The Effectiveness of a Team Goal Setting Program on Cohesion in Sport

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CONTRIBUTIONS OF AUTHORS

The manuscript included in the present thesis was created by Julie Senécal in collaboration with Dr. Todd Loughead. Julie Senécal was responsible for data collection, while both authors collaborated for data analyses and the writing of the manuscript.

I, Todd Loughead, attest the accuracy of this statement.

ABSTRACT

The purpose of the present study was to determine whether the implementation of a team goal setting program increased perceptions of cohesion. The participants came from eight female high school senior basketball teams from the Montreal region. A team goal setting intervention program was implemented over the course of the regular season with four teams. The remaining four teams were placed into the no-treatment control condition. Each participant completed a questionnaire that assessed cohesion within the first four weeks of the competitive season and at the end of the season. Results showed that participants in the team goal setting condition did not significantly increase perceptions of cohesion. However, athletes in the control condition significantly perceived a decrease in cohesion from the start of the season to the end of the season. The team goal setting intervention appeared to keep cohesion levels from decreasing throughout the season. Practical implications are discussed.

RÉSUMÉ

Le but de la présente étude était de déterminer si l'implantation d'un programme d'objectif d'équipe augmenterait la perception de la cohésion. Huit équipes féminines de basketball de la région de Montréal ont participé à l'étude. Un programme d'objectifs d'équipe a été implanté avec quatre équipes au cours de leur saison. Les quatre autres équipes faisaient parties du groupe contrôle. Chaque participant a complété un questionnaire qui mesure la cohésion et ce, une fois dans les quatre premières semaines de leur saison et une fois à la fin de leur saison. Les résultats ont démontré que les équipes recevant le programme d'objectifs d'équipe n'ont pas augmenté significativement leur perception de cohésion. Par ailleurs, les athlètes du groupe contrôle ont diminué significativement leur perception de cohésion en fin de saison. Le programme d'objectifs d'équipe a donc semblé prévenir le niveau de cohésion de diminuer durant la saison. Les applications pratiques sont discutées.

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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). It has been suggested that cohesion is the most important small group variable (Golembiewski, 1962; Lott & Lott, 1965). Needless to say, cohesion has been widely studied in several areas, such as social psychology, organizational behaviour, and more recently sport psychology.

Based on Carron and colleagues' (Carron, 1982; Carron et al., 1998) definition of cohesion, Carron, Widmeyer, and Brawley (1985) advocated the need to develop a conceptual model of cohesion. Carron et al. (1985) noted that the conceptual model for cohesion evolved from three fundamental assumptions. First, it was based on the assumption that cohesion could be measured through both group and individual beliefs of group members (Carron & Brawley, 2000). Hence each member's perceptions about the group are reasonable estimates of group unity characteristics and therefore members' cognitions about cohesion can be measured (Carron et al., 1998). The second assumption suggested that cognitions held by each group member regarding the cohesiveness of the group were related to the group as a totality, and to what extent the group satisfied personal needs and objectives (Carron et al., 1998). These cognitions were categorized as *Group Integration* and *Individual Attractions to the Group* beliefs (Carron et al., 1985). Group Integration beliefs reflected an individual's perception about the closeness, similarity, and bonding within the group as a whole, and the degree of unification of the group (Carron & Brawley, 2000). Individual Attractions to the Group cognitions referred to what motivated each member to stay in the group and their personal feelings about the group (Carron & Brawley, 2000). Thus, Individual Attractions to the Group assessed to what extent the group satisfied each member's personal needs and

objectives. The third assumption was based on the need to distinguish between the task- and socially-oriented concerns of groups and their members (Brawley, Carron, & Widmeyer, 1987).

Based on these three assumptions, Carron et al. (1985) advanced a conceptual model of cohesion whereby both task-social, and individual-group orientations were represented and resulted in a four dimensional model of cohesion. Cohesion can therefore be viewed as a multidimensional construct where the member's beliefs can be assessed by the following four dimensions: *Group Integration-Task* (GI-T), *Group Integration-Social* (GI-S), *Individual Attractions to the Group-Task* (ATG-T), and *Individual Attractions to the Group-Social* (ATG-S). Group Integration-Task (GI-T) is defined as the team member's feelings regarding the similarity, closeness, and bonding within the group around the group's task. Group Integration-Social (GI-S) is viewed as the member's feelings about the similarity, closeness, and bonding within the group as a whole as a social unit. Individual Attractions to the Group-Task (ATG-T) is viewed as each team member's feelings about his or her personal involvement with the group's task, goal, objectives, and productivity; whereas the Individual Attractions to the Group-Social (ATG-S) refers to each group member's feelings about his or her personal acceptance, and social interaction with the group (Carron et al., 1998).

Using the conceptual model of cohesion as a basis, Carron et al. (1985) developed the Group Environment Questionnaire (GEQ), an 18-item inventory that assesses the four dimensions of cohesion (i.e., GI-T, GI-S, ATG-T, ATG-S). Since its development, the GEQ has been the most widely used inventory to measure cohesion in sport (Loughead & Hardy, in press). For example, cohesion research using the GEQ has examined several antecedents such as leadership (e.g., Westre & Weiss, 1991), group size (e.g., Widmeyer, Brawley, & Carron, 1990), collective efficacy (e.g., Paskevich, Brawley, Dorsch, & Widmeyer, 1995), role

ambiguity (e.g., Eys & Carron, 2001) and performance (e.g., Carron, Colman, Wheeler, & Stevens, 2002).

As suggested by Loughead and Hardy (in press), coaches are continually interested in enhancing the performance of their teams and it is believed that greater cohesion is related to improved performance. This suggestion is in line with Carron, Bray, and Eys (2002) who pointed out that the definition of cohesion implicitly conveys the general assumption that greater team cohesion is associated with greater team success. Despite the suggestion that cohesion positively influences team performance, research findings have been equivocal. Some research has shown a positive relationship between cohesion and performance (e.g., Carron, Bray, & Eys, 2002; Mullen & Copper, 1994), while some research has shown a negative relationship or no relationship (e.g., Landers & Lueschen, 1974; Lenk, 1969; Melnick & Chemers, 1974). With the recent development and refinement of meta-analysis techniques, it has enabled researchers to determine whether cohesion influences the performance of teams. In fact, Carron and colleagues (2002) conducted a meta-analysis on the cohesion-performance relationship in sport. A total of 46 studies were included in the meta-analysis and those studies contained a total of 9,988 athletes from 1,044 teams. Overall, the results showed a moderate to large significant relationship between cohesion and performance in sport (*ES*= .66). Given the significant relationship between cohesion and performance, it is not surprising that attempts have been made to increase cohesion through a process called team building.

Team building can be defined as "a method of helping the group to increase effectiveness, satisfy the needs of its members, or improve work conditions" (Brawley & Paskevich, 1997, p. 13). Similarly, Stevens (2002) defined team building as "the deliberate process of facilitating the development of an effective and close group" (p. 307). Regardless of the definition used to describe this construct, it is implicit that team building is designed to

increase group effectiveness by enhancing group cohesiveness (Carron, Spink, & Prapavessis 1997). Despite the importance of enhancing cohesion, results of team building research have been mixed. Some studies have found a positive team building-cohesion relationship (e.g., Carron & Spink, 1993; Stevens & Bloom, 2003; Voight & Callaghan, 2001), while other studies have found no change in perceptions of cohesion (e.g., Bloom & Stevens, 2002; Prapavessis, Carron, & Spink, 1996). For instance, Carron and Spink (1993) implemented a team building intervention with fitness classes to determine whether cohesion could be enhanced in eight fitness classes while nine other classes where assigned to a control condition (i.e., regular exercise classes). At the end of the intervention, it was shown that individuals in the team building classes could be significantly discriminated between individuals from the control classes on the basis of cohesion ($\chi^2(1) = 12.39, p < .001$). That is, individuals in the team building class held higher perceptions of cohesion than members of regular exercise classes. Similarly, Voight and Callaghan (2001) found that a team building intervention program was helpful in improving cohesion in women's soccer. The success of the program was measured by recording the athletes' perceptions on the effectiveness of the team building program with the Consultant Evaluation Form (CEF; Partington & Orlick, 1987). The CEF assessed the effectiveness of the team building intervention by measuring team unity and performance. It was demonstrated that athletes perceived the team building intervention as very successful in helping them enhance their team's sense of unity (i.e., cohesion).

In spite of these successful interventions to enhance cohesion, some studies have not found any changes in cohesion following a team building program. For example, Prapavessis et al. (1996) conducted a study where coaches were to apply specific team building strategies with their soccer teams. Coaches were randomly assigned to an intervention condition, attention-placebo condition, or control condition. Coaches in the intervention condition

implemented various team building strategies with their teams after attending a team building workshop. No significant differences where found across the three conditions. That is, athletes' perceptions of cohesion were similar across each of the three conditions. Bloom and Stevens (2002) also found no significant increase in cohesion after implementing a season long team building program. The researchers implemented a team building program that emphasized the development of communication, leadership, norms, competition preparation, and coping with team selection. After six sessions, no significant difference in cohesion was found before and after the program. Although no significant difference was found pre- and post-intervention, the athletes qualitatively reported that perceptions of cohesion were strengthened and that team harmony was improved at the end of the season.

Given the results of previous research has been equivocal, it is difficult to draw conclusions concerning the effectiveness of team building interventions; however, there is a need to highlight the problems of previous research in an attempt to guide future research. In order to determine why some team building interventions failed to enhance cohesion, several explanations have been advanced. One explanation of why team building interventions have not been effective in enhancing cohesion was forwarded by Prapavessis et al. (1996) when they questioned the manner in which the team building program was implemented in their study. The authors used the indirect approach to team building whereby the coach was responsible for implementing the intervention. The authors mentioned that an indirect implementation of the team building program was certainly a limitation to their study. They compared their program with the direct approach used in business and industry, where the intervention specialist (e.g., sport psychologist) works directly with individuals. By working directly with individuals, the emphasis is placed on their direct education by providing them with greater insight. Individuals are more likely to feel empowered and motivated when realizing their progress. This suggests that the use of a direct approach to team building,

where the sport psychologist implements the team building program could enhance perceptions of cohesion. Another issue influencing the results in the team building research is related to the research design. For instance, although Bloom and Stevens (2002) found no significant increase in cohesion as a result of their team building intervention, it could be argued that cohesion levels were not reduced but maintained throughout the season. However, without the inclusion of a control group it is difficult to say whether this was the case. In fact, Brawley and Paskevich (1997) emphasized that team building interventions should be tested in comparison to an equivalent control group (i.e., no team building intervention). Without the inclusion of a control group, causal inferences are limited because the changes recorded after the intervention can be due to the maturation of the group, history, or the effect of testing. It is therefore recommended to use a control group in future team building research to determine whether there were any changes attributable to the intervention. Another issue influencing the results of team building interventions is related to the use of multiple team building approaches. For instance, Bloom and Stevens implemented a multidimensional approach to team building by using several intervention tools designed to increase cohesion, such as role behaviour, social support, team leadership, social interaction, and clarification of team goals. If a team building program is based on multiple interventions and the program failed to enhance cohesion, it becomes nearly impossible to determine which components of the intervention program might have been successful.

While there are various types of team building interventions that can be implemented, such as those focusing specifically on role clarity and team goal setting, very little research has determined the relative contribution of any one intervention in terms of enhancing cohesion. The present intervention study isolated group goal setting. 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 towards its achievement" (p. 132). Not surprisingly, sport

specific research has encouraged the use of team goal setting to improve team effectiveness. 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). While most researchers assume that team goals can be beneficial to group cohesiveness, few scientific studies have been conducted to test this assumption. That is, the majority of the literature in sport has examined the broad influence of team building on cohesion instead of investigating one particular type of team building activity—in this case the influence of team goal setting on cohesion. Interestingly, Stevens and Bloom (2003) reported that athletes perceived team goal setting as the most effective intervention in their team building program. Yet, given that several variables were being studied simultaneously, it was difficult to determine the relative contribution of the team goal setting on cohesion. As suggested by the authors, the effectiveness of team building programs might be better understood if only one intervention were isolated and evaluated. Widmeyer and Ducharme (1997) suggested that team goal setting can influence cohesion by encouraging a greater team focus.

In order to assist researchers interested in implementing a team goal setting program, Eys, Colman, Loughead, and Carron (2006) advanced a protocol to help ensure effective delivery of the intervention. More specifically, Eys et al. developed a three-stage protocol for implementing a team goal setting program that was based on both theory and empirical findings. In fact, the team goal setting protocol was developed using four empirically supported generalizations in order to maximize intervention effectiveness. First, athlete input is important. Second, goals should be set in specific terms. Third, long-term goals should be set using short-term goals as a method of achieving the long-term goals.

Purpose of the Study

The purpose of the present study was to determine whether the implementation of a team goal setting program increased perceptions of cohesion compared to a control condition receiving no treatment. Using research from Stevens and Bloom (2003) as a basis, it was hypothesized that teams receiving the intervention would have higher perceptions of cohesion than a control group.

Significance of the Study

Although research has found a positive relationship between team goal setting and cohesion, very few of those studies were conducted using sport teams (Widmeyer & Ducharme, 1997). As well, Stevens and Bloom (2003) pointed out that it would be interesting to isolate one intervention, such as team goal setting, to evaluate the contribution of this particular technique to the development of cohesion using a team building program. Finally, the findings from the present study have the potential to advance the team building literature by determining whether team goal setting is an effective intervention tool for enhancing cohesion.

Delimitations

The present study has the following delimitations:

1. Teams competed at the high school level in the Montreal region.
2. Teams were from the sport of basketball.
3. Teams were comprised of female athletes.
4. Teams competed at the interschool level.

Limitations

These delimitations may lead to the following limitations:

1. The results may not be generalized to sports other than basketball.
2. The results may not be generalized to other competition levels (e.g., recreational).

3. The results may not be generalized to male teams.
4. The results may not be generalized to teams outside the Montreal region.

Method

Participants

A total of eight female high school senior basketball teams from the Montreal region participated in the present study. It should be noted that originally ten teams were involved; however, two weeks after the study started one team from the control group and one team from the team goal setting group voluntarily withdrew from the study. The study continued with a total of eight teams. The mean age of the participants was 15.71 years (SD = .96), with a minimum age of 14 years and a maximum age of 18 years. The athletes had played on their current team on average for 1.3 years. They had played organized basketball for approximately 5 years. Four teams were randomly placed into the team goal setting condition (33 athletes completed the inventory at time 1; 41 athletes at time 2) and four into the no-treatment control condition (45 athletes completed the inventory at time 1; 32 athletes at time 2). Teams in the team goal setting condition were involved in intervention program over the course of the regular season. On the other hand, teams in the control condition were run as a traditional sport team.

Team Goal Setting Program

The Eys et al. (2006) protocol for team goal setting occurred in three stages under the supervision of the principal researcher who was responsible for implementing and monitoring the intervention. In the first stage, the rationale for the program was discussed with the athletes. As Gould (2001) suggested, coaches and athletes need more goal setting education on the benefits of this type of intervention. This first stage was therefore designed to have coaches and athletes aware of the advantages of using team goal setting. They were informed that working together to find common objectives for their team for the present season could help them work better as a unit, and hopefully they would perform better as a group. Then the

athletes determined together the appropriate long-term and short-term *outcome* goals. Typically, the former is reflected in overall team standing (e.g., finish among the top two teams in the league) while the latter is reflected in outcomes in an upcoming series of games (e.g., obtain 2 wins in the next 3 games). Once the short- and long-term outcome goals were set, the question, "What do you have to do especially well as a team on a game-to-game basis to maximize your chances of reaching your short-term and long-term goals?" was addressed. Athletes were then provided with a list of performance (game) indices that were specific and measurable (e.g., rebounds, turnovers). Each athlete *independently* picked four performance indices that she thought were most important for their team. Athletes were then assigned to *subgroups* of five individuals and asked to discuss and negotiate until consensus on four performance indices was obtained. Working in smaller groups prior to working with the total team increased the likelihood that each player's views were considered. Finally, the performance indices emanating from each of the subgroups were discussed with the whole team. The four performance indices considered most important for team performance was then established by the group as a whole.

Once the four team goals were decided upon by the team, the target level was established. To this end, athletes were provided with statistics from the previous season. Then the process previously described was repeated. First, each athlete, working alone, determined the target level she believed to be appropriate (e.g., obtain 55% of free throws as a team). Then, they were assigned to the same subgroup of five people to discuss and negotiate appropriate target levels for each of the team goals previously chosen. Finally, the levels chosen in each subgroup were discussed as a team and a team decision was made for each team goal.

In Stage 2, coaches were asked to remind their players of the team goals along with their target levels before each game. Results for each team goal were posted after every game

by the coach for the athletes to examine. Also, the investigator discussed some or all of the performance indices and highlighted those that required the team's attention.

In Stage 3, feedback was provided to the team whereby the goals and the target levels were discussed after the team had competed in three games. After these blocks of three games, modifications to the team goals were made by adding goals, removing goals, or changing the target levels if necessary. If alterations to the team goals were required, the procedure described in Stage 1 was repeated. Teams in the present study played a 10 game regular season schedule. Thus, the team goal setting meetings were conducted a total of four times during the season. See Appendix A for an overview of the team goal setting program's schedule.

Measures

Cohesion. Cohesion was measured using a modified version of the *Group Environment Questionnaire* (GEQ; Carron et al., 1985). The original version of the GEQ is an 18-item inventory that assesses four dimensions of cohesion: Group Integration-Task (GI-T), Group Integration-Social (GI-S), Individual Attractions to the Group-Task (ATG-T), and Individual Attractions to the Group-Social (ATG-S). The GEQ was originally developed for the ages 18 to 30 years. Given the athletes in the present study were at the high school level (ages 14-18 years), Carron et al. (1998) recommended the following guidelines for modification: (a) directly use any original items that appear to still be appropriate; (b) revise the wording on items that are useful but contain inappropriate language, terminology, or situational reference not present of the teams under examination; (c) delete items that are inappropriate through pilot testing; and (d) add new items that are more meaningful for any of the four dimensions of cohesion. Following these recommendations, two of the items were kept in their original form, while 16 items were modified after pilot testing with a group of high school athletes and consultation with a panel of two group dynamic experts.

Modifications of the items were minor, typically involving slight wording changes to make it age appropriate. An example item for the GI-T dimension was, "Our team is united in trying to reach its goals for performance". As for the GI-S dimension, an example item was, "Our team would like to spend time together in the off season". An example item for the ATG-T dimension was, "I do not like the style of play on this team". For the ATG-S dimension, an example item was, "Some of my best friends are on this team" (see Appendix B for a copy of the items). Responses were anchored on a 9-point type Likert scale by (1) "I strongly disagree" to (9) "I strongly agree". Thus, higher scores reflected higher perceptions of cohesion.

Team goal setting evaluation form. A team goal setting program evaluation form was used to help evaluate the effectiveness of the program. Team members who were involved in the team goal setting condition were asked to anonymously complete a five-item questionnaire at the end of the season to help evaluate the effectiveness of the program. Specifically, this evaluation form allowed athletes to express their opinion about the effectiveness of the program, including their coach's involvement in the program. The nature of the questions asked were based on Bloom and Steven's (2002) sport psychology evaluation form (see Appendix C for the questions asked in the team goal setting program evaluation form).

Manipulation check. In an effort to assess whether team building activities were implemented by coaches in the control group, athletes answered a brief questionnaire at the end of the season. Questions such as: "Throughout your regular season, were they any activities implemented to augment the closeness of your team either on or off the court?" were asked. This manipulation check helped understand whether and to what extent the coaches in the control group attempted to influence team cohesion. See Appendix D for the questions asked in the manipulation check.

Procedures

Coaches were contacted to outline and seek permission to administer the Group Environment Questionnaire (GEQ) to the athletes on their teams twice during the regular season. Coaches, players, and parents signed a consent form prior to the start of the study (see Appendixes E-G for a copy of the consent forms). The administration of the GEQ occurred within the first four weeks of the competitive season and at the end of the regular season within the last two games. The teams were randomly divided into either a team goal setting condition or a control condition. Athletes in the team goal setting condition also completed the team goal setting evaluation form; while athletes from the control condition completed the manipulation check form at the end of the season. Data collection took place prior to or following a practice session at the teams' practice facility. Once approval was obtained, the players were given a complete description of the study and were asked to give their own written consent and their parental consent for their participation in the study. The principal investigator implemented and monitored teams in the team goal setting program. The team goal setting sessions occurred prior to the start of a practice at the team's facility. These sessions took approximately 40 minutes to complete. Finally, ethical approval for the study was obtained from the university's research ethics board (see Appendix H for a copy of the ethics certificate).

Results

Descriptive Statistics

Internal consistency estimates were computed for each of the four GEQ dimensions at both Time 1 (at the beginning of the regular season) and Time 2 (near the end of the regular season). The Cronbach's alpha values for all the dimensions were acceptable based on Nunally's (1978) recommendations (ATG-T, Time 1, $\alpha = .80$, Time 2, $\alpha = .86$; ATG-S, Time 1, $\alpha = .76$, Time 2, $\alpha = .87$; GI-T, Time 1, $\alpha = .72$, Time 2, $\alpha = .85$; and GI-S, Time 1, $\alpha = .70$,

Time 2, $\alpha = .71$). However, it should be noted that one item from the ATG-T and the GI-S dimensions were deleted in order to reach the acceptable internal consistency level.

A summary of the descriptive statistics can be found in Table 1. Of note, participants in the team goal setting condition had higher average levels of cohesion after completing the season long intervention. More specifically, athletes in the team goal setting program perceived higher levels of cohesion at the end of the regular season (i.e., at Time 2) compared to the beginning of the season in terms of ATG-S (Time 2, $M = 6.71$, $SD = 1.63$ on the 9-point scale; Time 1, $M = 6.50$, $SD = 1.83$), GI-T (Time 2, $M = 6.63$, $SD = 1.69$; Time 1, $M = 6.06$, $SD = 6.06$), and GI-S (Time 2, $M = 6.47$, $SD = 1.43$; Time 1, $M = 6.22$, $SD = 1.30$). In contrast, the control group had a decrease in perceptions of cohesion from the beginning to the end of the regular season for all dimensions of this construct. That is for ATG-T (Time 2, $M = 5.88$, $SD = 2.17$; Time 1, $M = 7.03$, $SD = 1.67$), ATG-S (Time 2, $M = 5.31$, $SD = 1.91$; Time 1, $M = 6.23$, $SD = 1.41$), GI-T (Time 2, $M = 5.32$, $SD = 1.60$; Time 1, $M = 5.76$, $SD = 1.45$), and GI-S (Time 2, $M = 5.06$, $SD = 2.15$; Time 1, $M = 6.05$, $SD = 1.82$). Finally, it was shown that at the end of the season the team goal setting condition had greater perceptions of cohesion than the control group for all dimensions of cohesion, that is for ATG-T (Team Goal, $M = 6.72$, $SD = 1.80$; Control, $M = 5.88$, $SD = 2.17$), ATG-S (Team Goal, $M = 6.71$, $SD = 1.62$; Control, $M = 5.31$, $SD = 1.91$), GI-T (Team Goal, $M = 6.63$, $SD = 1.69$; Control, $M = 5.32$, $SD = 1.60$), and GI-S (Team Goal, $M = 6.47$, $SD = 1.43$; Control, $M = 5.06$, $SD = 2.15$).

A summary of the bivariate correlations among the variables can be found in Table 2. As shown in Table 2, significant Pearson correlation coefficients for the dimensions of cohesion ranged from $r = .321$ to $r = .659$ at Time 1. As for Time 2, significant Pearson correlation coefficients ranged from $r = .548$ to $r = .809$.

Team Goal Setting Program Evaluation Form

The team goal setting program evaluation form was created to help evaluate the effectiveness of the intervention. At the end of the season, athletes in the team goal setting condition were asked to anonymously complete a five-item questionnaire. A summary of the answers to the questionnaire can be found in Table 3. As shown in Table 3, when players were asked if the team goal setting program helped their team play better together, the majority of the players (68.4%) responded that it helped their team. It should be noted, that only 13% of the players on one team felt the program intervention was effective. In contrast, the other three teams believed that the team goal setting program was effective with an approval rate of 100%, 89%, and 64% respectively. When examining why the program helped the team play better together, the players mentioned that it enabled them to be more focused on common goals (42.3%), allowed them to work together to reach their goals (26.9%), forced them to work harder (11.5%), and helped set more realistic and manageable goals (7.7%). A small portion of the players (3.8%) indicated the program helped them to be more organized, communicated better, motivated them to reach their goals, and brought the team's shortcomings to the forefront. When asked how the program could better meet the needs of their team, the players who mentioned that the program was ineffective at helping them play better stated that making sure all team members were taking the program seriously (16.7%) was an important factor. It has to be pointed out that this type of statement was cited only by one team. Also from this same team, a small percentage of the players (8.3%) indicated that the team goal setting program would be better if the coach stressed the team goals more frequently and if the principal researcher more involved with the team. Players also believed that the coach's participation was important for the team's motivation (14.3%). Nonetheless, the majority of the players (57.9%) believed that their coach was sufficiently involved in the team goal setting program over the course of the season. Interestingly, some of the players

(21.1%) mentioned that setting the team goals was the team's responsibility and the coach's role should be to help the team achieve those goals. Finally, when questioned on ways to improve the team goal setting program, the most common suggestion (23.7%) indicated that having more sessions would have been helpful. However, some of the players (15.8%) noted that the program was excellent as is and that nothing (could be done to significantly improve it). Some players mentioned the inclusion of individual goals to the program (10.5%) and longer meetings and discussion periods (10.5%) would benefit the program.

Manipulation Check

The manipulation check was done to help identify whether and to what extent the coaches influenced team cohesion in the control group. The results from the athletes indicated that three out of the four coaches in the control condition implemented some type of team building activities. For example, one coach indicated that he actually created opportunities for personal discussions with his players and occasionally had team outings to the movies. Another coach encouraged players to cheer one another. Another coach had regular team meetings and group outings to develop trust in each other. Finally, one coach indicated that nothing was done to augment the closeness of the team. Based on the information gathered, it was concluded that no systematic team building activities or team goal setting intervention was implemented by coaches in the control group.

Main Analyses

A MANOVA with univariate follow-up tests was conducted to address the study's primary purpose, which was to determine whether athletes in a season long team goal setting intervention experienced greater perceptions of cohesion than a control group at the end of the season. The MANOVA revealed a significant multivariate effect, Pillai's trace $F(12,438) = .2.68$, $p = .002$, and univariate analyses demonstrated that the groups differed significantly in perceptions of cohesion on all four dimensions: ATG-T, $F(3,147) = 2.90$, $p < .05$; ATG-S,

$F(3,147) = 4.61, p < .05$; GI-T, $F(3,147) = 4.82, p < .05$, and GI-S, $F(3,147) = 4.48, p < .05$. Planned comparison post-hoc analyses using the Tukey-Kramer procedure were conducted. The first post-hoc analyses examined whether there were any differences in cohesion levels between the team goal setting condition and the control condition at the beginning of the season (i.e., Time 1). The results showed no significant difference in cohesion (ATG-T, ATG-S, GI-T, GI-S) between the individuals in the team goal setting condition and the control group at Time 1 ($p > .05$).

The second post-hoc analysis examined whether there were any differences in cohesion levels between the team goal setting condition and the control condition at the end of the season (i.e., Time 2). The results of the post-hoc showed that at the end of the season, athletes in the team goal setting condition had higher perceptions of cohesion on all four dimensions than athletes in the control condition ($p < .05$). In an attempt to explain the changes in cohesion levels that occurred over the course of the season, the third post-hoc examined whether these changes in cohesion occurred in the team goal setting condition or in the control condition. The results revealed that individuals in the team goal setting condition did not significantly increase their level of cohesion on any of the four dimensions (ATG-T, ATG-S, GI-T, GI-S) between the two time periods—beginning of the season *vs.* end of the season ($p > .05$). However, athletes in the control condition showed a significant decrease in cohesion from the start of the season to the end of the season on three (i.e., ATG-T, ATG-S, GI-S) of the four dimensions ($p < .05$).

Discussion

The purpose of this study was to determine whether the implementation of a team goal setting program increased perceptions of cohesion. Specifically, it was hypothesized that athletes receiving the team goal setting intervention would have higher perceptions of cohesion than athletes in the control group. The results showed that prior to the team goal

setting program being implemented athletes from the team goal setting condition and the control condition held the same perception of their team's cohesiveness on all four dimensions of this construct. However, at the end of the season and after completing the season long team goal setting program, athletes from this condition perceived higher levels of cohesion on all four dimensions than athletes in the control condition.

Interestingly, the results indicated that participants in the team goal setting condition did not significantly increase perceptions of cohesion over the course of the season. That is, the level of cohesion for athletes in the team goal setting condition remained stable over the course of the season. However, athletes in the control condition significantly perceived a decrease in cohesion from the start of the season to the end of the season on three of the four dimensions (ATG-T, ATG-S, GI-S). Consequently, the results of the present study partially support the hypothesis as the intervention did not significantly increased perceptions of cohesion at the end of the season, but athletes receiving the team goal setting intervention showed significant higher perceptions of cohesion than the control group. This result is consistent with the notion that athletes participating in team goal setting demonstrate greater task and social cohesion (Brawley, Carron, & Widmeyer, 1993; Stevens & Bloom, 2003). Interestingly, these findings would tend to indicate that implementing a team goal setting program is not only beneficial on the task aspect of group dynamics, but also on the social aspect of cohesion. Beyond these specific findings, a number of aspects related to the results should be highlighted.

In contrast to Stevens and Bloom (2003), the results of the present study suggest that both individual and group orientations of cohesion are important when implementing a team building program. When assessing the effectiveness of a team building intervention on team cohesiveness, Stevens and Bloom measured the two group dimensions of cohesion, GI-T and GI-S. They noted that only these two dimensions were selected as all team building

interventions were group oriented activities. However, the current results showed that athletes completing the team goal setting program perceived higher levels of cohesion on all four dimensions in comparison with athletes in the control condition. This indicates that all dimensions of cohesion are important when conducting team building activities. That is, even individual dimensions of cohesion (i.e., ATG-T, ATG-S) are important when conducting group activities such as team goal setting programs. This could be a function of the protocol used in the current study whereby each athlete first had to individually identify important team goals, before discussing them with the group as a whole. Therefore, by having the athletes develop the team goals individually, the protocol may have helped enhance each team member's feelings about her own personal involvement with the group's task and goal (i.e., ATG-T) and each team member's feelings about her personal acceptance, and social interaction with the group (i.e., ATG-S). In addition, although the team goal setting program emphasized primarily task aspects (e.g., reduce the number of turnovers during games), the results showed social cohesion was maintained throughout the season. This finding was consistent with Tziner, Nicola, and Rizac's (2003) contention that a positive perception of social cohesion may evolve when collaborative interactions between team members are encouraged through the development of work strategies (e.g., team goals). Taken together, the results of the present study suggest all dimensions of cohesion (ATG-T, ATG-S, GI-T, GI-S) should be examined.

As noted by Stevens and Bloom (2003), it is difficult to assess the effectiveness of each individual intervention when several interventions are used in a team building program. The present study tried to address this matter by examining the effect of one team building intervention, team goal setting, and its relative contribution by comparing the findings to a control group. The results of the present study indicated that team goal setting appeared to keep cohesion levels from decreasing throughout the season. Hence, the team goal setting

program was able to maintain cohesion at a stable level throughout the season. This finding was consistent with the results from Bloom and Stevens (2002) where perceptions of cohesion did not change following a team building intervention program. Based on the findings from the present study and those from Bloom and Stevens, it would be logical to conclude that team building interventions were not useful in influencing perceptions of cohesion. However, the inclusion of a control group in the present study allowed for a better understanding of the effect of the intervention on cohesion. The results indicated that at the beginning of the season prior to the start of team goal setting program, athletes from both the team goal setting and control conditions did not differ in their perceptions of cohesion. Although, the results indicated that cohesion was not increased in the team goal setting condition from to beginning of the season to the end of the season, the results did however show athletes in the team goal setting condition had higher perceptions of cohesion at the end of the season compared to their control condition counterparts. That is, the athletes in the control group had a decrease in perceptions of cohesion from to beginning of the season to the end of the season. Therefore, the inclusion of a control condition in the present study highlighted the fact that the team goal setting program did have an impact in terms of influencing cohesion by maintaining levels throughout the season. This confirms the notion that the use of equivalent control groups in team building research is essential (Brawley & Paskevich, 1997).

In an effort to understand the contribution of team goal setting in greater detail, the current study implemented a manipulation check and program evaluation questionnaire. The results of the manipulation check showed that coaches in the control condition did not implement any systematic team building intervention including team goal setting. This result contradicts the suggestion advanced by Prapavessis et al. (1996) that constructs underlined in team building, such as goal setting, occur naturally. By contrast, the results of the present study appeared to indicate that some effort is required to maintain the closeness of team

members. In addition, the results of the present study also confirm Gould's (2001) contention that coaches and athletes need more goal setting education and Weinberg, Butt, and Knight's (2001) suggestion that high school coaches are not necessarily knowledgeable about how to set goals. According to Weinberg et al. study, many of the coaches who tried to implement a goal setting program with their team were not clear on how to set goals and did not record and evaluate their goals. Knowing that cohesion levels decreased throughout the season for the control condition despite some minor efforts by the coaches in creating group activities, it is safe to assume that group outings and team meetings are not sufficient to maintain cohesion at a stable level throughout the season. High school teams could therefore benefit from the implementation of team building activities, such as team goal setting, to help maintain cohesion levels.

Although the results showed that the team goal setting program did not significantly increase perceptions of cohesion, this results could be attributed to a ceiling effect. Given that the athletes already perceived a high level of cohesion at the start of the season, perhaps it is not surprising that cohesion levels did not increase at the end of the season. Therefore, the results of the program evaluation form helped highlight the effectiveness of the intervention. Specifically, the results from the program evaluation form indicated that the team goal setting program was perceived as being effective for helping the athletes play better as a team. It is interesting to note that the athletes who rated the program as ineffective were also those from the team who indicated that it would have been important to ensure that all team members take the program seriously. This result highlighted the importance that all team members must be involved and motivated to participate in the program to ensure the program's success. In addition, the athletes who perceived the intervention to be less effective indicated that the lack of participation from the coach influenced their perceptions of the team goal setting program. These two results are consistent with what Brawley et al. (1993) found when discriminating

the degree of participation in team goal setting. Brawley et al. indicated that there was a greater goal influence and cohesion among players who perceived their team as highly involved in the goal setting process. Further, the results of the present study also confirmed the recommendation of Eys et al.'s (2006) to implement a team goal setting program whereby coach support is essential. Coaches who were perceived in the present study to be interested in the team goal setting program had players that were motivated and interested in the program, and subsequently rated the program as successful in helping them play better as a team. Hence, for a team goal setting program to be successful, the sport psychology consultant must make sure all coaches and players are involved in the program. The results also showed that the main reason why players believed the team goal setting program helped them play better together was that it helped them develop common team goals. This result is consistent with the notion advanced by Cox (1990) that team goal setting can motivate players to work toward a common goal. The results of the present study also appear to confirm the suggestion of Widmeyer and Ducharme (1997) that team goal setting can influence cohesion by encouraging a greater team focus.

From a practical standpoint, the results of the present study may provide a guideline for high school coaches and sport psychology consultants. It appears that the Eys et al. (2006) protocol can be used to implement a systematic team goal setting program. First, this protocol was successful in fulfilling a primary goal of team goal setting: having the athletes work together to reach common goals. Although, this protocol showed promise as an effective method for delivering a team goal setting program, it has yet to be implemented with other types of sports and competition levels. Second, given that team goal setting appears to maintain cohesion levels throughout the season, coaches would be well advised to use this team building technique. To ensure that the team goal setting program is most effective, coaches may want to use the resources of a sport psychology consultant to implement the

program. While it is the sport psychology consultant's role to implement the program, it should be emphasized the results showed that coach support was essential for players' perceiving that the program was effective, thus the sport psychology consultant should ensure that the coach is involved in the entire team goal setting process.

Although the results of the present study are promising, some methodological limitations may have influenced the results. To begin, the small number of teams from one sport limits the generalizability of the results. Thus, the finding that team goal setting maintains cohesion levels during the course of the season may be specific to high school female basketball players. In addition, the small number of teams may have influenced the results when examining the program evaluation form. It was clear that athletes from one team perceived the team goal setting program as being ineffective; therefore influenced the overall perception of the intervention's effectiveness. In fact, only 13% of the players from this one team rated the program as effective while for the other three teams, 64% to 100% of the players rated the program as effective. With a larger sample size, a more normal distribution would have corrected automatically the presence of such an extreme rate. On that note, it is interesting to point out that if players from that one team were removed from the analyses, the effectiveness of the team goal setting program, as perceived by the athletes, would have jumped to from 68.4% to 84%. Future research should use a larger sample size to overcome those limitations.

Practical limitations may have also influenced the results from this study. As mentioned earlier, some of the players felt it would be important to make sure all team members took the team goal setting program seriously. Basketball players in the present study were competing at the high school level. As such, teams may be composed of players wanting to pursue a basketball career at a higher level of competition while other players may be part of the team for the sake of staying physically active. In the latter situation, these players are

probably not going to pursue higher levels of competition, and are probably not as interested and/or motivated to implicate themselves fully in team building program that requires an investment on their part. Therefore, when implementing a team goal setting program with high school teams, the sport psychology consultant may have to invest some time in developing the motivation of all team members.

Based on these results, a few guidelines will now be provided for future team goal setting research. It should be noted that the team goal setting program used in this study was focused on the task aspects of basketball. For instance, the players developed team goals based on performance indices that could be measured during games. However, the results of the present study found that social cohesion was maintained throughout the season. Therefore, future research could specifically target interventions designed to enhance social cohesion. For instance, research could examine whether social activities such as mandatory team dinners or team outings have a beneficial effect on social cohesion. Future studies would also benefit from examining different sports. In the present study, basketball players were sampled in the current research. However, as Carron et al. (2002) found, cohesion was associated with performance in both interactive team sports, such as basketball, and coactive team sports, such as swimming or golf. As Carron et al. noted, players from coactive team sports have fewer opportunities for team cohesion to develop, therefore having these types of teams involved in team building activities, such as team goal setting, may have a substantial impact on cohesion. Future research could compare whether there are differences between these two types of sports.

In summary, the findings of the present study highlighted the importance of team goal setting not so much for enhancing cohesion but as a method of, at least, maintaining it for the duration of the season. The results suggest that the Eys et al. (2006) protocol is a viable option for those interested in implementing a systematic team goal setting program. In doing so, the

team goal setting program should assist athletes by providing them with a focus on common goals. It is hoped that this type of intervention research will assist researchers and sport psychologist develop and evaluate new programs of research using control groups.

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Table 1

Means and Standard Deviations of the Four Dimensions of Cohesion for the Experimental Group, and Control Group at Time 1 and Time2

	Time 1		Time 2	
	Experimental M (SD)	Control M (SD)	Experimental M (SD)	Control M (SD)
ATG-T[a]	6.77 (1.23)	7.03 (1.67)	6.72 (1.80)	5.88 (2.18)
ATG-S[a]	6.50 (1.82)	6.23 (1.41)	6.71 (1.63)	5.31 (1.91)
GI-T[a]	6.06 (1.34)	5.76 (1.44)	6.63 (1.69)	5.32 (1.60)
GI-S[a]	6.22 (1.30)	6.05 (1.82)	6.47 (1.44)	5.06 (2.15)

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

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

Table 2

Bivariate Correlations Between Dimensions of Cohesion at Time 1 and Time 2

Dimensions	1	2	3	4
		Time 1		
1. ATG-T	-	.321**	.421**	.640**
2. ATG-S		-	.606**	.495**
3. GI-T			-	.659**
4. GI-S				-
		Time 2		
1. ATG-T	-	.548**	.772**	.786**
2. ATG-S		-	.663**	.704**
3. GI-T			-	.809**
4. GI-S				-

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

** Correlation is significant at the .01 level.

Table 3

Frequency and Percent Responses from the Group Goal Setting Program Evaluation Form

Question	Response	Frequency	%
1. Did the group goal setting program helped your team play better together?	Yes	26	68.4
	No	12	31.6
2. If yes, how did the program helped your team play better?	More focused on common goals	11	42.3
	Worked together to reach our goals	7	26.9
	Forced us to work harder (determination to do our best)	3	11.5
	Helped us set realistic and manageable goals	2	7.7
	More organized	1	3.8
	Better communication	1	3.8
	Motivated us to reach our goals	1	3.8
	Brought our weaknesses to attention	1	3.8
3. If no, how could the program better meet the needs of your team?	Making sure all team members are taking the program seriously	2	16.7
	Making sure the goals are stressed out by the coach	1	8.3
	More sessions	1	8.3
	Set individual goals in conjunction with group goals	1	8.3
	Having the sport psychology consultant		

	more involved with the team	1	8.3
	Finding solutions for not achieving the goals	1	8.3
4. Do you think your coach should have been more involved in the program? Why, Why not?	Yes	14	36.8
	No	19	50
	Don't know	3	7.9
	<u>Why</u>?		
	The coach is an integral part of the team. (his lack of participation affected the effectiveness of the program)	3	21.4
	Important for our motivation	2	14.3
	To guide us more	1	14.3
	<u>Why not</u>?		
	Coach was involved enough	11	7.1
	It was the team's job to set the goal; the coach should be there to help achieve them	3	57.9
	2 responses with a frequency of 1	1(x2)	21.1
			10.5
5. If there were to be a similar program next year, what should be done to improve it?	More sessions	9	23.7
	Nothing	6	15.8
	Include individual goals to the program	4	10.5
	Longer meetings/more discussion periods	4	10.5
	Make sure all team members are interested	3	7.9
	Provide ways to improve	3	7.9
	6 responses with a frequency of 1	1(x6)	15.8

Literature Review

The purpose of the present study was to examine the effectiveness of a team goal setting program on cohesion in sport. More specifically, it was hypothesized that teams receiving the team goal setting intervention would have higher perceptions of cohesion than a control group. The rational underlying the present study was that although research has found a positive relationship between team goal setting and cohesion, very few of those studies were conducted using sport teams (Widmeyer & Ducharme, 1997). As well, as Stevens and Bloom (2003) pointed out, it would be interesting to isolate one team building tool, such as team goal setting, to be able to evaluate the contribution of this particular intervention to the development of cohesion using a team building program. Thus, a team goal setting program was used to evaluate its specific influence to cohesion. The findings from the present study has the potential to advance the team building literature by determining whether team goal setting is an effective intervention tool for enhancing cohesion. This literature review will first focus on the definition, characteristics, conceptual model, and measurement of cohesion. This will then be followed by the cohesion-performance relationship and the team building literature. Within the team building literature section, the focus will be on team building programs and the team building-cohesion relationship. The last section of the literature review will focus on goal setting by describing how a goal setting program can influence cohesion. Finally, a team goal setting program will be described.

Defining Cohesion

It has been suggested that cohesion is the most important small group variable (Golembiewski, 1962; Lott & Lott, 1965). Needless to say, cohesion has been widely studied in several areas, such as social psychology, organizational behaviour, and more recently sport psychology. Given its importance in several domains, it is not surprising that researchers have attempted to define and operationalize this construct. One of the earliest definitions of

cohesion was advanced by Festinger, Schachter, and Back (1950) who viewed cohesion 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 failed to consider the group as a totality. Consequently, Gross and Martin defined cohesion as the resistance of the group to disruptive forces. However, it was noted that both these definitions were difficult to operationalize and led to several inconsistencies in research findings (Mudrack, 1989). To overcome some of shortcomings of the Festinger et al. and Gross and Martin definitions, Libo (1953) operationalized cohesiveness as attraction of the group for its members. Once again, a major limitation of the Libo operationalization was that it did not measure both individual and group levels of perceptions of cohesiveness (Mudrack, 1989). Furthermore, all of these earlier definitions of cohesion viewed the construct as being unidimensional. That is, these definitions focused on either the individual or group dimension of cohesion. In addition, when cohesion was operationalized as a unidimensional construct, researchers did not distinguish between task and social concerns of groups and their members—a fundamental characteristic of group dynamics research (Carron, Widmeyer, & Brawley, 1985). As a result, cohesion needed to be defined and conceptualized so that it reflected its multidimensional nature. Therefore, Carron, Brawley, and Widmeyer (1998) defined cohesion "as a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs (p.213). It should be pointed out that the Carron et al. definition evolved from Carron's (1982) original definition. However, in this revised definition, the authors included an affective dimension. The Carron et al. definition of cohesion is the most widely used and accepted definition of cohesion (Loughead & Hardy, in press).

Characteristics of Cohesion

The definition proposed by Carron et al. (1998) highlighted four important characteristics of cohesion. The first characteristic of cohesion reflects its *multidimensional* nature. That is, there are several factors explaining why a group sticks together and remains united. Moreover, the reasons why a particular group remains united will not necessarily be present in another similar type of group (Loughead & Hardy, in press). For instance, a basketball team can be highly cohesive on a social level as team members like each other and get along well. Although members of this team are socially united, they might not be united in regards to the task objectives of the team. That is, some team members may feel they need to work on turnovers to win (team goal) whereas some other members may feel it is more important to improve free-throw shooting percentage (individual goal). Conversely, another basketball team could be highly cohesive on task objectives while lacking of social cohesion. Therefore, the different factors explaining why a group is united may not be present in equal weight for two teams that seem identical (Carron et al., 1998).

The second characteristic of cohesion is that it is *dynamic*. Carron et al. (1998) noted cohesion can change over time. When a group develops, factors contributing to cohesion when a team initially forms may not be as relevant when the team has been working together for a certain period of time (Loughead & Hardy, in press). For example, task unity (i.e., members having similar goals to achieve a level of performance they agreed on) might be of primary importance for a newly formed team, while after several years of working together, social unity might become of primary importance .

The third characteristic highlights the fact that cohesion is *instrumental*. That is, every group forms for a reason. Intuitively, sport teams, along with many other groups, form for task-oriented reasons (Loughead & Hardy, in press). Even groups that form for purely social purposes will have an instrumental basis for wanting to be together (Carron et al., 1998). For

example, if recreational basketball players formed a team to develop new friendships, they are getting together for instrumental purposes. Consequently, every group, to some extent, forms for instrumental purposes (Carron et al., 1998).

The final characteristic of cohesion implies that cohesion has an *affective* component. It was noted by Carron and Brawley (2000) that bonding is fulfilling to team members, whether it is for task or social purposes. Moreover, it was noted by Baumeister and Leary (1995) that the need to belong to a group is a fundamental human need. Thus, when people belong to a group, it fulfills a basic human desire.

Conceptual Model of Cohesion

Based on Carron and colleagues' (Carron, 1982; Carron et al., 1998) definition of cohesion, Carron et al. (1985) proposed a conceptual framework of cohesion. Their conceptual model evolved from three fundamental assumptions. First, the model was based on the assumption that cohesion can be measured through both group and individual beliefs of group members (Carron & Brawley, 2000). That is, group members interact with one another and develop beliefs about the group, and these beliefs are a product of each member's personal integration of information related to the group. Hence each member's perceptions about the group are reasonable estimates of group unity characteristics and therefore members' cognitions about cohesion can be measured (Carron et al., 1998).

The second assumption suggested that cognitions held by each group member regarding the cohesiveness of the group were related to the group as a totality, and to what extent the group satisfied personal needs and objectives (Carron et al., 1998). These cognitions were categorized as *Group Integration* and *Individual Attractions to the Group* beliefs (Carron et al., 1985). Group Integration beliefs reflected an individual's perception about the closeness, similarity, and bonding within the group as a whole, and the degree of unification of the group (Carron & Brawley, 2000). Individual Attractions to the Group

cognitions referred to what motivated each member to stay in the group and their personal feelings about the group (Carron & Brawley, 2000). Thus, Individual Attractions to the Group assessed to what extent the group satisfied each member's personal needs and objectives.

The third assumption was based on the need to distinguish between task- and socially-oriented concerns of groups and their members (Brawley, Carron, & Widmeyer, 1987). That is, there are two fundamental foci to a group member's perceptions. The first is a task orientation which consists of a general orientation towards the achievement of the group's objective. The second is a social orientation that refers to a general orientation towards developing or maintaining social relationships within the group. The assumption that task and social orientations are two key components of group beliefs and this assumption is consistent with group dynamics theory (Festinger et al., 1950).

Based on these three assumptions, Carron et al. (1985) proposed a conceptual model of cohesion whereby both task-social, and individual-group orientations resulted in a four dimensional model of cohesion. Cohesion can therefore be viewed as a multidimensional construct where the member's beliefs can be assessed by the following four dimensions: *Group Integration-Task* (GI-T), *Group Integration-Social* (GI-S), *Individual Attractions to the Group-Task* (ATG-T), and *Individual Attractions to the Group-Social* (ATG-S) (see Figure 1). Group Integration-Task (GI-T) is defined as the team member's feelings regarding the similarity, closeness, and bonding within the group around the group's task. Group Integration-Social (GI-S) is viewed as the member's feelings about the similarity, closeness, and bonding within the group as a whole as a social unit. Individual Attractions to the Group-Task (ATG-T) is viewed as each team member's feelings about his or her personal involvement with the group's task, goal, objectives, and productivity; whereas the Individual Attractions to the Group-Social (ATG-S) refers to each group member's feelings about his or her personal acceptance, and social interaction with the group (Carron et al., 1998).

Measurement

Using the conceptual model of cohesion as a basis, Carron et al. (1985) then developed the *Group Environment Questionnaire* (GEQ), an 18-item inventory that assesses the four dimensions of cohesion (i.e., GI-T, GI-S, ATG-T, ATG-S). All of the items in the GEQ are scored on a 9-point Likert scale anchored by (1) "strongly disagree" to (9) "strongly agree". From the 18 items in the GEQ, twelve of them are negatively worded and need to be reversed scored. Thus, higher scores reflect higher levels of cohesion. The ATG-T and ATG-S dimensions are represented by "I", "my", and "me" types of perceptions (Carron et al., 1998). The ATG-T dimension contains 4 items and an example item is, "I do not like the style of play on this team". The ATG-S dimension contains 5 items and an example item is, "Some of my best friends are on this team". On the other hand, the GI-T and GI-S dimensions are represented by "us", "our", and "we" types of perceptions. The GI-T dimension contains 5 items and an example is, "Our team is united in trying to reach its goals for performance". Finally, the GI-S dimension contains 4 items and an example item is, "Our team would like to spend time together in the off season". Since the development of the GEQ, several studies have been undertaken to examine the instrument's psychometric properties. In general, the GEQ has shown to demonstrate content, concurrent, predictive, and factorial validity (e.g., Brawley et al., 1987; Carron et al., 1985; Carron & Spink, 1993; Prapavessis, Carron, & Spink, 1996; Spink & Carron, 1992). Insofar as content validity is concerned, Carron et al. (1985) showed that the instrument had good internal consistency (reliability) and was content-valid. To examine concurrent validity, Brawley et al. (1987) compared the GEQ to the Sport Cohesiveness Questionnaire (SCQ), the sport-modified Bass Orientation Inventory (BOI), and the Team Climate Questionnaire (TCQ). Overall, the results showed that the GEQ correlated with the other measures and it was concluded that the GEQ possessed good concurrent validity. Predictive validity refers to demonstrating relationships that are theoretically

hypothesized to be present between the construct under examination, cohesion in the present case, and other variables. Spink and Carron (1992) showed that cohesion predicted adherence behavior in exercise groups, such as lateness and absenteeism. In their research, Spink and Carron (1992) demonstrated that participants in fitness classes that perceived greater cohesion in the group were more likely to adhere to the program by reducing tardiness and absenteeism. Following this research finding, Spink and Carron (1993) and Carron and Spink (1993) showed that team building interventions implemented in fitness classes influenced positively the perceived cohesiveness of exercise groups, which in turn positively influenced adherence behaviours. More specifically, Carron and Spink concluded that fitness groups with enhanced perceived cohesion (i.e., groups who followed the team building program) would adhere more to their fitness classes. These findings showed that the relationship between perceptions of cohesion and adherence behaviours were related.

Since the GEQ has been shown to be a valid instrument in measuring cohesion, it is not surprising that a proliferation of research has occurred in sport. For example, cohesion research using the GEQ has examined several antecedents such as leadership (e.g., Westre & Weiss, 1991), group size (e.g., Widmeyer, Brawley, & Carron, 1990), collective efficacy (e.g., Paskevich, Brawley, Dorsch, & Widmeyer, 1995), group norms (e.g., Prapavessis & Carron, 1997), member's satisfaction (e.g., Martens & Peterson, 1971), role ambiguity (e.g., Eys & Carron, 2001) and performance (e.g., Carron, Colman, Wheeler, & Stevens, 2002). Although cohesion research in sport has examined numerous antecedents, research in this area as also examined the influence of cohesion on the outcome variable of performance. As suggested by Loughead and Hardy (in press), performance is probably the ultimate outcome variable since it is believed that greater cohesion is related to improved performance. This suggestion is in line with Carron, Bray, and Eys (2002) who pointed out that the definition of cohesion implicitly conveys the general assumption that greater team cohesion is thought to

be associated with greater team success. The nature of this relationship will be examined in the following section.

Cohesion and Performance

In spite of the importance of the cohesion-performance relationship, research findings have been equivocal. On the one hand, some research has shown a positive relationship between cohesion and performance (e.g., Carron, Bray, & Eys, 2002; Carron et al., 2002; Mullen & Copper, 1994, Tziner, Nicola, & Rizac, 2003). For instance, in the Carron, Bray, and Eys (2002) study, the relationship between task cohesiveness and winning percentages of Canadian elite university basketball teams and soccer teams was examined. This study provided evidence of a very strong relationship (r = 0.55-0.67) between cohesion and success (i.e., performance) in sport teams. The authors therefore suggested that coaches and sport psychologists would benefit from developing effective team building strategies to directly enhance cohesion. Given that this study only examined task cohesion, the results cannot be generalized to social cohesion. However, another study conducted by Tziner, Nicola, and Rizac (2003) investigated the relationship between social cohesion and team performance. The authors found a significant correlation (r = 0.27) between social cohesion and team performance by examining 36 Israeli national league soccer teams. On the other hand, some research has shown a negative relationship or no relationship between cohesion and performance (e.g., Landers & Lueschen, 1974; Lenk, 1969; Melnick & Chemers, 1974). For example, Landers and Lueschen (1974) found that winning bowling teams experienced lower levels of cohesiveness than teams with a losing record. Melnick and Chemers (1974) studied intramural basketball teams and found that cohesion was unrelated to performance as successful teams were not necessarily more cohesive than unsuccessful ones. Fortunately, the development and refinement of meta-analysis techniques helped to comprehend the cohesion-performance relationship by providing a more definitive answer as to the nature of the

relationship. That is, meta-analysis techniques have the powerful advantage of summarizing statistically a large body of research and allowing comparison across studies (Carron, Bray, & Eys, 2002, Loughead & Hardy, in press). Moreover, the meta-analysis enables researchers to study the role of possible moderator variables. Two meta-analyses that have been conducted on the cohesion-performance relationship will be examined in the following paragraphs.

The first meta-analysis was conducted by Mullen and Copper (1994) using a variety of groups such as work, military, and sport teams. They reviewed 49 experimental and correlational research findings and established that the relationship between cohesion and performance was positively related, but small in magnitude. The amount of cohesiveness in a group was a significant positive predictor of performance (r = .25). The nature of the group (i.e., reality of the group and group size) and the temporal nature of the cohesion-performance relationship were examined. When investigating the reality of the group, it was noted that real groups showed a greater cohesion-performance effect than artificial groups (i.e., groups created in a laboratory setting), and that sport teams represented a stronger effect than nonsport real groups. In sum, it was reported that sport teams had the strongest cohesion-performance relationship (r = .54). When examining the cohesion-performance correlation of military groups (r = .22), it was clear that other groups might have moderated the magnitude of the effect in sport. As for group size, it was reported that a stronger cohesion-performance effect was observed for smaller groups. A significant negative relationship between group size and the magnitude of the cohesion-performance effect was shown for artificial groups (r = -.58) and real groups (r = -.25). That is, groups with fewer members are more inclined to experience greater perception of cohesion. As for the temporal nature of the cohesion-performance relationship, it was reported that the correlation seemed to be stronger from performance to cohesion (r = .51) than from cohesion to performance (r = .25). The results from the Mullen and Copper meta-analysis were encouraging in that it helped to establish a

positive relationship between cohesion and performance, but there were several shortcomings related to sport.

Carron et al. (2002) pointed out that one of the reasons why the cohesion-performance effect found by Mullen and Copper was of small magnitude might be because of the variety of groups included in their study (e.g., military, social, industrial, and sport). Moreover, the conclusions emanating from the Mullen and Copper meta-analysis were based only on a small sample of sport-related studies ($n = 8$) that were available at the time (Carron et al, 2002). Thus, with such a small number of sport-related studies included in Mullen and Copper's meta-analysis, their conclusions were questionable (Carron et al, 2002).

Carron and colleagues (2002) conducted another meta-analysis that focused solely on the cohesion-performance relationship in sport. A total of 46 studies were included in the meta-analysis and those studies contained a total of 9,988 athletes and 1,044 teams. Overall, the results showed a moderate to large positive relationship between cohesion and performance in sport ($ES = .66$). A secondary purpose of the meta-analysis was to assess the influence of potential moderator variables on the cohesion-performance relationship. Hence, the meta-analysis also examined the influence of cohesion type (task vs. social), sport type (interactive vs. coactive), gender, level of competition, and the temporal nature of the cohesion-performance relationship.

When examining the cohesion type, Carron et al. (2002) found both social ($ES = .70$) and task ($ES = .61$) cohesion were related to performance. Although, social cohesion had a stronger relationship with performance than task cohesion, the differences between the two types of cohesion was not statistically significant. That is, both dimensions of cohesion were important to performance. Recently, other studies have supported Carron et al.'s findings by concluding that both social (Tziner, Nicola, & Rizac, 2003) and task cohesion (Carron, Bray, & Eys, 2002) were significantly related to team success. Insofar as sport type is concerned,

the results showed that the cohesion-performance relationship was greater in coactive sports (*ES* = .77) such as rowing, than in interactive sports (*ES* = .66) such as basketball. However, the difference between sport type was not statistically significant. Thus, the sport type was not a moderator in the cohesion-performance relationship. The meta-analysis also investigated whether there were any gender differences in the cohesion-performance relationship. The results indicated a large cohesion-performance relationship for females (*ES* =.94), but only a moderate cohesion-performance relationship was present for males (*ES* =.56). Moreover, this difference was statistically significant. The meta-analysis also examined whether the level of play moderated the cohesion-performance relationship. The findings indicated that there were no statistically significant difference among professional, club, intercollegiate, and high school levels of play. Finally, the meta-analysis examined the temporal nature of the cohesion-performance relationship. The results found no significant differences in cohesion (task or social) as a *cause of* (*ES* = .57) compared to cohesion as a *result of* (*ES* = .69) successful performance. That is, either task or social cohesion can lead to enhanced performance and improved performance can, in turn, lead to enhanced cohesion. Overall, the Carron et al. meta-analysis provided a descriptive summary of the cohesion-performance relationship. In general, it can be concluded that cohesion is associated with performance and that interventions used to enhance cohesion can be used on teams regardless of competition level or sport type. Furthermore, female athletes may benefit to a greater extent than male athletes. Given the importance of the cohesion-performance relationship, it is not surprising that attempts have been made to increase cohesion through a process called team building.

Team Building

Team building in sport has been defined in several different ways (Hardy & Crace, 1997). For instance, 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). Along the same lines, Widmeyer and Ducharme (1997) stated that the objectives of team building are group maintenance and locomotion. That is, team building has for objectives to enhance group locomotion (performance) and group maintenance (cohesion). Similarly, Stevens (2002) defined team building as "the deliberate process of facilitating the development of an effective and close group" (p. 307). Although, there have been several definitions advanced by numerous researchers, all these definitions have a common element. That is, team building is designed to increase group effectiveness by enhancing group cohesiveness (Carron, Spink, & Prapavessis, 1997).

Given that the goal of team building is to enhance cohesion, Carron and Spink (1993) conceptualized a team building model that focuses on the development of cohesion. The conceptual model consists of inputs, throughputs, and outputs (see Figure 2). As shown in Figure 2, the inputs are the group environment (e.g., distinctiveness) and group structure (e.g., group norms and role clarity/acceptance). The group processes (e.g., team goals and sacrifice) are the throughputs, and cohesion is the output in the model. Insofar as the group environment is concerned, Carron and Spink noted that making the team more distinct could influence perceptions of cohesion. The distinct factor refers to strategies that enhance the uniqueness of the group (e.g., to have a group name or a group T-shirt). In the group structure category, group norms and roles have been targeted as ways of promoting cohesion by valorising mutual interdependence and conformity (e.g., promote honest play) (Carron & Spink, 1993). As for the group processes category, individual sacrifices have been suggested as a way to increase cohesion. When each member of a team makes sacrifices for the team, their commitment to the team increases, and cohesion is therefore enhanced (Carron & Spink, 1993).

Team Building Programs

Using the Carron and Spink (1993) team building model as a basis, sport psychologists can deliver team building intervention programs using two delivery methods. The first method has been labelled the *indirect* approach, whereby the sport psychologist implements the team building program through the coach and in turn the coach implements the program to the team (Carron & Hausenblas, 1998). The protocol used in the indirect approach is a four-stage process consisting of an introductory stage, a conceptual stage, a practical stage, and an intervention stage (Carron & Spink, 1993). The purpose of the introductory stage is to provide the coach with a general overview of the benefits of cohesion (Carron et al., 1997). For example, the benefits such as increased task and social interactions, increased communication, enhanced group stability, greater role acceptance, and greater performance can be highlighted (Carron & Spink, 1993). The introductory stage is important given that past research has shown that coaches showed greater motivation towards a team building program if they understood the basis of it (Carron & Spink, 1993). The second stage, the conceptual stage, serves as an opportunity to explain the concepts and facilitate communication with the coach. Thus, in the conceptual stage, the conceptual framework of team building is presented to the coach as a method of brainstorming ideas that could be used to enhance cohesion on his/her team. As for the third stage, the practical stage, the coach becomes an active agent by developing specific strategies that could be used in the team building program (Carron & Spink, 1993). It is preferable to have the coach develop his/her own strategies since the coaches have different personalities and preferences. In addition, since the coach is knowledgeable about his/her players, he/she can develop and implement strategies that are most beneficial for his/her team. In the fourth stage, the intervention stage, the actual team building program is implemented and maintained by the coach. The duration of the program can vary across situations and settings where it is implemented (Carron et al., 1997).

The second method of team building is labelled the *direct* approach (Stevens, 2002). The major difference in the direct approach (compared to the indirect approach) is that the sport psychologist works directly with team members in terms of implementing the team building program (Carron et al., 1997). Yukelson (1997) developed a four stage protocol for implementing the direct approach in sport. The first stage, evaluation of the situation, is where the sport psychologist finds out as much as possible about the dynamics surrounding the team. To do so, the sport psychologist talks to the coach to learn more about how he/she operates with the team and what are the group norms regarding performance. The sport psychologist also becomes familiar with the atmosphere surrounding the team and the quality of interpersonal relationship between team members. In the second stage, the sport psychologist describes the rationale underlying the team building program by explaining to the team members that the main objective is to "enhance team chemistry [cohesion] while getting everyone to work together toward common goals" (Yukelson, 1997, p. 87). The third stage is where team members brainstorm ideas on how they can be effective during the season. The following question can be asked by the sport psychologist: "What can and what do you want to accomplish this season, and what will it take to get you there?" (Yukelson, 1997, p. 88). From there, an action plan is developed in the fourth stage. The team generates a list of goals for success where each member evaluates on a scale of 1 to 10 where they think they stand (regarding performance), and they develop strategies to improve their skills. Once each goal is set, the team can create a mission statement that reflects who they are and what they are all about (e.g., "Effort is everything"). This helps keep the team focus on what they want to achieve and creates a greater sense of "we", which as a significant impact on cohesion. Regardless of the team building method (direct vs. indirect), the objective remains the same: to develop team cohesion. Thus, the focus of the following section will be to discuss the relationship between team building and cohesion.

Team Building-Cohesion Relationship

Despite the importance of enhancing cohesion, results of team building research have been equivocal. Some studies have found a positive team building-cohesion relationship (e.g., Carron & Spink, 1993; Stevens & Bloom, 2003; Voight & Callaghan, 2001), while other studies have found no changes in perceptions of cohesion (e.g., Bloom & Stevens, 2002; Prapavessis, Carron, & Spink, 1996) following a team building intervention. For instance, Carron and Spink (1993) used team building concepts with fitness classes to determine if cohesion could be enhanced. They implemented team building interventions in eight fitness classes while nine other classes where assigned to a control condition (i.e., regular exercise classes). Examples of team building intervention strategies used were to emphasize group distinctiveness by having a group name and encourage group interaction by promoting partner activities. It was shown that team building classes could be significantly discriminated between control classes on the basis of cohesion ($\chi^2(1) = 12.39, p < .001$). That is, individuals in the team building class held higher perceptions of cohesion than members of regular exercise classes. Similarly, Voight and Callaghan (2001) found that a team building intervention program was helpful in improving cohesion in women's soccer. The success of the program was measured by recording the athletes' perceptions on the effectiveness of the team building program with the Consultant Evaluation Form (CEF; Partington & Orlick, 1987). The CEF assessed the effectiveness of the team building intervention by measuring team unity and performance. It was demonstrated that athletes perceived the team building intervention as very successful in helping them enhancing their team's sense of unity (i.e., cohesion). In spite of these successful interventions to enhance cohesion, some studies have not found any changes in cohesion following a team building program. For example, Prapavessis et al. (1996) conducted a study where coaches were to apply specific team building strategies with soccer teams. Coaches were randomly assigned to an intervention

condition, attention-placebo condition, or control condition. Coaches in the intervention condition implemented various team building strategies with their teams after attending a team building workshop. No significant differences where found across the three conditions. That is, athletes' perceptions of cohesion were similar across each of the three conditions. Bloom and Stevens (2002) also found no significant increase in cohesion after implementing a season long team building program. The researchers implemented a modified version of Yukelson's approach with an equestrian team. The team building program emphasized the development of communication, peer leadership, norms, competition preparation, and coping with team selection. After six sessions, no significant difference in cohesion was found before and after the program. However, although no significant difference was found pre and post intervention, the athletes qualitatively reported that perceptions of cohesion were strengthened and that team harmony was improved at the end of the season.

In order to determine why some team building interventions failed to enhance cohesion, several explanations could be advanced. One explanation of why team building interventions have not been effective in enhancing cohesion was forwarded by Prapavessis et al. (1996) when they questioned the manner in which the team building program was implemented in their study. The authors used the indirect approach to team building whereby the coach was responsible for implementing the intervention. The authors mentioned that an indirect implementation of the team building program was certainly a limitation to their study. They compared their program with the direct approach used in business and industry, where the intervention specialist (e.g., sport psychologists) works directly with individuals. By working directly with individuals, the emphasis is placed on their direct education by providing them with greater insight. Individuals are more likely to feel empowered and motivated when realizing their progress. This suggests that the use of a direct approach to team building, where the sport psychologist implements the team building program could

enhance perceptions of cohesion. Another issue influencing the results in the team building research is related the research design. For instance, although Bloom and Stevens (2002) found no significant increase in cohesion as a result of their team building intervention, it could be argued that cohesion levels were not reduced but maintained throughout the season. However, without the inclusion of a control group it is difficult to say whether this is the case. In fact, Brawley and Paskevich (1997) emphasized that team building interventions should be tested in comparison to an equivalent control group (i.e., no team building intervention). Without the inclusion of a control group, causal inferences are limited because the changes recorded after the intervention can be due to the maturation of the group, history, or the effect of testing. It is therefore recommended to use a control group in future team building research to determine whether there were any changes attributable to the intervention. Another issue influencing the results of team building interventions is related to the use of multiple team building approaches. For instance, Bloom and Stevens implemented a multidimensional approach to team building by using several intervention tools designed to increase cohesion, such as role behaviour, social support, team leadership, social interaction, and clarification of team goals. If a team building program is based on multiple interventions and the program failed to enhance cohesion, it becomes nearly impossible to determine which components of the intervention program might have been successful. For example, in the Stevens and Bloom's (2003) study, it was reported that athletes perceived the team goal setting intervention to be the most effective factor in the team building program. Yet, given that several variables were being studied simultaneously, it was impossible to determine the relative contribution of the team goal setting on the effectiveness of the team building. As suggested by the authors, the effectiveness of the team building program might be better understood if one intervention was isolated. Given that the Stevens and Bloom study indicated

that team goal setting could be an effective team building intervention to improve cohesion, the following section will be devoted to team goal setting.

Defining Team Goal Setting

Team goals have been defined by Mills (1984) as shared perceptions that refer to a desirable state for the group as a unit. Similarly, Johnson and Johnson (1987) defined team goal as "a future state of affairs desired by enough members of a group to motivate the group to work towards its achievement" (p. 132). Eys, Colman, Loughead, and Carron (2006) noted that team goals may have several positive outcomes for teams, such as increased motivation and interest in the task, increased personal and team confidence, and enhance team performance.

Team Goals to Enhance Cohesion

Team goal setting is known to be a common team building technique (Widmeyer & Ducharme, 1997). Widmeyer and Ducharme (1997) reported that team goal setting can influence cohesion and in turn increase performance. In fact, Gould (2001) stated that goal setting clearly and consistently helped to improve performance. Similarly, Kyllo and Landers (1995) demonstrated in their meta-analysis that goal setting was a successful technique to improve performance in sports. Specifically, they showed that by combining long term and short term goals, a greater performance enhancement was experienced by sport teams. More specifically, it was shown that the combination of long term and short term goals (*ES* = .48) was significantly more efficient than long term goals alone (*ES* = .19). It was also recommended to involve athletes in the goal setting process as they found that assigned goals (*ES* =.30) were not as effective as when athletes participated in the goal setting process (*ES* =.62). Similar to Kyllo and Landers, the findings of other sport specific research has also encouraged the use of goal setting to increase performance. In a study conducted by Dawson, Bray, and Widmeyer (2002), it was reported that intercollegiate sport teams set multiple goals

at the team and individual level. More specifically, the results showed that four types of goals were used by athletes: (a) individual member's goals set for themselves (b) the team's goals for each member of the team (c) the team's goals for the team (d) individual member's goals set for the team. It was found that team goals for the team and individual member's goals for themselves were used by almost (92%) all of the athletes. Given that several types of goals seemed to be use by university athletes, the authors recommended that coaches establish the priority in the type of goals to be used. It was suggested that in order for a team to be successful, team goals should have priority over individual goals. This statement was supported by Carron and Dennis (2001) as they stressed the importance that coaches emphasized team goals in order to ensure that the concept of team unity (i.e., cohesion) develops. Another study examined the importance of goal setting practices in university sports, by looking at how coaches implemented goals with their teams. Weinberg, Butt, Knight, and Perritt (2001) assessed the utilization of goal setting processes for 14 NCAA collegiate coaches of individual and team sports. In order to obtain the coaches' perceptions, in-depth interviews were conducted. First, it was reported that coaches widely used individual and team goal setting in both practice and competition. When setting the goals, the majority of the coaches, that is 12 out of 14 coaches interviewed, were moderately to extremely knowledgeable about the effective goal setting principles. For instance, short term goals seemed to be used in combination with long term goals. However, short term goals seemed to be used more extensively than long term goals. As well, process, performance, and outcome goals were used, although coaches tended to prioritize performance and outcome goals. It was also noted that coaches did not systematically record their goals. Only eight out of 14 coaches recorded their goals, and just four of them were very serious and meticulous when writing goals. The most common technique used to write down goals was to use a piece of paper, but coaches also had goals written on a chalkboard, or posted in the locker room. Coaches who

did not write down their goals mainly reported not having time to do it. It was found that the main reasons why coaches valued the use of goal setting were to keep their athletes focused. . Another study was conducted by Weinberg, Butt, and Knight (2001) to assess how high school coaches viewed goal setting. The results showed that high school coaches were not knowledgeable about how to set goals. Furthermore, of the coaches who did do some type of goal setting with their team, it was reported that many of the coaches were not clear on how to set goals and did not record and evaluate their goals.

Although goal setting appears to be beneficial, the majority of the results showed that coaches did not know how to set effective goals and that coaches should utilize more team goal setting to improve team functioning (e.g., cohesion and performance). 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). Nonetheless, only a few studies have examined the effectiveness of team goal setting. For instance, it was reported by Johnson, Ostrow, Perna, and Etzel (1997) that team goal setting was more effective than individual goal setting in a coactive team sport, such as bowling. In a coactive sport, team success is dependent of the combined performance of athletes who perform independently. Johnson et al. (1997) examined the effects of different goal setting formats (i.e., individual, team, or "do your best" goals) on bowling performance. Bowlers were randomly assigned to one of the three different goal setting formats. Bowling performance was measured by the number of pins knocked down per game averaged on four games. The authors found that bowling performance significantly increased in the team goal setting condition, whereas no significant increase in performance was recorded for the individual or "do your best" groups. The authors also found that bowlers in the team goal setting group communicated more with their teammates and provided more feedback and encouragement. Thus, it appears that the bowlers were more likely to work as a team on the

team goal setting condition as they were focused on achieving common objectives. Furthermore, Widmeyer and Ducharme (1997) suggested that team goal setting can also influence team cohesion by encouraging a greater team focus. While most researchers assume that team goals can be beneficial to team cohesiveness, few scientific studies have been conducted to test this assumption. That is, the majority of the literature in the sport domain has examined the broad influence of team building on cohesion instead of investigating one particular type of team building activity—in this case the influence of team goal setting on cohesion. Even though the portion of the literature investigating the influence of team goals on cohesion is very small, it will be reviewed below.

Brawley, Carron, and Widmeyer (1993) conducted a study to examine the relationship between team goals and cohesion. The results showed that teams who participated more extensively in team goal setting showed greater task and social cohesion. The researchers proposed that when team members interact with each other when participating in the goal setting process; they are more likely to experience a sense of "groupness". That is, team members developed common perceptions about the team while participating in team goal setting. As well, Kjormo and Halvari (2002) examined the influence of goal setting and cohesion of Norwegian Olympic athletes and whether these constructs were related to successful performance. Athletes participating in the study represented 16 different sports including team and individual sports from both the winter and summer Olympics. The findings showed cohesion was positively correlated with team goal clarity, which in turn was positively related to successful performance. It has to be noted that only three team sports represented were sampled, as opposed to 13 individual sports. Still, team goals seemed to be an important part of successful performances at the Olympic level. They also suggested that if team members were more cohesive, they were more likely to communicate better and share team information, which might be associated with enhanced team goal clarity.

Although it appears that team goal setting programs were successful in enhancing cohesion, some research has shown that goal setting did not influence cohesion. For instance, Pargman and De Jesus (1987) conducted a study to examine the effect of performance goals on cohesion and performance. The authors hypothesized that individual and team performance goals would enhance cohesion and that, in turn, enhanced cohesion would result in better final team standings. Participants were males playing for high school intramural basketball teams. The authors found that individual and team goals implementation did not enhance the players' perceptions of cohesion. It has to be noted that timely feedback was not consistently provided throughout the goal setting process. The effectiveness of goal setting is enhanced if there is timely feedback showing progress toward the goals (Locke & Latham, 1985; Widmeyer & Ducharme, 1997). Also, when referring to Carron et al.'s meta-analysis on cohesion and performance, it was suggested that interventions used to enhance cohesion may be more beneficial t to female athletes than male athletes. Nonetheless, further team goal-setting research needs to be conducted in the sport domain to understand whether this intervention technique is useful for enhancing team cohesion. Eys et al. (2006) advanced a team goal setting protocol that could be implemented to enhance the effectiveness of team building. This protocol will be discussed in the following paragraph.

Implementing a Team Goal Setting Program

Eys et al. (2006) developed a three-stage protocol for implementing a team goal setting program. To date, the Eys et al. protocol has not been empirically tested; however, the protocol was developed using both theory and empirical research findings and appears to be appropriate for all teams regardless of age. Specifically, the team goal setting protocol was developed using four empirically supported generalizations in order to maximize the intervention's effectiveness. First, athlete input is important. Second, goals should be set in specific terms. Third, long-term goals should be set using short-term goals as a method of

achieving the long-term goals. Finally, coach support is essential. In the Eys et al. protocol, the team goal setting program occurs in three stages under the direction of the sport psychologist who is responsible for implementing and monitoring the intervention. Thus, their protocol is considered to be a direct approach for implementing a team goal setting program. The first stage is where the rationale underlying the program is explained and specific team goals along with means to achieve to goals are determined. The second stage is where each game is monitored and feedback concerning the team's evolution is given by the coach. The final stage is where a short-term evaluation and feedback is provided by the sport psychologist, or the intervention specialist, in conjunction with the coach and the team captain.

In Stage 1, the rationale for using this particular program is discussed with the athletes. As Gould (2001) suggested, coaches and athletes need more goal setting education. This first stage is therefore designed to have coaches and athletes aware of the advantage of using such a program. After explaining the rationale of the program, the athletes determine together the appropriate long-term and short-term outcome goals for their team. Typically, the former is reflected in overall team standing, such as finishing in the top five teams of the league. The latter is related to outcomes in a series of games (e.g., winning at least 4 games out of 5 in the following month). Once the short- and long-term outcome goals are set, the question, "What do you have to do especially well as a team on a game-to-game basis to maximize your chances of reaching your short-term and long-term goals?" is addressed. At this point, athletes are provided with a list of performance indices that are specific and measurable (e.g., steals, rebounds, turnovers). Each athlete independently decides on six performance indices that are for them most important for team success. Athletes are then divided into subgroups of five individuals and asked to discuss their choices and negotiate until each subgroup has consensus on six performance indices. Working in subgroups prior to working in an open forum (i.e., the

total team) has the advantage to increase the probability that each athlete's views are considered. Finally, the choices emanating from each subgroup are discussed in an open forum. Through negotiation, the six performance indices considered most important for team success are established.

Once the specific short term team goals are determined, the specific level (i.e., the target to strive for in each game) is established by team members. To accomplish this task, athletes are provided with pertinent statistics from the previous games. By presenting the statistics to team members, it helps them establish realistic and challenging levels. The process described above is then repeated. First, each athlete, working alone, determines the level believed to be appropriate. When all athletes have made their independent decisions, they work with the same subgroup of five people to discuss and negotiate appropriate levels to be attained for each of the team goals. Finally, the decisions made in each subgroup are discussed in an open forum and a team decision is made.

In Stage 2, each game is monitored. Then, the results of each performance indices along with their corresponding levels targeted by the team are placed in the locker room for the athletes to examine. This should reinforce goals commitment as team progress towards the goals is provided on a regular basis. The sport psychologist can discuss, if necessary, some or all of the performance indices and highlight those that require the team's attention.

In Stage 3, summary feedback regarding the goals' attainment is provided to the team and each level targeted are discussed after each five game blocks. Subsequently, modifications to team goals are made; either by adding, changing, or removing goals. These modifications are done using the procedure highlighted above (i.e., individual choice followed by team consent).

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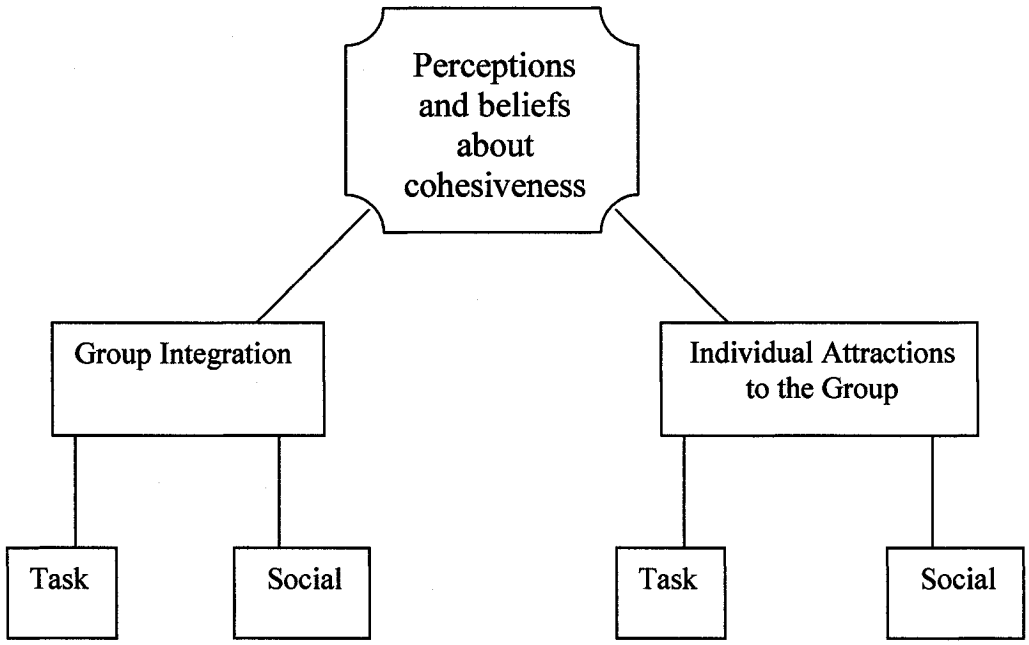
Figure Captions

Figure 1. A conceptual model of cohesion

Figure 2. A conceptual framework used for team building implementation

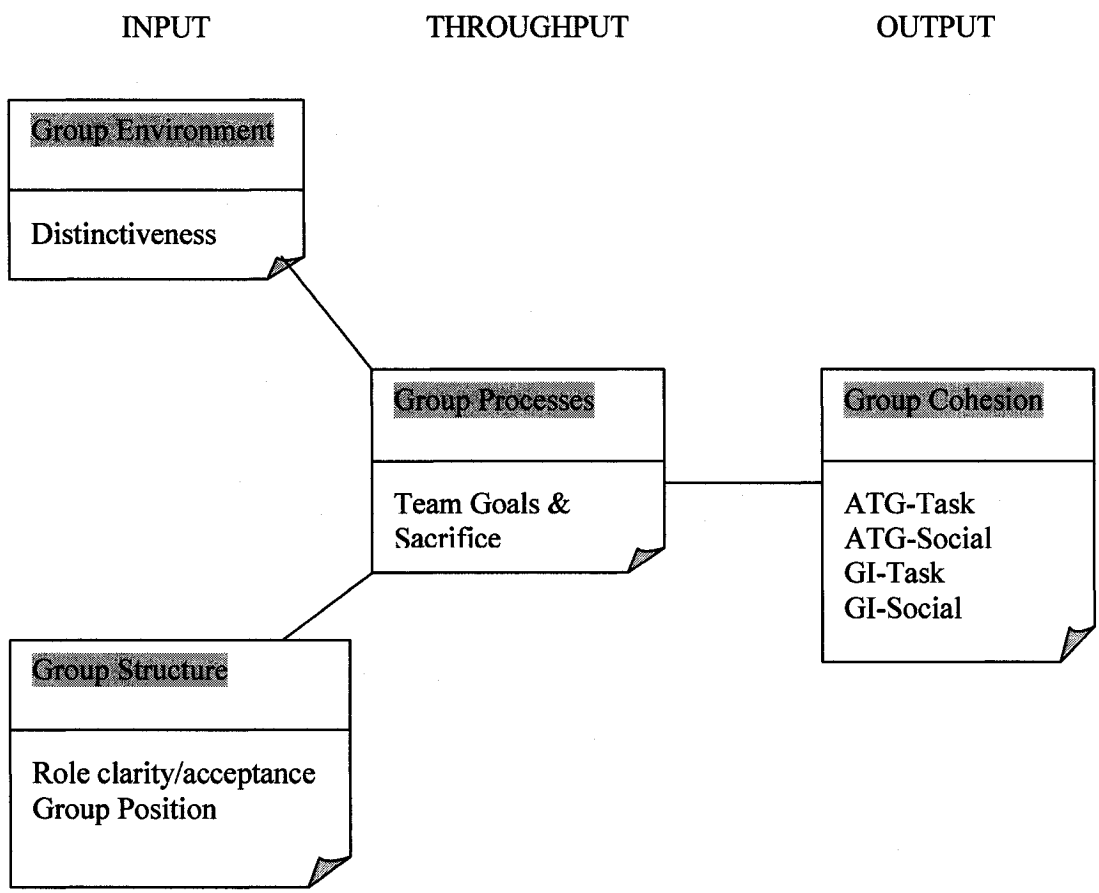
Figure 1



Adapted from:

Loughead, T. M., & Hardy, J. (in press). 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.

Figure 2



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Loughead, T. M., & Hardy, J. (in press). 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.

Appendix A

Team Goal Setting Program Schedule

Session 1 (approx. 20 minutes)

The first session was scheduled a couple of weeks before the beginning of regular season. This session occurred in mid-November. The following subjects were covered:

- Discuss and explain the rational of the program
- Determine appropriate long term and short term goals
- Determine performance game indices along with their respective levels to achieve

*The players were also asked to complete the Group Environment Questionnaire

Session 2 (approx. 20 minutes)

The second session was scheduled after the first two games had been played. This session occurred in early December. The following subjects were covered:

- Results for the performance indices' specific levels attained for the two games played were revealed and discussed
- Modifications to the group goals were made if necessary

Session 3 (approx. 20 minutes)

The third session was scheduled after the next bloc of three games had been played. This session occurred in late-December/early January. The following subjects were covered:

- Results for the performance indices' specific levels attained for the bloc of three games played were revealed and discussed
- Modifications to the group goals were made if necessary

Session 4 (approx. 20 minutes)

The fourth session was scheduled after the next bloc of three games had been played. This session occurred in mid-January/early February. The following subjects were covered:

- Results for the performance indices' specific levels attained for the bloc of three games played were revealed and discussed
- Modifications to the group goals for the last two games to play in regular season where made if necessary

*The Group Environment Questionnaire was completed by the players at the end of session 4.

Session 5 (approx. 20 minutes)

This session was scheduled after the last regular season game has been played. This session occurred in mid- February. The following subjects were covered:

- Results for the performance indices' specific levels attained for the bloc of five games played were revealed and discussed
- The players and coach were thanked for their participation

Appendix B

Group Environment Questionnaire (GEQ)

Name: _____ Team: _____ Date: _____

Age:_____ Gender: Female / Male (circle one)

How long have you been involved with this team?_____

How many years have you played your sport?_____

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 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 like the amount of playing time I get.

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

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

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

4. I am happy with how much my team wants 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. On this team, I get a lot of chances to improve my skills.

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

7. I would rather hang out with my teammates than with other friends.

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

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

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

9. Personally, this team is one of the most important groups I belong to.

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

10. Our team works together 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 get together as a team than hang out on their own.

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

12. When we lose, or play badly, we take responsibility as a team for our performance.

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

13. Our team does not work well together.

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

14. Members of our team always hangout together.

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

15. Members of our team have different goals for how we want the team to play.

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

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

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

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

17. If teammates have problems in practice, everyone wants to help them so we can play better as a team.

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

18. Members of our team hang out together outside of practice and games.

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

Appendix C

Team Goal Setting Program Evaluation Form

These questions look at what you think about the group goal setting program. There are no wrong or right answers, so please answer honestly.

1. Did the team goal setting program helped your team play better together? Yes No

2. **If Yes**, how did the program helped your team play better together?

_____

_____

3. **If No,** how could the program better meet the needs of your team?

_____

_____

4. Do you think your coach should have been more involved in the program? Yes No

Why/Why Not?_____

_____

5. If there were to be a similar program next year, what should be done to improve it?

_____

_____

I personally want to thank you for your participation!

Julie Senécal

Appendix D

Manipulation Check for the Control Group

1. Throughout your regular season, were they any activities done to augment the closeness of your team either on or off the court?

☐ Yes ☐ No

If so, please describe the activities:

_____

_____

_____

_____

_____

_____

_____

_____

2. Do you think those activities had an impact on your team?

☐ Yes ☐ No

If so, to what extent? Please describe the nature of the changes observed (e.g., "I think our team performed better after those activities were introduced" or "I noticed a decrease of arguments between players on my team")

_____

_____

_____

_____

3. How do you perceive your team's closeness at the end of the season when comparing the beginning of the season?

☐ no change ☐ little closer ☐ more closer ☐ much more closer

4. Feel free to give us more details about the coaching methods (related to enhancing the closeness of your team).

Appendix E

McGill

The Influence of Group Goal Setting on Team Cohesion Consent Form (Coach)

We would like your team to participate in a research study. Please read this page carefully, and, if you agree to participate in the study, please sign the bottom of this page to represent your informed consent. Feel free to keep this letter for your records.

Purpose: The purpose of the study is to examine how perceptions of a team's environment and your players' personal factors influence the team's chemistry.

Measures: If you agree to participate, your team will be asked to fill out a short questionnaire twice during your regular season. This questionnaire will assess various perceptions of your sport team.

What do you have to do? Your players' participation includes completing the questionnaire twice during the regular season: once at the beginning of the season and once at the end of the season. There are no right or wrong answers, your players will be asked to answer the questions as honestly as possible. Your team may also be randomly placed into the research group where, in addition to completing the questionnaire, your team will be asked to participate in a group goal setting program throughout your regular season. There are no known PHYSICAL OR PSYCHOLOGICAL risks associated with this research.

Confidentiality: All information that you provide will be kept in strict confidence. The information collected through this survey will be destroyed five years after collection.

Results: The results of the study will be reported without identifying you personally or your team so your anonymity can be maintained. You may receive a copy of the results of this study by emailing Ms. Julie Senécal at julie.senecal2@mail.mcgill.ca.

Your team's participation in the study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at anytime. Please feel free to ask for clarification or additional information throughout your team's participation. If you have any questions concerning this research, please contact me at the email address above.

- I understand the purpose of this study and know about the risks, benefits and inconveniences that this research project entails.
- I understand that I am free to withdraw at anytime from the study without penalty or prejudice.
- I understand how confidentiality will be maintained during this research project.
- I understand the anticipated uses of data, especially with respect to publication, communication and dissemination of results
- I have read the above and I understand all of the above conditions. I freely consent and voluntarily agree to have my team participate in this study.

Name (please print)_____

Signature_____Date_____

Appendix F

McGill

The Influence of Group Goal Setting on Team Cohesion
Assent Form (Players)

We would like you to participate in a research study. Please read this page carefully, and, if you agree to participate in the study, please sign the bottom of this page to represent your informed consent. Feel free to keep this letter for your records.

Purpose: The purpose of our study is to examine how perceptions of your team environment and your own personal forces influence your team's chemistry.

Measures: If you agree to participate, you will be asked to fill out a short questionnaire twice during your regular season. This questionnaire will assess various perceptions of your sport team.

What do you have to do? Your participation includes completing the questionnaire twice during the regular season: once at the beginning of the season and once at the end of the season. There are no right or wrong answers, please answer the questions as honestly as possible. Your team may also be randomly placed into the research group where, in addition to completing the questionnaire, you will be asked to participate in a group goal setting program throughout your regular season. There are no known PHYSICAL OR PSYCHOLOGICAL risks associated with this research.

Confidentiality: All information that you provide will be kept in strict confidence. The information collected through this survey will be destroyed five years after collection.

Results: The results of the study will be reported without identifying you personally so your anonymity can be maintained. Do not put your name on the questionnaire. You may receive a copy of the results of this study by emailing Ms. Julie Senécal at julie.senecal2@mail.mcgill.ca.

Your participation in the study is voluntary. You may refuse to participate, refuse to answer any questions or withdraw from the study at anytime. Please feel free to ask for clarification or additional information throughout your participation. If you have any questions concerning this research, please contact me at the email address above.

- I understand the purpose of this study and know about the risks, benefits and inconveniences that this research project entails.
- I understand that I am free to withdraw at anytime from the study without penalty or prejudice.
- I understand how confidentiality will be maintained during this research project.
- I understand the anticipated uses of data, especially with respect to publication, communication and dissemination of results
- I have read the above and I understand all of the above conditions. I freely consent and voluntarily agree to participate in this study.

Name (please print)_____

Signature_____ Date_____

Appendix G

McGill

The Influence of Group Goal Setting on Team Cohesion
Consent Form (Parent)

Dear Parent or Guardian:

I would like to ask your permission for your child to help us by completing a questionnaire twice during their basketball season which aims at better understanding a player's perception regarding their team environment.

What is involved? Players who participate will be asked to spend approximately 10 minutes completing the questionnaire twice during the regular season: once at the beginning of the season and once at the end of the season.

Potential Benefits and Concerns. There are no foreseeable risks from your child's participation, because this is neither a test nor an evaluation. A benefit of your child's participation is in better understanding how the team's environment can influence her perceptions of the team's chemistry through the study's results.

Participation is voluntary. Your child's participation is completely voluntary. There will be no consequences if you do not wish your child to be in this study, and she may withdraw at any time during the study.

Information is confidential. All information will be held confidential. Only the researchers will see the questionnaires. All information will be stored under lock and key. Your child's name will not appear anywhere on the questionnaire so that she cannot be associated with any responses.

Questions? I would appreciate it if you would return this form whether or not you would like your child to participate, so that I know that this information has reached you. The results of the study will be published in a scientific journal. If you have any questions, concerns, or would like a copy of the findings, please feel free to contact Ms. Julie Senécal at julie.senecal2@mail.mcgill.ca

Thank you for your consideration.
Sincerely,

Julie Senécal
Department of Kinesiology and Physical Education
McGill University
Email: julie.senecal2@mail.mcgill.ca
Phone: (514) 293-3289

Please check the appropriate line and send this form back with your child's assent form.

_____ I have read and I understand that I can withdraw my consent at any point in the study. I give consent for my child to participate in this study.

_____ I do not wish my child to participate in this study.

Parent or Guardian's Signature/Date _____

Appendix H

Ethics Certificate

McGill

Faculty of Education – Ethics Review Board
McGill University
Faculty of Education
3700 McTavish; Room 230
Montreal H3A 1Y2

Tel: (514) 398-7039
Fax: (514) 398-1527
Ethics website: www.mcgill.ca/rgo/ethics/human

Faculty of Education – Review Ethics Board
Certificate of Ethical Acceptability of Research Involving Humans

REB File #: 569-0705

Project Title: ***The Influence of Group Goal Setting on Team Cohesion***

Applicant's Name: Julie Senecal **Department:** KPE

Status: M.A. Student **Supervisor's Name: Gordon Bloom**

Granting Agency and Title (if applicable):

Type of Review: Expedited ✓___ Full _____

This project was reviewed by: Russell/Lyster

Approved by _ / Sept 6 '05

Robert Bracewell, Ph.D.
Chair, Education Ethics Review Board

Approval Period: Sept 6, '05 to Aug 31, '06

All research involving human subjects requires review on an annual basis. An Annual Report/Request for Renewal form should be submitted at least one month before the above expiry date. If a project has been completed or terminated for any reason before the expiry date, a Final Report form must be submitted. Should any modification or other unanticipated development occur before the next required review, the REB must be informed and any modification can't be initiated until approval is received. This project was reviewed and approved in accordance with the requirements of the McGill University Policy on the Ethical Conduct of Research Involving Human Subjects and with the Tri-Council Policy Statement on the Ethical Conduct for Research Involving Human Subjects.