

Goal Orientations, Perceptions of Aggression, and Sportpersonship in Elite Male Youth Ice Hockey Players

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The purpose of this study was to examine the relationship between goal orientations, perceptions of athletic aggression, and sportpersonship among elite male youth ice hockey players (M age = 13.08 years). Athletes ($N = 171$) completed questionnaires to assess their goal orientations, attitudes toward directing aggressive behaviors during competition, and non-aggression-related sportpersonship. In accordance with Vallerand, Deshaies, Cuerrier, Brière, and Pelletier (1996), sportpersonship was conceptualized as a five-dimensional construct. Multiple regression analyses revealed that high ego-oriented athletes were more inclined to approve of aggressive behaviors than those with low ego orientation. Players with higher levels of task orientation (rather than low task orientation) had higher sportpersonship levels on three dimensions. An analysis of goal orientation patterns revealed that regardless of ego orientation, low (compared to high) task orientation was more motivationally detrimental to several sportpersonship dimensions. The practical implications of these results are discussed in the context of Nicholls's (1989) achievement goal theory.

Achievement goal approaches to motivation (e.g., Ames, 1992; Nicholls, 1989) assume that individuals strive to demonstrate ability or competence in achievement situations. A salient achievement situation that provides individuals with the opportunity to demonstrate competence in a public domain is competitive sport. According to Nicholls (1989), two independent goal orientations may be adopted that influence the types of situational goals individuals pursue in a competitive sport environment, namely, task and ego orientation. Individuals high in task orientation tend to approach sport with a focus on improving skill, trying

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hard, and achieving personal mastery in competition. In contrast, individuals who tend to approach sport with the goal of demonstrating superior normative ability are described as predominantly ego-oriented.

Task and ego goal orientations reflect two different achievement theories, differential beliefs about the causes of success, as well as different views about the purpose of participation. For example, goal orientation research indicates that ego orientation is associated with beliefs that the purpose of sport is to enhance social status (Treasure & Roberts, 1994) and gain financial reward (Carpenter & Yates, 1997), while deception (Roberts, Treasure, & Kavussanu, 1996) and taking an illegal advantage (White & Zellner, 1996) are the causes of success in sport. In contrast, task orientation is positively related to the view that sport is for personal development (Treasure & Roberts, 1994) and success is attributed to motivation and effort (Roberts et al., 1996).

High ego orientation predisposes many athletes to view sport as a means to an end, whereas high task-oriented athletes are more inclined to view sport achievement as the end in itself (Duda, Olson, & Templin, 1991). Accordingly, highly ego-oriented athletes may become so focused upon the end result of the sport process (e.g., social approval, status, financial reward) that their moral concerns about the means of achieving those ends may decline. Furthermore, because winning is a key indicator of success in sport, Nicholls's (1989) achievement goal theory postulates that highly ego-oriented athletes may be inclined to endorse the use of illegal or unsportspersonlike behaviors in their efforts to achieve the desired competitive victory (Stephens & Bredemeier, 1996).

Duda et al. (1991) investigated the relationship between goal orientations and sportpersonship with male and female interscholastic high school basketball players and found that athletes' goal orientations corresponded to their beliefs about what constituted acceptable behavior in competition. Specifically, canonical correlation results revealed that athletes with moderate to high ego orientation and low task orientation endorsed unsportspersonlike behaviors and advocated certain aggressive injurious behaviors that were intentionally directed at opponents. In addition, high ego orientation was correlated with athletes' endorsements of verbal intimidation and injury-causing behaviors that force an opponent to miss the rest of a game or season.

The present study was undertaken to examine goal orientations and sportpersonship in young male elite-level ice hockey players. Previous research (Silva, 1983) has shown that athletes involved in high-contact collision sports (e.g., football, ice hockey, and rugby) often legitimize the use of rule-violating behaviors in sport more than individuals involved in sports with less physical contact (e.g., soccer, basketball, and baseball). Thus, the present study was intended to investigate the generalizability of Duda et al.'s (1991) findings to younger athletes competing in a sport characterized by a high degree of physical contact. More specifically, the first purpose of this study was to examine the relationship between ice hockey players' goal orientations and their perceptions about the intentional use of aggressive behaviors, where aggression was defined as an athlete's "intent to physically, verbally, or psychologically harm . . . [an opponent] who is motivated to avoid such treatment" (Wann, 1997, p. 257). Based on Duda et al.'s (1991) findings and the theoretical predictions of Nicholls's (1989) achievement goal theory, it was hypothesized that ice hockey players with high ego orientation would be more inclined to endorse aggressive behavior than players with lower ego orientation.

Researchers (e.g., Vallerand, Deshaies, Cuerrier, Brière, & Pelletier, 1996; Vallerand & Losier, 1994) recently advocated the need for a more standardized theory-driven definition of sportspersonship than that used in previous research (e.g., Duda et al., 1991). They claimed that a standardized definition would help researchers gain a better understanding of individual differences in sportspersonship orientations (Vallerand & Losier, 1994) and enhance the feasibility of comparing sportspersonship research results across studies. To this end, Vallerand and colleagues (e.g., Vallerand, Brière, Blanchard, & Provencher, 1997; Vallerand, Brière, & Provencher, 1991; Vallerand, Deshaies, Cuerrier, Brière, & Pelletier, 1996; Vallerand & Losier, 1994) adopted a social-psychological view of sportspersonship that separates the latter from aggression (see Vallerand and Losier, 1994, for a more detailed discussion). The results of this research provide evidence for a multidimensional sportspersonship construct consisting of the following five dimensions:

1. Respect and concern for the social conventions in sport (e.g., shaking hands with opponents)
2. Respect and concern for personal involvement in sport (e.g., not giving up during competition)
3. Respect and concern for rules and officials (e.g., respecting the referee's decisions)
4. Respect and concern for the opponent (e.g., looking after the welfare of an injured opponent)
5. A negative approach to the practice of sport (e.g., abusing equipment after a poor performance)

Given these recent developments in sportspersonship-definitional research, the second purpose of the present study was to examine the relationship between goal orientations and a five-dimensional non-aggression-based sportspersonship construct. On the basis of the theoretical framework provided by Nicholls's (1989) achievement goal theory and following Duda et al.'s (1991) results, we hypothesized that high ego orientation would be associated with lower levels of sportspersonship (compared to low ego-oriented athletes). In addition, we predicted that high task orientation would be associated with higher levels of sportspersonship (compared to low task-oriented athletes).

Method

Participants

Participants were male youth ice hockey players ($N = 173$) from 11 Pee Wee AA teams. Player age ranged from 11.83 to 13.75 years (M age = 13.08, $SD = 0.52$). All players competed in one of two regional Pee Wee AA leagues in a Canadian province; the leagues offered the highest level of competitive age-group hockey available to youth in the province.

Measures

Four self-report questionnaires were used to assess players' demographic characteristics, goal orientations, perceived legitimacy of deliberately directing injurious behaviors toward opponents, and sportspersonship orientations. The demographic questionnaire prompted participants to provide information about age, regular playing position, and years of playing experience at the Pee Wee AA level.

Goal Orientations. A modified version of the Task and Ego Orientation in Sport Questionnaire (TEOSQ) (Duda & Nicholls, 1992) was used to assess players' goal orientations in hockey. The TEOSQ, which measures individual differences in goal orientations in the sport context, comprises 13 items: 7 measuring task orientation and 6 measuring ego orientation. Respondents are initially asked to think of their most successful experiences in sport and then to indicate on a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*) the extent to which they agree with each item. For each subscale, a higher composite score indicates a greater tendency toward the respective goal orientation. To make the TEOSQ more relevant to ice hockey, four of the original items were reworded, and the stem of the TEOSQ was modified from its original wording ("I feel most successful in sport when . . .") to a more sport-specific version (i.e., "I feel most successful in hockey when . . ."). Numerous studies have provided evidence for the factorial stability of the TEOSQ items (e.g., Chi & Duda, 1995; Duda, 1989; Duda & White, 1992) and demonstrated acceptably high levels of subscale internal consistency using Cronbach's (1951) coefficient alpha (e.g., Lochbaum & Roberts, 1993; Williams, 1994).

Legitimacy Perceptions of Injurious Behaviors. Players' perceptions regarding the legitimacy of deliberately injuring an opponent (through physical or nonphysical aggression) were assessed with five hockey-specific game scenarios that paralleled items in Bredemeier's (1985) Continuum of Injurious Acts (CIA). In the original version of the CIA, Bredemeier (1985) provided respondents with a set of six behavioral scenarios describing athletes' behaviors that were intended to injure or intimidate opponents. In this study, players were presented with a questionnaire (CIA-Hockey) containing five randomly ordered game scenarios, each describing injurious acts that a player might intentionally direct at an opponent during competition. In order of increasing severity, the injurious scenarios were as follows:

- Verbal intimidation of an opponent
- Physical intimidation of an opponent through the use of an illegal body check that does not result in injury
- An illegal elbow to an opponent's face that forces the injured player to miss the next few minutes of the game
- An illegal forearm to an opponent's face that forces the injured player to miss the rest of the game
- An illegal hip-check to an opponent's knee that causes the injured player to miss the rest of the season

The CIA-Hockey provided respondents with the following set of initial instructions prior to commencing the questionnaire:

Listed below are a number of statements describing various situations [the five injurious scenarios] that sometimes occur during competition. Imagine that each statement describes your behavior during an important end-of-season game. Please read each statement and indicate how much you personally approve or disapprove of the behaviors described.

After reading each scenario, respondents indicated their level of approval for each behavior on the following 5-point scale: 1 = *strongly disapprove*, 2 = *disapprove*, 3 = *neither approve nor disapprove*, 4 = *approve*, 5 = *strongly approve*

(cf. Duda et al., 1991, p. 81). Although each player only completed one CIA-Hockey questionnaire, five different versions of the instrument were employed in the study, each containing a different random presentation order of the five injurious scenarios. This format was deemed necessary to minimize the likelihood of any presentation order effect biasing the data.

Sportspersonship Orientations. Sportspersonship orientations were assessed with a modified hockey-specific version of the Multidimensional Sportspersonship Orientations Scale (MSOS; Vallerand et al., 1991).¹ Similar to Vallerand et al.'s original (1991) MSOS, the MSOS-Hockey contained 25 items measuring five different sportspersonship dimensions (respect and concern for social conventions, respect and concern for one's involvement in sport, respect and concern for the rules and officials, respect and concern for the opponent, negative approach to the practice of sport) (cf. Vallerand et al., 1996, 1997). Each dimension was assessed with a separate five-item subscale. Respondents were instructed to indicate on a 5-point scale (1 = *not at all like me*, 5 = *very much like me*) the degree to which the 25 items reflected the players' feelings or behaviors during competitive ice hockey. To avoid a response-set bias, eight items were worded such that a low score reflected a high degree of sportspersonship, whereas a high score on the remaining 17 items reflected a high degree of sportspersonship. When composite subscale scores were calculated, scoring on the eight low-scoring items was reversed such that higher item scores reflected higher levels of sportspersonship.

Although the original MSOS (Vallerand et al., 1991) served as the template for the MSOS-Hockey, the majority of the original MSOS items were modified to make them more relevant to the team-sport context of ice hockey. For example, one of the original MSOS-respect for social conventions items ("Even when I lose, no matter who the opponent is, I congratulate him") was changed to read: "When I lose, no matter which team I'm playing, I congratulate the opponents after the game." Similarly, one of the original MSOS-respect for one's involvement in sport items ("I don't give up, even after making many mistakes") was reworded: "I don't give up during games even when I make lots of mistakes." Occasionally, original MSOS items were deemed irrelevant to the context of this study and were therefore replaced with completely new items. For example, one item contained in the original MSOS-respect for opponents subscale ("If by misfortune, the opponent forgets his equipment, I lend him my spare one") was replaced with: "If an opponent who I disliked got hurt during my shift, I would make an effort to see that he was all right." Given the large number of alterations to the wording of the original MSOS, the MSOS-Hockey must be viewed as an exploratory instrument with no previously established reliability and validity evidence.

Procedures

Permission to conduct the study was initially granted by the hockey association governing all amateur hockey in the province where the study was conducted. Letters describing the general nature of the study, together with consent forms,

¹At the time of this study, the most recent work pertaining to the development of the MSOS by Vallerand and his colleagues (Vallerand, Deshaies, Cuerrier, Brière, & Pelletier, 1996; Vallerand, Brière, Blanchard, & Provencher, 1997) was unpublished.

were then sent to parents of players competing on the regional Pee Wee AA teams. Coaches of the respective teams were also contacted to seek their permission for access to the players immediately before or after a training session. Participation was voluntary, and only players who returned signed parental consent forms were administered the questionnaires. Written assent was also obtained from all participants at the time of testing. Testing was conducted at various ice rinks throughout the province where the teams practiced.

Before completing the questionnaires, players were given verbal reassurance from the person administering the instruments that all information would remain confidential and that neither the players' coaches nor parents would be given access to individual responses. All players completed the demographic questionnaire first. The three remaining questionnaires were completed in a random order. None of the players expressed any comprehension difficulties with questionnaires. A total of 28 questionnaires were deemed unsuitable for use in the data set due to missing data or inappropriate completion procedures (e.g., circling two response options for one question). Consequently, the final data set used for analytic purposes contained responses from 143 athletes.

Results

Goal Orientations

Given the changes to the wording of the TEOSQ items, a principal components analysis followed by a varimax rotation was conducted for the TEOSQ responses. Two factors with eigenvalues >1.0 were extracted, and an analysis of the resulting scree plot of eigenvalues using Cattell's (1978) scree criteria also suggested a two-factor solution. Factor 1 ($\lambda = 3.98$) accounted for 30.5% of the variance and contained all seven of the task orientation items. Factor 2 ($\lambda = 2.51$) explained 19.3% of the variance and contained the six ego orientation items. All items were rotated to simple structure (Thurstone, 1947), with each achieving a factor loading $>.50$ on one factor, and a factor loading $<.25$ on the other. Subscale internal consistency values using Cronbach's alpha were .83 and .79 for the task and ego orientation subscales, respectively. These results indicate that the modified version of the TEOSQ functioned in accordance with theoretical expectations.

The mean task orientation item score for the sample, calculated by dividing the composite task orientation subscale score by the number of items in the subscale ($n = 7$), was 4.30 ($SD = 0.49$). The mean ego orientation item score, calculated by dividing the composite ego orientation subscale score by the number of items in the subscale ($n = 6$), was 2.80 ($SD = 2.80$). The correlation between the two subscales was .22 ($p < .01$).

Legitimacy Perceptions

Table 1 contains full descriptions of the five game scenarios within the CIA- Hockey questionnaire, together with the mean approval ratings for each item. With the exception of the verbal intimidation scenario ($M = 3.37$), the rank order of the mean approval ratings for the four remaining scenarios was in the expected direction. Specifically, the more serious (or severe) the resulting injury to an opponent, the lower the corresponding mean approval score provided by athletes (see Table 1).

Table 1 Item Descriptions, Means, and Standard Deviations for Continuum of Injurious Acts-Hockey Scenarios

Item descriptions	<i>M</i>	<i>SD</i>
Verbal intimidation Early in the game you deliberately try to intimidate the opponent's best player by telling him that your team is "out to get him, so he better keep his head up."	3.37	1.15
Physical intimidation (no injury) Early in the game you deliberately hit the opposition's best player with a late body check just to let him know that he won't have an easy game against your team.	3.55	1.14
Miss next few minutes While digging for the puck in the corner, you get speared by an opponent but the referee doesn't call a penalty. You manage to free one arm and deliberately elbow the opponent in the face causing him to miss the next few minutes of the game.	2.83	1.10
Miss rest of game After making a number of dangerous plays with his stick, an opponent badly slashes one of your teammates on the wrist; the referee misses the play, and no penalty is called. On the next shift you body-check the same opponent into the boards while deliberately driving your forearm into his face; the opponent is forced to miss the rest of the game as a result of your check.	2.74	1.20
Miss rest of season An opponent cross-checks one of your teammates into the boards. Your teammate is forced to leave the game, and the opponent is given a 2-min penalty. Later in the game you deliberately aim a hip-check at the opponent's knee causing him to miss the rest of the season.	2.24	1.19

Note. Items were scored on a 5-point scale (1 = *strongly disapprove*, 5 = *strongly approve*).

Sportspersonship Orientations

The MSOS-Hockey data were subjected to a series of principal axes analyses. The initial analysis resulted in the extraction of seven factors with eigenvalues >1.0. However, the eigenvalue scree plot suggested a three-factor solution. The factor structures resulting from orthogonal rotations and oblique transformations for the three- and seven-factor solutions provided very poor simple structure across several items. Seven items were subsequently removed from the data set due to poor simple structure or loading on unique factors. Among the seven items removed from the data set, two were originally intended to represent the negative approach to the practice of sport (NAPS) dimension. Of the three remaining NAPS items, only two loaded together on a single factor, and one of the items had the lowest communality value (h^2) of any item in the seven-factor solution ($h^2 = .24$). Indeed,

in the original three-factor solution, four of the NAPS items had the lowest communality values of any items in the analysis (all $h^2 \leq .38$). Given the lack of fit between the NAPS items and the factor solutions, all NAPS items were removed from the data set.

Another principal axes analysis was conducted on the remaining 15 MSOS-Hockey items. Four factors with eigenvalues >1.0 were extracted, and an analysis of the eigenvalue scree plot also suggested a four-factor solution. An oblique transformation (direct oblimin) was then applied to the unrotated factor matrix, and a highly interpretable pattern matrix with excellent simple structure across all items emerged (see Table 2). All four factors reflected the sportspersonship dimensions proposed by Vallerand and colleagues (Vallerand et al., 1991, 1996, 1997), and labels given to each factor were in accordance with previous research.

Factor 1 ($\lambda = 4.40$) contained five items that reflected players' respect and concern for the social conventions (RSC) in hockey. Factor 2 ($\lambda = 2.01$) was composed of four items reflecting players' respect and concern for one's personal commitment to participation (ROPC) in hockey. The third factor ($\lambda = 1.52$) contained three items reflecting players' respect and concern for rules and officials (RRO). The fourth factor ($\lambda = 1.25$) also contained three items and reflected player's respect and concern for opponents (RO). The four factors accounted for 61.1% of the total variance.

Internal consistency coefficients were acceptable for both the RSC ($\alpha = .85$) and ROPC ($\alpha = .72$) subscales. However, internal consistency values for the RRO ($\alpha = .63$) and RO ($\alpha = .64$) factors fell below the .70 "acceptability-criteria" that is commonly adopted by researchers. Since the value of coefficient alpha is largely dependent upon the number of items in a subscale (Crocker & Algina, 1986), the internal consistency values for the RRO and RO subscales may have been lower than the two others because they have fewer items. Admittedly, however, the subscales may simply lack a high degree of internal consistency. Consequently, further results relating to the RRO and RO dimensions should be interpreted with some degree of caution.

Goal Orientations and Legitimacy Perceptions

To determine the relationship between players' goal orientations and their perceptions about the intentional use of injurious behaviors (as measured by the CIA-Hockey questionnaire), five separate multiple regression analyses were conducted. For each analysis, composite task and ego orientation scores were entered as independent variables, while the approval rating for each respective CIA-Hockey scenario was entered as the dependent variable. Both independent variables were entered into the analyses in a single step (cf. Norušis, 1993, p. 358). Results of the analyses are shown in Table 3. For each of the five CIA-Hockey scenarios, ego orientation was positively related to the dependent variable (all $ps < .05$), while the relationship between each dependent variable and task orientation was nonsignificant. Thus, results show that, on average, players with higher levels of ego orientation indicated higher approval ratings for the use of intentionally injurious behaviors than players with lower levels of ego orientation.

Goal Orientations and Sportspersonship

To determine the relationship between players' goal orientations and sportspersonship orientations on the four MSOS-Hockey dimensions (see Table 2), four separate multiple regression analyses were conducted. For each analysis, composite

Table 2 Descriptive Statistics and Rotated Pattern Coefficients for 15 Sportpersonship Items

Abbreviated item descriptions	Item ratings		Pattern coefficients			
	<i>M</i>	<i>SD</i>	F1	F2	F3	F4
When I lose, no matter who I am playing, I congratulate my opponents after the game.	3.79	1.04	.80			
I congratulate the opposing team for their performance, regardless of the score.	3.76	1.12	.71			
After a defeat, I think it's important to shake hands with the opposition's coach.	4.07	0.97	.70			
Whether I win or lose, I make an effort to shake hands with my opponents.	3.91	1.09	.66			
After winning, I acknowledge the other team's good play.	3.51	1.14	.49			
I don't give up during games, even when I make lots of mistakes.	3.90	0.95		.68		
I try to think about ways to improve my weaknesses.	4.29	0.79		.65		
During practices, I give maximum effort.	3.96	0.91		.56		
It's important for me to be at all team practices.	4.54	0.72		.55		
I think it's all right to argue with the referee when he makes really bad calls. (R)	3.12	1.29			.67	
I believe it's important to obey the referee and not argue with his decisions.	3.27	1.10			.57	
I think it's all right to break some rules if the opposing team keeps breaking them. (R)	3.10	1.21			.54	
If an opponent was wrongly given a 2-min penalty after hurting me with a clean check, I think someone should fix the situation by talking to the referee.	2.12	1.19				.63
If an opponent who I disliked got hurt, I'd make an effort to see that he was all right.	2.88	1.36				.59
If an opponent is unjustly penalised, I try to rectify the situation.	2.55	1.34				.59

Note. Only pattern coefficients $\geq .30$ are reported. All interfactor correlations (r) were $\leq .15$, with the exception of $r_{1,2} = .32$ and $r_{1,4} = .31$.

Table 3 Simultaneous Multiple Regression Analyses of Goal Orientations on Continuum of Injurious Acts (CIA)-Hockey Items

CIA item	Beta	<i>t</i>	<i>p</i>
Verbal intimidation, $F(2, 140) = 3.91, p < .05, R^2 = .05$			
Ego	.23	2.70	< .01
Task	.01	0.11	<i>ns</i>
Physical intimidation . . . No injury, $F(2, 140) = 4.06, p < .05, R^2 = .05$			
Ego	.20	2.35	< .05
Task	.09	1.06	<i>ns</i>
Opponent misses next few minutes, $F(2, 140) = 4.04, p < .05, R^2 = .05$			
Ego	.23	2.72	< .01
Task	-.12	-1.42	<i>ns</i>
Opponent misses rest of game, $F(2, 140) = 4.59, p < .05, R^2 = .06$			
Ego	.25	3.03	< .005
Task	-.04	-0.51	<i>ns</i>
Opponent misses rest of season, $F(2, 140) = 2.56, p < .08, R^2 = .08$			
Ego	.19	2.23	< .05
Task	-.07	-0.85	<i>ns</i>

task and ego orientation scores were entered as independent variables, and the respective composite MSOS-Hockey subscale scores were entered as the dependent variables. The two independent variables were entered simultaneously into the analyses in a single step.

Table 4 reveals that task orientation was positively related to players' respect and concern for social conventions in hockey ($p < .0001$); players with higher levels of task orientation were more likely to have a greater respect for social conventions in hockey than players with lower levels of task orientation. Task orientation was also positively related to players' ROPC scores ($p < .0001$); on average, players with higher levels of task orientation had greater respect and concern for their personal commitment to participation in hockey than players with lower levels of task orientation. Task orientation ($\beta = .169, p < .05$) and ego orientation ($\beta = -.249, p < .005$) were both significantly related to RRO scores. Specifically, players with higher levels of task orientation had, on average, higher levels of respect for rules and officials than players with lower levels. In contrast, players with higher levels of ego orientation were more likely to have lower respect for the rules and officials than players with lower levels. When the respect and concern for opponents (RO) dimension was entered as a dependent variable, no significant multiple regression test statistics were obtained.

Goal Orientation Patterns

Because task and ego orientation are considered independent constructs (Duda & Nicholls, 1992), an examination of the relationship between athletes' goal orientation patterns, legitimacy perceptions, and sportpersonship orientations was considered

Table 4 Simultaneous Multiple Regression Analyses of Goal Orientations on Multidimensional Sportsmanship Orientations Scale (MSOS)-Hockey Subscales

MSOS subscale	Beta	<i>t</i>	<i>p</i>
Respect for social conventions, $F(2, 140) = 10.18, p < .0005, R^2 = .13$			
Ego	-.09	-1.11	<i>ns</i>
Task	.365	4.51	< .0001
Respect of personal commitment to participation, $F(2, 140) = 32.18, p < .0001, R^2 = .31$			
Ego	-.052	-0.73	<i>ns</i>
Task	.57	7.95	< .0001
Respect for rules and officials, $F(2, 140) = 5.44, p < .01, R^2 = .07$			
Ego	-.249	-2.98	< .005
Task	.169	2.03	< .05
Respect for opponent, $F(2, 140) = 1.28, p < .28, R^2 = .02$			
Ego	-.135	-1.57	<i>ns</i>
Task	.055	0.64	<i>ns</i>

necessary. Consequently, the sample was divided into four goal orientation-pattern groups using a similar mean-split protocol employed in previous research (see Fox, Goudas, Biddle, Duda, & Armstrong, 1994). Athletes were categorized into the following mutually exclusive groups based upon their mean task- ($M = 4.30$) and ego-orientation scores ($M = 2.80$): high task/high ego (HT/HE; $n = 48$), high task/low ego (HT/LE; $n = 24$), low task/high ego (LT/HE; $n = 32$), and low task/low ego (LT/LE; $n = 39$). Table 5 contains the mean CIA-Hockey approval ratings and mean MSOS-Hockey subscale item scores for the four groups.

A one-way MANOVA was conducted on the five CIA-Hockey scenarios (with the four goal orientation groups serving as independent variables) to determine if there were significant differences between goal orientation groups' CIA-Hockey approval ratings. A nonsignificant multivariate test of significance was obtained, $T^2 = .141, F(15, 401) = 1.26, p = .23$, leading to the conclusion that the patterning of goal orientations among the ice hockey players in this sample did not differentially affect legitimacy perceptions.

A similar MANOVA procedure was employed to examine whether goal orientation patterns affected players' sportspersonship orientation levels, with the mean item subscale scores for the four MSOS-Hockey dimensions entered as dependent variables. A significant multivariate test statistic was obtained, $T^2 = .416, F(12, 404) = 4.67, p < .0001$, leading to the rejection of the null hypothesis of no differences in sportspersonship orientation levels between goal orientation groups. Follow-up univariate F tests revealed significant group differences on respect for social conventions (RSC), $F(3, 139) = 5.45, p < .005$, and respect for one's personal commitment to participation (ROPC), $F(3, 139) = 15.29, p < .001$. The univariate F test for the respect for rules and officials (RRO) dimension approached significance, $F(3, 139) = 2.33, p = .07$. However, the respect for opponents (RO) dimension was nonsignificant, $F(3, 139) = 1.19, p = .32$.

Table 5 Goal Orientation Group Mean Item Ratings for Continuum of Injurious Acts (CIA)-Hockey Scenarios and Mean Subscale Item Scores for Multidimensional Sportsmanship Orientations Scale (MSOS)-Hockey Dimensions

Dependent variables	Goal orientation groups							
	High task/ high ego ^a		High task/ low ego ^b		Low task/ high ego ^c		Low task/ low ego ^d	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CIA scenarios								
Verbal intimidation	3.50	1.22	3.12	1.30	3.59	0.08	3.18	1.21
Physical intimidation (no injury)	3.81	1.20	3.46	1.18	3.41	0.95	3.38	1.16
Miss next few minutes	3.00	1.22	2.42	1.06	3.00	0.98	2.72	1.00
Miss rest of game	2.90	1.46	2.29	1.00	3.03	1.18	2.59	0.88
Miss rest of season	2.52	1.30	1.58	0.72	2.37	1.24	2.18	1.10
MSOS subscales								
Respect for social conventions	4.03	0.79	4.17	0.86	3.53	0.77	3.55	0.83
Respect for one's commitment	4.48	0.52	4.45	0.47	3.77	0.61	3.94	0.58
Respect for rules and officials	3.13	1.10	3.49	0.96	2.86	0.70	3.25	0.72
Respect for opponent	2.59	1.07	2.79	1.02	2.38	0.96	2.38	0.89

Note. A higher mean CIA item score reflects a higher approval rating for the use of the intentionally injurious behavior. A higher mean item MSOS subscale score reflects a higher respect and concern for the sportsmanship dimension.

^a*n* = 48. ^b*n* = 24. ^c*n* = 32. ^d*n* = 39.

To locate group differences in sportpersonship orientation levels, follow-up multiple independent *t* tests using a Bonferroni correction to keep the overall per-comparison α -rates at .05 were employed. In accordance with the Bonferroni correction procedure outlined by Stevens (1992), each *t* test was conducted at the .008 level of significance, thereby keeping the overall α level below .05. Table 6 contains the significant independent *t* test results for the RSC, ROPC, and RRO dimensions. In all cases where significant univariate test statistics were obtained, high task orientation groups (irrespective of ego orientation levels) had significantly higher sportpersonship orientation levels than low task orientation groups (all *ps* < .008).

Discussion

Nicholls (1989) stated that a person's "preoccupation with winning may . . . be accompanied by a lack of concern about justice and fairness" and that "when winning is everything, it is worth doing anything to win" (p. 133). Results of the

Table 6 Significant Independent *t* tests Comparing Mean Subscale Item Scores on Three Sportspersonship Dimensions Across Goal-Orientation Groups

Goal-orientation group comparisons	Mean difference	<i>t</i>	<i>df</i>	<i>p</i>	<i>ES</i> ^a
Respect and concern for one's personal commitment to hockey participation					
(HT/HE) – (LT/HE)	.71	5.64	78	< .001	1.27
(HT/HE) – (LT/LE)	.54	4.59	85	< .001	0.98
(HT/LE) – (LT/HE)	.68	4.57	54	< .001	1.24
(HT/LE) – (LT/LE)	.51	3.62	61	< .001	0.94
Respect and concern for the social conventions in hockey					
(HT/HE) – (LT/HE)	.50	2.81	78	< .008	0.64
(HT/HE) – (LT/LE)	.47	2.74	85	< .008	0.58
(HT/LE) – (LT/HE)	.64	2.97	54	< .005	0.79
(HT/LE) – (LT/LE)	.62	2.87	61	< .008	0.74
Respect and concern for the rules and officials					
(HT/LE) – (LT/HE)	.62	2.79	54	< .008	0.76

Note. HT = high task; LT = low task; HE = high ego; LE = low ego.

^a $ES = (M_1 - M_2) / SD_{pooled}$ (see Thomas, Salazar, & Landers, 1991).

multiple regression analyses using the five CIA-Hockey game scenarios as dependent variables support Nicholls's contention. For all five scenarios, hockey-specific ego orientation significantly predicted athletes' legitimacy judgements, with higher levels of ego orientation associated with greater approval ratings for the use of aggressive behaviors. These findings are similar to results obtained from canonical correlation analyses conducted by Duda et al. (1991), who indicated that high ego orientation among high school basketball players was strongly associated with athletes' approval for the use of nonphysical intimidation and aggressive behavior that forced an opponent to miss the rest of the game or season. Thus, results obtained in the present study support previous findings, suggesting that athletes with high ego orientation tend to demonstrate less concern for "the process of competitive sport" (Duda et al., 1991, p. 85) than their low ego-oriented counterparts. Apparently, high ego orientation can have a detrimental effect upon athletes' moral reasoning in sport when the players' need to "maximize their superiority or dominance" (Nicholls, 1992, p. 48) over opponents becomes more important than the manner in which competitive success is achieved.

Results of the multiple regression analyses using the four MSOS-Hockey subscales as dependent variables revealed that athletes with higher hockey-specific task orientation (compared to athletes with lower task orientation) generally had greater respect and concern for social conventions in hockey, for their own personal commitment to hockey participation, and for the rules and officials. These results are consistent with theoretical expectations (Nicholls, 1989) and previous research (Duda, 1989) indicating that task orientation is "linked to an endorsement of the intrinsic dimensions [e.g., personal mastery] and prosocial consequences [e.g., cooperation] of the sport experience" (Duda, 1992, p. 81).

Previous discussion about the multiple regression results addressed the independent effects of task and ego orientation on players' legitimacy perceptions and sportspersonship. That is, the reported beta coefficients account for variance in the dependent variables that is associated with one independent variable (i.e., goal orientation) when the other independent variable's effect has been partialled out (cf. Stevens, 1992). Although this information is important to demonstrating the independent relationships between each goal orientation, athletic aggression, and sportspersonship in ice hockey, from an applied perspective it is perhaps more important to understand how an athlete's pattern of goal orientations affects athletic aggression and sportspersonship. Although no goal orientation-pattern group differences were observed among the players' approval ratings for the use of aggressive behaviors, several group differences did emerge on three of the MSOS-Hockey dimensions. In every instance where a significant univariate test statistic was observed (see Table 6), high task orientation groups had significantly higher sportspersonship orientation levels than low task orientation groups, regardless of the level of ego orientation. In other words, irrespective of ego orientation levels, low task orientation was more "motivationally detrimental" (Fox et al, 1994, p. 259) than high task orientation to players' respect for personal commitment to hockey participation (ROPC) and for social conventions in hockey (RSC). Thus, task orientation appears to be the critical motivational factor in determining players' sportspersonship on the ROPC and RSC dimensions.

Of further interest is the rank order of the mean MSOS-Hockey dimension scores across the four goal orientation pattern groups (see Table 5). Among the four groups, the HT/LE group had the highest sportspersonship scores on three of the four MSOS-Hockey dimensions, while the LT/HE group had the lowest scores on all four dimensions. (The magnitude of the effect sizes reported in Table 6 indicates that the observed mean sportspersonship differences between the HT/LE and LT/HE groups were quite large). The LT/HE group also had the highest approval ratings for three of the five CIA-Hockey game scenarios (see Table 5). These results suggest that for the present sample, a low task orientation combined with a high ego orientation is the most detrimental motivational pattern for sportspersonship and athletic aggression in ice hockey, while a high task orientation combined with a low ego orientation may be the most beneficial for sportspersonship.²

Achievement goal theorists (e.g., Ames, 1992; Nicholls, 1989) suggest that children's goal orientations can be altered through the systematic delivery of task- and ego-directed reinforcement from significant others. Given the results of this study, if young male elite-level ice hockey players are to develop more favorable attitudes toward sportspersonship and moral reasoning in sport, coaches and parents should attempt to reinforce the importance of task-oriented achievement in the competitive environment. For example, a coach should consistently provide verbal rewards (that contain no normative-comparison content) to athletes who have clearly tried hard or who have performed to the best of their abilities. However, the present results also suggest that trying to reduce athletes' levels of ego orientation

²It must be recognized that "population-specific" group norms regarding levels of task and ego orientation are not available (Fox et al., 1994, p. 256), therefore, the high-low classifications in this study are only relevant to athletes in this particular sample. Thus, an athlete who was classified as high task/low ego in this study may, for example, be classified quite differently in a different sample.

may not necessarily lead to improved sportspersonship. Moreover, Fox et al. (1994) found that school children (M age = 11.1 years) who were highly ego- and task-oriented tended to report high levels of perceived competence and enjoyment in sport—attributes that would be desirable for elite athletes who regularly engage in competition over prolonged periods. Furthermore, research in the classroom (Hofmann & Strickland, 1995) has also shown that high ego orientation can be associated with strong performance on an academic problem-solving task, suggesting that high ego orientation can be highly beneficial for individuals in achievement situations. In other words, trying to reduce ego orientation levels among elite youth sport competitors may actually have a detrimental effect upon the motivational characteristics that are required for elite-level performance in sport.

While the present study focused upon the relationship between goal orientations and athletes' perceptions of athletic aggression and sportspersonship, other situational variables could potentially influence players' responses on the dependent variables in this study and therefore require future consideration. For example, a recent study with young female soccer players (M age = 11.47 years) found that goal orientations were actually uncorrelated with players' responses to a question about the likelihood of deliberately tripping an opponent that would probably result in injury to the player who was fouled (Stephens & Bredemeier, 1996). However, Stephens and Bredemeier did find that players' perceptions about team norms (regarding the use of aggressive behaviors) and their coaches' ego-orientation levels significantly predicted the athletes' likelihood to aggress. From an applied perspective, youth sport research has consistently shown that coaching behaviors (or coaching styles and motives) can have an important influence upon the development of athlete perceptions, motives, and behaviors in the competitive sport environment (see Chelladurai, 1993, for a review of related research). Thus, assuming that one of society's goals for youth sport is to build moral or prosocial character, future research is needed to investigate the potential influence of coaches (and other relevant situational variables) on the development of sportspersonship and athletic aggression among young athletes. More information of this nature will enable coaches to more effectively structure youth sport environments to increase the likelihood of developing skilled athletes who possess a strong commitment to sportspersonship, justice, and fairness in sport. This line of work seems particularly warranted in the context of a high-contact sport like ice hockey, where previous research has shown a tendency among athletes competing in high contact sports to legitimize rule violating behaviors (e.g., Silva, 1983).

Although not the primary purpose of this study, the results of the principal axes analyses of the MSOS-Hockey data provided support for the multidimensional conceptualization of sportspersonship proposed by Vallerand et al. (1991, 1996, 1997). Even though the wording and content of the MSOS-Hockey items were different from those in Vallerand et al.'s (1991) original and current versions of the MSOS (Vallerand et al., 1996, 1997), four of the extracted factors in this study were congruent with those obtained in previous research. Only the negative approach to the practice of sport (NAPS) items failed to replicate the hypothesized factor. This finding may have resulted due to poor item construction during the development of the MSOS-Hockey questionnaire. However, in a recent study on the factorial structure of the current MSOS (Vallerand et al., 1997), two NAPS subscale items had low (but statistically significant) factor loadings on the NAPS dimension, and the internal consistency of the 5-item subscale was also quite low

($\alpha = .54$). Given these findings, the theoretical definition of the NAPS sports-personship dimension (and the content of items that make up the subscale) may need further clarification and examination before the NAPS dimension can be considered a valid component of the sports-personship construct. Nevertheless, the present results indicate that Vallerand and colleagues' (Vallerand et al., 1996; Vallerand & Losier, 1994) social-psychological conceptualization of sports-personship goes beyond previous "justice-oriented" definitions of the construct (Vallerand et al., 1996) and that key components of sports-personship, including athletes' respect and concern for social conventions, others, and themselves (see Vallerand et al., 1996, pp. 96–97), should be considered in future research.

Finally, because the present study focused solely upon the relationship between goal orientations, perceptions of athletic aggression, and sports-personship in male athletes, an additional consideration for future research would be determining whether gender may affect the observed relationships among these variables. Previous research by Duda et al. (1991) found gender differences in goal orientations, sports-personship attitudes, and aggression perceptions in high-school basketball players. Specifically, Duda et al. found that compared to females, male athletes were significantly more inclined to endorse the use of cheating strategies and injurious behaviors; they also had significantly higher levels of ego orientation and significantly lower levels of task orientation than female athletes. Therefore, in the absence of empirical evidence, caution should be exercised in generalizing the present results to similarly aged female hockey players.

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