What Makes a Good Coach?
Examining the Antecedents of Autonomy-Supportive Behaviors

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Abstract

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Various sport associations employ coaches to shape the environment that children and youth experience. Specifically, a coach's style of interaction often directly or indirectly influences youth participation and motivation. While research suggests that adopting autonomy-supportive coaching behaviors enhance children and youth well-being and promote overall healthy development, not every coach uses this particular coaching strategy. The present study therefore sought to examine the determinants of coaches' autonomy-supportive behaviors. The constructs under investigation included ego-involvement, coaching efficacy, perceived athlete competence, and pressure. Data were collected from 100 coaches who currently coach an individual or team sport within the Montreal region. The results demonstrated that motivation efficacy, a sub-factor within coaching efficacy, and perceived athlete competence were positively related to coaches' autonomy-supportive behaviors. The findings present important implications for practitioners regarding training and development opportunities. In addition, suggestions are provided for managers to superimpose the model on the supervisor-employee relationship.

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INTRODUCTION

Numerous sport associations utilize coaches to shape the environment that children and youth experience. In particular, a coach's style of interaction often directly or indirectly influences youth participation, motivation, and development. Self-determination theory (SDT) supports this notion stating that events within the social environment affect the motivation and well-being of individuals through satisfaction of the needs for competence, autonomy, and relatedness (Gagné & Deci, 2005; Ryan & Deci, 2002). According to Mageau and Vallerand (2003), an autonomy-supportive coaching style has been found crucial for need satisfaction and overall healthier development in children and youth. This particular style of interaction has been defined as when "an individual in a position of authority (e.g., an instructor [or a coach]) takes the other's (e.g., a student's [or an athlete's]) perspective, acknowledges the other's feelings, and provides the other with pertinent information and opportunities for choice, while minimizing the use of pressure and demands" (Mageau & Vallerand, 2003, p. 886).

Although various findings suggest that adopting autonomy-supportive coaching behaviors may enhance children and youth well-being and promote overall healthy development (Pelletier, Fortier, Vallerand, & Briere, 2001; Reinboth, Duda, & Ntoumanis, 2004; Richer & Vallerand, 1995), not every coach uses this particular coaching style despite all the benefits associated with it. Therefore, it is imperative to examine which factors influence the use of autonomy-supportive behaviors. To gain insight into these issues, the following section will be divided into four parts: 1) self-

determination theory, 2) autonomy-support, 3) models in sport, and 4) factors influencing autonomy-support.

While coaches are strongly advised to utilize autonomy-supportive behaviors to promote athlete development and well-being, differences may arise among paid versus volunteer coaches. Therefore, identifying the factors which influence these behaviors will enable practitioners to gain a better understanding of how to educate their coaches to ensure positive outcomes for children and youth sport. The results may also shed insight into other domains and suggest important implications for teacher-student and supervisor-employee relationships.

Self-Determination Theory

SDT, a broad meta-theory developed by Ryan and Deci (2002), suggests a framework that integrates different viewpoints; humans become actively engaged and seek developmental and growth opportunities, while others express conditioned responses to the external environment. Based on this organismic dialectical approach, SDT has two main postulates. First, there are social-contextual factors that facilitate or inhibit individuals' tendencies for optimal development (Ryan & Deci, 2002). Second, the components that specify whether individuals will experience healthy development and functioning are centred on the basic psychological needs of competence, relatedness, and autonomy (Ryan & Deci, 2002).

The need for competence refers to being effective in one's interaction with the environment by seeking opportunities and exploring one's capacities (Deci & Ryan, 2000). Research investigating the positive outcomes of perceived competence is

demonstrated by Ferrer-Caja and Weiss (2000), who examined the relationship between social factors, individual differences, and intrinsic motivation in the physical education setting. Based on data from 407 students, the results demonstrated that perceived competence and goal orientations were positively correlated with intrinsic motivation (Ferrer-Caja & Weiss, 2000). Furthermore, Vallerand and Reid (1984) explored the relationship between positive and negative performance feedback and intrinsic motivation, and whether this association was mediated by perceived competence. Results based on 84 students supported the mediating role of perceived competence on intrinsic motivation (Vallerand & Reid, 1984). The findings from both studies therefore indicate the significance of perceived competence and its impact on intrinsic motivation.

Relatedness explains an individual's need to feel connected and a sense of belongingness to others (Deci & Ryan, 2000). Research by Furrer and Skinner (2003) examined relatedness in children's academic motivation and performance. Based on a longitudinal design, data was collected from third to sixth-grade students. The findings showed that students with a higher sense of relatedness resulted in increased emotional and behavioural engagement in school (Furrer & Skinner, 2003). In addition, Sanchez, Colon, and Esparza (2005) investigated the relationship between gender, relatedness, and academic outcomes in a sample of high school students. In particular, participants were assessed on factors such as grade point average, absenteeism, motivation, and effort. The results demonstrated that increased perceived relatedness was associated with higher academic motivation and effort and lower absenteeism (Sanchez, Colon, & Esparza, 2005). The findings from both studies therefore suggest that relatedness plays a crucial role in student well-being and education.

Finally, autonomy has been defined as making one's own choices and decisions, therefore encompassing a sense of control (Deci & Ryan, 2000). Research by Miserandino (1996) examined the impact of perceived autonomy and competence on engagement and performance in children. Results based on 77 students demonstrated that children experiencing higher levels of autonomy reported increased involvement, participation, and task engagement in school (Miserandino, 1996). Furthermore, in a meta-analysis, Humphrey, Nahrgang, and Morgeson (2007) found that job autonomy was associated with increased job satisfaction, work performance, and intrinsic motivation. The findings therefore demonstrate the importance of autonomy in student and job-related outcomes.

Autonomy-Support

As mentioned above, SDT states that environmental factors such as rewards, positive feedback, and interpersonal styles such as autonomy-support and control, impact the well-being and motivation of people (Ryan & Deci, 2002). To clarify, SDT suggests that these events can either satisfy or inhibit the psychological needs of individuals, therefore either increasing or decreasing their intrinsic motivation and well-being (Iachini, 2008). Regarding interpersonal styles, being autonomy-supportive is described as one that takes other's perspective into consideration, acknowledges other's feelings, provides choice and opportunities, and minimizes pressures and demands (Mageau & Vallerand, 2003). For example, coaches can provide their athletes with support by listening to their concerns and taking the time to understand the problems they experience. Furthermore, they could provide their athletes with choices during practice,

such as providing a list of drills they can choose from to participate in. In contrast, a controlling interpersonal style is defined as an individual who uses behaviors such as overt control, tangible rewards, and guilt-inducing criticisms, with minimal or no consideration for the feelings or perspective of others (Mageau & Vallerand, 2003). For example, coaches can emphasize their control by applying power-assertive techniques during practices/games. In particular, if athletes express their concerns with their coaches' behavior, coaches would disregard their problems and subsequently pressure them to comply with their particular coaching method. To assess individual outcomes of these interpersonal styles, autonomy-support and control have been examined in the teaching, health, and sport domains.

Autonomy-Support in the Teaching Domain

Deci, Schwartz, Sheinman, and Ryan (1981) assessed teachers' autonomy vs. control orientations in their interactions with children. The results demonstrated that the students of the autonomy-oriented teachers had increased levels of intrinsic motivation, self-esteem, and competence in comparison to students whose teachers were more control oriented (Deci et al., 1981). In addition, Richer and Vallerand (1995) examined the effects of three teaching styles – autonomy supportive, punitive controlling, and non-punitive controlling – on students' feelings of self-determination, competence, and intrinsic motivation. The results demonstrated that students experienced higher levels of perceived competence and self-determination in the autonomy-supportive condition than in the controlling conditions. Furthermore, the punitive-controlling style had a greater detrimental effect than the non-punitive controlling style on students' intrinsic motivation

(Richer & Vallerand, 1995). The findings from both studies therefore suggest that individual differences exist within various teaching styles, which subsequently affect students' self-determination.

Similar to the above studies, Grolnick and Ryan (1987) investigated the relationship between environmental settings, children's motivational orientations, and learning outcomes. Participants were 91 fifth-grade children who were randomly assigned to one of three experimental conditions: noncontrolling-directed (autonomy-directed), controlling-directed, or non-directed. The results demonstrated that students in the noncontrolling-directed condition displayed greater interest and conceptual learning while those in the controlling-directed condition experienced more pressure and decreased levels in rote learning (Grolnick & Ryan, 1987). The findings therefore provide additional insight on the significance of teaching style such that learning may be improved under conditions that facilitate autonomous involvement.

Assor, Kaplan, and Roth (2002) explored the impact of autonomy-enhancing and autonomy-suppressing teacher behaviors on student engagement in schoolwork. Questionnaires were completed by children (grades 3-5) and early adolescent (grades 6-8) Israeli students assessing the following variables: fostering relevance, providing choice, allowing criticism and encouraging independent thinking, suppressing criticism, intruding in ongoing behavioural sequences, and forcing meaningless activities. The findings demonstrated that fostering relevance, an autonomy-enhancing strategy, was positively correlated to behavioural and cognitive engagement while criticism suppression, an autonomy-suppressing strategy, resulted in a significant negative correlation (Assor et al., 2002). The findings therefore suggest that autonomy-supportive

environments yield beneficial outcomes for students such that it increases task engagement.

In addition, Reeve & Jang (2006) investigated the relationship between instructional behaviors favored by teachers and students' perceived autonomy and behavioural outcomes. Using the teacher-student paradigm first introduced by Deci, Spiegel, Ryan, Koestner, and Kauffman (1982), 72 pairs of same-sex preservice teachers were rated on 11 autonomy-supportive and 10 controlling behaviors. The results demonstrated that autonomy-supportive behaviors such as listening, giving the student opportunities to speak, fostering independent work, praising signs of improvement, offering hints, being responsive to student questions and comments, and acknowledging the student's perspective and experiences positively correlated with students' experiences of autonomy. Furthermore, controlling behaviors such as uttering directives and commands, monopolizing learning materials, stating solutions and answers before the student has a chance to respond, and using controlling questions negatively correlated with students' experiences of autonomy (Reeve & Jang, 2006).

Further support from the teaching domain comes from Vallerand, Fortier, and Guay (1997), who developed and tested a motivational model to assess high school dropout. The model suggests that parents', teachers', and school administrators' who are less autonomy-supportive, would decrease students' perceptions of competence and autonomy. As such, decreased levels of students' perceived competence and autonomy would lead to lower self-determined motivation and thus impact students' intentions to drop out of high school. Based on longitudinal data from 4,537 high school students, results from analyses of variance and a structural equation modeling analysis supported

the model's propositions (Vallerand et al., 1997). Furthermore, a longitudinal study by Black and Deci (2000) investigated the relationship between students' self-regulation and their perceptions of instructors' autonomy-support. Participants were 137 students from a college-level organic chemistry course who were assessed on perceptions of competence, interest/enjoyment, self-determined motivation, anxiety, and performance in the course. The results demonstrated that students entering the course with increased levels of autonomous motivation experienced higher perceived competence and interest/enjoyment, and lower anxiety and course drop out. In addition, students who perceived their instructors as autonomy-supportive resulted in increased levels of self-regulation, perceived competence, and interest/enjoyment over the semester (Black & Deci, 2000). The findings from both studies therefore provide additional support for the positive influence of autonomy-supportive behaviors in the teaching domain, including the crucial impact it has on students regarding school dropout.

Autonomy-Support in Health and Other Domains

While previous studies have demonstrated the benefits of autonomy-supportive behaviors from the perspective of instruction, research in the health domain also sheds insight on the importance of this interpersonal style. For example, Williams, Grow, Freedman, Ryan, and Deci (1996) conducted a study on severely obese patients taking part in a 6-month weight-loss program to examine the relationship between autonomous motivation and weight loss. Results demonstrated that patients with increased levels of autonomous motivation attended weekly meetings regularly, lost more weight during the program, and maintained weight loss during follow-up. Furthermore, the more patients

perceived the staff as autonomy-supportive, the more they persisted within the program (Williams et al., 1996). The findings therefore suggest that the interpersonal climate created by the health-care staff has a significant effect on patients' autonomous motivation, which has beneficial outcomes for patient health.

To gain further insight on the issue, Kasser and Ryan (1999) explored the impact of perceived autonomy-support and relatedness on the well-being of nursing-home residents. The researchers hypothesized that resident health and well-being would be facilitated by: 1) autonomous self-regulation, 2) perceived support from nursing staff, friends, and family, and 3) the quality, rather than quantity, of relatedness with residents' contacts. Results based on interviews and survey data from 50 residents demonstrated that all hypotheses were supported. In addition, perceived autonomy-support from nursing staff, friends, and family were associated with lower depression and increased vitality, well-being, and life satisfaction (Kasser & Ryan, 1999). In addition, Standage, Duda, and Ntoumanis (2003) examined the motivational processes that account for individual differences in student motivation and its effect on students' intention to be physically active in their leisure time. Results based on 328 children from physical education classes demonstrated that students experienced more competence, relatedness, and autonomy when perceiving an autonomy-supportive environment, thus increasing their self-determination. In turn, students that were self-determined had higher intentions to be active outside of their physical education classes. The findings from both studies provide insight for educators and health officials such that providing autonomy-supportive environments may increase individual well-being and self-determined motivation.

Regarding the influence of autonomy-support in the work domain, Deci et al. (2001) investigated the relationship between autonomy-supportive work climates, need satisfaction, task engagement, and well-being. Based on questionnaire samples from Bulgarian and American organizations, the results demonstrated that autonomy-supportive work climates influenced overall need satisfaction, and need satisfaction in turn impacted both work engagement and well-being (Deci et al., 2001). The findings therefore suggest that satisfying basic needs may be generalized across cultures, although further research is warranted.

Autonomy-Support in the Sport Domain

As the previous section demonstrated that health benefits are associated with autonomy-supportive behaviors, studies from the sport domain also provide additional evidence. For example, Gagné, Ryan, and Bargmann (2003) investigated the effects of perceived coach and parent autonomy-support on the motivation, need satisfaction, and well-being of gymnasts. Participants were 45 female athletes between the ages of 7 to 18 who all completed an initial questionnaire, and 33 completed diary forms before and after each practice. The results demonstrated that coach and parent autonomy-support was correlated with more autonomous motivation toward gymnastics. In addition, daily need satisfaction during practice stimulated enhanced athlete well-being (Gagné et al., 2003). The findings therefore suggest that coaches and parents using autonomy-supportive behaviors play a vital role in influencing athlete autonomous motivation.

Research by Reinboth, Duda, and Ntoumanis (2004) investigated the relationship between autonomy-support and satisfaction of autonomy, relatedness, and competence

needs, and athletes' perceptions of subjective vitality, intrinsic satisfaction and physical symptoms. The results demonstrated that autonomy-support was related to the satisfaction of an athlete's need for autonomy. Furthermore, in a study of competitive swimmers, Pelletier, Fortier, Vallerand, and Briere (2001) found that athletes' perceptions of coach's autonomy-support influenced both the athlete's identified and introjected regulation, as well as their participation in competitive swimming. In addition, Richer and Vallerand (1995) compared the use of autonomy-supportive and controlling coaching styles. The results demonstrated that when coaches utilize an autonomy-supportive style, their athletes reported higher levels of intrinsic motivation, competence, and self-determination. The findings therefore provide additional support for the importance of utilizing autonomy-supportive coaching styles.

Furthermore, Conroy and Coatsworth (2007) examined whether athletes distinguish between autonomy-supportive coaching strategies and its subsequent effect on athletes' need satisfaction. Using the Autonomy-Supportive Coaching Questionnaire (ASCQ), two forms of autonomy-support were assessed: interest in athlete's input and praise for autonomous behavior. In particular, interest in athlete's input was described as coaches who offered choices and asked for athlete opinions whereas praise involved admiring athlete decisions, attitude, and effort during practice. The results demonstrated that athletes were able to differentiate between the various strategies through factor structures in ratings of autonomy-supportive coaching behaviors. Furthermore, whereas the need for autonomy was equally satisfied by both strategies, competence and relatedness need satisfaction were more highly related to the praise-related strategy than the interest-related strategy (Conroy & Coatsworth, 2007). In addition, Amorose and

Anderson-Butcher (2007) explored the relationship between coaches' autonomy-supportive behaviors, athlete motivation, and whether this association was mediated by perceived competence, relatedness, and autonomy. The results demonstrated that high school and college athletes who perceived their coaches to be autonomy-supportive positively related to each of the three needs. Furthermore, increased levels of competence, relatedness, and autonomy positively related to athlete self-determined motivation, therefore confirming the mediating role of need-satisfaction (Amorose & Anderson-Butcher, 2007). The findings from both studies therefore indicate the substantial value of need-satisfaction in the relationship between coach autonomy-support and athlete self-determination.

Summary

To summarize, the studies presented above demonstrate how the interpersonal styles of autonomy-support and control influence behavioural, cognitive, and psychological outcomes in individuals. For example, within the teaching-domain, research demonstrated that perceived autonomy-support from teachers was associated with increased self-determination and task engagement in students. Furthermore, studies in the health domain showed that providing autonomy-supportive environments enhanced individual well-being. Lastly, research in the sport domain revealed that coaches utilizing autonomy-supportive behaviors increased athlete need-satisfaction and autonomous motivation.

While numerous studies have been conducted to examine the outcomes associated with these interpersonal styles, a remaining question is what influences individuals to be

autonomy-supportive in the first place. More specifically, within the domain of sport, the purpose of the present study was to investigate the antecedents of coaches' autonomy-supportive behaviors. To describe the determinants of the coach-athlete relationship in further detail, two models are presented in the next section.

Models in Sport

To derive the theoretical framework for this study, two models in the sport domain were consulted: the motivational model developed by Mageau and Vallerand (2003) and the coaching efficacy model developed by Feltz, Chase, Moritz, and Sullivan (1999).

Motivational Model

The motivational model, developed by Mageau and Vallerand (2003), focuses on the determinants of the coach-athlete relationship and describes how coaches impact athletes' intrinsic motivation and self-determined forms of extrinsic motivation. To clarify, the model proposes that coaches' personal characteristics, their perception of athlete behaviors and motivation, and the context within which they function influence their autonomy-supportive coaching behaviors. Consequently, these autonomy-supportive behaviors have a positive effect on the basic psychological needs of competence, relatedness, and autonomy, which in turn impact athletes' intrinsic and extrinsic motivation (Mageau & Vallerand, 2003).

For the purpose of this study, the focus will be on the first part of Mageau and Vallerand's (2003) model – the antecedents of coaches' autonomy-supportive behaviors.

These antecedents include the coaches' personal characteristics, their perception of athlete behaviors and motivation, and the context within which they function. To begin, the authors examine autonomy-support at the personality level such that coaches are characterized as being autonomy-supportive while others can be more controlling (Mageau & Vallerand, 2003). Second, coaches' perception of athlete competence and motivation is suggested to impact coaches' autonomy-supportive behaviors such that coaching styles are influenced by athletes' individual abilities. Third, the authors propose that the context can shape coaches' behaviors through factors such as pressure from the organization to perform/win and high levels of stress. In particular, the more pressure and stress coaches experience, the more likely they are to exhibit controlling behaviors (Mageau & Vallerand, 2003).

Coaching Efficacy Model

The coaching efficacy model, developed by Feltz et al. (1999), describes coaching efficacy as another determinant of the coach-athlete relationship, defined as "the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes" (Feltz et al., 1999, p. 765). Within their model, Feltz et al. (1999) propose four dimensions of coaching efficacy: motivation, game strategy, technique, and character-building efficacy. Motivation efficacy examines whether coaches have confidence in their abilities to affect the psychological states of their athletes (Feltz et al., 1999). Game strategy efficacy is described as whether coaches have confidence in their abilities to coach and perform during competition (Feltz et al., 1999). Technique efficacy refers to whether coaches have confidence in their instructional and diagnostic skills

(Feltz et al., 1999). Lastly, character-building efficacy is described as whether coaches have confidence in their abilities to influence athletes' development and positive attitude toward their sport (Feltz et al., 1999). These dimensions are in turn proposed to impact player/team satisfaction, performance, efficacy, and coaching behavior. While every determinant within these two models is crucial, this study focused on certain elements described in the following section.

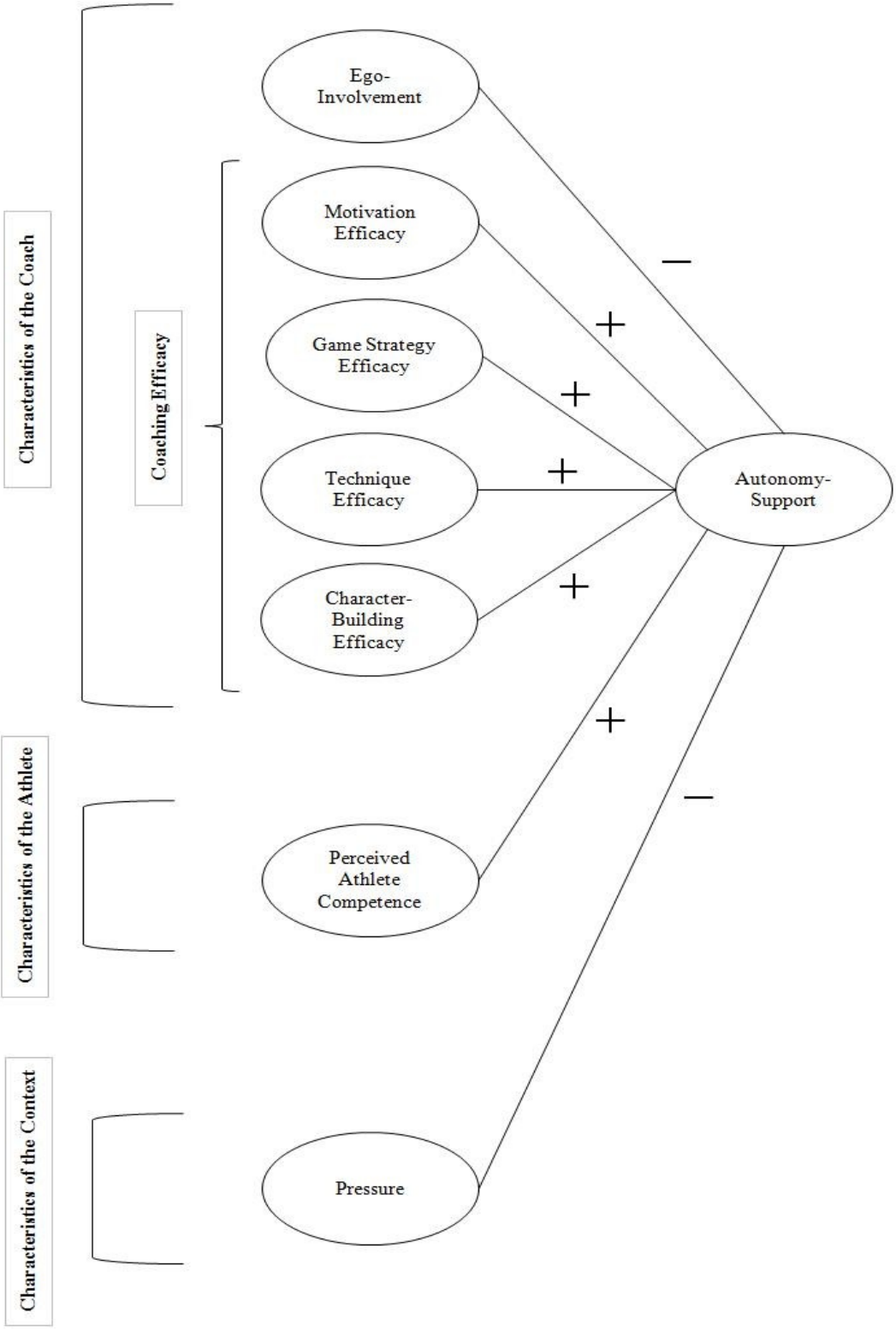
Factors Influencing Autonomy-Support

Based on the models proposed by Mageau and Vallerand (2003) and Feltz et al. (1999), four constructs were chosen and hypothesized to influence whether coaches utilize autonomy-supportive behaviors with their athletes. In particular, they are: ego-involvement, coaching efficacy, perceived athlete competence, and pressure (see Figure 1). The following section therefore explains each construct and its relevant review of literature in detail.

Ego-Involvement

In Mageau and Vallerand's (2003) model, ego-involvement is a personal characteristic of the coach that is proposed to influence coaching style. According to Ames (1992), when an individual's ego is involved in an activity, it implies that their self-worth and self-esteem depend on their performance. Individuals may also become ego-involved with the performance of significant others (Grolnick, Gurland, DeCourcey, & Jacob, 2002). For example, Grolnick et al. (2002) examined the relationship between ego-involvement and autonomy-supportive versus controlling behaviors in a sample of

Figure 1. Theoretical Model for the Present Study



mothers. The results demonstrated that the more ego-involved the mothers were with their child's performance, the less likely they were to use autonomy-supportive strategies and more likely to adopt controlling behaviors (Grolnick et al., 2002). The findings therefore suggest that ego-involvement plays a critical role in the use of autonomy-supportive behaviors in mothers.

Furthermore, Grolnick, Price, Beiswenger, and Sauck (2007) investigated the relationship between situational pressures, contingent self-worth, and mother's autonomy-support versus control. Data was collected from 60 mothers and their 4th-grade children, who were randomly assigned to one of two conditions: evaluation (mothers were told their child would be evaluated by other children) or no-evaluation (no mention of being evaluated). The results showed that mothers in the evaluation condition with high contingent self-worth were more controlling and spent more time revealing answers to their children (Grolnick et al., 2007). Although ego-involvement was manipulated in this particular study, the findings provide further evidence to demonstrate the importance of the role of ego-involvement in autonomy-supportive behaviors.

Like parents, coaches may act in similar ways in which they base their achievements on their athlete's performance. In particular, coaches may become more controlling in order to protect their self-esteem and assure a positive outcome, not only for the athlete but also for themselves. In other words, coaches with high ego-involvement may believe the successes and failures of their athletes are a reflection of their own worth. Consequently, coaches may resort to the use of controlling behaviors in order to preserve their self-esteem. Therefore, the following hypothesis was proposed:

H1: There will be a negative relationship between ego-involvement and coaches' autonomy-supportive behaviors.

Coaching Efficacy

Derived from Feltz et al.'s (1999) model, coaching efficacy is another personal characteristic factor proposed to influence coaches' autonomy-supportive behaviors. In particular, coaches with high levels of motivation, game strategy, technique, and character-building efficacy may utilize more autonomy-supportive behaviors with their athletes compared to those who are low on these dimensions. For example, research by Sullivan and Kent (2003) examined coaching efficacy in a sample of intercollegiate coaches. Specifically, they investigated the relationship between the four dimensions of coaching efficacy and the five measures of the Leadership Scale for Sport (LSS), including positive feedback, democratic behavior, autocratic behavior, training and instruction, and social support. The results demonstrated that coaching efficacy explained 42% of the variance in positive feedback and 28% of the variance in training (Sullivan & Kent, 2003). In addition, Vargas-Tonsing, Warners, and Feltz (2003) explored the relationship between coaching efficacy and team efficacy beliefs. Data was collected from 12 high school head coaches and 133 female varsity athletes. The results demonstrated that coaching efficacy positively correlated with team efficacy, specifically motivation and character-building efficacy (Vargas-Tonsing et al., 2003). The findings from both studies suggest that examining the four dimensions of coaching efficacy in more detail with respect to engagement in autonomy-supportive behaviors is crucial. Therefore, the following hypotheses were proposed:

H2a: There will be a positive relationship between motivation efficacy and coaches' autonomy-supportive behaviors.

H2b: There will be a positive relationship between game strategy efficacy and coaches' autonomy-supportive behaviors.

H2c: There will be a positive relationship between technique efficacy and coaches' autonomy-supportive behaviors.

H2d: There will be a positive relationship between character-building efficacy and coaches' autonomy-supportive behaviors.

Perceived Athlete Competence

A third factor, which is considered a characteristic of the athlete in the Mageau and Vallerand (2003) model, proposed to influence coaches' utilization of an autonomy-supportive style consists of coaches' perceptions of their athletes' competence with regard to their skills and abilities in sport. In particular, coaches who perceive their athletes as being highly competent may utilize more autonomy-supportive behaviors, whereas coaches who perceive their athletes to be less competent may use more controlling behaviors such that they try to improve their athlete's performance. While there is a lack of research for this particular hypothesis, research on parenting suggests similar findings. For example, Grolnick et al. (2002) examined the relationship between children's grades and how mothers interacted with their children on two academic tasks. The researchers coded maternal controlling behaviors as directing children's behavior in excess of the child's demonstrated need. The results showed that mothers of children with higher grades were more likely to use autonomy-supportive behaviors, whereas mothers

of children with poorer grades were found to be more controlling (Grolnick et al., 2002). However, the researchers point out that evidence suggests controlling interventions undermine children's motivation and competency levels, thus further research is warranted to examine the direction of the relationship.

In the work domain, Barrow (1976) investigated the relationship between subordinate performance and task complexity on leader behavior styles. Results based on 80 subordinates and 40 task leaders showed that subordinate performance was associated with particular behaviors exhibited by leaders. Specifically, the more employees were perceived as competent with regard to their task performance, the more supervisors were likely to listen to their suggestions and take their perspectives in to consideration (Barrow, 1976). Based on these findings, the following hypothesis was proposed:

> H3: There will be a positive relationship between coaches' perceptions of athletes' competence and coaches' autonomy-supportive behaviors.

Pressure

Lastly, a fourth factor, which is considered a characteristic of the context in the Mageau and Vallerand (2003) model, suggested to influence coaches' autonomy-supportive behaviors involves external pressures such as pressure to win or performance evaluations. However, while organizations may emphasize that coaches win 'at all costs' or that keeping their job is based on the success of their athletes, this may depend on the competitive level they coach. For example, coaches at the amateur level may experience less pressure compared to those at the professional level. Furthermore, external pressures may depend on coaching status such that head coaches experience more pressure

compared to assistant coaches since they have different job roles/demands. For this reason, the present study will take sport level and coaching status into consideration when testing the hypotheses.

According to Mageau and Vallerand (2003), children and youth sport has focused its attention on winning instead of developing skills and abilities. As such, coaches feel extreme pressure since their job now depends on the performance of their athletes, which may subsequently affect their coaching styles. This particular notion is experienced in numerous other jobs such as teaching. For example, Flink, Boggiano, and Barrett (1990) demonstrated that external pressures such as performance standards affected teachers' autonomy-supportive behaviors. In particular, the results found that teachers were more autonomy-supportive when external pressure was low, whereas teachers used more controlling strategies when external pressure was high (Flink et al., 1990). Furthermore, Pelletier, Seguin-Levesque, and Legault (2002) examined the relationship between socio-contextual factors and teachers' use of autonomy-supportive versus controlling behaviors with students. In particular, these factors included pressure at work (pressure to abide by performance standards, a curriculum, or colleagues), teachers' self-determined motivation toward their work, and teachers' perception of students' self-determined motivation. The results demonstrated that pressures from work were associated with decreased levels of teachers' self-determination, which subsequently influenced teachers to become more controlling with students (Pelletier et al., 2002). Based on these findings, the following hypothesis was proposed:

H4: There will be a negative relationship between external pressure and coaches' autonomy-supportive behaviors.

METHOD

Participants

The present study was conducted using a cross-sectional quantitative design. Data were collected from 100 coaches (n = 78 males, n = 22 females) who currently coach an individual or team sport within the Montreal region. The mean age of participants was 36 years (range 19 to 65) and mean education level achieved was an undergraduate degree. Regarding coaching status, 57 were head coaches and 43 were assistant coaches. The mean coaching tenure of participants was 10 years and 68 stated they had a coaching license. In terms of competitive sport level, 9 coached at the house level, 22 at the city level, 26 at the regional level, 40 at the provincial level, 2 at the national level, and 1 at the international level. List of sports coached included hockey (26%), soccer (21%), football (18%), other team sports such as ringuette, basketball, and volleyball (18%), and other individual sports such as figure skating and squash (17%). Forty-six coaches stated they received monetary compensation, including 32 receiving less than $5,000, 2 receiving between $5,000-$10,999, 4 receiving between $11,000-$20,999, 4 receiving between $21,000-$30,999, 3 receiving between $31,000-40,999, and 1 receiving greater than $50,000. None received compensation between $41,000-50,000.

Procedure

The participants in the sample were recruited through numerous strategies. These strategies included recruiting through coaching associations' e-mail listservs, in person at coaching clinics, and e-mail contact with various directors of local sport associations.

Participants first read and signed a consent form (see Appendix A) and were told that the study would be examining different coaching styles. In addition, the consent form emphasized that participation was voluntary and that participants could withdraw from the study at anytime without negative consequences. It also explained that data from the study may be published in academic journals and conferences, without disclosing participants' identity. Once subjects agreed to participate, they completed the paper-based questionnaire (see Appendix B). The questionnaire was anonymous, thus no identifying information was recorded (other than demographic questions), and took no longer than 15 minutes to complete. The questionnaires were collected in person by the researcher on the same day. After completing the questionnaire, participants were provided with a debriefing form (see Appendix C), which explained the purpose of the study and provided the researcher's contact information for any questions. Participants then received a $7 gift card from Starbucks Coffee as compensation for their time.

Measures

Ego-Involvement. To measure ego-involvement, Iachini's (2008) adapted version of Grolnick et al.'s (2007) 8-item scale was utilized. A confirmatory factor analysis with 5 of the original 8 items yielded a better fit to the data for a one-factor solution, $\chi^2(5) = 12.79$, $p < .05$, CFI = .96, GFI = .95, RMSEA = .13, AIC = 32.74, than with the 8-items, $\chi^2(20) = 82.01$, $p < .001$, CFI = .75, GFI = .83, RMSEA = .18, AIC = 114.01. The 5 items examined whether coaches felt their athletes' successes and failures influenced their self-esteem. Examples of items include: "My athletes' successes are a reflection of my own worth", "My athletes' failures make me feel ashamed", and "My athletes'

failures have very little influence on my worth as a person." Responses were based on a 7-point Likert scale, ranging from 1 (not at all true) to 7 (very true). The reliability (Cronbach's alpha) of the scale was reported as .81.

Coaching Efficacy. To assess whether the 24 items in the Coaching Efficacy Scale (CES) generated the factor structure (motivation, game strategy, technique, and character-building) identified by Feltz et al. (1999), an exploratory factor analysis was conducted using the maximum likelihood method and direct oblimin rotation. The break in the scree plot, extracted eigenvalues, and percentage of variance explained all suggested a four-factor solution (KMO = .84, χ^2 (276) = 1712.84, $p < .001$). All items loaded on their respective factors (range .51 to .89) and no cross-loadings were identified except for 1 item measuring technique efficacy. However, this item was kept because removing it did not improve internal reliability.

Seven items measured motivation efficacy to assess whether coaches have confidence in their abilities to affect the psychological states of their athletes. The items are a response to the question "How confident are you in your ability to?" and sample items include "Maintain confidence in your athletes", "Build the self-esteem of your athletes", and "Build team cohesion." Responses were based on a 7-point Likert scale, ranging from 1 (not at all confident) to 7 (extremely confident). The reliability (Cronbach's alpha) of the subscale was reported as .85.

Seven items measured game strategy efficacy to examine whether coaches have confidence in their abilities to coach and perform during competition. The items are a reply to the question "How confident are you in your ability to?" and sample items consist of "Recognize opposing team's strengths during competition", "Understand

competitive strategies", and "Adapt to different game situations." Responses were based on a 7-point Likert scale, ranging from 1 (not at all confident) to 7 (extremely confident). The reliability (Cronbach's alpha) of the subscale was reported as .91.

Six items measured technique efficacy to assess whether coaches have confidence in their instructional and diagnostic skills. The items are a response to the question "How confident are you in your ability to?" and sample items include "Demonstrate the skills of your sport", "Coach individual athletes on technique", and "Detect skill errors." Responses were based on a 7-point Likert scale, ranging from 1 (not at all confident) to 7 (extremely confident). The reliability (Cronbach's alpha) of the subscale was reported as .90.

Four items measured character-building efficacy to examine whether coaches have confidence in their abilities to influence athletes' development and positive attitude toward their sport. The items are a reply to the question "How confident are you in your ability to?" and sample items consist of "Instill an attitude of good moral character", "Instill an attitude of fair play among your athletes", and "Promote good sportsmanship." Responses were based on a 7-point Likert scale, ranging from 1 (not at all confident) to 7 (extremely confident). The reliability (Cronbach's alpha) of the subscale was reported as .88.

Perceived Athlete Competence. To measure coaches' perceptions of their athletes' competence, an adapted version of McAuley, Wraith, and Duncan's (1991) 3-item perceived competence sub-scale in the Intrinsic Motivation Inventory (IMI) (Ryan, 1982) was utilized. Examples of items include: "I think my athletes are good at this sport" and "I think my athletes are skilled for the competitive level they play." Responses were

based on a 7-point Likert scale, ranging from 1 (not at all true) to 7 (very true). The reliability (Cronbach's alpha) of the scale was reported as .83.

Pressure. In order to assess pressure, a 4-item scale adapted from Taylor, Ntoumanis, and Smith (2009) was used. The 4 items examined whether coaches perceive pressure from their organization and receive evaluations based on athlete performance. Sample items include: "I am evaluated as a coach based on the performance of my athletes", "Keeping my job as a coach depends on the success of my athletes", and "My sport association places great emphasis on winning." Responses were based on a 7-point Likert scale, ranging from 1 (not at all true) to 7 (very true). The reliability (Cronbach's alpha) of the scale was reported as .81.

Autonomy-Support. To measure autonomy-support, the 12-item scale developed by Hagger et al. (2007) was utilized. The construct includes items such as "I feel that I provide my athletes with choices, options, and opportunities regarding this sport", "I listen to my athletes regarding this sport", and "I feel that my athletes are able to share their experiences with me rearding this sport." Responses were based on a 7-point Likert scale, ranging from 1 (not at all true) to 7 (very true). The reliability (Cronbach's alpha) of the scale was reported as .86.

Demographics. Participants were asked for background information, including variables such as age, gender, coaching status (head or assistant coach), coaching level (license), sport type (individual or team sport), competitive sport level (house, city, regional, provincial, etc.), athlete gender, whether they receive monetary compensation, and the level of monetary compensation.

Data Preparation and Analytic Strategy

To conduct preliminary diagnostics, the data set was cleaned using the six-step method developed by Tabachnick and Fidell (2007). The method begins with the inspection of univariate descriptive statistics to verify the range of responses. The second step involves checking for missing data; however, there was no missing data in the current study. The third and fourth steps deal with the verification of normality and the transformation and verification of z-scores, respectively. The fifth step involves the identification of outliers. The last step deals with the evaluation of variables for multicollinearity (VIF); however, no multicollinearity was found. The following paragraphs report normality and outlier information in further detail.

Based on the frequencies for level of compensation (see method section), a dummy variable was created such that 1 referred to coaches receiving less than or equal to $5,000 and 2 for coaches receiving more than $5,000. The cut off for the new variable was based on the distribution of the frequencies (n = 32 for $\leq$ $5,000, and n = 14 for > $5,000). Measures for scale skewness and kurtosis were also examined. Following Kline's (2010) method, variables with skewness > |3| are described as extremely skewed, and variables with kurtosis > |8| are described as indicating extreme kurtosis. All scales yielded acceptable scores for skewness (range = .05 to 2.05) and kurtosis (range = .02 to 6.17). Therefore, the data was normally distributed.

To identify outliers, raw scores were converted into standardized z-scores. According to Tabachnick and Fidell (2007), outliers are defined as any score above or below 3.29 standard deviations from the mean. The results showed that the technique efficacy subscale included seven outliers, the character-building efficacy subscale

included six outliers, the perceived competence scale included two outliers, and the autonomy-support scale included ten outliers. Due to the limited sample size, outliers were included in the analyses.

To test the hypotheses more stringently, a path analysis was conducted (Jöreskog, 1979). According to Olobatuyi (2006), using path analysis enables researchers to simultaneously measure various types of relationships among variables. In particular, computing the path coefficients assesses the level of change in each dependent variable predicted by the independent variable in the model (Olobatuyi, 2006).

RESULTS

The means, standard deviations, and correlations are displayed in Table 1. Pearson's correlation coefficients were computed for all constructs included in the research model. Although no significant correlation was found between ego-involvement and autonomy-support (r = -.03, p = .74), positive correlations were found between motivation efficacy and autonomy-support (r = .59, p < .001), game strategy efficacy and autonomy-support (r = .44, p < .001), technique efficacy and autonomy-support (r = .46, p < .001), and character-building efficacy and autonomy-support (r = .61, p < .01) such that as one construct increased, autonomy-support also increased. Furthermore, a significant positive correlation was found between perceived athlete competence and autonomy-support (r = .31, p < .01) such that as perceived athlete competence increased, autonomy-support also increased. These findings therefore provide preliminary support

for H2a, H2b, H2c, H2d, and H3, respectively. Lastly, there was no significant correlation found between pressure and autonomy-support (r = .12, p = .26).

Table 1

Descriptive Statistics and Correlations for the Constructs

	M	*SD*	1	2	3	4	5	6	7
1. Ego-Involvement	3.33	1.31	_						
2. Motivation Efficacy	5.70	.66	.03	_					
3. Game Strategy Efficacy	5.71	.82	-.19	.51***	_				
4. Technique Efficacy	5.99	.84	-.16	.54***	.64***	_			
5. Character-Building Efficacy	6.23	.82	-.14	.27**	.22*	.30**	_		
6. Perceived Athlete Competence	5.31	.89	.14	.15	.09	.03	.06	_	
7. Pressure	3.59	1.28	.30**	.27**	.06	.04	-.16	.08	_
8. Autonomy-Support	6.10	.54	-.03	.59***	.44***	.46***	.61**	.31**	.12

Note. N = 100. All scales are measured on a seven-point Likert scale.
*p < .05; **p < .01; ***p < .001

Spearman's correlation coefficients were conducted between all constructs and demographic variables (see Table 2). A moderate negative relationship was found between age and ego-involvement (r = -.23, p < .05) such that older coaches were less likely to be ego-involved compared to younger coaches. Furthermore, a moderate negative association was found between education and ego-involvement (r = -.27, p < .01) such that coaches' with higher educational degrees were less likely to be ego-involved compared to those with lower educational degrees. In addition, a moderate positive correlation was found between coaching status and autonomy-support (r = .24, p < .05) such that assistant coaches were more likely to experience autonomy-support compared to head coaches. Furthermore, a moderate positive association was found between coaching tenure and game strategy efficacy (r = .26, p < .05) such that individuals with greater years of coaching experience were more likely to experience game strategy efficacy compared to those with fewer years of coaching experience. In addition, a moderate positive correlation was found between sport level and perceived athlete competence (r = .22, p < .05) such that coaching at a higher competitive level was associated with increased perceived athlete competence. Furthermore, a moderate negative relationship was found between compensation and character-building efficacy (r = -.20, p < .05) such that coaches' who did not receive compensation were more likely to experience character-building efficacy compared to those who did receive compensation. Lastly, a moderate negative association was found between level of compensation and perceived athlete competence (r = -.32, p < .05) such that coaches' with lower levels of compensation were more likely to perceive their athletes as competent compared to those with higher levels of compensation.

Table 2

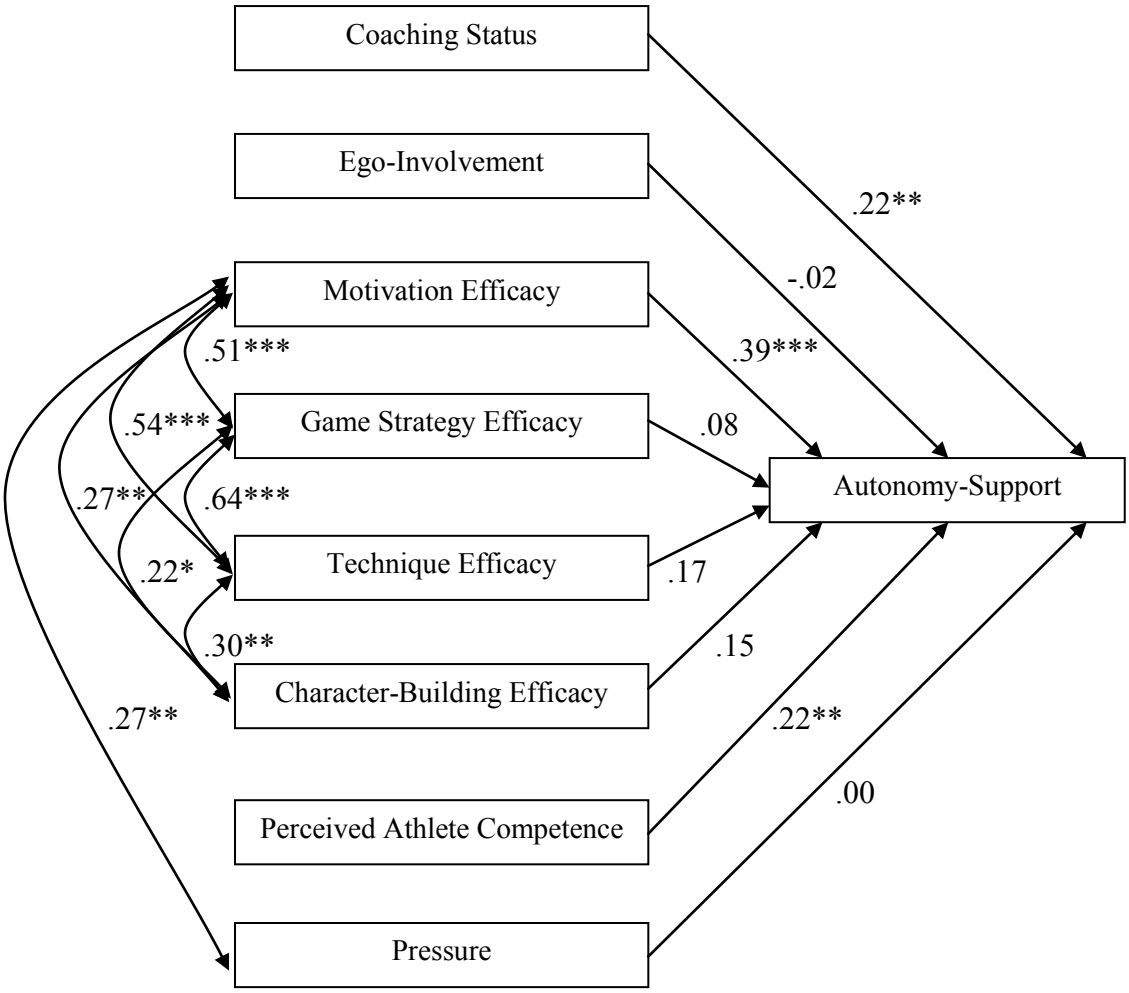
Correlations for the Constructs and Demographic Variables

	EI	ME	GSE	TE	CBE	C	P	AS
1. Gender	.00	.07	-.09	-.01	-.07	.05	-.08	.05
2. Age	-.23*	.18	.07	.10	.02	-.13	.07	.02
3. Education	-.27**	-.09	-.08	-.02	.04	-.04	-.16	-.18
4. Coaching Status	.03	.01	.01	.00	.00	.05	.05	.24*
5. Coach Tenure	-.07	.17	.26*	.15	-.02	.00	.14	.03
6. Sport Level	-.03	-.14	.10	-.01	-.12	.22*	.12	.00
7. Compensation	.19	-.13	.12	.00	-.20*	.16	.14	-.14
8. +Level of Compensation	-.26	-.01	.01	-.01	-.16	-.32*	.04	-.17

Note. N = 100. +Based on 46 participants. EI = ego-involvement; ME = motivation efficacy; GSE = game strategy efficacy; TE = technique efficacy; CBE = character-building efficacy; C = perceived athlete competence; P = pressure; AS = autonomy-support.
*$p < .05$; **$p < .01$.

A path analysis was conducted to further investigate the hypotheses. Based on the hypotheses, the path model was built accordingly. Coaching status was added to the hypothesized model because it was related to autonomy support, thus it was controlled for. The fit for the model, χ^2 (21) = 25.69, *ns*, CFI = .97, TLI = .95, GFI = .95, AGFI = .89, RMSEA = .05, is displayed in Figure 2.

Figure 2. Path Analysis Model



Note. R^2 = .46. **p* < .05; ***p* < .01; ***p < .001

The first hypothesis examined whether ego-involvement was negatively related to autonomy-support. No significant relationship was found (β = -.02, p = .81), therefore H1 was not supported. The second hypothesis investigated whether 4 subscales of coaching efficacy were positively related to autonomy-support. In particular, motivation efficacy was found to be positively related to autonomy-support (β = .39, p < .001), thereby supporting H2a. No significant relationship was found between autonomy-support and game strategy efficacy (β = .08, p = .39), technique efficacy (β = .17, p = .10), and character-building efficacy (β = .15, p = .06), therefore H2b, H2c, and H2d were not supported. The third hypothesis examined whether perceived athlete competence was positively related to autonomy-support. A significant relationship was found (β = .22, p < .01), thereby supporting H3. Lastly, the fourth hypothesis investigated whether pressure was negatively related to autonomy-support. No significant relationship was found (β = .00, p = .95), therefore H4 was not supported.

DISCUSSION

The goal of the present study was to investigate the antecedents of coaches' autonomy-supportive behaviors. In particular, four constructs were examined: ego-involvement, coaching efficacy, perceived athlete competence, and pressure. The first hypothesis explored whether there would be a negative relationship between ego-involvement and coaches' autonomy-supportive behaviors. Regarding coaching efficacy, four sub-factors involving motivation, game strategy, technique, and character-building efficacy were predicted to have a positive influence on autonomy-support. The third

hypothesis investigated whether there would be a positive relationship between coaches' perceptions of athletes' competence and autonomy-supportive behaviors. Lastly, the fourth hypothesis examined whether pressure would be negatively associated with coaches' autonomy-supportive behaviors.

Based on the results, no significant relationship was found between ego-involvement and autonomy-support. While research in the parenting domain suggests that mothers with high ego-involvement exhibit controlling strategies with their children (Grolnick et al., 2002; Gronick et al., 2007), this type of relationship was not supported for coaches in the current study. Furthermore, out of the four sub-factors within coaching efficacy, only motivation efficacy was found to be positively associated with autonomy-support. These findings, along with those demonstrated by Sullivan and Kent (2003) and Vargas-Tonsing et al. (2003), provide further evidence for the impact of coaching efficacy on various behavioral outcomes and suggest that exploring the sub-factor of motivation efficacy in further detail is warranted. It is important to note that, although the coaching efficacy scale was shown to contain four sub-factors, correlations between the sub-factors were fairly high. Therefore, a path analysis was utilized in order to forestall any possible multicollinearity problems. Path analysis, unlike conventional multiple regression analysis, allows to control for correlations between predictor variables and also provides fit indices that explain whether the hypothesized model fits the structure of statistical relations between the variables. As a result, if there was a multicollinearity problem, the fit of the model would not have been acceptable. Other statistical information was checked, such as residuals, and no problem was identified with the covariance matrix used to run the path analysis. The results therefore suggest that there

are suppression effects or that the findings are indeed reliable and can be used for interpretation.

In addition, perceived athlete competence was found to be positively associated with autonomy-support such that coaches who perceived their athletes as highly competent demonstrated increased autonomy-supportive behaviors. These findings are in agreement with those demonstrated in the work domain, in which supervisors were more likely to listen to employee suggestions and consider their perspectives when they were perceived as more competent (Barrows, 1976). Lastly, no significant relationship was found between pressure and coaches' autonomy-supportive behaviors. Although research in the teaching domain has demonstrated that external pressures such as performance standards are associated with more controlling rather than supportive strategies (Flink et al., 1990; Pelletier et al., 2002), no support was found for coaches in the current study.

Various correlations with demographic variables such as those regarding compensation were particularly interesting. The findings suggest that coaches who receive compensation have lower character-building efficacy, whereas coaches who do not receive compensation have higher character-building efficacy. In addition, a negative association was found between perceived athlete competence and level of compensation. In particular, coaches with higher levels of compensation perceive their athletes as less competent, while coaches who receive lower compensation perceive their athletes as more competent. This could be interpreted such that coaches who receive compensation may be coaching at higher competitive levels and have more coaching experience than those who do not receive compensation. Consequently, while they are most likely coaching athletes with experience, they may not see the need to focus a significant

amount of time on character building and may be more critical of their athletes' competence compared to amateur coaches.

Practical Implications

By identifying which factors influence the use of autonomy-supportive behaviors, practitioners are able to gain a better understanding of how to educate their coaches in shaping the environment that children and youth experience. As previously mentioned, the results suggest that motivation efficacy and perceived athlete competence are positively associated with coaches' autonomy-supportive behaviors. Based on these findings, athletic directors and administrators can provide professional development opportunities to inform coaches about the benefits of targeting these factors in order to enhance autonomy-supportive interactions. Furthermore, they can devise strategies to enhance the coach-athlete relationship.

The results also raise interesting implications for managing, selecting, and training coaching principles. To clarify, by investigating the determinants of autonomy-supportive behaviors, directors can specify the types of coaches they would like to represent their particular organizations, whether as volunteers or for occupational purposes. In addition, they can train coaches on the factors associated with autonomy-supportive behaviors in order to ensure beneficial outcomes for athletes. By selecting and training coaches accordingly, organizations have a better opportunity to increase children and youth well-being in sport.

Extending the results to an organizational setting, the model proposes interesting suggestions for the supervisor-employee relationship. To clarify, by superimposing the

model on managers, the results of the present study suggest that motivation efficacy and managers' perceptions of employee competence may be associated with managers' autonomy-supportive behaviors. In particular, managers who experience greater motivation efficacy and perceive their employees as more competent may be associated with increased autonomy-support. Furthermore, although no relationship was found between external pressures and coaches' autonomy-support, different findings may exist for managers since performance evaluations are pertinent in the work domain. In particular, managers who experience more pressure may be less autonomy-supportive. Therefore, by identifying which factors influence the use of managers' autonomy-supportive behaviors, organizations can develop strategies to enhance the supervisor-employee relationship, and subsequently impact the motivation and well-being of employees.

Limitations

There are several important limitations to address. First, the study used a cross-sectional design and included a small sample size, thus no causal associations could be derived. Moreover, all measures were based on self-report data thus it is important to consider that coaches may have interpreted the questions differently. In addition, although the questionnaire was anonymous, coaches may not have answered genuinely or may have experienced the social desirability bias. Furthermore, the ordering of variables within the questionnaire were based on the proposed model, thus common method variance and potential carry over effects are posited (Marczyk, DeMatteo, Festinger, 2005). Future research could therefore apply longitudinal data or quasi-experiments and

increase the sample to help test the hypotheses more stringently. Lastly, the present study only hypothesized four constructs to be related to coaches' autonomy-supportive behaviors. However, Mageau & Vallerand (2003) propose numerous other factors, such as perceived athlete motivation and stress, which are suggested to influence autonomy-support. Future research to examine the impact of these particular determinants is therefore warranted in order to gain a better understanding of autonomy-supportive coaching behaviors.

Future Research

Regardless of the limitations mentioned above, the present study is crucial in understanding which factors are associated with coaches' autonomy-supportive behaviors. Future research could conduct a longitudinal design in which they collect data at different times throughout the year to see if coaching behaviors vary. In particular, the researcher could distribute questionnaires at the beginning, middle, and end of the sport season to assess whether or not the factors influencing autonomy-support demonstrate variability throughout the year. In addition, future studies should incorporate numerous other factors which could influence coaches' autonomy-supportive behaviors in order to gain a better understanding of the proposed model. For example, perceived athlete motivation has been hypothesized by Mageau and Vallerand (2003) to impact autonomy-support such that athletes who exhibit decreased levels of motivation may induce coaches to utilize more controlling strategies in hopes of augmenting athlete motivation. However, the researchers add that this may be counterintuitive since controlling strategies are likely to decrease athlete motivation. Another variable proposed by Mageau and

Vallerand (2003) to influence autonomy-support is stress experienced by coaches in their environment. In particular, the researchers hypothesize that the more stress coaches' experience, the more detrimental the effect on psychological outcomes, which in turn will lead coaches to disregard athletes' thoughts, feelings, and perspectives (i.e. decreased autonomy-support).

Lastly, future research could further investigate the relationships found between compensation and character-building efficacy as well as level of compensation and perceived athlete competence. In particular, it might be possible that moderating or mediating variables are involved. For example, it would be interesting to see whether competitive sport level influences these particular relationships. It might be that the higher competitive level you coach, the more compensation you may receive, and in turn influence your autonomy-supportive behaviors in positive and/or negative ways.

CONCLUSION

In conclusion, the current study sought to examine the determinants of coaches' autonomy-supportive behaviors. In doing so, ego-involvement, coaching efficacy, perceived athlete competence, and pressure were hypothesized to impact autonomy-support. The results demonstrated that motivation efficacy, a sub-factor within coaching efficacy, and perceived athlete competence were positively correlated with autonomy-supportive coaching behaviors. No relationship was found for ego-involvement or pressure. The findings extend the literature on autonomy-support and suggest important implications for practitioners regarding developmental and training opportunities.

Furthermore, identifying which factors influence the use of coaches' autonomy-supportive behaviors allows researchers to gain a better understanding on how to educate coaches to enhance children and youth well-being and promote overall healthy development.

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Appendix A

CONSENT TO PARTICIPATE IN: COACHING STYLES QUESTIONNAIRE

I understand that I have been asked to participate in a research project being conducted by Dr. Marylène Gagné and Melissa Trivisonno of the MSc program of Concordia University (contact information: m_trivis@jmsb.concordia.ca). This project is supervised by Prof. Marylène Gagné, Management Dept., Concordia University, MB 13-359, John Molson Building, (514) 848-2424 ext. 2775.

A. PURPOSE

I have been informed that the purpose of the research is to examine different coaching styles within the Montreal region.

B. PROCEDURES

I understand that this study requires coaches to complete a questionnaire, which will take approximately 15 minutes. It is recommended that I complete the questionnaire in one sitting.

The researcher has explained that some questions seem to be repeated in the questionnaire. Although we agree that this may be somewhat frustrating to answer the seemingly same question more than once, we have to do it this way in order to ensure reliability. The researcher has therefore asked me to answer ALL questions in the questionnaire so that we can provide reliable and valid results.

Although the questionnaires will be collected in person, the researcher has explained that my responses are kept anonymous. No identifying information appears on the questionnaire and the consent forms will be kept separate. I am free to withdraw from this questionnaire at any time and can do so by submitting it blank. The researcher has also explained that the data will be entered on a secured server and will be processed on secured computers. The questionnaires will be kept in locked cabinets at the John Molson School of Business at Concordia University.

C. RISKS AND BENEFITS

I understand that there are no anticipated risks associated with participating in this questionnaire. My participation will provide useful feedback for practitioners to gain a better understanding of how to educate their coaches in shaping the environment that

children and youth experience. I will be compensated for my participation by receiving a $7 gift card from Starbucks Coffee upon completion of the questionnaire.

D. CONDITIONS OF PARTICIPATION

• I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences. I can do so by submitting the questionnaire blank.

• I understand that my participation in this study is anonymous (i.e., the researcher will not have any identifying information on the questionnaire, other than basic demographic information).

• I understand that the data from this study may be published in academic journals and conferences, without disclosing my identity.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

Name (please print): _____

Signature: _____

Date: _____

If at any time you have questions about your rights as a research participant, please contact the Research Ethics and Compliance Advisor, Concordia University, at (514) 848-2424 ext. 7481 or by e-mail at ethics@alcor.concordia.ca.

Appendix B

Relationship with Athletes. Below are statements about your relationship with your athletes. Using the scale below, indicate how true each statement is for you by filling in the appropriate circle.

	Not at All True			**Moderately True**			**Very True**
1. When my athletes do well, I feel good about myself.	O	O	O	O	O	O	O
2. My athletes' successes are a reflection of my own worth.	O	O	O	O	O	O	O
3. My athletes' successes have very little influence on how I feel about myself.	O	O	O	O	O	O	O
4. My athletes' failures make me feel ashamed.	O	O	O	O	O	O	O
5. Although I care about what happens to my athletes, their failures do not reflect on my worth as a person.	O	O	O	O	O	O	O
6. My athletes' failures have very little influence on my worth as a person.	O	O	O	O	O	O	O
7. When my athletes do not do well, I feel bad about myself	O	O	O	O	O	O	O
8. Although I care about what happens to my athletes, their successes do not reflect on my worth as a person.	O	O	O	O	O	O	O

Coach Confidence. Coaching confidence refers to the extent to which coaches believe they have the capacity to affect the learning and performance of their athletes. Think about how confident you are as a coach. Rate your confidence for each of these items below by filling in the appropriate circle.

How confident are you in your ability to…

	Not At All Confident						**Extremely Confident**
1. maintain confidence in your athletes	O	O	O	O	O	O	O
2. mentally prepare athletes for game/meet strategies	O	O	O	O	O	O	O
3. build the self-esteem of your athletes	O	O	O	O	O	O	O
4. motivate your athletes	O	O	O	O	O	O	O
5. build team cohesion	O	O	O	O	O	O	O
6. build the self-confidence of your athletes	O	O	O	O	O	O	O
7. build team confidence	O	O	O	O	O	O	O
8. recognize opposing team's strengths during competition	O	O	O	O	O	O	O
9. understand competitive strategies	O	O	O	O	O	O	O
10. adapt to different game/meet situations	O	O	O	O	O	O	O

11. recognize opposing team's weakness during competition	O	O	O	O	O	O	O
12. make critical decisions during competition	O	O	O	O	O	O	O
13. maximize your team's strengths during competition	O	O	O	O	O	O	O
14. adjust your game/meet strategy to fit your team's talent	O	O	O	O	O	O	O
15. demonstrate the skills of your sport	O	O	O	O	O	O	O
16. coach individual athletes on technique	O	O	O	O	O	O	O
17. develop athletes' abilities	O	O	O	O	O	O	O
18. recognize talent in athletes	O	O	O	O	O	O	O
19. detect skill errors	O	O	O	O	O	O	O
20. teach the skills of your sport	O	O	O	O	O	O	O
21. instill an attitude of good moral character	O	O	O	O	O	O	O
22. instill an attitude of fair play among your athletes	O	O	O	O	O	O	O

23. promote good sportsmanship	O	O	O	O	O	O	O
24. instill an attitude of respect for others	O	O	O	O	O	O	O

Coach Perception of Athlete's Competence. Perception of athlete's competence refers to the extent to which coaches' perceive their athletes' as competent with regard to their skills and abilities in sport. Using the scale below, indicate how true each statement is for you by filling in the appropriate circle.

	Not at All True			**Moderately True**			**Very True**
1. I think my athletes are good at this sport.	O	O	O	O	O	O	O
2. I think my athletes do well at this sport, compared to other athletes.	O	O	O	O	O	O	O
3. I think my athletes are skilled for the competitive level they play.	O	O	O	O	O	O	O

Feelings of Pressure to Win. Below are statements about how you feel about being evaluated as a coach. Using the scale below, indicate how true each statement is for you by filling in the appropriate circle.

	Not at All True			**Moderately True**			**Very True**
1. I am evaluated as a coach based on the performance of my athletes.	O	O	O	O	O	O	O
2. Keeping my job as a coach depends on the success of my athletes.	O	O	O	O	O	O	O
3. My athletes' performance record has a strong impact on whether I remain in my coaching position.	O	O	O	O	O	O	O
4. My sports association places great emphasis on winning.	O	O	O	O	O	O	O

Coaching Style. Using the scale below, indicate how true each statement is for you by filling in the appropriate circle.

	Not at All True			**Moderately True**			**Very True**
1. I feel that I provide my athletes with choices, options, and opportunities regarding this sport.	O	O	O	O	O	O	O
2. I think I understand why my athletes choose to practice this sport.	O	O	O	O	O	O	O
3. I display confidence in my athletes' ability to practice this sport.	O	O	O	O	O	O	O
4. I encourage my athletes to practice this sport.	O	O	O	O	O	O	O
5. I listen to my athletes regarding this sport.	O	O	O	O	O	O	O
6. I provide my athletes with positive feedback regarding this sport.	O	O	O	O	O	O	O
7. I feel that my athletes are able to talk to me regarding this sport	O	O	O	O	O	O	O
8. I make sure my athletes understand why they need to practice this sport.	O	O	O	O	O	O	O
9. I answer my athletes' questions regarding this sport.	O	O	O	O	O	O	O
10. I care about my athletes practicing/doing this sport.	O	O	O	O	O	O	O
11. I feel that my athletes are able to share their experiences with me regarding this sport.	O	O	O	O	O	O	O
12. I feel that my athletes trust my advice regarding this sport.	O	O	O	O	O	O	O

About You. Please provide the following descriptive information by checking the appropriate boxes or writing in the space provided.

1. Gender
- ❑ Male
- ❑ Female

2. Please indicate your age (in years). _____

3. Please indicate the highest level of education you have achieved:

- ❑ High School diploma
- ❑ College diploma
- ❑ Undergraduate degree
- ❑ Graduate degree

4. Coaching Status
- ❑ Head Coach
- ❑ Assistant Coach

5. Do you have a coaching license?

- ❑ Yes
- ❑ No, skip to question 7

6. Please indicate the highest coaching level you have achieved._____

_____

7. Please indicate how long you have been coaching (in years). _____

8. Are/Were you an athlete yourself?

- ❑ Yes
- ❑ No, skip to question 10

9. Please indicate how long you have been/were an athlete (in years). _____

10. What sport are you currently coaching or have most recently coached? _____

11. Is the sport that you indicated in Question 10 an individual or a team sport?

- ❑ Individual Sport
- ❑ Team Sport

12. Please indicate the competitive level that you currently coach.

- ❑ House (includes gym sport teams, work sport teams)
- ❑ City League
- ❑ Regional League
- ❑ Provincial League
- ❑ National Competition
- ❑ International Competition

13. How many athletes are on the team you currently coach? _____

14. What is the gender of the athletes you currently coach?

- ❑ Male
- ❑ Female
- ❑ Both

15. Is coaching your primary job/employment?

- ❑ Yes
- ❑ No

16. Do you receive any monetary compensation in your current coaching role?

- ❑ Yes
- ❑ No, skip to question 19

17. What is the level of monetary compensation you indicated in question 16?

- ❑ < $5,000
- ❑ $5,000-$10,000
- ❑ $11,000-$20,000
- ❑ $21,000-$30,000
- ❑ $31,000-$40,000
- ❑ $41,000-$50,000
- ❑ > $50,000

18. Is the monetary compensation you indicated in question 17 your primary source of income?

- ❑ Yes
- ❑ No

19. Please indicate any other sport(s) you have coached.

_____

_____

20. Please make any other comments that you wish to make regarding your experiences as a coach.

_____

_____

_____

_____

Appendix C

Debriefing Form

Thank you for completing the questionnaire. This study examines the antecedents of coaches' autonomy-supportive behaviors. In particular, it investigates the characteristics of the coach (ego-involvement, motivation efficacy, game-strategy efficacy, technique efficacy, and character-building efficacy), characteristics of the athletes (athletes' competence), and characteristics of the context (external pressures). Your results will be used for data collection purposes and will remain anonymous. The data from this study may also be published in academic journals and conferences, without disclosing your identity. Thank you for contributing to this project, which will also allow Melissa Trivisonno to complete her Master's degree thesis requirement. If you have any further questions, please contact Melissa at m_trivis@jmsb.concordia.ca.

This project is supervised by Prof. Marylène Gagné, Management Dept., Concordia University, MB 13-359, John Molson Building, (514) 848-2424 ext. 2775.