

1-1-2008

The influence of group goal type on cohesion.

Andree Castonguay
University of Windsor

Follow this and additional works at: <https://scholar.uwindsor.ca/etd>

Recommended Citation

Castonguay, Andree, "The influence of group goal type on cohesion." (2008). *Electronic Theses and Dissertations*. 7153.
<https://scholar.uwindsor.ca/etd/7153>

This online database contains the full-text of PhD dissertations and Masters' theses of University of Windsor students from 1954 forward. These documents are made available for personal study and research purposes only, in accordance with the Canadian Copyright Act and the Creative Commons license—CC BY-NC-ND (Attribution, Non-Commercial, No Derivative Works). Under this license, works must always be attributed to the copyright holder (original author), cannot be used for any commercial purposes, and may not be altered. Any other use would require the permission of the copyright holder. Students may inquire about withdrawing their dissertation and/or thesis from this database. For additional inquiries, please contact the repository administrator via email (scholarship@uwindsor.ca) or by telephone at 519-253-3000ext. 3208.

THE INFLUENCE OF GROUP GOAL TYPE ON COHESION

by
Andrée Castonguay

A Thesis
Submitted to the Faculty of Graduate Studies
through Human Kinetics
in Partial Fulfillment of the Requirements for
the Degree of Master of Human Kinetics at the
University of Windsor

Windsor, Ontario, Canada
2008
© 2008 Andrée Castonguay



Library and
Archives Canada

Published Heritage
Branch

395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque et
Archives Canada

Direction du
Patrimoine de l'édition

395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file *Votre référence*

ISBN: 978-0-494-47032-9

Our file *Notre référence*

ISBN: 978-0-494-47032-9

NOTICE:

The author has granted a non-exclusive license allowing Library and Archives Canada to reproduce, publish, archive, preserve, conserve, communicate to the public by telecommunication or on the Internet, loan, distribute and sell theses worldwide, for commercial or non-commercial purposes, in microform, paper, electronic and/or any other formats.

The author retains copyright ownership and moral rights in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

AVIS:

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque et Archives Canada de reproduire, publier, archiver, sauvegarder, conserver, transmettre au public par télécommunication ou par l'Internet, prêter, distribuer et vendre des thèses partout dans le monde, à des fins commerciales ou autres, sur support microforme, papier, électronique et/ou autres formats.

L'auteur conserve la propriété du droit d'auteur et des droits moraux qui protègent cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

In compliance with the Canadian Privacy Act some supporting forms may have been removed from this thesis.

Conformément à la loi canadienne sur la protection de la vie privée, quelques formulaires secondaires ont été enlevés de cette thèse.

While these forms may be included in the document page count, their removal does not represent any loss of content from the thesis.

Bien que ces formulaires aient inclus dans la pagination, il n'y aura aucun contenu manquant.


Canada

AUTHOR'S DECLARATION OF ORIGINALITY

I hereby certify that I am the sole author of this thesis and that no part of this thesis has been published or submitted for publication.

I certify that, to the best of my knowledge, my thesis does not infringe upon anyone's copyright nor violate any proprietary rights and that any ideas, techniques, quotations, or any other material from the work of other people included in my thesis, published or otherwise, are fully acknowledged in accordance with the standard referencing practices. Furthermore, to the extent that I have included copyrighted material that surpasses the bounds of fair dealing within the meaning of the Canada Copyright Act, I certify that I have obtained a written permission from the copyright owner(s) to include such material(s) in my thesis and have included copies of such copyright clearances to my appendix.

I declare that this is a true copy of my thesis, including any final revisions, as approved by my thesis committee and the Graduate Studies office, and that this thesis has not been submitted for a higher degree to any other University of Institution

ABSTRACT

The general purpose of the current study was to determine whether the implementation of a 6-week long team goal setting intervention would increase perceptions of cohesion. The specific purpose was to determine what goal type (process, performance, outcome, or multiple goals) would have the greatest impact on cohesion. The participants were 106 ($N = 38$ teams) male and female undergraduate students. The teams were randomly assigned to an experimental process goal, performance goal, outcome goal, multiple goal or control condition. Teams completed the task of doubles cup stacking in a laboratory setting. Each participant completed the Group Environment Questionnaire (GEQ; Carron, Brawley, & Widmeyer, 1985), which assessed perceptions of cohesion at three time points over the course of the study. Overall, the results indicated that the team goal setting intervention was not successful in fostering perceptions of cohesion. Recommendations for future team goal setting research are discussed.

ACKNOWLEDGEMENTS

I would like to take this opportunity to thank my friends and family for their exceptional encouragement and support throughout the years. I could not have made it this far without everyone of you and I will be forever grateful. I would also like to thank my committee members for their insightful feedback and contributions towards this final project. Finally, I would like to acknowledge the unbelievable support and guidance of my supervisor Dr. Todd Loughead. You have been an outstanding mentor.

TABLE OF CONTENTS

AUTHOR’S DECLARATION OF ORIGINALITY.....	iii
ABSTRACT.....	iv
ACKNOWLEDGEMENTS.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
LIST OF APPENDIXES.....	x

CHAPTER

I. RESEARCH ARTICLE

Introduction.....	1
Method	9
Participants	9
Experimental Task	10
Experimental Conditions	11
Measures	13
Manipulation Check.....	14
Design and Procedures.....	16
Results.....	20
Preliminary Analysis.....	20
Descriptive Statistics.....	21
Main Analysis	22
Manipulation Check.....	25
Discussion.....	26
References.....	32
Tables.....	40

II. REVIEW OF LITERATURE

Cohesion	46
Defining Cohesion	46
Characteristics of Cohesion	48
Conceptual Model of Cohesion	49
Measurement of Cohesion: The Group Environment Questionnaire	51

Cohesion and Performance	53
Team Building	56
Team Building Defined	56
Team Building Research	57
Team Goal Setting	61
Defining Team Goal Setting	61
Team Versus Individual Goal Setting	61
Types of Goals on Teams	63
Conditions for Effective Group Goal Setting	63
Group Goal Setting-Cohesion Relationship	65
Goal Type	67
References	74
Figures	82
Appendixes	85
VITA AUCTORIS	106

LIST OF TABLES

Table 1- Means and Standard Deviations of Cohesion for the Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions at Time 1, Time 2, and Time 3	40
Table 2- Bivariate Correlations between the Dimensions of Cohesion at Time 1, Time 2, and Time 3	41
Table 3- Hierarchical Model of Group Cohesion	42
Table 4- Means and Standard Deviations of ATG-S for Males and Females for the Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions	44
Table 5- Means and Standard Deviations of Goal Commitment for the Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions at Time 1 and Time 2	45

LIST OF FIGURES

Figure 1- Conceptual Framework for the study of Cohesion in Sport	83
Figure 2- Team Building Model for Development of Cohesion	84

LIST OF APPENDIXES

Appendix A	Cup Stacking Formations	85
Appendix B	Demographic Information	86
Appendix C	Modified Group Environment Questionnaire	87
Appendix D	Spontaneous Goal Setting Inventory	90
Appendix E	Goal Commitment Inventory	91
Appendix F	Goal Specificity Inventory	92
Appendix G	Goal Difficulty Inventory	93
Appendix H	Letter of Information	94
Appendix I	Instructional Sheet for Process Goal Setting Condition	96
Appendix J	Instructional Sheet for Performance Goal Setting Condition	97
Appendix K	Instructional Sheet for Outcome Goal Setting Condition	98
Appendix L	Instructional Sheet for Multiple Goal Setting Condition	99
Appendix M	Instructional Sheet for Control Condition	100
Appendix N	Letter of Consent for Experimental Conditions	101
Appendix O	Letter of Consent for Control Condition	103
Appendix P	Goal Setting Log Book	105

CHAPTER I

RESEARCH ARTICLE

Introduction

Practitioners, coaches, and players are continually interested in enhancing the performance of their teams and it is believed that greater cohesion is related to improved performance (Hardy, Eys, & Carron, 2005). 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). Not surprisingly, researchers have conducted numerous investigations examining the relationship between cohesiveness and performance (e.g., Carron, Bray, & Eys, 2002; Tziner, Nicola, & Rizac, 2003; Widmeyer & Williams, 1991). Furthermore, one of the most comprehensive analyses of this relationship was conducted by Carron, Colman, Wheeler, and Stevens (2002). These authors conducted a meta-analytic review containing a total of 46 studies with over 9,900 athletes and 1,000 teams. In general, the results revealed a significant moderate to large ($ES = .655$) relationship between cohesion and performance. Given the significant relationship between cohesion and performance, it is not surprising that attempts have been made to enhance cohesion through a process known as team building.

Team building can be viewed as a method to “promote an increased sense of unity and cohesiveness and enable the team to function together more smoothly and effectively” (Newman, 1984, p. 27). That is, team building interventions are designed to increase group effectiveness by enhancing group cohesiveness (Carron, Spink, & Prapavessis, 1997). Despite the importance of enhancing cohesion through team building,

research from this body of knowledge has yielded equivocal results. On the one hand, some studies have found a positive team building-cohesion relationship (e.g., Carron & Spink, 1993; Stevens & Bloom, 2003; Voight & Callaghan, 2001). For instance, Carron and Spink implemented a team building intervention with university aerobics classes to determine if cohesion could be enhanced. Specifically, university aerobics classes were randomly assigned to either a team building or a control condition (i.e., regular exercise classes) for a 13-week period. Results showed that the team building and control conditions could be differentiated on the basis of their perceptions of cohesion. In particular, exercisers who participated in the team building program focusing on individual positions in the group, group norms, sacrifices, distinctiveness, and communication perceived greater levels of task cohesion than exercisers in the control condition. That is, exercisers in the team building condition were more united in trying to reach their group's objectives compared to exercisers in the control condition. Similarly, Stevens and Bloom implemented a team building program with female NCAA Division 1 softball teams. The purpose of the study was to determine if the team building program consisting of role behavior, social support, team leadership, social interaction, and clarification of team goals held higher perceptions of cohesion than a control condition by the end of the season. The results indicated that participants in the intervention condition reported significantly higher levels of task and social cohesion following the intervention compared to the control condition. More specifically, participants in the intervention condition reported being more motivated towards developing and maintaining social relationships and activities within the group.

Alternatively, some research has found no changes in perceptions of cohesion following a team building intervention program (e.g., Bloom & Stevens, 2002; Prapavessis, Carron, & Spink, 1996). For example, Prapavessis et al. conducted a team building intervention study with coaches who were randomly assigned to a team building, an attention-placebo, or a control condition. Coaches in the team building condition attended a workshop and developed team building strategies that were implemented with their teams. The strategies were based on Carron and Spink's (1993) conceptual framework and included: clarification of roles, leadership, norms, and goals. Coaches in the attention-placebo condition were provided with information on topics such as nutrition. Perceptions of cohesion were assessed at three different times throughout the season, but no differences were found across the three conditions. Bloom and Stevens carried out a study on one equestrian team to examine whether the implementation of a team building program consisting of various interventions (e.g., development of leadership, norms, and communication) would enhance perceptions of cohesion. Results revealed no significant differences in perceptions of cohesion between pre- and post-intervention.

Given these equivocal findings, several shortcomings have been identified. One reason why team building interventions have failed to enhance cohesion may be related to the research design. Although, Bloom and Stevens (2002) found no increase in perceptions of cohesion after implementing a team building intervention program, an alternative explanation could be that while cohesion was not enhanced, perhaps it was maintained throughout the season. The idea of maintaining cohesion levels throughout the season would be consistent with recent findings. Senécal, Loughead, and Bloom

(2008) conducted a season-long team building intervention program using team goal setting. The authors randomly assigned teams to either a team goal setting condition or a control condition. The results revealed that levels of cohesion for athletes in the team goal setting condition remained stable, while athletes' perceptions of cohesion in the control condition significantly decreased over the season. Without the use of a control group, Senécal et al. would have concluded similar to Bloom and Stevens that the intervention was not effective in influencing perceptions of cohesion.

Another limitation influencing previous research in team building has been the duration of the study. Numerous researchers (e.g., Pargman & De Jesus, 1987) have assessed the effects of team building on perceptions of cohesion over a relatively short-term period. For instance, Pargman and De Jesus evaluated the effect of a team building intervention using team goal setting on cohesion over the course of a round robin tournament lasting less than a week. Therefore, team building interventions of short duration may not provide sufficient time for any long-term benefits of the program to develop (Buller, 1998).

A final limitation influencing the results of previous team building research could be the use of multiple team building strategies being implemented concurrently. Several studies (e.g., Bloom & Stevens, 2002; Carron & Spink, 1993; Prapavessis et al., 1996; Spink & Carron, 1993; Stevens & Bloom, 2003) have often implemented multiple intervention strategies such as team goal setting, team leadership, team communication, clarification of roles, and social support. Given that the intervention strategies were implemented concurrently, the relative contribution of any one strategy could not be determined. Therefore, it has been suggested that future research evaluate the

effectiveness of one intervention strategy (Stevens & Bloom). As noted above, there are several intervention strategies that can be used to enhance cohesion, however when asked, participants in the Stevens and Bloom study indicated that team goal setting was the most effective team building strategy to enhance perceptions of cohesion; therefore team goal setting will be used as the intervention strategy for the proposed study.

Team goals have been defined as shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members (Mills, 1984). Although there is limited research investigating whether teams are better served by individual goals for all members or team goals for the collective, the research evidence that is available suggests that team goals are superior to individual goals for team outcomes such as cohesion and performance (Johnson, Ostrow, Perna, & Etzel, 1997; Matsui, Kakuyama, & Onglatco, 1987; Mitchell & Silver, 1990). In fact, the idea to incorporate more team goals intuitively makes sense since sport is a context where the team dominates in terms of getting individuals to carry out their goals (Brawley, Carron, & Widmeyer, 1993). Specifically, it has been suggested that team goal setting can positively influence cohesion by encouraging a greater team focus (Widmeyer & Ducharme, 1997). In order to further investigate the team goal setting-cohesion relationship, Senécal et al. (2008) examined whether the implementation of a season-long team goal setting intervention increased perceptions of cohesion in female high school basketball teams. The teams were randomly assigned to either a team goal setting condition or a control condition. The results revealed that participants in the team goal setting condition held significantly higher perceptions on all four dimensions of cohesion than participants in the control condition. One of the dimensions included individual

attractions to the group task (ATG-T) referring to the attractiveness of the group's task, productivity, and goals for the individual personally. The second dimension was represented by individual attractions to the group social (ATG-S) and is viewed as each group member's feelings about his or her personal acceptance, and social interaction with the group. The third dimension found was group integration task (GI-T) represented by an individual's perceptions of the similarity, closeness, and bonding within the group as a whole around the group's task. The fourth dimension of cohesion consisted of group integration social (GI-S) incorporating individual's perceptions about the similarity, closeness, and bonding within the group as a whole as a social unit (Carron et al., 1998).

Although previous research does provide some insight into the relationship between group goal setting and cohesion, this body of research does have its shortcomings. One of these pertains to the examination of this relationship in field settings. A limitation to this research method is that the researcher loses the ability to directly control many aspects of the situation. However, the use of experimental designs allows researchers to keep extraneous variables constant, thereby eliminating their influence on the outcome of the experiment (Cozby, 1997). Thus, the present study was conducted in a controlled and stable environment whereby the primary researcher was responsible for conducting the research with all participants in a laboratory setting.

Another limitation is the majority of previous research has failed to implement a team goal setting program while fostering conditions for effective team goal setting. That is, few studies in sport have examined the effects of team goal setting while monitoring goal acceptance, goal commitment, goal difficulty, goal specificity, and goal feedback. Although no research has monitored the conditions for effective goal setting at the team

level, there is support for this in the individual goal setting literature (e.g., Kylo & Landers, 1995; Matsui et al., 1987; Mesch, Farh, & Podsakoff, 1994). Kylo and Landers recommended that investigators promote goal acceptance and commitment by having participants active in the goal setting process. In addition, they suggested that researchers assess goal commitment when conducting research on goal setting. Moreover, they found that goal difficulty moderates the goal setting-performance relationship in that moderately difficult goals enhanced performance more than difficult or easy goals. In terms of goal specificity, Kylo and Landers' research has found that specific goals result in better performance than relative and "do your best" goals. Finally, it is believed that goal setting effectiveness is enhanced if there is timely feedback showing progress towards the goals (Locke & Latham, 1985; Widmeyer & Ducharme, 1997).

In addition, although it has been recommended that participants' personal goals be measured when conducting goal setting research to assess whether additional goals are being set (Locke, 1994), previous research has failed to do so. In order to account for this previous limitation, the current study assessed for spontaneous goal setting.

A final shortcoming has been the lack of research examining the various goal types. Studies that have examined the effects of goal setting on cohesion have used performance goals (i.e., Pargman & De Jesus, 1987; Senécal et al., 2008) or have failed to indicate which type of goals were being implemented (e.g., Brawley et al., 1993; Kjormo & Halvari, 2002). Consequently, several researchers (e.g., Burton, 1989; Kingston & Hardy, 1994, 1997) have stressed the importance of distinguishing between four types of goals (i.e., process, performance, outcome, and combination of the previous three) and the significance of investigating the benefits of each goal type in relation to

various outcomes such as cohesion. Process goals are defined as focusing on the behaviours necessary for successful performance (Hardy, Jones, & Gould, 1996). That is, process goals focus on skill technique (Cox, 2007). Examples of process goals might include “staying relaxed” during a race or “keeping your eyes on the soccer ball”. Performance goals on the other hand, focus on identifying an end product of performance that can be achieved relatively independent of others (Hardy et al., 1996). Specifically, performance goals focus on skill achievement (Cox). For instance, running one mile in 12 minutes and 21 seconds or improving running time by 5 seconds would be indicative of a performance goal. Outcome goals focus on an end product of performance and are usually based on a comparison with a competitor such as finishing first in a race or beating the opponent by 10 seconds (Hardy et al., 1996). That is, outcome goals usually focus on winning (Cox). Finally, multiple goals reflect that by combining several goal types (process, performance, and/or outcome) may be beneficial for performance. In fact, research by Filby, Maynard, and Graydon (1999) found that the use of multiple types of goal is superior to any single type of goal setting on performance.

Thus, the general purpose of the present study was to determine whether the implementation of a team goal setting intervention program would increase perceptions of cohesion compared to a control condition receiving no treatment over a six week period. More specifically, the purpose was to determine what goal type (process, performance, outcome, or multiple goals) would have the greatest impact on cohesion. In order to enhance the effectiveness of the team goal setting intervention, several moderating factors (i.e., goal acceptance, goal commitment, goal difficulty, goal specificity, feedback, and spontaneous goal setting) were monitored and controlled. Two

hypotheses were advanced for this study. First using Senécal et al. (2008) findings as a guide, it was hypothesized that participants in the team goal setting condition would have higher perceptions of cohesion than their control counterparts. Second, it was hypothesized that participants in the multiple team goal setting condition would have the highest perceptions of cohesion followed by the process goal setting condition, then the performance and outcome goal setting conditions, respectively. The rationale for this hypothesis was based on previous goal setting research (e.g., Filby et al., 1999; Linnenbrink, 2005) that has found the use of multiple types of goal setting superior to any single type of goal setting on performance. Furthermore, because cup stacking is a relatively novel task, participants would benefit more from setting process goals until the task became relatively automatic (e.g., Kingston & Hardy, 1997; Zimmerman & Kitsantas, 1996, 1997).

Method

Participants

A total of 59 female and 47 male undergraduate students registered in an introductory sport psychology class at the University of Windsor served as participants. Their ages ranged from 18 to 23 years, with a mean of 18.67 ($SD = .90$). Participants were randomly placed into groups consisting of three members each. However, 17 students subsequently withdrew from the study indicating such reasons as lack of time and unknowingly signed up by a friend. Therefore, there were data available for 106 participants including one group of four, 29 groups of three and 9 groups of two members each. On average, participants reported knowing their teammates for 4.14 months ($SD =$

21.02). Furthermore, 93.4% of participants reported having no prior experience with cup stacking.

Students who took part in the study received a research credit equivalent to 2% towards their final grade in introductory sport psychology course. This research credit was treated as a bonus above the normal evaluation of their work in the class. Students who did not participate in the study were provided with the option of an alternative means to gain this research credit. The alternative means of gaining the research credit included submitting two 3-page reports that reviewed two published research studies on the topics of cohesion and team goal setting. Students who chose this option earned 1% point for each report. Two students selected this option. The aforementioned opportunities for additional credit were deemed equivalent in terms of time commitment.

Experimental Task

Teams were asked to perform an interdependent task called doubles cup stacking. The task of doubles cup stacking requires two individuals at one time to stack together plastic cups. Cup stacking is a sport where participants stack and unstack 12 specially designed plastic cups in a predetermined sequence. For the purpose of the current study, each participant within his/her team was required to perform the task twice, forcing team members to work together to accomplish the task through exchanging information, assigning roles to divide labour, and building on one another's performance. As such, teams were required to stack and unstack a 3-6-3 formation, 6-6 formation and 1-10-1 formation (see Appendix A). Thus, a stack of three cups was formed (two on the bottom and one on top) followed by a stack of six cups (three on the bottom, two in the middle, and one on top), and followed once again by a stack of three. All three of these

formations were then unstacked in the order that they were first formed and placed into one pile. From the pile of cups, participants formed the 6-6 formation consisting of two stacks of six cups. Once these two piles had been unstacked and placed once again into a single pile, teams finished the task with the 1-10-1 formation by placing two singles cups on the outsides and a stack of 10 in the middle (four on the bottom, three in the first middle row, two on the upper-middle row, and one on top). A timing mat was used to measure performance. The timer started once the participants took their hands off the sensor button and stopped once the button was depressed. This task was selected because very few of the participants had previous experience with cup stacking.

Experimental Conditions

Process goals. Teams assigned to the process goal condition ($n = 8$) were provided with a written definition of a process goal and informed verbally that research has indicated that process goals should be used to improve team performance. They were subsequently informed that in order to do well they should focus on using this type of goal. The researcher and teams participatively set team process goals that were used during their cup stacking task. Participants were active in the goal setting process in order to maximize the effectiveness of the goal setting program by promoting goal commitment. (Kyllo & Landers, 1995). Furthermore, participants were notified that although the task of doubles cup stacking was identical between all teams, they were taking part in one of three studies being conducted by the primary researcher. An emphasis was placed on the aforementioned point to avoid discussions and comparisons amongst the teams. They were also informed that their concern was with team goal improvements based on baseline and final goal assessments determined by the primary

researcher (i.e., the competition will focus on improvements regarding their process goals and not time). As a result, teams assigned to this condition did not use the timing mat during the remaining trials after baseline testing with the exception of the final performance evaluation trial.

Performance goals. Teams assigned to the performance goal condition ($n = 8$) followed a similar protocol to the previous condition except participants were informed about the performance benefits of setting performance goals and were later asked to develop team performance goals. However, unlike the previous condition, teams were presented with their baseline time and permitted to use the timing mat; thereby having immediate feedback with respect to time.

Outcome goals. Teams assigned to the outcome goal condition ($n = 8$) were provided with information regarding the use of outcome goals and were informed that in order to do well, the team should focus on using team outcome goals. Teams and the researcher generated the outcome goals that would be used during their cup stacking task. Unlike the previous team goal setting conditions, participants were informed that the competition would be based on performance measured by time. Therefore, teams used the timing mat and were also provided with the baseline performance times of other teams.

Multiple goal condition. The multiple goal setting condition ($n = 7$) included process, performance, and outcome goals. The protocol for this condition was identical to the other experimental groups except teams were asked to develop goals for all three goal types and they were informed that the competition was based on performance measured by time. Additionally, like the outcome goal condition, teams were permitted to use the timing mat and they were provided with the baseline times of all teams.

Control condition. Participants in the control condition ($n = 7$) were informed only that the experiment was concerned with the cohesion of groups (i.e., they were not told about the competition), and they completed the experimental task without the use of explicit goal statements. Furthermore, teams were not provided with the opportunity to use the timing mat during the trials in order to minimize spontaneous goal setting.

Measures

Demographic data. Participants completed demographic information including age, gender, prior experience with cup stacking, and length of friendship between teammates (see Appendix B).

Cohesion. Cohesion was measured using the Group Environment Questionnaire (GEQ; Carron, Widmeyer, & Brawley, 1985). The GEQ is an 18-item inventory that assesses four dimensions of cohesion. Specifically, individual attractions to the group-task (ATG-T) consists of four items and an example is: “I am unhappy with my team’s level of desire to win”. Individual attractions to the group-social (ATG-S) consists of five items and an example item is: “Some of my best friends are on this team”. Group integration-task (GI-T) comprises five items and an example item is: “Our team is united in trying to reach its goals for performance”. Lastly, group integration-social (GI-S) comprises four items and an example item is: “Members of our team would rather go out on their own than get together as a team” (see Appendix C for a copy of the items). Following Carron et al.’s (1998) recommendations, minor wording modifications were needed to ensure the GEQ was appropriate for the current task. Specifically, nine items were modified. For instance, the item “Our team would like to spend time together in the off season” was modified to read: “Members of our team would like to spend time

together when the cup stacking study is completed”. All items were measured on a 9-point Likert scale anchored at the extremes of 1 (*strongly disagree*) to 9 (*strongly agree*). Out of the 18 items, 12 were negatively worded and needed to be reversed scored; hence higher scores represented stronger perceptions of cohesion. Research has shown that the GEQ possesses adequate internal consistency (e.g., Carron et al., 1985), and shows content (e.g., Carron et al., 1985), concurrent (e.g., Brawley, Carron, & Widmeyer, 1987), predictive (e.g., Spink & Carron, 1993), and factorial validity (e.g., Carron et al., 1985; Li & Harmer, 1996).

Performance. Performance was measured by the time in seconds it took the teams to complete two full cycles consisting of the 3-6-3, 6-6, and 1-10-1 cup stacking structures as indicated by the cup stacking timing mat.

Manipulation Check

Spontaneous goal setting. Participants assigned to the control condition were asked to fill out the questionnaire at the end of the study to assess whether any goals were set during the study (Locke, 1994). If participants answered “yes” to setting goals, they were asked to provide a written example of the goals that were set in order to determine which type of goals were being set (see Appendix D).

Goal commitment. Goal commitment was measured using Klein, Wesson, Hollenbeck, Wright, and DeShon’s (2001) inventory. This unidimensional inventory contained five items on a 5-point Likert scale (e.g., “I am strongly committed to pursuing this goal”) with scores ranging from 1 (*completely disagree*) to 5 (*completely agree*). Of the five items, three were negatively worded and needed to be reversed scored (see Appendix E for a copy of the inventory). The goal commitment scale has been shown to

possess adequate reliability with a Cronbach's alpha of .81 (e.g., Seijts & Latham, 2001) and has been used in numerous goal setting studies in organizational psychology (e.g., Brown & Latham, 2002; Guthrie & Hollensbe, 2004; Seijts & Latham; Winters & Latham, 1996).

Goal specificity. Perceived goal specificity was measured by two items measured on a 5-point Likert scale. These items were derived from Winters and Latham (1996). This inventory was completed by participants in the team goal setting conditions after each trial to ensure that goals remained specific throughout the study. Minor wording modifications were made to both items to ensure the inventory was appropriate for the current task. For instance, the item "To what extent was the goal for producing schedules vague?" was modified to read "To what extent was the aim for producing your team goals vague?". Scale scores ranged from 1 (*not at all*) to 5 (*very much so*). One of the two items was negatively worded and needed to be reversed scored; thus higher scores reflected higher perceptions of specificity (see Appendix F for a copy of the inventory). Research using the goal specificity inventory has provided evidence that it is reliable with a Cronbach's alpha of .84 (e.g., Brown & Latham, 2002).

Goal difficulty. The extent to which the participants in the experimental conditions perceive the goal as difficult was measured using two items from Winters and Latham (1996): "To what extent were the goals that your team set difficult?" and "To what extent were the goals that your team set easy?" Similar to the goal specificity inventory, this inventory was completed by participants in the team goal setting conditions after each practice session to ensure that goals remained moderately difficult throughout the study. Scale scores ranged from 1 (*not at all*) to 5 (*very much so*). One of

the items was negatively worded and needed to be reversed scored; hence, higher scores represented greater perceptions of goal difficulty (see Appendix G for a copy of the inventory). Research has shown that the goal difficulty inventory possesses adequate reliability with a Cronbach's alpha of .65 and has been implemented as a measurement tool in various studies (e.g., Brown & Latham, 2002). Although the current inventory appears to have low levels of reliability, Price and Weiss (2000) suggest an acceptable cut off value of .60 for inventories containing few items such as the goal difficulty inventory.

Design and Procedures

Ethical approval for the study was first obtained from the university's research ethics board. Students registered in the introductory sport psychology class were invited to take part in a study concerning the development of cohesion. However, in order to avoid coercion the students were approached in another course. Participants were then given a letter of information (see Appendix H for a copy of the letter) and were informed that they would need to attend one 15 minute session for the first 3 weeks and on a biweekly basis for three weeks for a total of 6 weeks. In order to limit spontaneous goal setting, no further details regarding the study were provided at this time.

Participants were randomly assigned to teams consisting of three members. Having teams of three is consistent with previous team goal setting research (e.g., Guthrie & Hollensbe, 2004; Mesch et al., 1994; Mulvey & Ribbens, 1999; Silver & Bufanio, 1996), and should promote team member interaction. Once the teams were established, they were randomly assigned to one of five conditions: process goals, performance goals, outcome goals, multiple goals (comprised of process, performance, and outcome goals),

or a control condition. A duration of 6 weeks was selected for the current study because it emulates the length of a season for certain sports such as high school soccer, track and field, and rugby. Furthermore, the duration of the present study was consistent with previous goal setting research (e.g., Filby et al., 1999; Klein & Mulvey, 1995; Linnenbrink, 2005).

The first 10 minutes of the first meeting was devoted to showing a video clip of the cup stacking task and a review of the rules in doubles cup stacking was provided (see Appendixes I-M for a copy of the instructional sheet for each condition). Participants were then required to sign a consent form (see Appendixes N and O for a copy of the experimental and control group consent forms). A 5 minute team practice session ensued to familiarize the teams with the task.

The following three team meetings consisted of practice sessions lasting 15 minutes. Teams from all conditions did not use the timing mat to ensure that they were equal on all aspects prior to the introduction of the experimental manipulation. In addition to practice, the fourth meeting consisted of baseline testing. Specifically, all teams were required to perform three timed cup stacking trials to determine performance scores and their best score was recorded. The best score was recorded as opposed to taking the average as this simulates the sport of cup stacking competitions (Speed Stacks Inc, 2007). In addition, baseline levels of cohesion were assessed using the GEQ (Carron et al., 1985). At this time, teams from each condition, with the exception of the control condition, participated in determining their goals.

In order to help teams determine their goals, a three stage team goal setting protocol advanced by Eys, Patterson, Loughhead, and Carron (2006) was used. In the first

stage, the rationale for the team goal setting intervention was discussed with the participants. They were informed that working together to find common objectives for their team could help them work more efficiently as a unit. As a team, the participants and researcher generated an appropriate long-term and three short-term goals according to their goal setting condition. Once the long-term goal was established, the following question was asked by the primary researcher: “What do you have to do especially well as a team during practice to maximize your chances of reaching your long-term goal?” Each participant then independently picked three goals that he/she thought were the most important for the group. Participants then got together as a team to discuss and negotiate until consensus on three goals was obtained. Initially working individually prior to working with the whole group increases the likelihood that each participant’s views are considered. Once these three team goals had been decided, the target to strive for in practice was established for each experimental condition (i.e., process, performance, outcome, and multiple goals). In this respect, participants were provided with feedback (e.g., time, skill technique) from the previous practices. Immediate feedback was given to participants since research has found that the effectiveness of goal setting is enhanced if there is timely feedback (Locke & Latham, 1985; Widmeyer & Ducharme, 1997). Following this, the process previously described was repeated. First, each participant independently determined a target he/she believed was appropriate and moderately difficult. This was based on the individual goal setting literature suggesting that moderately difficult goals maximize the effectiveness of the goal setting process and are superior to easy and/or difficult goals (Kyllo & Landers, 1995). Then, participants got together as a team to discuss and negotiate appropriate target levels for each of the team

goals previously chosen. One team member then recorded the goals in a log book (see Appendix P) that was provided by the researcher.

In the second stage, the researcher reminded the participants of the team's goals before each practice. Furthermore, teams were encouraged to keep track of their progress towards their goals in their log book during practice sessions. In the third stage (i.e., sessions 5-8), participants evaluated their commitment levels towards their goals as well as how they perceived their goals to be specific and difficult. More specifically, participants were required to fill out a manipulation check questionnaire containing the goal commitment, goal specificity, and goal difficulty inventories during sessions five and seven to ensure that they were setting goals that were appropriate for their respective conditions. Furthermore, the primary researcher reviewed and discussed the goals after every team meeting. At this time, modifications to the team goals were made by adding and removing goals or by changing the target levels when necessary to ensure that goals remained moderately difficult and realistic. Thus, conditions for effective goal setting were monitored, and adjustments were made if necessary. This type of feedback and goal adjustments helped maximize the effectiveness of goal setting (Kyllo & Landers, 1995). If alterations to the team goals were required, the procedure described in the first stage was repeated.

During session six, in addition to practicing, participants were required to complete the GEQ to assess perceptions of cohesion. Session seven consisted of a practice session. Finally, during the eighth and final session of the study, participants practiced for 5 minutes and then they completed three trials to determine performance levels. Following these trials, participants' perceptions of cohesion were assessed. At this

time, participants assigned to the experimental conditions were also asked to complete the manipulation check questionnaire (i.e., goal commitment inventory, goal specificity, and goal difficulty inventories) while participants assigned to the control condition were asked to complete the spontaneous goal setting questionnaire. Finally, once the data collection had been completed, an e-mail was sent to participants thanking them for their participation and a short explanation of the study was provided.

Results

Preliminary Analyses

Prior to running the main analyses, the data were screened and cleaned for missing data using data imputation (i.e., case mean substitution) as recommended by Raudenbush, Byrk, Cheong, Congdon, and du Toit (2004). Taken together, the four dimensions of cohesion had approximately 4% of the data missing, whereas goal commitment, specificity, and difficulty had approximately 15%. Also, the data was examined to determine if there were any outliers using a scatter plot of standardized residuals against fitted values. Several outlying values were identified and replaced by the winsorized mean wherein the highest and lowest extreme scores were replaced by the next-to-highest value and by the next-to-lowest value (Munro, 2005). Furthermore, several assumptions for multilevel modeling were examined and met. That is, level 1 and level 2 residuals were independent and normally distributed with a mean of zero (Luke, 2004). Moreover, a scatter plot of standardized residuals against fitted values for both level 1 and 2 showed that the data met the assumptions of normality and linearity and there were no problems with heteroscedasticity (Hox, 2002; Tabachnick & Fidell, 2001).

Descriptive Statistics

Internal consistency estimates were computed for each of the four dimensions of the GEQ at Time 1 (session 4), Time 2 (session 6) and Time 3 (session 8). The Cronbach's alpha values for ATG-S, ATG-T, and GI-T were acceptable based on Nunally's (1978) recommendation of .70 (ATG-S, Time 1, $\alpha = .72$, Time 2, $\alpha = .76$, Time 3, $\alpha = .76$; ATG-T, Time 1, $\alpha = .74$, Time 2, $\alpha = .78$, Time 3, $\alpha = .80$; GIT, Time 1, $\alpha = .91$, Time 2, $\alpha = .89$, Time 3, $\alpha = .89$). GI-S however, had low internal consistency (GI-S, Time 1, $\alpha = .55$, Time 2, $\alpha = .61$, Time 3, $\alpha = .58$); therefore the item was eliminated from subsequent analyses.

In addition, internal consistency estimates were computed for the goal commitment, difficulty, and specificity inventories at Time 1 (session 5), and Time 2 (session 7). The Cronbach's alpha values for the goal commitment inventory were acceptable (Time 1, $\alpha = .79$, Time 2, $\alpha = .72$). Both the goal difficulty and goal specificity inventories were found to have low internal consistency and were eliminated from subsequent analyses as a result (goal difficulty, Time 1, $\alpha = .61$, Time 2, $\alpha = .36$; goal specificity, Time 1, $\alpha = .29$, Time 2, $\alpha = .40$).

A summary of the descriptive statistics for cohesion can be found in Table 1. Of note, participants' perceptions of ATG-S in the process goals condition increased slightly from Time 1 to Time 2 then decreased to its lowest level at Time 3. Perceptions of ATG-S in the performance and multiple goals conditions increased from Time 1 to Time 2 then decreased slightly from Time 2 to Time 3. As for the outcome goals and control conditions, ATG-S rose steadily from Time 1 to Time 3. As for ATG-T, perceptions in the process, performance, and outcome goals conditions decreased steadily over the three

time periods. Participants' perceptions of ATG-T in the multiple goals condition on the other hand increased from Time 1 to Time 2 then decreased to their lowest level at Time 3. Finally, participants in the control condition experienced slight decreases in ATG-T from Time 1 to Time 2 followed by increased perceptions at Time 3. In terms of GI-T, perceptions in the process, performance, and multiple goals conditions decreased over the three time periods. On the other hand, GI-T in the outcome goals condition increased from Time 1 to Time 2 then decreased to its lowest level at Time 3. Lastly, participants' perceptions of GI-T in the control condition increased steadily over time.

A summary of the bivariate correlations among the variables can be found in Table 2. Significant Pearson correlation coefficients were found between ATG-S and ATG-T ($r = .234, p < .05$) and for ATG-T and GI-T ($r = .775, p < .01$) at Time 1. As for Time 2, ATG-T was significantly correlated to GI-T ($r = .883, p < .01$). Finally, ATG-T and GI-T were significantly correlated at Time 3 ($r = .234, p < .01$). Based on these values, none of these relationships demonstrated evidence of multicollinearity with correlation values lower than .90 (Tabachnick & Fidell, 2001).

Main Analysis

Given that the present study contained repeated measures, these data can be viewed as multilevel data, with repeated measures nested within individuals, which in turn are nested within conditions (Hox, 2002). As a result, hierarchical linear modeling (HLM6) was conducted to determine the effects of time (i.e., baseline, mid-, and post-test) on individual participants' perceptions of cohesion from each condition (i.e., process goals, performance goals, outcome goals, multiple goals, and control group). The moderating variables of gender and performance were also included in the analysis as

level 1 and level 2 predictors respectively. The level 1 model (i.e., time) specifications for each of the three dimensions of cohesion were made as follows:

$$Y = \pi_0 + \pi_1 * (\text{Time}) + E$$

Y represents the average perceptions of cohesion across time for individuals in conditions; π_0 represents status of individual at initial time; π_1 examines change of the individual over time; and E is a level 1 random effect. The level 1 parameters, or the intercepts and slopes, then became the dependent variables in the level 2 model (i.e., individuals). Gender was included in the level 2 model to determine whether the variations in cohesion could be explained by examining the effects of gender. Therefore the following model was tested at level 2:

$$\pi_0 = \beta_{00} + \beta_{01} * (\text{Gender}) + r_0$$

$$\pi_1 = \beta_{10}$$

π_0 represents the initial perceptions of cohesion for individual; β_{00} represents the average perceptions of cohesion for condition; β_{01} is the relationship between gender and an individual's perceptions of cohesion; and r_0 is the random effect. β_{10} examines the change between individuals. The following model was tested for level 3 (i.e., team goal setting conditions):

$$\beta_{00} = \gamma_{000} + \gamma_{001} (\text{Performance}) + u_{00}$$

$$\beta_{01} = \gamma_{010}$$

$$\beta_{10} = \gamma_{100}$$

β_{00} symbolizes the average levels of cohesion for condition; γ_{000} is the intercept for the condition level model; γ_{001} represents the relationship between Performance and average

cohesion for all conditions; u_{00} depicts the random effect; γ_{010} is the relationship between gender and participants perceptions of cohesion across conditions; and the relationship between time and participants perceptions of cohesion across conditions is denoted by the symbol γ_{100} .

Table 3 lists the results for each of the three dimensions of cohesion. For ATG-S, no significant interactions were found for performance. Moreover, participants' perceptions of ATG-S did not differ between conditions across time. However, there was a significant gender X condition interaction ($\beta_{01} = -0.86, p = .019$). In other words, participants' perceptions of ATG-S differed according to gender and condition. The planned comparison post hoc analysis using Tukey-Kramer's procedure showed that there were no significant differences between males and females in all four experimental team goal setting conditions as well as the control condition. Furthermore, there were no significant differences between conditions for females. On the other hand, the post hoc revealed significant differences in ATG-S between the process goal ($M = 7.14, SD = 1.58$) and the multiple goal setting condition ($M = 5.66, SD = 1.15$) for males ($p < .05$). Similarly, there were significant differences between the performance goal ($M = 7.15, SD = 1.24$) and the multiple goal condition ($M = 5.66, SD = 1.15$) on ATG-S for males ($p < .05$). Means and standard deviations of ATG-S for males and females for all five conditions are presented in Table 4.

As for ATG-T, there was no performance interaction found. Furthermore, individuals' perceptions of cohesion did not differ according to gender and condition. Similarly, participants' perceptions of ATG-T did not differ between conditions across time.

For GI-T, the pattern of findings was very similar to that observed for ATG-T. There was no support for a performance interaction effect on GI-T. The gender and condition interaction also failed to emerge as a predictor of average perceptions of cohesion. Likewise, participants' perceptions of GI-T did not differ as a function of condition or as a function of time.

Manipulation Check

Spontaneous goal setting. The majority of participants (63%) assigned to the control condition indicated setting specific goals throughout the study. More specifically, participants reported setting all three goal types including process (e.g. "complete the task without knocking any cups down"), performance (e.g. "go for 2 minutes in the last day of cup stacking", and outcome goals (e.g. "achieve the lowest score") with an emphasis placed on performance type goals.

Goal commitment. Participants from all four experimental conditions completed the goal commitment inventory twice during the study (i.e., sessions 5, 7). A summary of the descriptive statistics for goal commitment can be found in Table 5. In general, goal commitment was fairly high. In particular, participants' commitment levels in the process goal condition decreased slightly from Time 1 to Time 2, while participants' commitment levels in the performance, outcome and multiple goal conditions increased slightly over time. However, there were no significant differences in commitment levels between four experimental conditions for Time 1 and Time 2. More specifically, regardless of the condition participants were committed to their team's goals.

Discussion

The general purpose of this study was to determine whether the implementation of a team goal setting intervention program would increase perceptions of cohesion compared to a control condition. The specific purpose was to determine what goal type (process, performance, outcome, or multiple goals) would have the greatest impact on cohesion. Specifically, two hypotheses were advanced for this study. First, it was hypothesized that participants in the team goal setting condition would have higher perceptions of cohesion than their control counterparts. Second, it was hypothesized that participants in the multiple team goal setting condition would have the highest perceptions of cohesion followed by the process goal setting condition, followed by the performance, and outcome goal setting conditions respectively.

In general, the results did not support these hypotheses. First, the results showed that individuals from all five conditions were similar on all three dimensions of cohesion included in the analysis before the implementation of the team goal setting intervention. Second, after completing eight team goal setting intervention sessions, individuals from the four experimental conditions perceived levels of cohesion to the same extent as those individuals in the control condition on all three dimensions. Third, participants' perceptions of all three dimensions of cohesion were similar regardless of their experimental goal setting condition. Finally, males and females in each of the four experimental conditions perceived cohesion to the same extent after completing the team goal setting intervention. However, there were significant differences in ATG-S between the process goal and the multiple goal conditions as well as the performance goal and

multiple goal conditions for male participants. Beyond these findings, a number of aspects associated with the results should be highlighted.

It is worth noting that the current study supported Estabrooks' (2000) suggestion concerning the development of groups. More specifically, Estabrooks proposed that an individual is first drawn towards a group for task purposes (i.e., ATG-T) followed by the development of the group's integration around the task (i.e., GI-T). As the individual becomes more efficient at the task, social interactions become more important (i.e., ATG-S). Finally, as satisfying social interactions within the group intensify, the group members become integrated around those interactions (GI-S). That is, the four dimensions of cohesion have differential prediction over time and GI-S has been identified as one of the last dimensions of cohesion to develop. Given this dimension of cohesion was found to possess low internal consistency values in the present study, it appears that GI-S was simply not important to the individuals in their newly formed group at that particular time.

The results of the present study contradicted the existing literature suggesting that cohesion (e.g., ATG-S) is more important for females than males (Carron, Colman et al., 2002). In particular, results from the current study indicated that there were no significant differences in all three dimensions of cohesion between males and females. Interestingly, males in the process goal and performance goal conditions held significantly higher perceptions of ATG-S than males assigned to the multiple goal setting conditions. Thus, it appears to be especially important for coaches and sport psychology consultants to enhance ATG-S by having male athletes set team process and performance goals.

The overall findings of the current study contradicted the results of previous research suggesting that team goal setting will enhance perceptions of cohesion. Specifically, it was surprising that none of the four team goal setting experimental conditions differed in relation to the control condition. However, this finding might be explained by the fact that 63% of participants assigned to the control condition reported setting specific goals for their team. In contrast, Senécal et al. (2008) indicated that participants assigned to the control condition in their study reported not engaging in any systematic team building interventions including team goal setting. This point becomes that much more salient considering that Senécal et al. found participants in the team goal setting condition did not increase their perceptions of cohesion but participants in the control condition reported a decline in cohesion.

Moreover, the findings in the present study were consistent with the results of Bloom and Stevens (2002) who found that participants' perceptions of cohesion remained stable following the implementation of a team building intervention. However, without the use of a control group to serve as a comparison, Bloom and Stevens determined that the intervention was not effective in enhancing perceptions of cohesion. Although one of the strengths of the present study included the incorporation of a control group, the fact that the participants in the condition reported using goal setting appears to indicate that goal setting is an effective technique for maintaining perceptions of cohesion. Nonetheless, this confirms the importance of including equivalent control groups (Brawley & Paskevich, 1997) and the necessity of assessing spontaneous goal setting in the control group (Locke, 1994) when conducting team goal setting research.

The results of the current study also suggested that the intervention program was not effective in contributing to differences in cohesion in relation to the various goal types. Nonetheless, it is worth noting that although the findings of the present study did not support Filby et al.'s (1999) contention that setting multiple types of goals is superior to setting any single type of goal (i.e., process, performance, outcome), their results were based on individual goal setting. Hence, it is possible that the findings of the present study can be attributed to underlying mechanisms that are unique to team goal setting (Weldon & Weingart, 1988). One potential mechanism could be increased group planning and strategy development through setting the same amount of process or performance goals as oppose to setting all types of goals, including outcome goals which may require less team communication to establish. Thus, future research may wish to identify and build on the mechanisms influencing the various types of team goals.

The results of the present study may also be explained by numerous methodological limitations. First, it is unknown if participants from all four of the experimental team goal setting conditions engaged in the spontaneous setting of different goal types over the course of the study. Thus, it is recommended that when assessing goal type, investigators assess whether and to what extent participants in the experimental conditions engaged in spontaneous goal setting in addition to assessing spontaneous goal setting in the control condition as recommended by Locke (1994).

Second, the duration of the current study lasted a total of eight sessions. However, as pointed out by Buller (1988), the length of the intervention could have been too short for any long-term benefits of the team building program to develop. More specifically, Brawley and Paskevich (1997) noted that team building interventions in sport generally

require a minimum of a season to determine whether there were any meaningful changes. Therefore, it is recommended that future research assess the effectiveness of a team goal setting intervention on perceptions of cohesion over a longer period of time.

Third, the present study used an experimental design. While this approach eliminated the influence of confounding variables (Cozby, 1997; Stevens & Bloom, 2003), it did not account for real groups having a significantly stronger cohesion-performance relationship than artificially created groups (Mullen & Copper, 1994). Consequently, results of the current study may not be generalizable to real sports teams. Future research may benefit from assessing the effectiveness of a team goal setting program on cohesion using established sports teams.

Fourth, on average male and female participants reported similar levels of ATG-S compared to the normative data available for the GEQ (Carron, Brawley, & Widmeyer, 2002). However, participants reported much lower levels of ATG-T and GI-T compared to the normative data. Thus, although participants reported being committed to their goals ($M = 4.03$ out of 5) it seems probable that the findings were influenced by the nature of the task. More specifically, athletes in the Filby et al. (1999) study performed a dynamic soccer task and participants in Linnenbrink's (2005) organizational study performed the complex task of completing a series of mathematical tests, while in contrast participants in the current study performed the relatively simple task of doubles cup stacking. Therefore, participants may not have been committed to the task selected for the current study. As a result, researcher may profit from using more dynamic and complex tasks (e.g., basketball, soccer) to evaluate the effectiveness of team goal setting types on cohesion.

Finally, in an effort to overcome previous research design limitations, goal commitment, goal difficulty, and goal specificity were assessed in the team goal setting conditions. In particular, Kyllö and Landers (1995) found that the aforementioned variables are moderators in the goal setting-performance relationship and thus should be evaluated when conducting goal setting research. However, Winters and Latham's (1996) goal difficulty and specificity inventories had low internal consistency values in the current study. Furthermore, these inventories have yet to be validated in a sport setting. As a result, future research may profit from refining and pilot testing Winters and Latham's goal difficulty and specificity inventories. Once this process has taken place, investigators will have the opportunity to assess the effects of these variables in the sporting context.

Interest in evaluating the effectiveness of team goal setting programs has received increased attention in sport psychology research. The present study added to the existing research evaluating the effectiveness of team goal setting interventions on cohesion. Furthermore, the current study examined the influence of various goal types on perceptions of cohesion. Support for the effectiveness of the intervention in a laboratory setting was not found, although the findings of the current study highlighted the findings of previous research in terms of the model of group development. Unexpectedly, it was also found that process and performance goals may be beneficial for male athletes for enhancing ATG-S. Future research is warranted to replicate and build on the above findings.

References

- Bloom, G. A., & Stevens, D. E. (2002). A team building mental skills training program with an intercollegiate equestrian team. *Athletic Insight, 4*,
www.athleticinsight.com/Vol4Iss1/EquestrianTeamBuilding.htm.
- Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *Journal of Sport Psychology, 9*, 275-294.
- Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1993). The influence of the group and its cohesiveness on perceptions of group goal-related variables. *Journal of Sport & Exercise Psychology, 15*, 245-260.
- Brawley, L. R., & Paskevich, D. M. (1997). Conducting team building research in the context of sport and exercise. *Journal of Applied Sport Psychology, 9*, 11-40.
- Brown, T. C., & Latham, G. P. (2002). The effects of behavioural outcome goals, learning goals, and urging people to do their best on an individual's teamwork behaviour in a group problem-solving task. *Canadian Journal of Behavioural Science, 34*, 276-285.
- Buller, P. F. (1988). Long term performance effects of goal setting and team building interventions in an underground silver mine. *Organization Development Journal, 6*, 82-93.
- Burton, D. (1989). Winning isn't everything: Examining the impact of performance goals on collegiate swimmers' cognitions and performance. *The Sports Psychologist, 3*, 105-132.

- Carron, A. V., Bray, S. R., & Eys, M. A. (2002). Team cohesion and team success in sport. *Journal of Sport Sciences*, 20, 119-126.
- Carron, A.V., Brawley, L. R., & Widmeyer, W. N. (1998). Measurement of cohesion in sport and exercise. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.
- Carron, A.V., Brawley, L. R., & Widmeyer, W. N. (2002). *The Group Environment Questionnaire test manual*. Morgantown, WV: Fitness Information Technology.
- Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta-analysis. *Journal of Sport & Exercise Psychology*, 24, 168-188.
- Carron, A. V. & Spink, K. S. (1993). Team building in an exercise setting. *The Sport Psychologist*, 7, 8-18.
- Carron, A. V., Spink, K. S., & Prapavessis, H. (1997). Team building and cohesiveness in the sport and exercise setting: Use of indirect interventions. *Journal of Applied Sport Psychology*, 9, 61-72
- 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.
- Cox, R. H. (2007). *Sport psychology: Concepts and applications* (6th ed.). New York: McGraw-Hill.
- Cozby, P. C. (1997). *Methods in behavioral research* (6th ed.). Mountain View, CA: Mayfield Publishing Company.

- Eitington, J. E. (1989). *The winning trainer* (2nd ed.). Houston, TX: Gulf Publishing Company.
- Estabrooks, P. A. (2000). Sustaining exercise participation through group cohesion. *Exercise and Sport Sciences Reviews, 28*, 63-67.
- Eys, M. A., Patterson, M. M., Loughhead, T. M., & Carron, A. V. (2006). Team building in sport. In J. Duda, D. Hackfort, & R. Lidor (Eds.), *Handbook of research in applied sport psychology: International perspectives* (pp. 219-231). Morgantown, WV: Fitness Information Technology.
- Filby, W. C. D., Maynard, I. W., & Graydon, J. K. (1999). The effect of multiple-goal strategies on performance outcome in training and competition. *Journal of Applied Sport Psychology, 11*, 230-246.
- Guthrie, J. P., & Hollensbe, E. C. (2004). Group incentives and performance: A study of spontaneous goal setting, goal choice and commitment. *Journal of Management, 30*, 263-284.
- Hardy, J., Eys, M. A., & Carron, A. V. (2005). Exploring the negative consequences of high cohesion in sports teams. *Small Group Research, 36*, 166-187.
- Hardy, L., Jones, J. G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Chichester, UK: John Wiley.
- Hox, J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, NJ: Lawrence Erlbaum.
- Johnson, S. R., Ostrow, A. C., Perna, F. M., & Etzel, E. F. (1997). The effect of group versus individual goal setting on bowling performance. *The Sport Psychologist, 11*, 190-200.

- Kingston, K. M., & Hardy, L. (1994). Factors affecting the salience of outcome, performance, and process goals in golf. In A. Cochran & M. Farrally (Eds.), *Science and golf II* (pp. 144-149). Brisbane, QLD: Australian Academic Press.
- Kingston, K. M., & Hardy, L. (1997). Effects of different types of goals on the processes that support performance. *The Sport Psychologist, 11*, 277-293.
- Kjormo, O., & Halvari, H. (2002). Two ways related to performance in elite sport: The path of self-confidence and competitive anxiety and the path of group cohesion and group goal-clarity. *Perceptual and Motor Skills, 94*, 950-966.
- Klein, H. J., Wesson, M. J., Hollenbeck, J. R., Wright, P. M., & DeShon, R. P. (2001). The assessment of goal commitment: A measurement model meta-analysis. *Organizational Behavior and Human Decision Processes, 85*, 32-55.
- Kyllo, L. B., & Landers, D. M. (1995). Goal setting in sport and exercise: A research synthesis to resolve the controversy. *Journal of Sport & Exercise Psychology, 17*, 117-137.
- Li, F., & Harmer, P. (1996). Confirmatory factor analysis of the Group Environment Questionnaire with intercollegiate sample. *Journal of Sport & Exercise Psychology, 18*, 49-63.
- Linnenbrink, E. A. (2005). The dilemma of performance-approach goals: The use of multiple goal contexts to promote students' motivation and learning. *Journal of Educational Psychology, 97*, 197-213.
- Price, M. S., & Weiss, M. (2000). Relationships among coach burnout, coach behaviours, and athlete's psychological responses. *The Sport Psychologist, 14*, 391-409.

- Locke, E. A. (1994). Comments on Weinberg and Weigand. *Journal of Sport & Exercise Psychology, 16*, 212-215.
- Locke, E. A., & Latham, G. P. (1985). The application of goal setting to sports. *Journal of Sport Psychology, 7*, 205-222.
- Luke, D. A. (2004). *Multilevel modeling*. Thousand Oaks, CA: Sage.
- Matsui, T., Kakuyama, T., & Onglatco, L. O. (1987). Effects of goals and feedback on performance groups. *Journal of Applied Psychology, 72*, 407-415.
- Mesch, D. J., Farh, J., & Podsakoff, P. M. (1994). Effects of feedback sign on group goal setting, strategies, and performance. *Group & Organization Management, 19*, 309-333.
- Mills, T. M. (1984). *The sociology of small groups* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Mitchell, T. R., & Silver, W. S. (1990). Individual and group goals when workers are interdependent: Effects on task strategies and performance. *Journal of Applied Psychology, 75*, 185-193.
- Mulvey, P. W., & Ribbens, B. A. (1999). The effects of intergroup competitions and assigned group goals on group efficacy and group effectiveness. *Small Group Research, 30*, 651-677.
- Mullen, B., & Copper, C. (1994). The relation between group cohesiveness and performance: An integration. *Psychological Bulletin, 115*, 210-227.
- Munro, B. H. (2005). *Statistical methods for health care research* (5th ed.). Philadelphia, PA: Lippincott Williams & Wilkins.

- Newman, B. (1984). Expediency as benefactor: How team building saves time and gets the job done. *Training and Development Journal*, 38, 26-30.
- Nunally, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Pargman, D., & De Jesus, M. (1987). The effect of goal setting on cohesiveness in high school intramural basketball teams. *Journal of Applied Research in Coaching and Athletics*, 2, 211-226.
- Prapavessis, H., Carron, A. V., & Spink, K. S. (1996). Team building in sport. *International Journal of Sport Psychology*, 27, 269-285.
- Raudenbush, S. W., Bryk, A. S., Cheong, Y. F., Congdon, R., & du Toit, M. (2004). *HLM 6: Hierarchical linear & nonlinear modeling*. Lincolnwood, IL: Scientific Software International.
- Seijts, G. H., & Latham, G. P. (2001). The effect of distal learning, outcome, and proximal goals on a moderately complex task. *Journal of Organizational Behavior*, 22, 291-307.
- Senécal, J., Loughead, T. M., & Bloom, G. A. (2008). A season-long team-building intervention: Examining the effect of team goal setting on cohesion. *Journal of Sport & Exercise Psychology*, 30, 186-199.
- Silver, W. S., & Bufanio, K. M. (1996). The impact of group efficacy and group goals on group task performance. *Small Group Research*, 27, 347-359.
- Speed Stacks Inc. (2007). *Speed stacks*. Retrieved February 6, 2008, from <http://www.speedstacks.com>.
- Spink, K. S., & Carron, A. V. (1993). Group cohesion and adherence in exercise classes. *Journal of Sport & Exercise Psychology*, 14, 78-86.

- Stevens, D. E., & Bloom, G. A. (2003). The effect of team building on cohesion. *Avante*, 9, 43-54.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Needham Heights, MA: Allyn & Bacon.
- Tziner, A., Nicola, N., & Rizac, A. (2003). Relation between social cohesion and team performance in soccer teams. *Perceptual and Motor Skills*, 96, 145-148.
- Voight, M., & Callaghan, J. (2001). A team building intervention program: Application and evaluation with two university soccer teams. *Journal of Sport Behavior*, 24, 420-431.
- Weldon, E., & Weingart, L. R. (1988, August). *A theory of group goals and group performance*. Paper presented at the Annual Meeting of the Academy of Management, Anaheim, CA.
- Widmeyer, W. N., & Ducharme, K. (1997). Team building through team goal setting. *Journal of Applied Sport Psychology*, 9, 97-113.
- Widmeyer, W. N., & Williams, J. M. (1991). Predicting cohesion in a coacting sport. *Small Group Research*, 22, 548-570.
- Winters, D., & Latham, G. P. (1996). The effect of learning versus outcome goals on a simple versus a complex task. *Group & Organization Management*, 21, 236-250.
- Zimmerman, B. J., & Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. *Journal of Applied Sport Psychology*, 8, 60-75.

Zimmerman, B. J., & Kitsantas, A. (1997). Development phases in self-regulation:

Shifting from process goals to outcome goals. *Journal of Educational Psychology*,

89, 29-36.

Table 1

Means and Standard Deviations of Cohesion for the Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions at Time 1, Time 2, and Time 3

	Process	Performance	Outcome	Multiple	Control
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Time 1					
ATG-S ^a	6.60 (1.13)	6.56 (1.25)	6.08 (1.31)	5.75 (1.27)	6.24 (1.29)
ATG-T ^a	4.21 (1.73)	3.92 (1.96)	2.95 (1.59)	3.39 (2.12)	3.37 (1.47)
GI-T ^a	3.19 (1.71)	3.35 (1.77)	2.61 (1.16)	3.30 (2.11)	2.81 (1.58)
Time 2					
ATG-S ^a	6.92 (1.23)	7.22 (1.22)	6.43 (1.47)	6.18 (1.51)	6.32 (1.63)
ATG-T ^a	3.27 (1.73)	3.59 (2.38)	2.83 (1.59)	3.53 (2.07)	3.34 (1.51)
GI-T ^a	2.89 (1.72)	2.95 (1.77)	2.65 (1.65)	3.05 (1.82)	3.02 (1.39)
Time 3					
ATG-S ^a	6.48 (1.81)	6.89 (1.56)	6.70 (1.38)	5.78 (1.23)	6.35 (1.64)
ATG-T ^a	3.11 (1.72)	2.41 (1.29)	2.65 (1.85)	3.28 (2.07)	3.71 (2.13)
GI-T ^a	2.83 (1.62)	2.23 (1.34)	2.58 (1.49)	2.67 (1.75)	3.06 (1.75)

Note: ATG-S = individual attractions to the group-social; ATG-T = individual attractions to the group-task; GI-T = group integration-task.

^a Assessed on a 9-point scale ranging from 1 to 9; higher scores indicate higher perceptions of cohesion.

Table 2

Bivariate Correlations between the Dimensions of Cohesion at Time 1, Time 2, and Time

3

	1	2	3
Time 1			
1. ATG-S	-	.234*	.118
2. ATG-T		-	.775**
3. GI-T			-
Time 2			
1. ATG-S	-	.106	.163
2. ATG-T		-	.883**
3. GI-T			-
Time 3			
1. ATG-S	-	.095	.061
2. ATG-T		-	.820**
3. GI-T			-

Note: ATG-S = individual attractions to the group-social; ATG-T = individual attractions to the group-task; GI-T = group integration-task.

* Correlation significant at the .05 level.

** Correlation significant at the .01 level.

Table 3

Hierarchical Model of Group Cohesion

ATG-S				
Fixed Effect	Coefficients	<i>SE</i>	<i>t</i> -ratio	
Time $\pi_0 \times$ Subject $\beta_{00} \times$ Condition γ_{000}	6.82	0.39	17.57***	
\times Performance γ_{001}	-6.77	3.68	1.84	
Gender $\beta_{01} \times$ Condition γ_{010}	-0.86	0.35	2.49*	
Time $\pi_1 \times$ Subject $\beta_{10} \times$ Condition γ_{100}	-0.02	0.15	0.17	
Random Effect	Variance Component	<i>df</i>	X^2	
Time r_0	0.48	26	62.46***	
Level 1 E	1.23			
Time/Subject u_{00}	0.00	2	1.54	
ATG-T				
Fixed Effect	Coefficients	<i>SE</i>	<i>t</i> -ratio	
Time $\pi_0 \times$ Subject $\beta_{00} \times$ Condition γ_{000}	3.08	0.49	6.29***	
\times Performance γ_{001}	2.62	4.98	0.53	
Gender $\beta_{01} \times$ Condition γ_{010}	0.19	0.47	.401	
Time $\pi_1 \times$ Subject $\beta_{10} \times$ Condition γ_{100}	0.09	0.17	0.49	
Random Effect	Variance Component	<i>df</i>	X^2	

Time r_0	1.08	26	80.64***
Level 1 E	1.34		
Time/Subject u_{00}	0.02	2	2.02
GI-T			
Fixed Effect	Coefficients	<i>SE</i>	<i>t</i> -ratio
Time $\pi_0 \times$ Subject $\beta_{00} \times$ Condition γ_{000}	2.62	0.44	5.93***
\times Performance γ_{001}	1.31	4.85	0.27
Gender $\beta_{01} \times$ Condition γ_{010}	0.16	0.46	0.35
Time $\pi_1 \times$ Subject $\beta_{10} \times$ Condition γ_{100}	0.11	0.14	0.80
Random Effect	Variance Component	<i>df</i>	X^2
Time r_0	1.09	26	118.64***
Level 1 E	1.11		
Time/Subject u_{00}	0.01	2	0.57

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 4

Means and Standard Deviations of ATG-S for Males and Females for the Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions

Condition	<i>N</i>	<i>M</i>	<i>SD</i>
Male			
Process	7	7.14	1.58
Performance	11	7.15	1.24
Outcome	10	6.37	1.43
Multiple	10	5.66	1.15
Control	9	6.74	1.01
Female			
Process	14	6.43	.92
Performance	11	6.64	1.20
Outcome	12	6.43	.88
Multiple	12	6.11	1.09
Control	10	5.89	1.26

Note: ATG-S = individual attractions to the group-social

Assessed on a 9-point scale ranging from 1 to 9.

Table 5

Means and Standard Deviations of Goal Commitment for Process Goals, Performance Goals, Outcome Goals, Multiple Goals, and Control Conditions at Time 1 and Time 2

	Process	Performance	Outcome	Multiple
	M (SD)	M (SD)	M (SD)	M (SD)
	Time 1			
Commitment ^a	3.51 (.80)	3.89 (.72)	4.08 (.77)	4.08 (.77)
	Time 2			
Commitment ^a	3.49 (.59)	3.95 (.63)	4.20 (.56)	4.41 (.43)

^a Assessed on a 5-point scale ranging from 1 to 5.

CHAPTER II

LITERATURE REVIEW

The present thesis was designed to examine the influence of group goal type on cohesion. That is, the general purpose of the present study was to determine whether the implementation of a team goal setting intervention program would increase perceptions of cohesion compared to a control condition receiving no treatment over a 6 week period. More specifically, the purpose was to determine what type of group goal setting condition would have the greatest impact on cohesion. Consequently, the review of the literature will be divided into three sections: (a) cohesion), (b) team building, and (c) team goal setting.

Cohesion

This section of the thesis will review the literature pertaining to cohesion. First, the construct of cohesion will be defined. Second, a review of the consequences of cohesion will be discussed. Third, a conceptual model of cohesion along with the measurement of cohesion will be presented. Fourth, Carron's (1982) conceptual framework for the study of cohesion will be explained. Lastly, literature regarding the cohesion-performance relationship will be presented.

Defining Cohesion

It has been suggested that cohesion is the most important small group variable (Golembiewski, 1962; Lott & Lott, 1965). Thus, it is not surprising that when groups have been the focus, cohesion has been a paramount topic of interest in disciplines such as sociology, social psychology, counseling psychology, military psychology, organizational psychology, educational psychology, and more recently sport psychology.

Consequently, it is not surprising that researchers in these disciplines have attempted to define and operationalize the construct of cohesion. One of the earliest definitions of cohesion was advanced by Festinger, Schachter, and Black (1950) who, after studying group dynamics in a student housing community at the Massachusetts Institute of Technology, viewed cohesiveness as “the total field of forces that act on members to remain in the group” (p. 164). Gross and Martin (1952) argued that the Festinger et al. definition emphasized individual perceptions and failed to consider the importance of the group as a totality. As a result, Gross and Martin defined cohesion as “the resistance of a group to disruptive forces” (p. 553). However, it was noted that both the Festinger et al., and the Gross and Martin definitions were impossible to operationalize and led to numerous inconsistencies in research findings (Mudrack, 1989). In order to improve upon some of the limitations of Festinger et al. and Gross and Martin’s definitions, Libo (1953) defined cohesiveness as simply attraction to the group. While Libo’s definition was easy to operationalize, it focused exclusively on individuals at the expense of the group (Mudrack). That is, the operationalization of cohesion did not measure both individual and group level perceptions of cohesion.

It should be noted that all of these earlier definitions of cohesion viewed cohesion as a unidimensional construct, focusing on either the individual or group orientation of cohesion (Carron, Brawley, & Widmeyer, 1998). Furthermore, the earlier unidimensional definitions of cohesion failed to distinguish between the task and social concerns of groups and their members (Mikalachki, 1969). Consequently, Carron, (1982) argued that a multidimensional definition of cohesion was needed that incorporated both the group/individual orientation and task/social orientation. Carron defined cohesion as “a

dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its goals and objectives” (p. 259). This definition was later revised by Carron, Brawley, and Widmeyer (1998) to include an affective dimension: “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). The Carron et al. (1998) definition of cohesion is the most widely used and accepted definition of cohesion (Loughead & Hardy, 2006).

Characteristics of Cohesion

The definition put forward by Carron et al. (1998) highlighted four important characteristics in understanding the nature of cohesion. The first characteristic was that cohesion be viewed as a multidimensional construct. That is, there are various factors influencing why groups sticks together and remain united. In addition, the factors influencing one group to stick together may be different for another otherwise similar group (Loughead & Hardy, 2006). Thus, the multidimensional nature of cohesion did not entail that every dimension will be equally present in all groups (Carron & Brawley, 2000). For instance, a team may be highly socially cohesive in that team members like each other, however they may not be united in how to reach their task objectives by having a number of team members placing a priority on individual goals instead of team goals. In contrast, another team may be in open conflict from a social perspective but very cohesive on task objectives.

The second characteristic of cohesion is reflected by its dynamic nature. According to Carron et al. (1998), the cohesion present in a group can change over time so that factors contributing to cohesion early in the group’s formation may not remain the

same when a group is well developed. For example, when a team initially forms, task unity (e.g., sharing similar team goals) may play a fundamental role, but after the team works together for a certain amount of time, social unity may be a primary importance (e.g., socializing with team members outside of practice time).

The third characteristic of cohesion highlights its instrumental nature. Indeed, all groups form for a reason (Carron et al., 1998). Intuitively, sports teams as well as other types of groups, form for task-oriented reasons (Loughead & Hardy, 2006). Even groups that form for purely social reasons have an instrumental basis for their formation (Carron et al., 1998). Thus, for instance, a basketball team that forms for the purpose of developing friendships is cohering for the instrumental reason of needing to belong on a social level.

The fourth characteristic of cohesion implies that it has an affective component. It was noted by Carron and Brawley (2000) that bonding is satisfying to group members whether it is for task or social reasons. Furthermore, it was noted by Baumeister and Leary (1995) that bonding is related to positive affect such as a group member's feelings of enjoyment, whereas feelings of exclusion may lead to negative feelings such as depression or anger. Furthermore, it was suggested that belonging to a group fulfills a basic human need (Baumeister & Leary).

Conceptual Model of Cohesion

Based on Carron's (Carron, 1982) definition of cohesion, Carron, Widmeyer, and Brawley (1985) proposed a conceptual model of cohesion (see Figure 1), which evolved using three fundamental assumptions from group dynamics theory. The first assumption was based on research in Social Cognition Theory suggesting that cohesion can be

assessed through the perceptions of individual group members (Carron et al., 1998). That is, group members interact with one another and experience various social situations together, leading individual group members to develop certain beliefs about the group, which are then integrated into perceptions regarding the group. Therefore, an individual group member's perceptions concerning the group are a reasonable estimate of numerous group unity characteristics, permitting social cognitions regarding cohesion to be measured (Carron et al., 1998).

The second assumption concerned the need to distinguish between the group and the individual. Thus, the social cognitions that each individual group member holds about the cohesiveness of the group are related to the group as a totality, and to what degree the group satisfies personal needs and objectives (Carron et al., 1998). These social cognitions were labeled group integration and individual attractions to the group (Carron et al., 1985). On the one hand, *group integration* reflects an individual's perceptions about the closeness, similarity, and bonding within the group as a whole, and the degree of unification of the group (Carron et al., 1998). On the other hand, *individual attractions to the group* reflects an individual's perceptions about personal motivations acting to retain the individual in the group, and the individual's personal feelings about the group (Carron et al., 1998).

The third assumption distinguished between task- and social-oriented concerns of the group and its members (Brawley, Carron, & Widmeyer, 1987). The *task orientation* represented a general orientation or motivation towards achieving the group's goals (Carron et al., 1998). Conversely, the *social orientation* represented a general orientation

or motivation toward developing and maintaining social relationships and activities within the group (Carron et al., 1985).

Based on these three assumptions, Carron et al. (1985) proposed a conceptual model of cohesion whereby the combination of the individual-group and task-social components resulted in a four dimension conceptual model. The multidimensional model of cohesion is represented by the following 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). ATG-T is defined as the attractiveness of the group's task, productivity, and goals for the individual personally. ATG-S is viewed as each group member's feelings about his or her personal acceptance, and social interaction with the group. GI-T represents an individual's perceptions of the similarity, closeness, and bonding within the group as a whole around the group's task. Finally, GI-S refers to an individual's perceptions about the similarity, closeness, and bonding within the group as a whole as a social unit (Carron et al., 1998).

Measurement of Cohesion: The Group Environment Questionnaire

Using the conceptual model of cohesion as a basis, Carron et al. (1985) developed a measure of cohesion that incorporated the four dimensions (i.e., ATG-T, ATG-S, GI-T, GI-S). The result was the development of the *Group Environment Questionnaire* (GEQ), an 18-item inventory that assesses the four dimensions of cohesion. Specifically, the ATG-T scale consists of four items and an example item is: "I am unhappy with my team's level of desire to win". The ATG-S scale consists of five items and an example item is: "Some of my best friends are on this team". The GI-T scale comprises five items and an example item is: "Our team is united in trying to reach its goals for performance".

Lastly, the GI-S scale comprises four items and an example item is: “Members of our team would rather go out on their own than get together as a team”. All items are measured on a 9-point Likert scale anchored at the extremes of 1 (*strongly disagree*) to 9 (*strongly agree*). Out of the 18 items, 12 are negatively worded and need to be reversed scored; hence higher scores represent stronger perceptions of cohesion.

Since the development of the GEQ, several studies have been undertaken to examine its psychometric properties. Research has shown that the GEQ possesses adequate internal consistency (e.g., Carron et al., 1985), and shows content (e.g., Carron et al., 1985), concurrent (e.g., Brawley et al., 1987), predictive (e.g., Spink & Carron, 1992), and factorial validity (e.g., Carron et al., 1985; Li & Harmer, 1996).

Since the development of the GEQ, numerous researchers have focused on examining the factors that contribute to cohesion as well as the consequences associated with cohesion. For instance, researchers have examined antecedents such as leadership (e.g., Westre & Weiss, 1991), group norms (e.g., Patterson, Carron, & Loughhead, 2005), role ambiguity (e.g., Eys & Carron, 2001), group size (e.g., Widmeyer, Brawley, & Carron, 1990), mood (e.g., Terry, Carron, Pink, Lane, Jones, & Hall, 2000), anxiety (e.g., Prapavessis, Carron, & Spink, 1996), and performance (e.g., Carron, Colman, Wheeler, & Stevens, 2002). In regards to the consequences of cohesion, researchers have extensively examined the influence of cohesion on performance. Given the importance of optimally functioning sports teams and since it is believed that greater cohesion is related to improved performance (Loughhead & Hardy, 2006), it is not surprising that researchers have extensively examined the cohesion-performance relationship.

Cohesion and Performance

Despite the apparent importance of the cohesion-performance relationship in sport, research findings have been equivocal with some researchers finding a positive (e.g., Carron, Bray, & Eys, 2002; Tziner, Nicola, & Rizac, 2003; Widmeyer & Williams, 1991), negative (e.g., Landers & Luschen, 1974), or no relationship (Davids & Nutter, 1988). For instance, Carron, Bray, and Eys (2002) examined the relationship between task cohesiveness and team success measured by total winning percentage, in elite level basketball and soccer teams. The results indicated a strong relationship ($r = .55-.67$) between cohesion and success (i.e., performance). As such, it was recommended that coaches and sport psychologists would benefit from developing effective team building strategies in order to enhance team cohesion. However, the results of the current study were limited to task cohesion, thus the authors suggested the need for future research focusing on social cohesion. In fact, Tziner et al. found a significant correlation ($r = .27$) between social cohesion and winning outcome, indicating a link between social cohesion and performance. In contrast, some research has found a negative or no relationship between cohesion and performance. For example, Landers and Luschen found that successful intramural league bowling teams experienced lower levels of cohesion than teams with a losing record. Furthermore, Davids and Nutter investigated the relationship between team cohesion and performance in elite level volleyball teams. Results indicated that no difference in performance between teams with varying levels of cohesion at the end of the season.

Given these equivocal findings, a more systematic and objective technique has been advocated to summarize research findings (Loughead & Hardy, 2006). Fortunately,

the development and refinement of the meta-analyses technique provides powerful advantages of statistically summarizing large bodies of research (Carron, Bray, & Eys, 2002). To date, there have been two comprehensive meta-analyses on the cohesion-performance relationship.

The first meta-analysis examining the cohesion-performance relationship was conducted by Mullen and Copper (1994) using 49 correlational and experimental studies from various sub-disciplines in psychology (e.g., industrial, military, social, and sport). Overall, the results revealed a significant but small ($\bar{Z}_{\text{Fisher}} = 0.25$, $\bar{r} = .25$) effect. Even though the meta-analysis conducted by Mullen and Copper provided insight into the cohesion-performance relationship, Carron, Colman, Wheeler, and Stevens (2002) suggested that the results relating to sport could be questioned for various reasons.

According to Carron, Colman et al. (2002), one of the reasons why the results by Mullen and Copper (1994) are limiting to sport is related to the number of sports studies that were sampled ($N = 8$). As a consequence, the findings regarding the cohesion-performance relationship and the influence of moderating variables might not be valid for sport settings (Carron, Colman et al., 2002).

In order to overcome the shortcomings of Mullen and Copper (1994), Carron, Colman et al. (2002) conducted a meta-analysis focusing on research examining the cohesion-performance relationship in sport. A total of 46 studies were obtained for analysis, containing 9,988 athletes and 1,044 teams. The overall analysis revealed a significant moderate to large ($ES = .66$) relationship between cohesion and performance. A secondary purpose of the meta-analysis was to examine the influence of potential moderator variables. More specifically, the study also investigated the influence of

cohesion type (i.e., task or social), sport type (coactive or interactive), gender, skill/experience level of the individual, as well as the direction of the cohesion-performance relationship.

When examining the influence of cohesion type on the cohesion-performance relationship, Carron, Colman et al. (2002) found that both task and social cohesion were related to successful performance in team sports. Although, social cohesion revealed a stronger relationship to performance ($ES = .70$) than task cohesion ($ES = .61$), the difference was not statistically significant. Thus, both dimensions of cohesion are important for enhancing performance. In terms of sport type, the results indicated that the cohesion-performance relationship was slightly stronger in coactive sports ($ES = .77$), such as wrestling, than in interactive sports ($ES = .66$), like hockey. However, the difference was not statistically significant. Thus, sport type did not moderate the cohesion-performance relationship. When gender was examined as a moderator, a large cohesion-performance effect was found for females ($ES = .95$), and only a moderate relationship was present for males ($ES = .56$). Furthermore, the difference between gender was statistically significant. The authors suggested that perhaps women are more emotional than men. The meta-analysis also examined the skill/experience level of the competitors. It was found that there were differences in the magnitude of the cohesion-performance relationship across the various levels of competition from high school to professional levels. However, these differences were not statistically significant. Thus, it was concluded that skill/experience level was not a moderator in the cohesion-performance relationship. Finally, analyses were undertaken to examine the direction of the cohesion-performance relationship. Results indicated that no differences existed when

examining task and social cohesion as a cause of ($ES = .57$) or a result of ($ES = .69$) successful performance. Thus, both task and social cohesion contribute to enhanced performance and, similarly, enhanced performance contributes to higher levels of task and social cohesion, resulting in a circular relationship. Given the importance of the cohesion-performance relationship, it is not surprising that attempts have been made to enhance cohesion and ultimately performance through a process known as team building.

Team Building

This section of the thesis will review the literature pertaining to team building. First, the construct of team building will be defined. Second, empirical research regarding team building and cohesion will be examined.

Team Building Defined

Hardy and Crace (1997) defined team building as “a team intervention that enhances team performance by positively effecting team processes or team synergy” (p. 4). Similarly, Widmeyer and Ducharme (1997) described team building as the process of attempting to enhance a team’s maintenance (cohesion) and locomotion (performance). Also, Stevens (2002) defined team building as “the deliberate process of facilitating the development of an effective and close group” (p. 307). Although researchers have defined team building in different ways, the above mentioned definitions have a good deal in common. That is, the definitions place an emphasis on enhanced performance and increased perceptions of cohesion (Loughead & Hardy, 2006).

Given that one of the goals of team building is to enhance cohesion, Carron and Spink (1993) conceptualized a team building model that can be used as a basis for enhancing cohesion. The linear conceptual model consists of inputs, throughputs, and

outputs (see Figure 2). The group's structure and the group's environment were the two broad categories identified as inputs in the model. In terms of the group's environment, Carron and Spink pointed out that when features related to the group's immediate physical environment and/or the appearance of the actual group members are distinctive, members develop a stronger sense of "we", distinguish themselves from nongroup members (i.e., "they") more often, and ultimately develop stronger perceptions of cohesion (Carron & Spink). An example method used for creating distinctiveness would be to provide the group with a team name or t-shirt. Two factors were identified under the group structure category: group norms, which reflect what the team considers to be acceptable individual behavior (Carron & Hausenblas, 1998), and individual positions in the group. It was noted that as groups develop norms, the group's structure becomes more stable which contributes to mutual interdependence, conformity, and ultimately leads to greater cohesion (Carron & Spink). For instance, the norm of honoring honest play leads to stability within the group's structure. As for the group processes category, it was noted that individual sacrifices such as team goals are important for team building because when members make sacrifices for their group, their commitment to the group increases and cohesiveness is enhanced (Carron & Spink). Finally, all four dimensions of cohesion (ATG-T, ATG-S, GI-T, and GI-S) were considered as the output.

Team Building Research

Despite the importance of enhancing cohesion through team building, research from this body of knowledge has yielded equivocal results. Some studies have found a positive team building-cohesion relationship (e.g., Carron & Spink, 1993; Stevens & Bloom, 2003; Voight & Callaghan, 2001) while others have found no changes in

perceptions of cohesion (e.g., Bloom & Stevens, 2002; Prapavessis et al., 1996) following a team building intervention program. For instance, Carron and Spink implemented a team building intervention in university aerobics classes to determine if cohesion could be enhanced. Specifically, university aerobics classes were randomly assigned to either a team building condition or a control condition (i.e., regular exercise classes) for a 13-week period. Results showed that that the team building and control conditions could be differentiated on the basis of their perceptions of cohesion ($\chi^2(1) = 12.39, p < .001$). In particular, exercisers in the team building program focusing on individual positions in the group, group norms, sacrifices, distinctiveness, and communication perceived higher levels of ATG-T than participants in the control condition. Similarly, Stevens and Bloom implemented a team building program with female NCAA division 1 softball teams. The purpose of the study was to determine if the team building program consisting of role behavior, social support, team leadership, social interaction, and clarification of team goals held higher perceptions of cohesion than a control condition by the end of the season. Results indicated that athletes in the team building condition reported significantly higher levels of both task and social cohesion following the intervention compared to the control condition.

In contrast, Prapavessis et al. (1996) conducted a study where coaches were randomly assigned to an intervention, an attention-placebo, or a control condition. Coaches in the intervention condition attended a team building workshop where they were provided with the benefits of team building, such as enhanced team cohesion. Coaches were also presented with factors that contribute to team cohesiveness including role clarity, role acceptance, leadership, norms, togetherness, distinctiveness, individual

sacrifices, goals, and cooperation. The coaches were then asked to develop and implement strategies with their teams. Perceptions of cohesion were assessed at three different times throughout the season, but no differences were found. Bloom and Stevens (2002) carried out a study on one equestrian team to examine whether the implementation of a team building mental skills training program that included the development of leadership, norms, communication, coping with team selection for competition, and preparing for competition, would enhance perceptions of cohesion. Results revealed no significant differences in perceptions of cohesion between pre- and post-intervention scores.

Several explanations for the equivocal findings have been advanced. One reason why team building interventions have failed to enhance cohesion could be the result of the research design. More specifically, some studies such as Bloom and Steven's (2002) found no increase in perceptions of cohesion after implementing a team building intervention. However, an alternative explanation could be that while cohesion was not enhanced, perhaps it was maintained throughout the season. The idea of maintaining cohesion levels throughout the season would be consistent with recent findings. Senécal, Loughhead, and Bloom (2008) conducted a season long team building intervention program using team goal setting with female high school basketball teams. The authors randomly assigned teams to either a team goal setting condition or a control condition. Results revealed that levels of cohesion for athletes in the team goal setting condition remained stable, while athletes' perceptions of cohesion in the control condition decreased over the season. Without the use of a control group, Senécal et al. could have concluded that the team building intervention had no influence on cohesion.

Another explanation that may have influenced the results of previous team building research is the individual in charge of implementing the team building program. For example, Prapavessis et al. (1996) used an indirect approach where the coach was responsible for implementing the team building intervention strategies. Eitington (1989) suggested that not all team leaders (e.g., the coach) will be successful as the agent of change in a team building intervention. More specifically, coaches may lack motivation, patience, commitment, and the know-how to successfully introduce and facilitate the team building intervention (Brawley & Paskevich, 1997).

An additional reason influencing the equivocal findings of team building interventions could be due to the duration of the study. Numerous researchers (e.g., Pargman & De Jesus, 1987) have assessed the effects of team building on perceptions of cohesion over a relatively short-term period. For instance, Pargman and De Jesus evaluated the effect of a team building intervention using team goal setting on cohesion over the course of a round robin tournament lasting less than a week on male high school intramural basketball teams. However, it has been noted that the assessment of any team building intervention in sport should require a minimum of a season for any meaningful, enduring changes to be validly assessed (Brawley & Paskevich, 1997).

Another explanation influencing the results of the team building interventions could be the use of multiple team building strategies. Several researchers (e.g., Bloom & Stevens, 2002; Carron & Spink, 1993; Prapavessis et al., 1996; Spink & Carron, 1993; Stevens & Bloom, 2003) have often implemented concurrently multiple intervention strategies designed to enhance cohesion such as team goal setting, team leadership, team communication, clarification of roles, and social support. Given that the interventions

strategies were implemented concurrently, the relative contribution of any one strategy could not be determined. Therefore, it has been suggested that future research evaluate the effectiveness of one intervention tool (Stevens & Bloom). While there are several intervention strategies that can be used to enhance cohesion, participants in the Stevens and Bloom study indicated that team goal setting was the most effective team building strategy to improve perceptions of cohesion; therefore the following section will be dedicated to reviewing the literature on team goal setting.

Team Goal Setting

Defining Team Goal Setting

The uniqueness of team goals and their independence from individual goals has been highlighted by Mills (1984) who defined team goals as shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members. Similarly, Johnson and Johnson (1987) defined team goals as “a future state of affairs desired by enough members of a group to motivate the group to work toward its achievement” (p. 132).

Team versus Individual Goal Setting

Research focusing on individual goal setting has provided considerable evidence that it contributes to enhanced group performance (e.g., Kylo & Landers, 1995). However, very little research has examined whether teams are better served by individual goals for all members or team goals for the collective (Eys, Patterson, Loughhead, & Carron, 2006). The research evidence that is available, from two laboratory studies (Matsui, Kakuyama, & Onglatco, 1987; Mitchell & Silver, 1990), and a field bowling study (Johnson, Ostrow, Perna, & Etzel, 1997) demonstrated that team goals are superior

to individual goals for team outcomes. Matsui et al. had undergraduate students work on an additive problem solving task in a laboratory setting in order to determine whether team goal setting or individual goal setting had the greatest impact on performance measured as the number of correct additions. Specifically, participants were asked to perform a sudoku-type task. The number of correct scores was recorded. Participants were randomly assigned to either a team goal setting or an individual goal setting condition. Results indicated that the performance mean was significantly higher for the team goal condition than for the individual goal condition. That is, team goal setting led to better performance than did individual goal setting. Likewise, Mitchell and Silver conducted a study examining the effects of individual and group goals on the performance of participants working on an interdependent wooden block tower building task. Subjects were randomly assigned to one of four goal setting conditions: individual goal, group goal, individual plus group goal, and no specific goal. Results showed that the group goal, individual plus group goal and the no specific goal conditions performed equally well on the task measured by number of falling blocks. However, all three of these conditions performed significantly better on the task than the individual goal setting condition. In addition, Johnson et al. examined the effects of different goal setting conditions including individual, team, or “do your best” on bowling performance. Participants were randomly assigned to one of the three goal setting conditions. Bowling performance was measured by the average number of pins knocked down per game. It was found that bowling performance significantly increased in the team goal setting condition, whereas no significant increases in performance were recorded for the individual or “do your best” conditions. Although the majority of the research has

examined either team or individual goal setting, several types of goal interactions that occur in a team setting have been identified.

Types of Goals on Teams

Zander (1971) suggested that there are four types of goals that exist at the group level: an individual member's goals for self, an individual member's goals for the group, the group's goal for the group, and the group's goal for individual members. In order to examine Zander's four-dimensional framework of goals in sport, Dawson, Bray, and Widmeyer (2002) examined the goal setting practices of various university team sport athletes using a combination of qualitative and quantitative methodologies. Results revealed that all four types of goals identified by Zander were present in the sport teams. As noted by Widmeyer and Ducharme (1997), there needs to be a great deal more of group research done in both the laboratory and field settings that focus on the various group goal setting interactions identified by Zander along with its relationship to cohesion. However, to maximize the effectiveness of these goal setting interactions, certain generalizations need to be considered (Eys et al., 2006).

Conditions for Effective Group Goal Setting

Although no research has examined the conditions for effective goal setting at the group level, there is a large body of literature that has focused on individual goal setting (e.g., Kylo & Landers, 1995; Matsui et al., 1987; Mesch, Farh, & Podsakoff, 1994). In their seminal work, Kylo and Landers performed a meta-analysis investigating the effects of goal setting participation, acceptance, difficulty, specificity, proximity, publicity, and research design characteristics on performance.

Overall, results of the meta-analysis demonstrated that goal setting in sport leads to significant improvements in performance ($ES = .34$). In terms of goal participation, it was shown that goal setting could be maximized by allowing individuals to participate in the goal setting process ($ES = .62$). Specifically, it was found that enhanced performance occurred when goals were cooperatively-set ($ES = .62$) followed by participant-set goals ($ES = .49$) and assigned goals ($ES = .30$). These findings echo those of Weinberg and his colleagues (Weinberg, Burton, Yukelson, & Weingand, 1993; Weinberg & Weingand, 1993) who found that individuals preferred to be involved in the goal setting process and that they may reject goals that are assigned to them and set their own goals. Building on previous goal participation findings, Locke (1994) recommended measuring athletes' personal goals when conducting goal setting research to assess whether additional goals are being set. Furthermore, according to Locke (1991), knowing that a participant is not committed to an assigned goal is simply not enough information unless one is knowledgeable about the actual goal being set.

The meta-analysis also found that goal acceptance moderated the goal setting-performance relationship ($ES = .26$). As a result, Kyllö and Landers (1995) recommended that investigators promote goal acceptance and commitment by having participants help in the goal setting process. In addition, it was suggested that researchers assess these factors when conducting research on goal setting. When investigating goal difficulty, it was found that it moderated the goal setting-performance relationship. On one hand, it was found that moderately difficult goals enhanced performance. On the other hand, difficult and easy goals were non-significant in enhancing the effectiveness of goal setting. When examining goal specificity, it was clear that specific absolute goals resulted

in better performance ($ES = .93$) than relative, no goal comparison ($ES = .27$) and “do your best” goals ($ES = .38$). The resulting trends of the meta-analysis suggested that goal setting may be improved by setting short-term and long term goals together ($ES = .48$), and by making these goals public ($ES = .79$). Lastly, results from the meta-analysis indicated that goal setting leads to enhanced performance equally well regardless if the research is laboratory or field based.

Although Kyllö and Landers (1995) examined several moderating variables, one moderating variable that they did not assess was feedback. However, empirical studies have been performed to examine the effects of feedback on the goal setting-performance relationship (e.g., Matsui et al., 1987; Mesch et al., 1994). For instance, when examining the effects of goals and feedback on a perceptual speed task in groups, Matsui et al. found that the effectiveness of task feedback in group goal setting is maximized if the feedback involves both individual and group performance information for subjects who are below target. Furthermore, Mesch et al. examined the effects of feedback on group goals and performance. Three person groups were randomly assigned and exposed to either positive or negative feedback after completing a group recognition task. The results indicated that, although groups that received negative feedback were less satisfied, these groups set higher goals, developed more strategies, and performed at higher levels than groups receiving positive feedback.

Group Goal Setting-Cohesion Relationship

Even though the majority of researchers assume that team goal setting can help increase individuals' perceptions of cohesion, few empirical studies have been conducted to test this assumption. Brawley, Carron, and Widmeyer (1993) were among the first to

examine the relationship between team goals and cohesion. Specifically, these researchers investigated whether participative team goal setting influenced perceptions of cohesion in adult community and college sport teams. The results indicated that when teams believed that they were actively involved in setting team goals, there was a greater perception of both task and social cohesion. Based on this result, it was suggested that team members develop common perceptions about the team while participating in setting team goals.

In addition, Kjormo and Halvari (2002) examined the relationship amongst team goal setting, cohesion, and performance in Norwegian Olympic teams. The findings showed that cohesion was positively correlated with team goal clarity, which in turn was positively correlated to performance. Hence, it was suggested that if team members were more cohesive, they were more likely to communicate more effectively and set clearer team goals. Finally, Senécal et al. (2008) carried out a study to determine whether the implementation of a season-long team goal setting intervention increased perceptions of cohesion. The participants were female high school basketball players. The teams were randomly assigned to either a team goal setting using performance goals or a control condition. Results revealed that at the end of the basketball season, participants in the group goal setting condition held significantly higher mean perceptions on all four dimensions of cohesion (ATG-T = 6.72, ATG-S = 6.71, GI-T = 6.63, GI-S = 6.47) than participants in the control condition (ATG-T = 5.88, ATG-S = 5.31, GI-T = 5.32, GI-S = 5.06). Further analysis indicated that the control group experienced decreases in perceptions of cohesion throughout the season, while participants in the team goal setting condition maintained their levels of cohesion from the beginning to the end of the season.

Although it appears that team goal setting is successful in fostering cohesion, some research has found no relationship between team goal setting and cohesion. For instance, Pargman and De Jesus (1987) conducted a study to examine the relationship amongst performance goals, cohesion, and performance in male secondary school intramural basketball teams. It was hypothesized that teams who set performance goals would exhibit higher levels of cohesiveness and that there would be a positive relationship between cohesion and the team's placement in the standings. However, the results indicated that team goals did not enhance players' perceptions of cohesion. However, it should be noted that feedback was not given to the participants concerning their team goals, which may have affected the results. Thus, it was suggested by the authors that team goal setting may have the most affect on cohesion and performance when feedback is given; a belief that is shared by numerous researchers (e.g., Locke & Latham, 1985; Matsui et al., 1987; Widmeyer & Ducharme, 1997).

Goal Type

Research in sport has begun to stress the importance of distinguishing between three types of goals (i.e., process, performance, and outcome) and the significance of investigating the benefits of each goal type in relation to various outcomes (e.g., Burton, 1989; Kingston & Hardy, 1994, 1997). As such, process goals are defined as focusing on the behaviours necessary for successful performance (Hardy, Jones, & Gould, 1996). Examples of process goals might include "staying relaxed" during a race. Performance goals on the other hand, focus on identifying an end product of performance that can be achieved relatively independent of others (Hardy et al.). For instance, running one mile in 12 minutes and 21 seconds would be indicative of a performance goal. Lastly, outcome

goals focus on an end product of performance and are usually based on a comparison with a competitor such as finishing first in a race (Hardy et al.).

Prior to the suggestion of examining the different types of goals, the majority of research in sport had utilized performance goals. As noted by Filby, Maynard, and Graydon (1999), this limitation applied equally to investigations conducted in laboratory settings as well as field-based studies. However, research on individual goal setting has attempted to overcome these limitations and have broadened their focus to examine the effects of process, performance and outcome goals on performance (e.g., Filby et al.; Kingston & Hardy, 1997; Zimmerman & Kitsantas, 1996, 1997). For instance, Zimmerman and Kitsantas (1996) investigated the impact of process versus outcome goals on skill acquisition and performance on a dart throwing task. Participants assigned to the process goal setting condition were required to concentrate on successfully achieving the final stages in each throw. The multi-approach strategy was described in detail to the participants and was labelled as “sighting”, “throwing”, and “follow through”. Participants assigned to the outcome goal condition on the other hand, were simply asked to hit the bull’s eye on the dart board. Results showed that participants using process goals, performed significantly better than participants setting outcome goals. It was suggested that process goals enhanced the ability of the participants to focus on the technical components of the task.

According to Zimmerman and Kitsantas (1997), the experimental conditions of their previous study (Zimmerman & Kitsantas, 1996) were not optimal since they did not consider the possibility that participants would change from process to outcome goals once the dart-throwing strategy became automatic. In order to overcome this limitation,

Zimmerman and Kitsantas (1997) added a shifting goal experimental condition that initially began using process goals and then changed to outcome goals when the dart-throwing task became automatic. The participants were female high school physical education classes, and were randomly assigned to one of the experimental conditions. It was found that participants who shifted goals from process to outcome goals obtained higher performance scores than those who set process goals or outcome goals. It should also be noted that participants regardless of their experimental condition outperformed those assigned to the control condition.

The findings of Zimmerman and Kitsantas (1996, 1997) were supported by Kingston and Hardy (1997), who compared the effectiveness of process and outcome goals on the performance of golfers over a season. The participants assigned to the process goal condition showed the greatest levels of improvement in performance than participants in the outcome goal condition. The authors suggested that process goals may lead to enhanced performance through improved attentional focus.

Building on the work of Zimmerman and Kitsantas (1997) on the use of multiple goal setting strategies, Filby et al. (1999) examined the use of a multiple goal setting strategies on the performance of a soccer task measured by kicking accuracy. Participants were assigned to one of the following conditions: outcome goals, outcome goals and process goals, process goals, a combination of outcome, performance, and process goals, or a control condition. Participants in all five conditions were informed that the experiment was concerned with the effectiveness of different approaches to goal setting. Specifically, participants required to set outcome goals were informed that their goal statement should reflect that their aim is to win first prize in the competition. On the other

hand, participants required to set process goals were helped to generate a process goal statement such as “focus on the ten” or “concentrate for the whole 90 seconds”.

Participants were instructed that would be their short-term aim. In addition, participants were not informed about the competition. Finally, participants assigned to the control condition were simply informed that the experiment was concerned with the efficacy of pre-performance routines.

Results revealed that the groups using multiple goal strategies (i.e., outcome and process goals condition and outcome, performance, and process goals condition) performed significantly better than each of the other three experimental groups. Additionally, participants in both the process goal only and the control conditions scored significantly better than did participants in the outcome goal only condition. Although post interviews revealed that participants assigned to the experimental conditions were committed to attaining their assigned goals, it was not made clear whether participants in the control condition engaged in spontaneous goal setting which may have altered the results. Furthermore, Filby et al. (1999) failed to include a performance goal only experimental condition limiting the findings in regards to providing insight into the prioritization of all three goal types. Nonetheless, the findings produced by the study revealed some considerations that may be valuable for practitioners when consulting performers on the most effective way to implement an effective goal setting training program.

As noted by Filby et al. (1999), the results also support Hardy’s (1997) contention that a balance should be maintained between setting process, performance, and outcome goals. Also, the results echoed Kingston and Hardy’s (1997) suggestion that the most

important factor for goal setting programs is knowing the extent to which performers learn to prioritize the different goal types (Filby et al.). However, goal setting in group contexts may not be generalizable from research at the individual level as goal setting becomes more complicated in groups.

One of the primary factors which has been found to differentiate group goal setting from individual goal setting is the presence of group phenomena such as cohesion (Klein & Mulvey, 1995). Nonetheless, it is important to note that similar findings from the individual goal setting research examining goal types have been echoed for group goal setting in the organizational literature (e.g., Linnenbrink, 2005). For instance, Linnenbrink examined the effects of different types of group goals on the performance of groups of upper elementary level students. Students were divided into groups of four and classrooms were assigned to one of three goal setting conditions: mastery goal orientation, performance goal orientation or a combined mastery and performance approach. Mastery goals focus on developing one's competence (i.e., process goal), while a performance goal orientation focuses on demonstrating one's competence (i.e., outcome goal). Performance was measured by math exam scores. Groups who were assigned to the combined condition showed the most improvements in performance, followed by the outcome goals group, and the process goals group. Thus, it was concluded that the findings supported the multiple goal perspective for group goal contexts, suggesting that a dual emphasis on process and outcome goals may be beneficial in enhancing group performance. Although examining research investigating the effects of different types of goal setting on the individual goal setting-performance relationship provides insight,

results can not necessarily be generalized to the group goal setting-performance or group goal setting-cohesion relationship.

Moreover, studies that have examined the effects of group goal setting on cohesion have solely used performance goals (i.e., Pargman & De Jesus, 1987; Senécal et al., 2008) or have simply failed to indicate which type of goals were being implemented (i.e., Brawley et al., 1993; Kjormo & Halvari, 2002). Thus, further team goal setting research needs to be conducted in the sports domain to determine which goal types should be emphasized.

In sum, it has been suggested that cohesion is the most important small group variable (Golembiewski, 1962; Lott & Lott, 1965). Therefore, it is not surprising that when groups have been the focus, cohesion has been a topic of interest in the sport psychology literature. In regards to the consequences of cohesion, research has found that greater cohesion is related to improved performance (e.g., Carron, Colman et al., 2002; Mullen & Copper, 1994). Given the importance of the cohesion-performance relationship, it is not surprising that attempts have been made to enhance cohesion through a process known as team building and more specifically team goal setting. Although the majority of literature has found a positive team goal setting-cohesion relationship, it should be noted that very few studies have been conducted to test this relationship. Furthermore, there are several limitations associated with previous research studies including the examination of various goal types (i.e., process, performance, outcome, and multiple). Therefore, further team goal setting research needs to be conducted in the sports domain to understand whether this intervention technique is useful for enhancing cohesion, as well as determining which goal types should be

emphasized. Since this relationship has not been previously examined, a laboratory setting would be ideal (McGrath, 1964).

References

- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.
- Bloom, G. A., & Stevens, D. E. (2002). A team building mental skills training program with an intercollegiate equestrian team. *Athletic Insight*, *4*, www.athleticinsight.com/Vol4Iss1/EquestrianTeamBuilding.htm.
- Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *Journal of Sport Psychology*, *9*, 275-294.
- Brawley, L. R., Carron, A. V., & Widmeyer, W. N. (1993). The influence of the group and its cohesiveness on perceptions of group goal-related variables. *Journal of Sport & Exercise Psychology*, *15*, 245-260.
- Brawley, L. R., & Paskevich, D. M. (1997). Conducting team building research in the context of sport and exercise. *Journal of Applied Sport Psychology*, *9*, 11-40.
- Buckworth, J., & Dishman, R. K. (2002). *Exercise psychology* (pp. 17-39). Champaign, IL: Human Kinetics Publishing.
- Burton, D. (1989). Winning isn't everything: Examining the impact of performance goals on collegiate swimmers' cognitions and performance. *The Sport Psychologist*, *3*, 105-132.
- Carron, A. V. (1982). Cohesiveness in sport groups: Implications and considerations. *Journal of Sport Psychology*, *4*, 123-138.

- Carron, A. V., Bray, S. R., & Eys, M. A. (2002). Team cohesion and team success in sport. *Journal of Sport Sciences, 20*, 119-126.
- Carron, A. V., & Brawley, L. R. (2000). Cohesion, conceptual and measurement issues. *Small Group Research, 31*, 89-105.
- Carron, A.V., Brawley, L.R., & Widmeyer, W.N. (1998). Measurement of cohesion in sport and exercise. In J. L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.
- Carron, A. V., Colman, M. M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta-analysis. *Journal of Sport & Exercise Psychology, 24*, 168-188.
- Carron, A. V., & Hausenblas, H. A. (1998). *Group dynamics in sport* (2nd ed.), Morgantown, WV: Fitness Information Technology.
- Carron, A. V. & Spink, K. S. (1993). Team building in an exercise setting. *The Sport Psychologist, 7*, 8-18.
- 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.
- Davids, K., & Nutter, A. (1988). The cohesion-performance relationship of English national league volleyball teams. *Journal of Human Movement Studies, 15*, 205-213.
- Dawson, K. A., Bray, S. R., & Widmeyer, W. N. (2002). Goal setting by intercollegiate sport teams and athletes. *Avante, 8*, 14-23.

- Eitington, J. E. (1989). *The winning trainer* (2nd ed.). Houston, TX: Gulf Publishing Company.
- Eys, M. A., & Carron, A. V. (2001). Role ambiguity, task cohesion, and task self-efficacy. *Small Group Research, 32*, 356-373.
- Eys, M. A., Patterson, M. M., Loughead, T. M., & Carron, A. V. (2006). Team building in sport. In J. Duda, D. Hackfort, & R. Lidor (Eds.), *Handbook of research in applied sport psychology: International perspectives* (pp. 219-231). Morgantown, WV: Fitness Information Technology.
- Festinger, L. (1950). Informal social communication. *Psychological Review, 57*, 271-282.
- Festinger, L., Schachter, S., & Back, K. (1950). *Social pressure in informal groups*. New York: Harper & Row.
- Filby, W. C. D., Maynard, I. W., & Graydon, J. K. (1999). The effect of multiple-goal strategies on performance outcome in training and competition. *Journal of Applied Sport Psychology, 11*, 230-246.
- Golembiewski, R. (1962). *The small group*. Chicago: University of Chicago Press.
- Gross, N., & Martin, W. (1952). On group cohesiveness. *American Journal of Sociology, 57*, 533-546.
- Hardy, C. J., & Crace, R. K. (1997). Foundations of team building: Introduction to the team building primer. *Journal of Applied Sport Psychology, 9*, 1-10.
- Hardy, L., Jones, J. G., & Gould, D. (1996). *Understanding psychological preparation for sport: Theory and practice of elite performers*. Chichester, John Wiley.
- Johnson, D. W., & Johnson, F. P. (1987). *Joining together: Group therapy and group skills* (3rd ed.). Englewood Cliffs, New Jersey: Prentice-Hall.

- Johnson, S. R., Ostrow, A. C., Perna, F. M., & Etzel, E. F. (1997). The effect of group versus individual goal setting on bowling performance. *The Sport Psychologist, 11*, 190-200.
- Kingston, K. M., & Hardy, L. (1994). Factors affecting the salience of outcome, performance, and process goals in golf. In A. Cochran & M. Farrally (Eds.), *Science and golf II* (pp. 144-149). Brisbane, QLD: Australian Academic Press.
- Kingston, K. M., & Hardy, L. (1997). Effects of different types of goals on the processes that support performance. *The Sport Psychologist, 11*, 277-293.
- Kjormo, O., & Halvari, H. (2002). Two ways related to performance in elite sport: The path of self-confidence and competitive anxiety and the path of group cohesion and group goal-clarity. *Perceptual and Motor Skills, 94*, 950-966.
- Klein, H. J., & Mulvey, P. W. (1995). Two investigations of the relationships among group goals, group commitment, cohesion, and performance. *Organizational Behaviour and Human Decision Processes, 61*, 44-53.
- Kyllo, L. B., & Landers, D. M. (1995). Goal setting in sport and exercise: A research synthesis to resolve the controversy. *Journal of Sport & Exercise Psychology, 17*, 117-137.
- Landers, D. M., & Lueschen, G. (1974). Team performance outcome and cohesiveness of competitive co-acting groups. *International Review of Sport Sociology, 9*, 57-69.
- Lewin, K. (1935). *A dynamic theory of personality*. New York: McGraw-Hill.
- Li, F., & Harmer, P. (1996). Confirmatory factor analysis of the Group Environment Questionnaire with intercollegiate sample. *Journal of Sport & Exercise Psychology, 18*, 49-63.

- Libo, L. (1953). *Measuring group cohesiveness*. Ann Arbor, MI: University of Michigan Press.
- Linnenbrink, E. A. (2005). The dilemma of performance-approach goals: The use of multiple goal contexts to promote students' motivation and learning. *Journal of Educational Psychology, 97*, 197-213.
- Locke, E. A. (1994). Comments on Weinberg and Weigand. *Journal of Sport & Exercise Psychology, 16*, 212-215.
- Locke, E. A. (1991). Problems with goal-setting research in sports and their solution. *Journal of Sport & Exercise Psychology, 8*, 311-316.
- Locke, E. A., & Latham, G. P. (1985). The application of goal setting to sports. *Journal of Sport Psychology, 7*, 205-222.
- Lott, A. J., & Lott, B. E. (1965). Group cohesiveness as interpersonal attraction: A review of relationships with antecedent and consequent variables. *Psychological Bulletin, 64*, 259-309.
- Loughead, T.M., & Hardy, J. (2006). Team Cohesion: From theory to research to team building. In S. Hanton & S. Mellalieu (Eds.), *Literature reviews in sport psychology*. Hauppauge, NY: Nova Science Publishers.
- Matsui, T., Kakuyama, T., & Onglatco, L. O. (1987). Effects of goals and feedback on performance groups. *Journal of Applied Psychology, 72*, 407-415.
- McGrath, J. E. (1964). Toward a "Theory of Method" for research in organizations. In W. W. Cooper, H. J. Leavitt, & M. W. Shelly (Eds.), *New perspectives in organization research* (pp. 533-556). New York: John Wiley & Sons.

- Mesch, D. J., Farh, J., & Podsakoff, P. M. (1994). Effects of feedback sign on group goal setting, strategies, and performance. *Group & Organization Management, 19*, 309-333.
- Mikalachki, A. (1969). *Group cohesion reconsidered*. London, ON: School of Business Administration, University of Western Ontario.
- Mills, T. M. (1984). *The sociology of small groups* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.
- Mitchell, T. R., & Silver, W. S. (1990). Individual and group goals when workers are interdependent: Effects on task strategies and performance. *Journal of Applied Psychology, 75*, 185-193.
- Mudrack, P. E. (1989). Defining group cohesiveness: A legacy of confusion? *Small Group Behavior, 20*, 37-49.
- Mullen, B., & Copper, C. (1994). The relation between group cohesiveness and performance: An integration. *Psychological Bulletin, 115*, 210-227.
- Pargman, D., & De Jesus, M. (1987). The effect of goal setting on cohesiveness in high school intramural basketball teams. *Journal of Applied Research in Coaching and Athletics, 2*, 211-226.
- Patterson, M. M., Carron, A. V., & Loughhead, T. M. (2005). The influence of group norms on the cohesion-performance relationship: A multi-level analysis. *Psychology of Sport & Exercise, 6*, 479-493.
- Prapavessis, H., Carron, A. V., & Spink, K. S. (1996). The effect of group cohesion on competitive state anxiety. *Journal of Sport & Exercise Psychology, 18*, 64-74.

- Senécal, J., Loughead, T. M., & Bloom, G. A. (2008). A season-long team-building intervention: Examining the effect of team goal setting on cohesion. *Journal of Sport & Exercise Psychology, 30*, 186-199.
- Spink, K. S., & Carron, A. V. (1993). Group cohesion and adherence in exercise classes. *Journal of Sport & Exercise Psychology, 14*, 78-86.
- Stevens, D. E. (2002). Building the effective team. In J. M. Silva and D. E. Stevens (Eds.), *Psychological foundations of sport* (pp. 306-327). Boston: Allyn and Bacon.
- Stevens, D. E., & Bloom, G. A. (2003). The effect of team building on cohesion. *Avante, 9*, 43-54.
- Terry, P. C., Carron, A. V., Pink, M. J., Lane, A. M., Jones, G. J., & Hall, M. P. (2000). Perceptions of group cohesion and mood in sport teams. *Group Dynamics: Theory, Research, and Practice, 4*, 244-253.
- Tziner, A., Nicola, N., & Rizac, A. (2003). Relation between social cohesion and team performance in soccer teams. *Perceptual and Motor Skills, 96*, 145-148.
- Voight, M., & Callaghan, J. (2001). A team building intervention program: Application and evaluation with two university soccer teams. *Journal of Sport Behavior, 24*, 420-431.
- Weinberg, R., Burton, D., Yulkelson, D., & Weigand, D. (1993). Goal setting in competitive sport: An exploratory investigation of practices of collegiate athletes. *The Sport Psychologist, 7*, 275-289.
- Weinberg, R., & Weigand, D. (1993). Goal setting in sport and exercise: A reaction to Locke. *Journal of Sport & Exercise Psychology, 15*, 88-96.

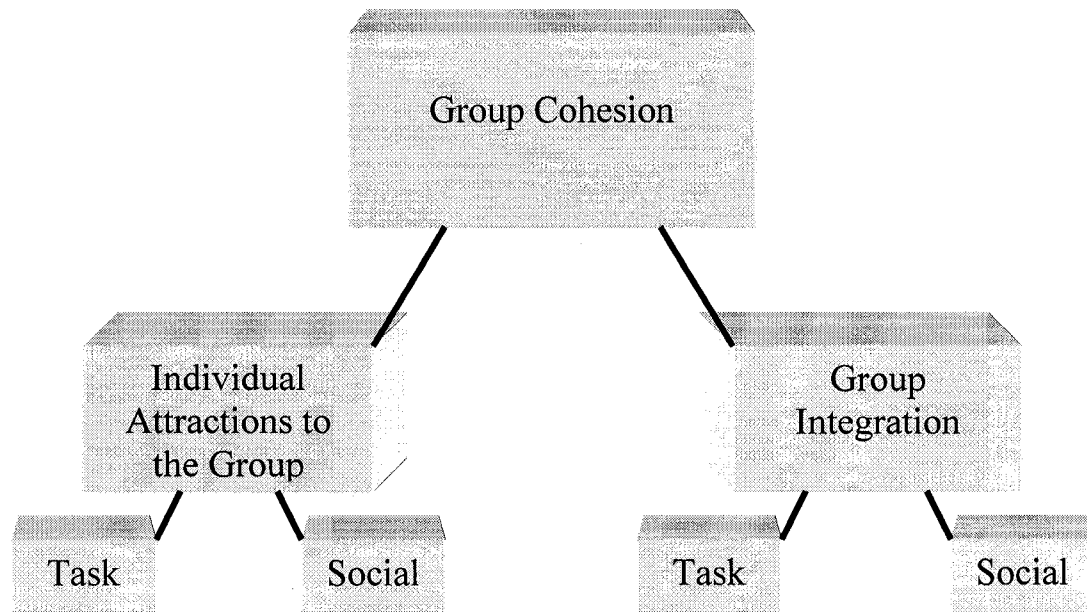
- Weistre, K. R., & Weiss, M. R. (1991). The relationship between perceived coaching behaviours and group cohesion in high school football teams. *The Sport Psychologist, 5*, 41-54.
- Widmeyer, W. N., Brawley, L. R., & Carron, A. V. (1990). Group size in sport. *Journal of Sport & Exercise Psychology, 12*, 177-190.
- Widmeyer, W. N., & Ducharme, K. (1997). Team building through team goal setting. *Journal of Applied Sport Psychology, 9*, 97-113.
- Widmeyer, W. N., & Williams, J. M. (1991). Predicting cohesion in a coaching sport. *Small Group Research, 22*, 548-570.
- Yulkelson, D., Weinberg, R., & Jackson, A. (1984). A multidimensional group cohesion instrument for intercollegiate basketball teams. *Journal of Sport Psychology, 6*, 103-117.
- Zander, A. (1971). *Motives and goals in groups*. New York: Academic Press.
- Zimmerman, B. J., & Kitsantas, A. (1996). Self-regulated learning of a motoric skill: The role of goal setting and self-monitoring. *Journal of Applied Sport Psychology, 8*, 60-75.
- Zimmerman, B. J., & Kitsantas, A. (1997). Development phases in self-regulation: Shifting from process goals to outcome goals. *Journal of Educational Psychology, 89*, 29-36.

Figure Captions

Figure 1. Conceptual Framework for the study of Cohesion in Sport (Carron, Widmeyer, & Brawley, 1985).

Figure 2. Team Building Model for Development of Cohesion (Carron & Spink, 1993).

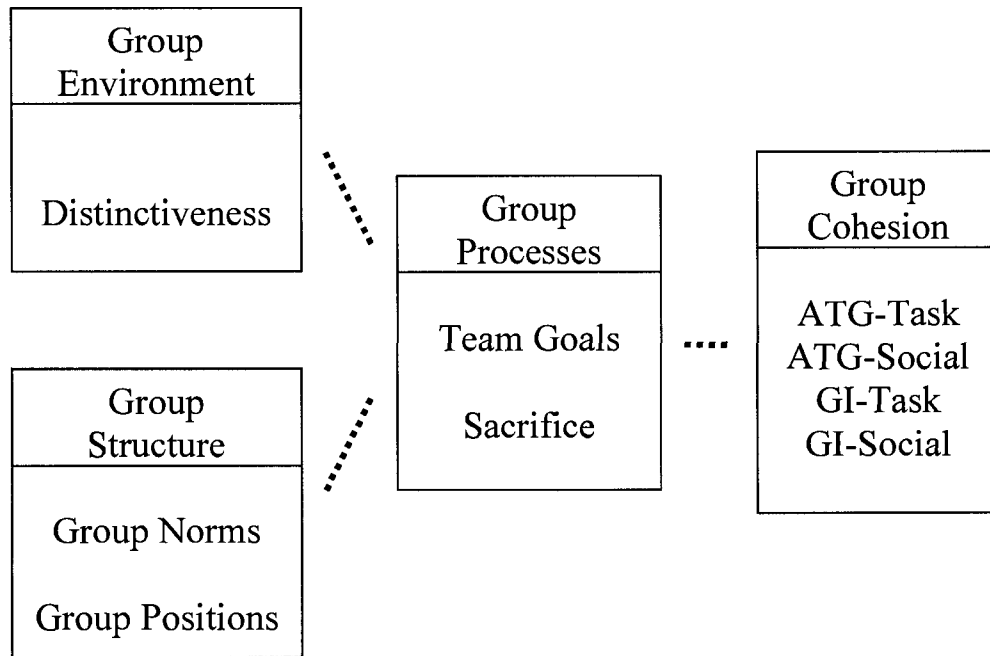
Figure 1



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

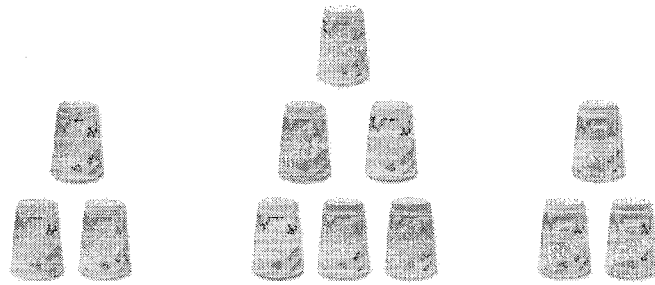


Adapted from:

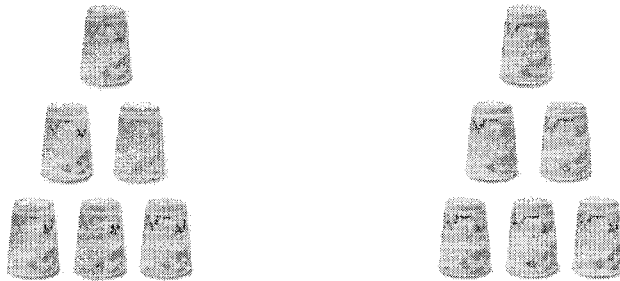
Carron, A. V., & Spink, K. S. (1993). Team building in an exercise setting. *The Sport Psychologist*, 7, 8-18.

Appendix A

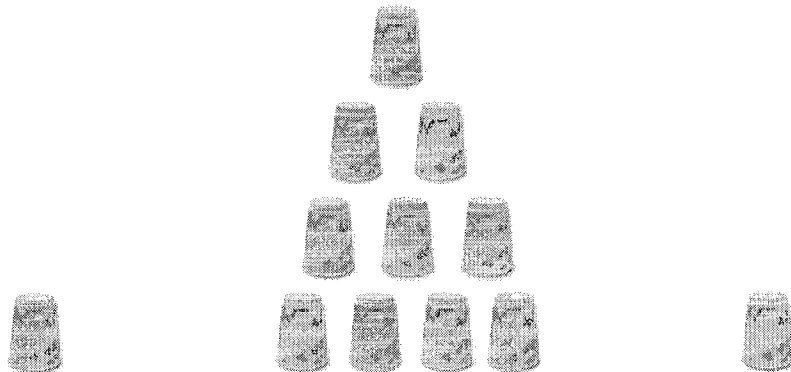
Cup Stacking Formations



3-6-3 Formation



6-6 Formation



1-10-1 Formation

Appendix B

Demographic Information

Age: _____ yrs

Gender: Female / Male (circle one)

Prior to this, did you ever cup stack? Yes No (circle one)

How long have you known your group members?

Teammate 1: _____ (in months)

Teammate 2: _____ (in months)

Appendix C

Group Environment Questionnaire (GEQ ; Carron et al., 1985)

This survey looks at what you think about your team. There are no wrong or right answers, so please answer honestly. Some of the questions may seem repetitive, but please answer ALL questions. Your answers will not be shared with anyone.

The following questions look at your feelings about your own involvement with this team. Please CIRCLE a number from 1 to 9 to indicate which number best describes your feelings about each question.

1. I do not enjoy being a part of the social activities of this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
2. I'm not happy with the amount of playing time I get.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
3. I am going to miss the members of this team when the cup-stacking task ends.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
4. I'm unhappy with my team's desire to win.

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

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
6. This team did not give me enough opportunities to improve my personal performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
7. I enjoy hanging out with others rather than my teammates.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree
8. I did not like the strategies used on this team.

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

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

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

The following questions look at your feelings about the team as a whole. Please CIRCLE a number from 1 to 9 to indicate which number best describes your feelings about each question

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

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

11. Members of our team would rather go out on their own than get together as team.

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

12. We all took responsibility for poor performances by our team.

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

13. Our team members rarely hang out together.

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

14. Our team members had conflicting goals for the team's performance.

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

15. Our team would like to spend time together when the cup-stacking task is done.

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

16. Members of our team would like to spend time together when the cup stacking task is done.

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

17. Members of our team did not stick together outside of practice and competition sessions.

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

Appendix E

Goal Commitment Inventory

(Klein, Wesson, Hollenbeck, Wright, & DeShon, 2001)

On a scale of 1 (completely disagree) to 5 (completely agree) please indicate the extent to which these statements correspond to your commitment levels towards your team's participatively set goals.

1. It's hard to take this goal seriously.

1	2	3	4	5
Completely Disagree				Completely Agree

2. Quite frankly, I don't care if I achieve this goal or not.

1	2	3	4	5
Completely Disagree				Completely Agree

3. I am strongly committed to pursuing this goal.

1	2	3	4	5
Not at all				Very much so

4. It wouldn't take much to make me abandon this goal.

1	2	3	4	5
Not at all				Very much so

5. I think this is a good goal to shoot for.

1	2	3	4	5
Not at all				Very much so

Appendix G
Goal Difficulty Inventory
(Winters & Latham, 1996)

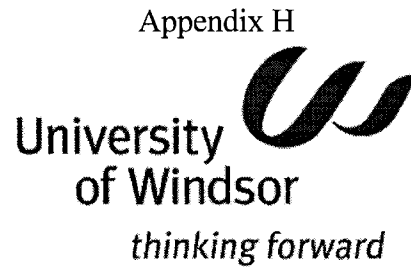
On a scale of 1 (not at all) to 5 (very much so) please indicate the extent to which these statements correspond to the difficulty of your team's participatively set goals.

1. To what extent were the goals set difficult.

1	2	3	4	5
Not at all				Very much so

2. To what extent were the goals set easy.

1	2	3	4	5
Not at all				Very much so



LETTER OF INFORMATION FOR CONSENT TO PARTICIPATE IN RESEARCH

Title of Study: **The Role of Groups on Cohesion**

You are asked to participate in one of three research studies conducted by **Andrée Castonguay** a Master's of Human Kinetics candidate, from the **department of human kinetics** at the University of Windsor. Results obtained from the current studies will be used in a master's thesis.

If you have any questions or concerns about the research, please feel to contact:

Andrée Castonguay (Primary Investigator)
Phone: 519-253-3000 ext. 4058
e-mail: castong2@uwindsor.ca

or

Dr. Todd Loughead (Faculty Supervisor)
Phone: 519-253-3000 ext. 2450
e-mail: loughead@uwindsor.ca

PURPOSE OF THE STUDIES

The purpose of all three of our studies is to examine how perceptions of your team environment influence your team's chemistry.

PROCEDURES

If you volunteer to participate in one of these studies, we would ask you to do the following things:
Fill out a short questionnaire three times throughout the 8 week study. This questionnaire will assess various perceptions of your sport team.

What do you have to do? Your participation includes attending one weekly cup stacking task lasting approximately 15 minutes per session for an 8 week period. The studies will take place in the Sport and Exercise Psychology Laboratory located in the Human Kinetics building. Participation also includes completing questionnaires three times throughout the 8 week period: weeks 4,6 and 8. There are no right or wrong answers, please answer the questions as honestly as possible.

POTENTIAL RISKS AND DISCOMFORTS

There are no known physical or psychological risks associated with this research.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Providing students with the opportunity to act as a research participant provides them with the chance to personally experience research related to the concepts that they study in the course 95-211 Principles of Mental Skills Training. Also, subjects participating in the current study are expected to experience benefits from learning how to set goals. Finally, the task of cup stacking is associated with improvements in hand eye coordination.

PAYMENT FOR PARTICIPATION

Subjects wishing to participate in the current studies will **not** receive payment for their participation.

CONFIDENTIALITY

Any information that is obtained in connection with these studies and that can be identified with you will remain confidential and will be disclosed only with your permission. The results of the studies will be reported without identifying you personally so your confidentiality can be maintained. The information collected through these surveys will be destroyed five years after collection.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in one of these studies or not. If you volunteer to be in one of these studies, you may withdraw at any point in time without penalty. That is, if you choose to withdraw you will still receive the additional credit. For instance, if you decide to withdraw half way through the study, then you will receive 1% instead of the 2% research credit bonus. However, you will have the opportunity to do a 3-page report in order to receive the other 1%. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results of the study will be posted on the Research Ethics Board website (www.uwindsor.ca/reb).
Date when results are available: May, 2008

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

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

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

Appendix I
Instructional Sheet
(Process goal condition)

What are team goals? Team goals are shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members (Mills, 1984).

What is a process goal? Process goals focus on the behaviours necessary for successful performance (Hardy, Jones, & Gould, 1996). That is, process goals focus on skill technique (Cox, 2007). Examples of process goals might include “place the cups down gently” or “use finger tips”.

Cup stacking task: Your group of 3 will need to perform a doubles cup stacking task as seen on the video. You are to ensure that each member goes twice and that someone is the right hand and someone is the left hand. When you upstack, the right hand makes a move, then the left hand, and so on.

Rules:

- Only hands that are being used by the participants are in play
- Each participant must make only one move at a time during the upstack
- All members have to go 2 times
- One person is the right hand, one the left
- Downstacking begins at the end at which you started
- If you fumble on the cups you are stacking, you do not need to start from the beginning. However, if you are on the third stack and you knock down the middle stack, you need to go back and redo the middle sequence
- Timer must be hit at the end of the sequence

Appendix J
Instructional Sheet
(Performance goal condition)

What are team goals? Team goals are shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members (Mills, 1984).

What is a performance goal? Performance goals focus on identifying an end product of performance that can be achieved relatively independent of others (Hardy, Jones, & Gould, 1996). Specifically, performance goals focus on skill achievement (Cox, 2007). Examples of performance goals might include “performing an up stack in 2 seconds” or “achieving a personal best score”.

Cup stacking task: Your group of 3 will need to perform a doubles cup stacking task as seen on the video. You are to ensure that each member goes twice and that someone is the right hand and someone is the left hand. When you upstack, the right hand makes a move, then the left hand, and so on.

Rules:

- Only hands that are being used by the participants are in play
- Each participant must make only one move at a time during the upstack
- All members have to go 2 times
- One person is the right hand, one the left
- Downstacking begins at the end at which you started
- If you fumble on the cups you are stacking, you do not need to start from the beginning. However, if you are on the third stack and you knock down the middle stack, you need to go back and redo the middle sequence
- Timer must be hit at the end of the sequence

Appendix K
Instructional Sheet
(Outcome goal condition)

What are team goals? Team goals are shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members (Mills, 1984).

What is an outcome goal? Outcome goals focus on an end product of performance and are usually based on a comparison with a competitor (Hardy, Jones, & Gould, 1996). That is, outcome goals usually focus on winning (Cox, 2007). Examples of outcome goals might include “winning first place in the competition” and “completing the cup stacking task 2 seconds faster than the second to best team”.

Cup stacking task: Your group of 3 will need to perform a doubles cup stacking task as seen on the video. You are to ensure that each member goes twice and that someone is the right hand and someone is the left hand. When you upstack, the right hand makes a move, then the left hand, and so on.

Rules:

- Only hands that are being used by the participants are in play
- Each participant must make only one move at a time during the upstack
- All members have to go 2 times
- One person is the right hand, one the left
- Downstacking begins at the end at which you started
- If you fumble on the cups you are stacking, you do not need to start from the beginning. However, if you are on the third stack and you knock down the middle stack, you need to go back and redo the middle sequence
- Timer must be hit at the end of the sequence

Appendix L
Instructional Sheet
(Multiple goal condition)

What are team goals? Team goals are shared perceptions that refer to a desirable state for the group as a collective rather than simply the sum of the personal goals of individual team members (Mills, 1984).

What is a process goal? Process goals focus on the behaviours necessary for successful performance (Hardy, Jones, & Gould, 1996). Specifically, performance goals focus on skill achievement (Cox, 2007). Examples of process goals might include “place the cups down gently” or “use finger tips”.

What is a performance goal? Performance goals focus on identifying an end product of performance that can be achieved relatively independent of others (Hardy, Jones, & Gould, 1996). Specifically, performance goals focus on skill achievement (Cox, 2007). Examples of performance goals might include “performing an up stack in 2 seconds” or “achieving a personal best score”.

What is an outcome goal? Outcome goals focus on an end product of performance and are usually based on a comparison with a competitor (Hardy, Jones, & Gould, 1996). That is, outcome goals usually focus on winning (Cox, 2007). Examples of outcome goals might include “winning first place in the competition” and “completing the cup stacking task 2 seconds faster than the second to best team”.

Cup stacking task: Your group of 3 will need to perform a doubles cup stacking task as seen on the video. You are to ensure that each member goes twice and that someone is the right hand and someone is the left hand. When you upstack, the right hand makes a move, then the left hand, and so on.

Rules:

- Only hands that are being used by the participants are in play
- Each participant must make only one move at a time during the upstack
- All members have to go 2 times
- One person is the right hand, one the left
- Downstacking begins at the end at which you started
- If you fumble on the cups you are stacking, you do not need to start from the beginning. However, if you are on the third stack and you knock down the middle stack, you need to go back and redo the middle sequence
- Timer must be hit at the end of the sequence

Appendix M
Instructional Sheet
(Control condition)

Cup stacking task: Your group of 3 will need to perform a doubles cup stacking task as seen on the video. You are to ensure that each member goes twice and that someone is the right hand and someone is the left hand. When you upstack, the right hand makes a move, then the left hand, and so on.

Rules:

- Only hands that are being used by the participants are in play
- Each participant must make only one move at a time during the upstack
- All members have to go 2 times
- One person is the right hand, one the left
- Downstacking begins at the end at which you started
- If you fumble on the cups you are stacking, you do not need to start from the beginning. However, if you are on the third stack and you knock down the middle stack, you need to go back and redo the middle sequence
- Timer must be hit at the end of the sequence

Appendix N



**CONSENT TO PARTICIPATE IN RESEARCH
(Experimental Conditions)**

Title of Study: **The Role of Groups on Cohesion**

You are asked to participate in one of three research studies conducted by **Andrée Castonguay** a Master's of Human Kinetics candidate, from the **department of human kinetics** at the University of Windsor. Results obtained from the current studies will be used in a master's thesis.

If you have any questions or concerns about the research, please feel to contact:

Andrée Castonguay (Primary Investigator)
Phone: 519-253-3000 ext. 4058
e-mail: castong2@uwindsor.ca

or

Dr. Todd Loughead (Faculty Supervisor)
Phone: 519-253-3000 ext. 2450
e-mail: loughead@uwindsor.ca

PURPOSE OF THE STUDIES

The purpose of all three of our studies is to examine how perceptions of your team environment influence your team's chemistry.

PROCEDURES

If you volunteer to participate in one of these studies, we would ask you to do the following things:
Fill out a short questionnaire three times throughout the 8 week study. This questionnaire will assess various perceptions of your sport team.

What do you have to do? Your participation includes attending one weekly cup stacking task lasting approximately 15 minutes per session for an 8 week period. The studies will take place in the Sport and Exercise Psychology Laboratory located in the Human Kinetics building. Participation also includes completing questionnaires three times throughout the 8 week period: weeks 4,6 and 8. There are no right or wrong answers, please answer the questions as honestly as possible. Your group may also be randomly placed into one of the research studies where, in addition to completing the questionnaire, you will be asked to participate in a group goal setting program throughout the study.

POTENTIAL RISKS AND DISCOMFORTS

There are no known physical or psychological risks associated with this research.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Providing students with the opportunity to act as a research participant provides them with the chance to personally experience research related to the concepts that they study in the course 95-211 Principles of Mental Skills Training. Also, subjects participating in the current study are expected to experience benefits

from learning how to set goals. Finally, the task of cup stacking is associated with improvements in hand eye coordination.

PAYMENT FOR PARTICIPATION

Subjects wishing to participate in the current studies will **not** receive payment for their participation.

CONFIDENTIALITY

Any information that is obtained in connection with these studies and that can be identified with you will remain confidential and will be disclosed only with your permission. The results of the studies will be reported without identifying you personally so your confidentiality can be maintained. The information collected through these surveys will be destroyed five years after collection.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in one of these studies or not. If you volunteer to be in one of these studies, you may withdraw at any point in time without penalty. That is, if you choose to withdraw you will still receive the additional credit. For instance, if you decide to withdraw half way through the study, then you will receive 1% instead of the 2% research credit bonus. However, you will have the opportunity to do a 3-page report in order to receive the other 1%. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results of the study will be posted on the Research Ethics Board website (www.uwindsor.ca/reb).
Date when results are available: May, 2008

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

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

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study **The Role of Groups on Cohesion** as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Subject

Signature of Subject

Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date



CONSENT TO PARTICIPATE IN RESEARCH (Control Condition)

You are asked to participate in one of three research studies conducted by **Andrée Castonguay** a Master's of Human Kinetics candidate, from the **department of human kinetics** at the University of Windsor. Results obtained from the current studies will be used in a master's thesis.

If you have any questions or concerns about the research, please feel to contact:

Andrée Castonguay (Primary Investigator)
Phone: 519-253-3000 ext. 4058
e-mail: castong2@uwindsor.ca

or

Dr. Todd Loughead (Faculty Supervisor)
Phone: 519-253-3000 ext. 2450
e-mail: loughead@uwindsor.ca

PURPOSE OF THE STUDIES

The purpose of all three of our studies is to examine how perceptions of your team environment influence your team's chemistry.

PROCEDURES

If you volunteer to participate in one of these studies, we would ask you to do the following things:
Fill out a short questionnaire three times throughout the 8 week study. This questionnaire will assess various perceptions of your sport team.

What do you have to do? Your participation includes attending one weekly cup stacking task lasting approximately 15 minutes per session for an 8 week period. The studies will take place in the Sport and Exercise Psychology Laboratory located in the Human Kinetics building. Participation also includes completing questionnaires three times throughout the 8 week period: weeks 4,6 and 8. There are no right or wrong answers, please answer the questions as honestly as possible.

POTENTIAL RISKS AND DISCOMFORTS

There are no known physical or psychological risks associated with this research.

POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

Providing students with the opportunity to act as a research participant provides them with the chance to personally experience research related to the concepts that they study in the course 95-211 Principles of Mental Skills Training. Also, subjects participating in the current study are expected to experience benefits from learning how to set goals. Finally, the task of cup stacking is associated with improvements in hand eye coordination.

PAYMENT FOR PARTICIPATION

Subjects wishing to participate in the current studies will **not** receive payment for their participation.

CONFIDENTIALITY

Any information that is obtained in connection with these studies and that can be identified with you will remain confidential and will be disclosed only with your permission. The results of the studies will be reported without identifying you personally so your confidentiality can be maintained. The information collected through these surveys will be destroyed five years after collection.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in one of these studies or not. If you volunteer to be in one of these studies, you may withdraw at any point in time without penalty. That is, if you choose to withdraw you will still receive the additional credit. For instance, if you decide to withdraw half way through the study, then you will receive 1% instead of the 2% research credit bonus. However, you will have the opportunity to do a 3-page report in order to receive the other 1%. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

FEEDBACK OF THE RESULTS OF THIS STUDY TO THE SUBJECTS

The results of the study will be posted on the Research Ethics Board website (www.uwindsor.ca/reb).
Date when results are available: May, 2008

SUBSEQUENT USE OF DATA

This data may be used in subsequent studies.

RIGHTS OF RESEARCH SUBJECTS

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

SIGNATURE OF RESEARCH SUBJECT/LEGAL REPRESENTATIVE

I understand the information provided for the study **The Role of Groups on Cohesion** as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

Name of Subject

Signature of Subject

Date

SIGNATURE OF INVESTIGATOR

These are the terms under which I will conduct research.

Signature of Investigator

Date

Appendix P
Goal Setting Log Book

Please Identify your Group's Long Term and Short Term Goals!

Long term goal:

-

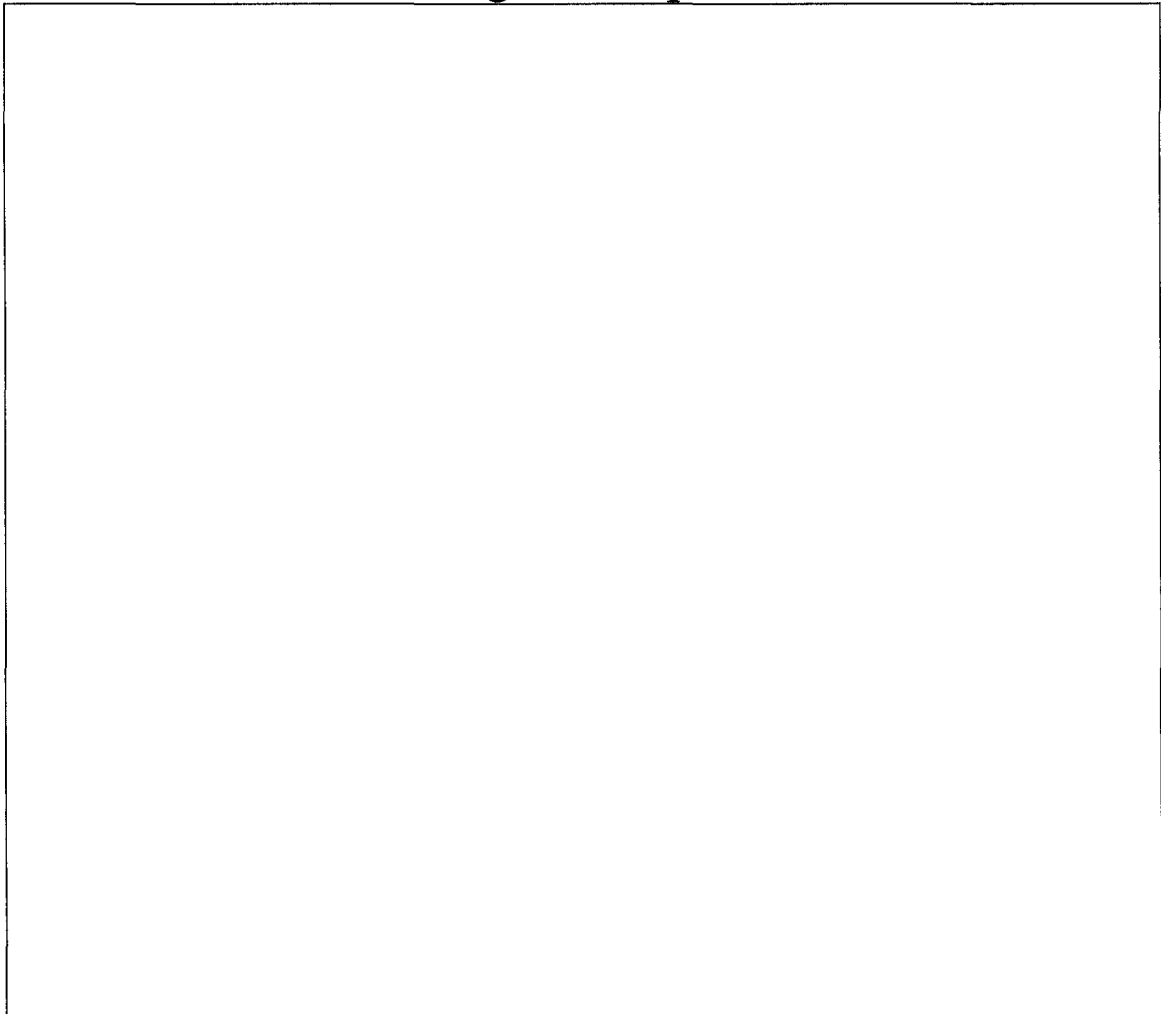
Short term goals:

-

-

-

Progress Report

A large, empty rectangular box with a thin black border, intended for writing a progress report. The box is centered on the page below the 'Progress Report' heading.

VITA AUCTORIS

- NAME: Andrée Castonguay
- PLACE OF BIRTH: Ormstown, Québec, Canada
- YEAR OF BIRTH: 1981
- EDUCATION: Master of Human Kinetics (Sport and Exercise Psychology)
University of Windsor
Windsor, ON, Canada
2006-2008
- Bachelor of Education (Physical Education)
McGill University
Montreal, QC, Canada
2001-2006
- Diplôme D'études Collegiales (Social Science)
John Abbott College
1999-2001
- ACADEMIC HONORS: In-Course Postgraduate Tuition Scholarship
University of Windsor
January 2007- April 2008
- Academic Achievement Award in Geography
John Abbott College
May 2001
- Academic Achievement while Playing Collegiate Rugby Award
John Abbott College
April 2001
- PRESENTATIONS: "An examination of the effects of group goal type on perceptions of cohesion" Poster presented at the University of Windsor Kinesiology Research Day Showcase, Windsor, ON, April, 2008.
- "Investigating the effects of group goal type on perceptions of cohesion: An experimental design" Paper presented at the Eastern Canada Sport and Exercise Psychology Symposium, Sudbury, ON, March 2008.

“The effects of goal participation on cohesion: An experimental design” Poster session presented at the annual meeting of the Canadian Society for Psychomotor Learning and Sport Psychology, Windsor, ON, November 2007.

“The influence of group goal type on cohesion” Paper presented at the Eastern Canada Sport and Exercise Psychology Symposium, Kingston, ON, March 2007.

“Doing it together: The effects of group goal type on cohesion” Poster presented at the University of Windsor Kinesiology Research Day Showcase, Windsor, ON, March 2007.