

Journal of Sport & Exercise Psychology

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The *Journal of Sport & Exercise Psychology* (ISSN 0895-2779) is published quarterly in March, June, Sept., and Dec., with one annual supplement, by Human Kinetics Publishers, Inc., 1607 N. Market St., Champaign, IL 61820-2200. Annual subscription rates in the U.S. are \$36 for individuals and \$88 for institutions. Student rates (\$24 each yr) available for up to 3 yrs; along with payment, indicate name of institution, year in school, and advisor's name. 2nd-class postage paid at Champaign, IL. POSTMASTER: Send address changes to *Journal of Sport & Exercise Psychology*, Human Kinetics, Box 5076, Champaign, IL 61825-5076.

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Self-Determined Motivation and Sportsmanship Orientations: An Assessment of Their Temporal Relationship

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The motives underlying involvement in sport appear to influence how a person will play the game. However, how athletes play the game may also have an impact on their motives for participating in sports. The purpose of this study was to examine the relationship between self-determined motivation and sportsmanship orientations by using a longitudinal design, as well as recent theoretical approaches to sportsmanship (Vallerand, 1991, 1994) and motivation (Deci & Ryan, 1985, 1991). Male adolescent elite hockey players ($N = 77$, mean age = 15.8) completed a questionnaire assessing both constructs 2 weeks into the hockey season (T1) and at the end of the regular season (T2), 5 months later. The results from cross-lag correlations suggested that, over time, self-determined motivation and sportsmanship orientations have a positive bidirectional relation, in which self-determined motivation has greater influence on sportsmanship. These results give further impetus to the need to consider motivation in future studies on sportsmanship.

Key words: ice hockey, motivation, sportsmanship, self-determination

Chris is a speedskater. Although she enjoys the game somewhat, she plays mostly for the trophies, the medals, and the recognition she gets from winning. Because her main goal is to win, she uses all the tricks in the book to find an edge and to beat her opponents. It does not really matter if she has to hit or trip them. As long as she wins, that is all that matters. On the other hand, Jody, another speedskater, plays mostly because of the fun and pleasure she derives from participation and from personal excellence. Trophies and medals are fine but do not represent the main reason for her involvement in speedskating. Because her goal is to outdo herself, lack of respect for the rules, the game, or other skaters would not help in getting closer to her objective.

The above examples illustrate that the reason athletes play the game (the motivational component) may have some bearing on how they behave in it (the

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sportsmanship component). For instance, playing to win at all costs (an extrinsic motivational orientation, because the focus is not on the activity itself) may lead an athlete to cheat (and thus to display poor sportsmanship) in order to reach his or her goal. However, the potential impact of sportsmanship on motivation is just as likely. Cheating and behaving in an unsportsmanlike manner may lead individuals to focus on the extrinsic elements for their involvement, such as beating opponents rather than outdoing oneself (an intrinsic element), thereby fostering an extrinsic orientation toward sport participation.

Some research (e.g., Duda, 1989; Snyder & Spreitzer, 1979; Webb, 1969) supports the hypothesis of a relationship between motivation and sportsmanship. The purpose of this study is to further assess the nature of this relationship by using methodological and conceptual advances. Because the study reported in this paper deals with motivation and sportsmanship, we will briefly review elements from the pertinent literature on these concepts, focusing on the social-psychological approach to sportsmanship (Vallerand, 1991, 1994) and self-determination theory (Deci & Ryan, 1985, 1991).

A Social-Psychological View of Sportsmanship

Sportsmanship research has been mostly influenced by two broad theoretical perspectives of morality; the social-learning (Bandura, 1986) and the structural-developmental (Haan, 1983; Kohlberg, 1976) approaches (see Bredemeier & Shields, 1993, for a review). Of these two broad perspectives, the structural-developmental approach, and, more specifically, Haan's (1983) theory of moral development, has had the most significant impact on research related to sportsmanship. This theory posits that moral reasoning develops through moral dialogue with other individuals. Moral reasoning is expected to go through different levels of development and is hypothesized to represent the major determinant of moral behavior (intrapyschic processes such as coping and defensive processes may also influence behavior; see Bredemeier & Shields, 1993).

Research so far has focused mainly on assessing athletes' levels of moral reasoning maturity using a sport application of Haan's scoring approach and then (a) comparing the scores to those of other athletes or nonathletes (e.g., Bredemeier & Shields, 1986), and (b) relating the scores to perceptions of legitimacy of aggressive behavior (Bredemeier, 1985) and self-report of aggressive behavioral intentions (e.g., Bredemeier & Shields, 1984). Such research has led to important findings, such as that athletes display lower levels of moral reasoning in sport than in nonsport settings and that moral reasoning represents a determinant of aggressive intentions (see Bredemeier & Shields, 1993). However, the application of Haan's (1983) theory in sports so far has neglected two important points. First, by focusing exclusively on aggression, Haan's theory has detracted scientific attention from nonaggressive behavior that are relevant for sportsmanship issues. In fact, the domain or content of sportsmanship behaviors has yet to be identified. And second, although Haan's theory does include the social context in the development of moral reasoning, it nevertheless neglects its role in influencing sportsmanship behavior.

More recently, Vallerand (1991, 1994) has proposed a social-psychological approach to sportsmanship that makes a number of propositions, including some

that deal with the issues raised above. A first proposition pertains to the definition of *sportsmanship*. The social-psychological approach to sportsmanship proposes that it is important to make a clear distinction between three key elements; sportsmanship orientations, the development of sportsmanship orientations, and the display of sportsmanship behavior. Sportsmanship orientations refer to the self-perceptions and internalized structures relevant to each of the sportsmanship dimensions, as well as the propensity to act in line with each orientation. Thus, athletes with a strong orientation on one sportsmanship dimension would *generally* tend to behave in line with the relevant sportsmanship orientation. Sportsmanship development refers to the process through which the various sportsmanship orientations develop. Finally, the display of sportsmanship behavior concerns the manifestation of sportsmanship-related behavior at one given point in time. Thus, during a game, an athlete may cheat deliberately or refuse to accept a decision made by one of the officials. Although sportsmanship orientations may influence sportsmanship behavior, it is not the only determinant, as the social context and other types of orientations (for instance, motivational orientations) may also influence behavior.

In addition to distinguishing the three aspects of sportsmanship, the social-psychological approach to sportsmanship proposes that it is crucial to identify the content of the sportsmanship behaviors and orientations. To this end, in line with several moral developmentalists (Backman, 1985; Damon, 1988; Graziano, 1987; Shweder & Much, 1987), an ecological approach to the study of sportsmanship dimensions is essential because sportsmanship meaning and labels attached to situations and behaviors are learned through interpersonal interactions that take place in the sport context. Through repeated interactions with their peers, parents, coaches, and other sport participants, children learn what sportsmanship is and what it is not, and they develop a consensual agreement regarding the nature of sportsmanship.

One implication of this proposition is that athletes should be in a prime position to help researchers define the core sportsmanship dimensions. In line with this assumption, Vallerand, Deshaies, Cuerrier, Brière, and Pelletier (1994) recently conducted a study that attempted to identify athletes' definition of sportsmanship. Over 1,000 athletes, ages 10 to 18 years, were asked to rate 21 items describing various sport situations in terms of the extent to which the athletes felt each item depicted the concept of sportsmanship. Athletes' responses were subjected to confirmatory factor analyses (with LISREL) and revealed the presence of five dimensions: (a) concern and respect for the rules and officials (e.g., "I respect the official, even if he or she is not good"), (b) concern and respect for the opponent (e.g., "When the opponent injures him- or herself, I do not take advantage of the situation"), (c) concern and respect for one's full commitment toward sport participation (e.g., "I do not give up even after doing several mistakes"), (d) concern and respect for social conventions (e.g., "After competing, I congratulate the opponent for his or her good performance"), and (e) a negative approach toward one's participation in sport (e.g., "If I make a mistake during an important part of the game, I really get upset"). Much research in the literature supports these dimensions (see Vallerand, 1991, 1994).

One contribution of this multidimensional definition is that it points to the behaviors of interest for the study of sportsmanship. Thus, by focusing on behaviors related to the above five dimensions, it then becomes possible to study

sportsmanship behavior independently from aggression. This process allows the disentanglement of the two concepts. A further contribution of this multidimensional definition is that it underscores the types of sportsmanship orientations that need to be assessed. Based on the above definition, Vallerand, Brière, and Provencher (1994) developed a scale to assess sportsmanship orientations: the Multidimensional Sportsmanship Orientations Scale (MSOS). The MSOS was developed and validated using a full psychometric approach (see the Method section for more information on the psychometric properties of the scale). The MSOS has led to several interesting findings. For instance, athletes who endorse a "win (at all costs) orientation" competitive approach (Gill & Deeter, 1988) display an interesting sportsmanship pattern. They subscribe to a negative approach toward participation while showing a lack of concern and respect for the opponent, the rules, or the officials (Vallerand, Brière, & Provencher, 1994). In addition, the more adolescent athletes display a negative approach toward sport participation and the less they show concern and respect toward the rules and officials, the more likely they are to indicate their intention to use steroids (Vallerand & Brière, 1994). In sum, the MSOS has yielded some interesting results, and it seems to lend itself well to new research inquiries.

A second major proposition of the social-psychological approach is that to provide better prediction of sportsmanship behavior, social determinants should be used (see Vallerand, 1991, 1994). Thus, in one study (Vallerand, Deshaies, & Cuerrier, 1994), it was shown that anticipated costs and benefits of performing sportsmanship behavior was a major determinant of the behavior. In another study (Vallerand, Deshaies, Cuerrier, Pelletier, & Mongeau, 1992), the combination of both personal and social determinants of behavior was assessed. It was shown that the theory of reasoned action (Ajzen & Fishbein, 1980), which contains both personal (attitudes) and social elements (subjective norms), can accurately predict behavioral intentions of sportsmanship.

Finally, a third proposition of the social-psychological approach germane to the present study is that the motivational style of the individual should be considered an important personal determinant of sportsmanship behavior and orientations. Because it is an integral part of the present study, motivation, and more specifically the self-determination perspective, is considered below.

Self-Determination Theory and Sportsmanship

The concept of motivation refers to the forces that initiate, direct, and sustain behavior (Petri, 1981). Most current theories of motivation focus on the direction issue at the expense of the initiation aspect. That is, theories (e.g., Ames, 1992; Bandura, 1986; Dweck, 1986; Eccles, 1993; Nicholls, 1984) focus on goals and processes that direct behavior toward desired outcomes but do not deal with the important question of why certain outcomes are desired. In other terms, they do not address the issue of the energization (or initiation) of behavior. For instance, Nicholls (1984) posits that engaging in a given activity with a task orientation leads to positive consequences, such as persistence; however, he does not specify why a task orientation is important for the person. Similarly, Bandura (1977, 1986) does not indicate why perceptions of self-efficacy are important for individuals; he simply assumes that such perceptions

are important and that they lead to important outcomes. By failing to address this important question, current theorists present an incomplete picture of human behavior (Deci, 1992).

However, self-determination theory (Deci & Ryan, 1985, 1991) does address the energization issue by postulating the existence of three psychological needs that are crucial in human life, namely, the needs for competence, relatedness and autonomy. Competence refers to perceptions of oneself as being efficacious in attaining desired outcomes. Relatedness pertains to the development of satisfying bonds with significant others. Finally, autonomy refers to being self-initiating in regulating one's actions. In other words, one is an origin and not a pawn of one's behaviors (deCharms, 1968).

The concept of needs is not intended to refer to instinctual drives and similar impulses inherent in individuals (e.g., Freud, 1923/1962; McDougall, 1908), but rather to elements deemed necessary to facilitate the growth and actualization of human potentiality (Ryan, 1993). This approach to the concept of needs is useful on both conceptual and applied grounds (see Deci & Ryan, 1985, 1991; Deci, Vallerand, Pelletier, & Ryan, 1991). From a conceptual perspective, since the needs for competence, autonomy, and relatedness are important for humans, individuals will engage in activities that will provide them with satisfaction of these needs. Thus, the search for opportunities to satisfy these needs provides the fuel of motivation. From an applied perspective, this search also allows researchers to identify the contextual conditions most likely to facilitate motivation. Indeed, conditions that will nurture individuals' needs of competence, relatedness, and autonomy will facilitate individuals' motivation. An important literature largely focusing on laboratory studies has evolved from this perspective and supports propositions from the theory (for reviews in sport see Ryan, Vallerand, & Deci, 1984; Vallerand, Deci, & Ryan, 1987).

With respect to the issue of direction of behavior, most current theories of motivation focus on goals and similar processes that direct behavior in a given direction. By focusing mostly on the competence concept, theorists (Ames, 1992; Dweck & Leggett, 1988; Nicholls, 1984) have recently proposed that individuals may approach a given task with one of two motivational perspectives: task and ego involvement.¹ Task involvement refers to the goal of mastering the demands of the task, whereas ego involvement leads one to focus on the goal of demonstrating competence to others (see Elliott & Dweck, 1988; Nicholls, 1984).

Self-determination theory, however, considers that this dichotomy is insufficient to adequately depict human behavior. It views motivation in terms of varying degrees of self-determination, thereby leading to a continuum of different types of motivation (Deci & Ryan, 1985; Deci et al., 1991; Rigby, Deci, Patrick, & Ryan, 1992). Such a continuum is posited to run from high to low levels of self-determination as one moves from intrinsic motivation, extrinsic motivation, and amotivation. Intrinsic motivation refers to doing an activity for the pleasure it provides or for its own sake. Vallerand and colleagues (Vallerand & Bissonnette, 1992; Vallerand, Blais, Brière, & Pelletier, 1989; Vallerand, Pelletier, et al., 1992; Vallerand et al., 1993) have identified three forms of intrinsic motivation, namely, intrinsic motivation toward accomplishment, toward knowledge and learning, and toward experiencing stimulation. Athletes participating for reasons such as "for the pleasure I get from mastering difficult skills," "for the pleasure I get from learning new moves," and "for the pleasure I experience while doing exciting

things" display, respectively, intrinsic motivation toward accomplishment, toward learning, and toward stimulation.

On the other hand, extrinsic motivation refers to doing an activity for reasons other than the activity itself. These reasons, according to Deci and Ryan (1985), can represent different forms of self-regulation. For instance, extrinsic reasons for doing an activity can be perceived as freely chosen (i.e., identified regulation), resulting from internal pressures (i.e., introjected regulation) or as being external to oneself (i.e., external regulation). Athletes participating in sport for reasons such as "because it is a means I have chosen to develop other aspects of myself," "because I would feel bad if I didn't take the time to do it," and "to show others how talented I am" are extrinsically motivated, respectively, out of identified, introjected, and external regulation.²

Finally, a behavior can be done for reasons that are neither intrinsic nor extrinsic, which reflect amotivation or a relative absence of motivation (Deci & Ryan, 1985). An athlete who would say, "I really don't know why I play basketball anymore; I don't see what it does for me" would display amotivation. Amotivated behaviors are the least self-determined because there is no sense of purpose and no expectation of reward or of the possibility of influencing the environment. There is no contingency between one's actions and responses from the environment. Eventually learned helplessness (Abramson, Seligman, & Teasdale, 1978) could follow amotivation.

The above taxonomy proposed by self-determination theory is useful in several ways. First, it allows for distinguishing several types of motivation that refine the intrinsic-extrinsic (or task-ego) dichotomy. Second, by using the taxonomy, it becomes possible to develop scales that assess motivational styles or rather stable motivational orientations of individuals (e.g., intrinsic motivation). Finally, because the different types of motivation are located on a continuum from high to low self-determination, and because self-determination is associated with enhanced psychological functioning (Deci, 1980), a corresponding pattern of consequences can be predicted. Thus, the most positive outcomes should be associated with a self-determined motivational profile (intrinsic motivation and identification), whereas negative outcomes should be associated with a non-self-determined motivational profile (exemplified by external regulation and amotivation).

Research conducted in several life domains such as education (Grolnick & Ryan, 1987; Vallerand & Bissonnette, 1992; Vallerand et al., 1989; Vallerand, Pelletier, et al., 1992; Vallerand et al., 1993), work (Blais, Brière, Lachance, Riddle, & Vallerand, 1993), leisure (Pelletier et al., 1993), and interpersonal relationships (Blais, Sabourin, Boucher, & Vallerand, 1990), as well as with different populations ranging from children (Ryan & Connell, 1989) to the elderly (Losier, Bourque, & Vallerand, 1993; O'Connor & Vallerand, in press; Vallerand & O'Connor, 1989), reveals that motivational styles can be reliably assessed. In addition, motivational styles have been found to be related to various outcomes, as predicted by self-determination theory.

Of particular relevance to the present study, is the fact that self-determination theory (Deci & Ryan, 1985, 1991) has been successfully applied to the sport domain (see Vallerand & Reid, 1990, for a recent review). A scale assessing motivational styles in sport was constructed and validated through rigorous procedures in both French (Brière, Vallerand, Blais, & Pelletier, in press) and English (Pelletier et al., 1993) with several hundred athletes from both ethnic groups (see the Method section

for more information on the scale). The Sport Motivation Scale (SMS) was then correlated with different sport outcomes. Results generally show that self-determined motivational profiles are associated with positive outcomes. For instance, self-determined motivational profiles have been related to less anxiety, more positive emotions, and greater interest in sport (Brière et al., in press; Pelletier et al., 1993). In addition, swimmers who display a non-self-determined motivational profile have been found to drop out of sport significantly more than those with a self-determined motivational profile (Pelletier, Brière, Blais, & Vallerand, 1988). Finally, athletes who display a self-determined motivational profile report higher levels of sport and life satisfaction (Brière et al., in press).

One outcome that should ensue from a self-determined motivational profile is a positive sportsmanship orientation. Indeed, it seems plausible that athletes who display a self-determined motivational profile (i.e., who play for fun and for the activity itself) should be more likely to show respect for others and less likely to cheat than athletes who want to win trophies and medals at all costs (a non-self-determined motivational profile). Some evidence from the education domain supports such an interpretation. For instance, Lonky and Reihman (1990) found that students who displayed a self-determined motivational profile cheated less than students who had a non-self-determined motivational profile.

Research suggests that a similar relationship may exist in sports. For example, Webb's (1969) results suggest that individuals adopting a "play" orientation display positive attitudes toward sport involvement relative to those who favor a "professional" (or win at all cost) orientation. Others (e.g., Duda, 1989; Snyder & Spreitzer, 1979) have also noted a relationship between prosocial values in sport and the motives underlying one's involvement in or motivation toward sport.

A recent study by Duda, Olson, and Templin (1991) gave more weight to the arguments that motivation may influence sportsmanship orientations and that an emphasis on winning may lead to unsportsmanlike conduct. These authors used Nicholls's (1984) perspective on achievement motivation to examine the relationship between attitudes toward sportsmanship and two motivational orientations, namely, task and ego orientations. Duda et al. (1991) found that low task- and high ego-oriented high school athletes more readily approved of unsportsmanlike conduct (e.g., cheating) in order to win.

Results from the Duda et al. (1991) study were correlational in nature and were obtained at a single point in time. They thus provide only suggestive support for the hypothesis that motivation influences sportsmanship orientations. Furthermore, it is possible that, over time, sportsmanship orientations could influence motivation as well. Indeed, by cheating and behaving in an unsportsmanlike manner, individuals may come to focus on the extrinsic elements of their involvement in sport, such as outdoing opponents rather than surpassing oneself (an intrinsic element), thereby fostering an extrinsic motivational orientation. In sum, while evidence seems to suggest that motivational orientations can influence sportsmanship orientations, the influence of sportsmanship on motivation is also possible.

In light of the above, the purpose of the present study was to assess the relationship between motivational and sportsmanship orientations from a longitudinal perspective using self-determination theory and the social-psychological approach to sportsmanship as underlying theoretical frameworks. We believed that such a strategy would allow a better understanding of the interplay between the two constructs. Given the empirical findings and the theoretical assumptions

reviewed, we anticipated that over time a positive bidirectional relationship would emerge between the two constructs. That is, we predicted that early self-determined motivation would be positively related to later sportsmanship orientations, and that early sportsmanship orientations would be positively associated to later self-determined motivation as well.

Method

Subjects and Procedure

Questionnaires in French were completed by 77 French-speaking Canadian male adolescents (mean age = 15.8 years) playing in an elite hockey league (midget AAA), involving seven different teams from the central region of Quebec. These players had between 4 and 13 years of competitive hockey experience, the majority (over 85%) of whom were in their first year at the midget elite level; the rest were in their second or third year at this level. We elected to examine sportsmanship in the context of ice hockey because this sport is often perceived as involving much unsportsmanlike conduct. The midget AAA level is a fairly competitive level, and thus "win at all cost" situations would be more likely to occur. Finally, we felt that adolescent players with several years of similar competitive experience in a specific activity (e.g., hockey) should have developed relatively homogeneous sportsmanship orientations, which yet may be changing because of their young age.

The players were asked to complete a first questionnaire 2 weeks into the hockey season (T1) and a second one at the end of the regular season (T2), 5 months later. Both questionnaires were completed in the team's locker room after a practice. The players were told that we were interested in knowing more about athletes' personal attitudes concerning their sport and that we would appreciate their collaboration with this project. They were also told that participation in the study was voluntary and anonymous and that their responses would remain confidential and would be used for research purposes only.

Measures

The Multidimensional Sportsmanship Orientations Scale (MSOS; Vallerand, Brière & Provencher, 1994) was used to measure sportsmanship orientations. This instrument is based on Vallerand's (1991, 1994) conceptualization of sportsmanship. As indicated previously, this approach posits the existence of five sportsmanship orientations, including concern and respect for (a) one's commitment toward sport participation, (b) social conventions in sport, (c) rules and officials, and (d) the opponent. The fifth dimension is a negative approach toward one's participation in sport. The MSOS thus contains five subscales with five items in each. The items are scored on a 5-point Likert scale, with 1 (*does not correspond at all to me*) and 5 (*corresponds exactly to me*) serving as extreme points, and 3 (*partially corresponds to me*) as the midpoint.

The development of the MSOS has gone through several phases. First, 20 items were developed for each of the five dimensions. Two sport psychologists then assessed the content validity of each item by placing them in the appropriate

sportsmanship dimension. Second, the best 12 items for each of the five dimensions were presented to 15 athletes to assess the clarity and ecological appropriateness of the items. Some changes were then made. Third, this preliminary version of the scale was presented to 150 athletes. Results from a factor analysis led to the selection of the best five items for each dimension. Finally, this 25-item version of the MSOS was used in a validation study (Vallerand, Brière, & Provencher, 1994), which provided satisfactory results concerning the psychometric properties of the scale. For instance, results from a confirmatory factor analysis (with LISREL) involving more than 600 athletes confirmed the five-factor structure of the MSOS. An overall mean Cronbach alpha value of .73 was also obtained. In addition, correlations among the MSOS subscales varied from $-.17$ to $.36$, indicating that although related, the subscales are relatively distinct. Significant correlations (ranging from $.20$ to $.44$) between behavioral intentions pertinent to each subscale provided preliminary support for the discriminant validity of the MSOS. Finally, the temporal stability of the MSOS was also assessed with a different sample of athletes. All correlations were high and a significant mean test-retest correlation of $.67$ ($p < .01$) over 5 weeks was obtained. Thus, overall, the MSOS represents a reliable and valid measure of sportsmanship.

In the present study, for reasons of parsimony, we considered this 25-item scale as a global index of sportsmanship orientations by averaging the scores on all items (after having recoded the scores of the negative dimension). This global measure had adequate internal consistency with alphas of $.76$ and $.81$, respectively, at T1 and T2, as well as good temporal stability with a significant correlation ($r = .65$, $p < .01$) between T1 and T2 assessments.

The French form of the Sport Motivation Scale (SMS; Brière et al., in press) was used to measure self-determined motivation in hockey. The French version of the scale has been recently validated in English (Pelletier et al., 1993). The SMS assesses seven types of motivation toward sport: three types of intrinsic motivation (intrinsic motivation toward accomplishment, toward knowledge, and toward stimulation), three types of extrinsic motivation (identified, introjected, and external regulation), and amotivation. Four items are used to measure each of the seven motivational orientations. Each item represents an answer to the question, "Why do you play hockey?" and is assessed on a 5-point Likert scale with 1 (*does not correspond at all to me*) and 5 (*corresponds exactly to me*) as extreme points, and 3 (*partially corresponds to me*) as midpoint.

The development of the French SMS (Brière et al., in press) involved several steps. In a first step, 40 athletes were interviewed to identify the reasons why they participate in sport. From these interviews, we retained the motives that exemplify the seven types of motivational orientations to be measured by the SMS. In the second step, we formulated 10 items for each scale (70 items in all). In a third step, these items were shown to athletes to assess the clarity and pertinence of these items. In a fourth step, the 70-item scale was given to 195 athletes, and a factor analysis was conducted. A seven-factor solution was obtained, and the best 4 items for each of the seven subscales were retained. This refined version of the SMS was then completed by 455 athletes. Results from this study supported (a) the seven-factor structure of the instrument (with confirmatory factor analysis using LISREL), (b) the internal consistency of the various subscales in three studies (a mean alpha value of $.82$ was obtained for the seven subscales), and (c) the construct validity of this SMS with correlational analyses among the seven subscales, as well as between

these subscales and other relevant sport constructs such as positive emotions, sport satisfaction, and interest. Finally, a mean test-retest correlation of .69 was also obtained for the subscales over a 4-week period with a different sample of athletes. Thus, overall, the SMS appears to be a valid and reliable measure of motivational styles in sport.

Again for reasons of parsimony, a motivation index was used to examine the relationship between sportsmanship orientations and self-determined motivation. In line with past research (e.g., Blais et al., 1990; Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand & Bissonnette, 1992; Vallerand & O'Connor, 1989) this index was obtained by weighting each type of motivation according to its position on the self-determination continuum (see Deci & Ryan, 1985) and then summing the products. This was done for each of the four items measuring each type of motivation. The three types of intrinsic motivation were averaged to give one score, and this score was given the highest positive weight (+2), since intrinsic motivation is the most self-determined form of motivation. Identified extrinsic motivation, although representing a self-determined type of extrinsic motivation, is lower on the continuum of self-determination than intrinsic motivation (Deci & Ryan, 1985) and therefore received a lower positive weight (+1). Conversely, amotivation represents the absence of self-determination and should be weighted highly negatively (-2). Finally, external regulation received a lower negative weight (-1) since it represents a lower form of extrinsic motivation. The introjected type of extrinsic motivation represents a midpoint on the self-determination continuum and consequently was not considered in the calculation of the motivation index.

The results of the four multiplications just described were summed to provide a sport motivation index. High positive scores on this index reflect high levels of self-determined motivation, whereas high negative scores represent high levels of non-self-determined motivation (for more information on these scoring procedures see Blais et al., 1990; Grolnick & Ryan, 1987; Ryan & Connell, 1989; Vallerand & Bissonnette, 1992; Vallerand & O'Connor, 1989). We found this measure to have adequate internal consistency, with alphas of .76 and .88, respectively, at T1 and T2, as well as good temporal stability with a significant correlation ($r = .55, p < .01$) between T1 and T2 assessments.

Results

We first conducted a preliminary analysis to compare the scores obtained 2 weeks into the hockey season (T1) with those observed at the end of the regular season (T2), both for self-determined motivation and sportsmanship orientations. For both constructs, we noted a significant decline in the mean scores from T1 to T2 assessments. That is, the decline in self-determined motivation from T1 (mean = 23.81) to T2 (mean = 20.05) assessments was significant ($t = 3.05, p < .005$). Similarly, the mean score for sportsmanship orientations declined from 3.22 at T1 to 3.10 at T2, and this drop was also significant ($t = 3.04, p < .005$). Results from Pearson correlations indicated that the number of years in competitive hockey was not significantly related to self-determined motivation at T1 ($r = .16, n.s.$) and at T2 ($r = -.07, n.s.$) nor to sportsmanship orientations at T1 ($r = -.14, n.s.$) and T2 ($r = .03, n.s.$).

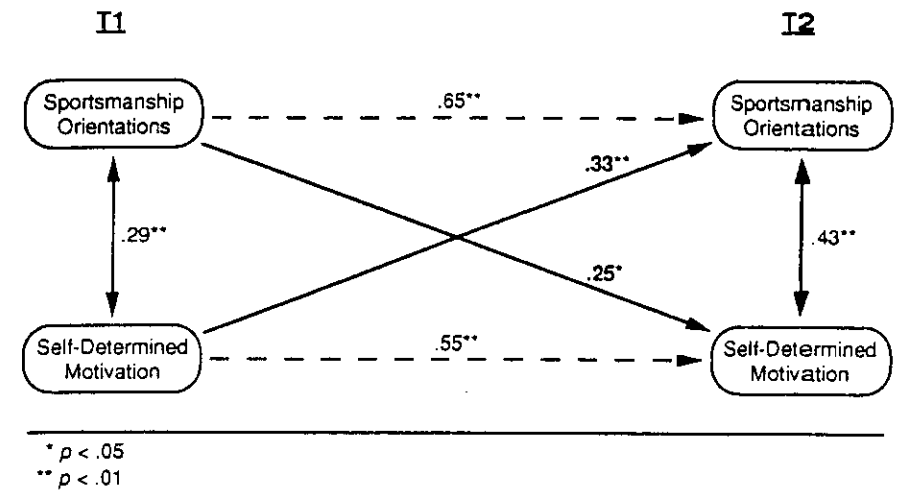


Figure 1 — Correlational results of the relation between sportsmanship orientations and self-determined motivation in hockey assessed 2 weeks into the season (T1) and at the end of the regular season (T2).

Next, we used a correlational design to examine the relationships between self-determined motivation in hockey and sportsmanship orientations. We anticipated that the two constructs would positively influence each other over time. Two types of correlational results are of interest and are presented in Figure 1. The first type of result concerns the relation between sportsmanship orientations and self-determined motivation, as assessed 2 weeks into the hockey season (T1) and at the end of the regular season (T2). These results revealed a positive association both at T1 ($r = .29, p < .01$) and at T2 ($r = .43, p < .01$). That is, greater self-determined motivation in hockey was associated with greater sportsmanship orientations at the beginning and at the end of the regular hockey season.

The second type of results deals with the longitudinal relationship between sportsmanship orientations and self-determined motivation by using a cross-lag correlational design. These results suggested that the two constructs positively influenced each other over time and that self-determined motivation has greater influence on sportsmanship orientations than sportsmanship has on self-determined motivation. Indeed, the correlation between early self-determined motivation and later sportsmanship orientations was higher ($r = .33, p < .01$) than the correlation between early sportsmanship orientations and later self-determined motivation ($r = .25, p < .05$).

Finally, we conducted regression analyses to further test the possibility that, over time, self-determined motivation would exercise greater influence on sportsmanship orientations than sportsmanship would on self-determined motivation. A first regression analysis was conducted with sportsmanship orientations at T2 serving as the dependent variable, while both self-determined motivation and sportsmanship orientations at T1 were used as predictors. The results revealed that these two predictors could account for 42% of the variance in sportsmanship orientations at T2. Specifically, later sportsmanship orientations were significantly predicted by

early sportsmanship orientations ($\beta = .61, p < .001$) and marginally predicted by self-determined motivation at T1 ($\beta = .14, p < .10$), with the later explaining an additional 2.0% of variance. A second regression analysis, however, revealed that sportsmanship orientations at T1 did not predict self-determined motivation at T2 ($\beta = .10, n.s.$) when early self-determined motivation were held constant. In this case, early self-determined motivation explained by itself 29% of the variance in later self-determined motivation, and sportsmanship orientations at T1 did not explain additional variance. Taken together these results suggest that, over time, self-determined motivation and sportsmanship orientations have a positive bidirectional relation, in which the self-determined motivation exercises greater influence on sportsmanship.

Discussion

The present study was designed to extend previous findings concerning the relationship between motivation and sportsmanship orientations by using recent theoretical frameworks on sportsmanship (Vallerand, 1991, 1994) and motivation (Deci & Ryan, 1985, 1991) and by using a longitudinal design. It was anticipated that self-determined motivation and sportsmanship orientations would positively influence each other over time. As predicted, cross-lag correlational results indicated that self-determined motivation at T1 positively influenced sportsmanship orientations assessed 5 months later at T2. This tended to hold true even when early levels of sportsmanship orientations were taken into account, as revealed by the regression analysis. Also as anticipated, early sportsmanship orientations were positively associated with later self-determined motivation. However, results of a regression analysis did not support the notion that sportsmanship orientations act as a determinant of self-determined motivation. Therefore, it appears that, over time, the motives for one's involvement in sport have greater influence on sportsmanship orientations than do sportsmanship orientations on motivation.

The present study extends previous findings in at least two important ways. First, by using a longitudinal design we were able to examine the interplay between sportsmanship orientations and self-determined motivation. Such a design allowed us to study the direction of causality between the two constructs. Second, the present study was based on new theoretical frameworks that may lead to potential advances in our understanding of motivation, sportsmanship, and their relations. Self-determination theory (Deci & Ryan, 1985, 1991) represents an interesting approach to human motivation that posits the existence of different types of motivation representing various degrees of autonomous regulation along a continuum of self-determination. This framework has been effective in studying various phenomena in several domains of human activities, including education, work, religion, leisure, and aging. The present results indicate that this motivational approach can be useful to study behavior in the sport context as well.

Similarly, the social-psychological approach to sportsmanship makes several propositions that may lead to a better understanding of moral behavior and development in the sport domain. For instance, this approach considers three concepts as central to the study of sportsmanship: (a) the development of sportsmanship orientations, (b) sportsmanship orientations, and (c) the display of sportsmanship behaviors (Vallerand, 1991, 1994). However, in the present study, only sportsmanship orientations were examined in relation to self-determined motivation. Future studies should also look at the other two sportsmanship concepts

and assess how they relate to motivation. Since the present findings support a positive bidirectional relationship, over time, between sportsmanship orientations and self-determined motivation, it is possible that sportsmanship behavior, as well as the process through which sportsmanship orientations develop, is influenced by motivation. Future research on these issues appear warranted.

It should also be noted that we obtained some significant results that were not predicted and that may be somewhat alarming. That is, significant declines were noted from early to later season assessments for both sport motivation and sportsmanship orientations. The fact that these constructs showed similar trends over the season is not surprising, and is in line with our hypothesis of a positive relation between the two factors. What could be alarming, however, is the fact that both motivation and sportsmanship declined over the course of the season. An increase, rather than a decline, is what anyone interested in the psychological development of athletes would work and hope for. It cannot be determined from the present results why such declines took place over time. However, one can only note that they occurred in a highly competitive context where "win at all cost" situations are prevalent. Indeed, the midget AAA level is the most competitive adolescent hockey league in the province of Quebec.

The suggestion that higher levels of competition may lead to lower levels of both self-determined motivation and sportsmanship orientations has been substantiated by studies dealing with both sportsmanship (e.g., Bredemeier, 1985; Silva, 1983) and motivation (e.g., Fortier, Vallerand, Brière, & Provencher, in press; Vallerand, Gauvin, & Halliwell, 1986). It is possible that the highly competitive environment undermined athletes' motivational styles, which in turn lowered their level of sportsmanship orientations. Furthermore, over the course of the season, a vicious circle may have developed such that both sportsmanship orientations and motivational styles influenced each other. Although the present results do not allow us to explain the decline over the season in sportsmanship orientations and self-determined motivation, the highly competitive context as a triggering factor appears a likely candidate. In light of the potential applied advances, this hypothesis deserves further study.

The present results are encouraging in that they reiterate the importance of considering the role of motivation in the study of sportsmanship and suggest future research directions. However, these findings should also be viewed in light of the limitations of the present study. In this respect, it is important to underscore two points. First, the present results were obtained from a fairly small and homogeneous sample. Future research should use larger samples of male and female athletes from various sport disciplines and different age groups. This would allow examination of the generalizability of the present findings. Second, we used recently developed measures to assess self-determined motivation in sport and sportsmanship orientations. Although each instrument has been the focus of validation studies, more research using both tools are necessary to continue the study of their psychometric properties.

In sum, the present study brings additional support to previous findings on the relationship between motivation and sportsmanship and extends them in several respects. The need to consider motivation as an important factor in the study of sportsmanship was further underscored. Because a strong emphasis is often put on winning at all costs in the sport context, and because such an emphasis may be detrimental to both motivation and sportsmanship, it is imperative that future research

look at how self-determined sport involvement may be conducive to positive sportsmanship orientations and behavior. Eventually, by finding out more about why people play the game, we may be in a better position to do something about how they play it.

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Notes

¹Several related approaches have been proposed (Ames, 1992; Dweck, 1992). These approaches are very similar in content (Duda, 1992) and either emphasize a goal associated with the intrinsic (task, mastery, and learning) or extrinsic (ego, ability, and performance) elements of the task.

²Deci and Ryan (1985) also include integrated regulation (or integration) as one type of extrinsic motivation. However, because integrated regulation is expected to be present mainly in adults and because our subject population of interest is rather young, we will not discuss this issue in the present paper.

Acknowledgments

This research was completed while the first author was funded by the Social Sciences and Humanities Research Council of Canada, the Conseil Québécois de la Recherche Sociale, the Fonds pour la Formation des Chercheurs et l'Aide à la Recherche, as well as the Université du Québec à Montréal, and while the second author was supported by a fellowship from the Social Sciences and Humanities Research Council of Canada. We would like to thank Pierre Provencher for his contribution to this study.

Manuscript submitted: August 20, 1993

Revision received: April 11, 1994