team functioning.

Second, the results highlight the importance of targeting social cohesion through team building (e.g., team social events, team dinners) and focus on developing effective social athlete leaders (e.g., encouraging athletes to provide social support to teammates and create a positive team environment, providing encouragement and positive feedback, and displaying democratic behaviour in their interactions with teammates). One method to improve the social atmosphere of a team is for coaches to focus on fostering good communication skills among leaders and teammates, as well as creating a positive friendly environment, especially in a youth setting. In addition, similar to developing task leadership behaviours, the techniques of self-monitoring and behavioural feedback can be used in the development of social athlete leadership behaviours. For example, athletes and coaches could monitor the amount of social support that is provided by athlete leaders. Coaches, athlete leaders, and teammates can determine what kind of social support is appropriate and effective for their own respective teams (i.e., males and females at different age levels may seek out different types of social support). One method to improve social cohesion is to target the team's distinctiveness with a unique team uniform that makes them identifiable in the community as a member of that team.

Another method of intervening is to foster the team's togetherness by increasing time spent together as a team. This could be done by travelling to competitions together, staying in the same hotels, and maintaining close proximity to one another. When a team feels a sense of distinctiveness and group identity along with a feeling of togetherness, and closeness, cohesiveness is enhanced (Prapavessis, Carron, & Spink, 1996).

One point worth discussing surrounds the athlete leader behaviour of *autocratic behaviour* from both formal and informal athlete leaders. On the one hand, the internal consistency value for the informal athlete leader behaviour of *autocratic behaviour* was below the .70 threshold (Nunnally & Bernstein, 1994) and consequently this subscale was not used in the main analyses (i.e., testing for mediation). On the other hand, the formal athlete leader behaviour of *autocratic behaviour* did have an acceptable internal consistency value but the factor loading in the measurement models was not statistically significant, nor did it yield any significant relationships with any other constructs in the models, and thus was not included in the structural models. In addition, the results from the mean scores for *autocratic behaviour* for both formal and informal athlete leaders was ranked the lowest by the participants indicating that athlete leaders use this type of leadership behaviour the least. This finding is consistent with previous athlete leadership research examining varsity athletes (e.g., Loughead & Hardy, 2005; Vincer & Loughead, 2009) and youth sport athletes (Paradis & Loughead, 2009). In addition, in a study examining athlete leadership effectiveness, both the formal and informal athlete leader behaviour of *autocratic behaviour* did not predict athlete leader effectiveness (Paradis & Loughead, 2010). Finally, given that the LSS was originally designed to assess coaching leadership behaviour (Chelladurai & Saleh, 1980), it may be that this behaviour is not

relevant in the context of athlete leadership. Consequently, further research on this is warranted to determine whether *autocratic behaviour* is relevant in the measurement of athlete leadership and in the context of youth sport.

While the present study has contributed to the literature on athlete leadership, cohesion, and athlete satisfaction, it's not without limitations and thus has raised possibilities for future research. One limitation of the current study pertains to cross-sectional designs. The cross-sectional design enables the collection of data on more than one case and at a single moment in time on two or more variables. However, this type of design makes it difficult to establish causality because the independent and dependent variables are measured simultaneously, thus making temporal order harder to specify. One way to address this issue is by the use of a longitudinal design to determine whether athlete leadership and athlete satisfaction is a cause of cohesion or is a result of being on a cohesive team.

A second limitation of the current study is that the data were collected using self-report inventories. As a result, response bias may be an issue with this method in terms of social desirability among participants. However to minimize this, anonymity and confidentiality were assured among participants. As well, the researcher openly and honestly communicated the purpose of the study. These three methods have been suggested as a way to reduce social desirability (Cozby, 1997).

A third limitation of the current study is that it only assessed two competitive youth sporting contexts of soccer and basketball and thus may lack some generalizability across other sports and competition levels. Therefore, future research should aim to sample a wide variety of sports and competition levels.

One final limitation pertains to the assessment of athlete leadership using the LSS. This inventory was originally developed to assess coaching leadership (Chelladurai & Saleh, 1980) and was recently modified to assess athlete leadership (e.g., Loughead & Hardy, 2005). While the LSS is a valid and reliable measurement of leadership in sport, it may not encompass all leader behaviours in sport. In fact, Chelladurai (2007) has suggested that a more comprehensive measurement tool may be necessary for the assessment of leadership in sport with the addition of transformational leadership. In general, transformational leadership deals with: a) inciting higher order needs of members, b) motivating them to perform, c) expressing confidence in team members and d) empowering them (Chelladurai, 2007). Previous research (Paradis & Loughead, 2010) found evidence that athlete leaders use transformational leadership behaviours. Thus, future research should examine whether transformational leadership behaviours are present amongst athlete leaders at the youth sport level.

In summary, the results of the present study showed that Carron's (1982) model is mediational in nature. Consequently, the results of this study have made three contributions to the cohesion mediation literature. First, the findings showed that cohesion serves as a mediator in youth sport. Second, evidence was found that both task and social cohesion to serve as mediator in sport. Third, the results showed that cohesion serves as both a partial and full mediator. Based on these findings, research should continue to investigate partial and full mediation with other antecedents and outcomes contained in Carron's model. Further examining the mediational nature of cohesion will help determine which variables to target for intervention.

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Variable	*Mean*	*SD*	*α*
1. Training and Instruction-Formal[a]	3.46	0.66	.85

Tables

Table 1

Descriptive Statistics fo

2. Democratic Behaviour-Formal[a]	3.60	0.68	.78
3. Autocratic Behaviour-Formal[a]	2.68	0.89	.72
4. Social Support-Formal[a]	3.38	0.83	.84
5. Positive Feedback-Formal[a]	3.94	0.88	.84
6. Training and Instruction-Informal[a]	3.12	0.64	.84
7. Democratic Behaviour-Informal[a]	3.43	0.66	.75
8. Autocratic Behaviour-Informal[a]	2.56	0.77	.67
9. Social Support-Informal[a]	3.36	0.75	.80
10. Positive Feedback-Informal[a]	3.88	0.81	.81
11. Task Cohesion[b]	7.12	1.38	.90
12. Social Cohesion[b]	6.76	1.65	.92
13. Team Integration[c]	5.63	1.00	.80
14. Personal Dedication[c]	5.89	0.92	.78
15. Personal Treatment[c]	5.69	1.06	.84
16. Team Task Contribution[c]	5.50	1.17	.76
17. Team Social Contribution[c]	5.64	1.10	.78
18. Team Performance[c]	5.55	1.06	.71
19. Individual Performance[c]	5.65	0.96	.70
20. Training & Instruction[c]	5.45	1.24	.80

Note. [a]Scores for the athlete leadership variables can range from 1-5.
[b]Scores for the cohesion dimensions can range from 1-9.
[c]Scores for athlete satisfaction can range from 1-7.

Table 2

Bivariate Correlations Between Athlete Leadership, Cohesion, and Athlete Satisfaction

Variable	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
1.T&I-F	.62**	.47**	.33**	.27**	.18*	.39**	.24**	.32**	.19**	.35**	30**	.33*	.27**	.41**	.40**	.35**	.24**	.25**	.42**
2.T&I-I	-	.26**	.47**	.29**	.36**	.18*	.28**	.11	.17*	.31**	26**	.26**	.20**	.32**	.31**	.23**	.28**	.17*	.30**
3.DB-F		-	.64**	.07	.02	.55**	.38**	.54**	.37**	.42**	.30**	.35**	.23**	.43**	.42**	.34**	.27**	.17*	.41**
4.DB-I			-	.04	.11	.39**	.45**	.40**	.44**	.38**	.33**	.31**	.27**	.40**	.38**	.30**	.30**	.20**	.32**
5.AB-F				-	.79**	-.01	-.07	-.09	-.15	-.06	-.04	-.02	-.04	-.08	-.03	-.03	-.06	-.02	-.02
6.AB-I					-	-.06	.03	-.20*	-.15*	.03	-.03	.03	-.01	-.01	.04	-.01	.10	.03	.05
7.SS-F						-	.76**	.66**	.49**	.32**	.37**	.24**	.16*	.34**	.36**	.41**	.14*	.18**	.33**
8.SS-I							-	.52**	.62**	.30**	.42**	.24**	.25**	.36**	.33**	.40**	.21**	.25**	.31**
9.PF-F								-	.67**	.39**	.34**	.32**	.30**	.40**	.36**	.37**	.23**	.21**	.33**
10. PF-I									-	.39**	.40**	.40**	.40**	.39**	.36**	.41**	.32**	.32**	.30**

Variable	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.
11.Task										-	.61**	.75**	.56**	.66**	.72**	.56**	.54**	.59**	.68**
12.Soc											-	.46**	.42**	.52**	.50**	.65**	.43**	.45**	.45**
13.TI												-	.66**	.75**	.77**	.61**	.67**	.64**	.77**
14.PD													-	.57**	.55**	.55**	.57**	.67**	.55**
15.PT														-	.83**	.65**	.56**	.59**	.79**
16.TTC															-	.64**	.52**	.63**	.82**
17.TSC																-	.56**	.57**	.60**
18.TP																	-	.55**	.51**
19.IP																		-	.60**
20.T&I																			-

Note. * $p < .05$; ** $p < .01$; T&I-F = Training and Instruction-Formal; T&I-I = Training and Instruction-Informal; DB-F = Democratic Behaviour-Formal; DB-I = Democratic Behaviour-Informal; AB-F = Autocratic Behaviour-Formal; AB-I = Autocratic Behaviour-Informal; SS-F = Social Support-Formal; SS-I = Social Support-Informal; PF-F = Positive Feedback-Formal; PF-I = Positive Feedback Informal; Task = Task Cohesion; Soc = Social Cohesion; TI = Team Integration; PD = Personal Dedication; PT = Personal Treatment; TTC = Team Task Contribution; TSC = Team Social Contribution; TP = Team Performance; IP = Individual Performance; T&I = Satisfaction with Training and Instruction.

Table 3

Mediation Models for Formal Athlete Leadership

Model	CFI	NFI	TLI	RMSEA	SRMR	χ^2 (df)
Formal Task Athlete Leadership, Task Cohesion, and Task Team Athlete Satisfaction						
1	.98	.96	.95	.08	.04	19.60 (8)
2	.98	.96	.95	.08	.05	28.66 (13)
3*	.98	.97	.97	.07	.03	24.44 (12)
Formal Task Athlete Leadership, Task Cohesion, and Individual Task Athlete Satisfaction						
1	.92	.91	.85	.14	.06	39.32 (8)
2*	.94	.92	.90	.11	.05	47.99 (13)
3	.94	.92	.89	.12	.06	46.27 (12)
Formal Social Athlete Leadership, Social Cohesion, and Social Athlete Satisfaction						
1	.98	.97	.95	.09	.02	10.88 (4)
2	.95	.93	.90	.13	.09	34.66 (8)
3*	.98	.97	.97	.07	.02	14.63 (7)

Note. * Indicates best fitting model for the data
Model 1 indicates direct effects model
Model 2 indicates mediation model (full mediation)
Model 3 indicates combined effects model (partial mediation)

Table 4

Mediation Models for Informal Athlete Leadership

Model	CFI	NFI	TLI	RMSEA	SRMR	χ^2 (df)
Informal Task Athlete Leadership, Task Cohesion, and Task Team Athlete Satisfaction						
1	.94	.93	.89	.12	.05	33.84 (8)
2	.95	.93	.92	.11	.07	44.48 (13)
3*	.96	.94	.93	.10	.04	39.28 (12)
Informal Task Athlete Leadership, Task Cohesion, and Individual Task Athlete Satisfaction						
1	.92	.91	.86	.13	.06	35.84 (8)
2*	.93	.91	.88	.11	.06	50.72 (13)
3	.93	.91	.88	.12	.06	48.76 (12)
Informal Social Athlete Leadership, Social Cohesion, and Social Athlete Satisfaction						
1	.99	.98	.97	.07	.02	7.53 (4)
2	.96	.94	.92	.10	.07	26.81 (8)
3*	.99	.98	.98	.05	.02	11.21 (7)

Note. * Indicates best fitting model for the data
Model 1 indicates direct effects model
Model 2 indicates mediation model (full mediation)
Model 3 indicates combined effects model (partial mediation)

Figure Captions

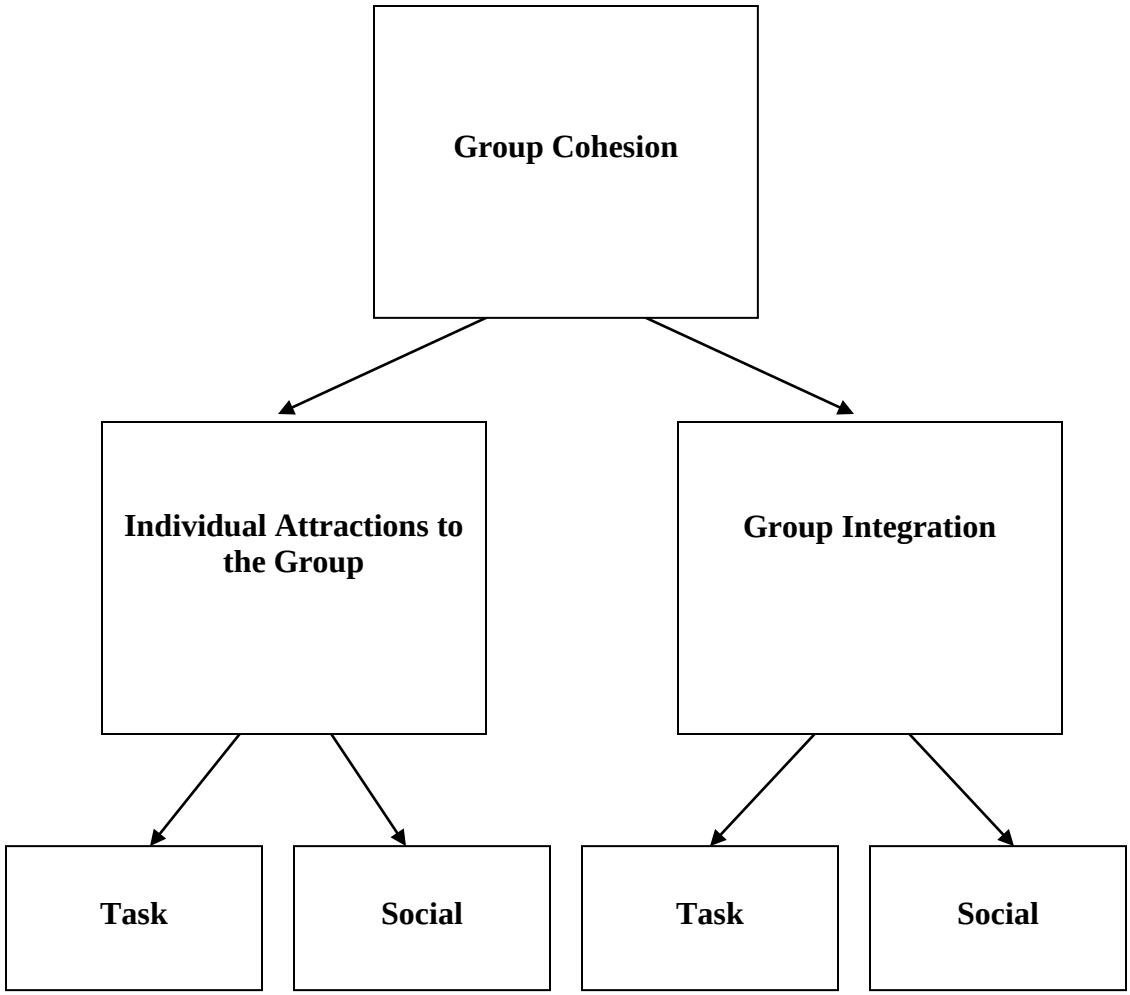
Figure 1. A Conceptual Model of Cohesion

Figure 2. A Conceptual Framework for the Study of Cohesion in Sport

Figure 3. The Multidimensional Model of Leadership in Sport

Figure 4. A Conceptual Framework of Athlete Satisfaction

Figure 1



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 2

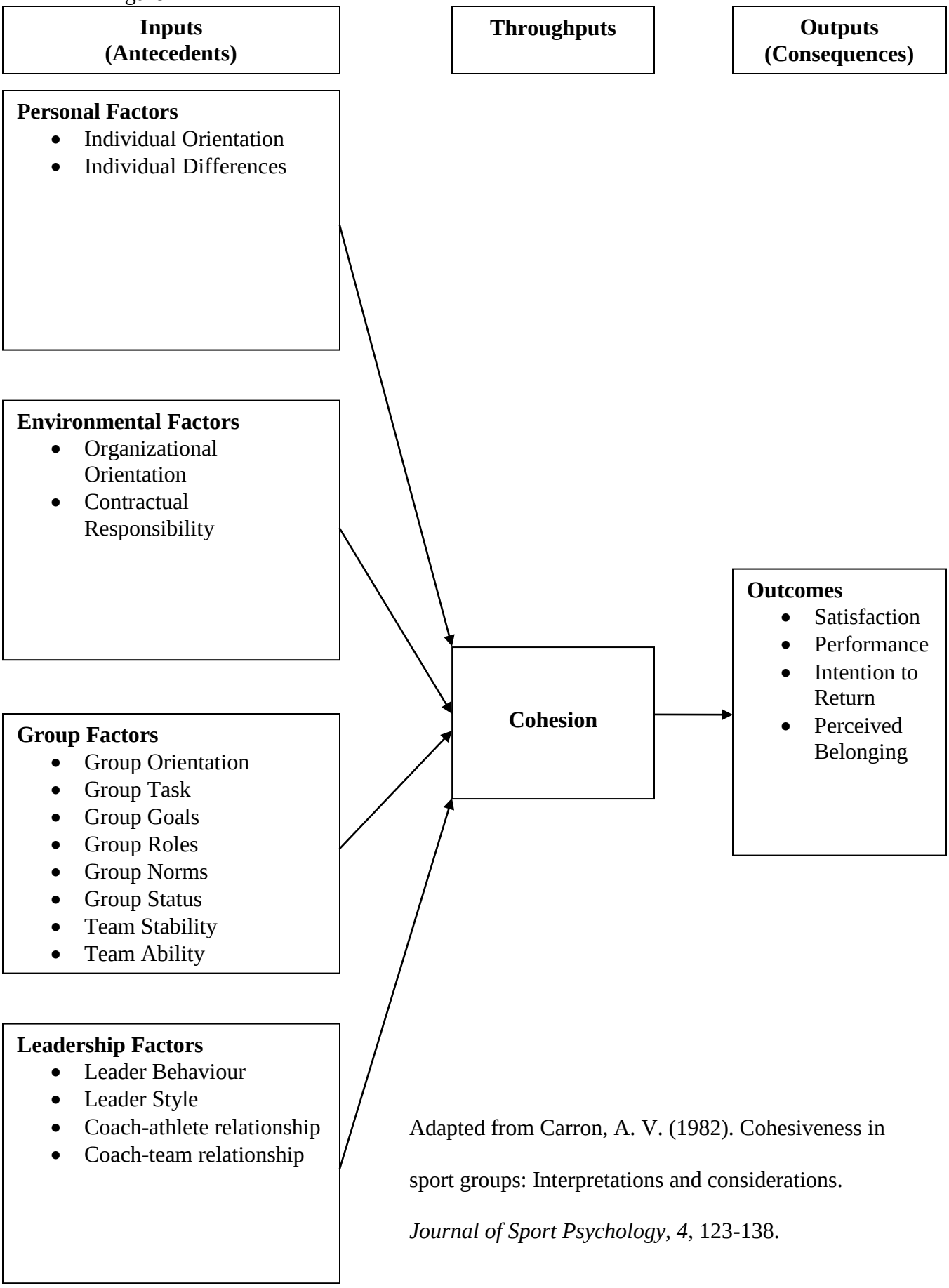


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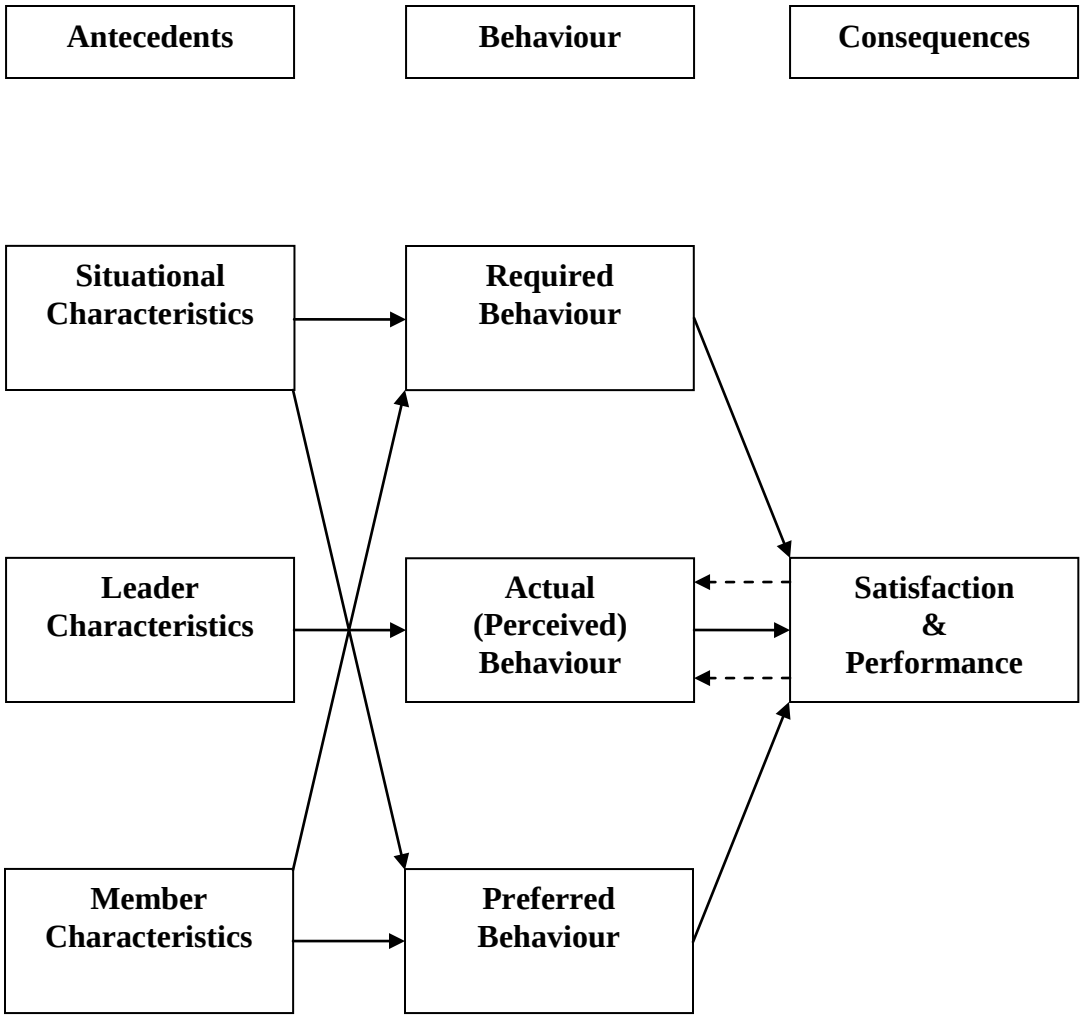
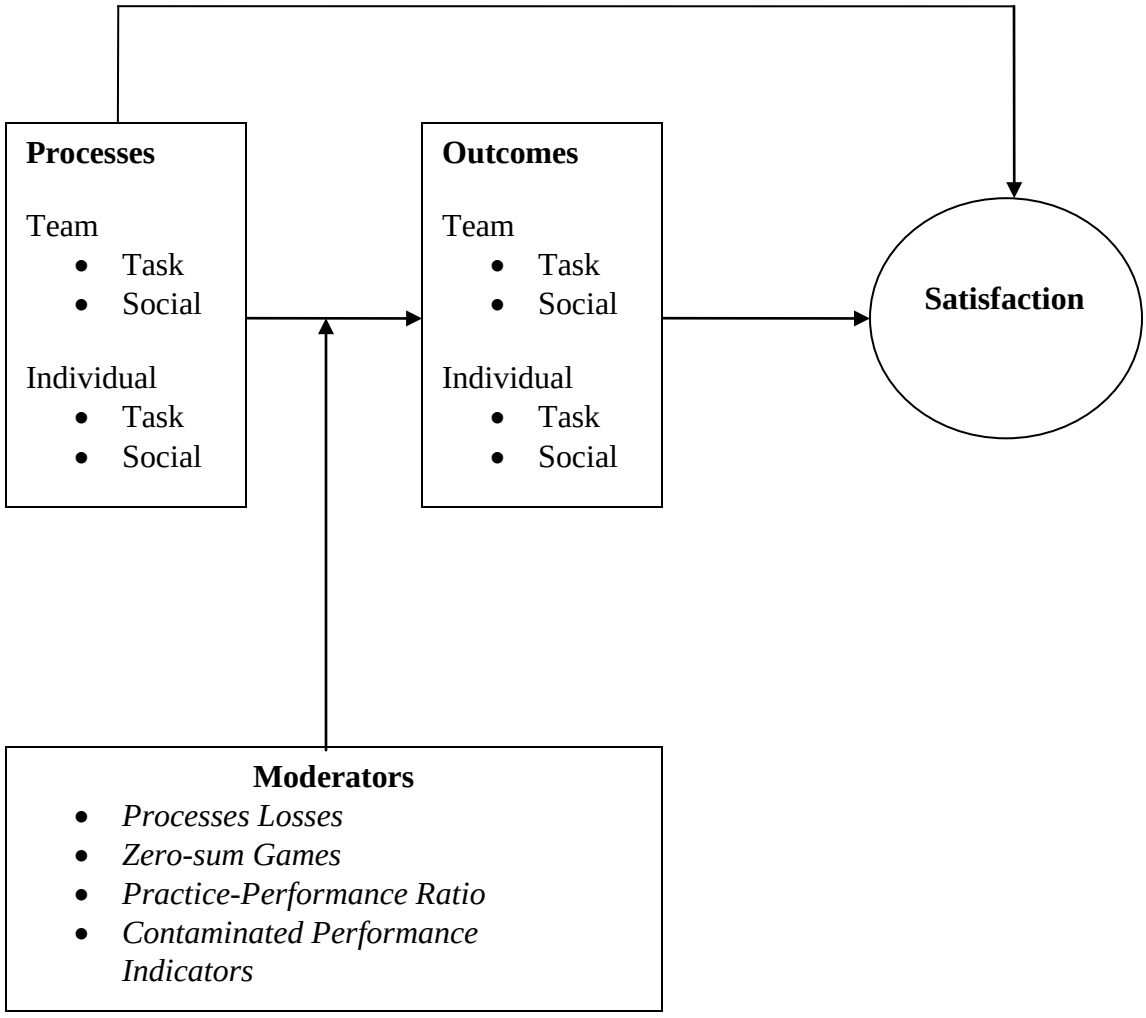
Figure 3



Adapted from: Chelladurai, P. (1978). *A contingency model of leadership in athletics.* Unpublished doctoral dissertation, University of Waterloo, Waterloo, Ontario, Canada.

Figure 4



Adapted from: Chelladurai, P., & Riemer, H. A. (1994, June). *A model of athlete satisfaction.* Paper presented at the annual conference of the North American Society of Sport Management, Pittsburgh, PA.

REVIEW OF LITERATURE

Introduction

The present thesis is designed to examine whether cohesion mediates the relationship between athlete leader behaviours and athlete satisfaction. Consequently, the review of literature will be divided into four sections: (a) cohesion, (b) leadership, (c) athlete leadership, and (d) athlete satisfaction.

Cohesion

Defining Cohesion

Over the last 60 years, a considerable body of work has examined the construct of cohesion. One of the first definitions of cohesion was advanced by Festinger, Schacter, and Back (1950) who defined it as “the total field of forces which act on group members to remain in a group” (p.164). This “force field” was further broken down into two components of forces: attractiveness to the group which are the factors that make someone want to be a part of the group and means control which is the extent the group mediates goals for its members (Dion, 2000).

After receiving much criticism on the original definition due to the wide gulf between the nominal and operational definitions, Festinger (1950) reworded his previous definition to read as “the resultant of all the forces acting on members to remain in the group” (p. 274). This revised definition however did not appease his critics. As a result, Gross and Martin (1952) suggested that cohesion instead represented “the resistance of a group to disruptive forces” (p. 553). These seemingly similar definitions with subtle semantic differences offered by these researchers led to one main limitation: the inability to operationalize these definitions, which led to unclear and inconsistent research findings

(Mudrack, 1989). Thus, Libo (1953) offered a simple definition of cohesion as “attraction to group”. The Libo interpretation was popular throughout the 1950s as it was easy to operationalize. However, while this definition was easy to operationalize, two limitations emerged. One, it only focused on the individual as opposed to the group as a whole, and two, it was unidimensional thus did not explore the multidimensional potential of the construct. Further attempts to define cohesion have included Van Bergen and Koekebakker (1959) suggesting that cohesion is “the degree of unification of the group field” (p. 85). Finally, Lott and Lott (1965) defined cohesion as “that group property which is inferred from the number and strength of mutual positive attitudes among the members of a group” (p. 259).

Following these initial attempts to define cohesion, Carron and his colleagues developed the most widely accepted definition of cohesion (Loughead & Hardy, 2006). Carron (1982) initially defined cohesion as “a dynamic process which is reflected in the tendency for the group to stick together and remain united in the pursuit of its goals and objectives” (p. 259). This definition was revised by Carron, Brawley, and Widmeyer (1998) to include an affective component. The revised definition viewed 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 instrumental objectives and/or for the satisfaction of member affective needs” (p.213). To date, this has been the most widely accepted and most utilized definition of cohesion.

Characteristics of Cohesion

The definition advanced by Carron et al. (1998) highlighted four important characteristics of cohesion; the first being that cohesion is a multidimensional construct.

That is, there are various factors that influence why groups stick together. Furthermore certain factors that are present for one group to stick together may be different for another similar group (Loughead & Hardy, 2006). Thus, the multidimensional nature allows for varying levels of cohesion to be present (Carron & Brawley, 2000). For example, a team may be high in social cohesion in that all group members like each other and share close personal bonds, however they may not be effective in terms of achieving task objectives. On the contrary, a team may lack social cohesion in that group members do not share any close personal relationships yet share similar beliefs of a common goal and be very effective in achieving it.

The second characteristic of cohesion is that it is dynamic. Thus, it is important to note that cohesion is not a trait and it can change over time due to the group's development. In contrast, cohesion is not as transitory as a situation-specific state. Although perceptions of cohesion do change over time, the change is often gradual in nature (Carron & Brawley, 2000). For example, when groups initially form, social cohesion is likely to be lower and task cohesion is likely to be higher with a primary focus on the goals and objectives of the team. However, towards the dissolution of the group, when task objectives are completed, task cohesion would likely be lower and social cohesion higher.

The third characteristic of cohesion is that it has an instrumental basis. All groups are brought together for at least one common objective, goal, or purpose. Typically sports teams, work groups, musical bands and many other types of groups form with initial task objectives to carry out. However, even groups that are considered to be social in nature like a recreational sports team, a senior’s lodge, a legion or a cultural club, still have an

instrumental basis for their formation (Carron et al., 1998). The purpose of socializing and developing friendships in itself is cohering for instrumental reasons on a social level as opposed to a task level.

The fourth characteristic of cohesion is that it has an affective component. Baumeister and Leary (1995) alluded that the need to belong is a basic and fundamental human desire. Thus, the formation of relationships and bonding is associated with positive affect such as enjoyment whereas being excluded from a group is associated with negative affect such as loneliness. Therefore, the unity or cohesiveness developed within a group on a task or social level produces positive affect in people.

Conceptual Model of Cohesion

Given that cohesion is a multidimensional construct, a conceptual model of cohesion was needed to capture its multidimensional nature. Using a group dynamics perspective, Carron, Widmeyer, and Brawley (1985) advanced a conceptual model of cohesion (see Figure 1) that evolved from two issues. The first issue was the need to distinguish between the individual and the group. The second issue was the need to distinguish between task and social concerns of the group and its members. Therefore, the Carron et al. (1985) multidimensional model of cohesion was comprised of four dimensions: *individual attractions to the group-task* (ATG-T), *individual attractions to the group-social* (ATG-S), *group integration-task* (GI-T), and *group integration social* (GI-S). *Individual attractions to the group-task* is defined as the attractiveness of the group's task, productivity and goals for the individual personally. *Individual attractions to the group-social* is defined as each group member's feelings on their personal acceptance and social interaction with the group. *Group integration-task* refers as an

individual's perceptions of the similarity, closeness, and bonding within the group as a whole pertaining to the group's task. *Group integration-social* is viewed as an individual's perceptions about the similarity, closeness, and bonding within the group as a social unit (Carron et al., 1998).

A Measurement of Cohesion: The Group Environment Questionnaire

Using the conceptual model of cohesion as a fundamental basis, Carron et al. (1985) developed an inventory that assessed the four dimensions of cohesion. This questionnaire was named the Group Environment Questionnaire and is an 18-item inventory scored on a 9-point Likert-type scale anchored at the extremes by 1 (*strongly disagree)* to 9 (*strongly agree).* Thus, higher scores reflect higher perceptions of cohesion. Of the 18 items, 12 items are negatively worded to guard against response sets and need to be reverse scored.

The *individual attractions to the group-task* (ATG-T) scale consists 4-items. A sample item from this dimension is "I am unhappy with my team's level of desire to win". The *individual attractions to the group-social* (ATG-S) scale consists of 5-items and a sample item is "Some of my best friends are on this team". The *group integration-task* (GI-T) scale consists of 5-items and a sample item is "Our team is united in trying to reach its goals for performance". Finally, the *group integration-social* (GI-S) scale is comprised of 4-items and a sample item is "Our team would like to spend time together in the off season".

Recently, research has become more abundant in the context of youth sport. As a result psychometric issues and concerns have been raised with the use of inventories intended for adult populations being administered to youth populations. Within the

context of the GEQ, it was originally developed to be used with competitive and recreational athletes between the ages of 18 and 30 years old. Not surprisingly, group dynamics researchers have called for the development of an appropriate measure of cohesion for a youth population (Carron, Eys, & Burke, 2007). In lieu of this, item wording (Eys, Carron, Bray, & Brawley, 2007), operationalization (Eys, Loughead, Bray, & Carron, 2009a) and other generalizability concerns (Carron, Brawley, & Widmeyer, 2002), Eys, Loughead, Bray, and Carron (2009b) developed the Youth Sport Environment Questionnaire (YSEQ; see Appendix B) to measure perceptions of cohesion in this population. The recently developed 16-item YSEQ is scored on a 9-point Likert-type scale anchored at the extremes of 1 (*strongly disagree*) to 9 (*strongly agree*). The YSEQ differs from the original GEQ in that it is operationalized into only two dimensions of cohesion: *task* cohesion (8-items) and *social* cohesion (8-items). Youth participant's perceptions of cohesion differed from those of adult perceptions in that they could only distinguish task and social functions and not individual and group functions (Eys et al., 2009a). Youth perceptions of task cohesion included the notions of "working together" and "communicating effectively." Meanwhile, youth perceptions of social cohesion included the notions of "getting to know one another" and "developing friendships" (Eys et al., 2009a). A sample item from the task cohesion scale is "We all share the same commitment to our team's goals." While a sample item from the social cohesion scale is "I spend time with my teammates." Given that the target population of this inventory was for competitive and recreational youth athletes aged 13-17 years, readability scores were calculated. The final readability of the YSEQ averaged at a 3.8 grade level compared to an average of a 6.0 grade level from the original GEQ. Finally,

internal consistency values were found to be acceptable for both *task* (α = .89) and *social* (α = .94) dimensions with a moderate correlation (*r* = .45) between the two sub scales (Eys et al., 2009b).

Studying the Antecedents and Consequences of Cohesion

Carron (1982) advanced a linear model (see Figure 2) for the study of cohesion that consists of inputs (antecedents), throughputs (cohesion), and outputs (consequences). Carron's (1982) model contains of four factors hypothesized to influence cohesion. These four antecedents are categorized into environmental factors, personal factors, team factors, and leadership factors. The first antecedent of cohesion is environmental factors. Carron identified two different types of environmental factors: organizational orientation and contractual responsibility. Organizational orientation refers to variable such as team goals, strategies for achieving their goals, age, sex, and maturity of its members. Contractual responsibility refers to such factors as the eligibility of the athlete, and/or transfer rules, as well as geographical restrictions and contractual obligations.

The second factor hypothesized to influence cohesion is personal factors. Carron (1982) noted that it is difficult to outline a complete list of the personal factors but may include constructs such as motivation (including task, affiliation and self-motivation), and individual differences (sex, race, religion, socio-economic status).

The third factor influencing cohesion is team factors. Team factors include but are not limited to group norms (the expected and assumed behaviours of all members of the team), group stability (the strength of the group and the longevity and amount of time group has been together), and group orientation (level of congruence among members of goals, strategies etc.).

The fourth factor influencing the cohesiveness of sport teams is leadership factors. The leadership factors that have been noted to influence cohesiveness are leader behaviour (Westre & Weiss, 1991), the coach-athlete relationship (Carron & Chelladurai, 1981; Jowett & Chaundy, 2004), coach-team relationships (Schacter, Ellerston, McBride, & Gregory, 1951), and athlete leadership (Vincer & Loughead, 2009) have all been shown to influence cohesion.

The throughputs outlined in Carron's (1982) linear model are the aforementioned four dimensions of cohesion outlined in the Carron et al. (1985) conceptual model of cohesion. These once again are *individual attractions to the group-task, individual attractions to the group-social, group integration-task* and *group integration-social*. However, Eys et al. (2009a) noted that for a youth population the throughputs of cohesion consisted of only *task* cohesion and *social* cohesion.

Previous research in sport has shown some of the common consequences of cohesion to be performance (Carron, Colman, Wheeler, & Stevens, 2002), adherence (Carron, Widmeyer, & Brawley, 1988), athlete satisfaction (Widmeyer & Williams, 1991), intention to return (Spink, 1995; 1998), perceived belonging (Allen, 2006), collective efficacy (Spink, 1990), role clarity (Schriesheim, 1980), and role involvement (Eys & Carron, 2001). Meanwhile research in the exercise setting has found cohesion to mediate the leadership-satisfaction relationship (Loughead & Carron, 2004), the leadership-adherence relationship (Loughead, Colman, & Carron, 2001), and the leadership-affect relationship (Loughead, Patterson, & Carron, 2008).

Leadership

Definition of Leadership

Over the last 50 years, there have been as many as 65 definitions of leadership that have been advanced (Northouse, 2001). Early definitions of leadership viewed it as an act focused on manipulation, persuasion, and coercion of followers. More recent definitions have taken a more positive approach to leadership suggesting that leaders help assist and direct followers in the achievement of group goals (Barrow, 1977; Murray, 1986). As such, Northouse (2001) defined leadership as "a process whereby the individual influences a group of individuals to achieve a common goal" (p. 3).

Characteristics of Leadership

Based on the Northouse (2001) definition, Northouse outlined four characteristics central to leadership. The first characteristic of leadership is that it is a *process*. This suggests that leadership is not a specific trait but an interactive experience between the leader and followers. Northouse suggested that when leadership is defined in this manner, leadership becomes available to everyone. Hence, the leadership role is not solely limited to the formally designated leader of the group (p. 3). The second characteristic of leadership is *influence*. This refers to how the leader will affect the followers. Influence is an integral component of leadership because if there is no influence than leadership is absent. The third characteristic of leadership is that leadership occurs in *groups*. The group provides the context for leaders to exert their influence towards achieving a common goal. Finally, the fourth characteristic of leadership is the presence of *goals*. The leader is concerned with the strategies, tactics and priorities involved with achieving the group's goals.

A Model for the Study of Leadership in Sport

Several researchers (Chelladurai & Carron, 1978; Terry & Howe, 1984) called for the development of a sport specific model of leadership as they argued that general leadership models may not be applicable for the study of leadership in sport. These researchers argued that sport teams possess unique characteristics compared to educational, industrial, and military groups, thus making it difficult to adapt those leadership models to the sport setting. Consequently, Chelladurai (1978; 1990; 1993; 2001; 2007) advanced a model for the study of leadership in sport entitled the Multidimensional Model of Leadership (MML; see Figure 3). The MML is one of the most widely used models for the study of leadership in sport. The development of the MML was based on a variety of leadership theories: Contingency Model of Leadership Effectiveness (Fiedler, 1967), Life-Cycle Theory (Hersey & Blanchard, 1977), Path-Goal Theory (House, 1971), and Discrepancy Model of Leadership (Yukl, 1971).

Fiedler (1967) suggested that the effectiveness of any single leadership style is dependant on the type of situation. Fielder also contended that the personal relationships between the leader and group members were an important factor for team performance. Fiedler alluded to the level of task structure suggesting that the leader's job is easier when the task is highly structured, that is, when group roles and objectives are accepted by its members. Furthermore, Fielder noted that the ideal situation for leadership is one of complete power and control with a trusted, respected interaction with a homogeneous work group. Therefore, Fiedler's (1967) Contingency Model of Leadership suggested that the leader's own personal style of interacting (task oriented; person oriented) along with

the favourableness of the situation (power position of the leader; leader-member relations; task structure) will determine the satisfaction of the group.

According to Hersey and Blanchard (1977) Life Cycle Theory of Leadership effective leaders perform two primary functions: they work towards the group's goals (task-oriented behaviour) and they facilitate positive interaction among group members (people-oriented behaviour). That is to say, effective leaders should adjust their leadership style to respond to the needs of their followers and the environment. The appropriate leadership style is determined by the maturity of the followers and will change as the followers evolve.

In contrast to Fiedler's (1967) Contingency Model of Leadership, where much of the focus is on the leader, House's (1971) Path-Goal Theory views the leader as the facilitator who helps others (e.g., followers) achieve their goals. That is, the leader provides a path by which the followers can successfully achieve their goals. This type of leadership includes providing opportunities, motivation, and performance enhancement opportunities for the followers.

The final theory that influenced the development of the Multidimensional Model of Leadership was the Discrepancy Theory of Leadership (Yukl, 1971). This theory explains how leader behaviour, situational variables, and intermediate variables interact to determine productivity and satisfaction. The theory is comprised of three main hypotheses: 1) members' satisfaction with their leader is a function of discrepancy between the actual leader behaviour and the preference of the team member, 2) team member's preferences are determined by his/her personality and any situational variables that may be present, and 3) team members usually prefer a high degree of leader

consideration which results in positive relations with members and higher member satisfaction.

The four theories that were discussed above were used in the development of the Multidimensional Model of Leadership. This model was conceptualized as a linear model comprised of antecedents, leader behaviours, and consequences. The antecedents consist of situational characteristics, leader characteristics and member characteristics. Situational characteristics refer to the specific demands of the situation such as group composition and group norms. Leader characteristics are the leader's personal characteristics such as personality, age, gender, and experience. Finally, member characteristics are comprised of the team member's personal characteristics such as personality, age, ethnicity, ability, maturity, and experience (Chelladurai, 2007).

The leader behaviour component of the Multidimensional Model of Leadership is categorized into three types: required, actual or perceived, and preferred. The required leader behaviour is viewed as expectations and limitations imposed on the leader and are determined by the antecedents of situational characteristics and member characteristics. The actual or perceived leader behaviour is how the leader actually behaves and is a result of his/her own leadership characteristics, the required leader behaviour, and the preferred leader behaviour. Finally, preferred leader behaviour is the athletes individual preferences of leadership qualities that are influenced by both situational and member characteristics (Chelladurai & Carron, 1978).

Although, not an exhaustive list of outcomes, Chelladurai (1978) noted two outcomes based on the required, actual, and/or perceived leader behaviours: performance, and athlete satisfaction. Based on the performance and the perceived satisfaction of the

athlete, there is a feedback loop that information to the leader on the type of actual behaviour the leader may want to engage in (Chelladurai, 1978).

Measurement of Leadership in Sport

With the development of the MML (Chelladurai, 1978), Chelladurai and Saleh (1980) developed the Leadership Scale for Sports (LSS; see Appendix C) in order to test the constructs of the model. The LSS is a 40-item inventory that assesses five dimensions of leader behaviours: *training and instruction* (13-items), *democratic behaviour* (9-items), *autocratic behaviour* (5-items), *social support* (8-items), and *positive feedback* (5-items). *Training and instruction* refers to behaviours that improve the athletes' performance through physical and skill development. A sample item from this dimension is "My coach explains to each athlete the techniques and tactics of the sport". *Democratic behaviour* refers to the extent that the coach permits participation by the athletes in decision making. A sample item from this scale is "My coach lets his/her athletes share in decision making". *Autocratic behaviour* is defined as the degree to which the coach is independent in his/her decision making and to the extent he/she stresses personal authority. A sample item from this scale is "My coach works relatively independent of athletes". *Social support* alludes to the extent to which the coach satisfies the interpersonal needs of the athletes, develops a positive team atmosphere, and establishes warm interpersonal relationships with team members. A sample item from this scale is "My coach helps the athletes with their personal problems". Finally, *positive feedback* reflects the extent to which the coach recognizes and rewards good performance by the athletes. A sample item from this scale is "My coach gives credit where credit is due".

All responses on the LSS are scored on a 5-point Likert-type scale anchored at the extremes of 1 (*never*) to 5 (*always*) with higher scores reflecting higher occurrences of the leadership behaviours. The LSS can be modified to assess either preferred or perceived leadership behaviours by altering the stem preceding the items (Chelladurai, 1990). The stem for perceived behaviour is "My coach…" where as the stem to assess preferred behaviour is "I prefer my coach to…" To date, required leader behaviours have not been examined.

The LSS has been shown to demonstrate adequate content validity, factorial validity, convergent validity, discriminate validity, criterion-related validity and test-retest reliability (Chelladurai & Saleh, 1980). In addition, Chelladurai and Saleh have shown all five dimensions to have adequate internal consistency values: *training and instruction* (α = .93), *democratic behaviour* (α = .87), *autocratic behaviour* (α = .79), *social support* (α = .86) and *positive feedback* (α = .92). Previous research (Chelladurai & Carron, 1983; Loughead & Hardy, 2005; Riemer & Chelladurai, 1995) utilizing the LSS has also shown adequate internal consistencies scores for all dimensions. Finally, Chelladurai and Carron (1981) also tested the applicability of the LSS to youth sports and found support for the applicability, reliability and validity of the instrument.

Research Using the LSS

An extensive body of research has utilized the LSS making it one of the most widely used, valid, and accepted measurement tools for assessing leader behaviours in sport. For example, Chelladurai and Carron (1983) examined athletic maturity and preferred leadership using the LSS. Findings suggested that athletes preferred increased levels of *social support* as their competition levels and experience increased. As well,

more experienced and higher ability athletes preferred more *training and instruction* coaching behaviours than athletes with less experience and ability. These athletes preferred more personal interactions with their coach.

Roles. Beauchamp, Bray, Eys, and Carron (2005a) examined the effect of the leadership behaviours of *training and instruction* and *positive feedback* on role ambiguity for starters and non-starters. The results indicated that the decrease in *training and instruction* for the non-starters lead to an increase in role ambiguity, where as an increase in *training and instruction* predicted lower role ambiguity. However, there was no effect of role ambiguity experienced for starters. Finally, *positive feedback* did not predict any role ambiguity.

Satisfaction. Several studies have examined the relationship between leader behaviours and various forms of satisfaction. Chelladurai (1984) examined the discrepancies between preferences and perceptions of leader behaviours and satisfaction in athletes. Results depicted that when perceptions were greater than the preferences in *training and instruction, democratic behaviour, social support*, and *positive feedback* and perceptions were lower than preferences in *autocratic behaviour,* there was increased satisfaction with leadership. However, no discrepancies in leadership behaviours predicted satisfaction with individual performance, team performance or satisfaction with overall involvement.

Horne and Carron (1985) examined compatibility in coach-athlete relationships with the LSS and satisfaction with leadership. Results showed the best predictor of satisfaction was the discrepancy between preferred and perceived *training and instruction, positive feedback,* and *social support*.

Riemer and Chelladurai (1995) also examined preferred and perceived leadership congruence and satisfaction amongst athletes. Their results were also consistent with previous research in that preferences and perceptions of *training and instruction*, *positive feedback*, and *social support* led to increased satisfaction.

Weiss and Friedrichs (1986) examined the effects of leader behaviours on performance and satisfaction in basketball. Results demonstrated that leader behaviours were significant predictors of team performance (i.e. win/loss records) and team satisfaction. In fact, rewarding behaviour was the best predictor of team satisfaction with *democratic behaviour* and *social support* the two most salient predictors. Interestingly enough, there was no relationship between *training and instruction* and performance while *social support* was the only predictor of performance showing a negative relationship with a team's performance in that coach's higher in *social support* had a worse win/loss record.

Price and Weiss (2000) examined the relationships among coach burnout, coaching behaviours and athletes psychological responses in soccer. Results demonstrated that burnt out coaches displayed, higher *democratic behaviour*, reduced *autocratic behaviour*, while providing less *training and instruction* and less *social support*. Consequently, athletes who perceived their coaches to have less d*emocratic behaviour* and more *autocratic behaviour*, while providing less *training and instruction*, less *social support* and less *positive feedback* reported higher levels of anxiety, and burnout and lower levels of enjoyment and perceived competence. Athletes who perceived more *training and instruction, social support*, *positive feedback*, and *democratic behaviour* from coaches reported higher levels of enjoyment and competence.

Cohesion. Westre and Weiss (1991) investigated the relationship between perceived coaching behaviours and cohesion in football. Results showed that the leader behaviours of *training and instruction, democratic behaviour, social support* and *positive feedback* were all significantly related to task cohesion.

Finally, more recently, Jowett and Chaundy (2004) examined the impact of leadership behaviours and the coach-athlete relationship on group cohesion. Their findings suggested that coach leadership variable of *training and instruction, democratic behaviour*, and *positive feedback* significantly predicted task and social cohesion. In addition, leadership behaviours interacting with positive perceptions of the coach-athlete relationship further strengthened the relationship to cohesion. However, it should be noted that leadership behaviours were found to have been better predictors of task cohesion than social cohesion.

Athlete Leadership

While the majority of research in sport leadership has examined coaching behaviours, another source has leadership has recently emerged in the literature. In particular, research pertaining to athlete leadership has been a recent undertaking.

Defining Athlete Leadership

Recall that Northouse (2001) outlined four main characteristics of leadership when defining leadership: leadership is a process, its influential, it occurs in groups, and has the presence of goals. Also recall that Northouse suggested that leadership is not only restricted to the formally designated leader of the group. Hence, leadership is not a restricted role in that it is available to all members of the group. Carron, Hausenblas, and Eys (2005) identified two types of leadership based on the roles each individual occupies

within the group. The two types of leadership are formal and informal leadership. Formal leaders can be viewed as those who have been prescribed, assigned appointed or elected by the group or organization. This would include such roles as managers, coaches, and captains. In contrast, team members other than team captains like veterans could occupy informal leadership roles based on their status and interaction with other members of the team. Based on these characteristics, Loughead, Hardy, and Eys (2006) developed a definition pertaining to athlete leadership encompassing these criteria. Loughead and colleagues viewed athlete leadership as "an athlete occupying a formal or informal role within a team, who influences team members to achieve a common goal" (p.144).

Measuring Athlete Leadership

The assessment of athlete leadership has taken on many operationalizations. For instance, athlete leadership has been measured by identifying the name of athletes who provide leadership and by the absolute number within a particular team (Eys, Loughead, & Hardy, 2007; Hardy, Eys, & Loughead, 2008). Athlete leaders have also been identified by the leadership characteristics and functions they provide such as task, social, or external (Loughead et al., 2006). Finally, athlete leadership has been assessed using the LSS (Loughead & Hardy, 2005). Given that the LSS has been a widely used and reliable measure in coaching psychology research (Riemer, 2007), a modified version of the LSS (Loughead & Hardy, 2005) has been utilized to assess athlete leadership. It is important to note that the only modification made to the inventory was pertaining to the stem "My coach" and replacing it with the stem "The athlete leader(s) on my team" to precede each item. That is to say that this adapted version of the LSS consisted of the same five subscales and same 40 items as the original. However, the items are adapted to

fit the context of athlete leadership. Modification of the LSS items by Loughead and Hardy were carried out following the suggestions offered by Carron et al. (1998). Following Loughead and Hardy's utilization of the LSS to assess athlete leadership, more recent studies have also adopted this instrument as an assessment tool for athlete leadership. Vincer and Loughead (2009) examined athlete leader behaviours effects on cohesion using the LSS. Furthermore, Paradis and Loughead (2009) expanded on this research and assessed athlete leadership behaviours in youth sport using not only the LSS but also the Multifactor Leadership Questionnaire—5X Short (Bass & Avolio, 1995).

Transformational leadership has gained some interest in the sport and exercise psychology literature in terms of examining leadership behaviours (e.g., Beauchamp, Welch, & Hulley, 2007; Callow, Smith, Hardy, Arthur, & Hardy, 2009; Zacharatos, Barling, & Kelloway, 2000). According to Bass (1985), transformational leadership exerts influence by elevating followers' goals, providing them with confidence to go beyond minimally accepted standards where as transactional leadership exerts influence by setting goals, providing feedback and exchanging awards for achievement. With its origins stemming from the business setting, Avolio (1999) described transformational leadership as consisting of five dimensions: *idealized influence-attributed, idealized influence-behaviour, inspirational motivation, intellectual stimulation* and *individual consideration*. *Idealized influence* refers to behaviours and attributions that promote a leader's vision, mission, and beliefs. *Inspirational motivation* refers to the leader's ability to instil confidence in the follower and their ability to live up to their expectations and goals through encouragement and persuasion. *Intellectual stimulation* refers to the cognitive process that is involved in achieving one's goals. Transformational leaders

create an atmosphere where group members feel safe but are challenged by a proactive, creative, and innovative thought process. Finally, *individual consideration* refers to the leader's assessment of the follower's potential and delegating appropriate tasks, while improving the one on one relationship by providing individual attention and feedback and encouraging a two way dialogue process.

Transformational leadership can be measured using five dimensions from the Multifactor Leadership Questionnaire —5X Short (Bass & Avolio, 1995). The five transformational dimensions consist of 20-items: *idealized influence-attributed* (4-items), *idealized influence-behaviour* (4-items), *inspirationa*l *motivation* (4-items), *intellectual stimulation* (4-items), and *individual consideration* (4-items). All responses are scored on a 5-point Likert-type scale anchored at the extremes by 1 (*never*) to 5 (*always*).

The MLQ has shown to demonstrate adequate content validity, factorial validity, convergent validity, discriminate validity, criterion-related validity, test-retest reliability and have adequate internal consistency scores (Bass & Avolio, 1995). Previous research utilizing the MLQ for measuring athlete leadership behaviours has also demonstrated adequate internal consistency scores and factorial validity (Paradis & Loughead, 2009).

Research on Athlete Leadership

Early research on athlete leadership examined the characteristics of athlete leaders such as playing position, team tenure, psychological, and personal predictors. Grusky (1963) hypothesized that athlete leaders may emerge based on their playing position. In particular, the responsibilities required from certain playing positions are more likely that players may naturally develop leadership skills and thus assume a leadership role within a team. Grusky found that the majority of athlete leaders in sports teams emerged from

central and highly interactive positions, such as a baseball catcher, as opposed to peripheral positions with lower interaction, such as a baseball outfielder.

However, Tropp and Landers (1979) suggested that this centrality principle may not always be the case when it comes to identifying athlete leaders. Tropp and Landers were concerned with team captaincy and interpersonal attraction in field hockey. Their results were inconsistent with Grusky's findings that centrality may not always be important in highly dynamic sports. Tropp and Landers' findings suggested that athlete leaders emerge more based on the nature of the task as opposed to playing position.

Weese (1983) examined peer ratings on observable leadership behaviours in determining athlete leaders within baseball teams. He found that athlete leaders displayed more task leadership behaviours than non-athlete leaders. Furthermore, tenure on the team and popularity were significant determinants of whether an athlete was considered an athlete leader. Contrary to Grusky (1963), centrality of playing position was not a significant determinant of athlete leadership.

Rees (1983) examined athlete leadership by comparing instrumental and expressive types of leadership. Instrumental athlete leaders were those concerned with task success and goal attainment, while expressive athlete leaders were more concerned with maintaining group solidarity and cohesion. Results showed that athletes viewed as an athlete leader displayed both instrumental and expressive types of leadership. The results of this study showed early evidence for the presence and the importance of both formal and informal leaders on a team.

Building on the research by Rees (1983), Rees and Segel (1984) examined the differences between expressive and instrumental leadership roles within football teams.

They found that several members of the football team occupied both instrumental and expressive leadership roles. More specifically, they found that some athlete leaders emerged as instrumental and expressive specialist, but the majority of athlete leaders fulfilled both types of leadership roles. Finally, the results also indicated that most of the athlete leaders were more likely to be starters, had higher status within the team, and occupied central playing positions.

Glenn and Horn (1993) examined the psychological and personal predictors of athlete leadership in female soccer. The results indicated that players who occupied central positions (central midfield and defence) on the team were more likely to be perceived by the coach and by themselves as an athlete leader. Interestingly, playing position was not a predictor of athlete leadership when fellow teammates rated their peers. In fact, peers perceived teammates who were high in competitive trait anxiety and sport competence to be leaders on the team. These results again suggest that playing position may not be the best predictor of whether an athlete emerges as an athlete leader.

These early studies were important in documenting the characteristics of athlete leaders, but this body of knowledge did have some shortcomings. Of note, these early studies did not have an operational definition of athlete leadership. As such, a lot of the early work on athlete leadership was exploratory in nature. Consequently, there were no standard measurement tools to assess athlete leadership. Furthermore, it could be argued that studies such as Grusky's (1963) and Tropp and Landers' (1979) were more concerned with elements of group composition, and that athlete leadership was a bi-product of their original research question. These early studies offered some interesting findings that would influence future research in the area.

Loughead and his colleagues (e.g., Eys et al., 2007; Hardy et al., 2008; Loughead et al., 2006; Loughead & Hardy, 2005) have conducted the majority of athlete leadership research in the last five years. Loughead and Hardy were interested in determining whether athlete leaders behaved differently than coaches. The authors had a variety of team sport athletes ($n = 238$) complete the original and an athlete leader version of the LSS. The results showed that coaches and athlete leaders demonstrated different types of leader behaviour. Coaches were higher in *training and instruction* and *autocratic behaviour* than athlete leaders, while athlete leaders were higher in *democratic behaviour*, *positive feedback*, and *social support* compared to coaches. These findings provided some initial evidence on the presence of athlete leadership behaviours in sport.

Loughead et al. (2006) were then interested in examining the characteristics of athlete leaders, the number of athlete leaders on a team, and the stability of athlete leadership over the course of a season. The authors also examined formal and informal athlete leaders. The results showed that both formal and informal leaders were viewed as athlete leaders but formal leaders were most likely to be recognized as an athlete leader. As well, both formal and informal leaders had more tenure on the team and were generally starters. In terms of the number of athlete leaders, it was found that approximately 25% of the team's roster consisted of formal and informal athlete leaders. These findings suggest that athlete leadership is not just limited to the team captain role, but is widespread across many members of the team.

Eys et al. (2007) examined athlete leadership dispersion (i.e., the number of athletes) and athlete satisfaction in interactive team sports. They examined athlete leadership across three leadership functions of task, social, and external. A task

leadership function referred to the athlete leader's contribution to directing the team towards achieving their goals or objectives. A social leadership function referred to the athlete leader's contribution in facilitating communication between teammates, and providing psychosocial support to fellow teammates. Finally, the external leadership function referred to the athlete leader contributing or carrying out external duties outside the team environment such as representing the team at media conferences. Results demonstrated that athletes who perceived their team to have an equal number of athlete leaders across all three functions showed the highest levels of satisfaction. In contrast, athletes that perceived an imbalanced number of athlete leaders over the three functions reported lower levels of satisfaction.

Hardy et al. (2008) examined whether communication mediated the athlete leadership-cohesion relationship in varsity athletics. Results showed that communication was found to negatively mediate the relationship between the number of athlete leaders performing a task function and task cohesion. Results of this study were consistent with previous research (i.e., Eys et al., 2007; Loughead et al., 2006) suggesting that the number of athlete leaders is in fact important to team functioning and has implications on cohesion and satisfaction of the athletes.

Dupuis, Bloom, and Loughead (2006) conducted a qualitative study investigating one type of athlete leadership; the role of team captains in varsity ice hockey. Using semi-structured interviews with six former varsity team captains, the result found three main categories: interpersonal characteristics and experiences, verbal interactions, and task behaviours. The findings demonstrated that effective team captains needed to have effective communication skills, possess a positive attitude especially when confronted

with adversity, and be respectful towards both coaches and teammates. Finally, team captains used leadership behaviours to enhance the team's norms, team's functioning, and the team's cohesion.

Vincer and Loughead (2009) examined the influence of athlete leadership behaviours on cohesion. Results indicated that athlete leadership did in fact influence cohesion. Specifically, the athlete leader behaviours of *training and instruction* and *social support* were found to have a positive relationship to all four dimensions of cohesion. *Democratic behaviour* was found to have a positive relationship to task cohesion. *Autocratic behaviour* was found to have a negative relationship with all four dimensions of cohesion. Finally, *positive feedback* was not found to influence cohesion one way or the other.

Paradis and Loughead (2009) expanded on this study and examined both formal and informal transformational and transactional athlete leader behaviours by utilizing the LSS (Chelladurai & Saleh, 1980) and the MLQ (Bass & Avolio, 1995). Respondents were asked to rate both their formal and informal leaders for each item of the subscales. Finally, a confirmatory factor analysis was performed to determine which factor model was of best fit for a youth sample. Chelladurai (2007) has suggested that two different three factor models and a five factor model were theoretically plausible for the LSS. Results of the CFA demonstrated that while all models were of adequate fit, the five factor model was the best fit for a youth sample. Similarly, Bass and Avolio have suggested a plausible three, six, or nine factor model for the MLQ. Results of the CFA indicated that while all three models were of adequate fit, the six factor model was the best fit for a youth sample.

Athlete Satisfaction

Facets of Satisfaction

Satisfaction has been a construct of particular research interest across many social science disciplines. One of the most studied elements of satisfaction has been job satisfaction. Locke (1976) defined job satisfaction as a pleasurable or emotional state resulting from the perception of one's role as fulfilling. Saal and Knight (1988) identified some of the contributing factors that may lead one to be satisfied such as a) the amount of effort expenditure for the task, b) the duration and tenure with the organization, c) the quality of relationships, and cooperation with others in the immediate environment, and d) the overall happiness. Similarly, in an organizational sport setting, Rail (1987) identified competence, autonomy, recognition, and role significance as contributing factors to role satisfaction. Role satisfaction in sport has also been found to be influenced by cohesion (Rainey & Schwieckert, 1988), role clarity (Beauchamp, Bray, Eys, & Carron, 2005b), communication (Cunningham & Eys, 2007), and the coach-athlete relationship (Paradis, Loughead, & Eys, 2009). Not surprisingly, the construct of athlete satisfaction in sport has been of particular interest to researchers. For example, the construct of athlete satisfaction has been included in many theoretical frameworks as an outcome variable including the Multidimensional Model of Leadership (Chelladurai, 1978; 1990; 1993; 2001; 2007), and Carron's (1982) conceptual model of cohesion. Chelladurai and Riemer (1997) provided a classification for the different facets of athlete satisfaction based on three criteria: a) outcomes versus processes, b) personal versus team effects, and c) task versus social aspects. In a sport context, both in the model and measurement of cohesion (Carron, 1982; Carron et al., 1985) and in the model and

measurement of leadership (Chelladurai, 1978; Chelladurai & Saleh, 1980) have been broken down into not only task and social aspects but personal and team factors as well, through processes and outcomes. Not surprisingly, Chelladurai and Riemer (1994) operationalized athlete satisfaction in their conceptual model (see Figure 4) as a multidimensional construct. Processes are hypothesized to lead to outcomes which in turn lead to satisfaction. In addition, both processes and outcomes may pertain to the individual or the team and also may be viewed on a task or social level. Finally, the relationships between processes and outcomes can have four potential moderators: a) process losses, b) zero sum games, c) practice-performance ratio, and d) contaminated performance indicators. As a result, Chelladurai and Riemer (1997) defined athlete satisfaction as "a positive affective state resulting from a complex evaluation of the structures, processes, and outcomes associated with the athletic experience" (p. 135).

Measuring Athlete Satisfaction

Riemer and Chelladurai (1998) developed a sport specific inventory for measuring athlete satisfaction entitled the Athlete Satisfaction Questionnaire (ASQ; see Appendix E). The ASQ contains 56-items and assesses 15 dimensions of athlete satisfaction: *individual performance* (3-items), *team performance* (4-items), *ability utilization* (5-items), *strategy* (6-items), *personal treatment* (5-items), *training and instruction* (3-items), *team task contribution* (3-items), *team social contribution* (3-items), *ethics* (3-items), *team integration* (4-items), *personal dedication* (4-items), *budget* (3-items), *medical personnel* (4-items), *academic support services* (3-items), and *external agents* (4-items). All items are preceded with the stem "I am satisfied with…" *Individual performance* assesses the individual's satisfaction with his/her own task performance

including overall performance, skill improvements, and goal attainment. A sample item from this subscale is “The improvement in my skill level”. *Team performance* refers to the individual’s satisfaction with his/her team’s level of task performance including overall performance, performance improvements, and goal achievement. A sample item from this subscale is “The team’s win/loss record this season”. *Ability utilization* is defined as the athlete’s satisfaction with how the coach uses and/or maximizes the individual athlete’s talents abilities and attributes. A sample item from this subscale is “The extent to which my role matches my potential”. *Strategy* is defined as the satisfaction with strategic and tactical decisions made by the coach. A sample item from this subscale is “The tactics used during games”. *Personal treatment* refers to how the coach treats the athlete and how it affects the individual and the team. A sample item from this subscale is “My coach’s loyalty towards me”. *Training and instruction* refers to the satisfaction with the coaching behaviour of *training and instruction*. A sample item from this subscale is “The coach’s teaching of the tactics and techniques of my position”. *Team task contribution* is defined as those actions by which the group serves as a substitute for leadership for the athlete. A sample item from this subscale is “The constructive feedback I receive from my teammates”. *Team social contribution* is defined as how teammates contribute to the athlete as a person. A sample item from this subscale is “The role I play in the social life of the team”. *Ethics* refers to satisfaction with the ethical positions of teammates. A sample item from this scale is “My teammate’s sense of fair play”. *Team integration* is defined as the members’ contributions and coordination of their efforts towards carrying out the team’s task. A sample item from this subscale is “How the team works to be the best”. *Personal dedication* refers to the athlete’s

satisfaction with his/her own contribution to the team. A sample item from this subscale is “My dedication during practices”. *Budget* refers to the satisfaction with the amount of money provided to the team by the organisation. A sample item from this subscale is “The funding provided to my team”. *Medical personnel* refers to the satisfaction with the team’s medical staff. A sample item from this subscale is “The competence of the medical personnel”. *Academic support services* refers to the satisfaction with the academic counselling provided to the athletes. A sample item from this subscale is “The tutoring I received”. *External agents* refers defined as those elements outside the organisation which may contribute to the team. A sample item from this subscale is “The local community’s support”.

All responses on the ASQ are scored on a 7-point Likert-type scale anchored at the extremes by 1 (*not at all satisfied*) to 7 (*extremely satisfied*). The ASQ has been shown to demonstrate adequate content validity, factorial validity, convergent validity, discriminate validity, criterion-related validity, and test-retest reliability (Riemer & Chelladurai, 1998). In addition, Riemer and Chelladurai have shown all 15 dimensions to have adequate internal consistency values: *individual performance* ($\alpha = .85$), *team performance* ($\alpha = .95$), *ability* utilization ($\alpha = .92$), *strategy* ($\alpha = .94$), *personal treatment* ($\alpha = .92$), *training and instruction* ($\alpha = .88$), *team task contribution* ($\alpha = .83$), *team social contribution* ($\alpha = .91$), *ethics* ($\alpha = .79$), *team integration* ($\alpha = .88$), *personal dedication* ($\alpha = .78$), *budget* ($\alpha = .92$), *medical personnel* ($\alpha = .87$), *academic support services* ($\alpha = .86$), *external agents* ($\alpha = .85$).

Research using the ASQ

The development of the ASQ has given researchers a valid and reliable assessment tool for the measure of athlete satisfaction. Athlete satisfaction has been assessed using the ASQ with a number of different variables. Riemer and Chelladurai (2001) assessed athlete satisfaction and commitment in Canadian university athletics by examining the effects of gender and tenure. They found that gender, and tenure both to be significant antecedents to satisfaction. In addition, negative affectivity (one's overall general affective disposition towards life) was found to have a significant relationship with all satisfaction dimensions except for *budget* and *external agents*. With regards to gender, females were more satisfied in every dimension of satisfaction from the ASQ than males were. Starting status (starter vs. non-starter) was found to be a significant predictor for the satisfaction dimensions of *ability utilization*, *personal treatment* and *individual performance*. Finally tenure (years with team) was found to be a significant predictor for the satisfaction dimensions of *strategy*, *training and instruction*, *team task contribution*, and *team integration*. As for consequences of athlete satisfaction, they found both commitment to the team, and desire to leave also to be significant outcome variables of satisfaction. The satisfaction dimensions of *strategy*, *team social contribution*, *personal dedication*, and *medical support staff* were found to be significant predictors of commitment to the team. As for the outcome variable of desire to leave the team, satisfaction of *individual performance*, *strategy*, *personal treatment*, *personal dedication*, *medical support staff*, and *external agents* were all significant predictors.

Riemer and Toon (2001) investigated coaching leadership and satisfaction in tennis. They utilized the LSS (Chelladurai & Saleh, 1980) which assessed the five

leadership behaviours of *training and instruction*, *democratic behaviour*, *autocratic behaviour*, *social support* and *positive feedback* and used only four subscales of the ASQ: satisfaction with *training and instruction*, *personal treatment*, *team performance* and *individual performance*. Results indicated that satisfaction with *training and instruction* was predicated by the coaching behaviours of *training and instruction*, *democratic behaviour*, *social support* and *positive feedback*. As for satisfaction with *personal treatment*, all five leadership behaviours were significant predictors. As for satisfaction with *team performance*, *positive feedback* was a significant predictor. Finally for satisfaction with *individual performance*, *democratic behaviour* was the only leadership behaviour to be a significant predictor in this relationship.

In another study utilizing the ASQ, Eys, Carron, Bray, and Beauchamp (2003) examined the relationship between role ambiguity operationalized as *scope of responsibilities*, *behaviours to fulfill responsibilities*, *evaluation of performance*, and *consequences of not fulfilling responsibilities* and athlete satisfaction. Using a sample of competitive soccer players, they found that lower perceptions of role ambiguity (i.e., greater role clarity) led to greater athlete satisfaction. Interestingly enough, the role ambiguity dimension of *scope of responsibilities* was found to be the only significant predictor of athlete satisfaction for the dimensions of *ability utilization*, *strategy*, *personal treatment*, *training and instruction*, *team task contribution*, and *team integration*.

Bray, Beauchamp, Eys, and Carron (2005) examined if the need for role clarity moderated the role ambiguity-athlete satisfaction relationship in Junior B ice hockey players. Using a sample of 112 athletes, the need for role clarity was found to moderate

the relationship between role ambiguity and the athlete satisfaction dimensions of *individual performance, personal treatment, training and instruction,* and *personal dedication.*

Finally, Sullivan and Gee (2007) examined the relationship between athlete satisfaction and intra-team communication. Results showed that intra-team communication was a significant predictor for the satisfaction dimensions of *strategy, training and instruction, ethics, team integration, medical personnel,* and *personal treatment*.

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Figure Captions

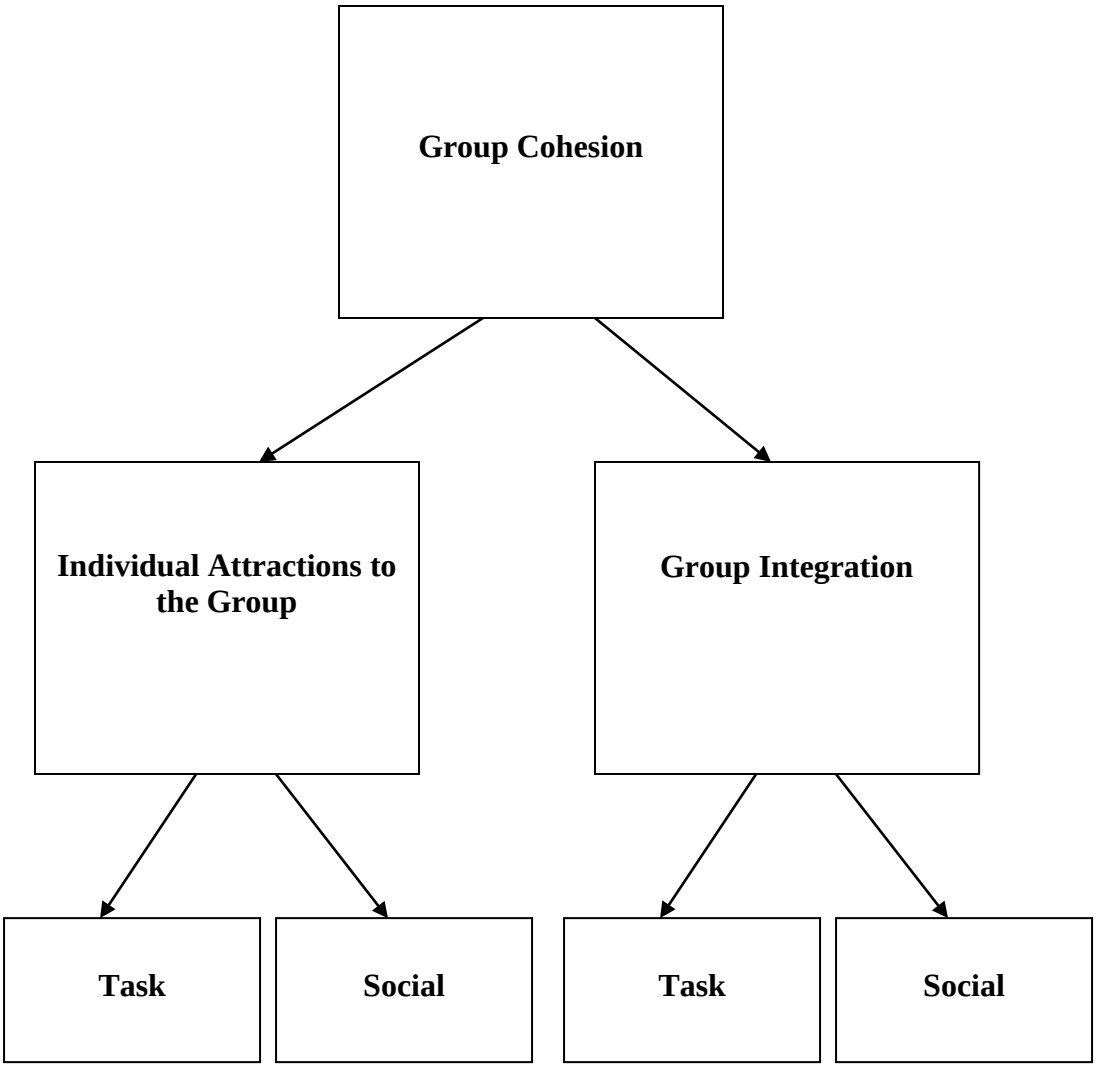
Figure 1. A Conceptual Model of Cohesion

Figure 2. A Conceptual Framework for the Study of Cohesion in Sport

Figure 3. The Multidimensional Model of Leadership in Sport

Figure 4. A Conceptual Framework of Athlete Satisfaction

Figure 1



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 2

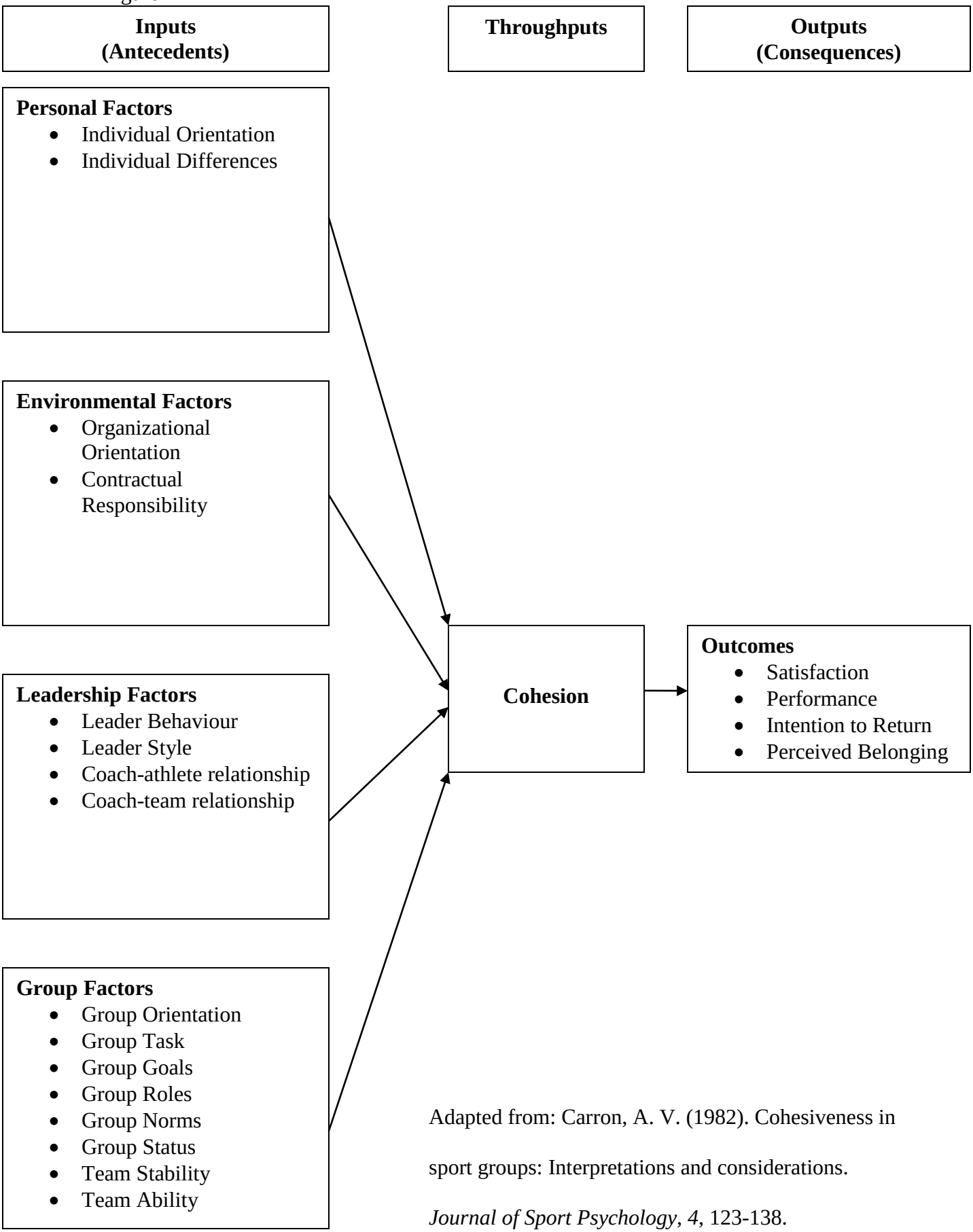


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Figure 3

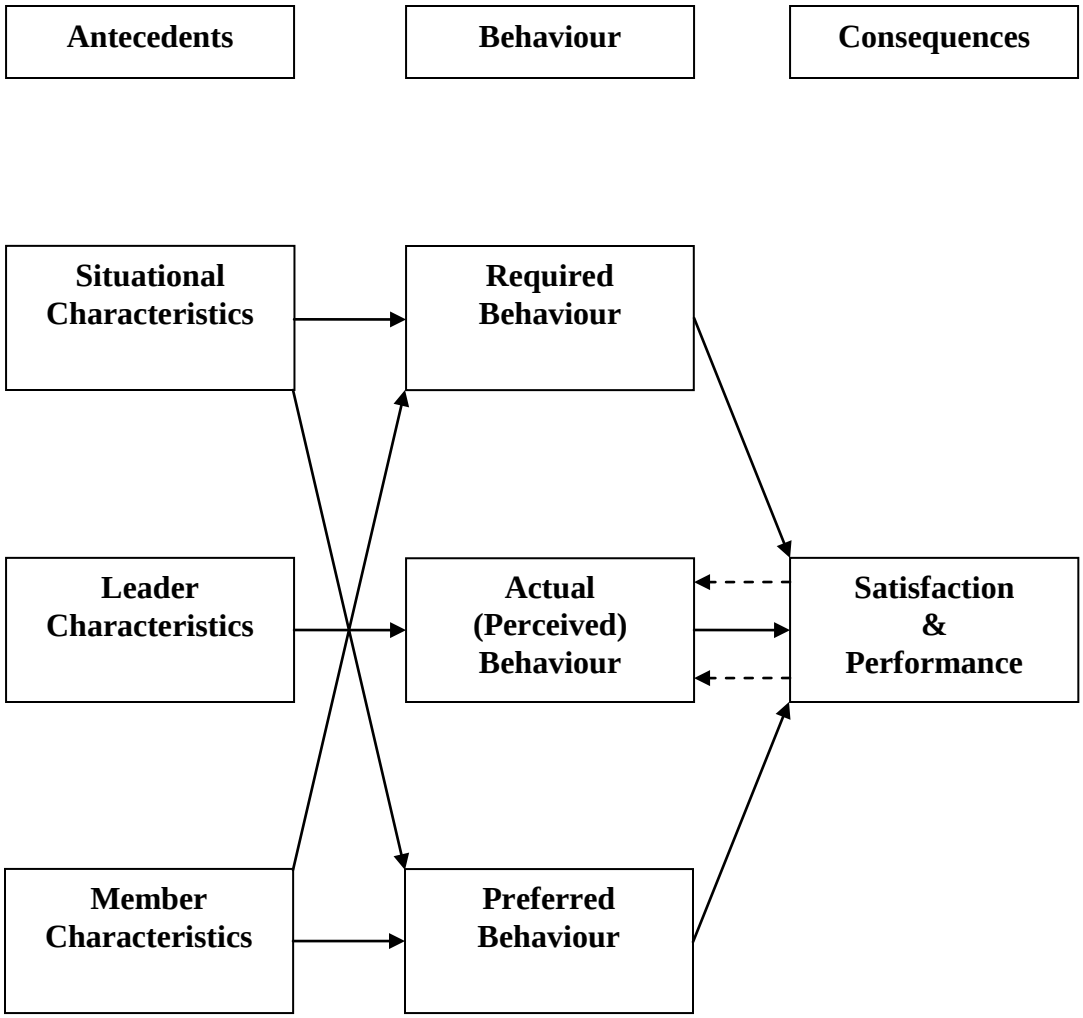

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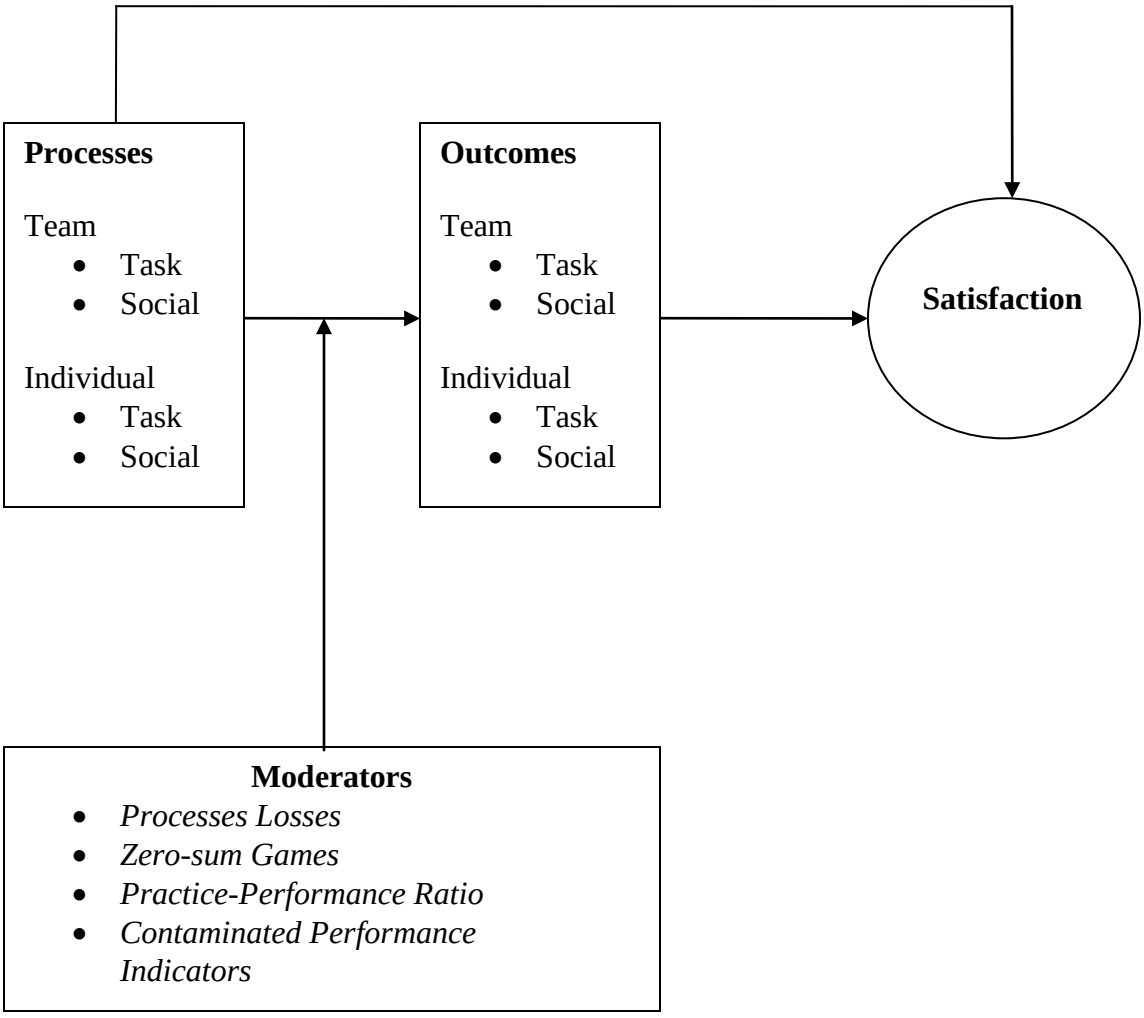
Figure 4



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Appendices

Appendix A

The Youth Sport Environment Questionnaire (YSEQ)

(Eys, Loughead, Bray, & Carron, 2009)

The following questions ask about your feelings toward your team. Please circle a number from 1-9 to show how much you agree with each statement.

1. We all share the same commitment to our team's goals.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

2. I invite my teammates to do things with me.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

3. As a team, we are all on the same page.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

4. Some of my best friends are on this team.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

5. I like the way we work together as a team.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

6. We hang out with one another whenever possible.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

7. As a team, we are united.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

8. I contact my teammates often (phone, text message, internet).
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

9. This team gives me enough opportunities to improve my own performance.
   (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

10. I spend time with my teammates.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

11. I am going to keep in contact with my teammates after the season ends.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

12. I am happy with my team's level of desire to win.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

13. We stick together outside of practice.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

14. My approach to playing is the same as my teammates.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

15. We contact each other often (phone, text message, internet).
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

16. We like the way we work together as a team.
    (Strongly Disagree) 1 2 3 4 5 6 7 8 9 (Strongly Agree)

Appendix B

The Leadership Scale for Sports (LSS)
(Chelladurai & Saleh, 1980)

Please tell us a little about your background

This section deals with your perceptions of your leadership role on your current team. Read the description below and select what best applies to you.
If you feel this does not apply to you (you don't consider yourself to be a leader on your team) then you may move on to the next box.

Formal Athlete Leader: A formal athlete leader is usually someone in a recognized position who the team looks to for leadership, such as a team captain

OR

Informal Athlete Leader: An athlete that establishes leadership through the interactions with other team members in specific situations. This is not a formally appointed position by the coach or the team but is still recognized as a leader by team members such as a veteran.

Do you consider yourself a… a) Formal Athlete Leader b) Informal Athlete Leader
(Please circle one if it applies to you)

If you are a formal leader, are you a… a) Captain b) Co-Captain c) Assistant Captain
(Please circle one if it applies to you)

Age: _____ yrs.

Gender: Male: ___ Female: ___

What sport are you currently participating in? (e.g., hockey, soccer):_____

What position do you play on your team? (e.g., defence, forward):_____

How long have you been playing on your current team? _____ yrs.

How many years have you been involved in your sport? _____ yrs.

What level does your team compete at? (e.g., provincial, regional)_____

Are you a starter? Yes: _____ No: _____

Athlete leaders are team members who influence other team members. Athlete leaders are not coaches. The following questions are designed to assess your opinions of the behaviours provided by the **ATHLETE LEADERS** on your team. Please provide a response for both:

FORMAL ATHLETE LEADER(S): A formal athlete leader is usually someone in a recognized position who the team looks to for leadership, such as a team captain.

INFORMAL ATHLETE LEADER(S): Another type of leader but not a team captain who provides leadership to the team such as a veteran.

1	2	3	4	5
never	once in a while	sometimes	often	always

The formal and informal athlete leader(s) on my team…

1. Sees to it that every athlete is working to their capacity.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

2. Explains to teammates the techniques and tactics of the sport.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

3. Pays special attention to correcting teammates' mistakes.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

4. Makes sure that their part in the team is understood by all the athletes.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

5. Instructs teammates individually in the skills of the sport.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

6. Plans ahead on what should be done.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

7. Explains to teammates what they should and should not do.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

8. Expects teammates to carry out their tasks to the last detail.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

9. Points out teammates' strengths and weaknesses.
   Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

10. Gives specific instructions to teammates as to what they should do in every situation.
    Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

11. Sees to it that the efforts are coordinated.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

12. Explains how teammates' contribution fits into the total picture.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

13. Specifies in detail what is expected of teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

14. Asks for the opinion of teammates on strategies for specific competitions.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

15. Gets team approval on important matters before going ahead.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

16. Lets the other teammates share in the decision making.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

17. Encourages teammates to make suggestions for ways of conducting practices.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

18. Lets the team set its own goals.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

19. Lets teammates try their own way even if they make mistakes.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

20. Asks for the opinion of teammates on important team matters.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

21. Lets teammates work at their own speed.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

22. Asks teammates on the plays that should be used in the game.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

23. Works relatively independent of teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

24. Does not explain their actions.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

25. Refuses to compromise a point.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

26. Keeps to themselves.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

27. Speaks in a manner that is not to be questioned.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

28. Helps teammates with their personal problems.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

29. Helps members of the team settle their conflicts.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

30. Looks out for the personal welfare of teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

31. Does personal favours for teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

32. Expresses affection that they feel towards teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

33. Encourages teammates to confide in them.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

34. Encourages close and informal relations with teammates.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

35. Invites members of the team to their home.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

36. Compliments teammates for their performance in front of others.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

37. Tells teammates when they do a particularly good job.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

38. Sees that a teammate is rewarded for a good performance.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

39. Expresses appreciation when a teammate performs well.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

40. Gives credit where credit is due.
Formal Leader(s)…1 2 3 4 5 Informal Leader(s)…1 2 3 4 5

Appendix C

The Athlete Satisfaction Questionnaire (ASQ)
(Riemer & Chelladurai, 1998)

Using the following scale, please circle a number from 1-7 to indicate your level of agreement with each statement regarding your satisfaction with your sport experience.

How satisfied are you with…

1. How the team works to be the best.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

2. My social status on the team.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

3. The degree to which I do my best for the team.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

4. The degree to which I have reached my performance goals during the season.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

5. The extent to which athlete leader(s) provide me with instruction.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

6. The recognition I receive from my athlete leader(s).
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

7. The team's win/loss record this season.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

8. The training I receive from my athlete leader(s) during the season.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

9. My commitment during practices and training.
   (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

10. The degree to which my athlete leader(s) share the same goal as me.
    (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

11. The friendliness of my athlete leader(s) towards me.
    (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

12. The guidance I receive from my athlete leader(s).
    (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

13. The progress in my performance over last season.
    (Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

14. The instruction I received from my athlete leader(s) this season.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

15. The role that I play in the social life of the team.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

16. The team's overall performance this season.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

17. My passion during games and competitions.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

18. The athlete leader(s) dedication to work together toward team goals.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

19. My athlete leader(s) teaching of the tactics and techniques of my position.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

20. The constructive feedback I receive from my athlete leader(s).
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

21. The degree to which my athlete leader(s) accept me on a social level.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

22. The extent to which the team is meeting its goals for the season.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

23. The improvement of my skill level.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

24. The level of appreciation my athlete leader(s) show when I do well.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

25. The loyalty shown towards me from my athlete leader(s).
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

26. My commitment to the team.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

27. The extent to which my teammates play as a team.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

28. The extent to which my athlete leader(s) are behind me.
(Not at all Satisfied) 1 2 3 4 5 6 7 (Extremely Satisfied)

Appendix D

Recruitment Script to Clubs

Hello, my name is Kyle Paradis, I am a master's student in sport psychology at the University of Windsor and I am conducting a study on athlete leadership, cohesion, and satisfaction in youth sport for my master's thesis. I want to request your permission to contact the coaches at your club to request their permission for their teams to participate in my study. The athletes will be asked to fill out a questionnaire package before or after a practice that should take no longer than 20 minutes to complete. The athletes will also be eligible to be entered in a draw to win a $50.00 gift certificate to a local sporting goods store for their participation.
Thank you for your time.

Appendix E

LETTER OF INFORMATION FOR COACHES

An Examination of the Youth Sport Environment

Your athletes are being asked to participate in a research study conducted by Kyle Paradis, a master's student in Human Kinetics, under the supervision of Dr. Todd Loughead from the Department of Kinesiology at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Kyle Paradis by phone at 519-253-3000 ext. 4058 or via email at paradisk@uwindsor.ca or Dr. Todd Loughead by phone at 519-253-3000 ext. 2450 or via email at loughead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine how the youth sport environment influences perceptions of cohesion, athlete leadership, and athlete satisfaction.

PROCEDURES

The athletes who volunteer for the study will complete a questionnaire package that may take up to 20 minutes to complete.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks associated with this research.

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 leadership and cohesion impacts athlete satisfaction. This knowledge can be used by sport psychology consultants to enhance the effectiveness of sport psychology interventions.

PAYMENT FOR PARTICIPATION

Athletes will be entered in a draw to win a gift certificate to a local sporting goods store ($50.00 at Sportchek).

CONFIDENTIALITY

Any information that is obtained in connection with this study and will remain confidential. All data will be kept in a locked cabinet which will only be accessible by the investigators. Data will be kept secured for five years, when it will then be destroyed. The questionnaire is anonymous. If the athletes complete a ballot for the gift certificate, the athlete's contact information is only on the ballot and not on the questionnaire itself.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. The athletes may withdraw from the study at any time without consequences of any kind. Your athletes may also refuse to answer any questions and still remain in the study. However, once the athletes have handed in the completed surveys this will be

accepted as their consent to participate in the study and it is not possible to withdraw because the surveys are anonymous, hence one cannot withdraw post-submission.

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 August 2010 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can email or call the investigators at the address or number above.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

The athletes may withdraw their consent at any time and discontinue participation without penalty. If you have questions regarding the rights of your athletes 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

Appendix F

LETTER OF INFORMATION FOR PARENTS

An Examination of the Youth Sport Environment

Your child is being asked to participate in a research study conducted by Kyle Paradis, a master's student in Human Kinetics, under the supervision of Dr. Todd Loughead from the Department of Kinesiology at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Kyle Paradis by phone at 519-253-3000 ext. 4058 or via email at paradisk@uwindsor.ca or Dr. Todd Loughead by phone at 519-253-3000 ext. 2450 or via email at loughead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine how the youth sport environment influences perceptions of cohesion, athlete leadership, and athlete satisfaction.

PROCEDURES

If your child volunteers for the study he/she will complete a questionnaire package that may take up to 20 minutes.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks associated with this research.

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 leadership and cohesion impacts athlete satisfaction. This knowledge can be used by sport psychology consultants to enhance the effectiveness of sport psychology interventions.

PAYMENT FOR PARTICIPATION

If your child participates in the study, he/she will be entered in a draw to win a gift certificate to a local sporting goods store ($50.00 at Sportchek).

CONFIDENTIALITY

Any information that is obtained in connection with this study and will remain confidential. All data will be kept in a locked cabinet which will only be accessible by the investigators. Data will be kept secured for five years, when it will then be destroyed. The questionnaire is anonymous. If your child completes a ballot for the gift certificate, his/her contact information is only on the ballot and not on the questionnaire itself.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. Your child may withdraw from the study at any time without consequences of any kind. Your child may also refuse to answer any questions and still

remain in the study. However, once your child has handed in the completed surveys this will be accepted as their consent to participate in the study and it is not possible to withdraw because the surveys are anonymous, hence one cannot withdraw post-submission.

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 August 2010 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can email or call the investigators at the address or number above.

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

Your child may withdraw his/her consent at any time and discontinue participation without penalty. If you have questions regarding the rights of your athletes 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

Appendix G

LETTER OF INFORMATION FOR ATHLETES

An Examination of the Youth Sport Environment

Your are being asked to participate in a research study conducted by Kyle Paradis, a master's student in Human Kinetics, under the supervision of Dr. Todd Loughead from the Department of Kinesiology at the University of Windsor.

If you have any questions or concerns about the research, please feel to contact Kyle Paradis by phone at 519-253-3000 ext. 4058 or via email at paradisk@uwindsor.ca or Dr. Todd Loughead by phone at 519-253-3000 ext. 2450 or via email at loughead@uwindsor.ca.

PURPOSE OF THE STUDY

To examine how the youth sport environment influences perceptions of cohesion, athlete leadership, and athlete satisfaction.

PROCEDURES

If you volunteer for the study you will complete a questionnaire package that may take up to 20 minutes.

POTENTIAL RISKS AND DISCOMFORTS

There are no known risks associated with this research.

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 leadership and cohesion impacts athlete satisfaction. This knowledge can be used by sport psychology consultants to enhance the effectiveness of sport psychology interventions.

PAYMENT FOR PARTICIPATION

If you participate in the study, you will be entered in a draw to win a gift certificate to a local sporting goods store ($50.00 at Sportchek).

CONFIDENTIALITY

Any information that is obtained in connection with this study and will remain confidential. All data will be kept in a locked cabinet which will only be accessible by the investigators. Data will be kept secured for five years, when it will then be destroyed. The questionnaire is anonymous. If you complete a ballot for the gift certificate, your contact information is only on the ballot and not on the questionnaire itself.

PARTICIPATION AND WITHDRAWAL

Participation in this study is voluntary. You may withdraw from the study at any time without consequences of any kind. You may also refuse to answer any questions and still remain in the study. However, once you have handed in the completed surveys this will be accepted as your

consent to participate in the study and it is not possible to withdraw because the surveys are anonymous, hence one cannot withdraw post-submission.

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 August 2010 (http://www.uwindsor.ca/reb). If you have any additional concerns or questions, you can email or call the investigators at the address or number 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 the 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

VITA AUCTORIS

NAME:	Kyle Francis Paradis
PLACE OF BIRTH:	Toronto, Ontario, Canada
YEAR OF BIRTH:	1986
EDUCATION:	Ph.D. (Doctor of Philosophy) Psychological Bases of Physical Activity and Movement Control (Sport and Exercise Psychology) University of Western Ontario, London, Ontario, Canada 2010-2014 M.H.K. (Master of Human Kinetics) Applied Human Performance (Sport and Exercise Psychology) University of Windsor, Windsor, Ontario, Canada 2008-2010 B.A.[H]. (Bachelor of Arts, Honours) Sport Psychology (Human Kinetics/Psychology) Laurentian University, Sudbury, Ontario, Canada 2004-2008 O.S.S.D. (Ontario Secondary School Diploma) St. Mary Catholic Secondary School Pickering, Ontario, Canada 2000-2004