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**The Influence of Social and Psychological
Determinants on Physical Education Teachers'
Interpersonal Style**

by

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**Thesis Submitted to the School of Graduate Studies and
Research in Partial Fulfillment of the Requirement for the
Degree of Master of Arts in Human Kinetics**

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ABSTRACT

This correlational research investigated the social and psychological determinants of physical education teachers' interpersonal style. This thesis was based on the theoretical framework from Deci and Ryan's (1985, 1991) Cognitive Evaluation Theory (CET). This research was examining the influence of (a) the teachers' perceptions of their working climate, (b) teachers' own motivation toward physical activity, (c) teachers' own motivation toward their career, and (d) teachers' perceptions of their students' motivation towards physical activity on the physical education teachers interpersonal style (autonomy supportive versus controlling interpersonal style). 48 physical education teachers from two school boards in the Ottawa region decided to fill out a questionnaire. Data were analyzed using multiple regression in order to find relationships between the determinants of interpersonal style and physical education teachers' interpersonal style. The findings from this research revealed that one hypothesis out of four was supported. The limitations of the study are discussed and future research ideas are provided.

CHAPTER I

Introduction

Much research over the last decade has examined motivation towards physical activity (e.g., Amorose & Horn, 2000; Goudas, Biddle, Fox, & Underwood, 1995; Vallerand, Deci, & Ryan, 1987). Indeed, developing motivation toward physical activity is one of the major objectives of many secondary school physical education programs (Pangrazi & Dauer, 1992). In fact, it is believed that physical education programs promoting positive attitudes in youths will increase the likelihood of adopting and maintaining an active lifestyle (Hellison & Templin, 1991).

According to Sallis et al. (1992), the probability of having a health impact with children and adolescents is better in schools because they can all be reached in this context, as an existing infrastructure is already in place. Furthermore, of the wide array of social factors that may potentially have an influence in the physical education context, the physical education teachers' interpersonal style seems to be of paramount importance on influencing students motivation (Goudas et al., 1995).

According to numerous researchers (e.g., Deci, Connell, & Ryan, 1989; Ryan & Stiller, 1991), interpersonal style can be divided into two main types: a controlling style, in which the significant other acts in a coercive, pressuring, autocratic way; and an autonomy supportive style where the significant other supports freedom, encourages autonomy, is democratic, and involves individuals in the decision process.

Several studies have shown that significant others' (e.g., teachers, coaches, parents, superiors) interpersonal style is an important determinant of youth's motivation (e.g., Deci & Ryan, 1991; Ryan & Grolnick, 1986). One study by Deci, Schwartz, Sheinman, and Ryan (1981) revealed that students who were with autonomy supportive teachers

experienced an increase in their intrinsic motivation, whereas those who were with controlling teachers experienced a decrease in intrinsic motivation. This indicates the positive effects of an autonomy supportive style and the negative effects controlling style on one's motivation. Many other studies have found similar results (e.g., Blanchard, Perreault, & Pelletier, 1993; Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982; Enzle, Wright, & Redondo, 1996).

One theory of paramount importance in the domain of motivation that can explain the results from the previously mentioned studies is Self-Determination Theory (SDT; Deci & Ryan, 1985; 1991). According to SDT, when a social context is autonomy supportive, individuals are inherently motivated to partake in the activities (i.e. are motivated in a self-determined fashion), whereas when the context is controlling, individuals are motivated to engage in the activities for external reasons (i.e. are motivated in a non self-determined way). More specific to the aim of the present study, and within the framework of SDT, is an important sub-theory, that of Cognitive Evaluation Theory (CET). This theory postulates that events (e.g., an autonomy supportive interpersonal style) which increase feelings of competence and/or feelings of autonomy increase self-determined motivation. Conversely, events that decrease feelings of competence and/or feelings of autonomy (e.g., a controlling interpersonal style) undermine self-determined motivation (Deci & Ryan, 1985; 1991). According to CET, a controlling interpersonal style fosters an external locus of causality and thereby undermines feelings of autonomy and consequently, self-determination. Conversely, an autonomy-supportive style should bring about an internal locus of causality and subsequently enhance feelings of autonomy and promote self-determined forms of motivation.

Although several investigations have measured the influence of significant others' (e.g., teachers, coaches, parents, superiors) interpersonal style on others' motivation, few studies have assessed the factors that lead a significant other to adopt a specific interpersonal style (i.e. the determinants of the interpersonal style). In addition, of those studies, very few have examined multiple determinants simultaneously, particularly in the physical activity contexts. Therefore, the purpose of the present study was to examine the determinants of physical education teachers' interpersonal style.

Based on past literature (Blanchard et al., 1993; Blais, Brière, Lachance, Riddle, & Vallerand, 1993; Flink, Boggiano, & Barrett, 1990), four different determinants were studied: (a) the physical education teachers' perceptions of their working climate; (b) the physical education teachers' motivation towards their career; (c) the physical education teachers' motivation towards physical activity; and (d) the physical education teachers' perceptions of their students' motivation towards physical activity.

Four hypotheses were formulated. With regards to the first determinant, it was hypothesized that (a) when physical education teachers perceive their working climate as being autonomy supportive, they will be more likely to adopt an autonomy supportive style with their physical education students whereas, when they perceive the working climate as being controlling, they will be more likely to adopt a controlling style.

For the second determinant, it was hypothesized that (b) physical education teachers motivated in a self-determined way toward their career will exhibit a more autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward their career will show a more controlling interpersonal style in this context.

For the third determinant, it was hypothesized that (c) physical education teachers motivated in a self-determined way toward physical activity will demonstrate a more autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward physical activity will demonstrate a more controlling interpersonal style in this context.

And for the final determinant, it was hypothesized that (d) when physical education teachers perceive their students as being motivated in a self-determined way towards physical activity, they will be more likely to adopt an autonomy supportive interpersonal style whereas, when they perceive their students as being motivated in a non self-determined way in the physical education context, they will be more likely to adopt a controlling interpersonal style.

The present study was of importance because of its contribution to the domain of physical education in that it investigated physical education teachers' interpersonal style. Also, further exploration of the antecedents of interpersonal style enables a better comprehension of the determinants of the interpersonal style adopted. By looking at multiple determinants of the interpersonal style in a physical activity context, this study was examining an aspect of the literature that has not been researched extensively in the past. This research contributes to the body of knowledge related to physical education teaching and could potentially be helpful in promoting specific behaviors when educating future teachers by incorporating this literature in their programs. Finally, having more knowledge about the influence of determinants of interpersonal style is very important because it will enable people, particularly teachers, to better understand the relationship between the determinants of interpersonal style and the actual style that they adopt

Organization of the Remainder of the Proposal

The remainder of this proposal is organized into four chapters. Chapter II contains a presentation of the motivational theory that is at the foundation of this study, namely CET (Deci & Ryan, 1985, 1991). It also contains a review of literature on the determinants of interpersonal style. Finally, it contains a description of the present study in which the hypotheses and the significance of the study are presented. Chapter III describes the methodology and procedures that were used for the research. Furthermore, the questionnaire is thoroughly explained. Chapter IV presents the results obtained from the correlations and multiple regression. Finally, Chapter V discusses the results with respect to each hypothesis, what was postulated, what was found and what these findings seem to indicate. In addition, it outlines the limitations of the study, proposes suggestions for future research, discusses the practical implications, and recapitulates the essence of the study in a brief conclusion.

CHAPTER II

Review of Literature

Significant others (e.g., parents, coaches, teachers) have been found to consistently influence youth's motivation, emotions and behaviors (e.g., Brophy, 1986; Goudas et al., 1995). One way in which these individuals exert their impact is through their interpersonal style. For instance, research in education (e.g., Grolnick, Ryan, & Deci, 1991; Pelletier, Fortier, Vallerand, & Brière, 2000) and in the physical activity domain (Fortier, Kowal, Grenier, & Leblanc, 1996; Vallerand, Deci, & Ryan, 1987) has shown that social agents' interpersonal style has an important impact on youth's motivational orientation.

Interpersonal Style

According to Deci, Connell, & Ryan (1989), interpersonal style can be divided into two main types: an autonomy supportive style and a controlling style (also see Deci & Ryan, 1987; Ryan & Stiller, 1991). The autonomy supportive style is where the significant other supports freedom, encourages autonomy, offers choices, and involves individuals in the decision process. Autonomy support has generally been associated with greater interest, less pressure and tension, more creativity, higher self-esteem, more trust, greater persistence of behavior change, and better physical and psychological health.

On the other hand, a controlling style is one in which the significant other acts in a coercive and pressuring way, uses rewards and constraints to influence behavior and does not take individuals' opinions into account. A controlling interpersonal style can be described as instances in which a significant other pressure people toward specified outcomes, thereby undermining their personal choice. These instances have a negative influence on one's motivation and thus, an affect on one interpersonal style. Both

interpersonal style have been studied in different domains and most research found that an autonomy supportive interpersonal style should have more positive effects on an individual's motivation than a controlling interpersonal style.

Educational research has focused on teacher behaviors that should be effective in promoting student motivation (Flink, Boggiano, and Barrett, 1990). A wide array of teachers' behaviors has been suggested. For example, teachers can support autonomy by allowing children latitude in their learning activities and by providing connections between school activities and children's interests. Especially important for the teacher is to foster autonomy in the absence of external rewards, controls, and pressures. One way a teacher can induce an autonomy climate in a class is to give students the chance to express their opinion, creativity and ideas in an interactive context.

It is important to mention that in the pedagogical/educational literature, interpersonal style is described and termed differently. In fact, many researchers (Artaud, 1989; Florence, Brunelle & Carlier, 1998) in this realm define three main types of interpersonal style. The first one, described as normative or authoritarian is a style where a teacher imposes orders in an autocratic way and establishes consequences if the requirements are not satisfied. Thus this style would be similar to the controlling interpersonal style previously explained. A second type, described as interactive or affirmative is a style where a teacher expresses his or her expectations and opens up to the class in order to know the students needs and expectations and thus, would be similar to the autonomy supportive interpersonal style previously defined. A third type called libertarian or permissive is a style where a teacher ignores the students, lets the students figure out solutions, where there is an absence of support of the students, a general *laissez-faire* attitude and no proactive assistance from the teacher.

Also in the leadership/coaching literature, other terms are used to describe interpersonal style. An autocratic interpersonal style is where a coach, for example, pressures athletes toward particular outcomes and is thus similar to the controlling interpersonal style. A democratic interpersonal style is where a coach, for example, encourages athletes to make their own choices and is thus similar to the autonomy supportive style (Black & Weiss, 1992; Pelletier, Fortier, Vallerand, Tuson, Brière, & Blais, 1995). However, for the purpose of this study, only two styles were investigated and the terms used to describe them are the controlling interpersonal style and autonomy supportive interpersonal style.

Self-Determination Theory

A theory of paramount importance in the domain of motivation is Self-Determination Theory (SDT; Deci & Ryan, 1985, 1991). According to this theory, two main types of motivation exist, namely, self-determined motivation and non self-determined motivation. An individual who engages in an activity (for instance physical education) for pleasure, satisfaction, enjoyment or by choice is described as a self-determined individual. On the other hand, an individual who engages in this activity because of external sources or internal pressures or is simply not motivated to participate is an example of a non self-determined individual. Although these are the two main types of motivation, depending on the intensity of the self-determination an individual experiences, there has been three distinct types of motivation that have been differentiated, namely: intrinsic motivation, extrinsic motivation and amotivation.

Intrinsic motivation is experienced when one practices a particular activity just for the sake of participating in it and for the pleasure one would get from doing this activity (Brière, Vallerand, Blais & Pelletier, 1995). For example, a student that partakes in a

physical education class for the pleasure of acquiring new skills, knowledge or simply for fun would be intrinsically motivated. Building upon the work of Deci & Ryan (1985, 1991), Vallerand et al. (1989, 1992, 1993) suggested the existence of three types of intrinsic motivation: intrinsic motivation to know, intrinsic motivation toward accomplishments, and intrinsic motivation to experience stimulation (see Pelletier et al., 1995 for further elaboration on these three types).

The second category of motivation is extrinsic motivation. According to Deci and Ryan (1985), extrinsic motivation occurs when an individual participates in an activity as a means to an end. For instance, when a physical education teacher teaches physical education for the money, the motivation is extrinsic in nature. Furthermore, Deci and Ryan (1985, 1991) have proposed three types of extrinsic motivation: external regulation, introjected regulation, and identified regulation. External regulation refers to one's behavior being controlled by external sources, for example, an athlete performing an activity in order to obtain rewards (e.g., praise) from the coach. Introjected regulation refers to one's behavior being controlled by internal pressures such as guilt or anxiety, for instance, an athlete engaging in physical activity for aesthetic reasons. Identified regulation refers to one's behavior performed out of choice because the individual values it, for example, an athlete participating in an activity because he or she believes that their involvement contributes to a positive learning experience. Although it is not the intention of the present study to go in details about the different forms of extrinsic motivation, it is essential to mention that identified regulation is a self-determined type of motivation, whereas external and introjected regulation are both types of non self-determined motivation.

The third type of motivation is amotivation. Many researchers (Deci & Ryan, 1985; Seligman, 1975; Skinner, 1995) proposed that amotivation can be defined as an absence of any form of motivation (intrinsic or extrinsic). When amotivated, individuals do not perceive contingencies between their behaviors and the consequences of their actions and no longer recognize genuine justifications to pursue an activity. For example, a student wondering if he/she should continue to take physical education class because he/she finds no significant or valuable reasons to pursue the activity would represent the profile of an amotivated person towards this activity.

According to Deci and Ryan (1985, 1991), the different types of motivation can be situated on a self-determination continuum; from lower to higher levels of self-determination are: amotivation, external regulation, introjected regulation, identified regulation, and intrinsic motivation. Much research now supports the existence of this self-determination continuum (e.g., Blais, Sabourin, Boucher, & Vallerand, 1990; Pelletier et al., 1995; Vallerand & Bissonnette, 1992).

Many researchers (Blais et al., 1993; Pelletier et al., 2000) have recently become interested in examining individual's motivation profile (self-determined or not) instead of looking at the individual types of motivation separately. In fact, many researchers create an index where the different types of motivation are given weights based on their placement on the self-determination continuum (to be covered in the method section).

Cognitive Evaluation Theory

Within the framework of SDT is an important sub-theory, called Cognitive Evaluation Theory (CET). This theory postulates the existence of two fundamental psychological needs, perceptions of competence and perceptions of autonomy. An individual getting the information that he or she is not competent on a specific task (e.g.,

physical education) also discloses that he or she is unlikely to fulfill the need for competence on this activity. Thus, motivation toward this given task would be undermined. Along the same lines, feeling autonomous on a given task is likely to increase motivation, whereas feeling controlled by others should decrease an individual's motivation toward the activity. CET predicts that events which increase feelings of competence and/or feelings of autonomy also increase self-determined forms of motivation (intrinsic motivation, identified regulation), and at the same time decrease non self-determined types of motivation (introjected regulation, external regulation, amotivation). Conversely, events that decrease feelings of competence and/or feelings of autonomy correspondingly undermine self-determined types of motivation while increasing non self-determined forms of motivation (Deci & Ryan, 1985; 1991).

More specifically, according to CET, when people perceive their behaviors as being induced by external sources (e.g., a deadline, or reward), there is a change from an internal to an external perceived locus of causality. The locus of causality refers to what leads behaviors to be adopted and their regulation (Pelletier et al., 1999). People that perceive their behaviors as being freely chosen experience an internal locus of causality. On the other hand, people that perceive that their behaviors are attributed to external factors responsible for their activation will experience an external locus of causality. Thus, when people partake in an activity for reasons other than the sake of the activity itself, for instance because of a deadline or a reward, a shift from an internal to an external locus of causality will result. This change decreases one's feelings of autonomy in the activity and, in turn, undermines self-determined forms of motivation while increasing non self-determined forms of motivation.

According to CET, a controlling interpersonal style, as other controlling events (e.g., rewards, deadlines) fosters an external locus of causality and thereby undermines feelings of autonomy and consequently, self-determination. By way of comparison, an autonomy-supportive style leads one to feel as if one is the source of its own behavior. This will bring about an internal locus of causality and subsequently enhance feelings of autonomy and promote self-determined forms of motivation. The individual will feel as if participating in a specific activity results solely from personal satisfaction. On the other hand, a controlling interpersonal style is characterized by the use of constraints that leads one to behave in a certain way. The individual will feel as participating in a specific activity as a result of those constraints.

The Influence of Interpersonal Style on Motivation

Much research over the past decades has demonstrated that when significant others adopt an autonomy supportive interpersonal style, other's self-determined motivation is enhanced, whereas when significant others adopt a controlling interpersonal style, other's self-determined motivation is undermined (Deci, Nezlek & Sheinman, 1981; Flink, Boggiano & Barret, 1990; Goudas, Biddle, Fox, & Underwood, 1995; Grolnick & Ryan, 1989; Pelletier, Fortier, Vallerand, & Brière, 2000). For example, a study by Deci, Schwartz, Sheinman, and Ryan (1981) assessed teachers' level of behavior control versus autonomy support toward students. Results revealed that students who were with autonomy supportive teachers experienced an increase in their intrinsic motivation, whereas those who were with controlling teachers experienced a decrease in intrinsic motivation. Interestingly, once a change in intrinsic motivation was established, it was maintained throughout the school year.

Other research in education (e.g., Gottfried, Fleming, & Gottfried, 1994; Grolnick & Ryan, 1989; Grolnick, Ryan, & Deci, 1991; Ryan & Connell, 1989; Skinner & Belmont, 1993; Vallerand, Fortier & Guay, 1997) has supported the previous studies' findings. For instance, a study showed that when students participated in an evaluation under controlling conditions (i.e., teachers using controlling strategies), they displayed lower levels of self-determined motivation and performance than when they engaged in the activity under autonomy-supportive conditions (Flink, Boggiano, & Barrett, 1990).

Always in the education realm, past research examining perceptions of teachers' style (e.g., Ryan & Grolnick, 1986) have shown that perceptions of an autonomy supportive interpersonal style foster in student self-determined forms of motivation and undermines amotivation. On the other hand, a controlling style, for example, where teachers are strictly adhering to a program and giving no latitude to the student, has been shown to undermine intrinsic motivation and identification, and foster amotivation.

Similarly, Meece (1991) found that students in different science classes displayed different goal-engagement patterns and that these were largely due to the instructional approach of the teacher. When the teacher promoted meaningful learning, adapted instruction to the personal interest of the students, and was more supportive of students' autonomy, students were more intrinsically motivated in the lessons.

In the pedagogical/education literature, Rink (1998) suggests that teaching methods such as an interactive interpersonal style (i.e., similar to autonomy-supportive style) will increase the students' intrinsic motivation. It will also enable the students to learn from the activity and grow as an individual. One way that physical education teachers can increase students' intrinsic motivation is by helping them in seeing the purpose for doing an activity, and attach a personal meaning to what they are doing.

In his recommendations for the physical education teachers, Telama (1999) proposes the use of methods or teaching styles that provide students with collaborative interaction and individual responsibility in order to increase their motivation in class activities. For instance, he suggests to encourage students to organize activities by themselves, emphasize the possibility for all students to be involved and deliberately try to create a task-oriented motivational climate.

Researchers have found comparable findings in the physical activity and health context (Amorose & Horn, 2000; Black & Weiss, 1992; Williams, Grow, Freedman, Ryan, & Deci, 1996). These studies provided evidence that selected aspects of coaching behavior, such as the interpersonal style, do have an effect on the intrinsic motivation of the athletes. For example, a study conducted by Pelletier et al. (2000) showed that when athletes perceived their relationships with the coach as autonomy-supportive, greater levels of self-determined motivation occurred. Conversely, when athletes perceived their relationships with the coach as controlling, self-determined motivation was decreased.

Another study by Black & Weiss (1992) examining the relationship between perceived coaching behaviors and athletes' motivation revealed that young athletes' self-determined motivation was significantly related to the coaching feedback they received for performance successes and errors. In fact, feedback is an autonomy-supportive strategy used by the coaches having an influence on the athletes' motivation by increasing self-determined motivation.

Finally, closely related to the present study, Goudas et al. (1995) did a study on the motivational effects of different teaching styles in one sport activity. When the physical education teacher used an autonomy-supportive style, students' levels of intrinsic

motivation increased whereas, when the teacher used a controlling style, students' levels of intrinsic motivation decreased.

To summarize, several studies have found that self-determination is increased when significant other's interpersonal style is autonomy supportive. On the contrary, a controlling interpersonal style will have the effect of pressuring an individual to engage in actions because of external pressures and thus, undermine his or her self-determination.

Although several studies have been conducted on the effects of an autonomy supportive style versus a controlling style, few studies have examined the determinants of interpersonal style. That is, not much research has investigated the factors that influence an individual to adopt a specific style, whether it is autonomy supportive or a controlling interpersonal style. Therefore, the main purpose of the present study is to investigate social and psychological determinants of physical education teachers' interpersonal style.

Determinants of Interpersonal Style

Some studies have started to investigate certain determinants of interpersonal style. For instance, Blanchard, Perreault, and Pelletier (1993) looked at determinants of teachers' interpersonal style in a work context, specifically the influence of administrative constraints, the teachers' perceptions of their students' motivation and the teachers' own motivation toward their career on the interpersonal style. Although, some research has looked at factors that influence one to adopt a specific interpersonal style, very few have examined multiple determinants in a single study. Furthermore, most of these studies have been conducted mostly in education or work settings, however, the present study will attempt to do so in a physical education context.

Although not much research has been devoted to examining the factors that influence the adoption of an autonomy supportive style versus a controlling style, it has

been previously suggested that the working climate, the individual's own motivation toward one's career as well as the individual's perceptions of their subordinates'/students' motivation has an influence on their interpersonal style (Blanchard et al., 1993; Deci, Spiegel, Ryan, Koestner, & Kaufmann, 1982; Flink et al., 1990). Therefore, this study will examine the influence of these determinants on interpersonal style.

The Influence of the Working Climate on Interpersonal Style

Deci and Ryan (1982a, 1982b) have suggested that environmental variables will affect whether teachers create a classroom climate that is primarily autonomy supportive or primarily controlling. When teachers are themselves pressured to achieve particular outcomes by administrative constraints or by a controlling supervisor, they may in turn become more controlling with their students. This happens because being controlled is characterized by greater rigidity and the feeling of having to do a given task under someone else's conditions. There is an intention to perform the task, but lacking is a true sense of choice undermining self-determined motivation (Deci & Ryan, 1987).

A certain number of studies examining the influence of the working climate on one's interpersonal style can be found in the literature. For example, Blais et al. (1993) found that interacting on a regular basis with a supervisor who leads one to feel incompetent (controlling supervisor) has been found to enhance amotivation toward work. In fact, if the relationship with the supervisor (i.e., working climate) is pressuring, one is more likely to be motivated in a non self-determined way, thus having an influence on the interpersonal style the supervisor will adopt.

Garbarino (1975) found that externally constrained/rewarded teachers (i.e., controlling working climate) were more critical and demanding of their students (i.e., adopted a more controlling style) than unconstrained teachers (i.e., volunteer). In

addition, results from a study by Blanchard et al. (1993) demonstrated that the more administrative constraints are perceived as controlling, the more teachers are perceived as being non self-determined. Thus, the lower the teachers' level of self-determination, the more likely they will have controlling interpersonal styles. On the contrary, the more administrative constraints are perceived as non-controlling, the more teachers are perceived as being self-determined. Thus, the higher the teachers' level of self-determination, the more likely that they will have autonomy supportive interpersonal styles.

According to Flink, Boggiano & Barrett (1990) pressures from superiors, expectations imposed with regards to the students' academic performance standards, and administrative politics often have the effect of restraining the autonomy perceived by the teachers. This being said, a number of studies (e.g., Flink et al., 1990) have shown that pressures being imposed on teachers would incite them to adopt more controlling interpersonal strategies. These researchers found that teachers who were externally pressured to produce good student performance were more controlling in their instructional style and less effective in their teaching than teachers who were merely asked to help their students.

It is also possible that contextual factors such as impressing upon supervisors (i.e., teachers) that they were responsible for a student performing up to high standards (Deci, Spiegel, Ryan, Koestner, & Kauffman, 1982), whether or not supervisors are expected to use rewards to motivate subordinates, or whether or not supervisors are themselves rewarded (Harackiewicz & Larson, 1986) may determine whether supervisors create a climate that is primarily controlling or primarily oriented toward supporting autonomy.

A study conducted by Ryan, Mims, and Koestner (1982) found that when teachers are told they are responsible for their students' performing up to standards, the teachers themselves will experience this as pressure and respond by being more controlling with their students. These findings could have considerable implications for educational systems, for it would suggest that the more school systems pressure teachers to make the students perform up to standards, the more teachers will be controlling rather than autonomy supportive with their students, and hence the more students' intrinsic motivation and self-esteem will be undermined.

In sum, a number of studies have shown that when the working climate is controlling, teachers feel pressured and tend to become more controlling with their students. Therefore, it can be predicted that when the working climate in a school is perceived as being autonomy supportive, it is more likely that the physical education teachers' interpersonal style will be autonomy supportive. On the other hand, when the working climate in a school is controlling, that is, when the supervisors and administrative constraints are controlling, it will be more likely that the physical education teachers' interpersonal style will be controlling.

The Influence of One's Own Motivation on One's Interpersonal Style

The self-determined motivation of teachers toward their career has been found to influence their interpersonal style (Blais et al., 1993; Richer & Vallerand, 1996b). Specifically, teachers that were motivated in a self-determined way toward their career used more autonomy supportive strategies than teachers that were motivated in a non self-determined way toward their career. More specific to the education domain and to the present investigation, a study conducted by Blanchard et al. (1993) demonstrated that teachers who are self-determined toward their teaching have the tendency to use more

autonomy supportive strategies in comparison with teachers that are non self-determined. In fact, if teachers engage in their teaching out of choice and personal satisfaction, they will experience positive feelings and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. However, if teachers go to work everyday because they are forced to, they will experience a more negative feeling and will be more likely to adopt a more negative approach such as a controlling interpersonal style.

Along the same lines of what has just been presented, one's self-determined motivation toward physical activity was thought to have an influence on one's interpersonal style in a physical activity context. Although no studies have been found in the literature examining this particular link, results from the previous studies (e.g., Blanchard, Perreault, & Pelletier, 1993; Goudas et al., 1995) provided sufficient information leading to the belief that one's self-determined motivation toward physical activity will influence one's interpersonal style. Indeed, because many studies have found that one's own motivation toward their career influences one's interpersonal style, it is believed that physical education teachers' own motivation toward physical activity (closely related to their career) would also affect their interpersonal style. Thus, it is possible to deduce that when a teacher is motivated in a self-determined way toward physical activity, it is more likely that this teacher will have an autonomy supportive interpersonal style. On the other hand, in a situation where one is non self-determined it is more likely that one will have a controlling interpersonal style. Moreover, if teachers usually engage in physical activity because they enjoy it, they will experience positive feelings about promoting physical activity to their students and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. Conversely, if teachers do physical activity because they of external pressures, they will

experience more negative feelings about physical activity and will be more likely to adopt a more negative approach with their students such as a controlling interpersonal style.

Therefore, it is predicted that physical education teachers that are self-determined toward physical activity will demonstrate a more autonomy supportive interpersonal style. In turn, physical education teachers that are motivated in a non self-determined way toward physical activity will demonstrate a more controlling interpersonal style.

The Influence of the Perceptions of Subordinates'/Students' Motivation on Interpersonal Style

Another determinant of a supervisors'/teachers' interpersonal style seems to be the individuals' perception of their subordinates'/students' motivation. According to Blanchard et al. (1993), an individual's perception of a specific type of motivation of his or her students (self-determined or non self-determined) will have a tendency to influence and change his or her interpersonal style. Also, the results of that study revealed that teachers have a tendency to adopt a controlling interpersonal style when they perceived that they were interacting with non self-determined students. Conversely, they developed an autonomy supportive interpersonal style when they perceived that they were interacting with self-determined students.

A recent laboratory study by Pelletier and Vallerand (1996) has shown that to the extent that supervisors perceive subordinates to be self-determined, they were more likely to act in an autonomy-supportive way. On the other hand, perceiving subordinates as being non self-determined led supervisors to act in a more controlling way toward them.

Another study by Skinner and Belmont (1996), this time in the education domain, revealed that teachers' perceptions of students' emotional and behavioral engagement

predicted teachers' interactions with students across the school year. Strong support was found for the reciprocal effect between positive student engagement and positive teacher behaviors. Specifically, teachers responded to children who had high self-determination with more involvement, more autonomy support, and, more contingency and consistency, whereas they responded to children who were more passive (low self-determination) with correspondingly more neglect, coercion, and inconsistency.

Finally, closely related to the present study, Fortier et al. (1996) investigated the relations between physical education teachers' interpersonal style and students' self-determined motivation toward physical education. More specifically, they wanted to determine if physical education teachers' interpersonal style would be influenced by their students' self-determined motivation. The findings revealed an influence of students' self-determined motivation on physical education teachers' interpersonal style. Teachers whose students were self-determined showed high levels of autonomy support.

To summarize, teachers who perceive a student as being self-determined will have a tendency to adopt a more autonomy supportive interpersonal style. On the other hand, teachers who perceive a student as being non self-determined will have the tendency to adopt a more controlling interpersonal style. In fact, if teachers feel that their students are motivated with what they teach, they will be affected positively by this enthusiasm and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. Conversely, if teachers feel that their students are not particularly involved in class, they will be affected negatively by this pessimistic attitude and will be more likely to adopt a more negative approach with their students such as a controlling interpersonal style.

As previously mentioned, although some studies (e.g., Blanchard, Perreault, & Pelletier, 1993; Goudas et al., 1995) have started to investigate certain determinants of interpersonal style, very few have examined multiple determinants in a single study. Moreover, these studies have been conducted mostly in education or work settings, however, the present study will attempt to do so in a physical education context.

It can be observed that several studies investigating the teaching styles have been conducted in a pedagogical domain, which constitutes a whole new literature by itself. However, it is very important to understand that this particular study is being conducted using a social psychology approach and motivational concepts (i.e., SDT and CET) as a theoretical framework. Most studies that have been included in the review of literature have been done in different contexts of social psychology such as sports/coaching, work, and education. One of the context that was researched extensively is education, however, physical education is one aspect of the general education realm that has not been studied with respect to the determinants of interpersonal style.

Although it has been clarified that most research have been conducted in an education setting, perhaps it would be helpful to understand why this particular study is investigating in a physical education setting and how those two domain are slightly different. In fact, physical education could be considered as a branch in education where the teachers will focus on physical activity as a topic. The reason why a physical education setting is unique in comparison with other education setting is that the physical education teachers will have a certain influence on students' involvement in physical activity. In effect, it is believed that physical education teachers are having a considerable influence on students active lifestyle and this is why this study is attempting to investigate the physical education setting in particular, rather than the general education setting.

The Present Study

Purpose

The present study will focus on the influence of different social and psychological determinants on physical education teachers' interpersonal style. Based on the literature (Blanchard et al., 1993; Flink et al., 1990), four different determinants will be studied: (a) the physical education teachers' perceptions of their working climate; (b) the physical education teachers' motivation toward their career; (c) the physical education teachers' motivation toward physical activity; and (d) the physical education teachers' perceptions of their students' motivation towards physical activity.

Hypotheses

Based on the literature (Blais et al., 1993; Blanchard et al., 1993; Deci, Nezlek, & Sheinman, 1981; Flink et al., 1990), four hypotheses were formulated. With regards to the first determinant, it was hypothesized that (a) when physical education teachers perceive their working climate as being autonomy supportive, they be more likely to adopt an autonomy supportive style with their physical education students whereas, when they perceive their working climate as being controlling, they will be more likely to adopt a controlling style.

For the second determinant, it was predicted that (b) physical education teachers motivated in a self-determined way toward their career will exhibit a more autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward their career will show a more controlling interpersonal style in this context.

For the third determinant, it was hypothesized that (c) physical education teachers motivated in a self-determined way toward physical activity will demonstrate a more

autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward physical activity will demonstrate a more controlling interpersonal style in this context.

And for the final determinant, it was postulated that (d) when physical education teachers perceive their students as being motivated in a self-determined way towards physical activity, they will be more likely to adopt an autonomy supportive interpersonal style whereas, when they perceive their students as being motivated in a non self-determined way in the physical education context, they will be more likely to adopt a controlling interpersonal style.

Significance of the Study

The present study is of importance because of its contribution to the domain of education and more precisely, physical education. One of the basic functions of a physical education teacher is to increase students' motivation towards physical activity so that they may adopt and maintain an active lifestyle. However, if physical education teachers adopt a controlling style, they risk undermining their students' motivation and, consequently, their participation in physical activity. Although the present study does not directly examine the link between the physical education teacher's interpersonal style and students' self-determined motivation, it does contribute to the body of knowledge on teaching styles. Specifically, it looks at the antecedents of interpersonal style and how these factors influence a physical education teacher to adopt an autonomy-supportive or controlling interpersonal style.

One of the reasons why the present study is important is that it will fill a gap. By looking at the determinants of interpersonal style, this study is examining an aspect of the literature that has not been researched extensively in the past. More specifically, hardly

any studies have examined multiple determinants at the same time. In this study, multiple determinants are examined simultaneously. Also, not many studies have investigated the influence of the determinants on interpersonal style in the domain of physical education. Most research have been conducted in the education domain whereas this study examines these factors in a physical activity context.

From an applied perspective, this study could also be helpful in promoting specific interpersonal styles when educating future teachers by incorporating this literature in their programs. Finally, having a better knowledge about the influence of determinants of interpersonal style is very important because it will enable teachers to better understand the relationship between the determinants of interpersonal style and the actual style that they adopt. For instance, if physical education teachers know that their perception of student self-determined motivation has a definite influence on their style, perhaps they may be more inclined to adopt a style not based on their perceptions. Also, it might be a great idea for the school administration to create a more autonomy supportive climate helping teachers to be more autonomy supportive with their students and thus, promote students' self-determined motivation.

CHAPTER III

Methodology

Procedures

The process of data collection was twofold. A first data collection with physical education teachers from the Ottawa-Carleton Public School Board (OCPSB) was done through Dr. Michelle Fortier's Grant Project (SSHRC). The Grant Project is a major longitudinal research on adolescents physical activity and involved following and questioning 9th grade students, their parents and their physical education teachers over a two year period (four data collection waves: wave 1; Fall 1998, wave 2; Spring 1999, wave 3; Fall 1999, wave 4; Spring 2000). Physical education teachers' questionnaires from Wave 2 were used in this thesis project. Secondly, data collection with physical education teachers from the Ottawa-Carleton Catholic School Board (OCCSB) was done as a second part in order to obtain more teachers as well as to add my own contributions to this project.

Data Collection 1 (Grant Project)

First, consent for the grant project was obtained from the administrators of the school board (Ottawa-Carleton Public School Board) and school principals. Nine schools accepted to participate in this study. Meetings with the physical education teachers from the different schools were then held to inform them of the purpose of the study as well as the different steps involved in the data collection process. The researchers mentioned that the physical education teachers who wished to participate in the study were volunteers and that they could withdraw from the study at any point. Twenty-five physical education teachers out of 45 decided to participate. During data collection (early to mid-March 1999), standardized instructions were given to the physical education teachers in the

school gyms or physical education offices. The questionnaires were then completed by the teachers at their own leisure. The questionnaire took approximately 10 to 15 minutes to complete. Teachers then mailed back the questionnaire in a pre-paid envelope that was addressed to Dr. Michelle Fortier at the department of Human Kinetics.

Data Collection 2 (Additional Participants)

In order to obtain additional participants, 40 more physical education teachers from the Ottawa-Carleton Catholic School Board were contacted in May and September of 1999. Twenty-three physical education teachers from this board decided to participate in the study. The questionnaires were sent in September, 1999, because of a lack of response from the participants in the May 1999 session. The participants were asked to complete the same questionnaire according to the same guidelines as data collection 1.

Participants

A total of 48 grade nine physical education teachers from a number of different high schools in the Ottawa region participated in this study. As mentioned previously, 25 teachers were from the grant project (Ottawa-Carleton Public School Board) and 23 teachers were from the Ottawa-Carleton Catholic School Board. The participants were mixed in gender (48% female, 52% male) and had an average age of 36.36 years old. Furthermore, all participants were English-speaking as they all teach in the English language.

Questionnaire

The questionnaire was composed of five scales measuring the teachers' interpersonal style and the four determinants of the interpersonal style. The majority of the items were taken from previously validated scales and were assessed using a 7-point Likert scale ranging from (1) strongly disagree to (7) strongly agree. In the first section,

teachers' self-perception of their interpersonal style was assessed. In the second section, participants responded to questions related to their motivation towards their career (determinant 1). The third section measured teachers' perceptions of their work climate (determinant 2). The fourth section measured teachers' motivation towards physical activity (determinant 3). The fifth section measured the teachers' perceptions of their 9th grade students' motivation towards physical activity (determinant 4). The final section of the questionnaire questioned the participants about their age, gender and name of their respective schools. See the Appendix for further details.

Measuring Physical Education Teachers' Interpersonal Style

Two subscales of the Perceptions of Interpersonal Style Questionnaire (PISQ - Pelletier, 1992) were used in the present study: the Controlling Interpersonal Style and the Autonomy Supportive Interpersonal Style. There were four items for each subscales. The general question asked in this section was "This year with my 9th grade physical education students...". An example of one item measuring the teachers' controlling interpersonal style (ISC) is "I have to continually watch the students". An example of one item measuring the teachers' autonomy supportive style (ISAS) is "I occasionally let the students choose the activities they want to do in class". The items for both of these subscales were combined in order to obtain one score for the interpersonal style (IS). In order to do this, the ISC items were recoded. When these eight items were joined together to become the dependent variable, interpersonal style, and the standardized alpha was .58.

Measuring the determinants of physical education teachers' interpersonal style

Perceptions of the Work Climate

This scale was slightly adapted from Blanchard et al.' (1993) Scale. There were two different subscales: Controlling Working Climate and, Autonomy Supportive

Working Climate. Each subscale was composed of five items respectively. The general question asked in this section was “At my school, ...”. An example of one item measuring a controlling working climate (WCC) was “I am watched closely by my superiors”. An example of one item measuring autonomy supportive working climate (WCAS) was “my superiors support my teaching initiatives”. The items representing both autonomy supportive and controlling variables were combined and a score determining the general working climate (WC) was given. In order to do this, the WCC items were recoded. When all these items were joined together to become the independent variable working climate, the standardized alpha was .79.

Teachers’ Motivation Towards Their Career

This scale was a shortened version of Blais et al.’s (1993) Work Motivation Inventory. There were four different subscales: Intrinsic Motivation toward work, Identified regulation toward work, External Regulation toward work and, Amotivation toward work. The Intrinsic Motivation toward work subscale was composed of two items (e.g., WIMT1W2) and had an alpha of .86. The Identified regulation toward work subscale was composed of two items (e.g., WIDT1W2) and had an alpha of .93. The External Regulation toward work subscale was composed of three items (e.g., WERT1W2) and had an alpha of .60. The Amotivation toward work subscale was composed of one item (e.g., WAMOTW2). The general question asked in this section was “In general, WHY DO you do teach physical education?”. An example of one item measuring teachers’ amotivation was “I don’t know, I have the impression I am wasting my time”. An example of one item measuring teachers’ external regulation was “For the benefits associated with this type of job”. An example of one item measuring teachers’ identified regulation was “Because I chose this career because I value it”. An example of

one item measuring teachers' intrinsic motivation was "For the pleasure and satisfaction it gives me". The items reflecting the different types of motivation were combined to form one indicator (index) representing teachers' overall motivation toward their career (see Blais, Brière, Lachance, Riddle, & Vallerand, 1993; Pelletier et al., 1999). In order to obtain the INDEXMC (Index Motivation towards Career), a specific weight was given to each subscale according to their placement on the self-determination continuum. Intrinsic motivation and identified motivation items, because they are considered self-determined forms of motivation, were assigned the weights of +2, and +1, respectively. Moreover, amotivation and external regulation items, because they are considered less self-determined forms of motivation, were assigned the weights of -2, and -1, respectively. The equation $(2*IM+ 1*ID)-(1*ER+2*AMOT)$ was used. The total score, ranging between -18 to 18, indicates the extent to which the physical education teacher is non self-determined towards their career (closer to -18) or self-determined towards their career (closer to 18).

Teachers' Motivation Towards Physical Activity

This scale was a shortened version of the Sport Motivation Scale (SMS, Pelletier et al., 1995). It was composed of three different subscales: Teachers' Intrinsic Motivation towards physical activity, Teachers' Self-Determined Motivation towards physical activity, and Teachers' Non Self-Determined Motivation towards physical activity. The Teachers' Intrinsic Motivation toward physical activity subscale was composed of two items (e.g., IMT1W2) and had an alpha of .66. The Teachers' Self-Determined Motivation toward physical activity subscale was composed of two items (e.g., SDT1W2) and had an alpha of .73. The Teachers' Non Self-Determined Motivation toward physical activity subscale was composed of three items (e.g., NSDT1W2) and had an alpha of .54.

The general question asked for this scale was “In general, when you do physical activity, WHY DO you do it?”. An example of one item measuring teachers’ intrinsic motivation towards physical activity was “for the pleasure and satisfaction it gives me”. An example of one item measuring teachers’ self-determined motivation towards physical activity was “because I choose to do it for my own good”. An example of one item measuring teachers’ non self-determined motivation towards physical activity was “because I would feel bad if I wasn’t doing it”. Based on previous studies (e.g., Grolnick & Ryan, 1987, 1989; Pelletier et al., 1999), the items reflecting the different types of motivation were combined to form one indicator representing teachers’ overall motivation toward physical activity. In order to do this, the three NSDTW2 items were recoded and then all of the items from the three subscales (i.e., IMTW2, SDTW2, and NSDTW2) were added together and divided by the total number of items (7) to form the Index of Motivation towards Physical Activity (INDEXMPA). The total score, ranging between 1 to 7, indicates the extent to which the individual is non self-determined towards physical activity (closer to 1) or self-determined towards physical activity (closer to 7).

Perceptions of Students’ Motivation Towards Physical Activity

This scale was adapted from the Sport Motivation Scale (SMS, Pelletier et al., 1995). There were three different subscales: Student’s Intrinsic Motivation towards physical activity, Student’s Self-Determined Motivation towards physical activity and, Student’s Non Self-Determined Motivation towards physical activity. The Student’s Intrinsic Motivation toward physical activity subscale was composed of two items (e.g., SIM1W2) and had an alpha of .82. The Student’s Self-Determined Motivation toward physical activity subscale was composed of two items (e.g., SSD1W2) and had an alpha of .65. The Student’s Non Self-Determined Motivation toward physical activity subscale

was composed of three items (e.g., SNSD1W2) and had an alpha of .70. The general question asked in this section was “I believe that the majority of my 9th grade students this year do the activities in class ...”. An example of one item measuring teacher’s perceptions of students being intrinsically motivated was “because they enjoy physical activity”. An example of one item measuring teacher’s perceptions of students being motivated in a self-determined way was “because they choose to do it for their own good”. An example of one item measuring teacher’s perceptions of students being motivated in a non self-determined way was “because they are afraid of being disciplined”. The items reflecting the different types of motivation were combined (see Pelletier et al., 1999) to form one indicator representing teachers’ perceptions of students’ overall motivation toward physical activity. In order to do this, the three SNSDW2 items were recoded and then all of the items from the three subscales (i.e., SIMW2, SSDW2, SNSDW2) were added together and divided by the total number of items (7) to form the Index of Perception of Student’s Motivation (INDEXPSM). The total score, ranging between 1 to 7, indicates the extent to which the physical education teachers perceived their students as being motivated in a non self-determined way towards physical activity (closer to 1) or motivated in a self-determined way towards physical activity (closer to 7).

CHAPTER IV

Results

The Statistical Package Software System (SPSS) software package was used in order to analyze the data. After cleaning the data bank in which the information from the questionnaires were disposed, preliminary analyses such as frequencies were performed in order to prepare the data for the main analyses. Also, reliabilities were performed in order to obtain alpha scores before creating the variables and indexes.

Correlations

Complex correlations was the first statistical analysis performed in order to verify the degree of relationship between the variables, specifically between the four determinants (Independent variables) and the interpersonal style (Dependent variable). When all these variables were correlated together, only two significant relationships were revealed (see table 1). First, a positive and significant coefficient was found between the Index for Teacher's Perception of Students' Motivation (INDEXPSM) and the interpersonal style (IS) $r = .37, p < .011$. This indicates that when physical education teachers perceived their students as being motivated in a self-determined way, they were more likely to adopt an autonomy supportive interpersonal style. Also, a positive coefficient was found between the Index for Teacher's Perception of Students' Motivation (INDEXPSM) and the Index for the teacher's own Motivation towards their Career (INDEXMC), $r = .38, p < .009$. This reveals that when the physical education teachers perceived their students as being motivated in a self-determined way, they were more likely to be motivated in a self-determined way towards their career. No further significant correlations were found between the variables.

Multiple Regression

Multiple regression was the second statistical analysis performed in order to establish the direction and strength of the relationships between the independent variables (the four determinants) and the dependent variable (the interpersonal style). It can be observed that out of the four independent variables (i.e., determinants), only the physical education teacher's perception of their student's motivation (INDEXPSM) was significantly related to the teacher's interpersonal style ($\beta = .37$, $p = .024$) indicating that the more physical education teachers perceived their students as being motivated in a self-determined way, the more they adopted an autonomy supportive style. Results yielded an adjusted R squared of .15 (Multiple $r = .39$) meaning that 15% of the variability between all of the independent variables (i.e., determinants) are due to the actual dependent variable (see Figure 1). The other independent variables did not show significant relationships with the dependent variable.

CHAPTER V

Discussion

This chapter presents a discussion where the purpose of the study along with the contributions of this research are restated. Next, each hypothesis is presented with respect to the predictions, the results found, and how these findings relate to past literature and theory. Furthermore, the limitations of the study will be discussed in light of the results obtained. Another part of the discussion will be suggesting changes and/or modifications to certain aspects of this research for future research. Following, there will be a section of the practical applications of the findings from this study and, finally, a brief conclusion.

The general purpose of this thesis was to investigate the social and psychological determinants of physical education teachers' interpersonal style. More specifically, we were interested in the factors that influence physical education teachers to adopt an autonomy supportive style versus a controlling interpersonal style. In this particular study, four determinants of the interpersonal style were investigated, namely: (a) the physical education teachers' perceptions of their working climate; (b) the physical education teachers' motivation towards their career; (c) the physical education teachers' motivation towards physical activity; and (d) the physical education teachers' perceptions of their students' motivation towards physical activity. The present study was of importance because it filled a gap in the literature by looking at the determinants of interpersonal style, an aspect that had not been researched extensively in the past. Also, of the studies that researched determinants of the interpersonal style, very few have examined multiple determinants at the same time. In this study, four determinants were examined simultaneously. Moreover, most research has been conducted in the education

domain, whereas this study examined these factors in a physical activity context. The findings of this research are explained in more details in the following sections.

Overview of Results

With regards to the first determinant (1), it was hypothesized that when physical education teachers perceived their working climate as being autonomy supportive, they would be more likely to adopt an autonomy supportive style with their physical education students whereas, when they perceived their working climate as being controlling, they would be more likely to adopt a controlling style. This hypothesis was based on past research (e.g., Blanchard, Perreault, & Pelletier, 1993; Deci & Ryan, 1987; Flink, Boggiano, & Barrett, 1990) showing that pressures being imposed on teachers (i.e., controlling working climate) incites them to adopt a more controlling interpersonal style, whereas, a less pressuring climate (i.e., autonomy supportive working climate) incites teachers to adopt a more autonomy supportive style. The reasoning behind the hypothesis was that teachers feeling competent, autonomous, and supported in their work context will be more likely to have a positive experience and reflect that by using an autonomy-supportive style themselves. In turn, when teachers feel incompetent, controlled and pressured in their work context, they will be more like to have a negative experience and transfer that on their interpersonal style by being more controlling. Findings of the present study did not support the hypothesis as the working climate was not found to significantly influence interpersonal style. This hypothesis was possibly not supported because the teachers' perceptions of their working climate could have an influence on their motivation towards teaching physical education rather than on their interpersonal style. Perhaps, the working climate has some indirect effects on the teachers' interpersonal style but not enough to be a determinant of the style. Also, the working climate is a concept that could

be interpreted differently from one person to another. Perhaps, the fact that the working climate can be such a broad concept could have influenced the results. For example, the administrative constraints could have little or no effects on the teachers' interpersonal style as oppose to the relationship with the superiors.

For the second determinant (2), it was predicted that physical education teachers motivated in a self-determined way toward their career would exhibit a more autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward their career would have a more controlling interpersonal style in this same context. The reasoning was that when the teachers engage in their teaching out of choice and personal satisfaction, they will experience a positive feeling and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. However, if the teachers go to work everyday because they are forced to, they will experience a more negative feeling and will be more likely to adopt a more negative approach such as a controlling interpersonal style. Findings from the present study did not support the hypothesis as the teachers' own motivation toward their career did not significantly influence their interpersonal style. These results contradict past research (e.g., Blais, Brière, Lachance, Riddle, & Vallerand, 1993; Blanchard, Perreault, Pelletier, 1993; Richer & Vallerand, 1996b) which indicated that teachers who are self-determined toward their teaching career have the tendency to use more autonomy supportive strategies compared with teachers that are non self-determined who seem to have the tendency to use more controlling strategies. Findings of the present study did not support the hypothesis as the teachers' own motivation toward their career was not found to significantly influence interpersonal style. The age of the participants as well as the years of experience could be factors explaining why the

hypothesis was not significantly supported. The fact that some of the teachers were close to the end of their career and some other were just at the beginning would explain a different perspective on how they feel about their career. Different factors would influence the motivation of teaching physical education to students with younger and older teachers. Also, younger teachers would have a different training experience in comparison with the older teachers that could influence their teaching style whether or not they are motivated in a self-determined way toward their career.

With regards to the third determinant (3), it was hypothesized that physical education teachers motivated in a self-determined way toward physical activity would demonstrate a more autonomy supportive interpersonal style in the physical education context whereas, physical education teachers motivated in a non self-determined way toward physical activity would exhibit a more controlling interpersonal style in this context. Findings from the present study did not support the hypothesis as the teachers' own motivation toward physical activity did not significantly influence their interpersonal style.

Although no studies were found in the literature examining this particular link, results from the previous studies (e.g., Amorose & Horn, 2000; Black & Weiss, 1992; Pelletier & Vallerand, 1985; Vallerand & Pelletier, 1985) provided sufficient information leading to the belief that one's self-determined motivation toward physical activity would influence one's interpersonal style. The reasoning is that when the teachers engage in physical activity because they enjoy it, they will experience a positive feeling about promoting physical activity to their students and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. Conversely, if the teachers do physical activity because they of external pressures, they will experience a more

negative feeling about physical activity and will be more likely to adopt a more negative approach with their students such as a controlling interpersonal style. Thus, it was possible to deduce that when a teacher is intrinsically motivated toward physical activity, it is more likely that this teacher will have an autonomy supportive interpersonal style. Findings of the present study did not support the hypothesis as the teachers' own motivation toward physical activity was not found to significantly influence interpersonal style. The fact that no other study looked at this variable as a possible determinant of interpersonal style could potentially explain why it was not significantly supported. Perhaps, the teachers' motivation toward physical activity has little or no influence on the teaching style they will adopt because when they teach it is totally different than when they do physical activity themselves. Even though the teachers could be motivated in a self-determined way toward doing physical activity, it does not necessarily mean that they will be motivated to adopt a specific style with their students.

And for the final determinant (4), it was postulated that when physical education teachers perceived their students as being motivated in a self-determined way towards physical activity, they would be more likely to adopt an autonomy supportive interpersonal style whereas, when they perceived their students as being motivated in a non self-determined way in the physical education context, they would be more likely to adopt a controlling interpersonal style. This hypothesis was based on past research (Skinner & Belmont, 1996; Pelletier & Vallerand, 1996; Vallerand, Deci, & Ryan, 1987) which had found that when superiors (e.g., teachers) perceive subordinates (e.g., students) to be self-determined, they were more likely to act in an autonomy supportive style. Conversely, perceiving subordinates as being non self-determined led supervisors to act in a more controlling way toward them. The reasoning was that when the teachers feel that

their students are motivated in what they teach, they will be affected positively by this enthusiasm and will be more likely to adopt a positive approach such as an autonomy-supportive interpersonal style. Conversely, if the teachers feel that their students are not particularly involved in class, they will be affected negatively by this pessimistic attitude and will be more likely to adopt a more negative approach with their students such as a controlling interpersonal style. Results from the present study supported the hypothesis that was proposed as a positive and significant relation was found. This means that the teachers' perceptions of their students' motivation influenced their interpersonal style.

Limitations

The fact that one hypothesis out of four proposed in the present research was significantly supported raises some questions about the limitations of the study. The first factor having a direct effect on the results is the number of participants. In fact, this study is examining multiple determinants simultaneously and only 48 physical education teachers account for the findings. A greater number of participants would more than likely have an influence on the results by increasing the power of the statistical test and perhaps yielding more significant results.

The fact that only two different interpersonal styles (i.e., autonomy-supportive and controlling) were studied when a third interpersonal style (i.e., laissez-faire) is proposed in the literature could also be a limitation. Although most previous research in the domain of interpersonal styles have been conducted using only the autonomy-supportive and controlling style, the laissez-faire style could be more important than what was predicted. Since the interpersonal styles could be placed on a continuum, where autonomy-supportive and controlling would be on opposite ends, a laissez-faire style would be more in the middle of the continuum. Some of the teachers that participated in the research

could have been adopting that laissez-faire style and since that interpersonal style was not being measured, the results could have been influenced by this factor.

Social desirability is an important psychological concept that also needs to be accounted for in this research. In fact, the physical education teachers were all given the freedom of completing the questionnaire at their own will and to mail it back when they were ready. It might be implied that those teachers that did not fill out and return the questionnaire did not want to reveal information about their teaching behaviors. And one reason why they did not want to divulge their thoughts about their teaching styles might be the fear of disclosing, for example, a controlling interpersonal style or unsatisfactory work conditions. Furthermore, those teachers who decided to participate might have done so because they were more willing to be socially desirable and reveal positive behaviors related to their work.

One of the most important limitations that exist with any type of research is the threat to internal validity. This also applies to this correlational research because the purpose is to look for the explanation of relationships between two or more variables. In fact, the problem with correlational studies is that the researcher has to be aware that the relationships might have alternative explanations. Extraneous variables (e.g., years of experience, age, time of the year) are factors that need to be accounted for in order to prevent false interpretations of the relationships. And the results of this study indicate that the relationships between the determinants and the teaching style do not account for much of the variance. This is why it is important to be aware that these extraneous variables might affect the relationships and thus, bias the findings and the conclusions.

Another limitation to this study is the reliability level of some of the scales measuring the physical education teachers' interpersonal style as well as the determinants.

In fact, the alpha level for the variable measuring the physical education teachers' interpersonal style was .58, which is considered too low in comparison with the acceptable level of .70. Since the physical education teachers' interpersonal style is the main variable (i.e., dependent variable) being measured, the fact that its alpha level proves to be unreliable could be influencing the results of the whole study. Moreover, the alpha level for the external regulation toward work subscale measuring the teachers' motivation towards their career was .60, which is again lower than the acceptable level of .70.

The questionnaire was composed of different previously validated scales, but every scale was slightly shortened/modified. This could be a factor explaining the alpha levels for these two instances being lower than the acceptable levels and therefore, affect the reliability and validity of the results obtained in this study.

Finally, perhaps the model proposed in this study is more complex than what was hypothesized. In fact, there is a possibility that more determinants could explain and influence physical education teachers' interpersonal style. In such a case, it would be primordial to study other determinants that could potentially affect the relationships. Also, there might be more complicated interactions between all the determinants explaining the findings. For example, it could be possible that the physical education teachers' working climate has an influence on teachers' motivation towards their career which, subsequently, influences teachers' interpersonal style.

Future Research

In light of the previous findings, suggestions are proposed for future research in order to clarify and increase the knowledge about the determinants of interpersonal style. First, it is recommended to increase the sample size to at least 100 participants in order to obtain a better representation of the population and increase the power of the statistical

test. Also, an attempt to get the teachers to fill out the questionnaire on the spot. That would not only increase the number of participants but insure that more teachers in the schools participate and not only those who want to be socially desirable. Perhaps the findings would reveal a better distribution of teachers using a controlling or an autonomy supportive interpersonal style.

A multi-method approach where there would be a combination of a quantitative and qualitative phase would perhaps be a great recommendation. In fact, this approach would enable a follow-up to the questionnaire part with observations and/or interview component in order to increase the amount of information on the topic. For instance, an observing phase where the teachers' interpersonal style is examined might enable the researcher to find out about the use of autonomy supportive or controlling style of the teachers with their students. Also, interviews with physical education teachers could help obtaining additional information about how the teachers feel about their work climate, their perceptions of students' motivation and/or their own motivation towards physical activity. The idea behind the use of a multi-method approach is to obtain more information on a specific topic using different analysis techniques. Once the researcher gets the quantitative data, a more qualitative approach might enable to better understand and interpret the findings by going further into the analysis.

Finally, a further exploration for more details about the determinants of interpersonal style and how they can affect an individual to act in a particular way might be useful. In fact, some determinants of the interpersonal style could be considered as being proximal, which means that they have a direct influence on the style one would adopt. For instance, physical education teachers being motivated in a self-determined way and using an autonomy supportive interpersonal style would be an example of a proximal

determinant. Conversely, some determinants of the interpersonal style could be considered as being distal, which means that they have an indirect influence on the style one would adopt. For instance, a controlling working climate might influence physical education teachers' motivation toward their career and then have affect on their interpersonal style. That would be an example of a distal determinant (i.e., controlling working climate) having an indirect influence on the type of interpersonal style one would adopt. The proximal and distal determinant concepts bring a need for questioning and more research to find out which of factors affect the interpersonal style directly or indirectly.

Practical Applications

From an applied perspective, this study could also be helpful in promoting specific interpersonal styles when educating future teachers. Indeed, it might be good for future teachers to be aware of the existence of different interpersonal style, what influences them to adopt a specific style and, the influence of their style on students' motivation. In doing so, physical education teachers might better understand the relationships between the determinants of interpersonal style and the actual style that they adopt. For example, knowing that the working climate has an influence on the physical education teachers interpersonal style, perhaps there would be more attention given to this aspect by the schools' administration and they would try to install a more autonomy supportive working climate. This could have considerable implications for educational systems, for it would suggest that the more school systems pressure teachers to make the students perform up to standards, the more teachers will be controlling rather than autonomy supportive with their students, and hence the more students' intrinsic motivation and self-esteem will be undermined.

Conclusions

In conclusion, the purpose of this thesis was to investigate the social and psychological determinants of physical education teachers' interpersonal style. The theoretical framework of this study was Deci and Ryan's (1985, 1991) Cognitive Evaluation Theory (CET). This correlational study was examining the influence of (a) the teachers' perceptions of their working climate, (b) teachers' own motivation toward physical activity, (c) teachers' own motivation toward their career, and (d) teachers' perceptions of their students' motivation towards physical activity on the physical education teachers interpersonal style (autonomy supportive versus controlling interpersonal style). Data were analyzed using multiple regression in order to find relationships between the determinants of interpersonal style and physical education teachers' interpersonal style. The findings from this research reveal that one hypothesis only was supported. When physical education teachers perceived their students as being motivated in a self-determined way towards physical activity, they were more likely to adopt an autonomy supportive interpersonal style whereas, when they perceived their students as being motivated in a non self-determined way in the physical education context, they are more likely to adopt a controlling interpersonal style. However, the three other hypotheses were not significantly supported.

In terms of limitations to this study, the number of participants was a problem affecting the results obtained. Also, the administration of the questionnaire and the concept of social desirability were raised as factors influencing the findings. Using a multi-method approach and investigating the distal/proximal concept further have been proposed as ideas for future research in the domain. Practically, more research on the topic would enable physical education teachers to better understand the relationships

between the antecedents of interpersonal style and the actual style that they adopt in their gym and/or classroom.

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Appendix

WE NEED YOUR HELP FOR THIS IMPORTANT STUDY, IT WILL ONLY TAKE 15 MINUTES TO FILL OUT THIS QUESTIONNAIRE AND YOU HAVE THE CHANCE TO WIN A 150\$ PRIZE AND TO HELP CANADIAN YOUTHS

Letter of Information for physical education teachers

This research project is being conducted by Dr. Michelle Fortier from the University of Ottawa. If, for any reason, you would like to contact Dr. Fortier regarding this study, she can be reached at the following address/number:

Dr. Michelle Fortier, Assistant Professor,
School of Human Kinetics, University of Ottawa
Tel: 562-5800 Ext. 4275

For any additional information concerning ethical issues, you may also contact:

Dr. Roger Proulx, President of the Ethics Committee
Faculty of Health Sciences, University of Ottawa
Tel: 562-5800 Ext. 8055

Purpose: The objective of this study is to understand **why certain youths regularly engage in physical activity while others tend to be inactive**. We are particularly interested in examining **what motivates youths to adopt and/or maintain an active healthy lifestyle**. In order to better understand this important phenomenon we require the participation of your 9th grade students and your participation in this study. Results will ultimately be used to develop programs aimed at enhancing youths' motivation towards physical activity so that they may adopt and maintain an active healthy lifestyle and thus benefit from the numerous advantages of regular physical activity.

Requirements: The only requirements are for you to **answer a brief questionnaire** (it is not a test) at 2 different times over the next year (November 1998 and March 1999). The questionnaire will assess your attitudes, perceptions and behaviors towards physical activity. Data collection will take place in your physical education class (at your convenience), and should last approximately 25 minutes. **You will complete your questionnaire at the same time as your students answer their questionnaire or shortly after (in the latter case we will pick it up the next day when we return for data collection)**. Your participation is completely voluntary and you may withdraw from this study at any time without fear of any negative consequences.

There are **NO** risks or discomforts involved in this study. We only require that you answer a short questionnaire on 2 separate occasions over the next year.

Anonymity and Confidentiality: You do not have to identify yourself (i.e. to put your name on the questionnaire) at anytime during the study. In this way, anonymity can be assured. However your responses will be matched with those of your students. Only the members of the research team will have access to the data with this information being completely confidential and used only for the purposes of this study (nothing will appear in school records). In addition, the questionnaires will be kept at the University of Ottawa in Dr. Fortier's laboratory. Finally, the data will be analyzed and presented in an aggregate format (everyone together) thus, individual responses will not be identifiable.

For your Information: This research project has been approved by the Ottawa-Carleton Research Advisory Committee and by the principal of your school. If you have any questions or concerns regarding this study, please do not hesitate to contact us at the previously indicated number. If desired, you may also obtain a summary of the overall results once the study has been completed. If interested, please contact Dr. Fortier.

Thank you for your time and cooperation!

Researcher: _____

**ATTITUDES AND PERCEPTIONS
TOWARDS PHYSICAL ACTIVITY AND HEALTH**

We are presently conducting an important study which aims to better understand adolescents' and physical education teachers' attitudes, perceptions and behaviors towards physical activity and health. Please read each question carefully and indicate the extent to which the question corresponds to YOUR personal experience/opinion. **WE ARE NOT INTERESTED IN EVALUATING YOUR TEACHING, WE JUST WANT TO KNOW YOUR THOUGHTS AND FEELINGS ABOUT DIFFERENT PHYSICAL ACTIVITY/HEALTH ISSUES.** It is important to answer, i.e., circle a number or choose an option for EVERY question.

This is neither a test nor an evaluation. Therefore, there are no right or wrong answers. We are simply interested in your **HONEST** responses to the questions and ask that you respond as **SERIOUSLY** and **TRUTHFULLY** as possible. It is important to carefully read all of the instructions.

You do not have to write your name on the questionnaire, therefore we CANNOT identify you. However for the study to be conducted successfully, we require your date of birth and the last 4 digits of your telephone number (for identification purposes only). **The information that you provide us with is strictly confidential (private) and will be used for research purposes only.** No one except us will see your questionnaire.

IMPORTANT

YOUR DATE OF BIRTH (DAY/MONTH/YEAR): _____/_____/_____

LAST 4 DIGITS OF YOUR TELEPHONE NUMBER : _____

**Thank you VERY MUCH for your participation.
Michelle Fortier, Ph.D.
School of Human Kinetics
University of Ottawa**

16. ... I give more attention to the better students in the class.	1	2	3	4	5	6	7
17. ... I encourage the students to work on their individual weaknesses.	1	2	3	4	5	6	7
18. ... I try to allow students the possibility of working at their own pace.	1	2	3	4	5	6	7
19. ... I encourage the students to try to be better than the other students in the class.	1	2	3	4	5	6	7
20. ... I occasionally let the students choose what they want to do in class. (ISAS)	1	2	3	4	5	6	7
21. ... I encourage the students to speak their minds and to ask questions. (ISAS)	1	2	3	4	5	6	7
22. ... I regularly have to put pressure on the students for them to do the activities. (ISC)	1	2	3	4	5	6	7
23. ... I try to create a competitive atmosphere in class.	1	2	3	4	5	6	7
24. ... I try to emphasize that each student's improvement is equally important.	1	2	3	4	5	6	7
25. ... I have favorites.	1	2	3	4	5	6	7
26. ... The focus of the class is on individual improvement.	1	2	3	4	5	6	7
27. ... I emphasize doing better than classmates.	1	2	3	4	5	6	7
28. ... I frequently compliment the students.	1	2	3	4	5	6	7

6. BACKGROUND

Age : _____
Gender : Female _____ Male _____
Name of your school: _____

WE THANK YOU VERY MUCH FOR YOUR PARTICIPATION!

<p>IF YOU HAVE DONE THE QUESTIONNAIRE ON YOUR OWN TIME PLEASE: 1) PUT THE QUESTIONNAIRE IN THE ACCOMPANYING PRE-PAID ENVELOP, 2) SEAL IT AND 3) MAIL IT TO THE UNIVERSITY OF OTTAWA .</p> <p>NO ONE WILL BE LOOKING AT YOUR QUESTIONNAIRE EXCEPT THE U OF O RESEARCH TEAM</p>

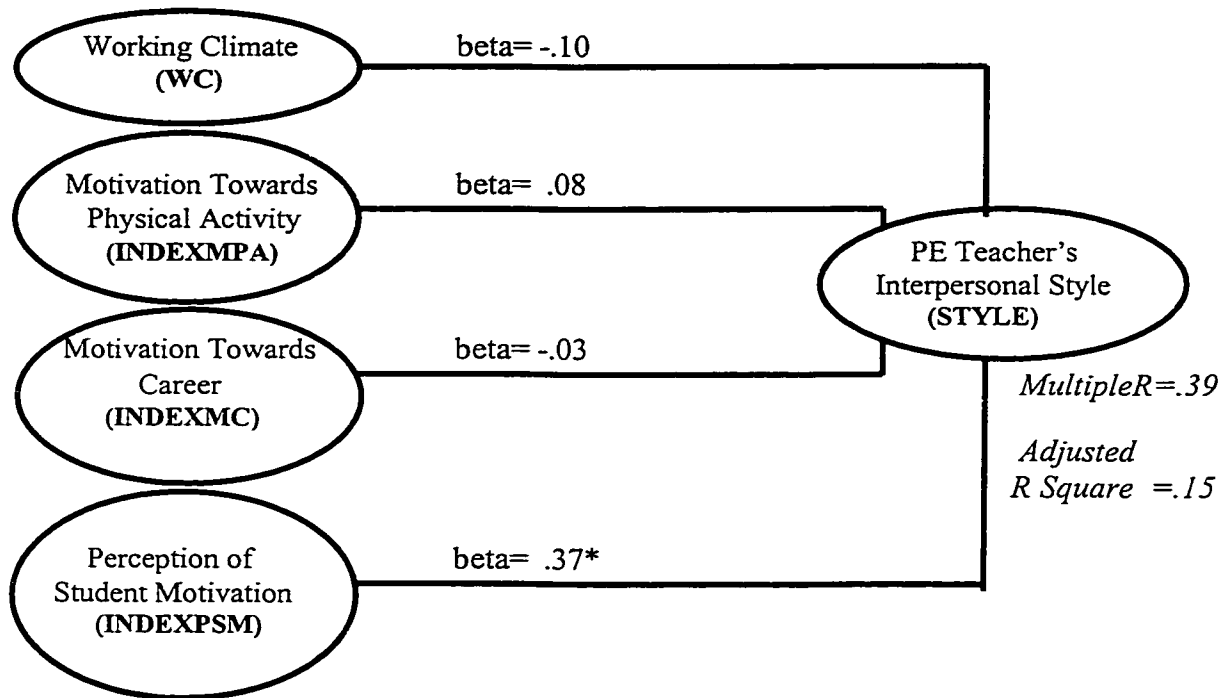
Table 1
Correlation coefficients for the interpersonal style and the four determinants

Total sample (N=48)			(1)	(2)	(3)	(4)	(5)
	M	SD					
Interpersonal Style (1) STYLE	4.25	2.31	1,00				
Working Climate (2) WC	5.13	2.16	-0.05	1.00			
Motivation Toward Physical Activity (3) INDEXMPA	5.53	0.67	0.15	0.18	1.00		
Motivation Toward Career (4) INDEX MC	12.25	5.06	0.09	0.19	-0.01	1.00	
Perception of Student Motivation (5) INDEXPSM	4.65	0.76	0.37**	0.13	0.24	0.38**	1.00

**p < .01.

Figure captions

Figure 1. Multiple regression between the interpersonal style and the four determinants.



* $p < .05$.