

## Participation in sport and moral functioning: Does ego orientation mediate their relationship?

Kavussanu, Maria; Ntoumanis, Nikolaos

*Citation for published version (Harvard):*

Kavussanu, M & Ntoumanis, N 2003, 'Participation in sport and moral functioning: Does ego orientation mediate their relationship?', *Journal of sport & exercise psychology*, vol. 25, no. 4, pp. 1-18.  
<<http://hk.humankinetics.com/JSEP/journalAbout.cfm>>

[Link to publication on Research at Birmingham portal](#)

### General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

### Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact [UBIRA@lists.bham.ac.uk](mailto:UBIRA@lists.bham.ac.uk) providing details and we will remove access to the work immediately and investigate.

## **Participation in Sport and Moral Functioning: Does Ego Orientation Mediate Their Relationship?**

**Maria Kavussanu and Nikos Ntoumanis**  
The University of Birmingham

This study examined whether participation in contact sports influences moral functioning within the sport context, and whether these effects are mediated by ego orientation; the role of task orientation on moral functioning was also examined. Participants ( $N = 221$ ) were college athletes participating in basketball, soccer, field hockey, and rugby. They completed questionnaires assessing sport participation, goal orientations, moral functioning, and social desirability. Structural equation modeling analysis indicated that participation in contact sports positively predicted ego orientation, which in turn predicted low levels of moral functioning. The direct effects of sport participation on moral functioning became nonsignificant in the presence of ego orientation, indicating that the latter construct mediates the relationship between the first two variables. Task orientation corresponded to high levels of moral functioning. These findings help us further understand the processes operating in contact sports and are discussed in terms of their implications for eliminating unsportsmanlike conduct from the sport context.

**Key Words:** achievement goals, sport participation, mediation, contact sports

The adage that sport builds character is popular in many societies and can be traced back to the ancient Olympic Games. This belief is based on the premise that sport provides a vehicle for learning to cooperate with teammates, negotiate and give solutions to moral conflicts, develop self-control, display courage, and learn virtues such as fairness, team loyalty, persistence, and teamwork (see Shields & Bredemeier, 1995). Despite popular beliefs, the idea that sport builds character has been questioned. Ogilvie and Tutko (1971), for example, published an article titled "Sport: If you want to build character, try something else." Moreover, stories of illegal recruitment, use of performance enhancing drugs, aggressive behaviors, and acts of cheating are abundant in the sport context.

Although sport has been advocated as a character builder since ancient times, moral issues in sport have only recently been the subject of empirical research. A number of studies conducted primarily by Bredemeier and her colleagues (e.g., Bredemeier & Shields, 1984, 1986a, 1986b; Bredemeier, Weiss, Shields, & Cooper, 1986, 1987) have examined the relationship between sport participation and

---

The authors are with the School of Sport and Exercise Sciences at the University of Birmingham, Edgbaston, Birmingham, B15 2TT, U.K.

various aspects of morality, namely moral reasoning, aggressive tendencies, and judgments about the legitimacy of intentionally injurious sport acts. The bulk of this work has focused on medium and high contact sports, as these sports have the inherent potential for injury and therefore directly raise moral issues (Bredemeier & Shields, 1986a). Two distinct strategies have been employed to determine the relationship between sport participation and morality.

The first strategy was to compare athletes and nonathletes on moral reasoning, which refers to the criteria one uses to give solutions to moral conflicts. For structural developmental theorists (e.g., Kohlberg, 1984), these criteria reflect one's level of moral development. Initial research employing measures of general moral maturity revealed that college basketball players reasoned at a less mature level compared to college norms (Bredemeier & Shields, 1984; Hall, 1981). Subsequent work using moral dilemmas set in sport and daily life contexts showed that college basketball players demonstrated less mature reasoning than nonathletes in response to both life and sport moral dilemmas (Bredemeier & Shields, 1986a). However, no such differences were found at the high school level among basketball players or at the college level among swimmers (Bredemeier & Shields, 1986a).

The second strategy used to examine the relationship between sports participation and morality was to determine whether the extent of sport involvement is associated with moral reasoning, aggressive tendencies, and judgments about the legitimacy of intentionally injurious sport acts. Bredemeier et al. (1986) found that the extent of boys' involvement in high contact sports such as football, wrestling, and judo, and girls' involvement in medium contact sports such as soccer and basketball, was associated with less mature moral reasoning and greater self-reported tendencies to be aggressive in both sport and daily life. These findings were corroborated by two other studies, which revealed that extensive participation in medium contact sport among young people (Conroy, Silva, Newcomer, Walker, & Johnson, 2001), and in high contact sports among boys at a summer camp (Bredemeier et al., 1987), corresponded to judgments that aggressive behaviors in sport are legitimate. Interestingly, participation in noncontact sports such as gymnastics, golf, swimming, and track and field did not emerge as a predictor of any dimension of morality in these studies.

These findings are alarming and cast serious doubts on the belief that sport builds character, as assessed by different measures of morality. The findings suggest that extensive participation in at least some types of sport may have detrimental effects on moral functioning. However, as Shields and Bredemeier (1995) have noted, there is nothing inherently moral or immoral about performing sport skills. Other factors associated with competitive sport influence the relationship between participation in certain sports and various aspects of morality. Identifying these factors would enhance our understanding of the processes that operate in the sport context. Achievement goal theory can shed some light on these processes.

Achievement goal theory (Ames, 1992; Nicholls, 1989) suggests that individuals engage in achievement situations in order to demonstrate competence. However, the criteria one uses to judge success and define competence vary as a function of one's goal perspective. Two major goal perspectives are assumed to operate in the achievement context of sport, namely task orientation and ego orientation. The task-oriented individual tends to use self-referenced criteria to judge competence and feels successful when he or she has learned or mastered the task. In contrast, the ego-oriented person tends to use other-referenced criteria to define

success and judge competence, and feels successful when he or she has outperformed others. The primary means by which the ego-oriented athlete demonstrates competence is through winning. Goal orientations are orthogonal, that is, one can be high or low on both, or high on one and low on the other (Nicholls, 1989).

Achievement goals appear to have important implications for moral functioning in sport. Because the ego-oriented athlete's perceptions of competence are dependent on outdoing others, he or she may be more likely to break the rules and behave in an unsportspersonlike fashion when winning is at stake. In contrast, an athlete high in task orientation focuses on the task at hand and feels successful when he or she performs up to his or her potential. When task orientation prevails, one's level of competence is judged with respect to self-referenced criteria, thus cheating and aggressing against another to demonstrate competence in the normative sense is irrelevant. This athlete is more likely to want to play by the rules and experience a fair competition.

A number of empirical studies examining the link between goal orientations and various aspects of morality have supported these predictions. Specifically, ego orientation has been related to approval of intentionally injurious acts among high school and college basketball players (Duda, Olson, & Templin, 1991; Kavussanu & Roberts, 2001) and elite ice hockey players (Dunn & Dunn, 1999), and corresponded to low levels of moral reasoning in adult rugby players (Todd & Hodge, 2001). Task orientation, on the other hand, has been linked to sportspersonlike attitudes (Duda et al., 1991) and has emerged as a positive predictor of some dimensions of sportspersonship, namely respect for social conventions and personal commitment to sport (Dunn & Dunn, 1999).

The role of achievement goals on moral functioning in sport has recently been examined using Rest's (1984) model. Rest proposed that in order to understand moral behavior, we need to examine the inner processes that produce the behavior. According to Rest, in each moral action at least four major processes are implicated: (a) interpreting the situation by recognizing how different actions could influence the welfare of all parties involved; (b) forming a judgment about what *ought to* be done in a particular situation; (c) deciding what one actually intends to do; and (d) implementing the actual behavior. Moral development involves gaining proficiency in all four processes. Deficiency in any of these processes can result in moral failure.

Rest (1984) proposed that the four processes are interactive, influencing each other through feedback and feed-forward loops, and that a number of factors act upon them. For instance, the process of making a moral decision is influenced by motivational factors, while actual behavior is affected by distraction, fatigue, or factors that physically prevent someone from carrying out a plan of action. Achievement goals have been proposed (Kavussanu & Roberts, 2001; Shields & Bredemeier, 1995) to influence the third component of Rest's model, that is, one's decision or intention to act. However, because of the interactive nature of the four processes, factors seen as acting primarily on one process also indirectly influence the others. A number of studies have used Rest's model in sport (e.g., Gibbons, Ebbeck, & Weiss, 1995; Kavussanu & Roberts, 2001; Stuart & Ebbeck, 1995), and it has received support in other life domains (e.g., Rest, 1994).

Using a sample of American college basketball players, Kavussanu and Roberts (2001) examined the role of achievement goals on three of the four components of Rest's model, namely moral judgment, intention, and behavior. The term

moral functioning was used to refer to the three components. Athletes responded to moral dilemmas describing unsportsmanlike behaviors likely to occur during a basketball game. High ego orientation corresponded to low levels of moral judgment and intention in women; that is, the higher the athlete's ego orientation, the more likely she was to judge the described behaviors as appropriate and to report the intention to engage in these behaviors. The relationship between ego orientation and reported behavior was not significant.

The studies above clearly suggest that achievement goals, ego orientation in particular, have important implications for moral functioning in sport. Although the evidence on task orientation is less consistent, research has clearly shown that ego orientation is inversely related to various aspects of morality including sports-personship, judgments about the legitimacy of intentionally injurious acts, and moral judgment and intention. Because of the inverse link between ego orientation and moral variables, factors that promote this goal perspective would also be expected to promote low levels of moral functioning. One such factor is extensive involvement in competitive sport. It has been shown that ego orientation is more pronounced at higher levels of competitive sport. Specifically, White and Duda (1994), using a wide variety of sports (basketball, soccer, volleyball, field hockey, and lacrosse), found that athletes participating in intercollegiate sport—the highest competitive level group they examined—were significantly more ego oriented than youth, high school, and recreational sport participants.

According to achievement goal theory, goal orientations develop as a result of socialization experiences (Ames, 1992; Nicholls, 1989). Through interaction with parents, teachers, and coaches, young people learn what is valued in achievement contexts and adopt different criteria for success, thereby adopting different goal perspectives (Ames, 1992). In particular, extensive exposure to environments in which success is defined in normative terms and the focus is on competitive outcomes would be expected to promote ego orientation. Such an environment is typical at high levels of competitive sport. Indeed, research examining variation in coaching behaviors at different competitive levels in basketball found that as the athlete moves through the sport system, there is an increasing emphasis on competitive outcomes and normative ability from elementary to junior high to the high school level (Chaumeton & Duda, 1988). As a result, extensive participation in competitive sport with its emphasis on competitive outcomes and normative ability may strengthen the athlete's ego orientation. This orientation in turn may influence his or her moral functioning.

The present study attempted to integrate the extant literature on morality in sport and propose a process through which participation in medium or high contact sports may influence athletes' moral functioning in the sport context. The term moral functioning was used to refer to moral judgment, intention, and behavior—three of the four components of Rest's (1984) model. We used Rest's model as the theoretical framework because it is an inclusive model of morality that considers multiple components of the construct. We proposed that extensive involvement in medium or high contact sports has a negative effect on moral functioning and that this effect is mediated by ego orientation. Thus, extensive participation in these sports was hypothesized to be positively related to ego orientation, which in turn was predicted to correspond to low levels of moral functioning. Because, to the best of our knowledge, there is no evidence to suggest that sport participation may affect task orientation, we hypothesized no link between the two constructs. How-

ever, a relationship was expected between task orientation and moral functioning, with higher levels of task orientation leading to higher levels of moral functioning. This relationship was not expected to be strong, as the relevant evidence to date has been inconsistent (e.g., Duda et al., 1991; Dunn & Dunn, 1999; Stephens, 2000).

## Method

### *Participants*

Participants were male ( $n = 161$ ) and female ( $n = 61$ ) college athletes participating in one of four sports at a British university: basketball ( $n = 56$ ), football ( $n = 39$ ), hockey ( $n = 50$ ), and rugby ( $n = 77$ ). Those sports were selected because they can be classified as medium or high contact sports, and past work (Bredemeier & Shields, 1986a; Bredemeier et al., 1986, 1987; Conroy et al., 2001) has shown that extensive participation in these sports is associated with low levels of moral functioning, as broadly defined. A total of 18 teams participated in the study. Participants' ages ranged from 17 to 28 years (mean = 20,  $SD = 1.57$ ) and had participated in their respective sport for an average of 8.33 ( $SD = 4.03$ ) seasons.

### *Measures*

*Sport Participation.* Extent of sport participation was measured with a single item asking athletes to indicate the total number of seasons they had participated in their respective sport. This item has been used extensively in past research to assess sport participation (e.g., Bredemeier et al., 1986, 1987; Conroy et al., 2001).

*Goal Orientation.* The Perception of Success Questionnaire (POSQ; Roberts, Treasure, & Balague, 1998) was used to assess task and ego goal orientations. Athletes were asked to think about when they feel most successful in their sport and respond to six items reflecting task and six items reflecting ego orientation. The stem for each item was "When playing my sport, I feel most successful when..." Examples of items are "I show clear personal improvement" and "I am the best" for task and ego orientations, respectively. Participants responded on a 5-point Likert scale anchored by "strongly disagree" = 1 and "strongly agree" = 5. Separate scores were calculated for each subscale by adding participants' responses on the items of the respective subscale and dividing by the number of items. The POSQ has demonstrated satisfactory internal consistency with Cronbach's (1951) alpha coefficients of .90 for the task subscale and .84 for the ego subscale (Roberts et al., 1998). Alpha coefficients in the present study were .77 for task and .81 for ego orientation.

*Moral Functioning.* Moral functioning was assessed using an instrument developed by Gibbons, Ebbeck, and Weiss (1995) which was modified to adapt to the present study. We used four dilemmas referring to unsportspersonlike behaviors likely to occur in all four sports: lying to an official, breaking a rule, risking injuring an opposing player, and deliberately hurting an opponent. We selected these dilemmas based on previous research (Kavussanu & Roberts, 2001; Stephens, 1993; Stuart & Ebbeck, 1995).

Judgment, intention, and behavior were assessed following each dilemma. *Judgment* was measured by asking athletes to judge whether it is appropriate to engage in the described behavior during a critical game. To assess *intention* to act,

athletes were asked to indicate whether they would engage in the described behaviors during a critical game. In both cases the responses ranged from “never” = 1 to “always” = 5. Finally, *behavior* was measured by asking participants to indicate how often they had engaged in the described behaviors this season. Responses ranged from “never” = 1 to “very often” = 5. Since this study measured reported rather than actual behavior, the term behavior refers to reported behavior. These questions have been used in past research (Kavussanu & Roberts, 2001) to assess indices of moral functioning.

*Social Desirability.* Given the nature of the questions asked, it was deemed important to include a social desirability scale. We used the short version of the Marlowe–Crowne social desirability scale (Crowne & Marlowe, 1960), which contains 10 statements describing socially desirable attributes (e.g., “I am always willing to admit when I make a mistake”). Participants indicated whether each statement was true or false for them personally, and received a score of 1 for each socially desirable response and a score of 0 for responses not considered socially desirable. The total score was determined by summing the numbers assigned to each statement. The KR-20 of the social desirability scale was .53.

### *Procedure*

We contacted the coaches of all university teams of the four respective sports, informed them about the purpose of the study, and asked for permission to administer a questionnaire to their athletes. All 18 coaches who were contacted agreed to assist us in conducting the study. The first author then visited the teams and administered a multisection questionnaire to the athletes either at the beginning or at the end of a practice session. All athletes who were present at the time of data collection participated in the study. The questionnaire took approximately 10 to 15 minutes to complete. Normal informed consent procedures were followed. Athletes were encouraged to respond to the questions as honestly as possible; they were assured that their responses would be kept confidential and that they could withdraw from the study at any time.

## **Results**

### *Descriptive Statistics and Correlation Analysis*

Means and standard deviations for all variables are listed in Table 1. This table also includes correlations among sport participation, task orientation, ego orientation, and moral variables. Correlations remained largely unchanged when we controlled for social desirability, indicating that social desirability did not affect the relationships among the variables of interest.

### *Structural Equation Modeling*

Structural equation modeling (SEM) was used to test the hypothesized model. When using SEM, a two-step approach is recommended (Anderson & Gerbing, 1988). The first step involves testing the measurement model, that is, the relationships of observed items to their posited underlying factors. If this is found to be adequate, one can proceed to the second step to examine the structural model, that is, the relationships among latent factors. Following this recommendation, we

**Table 1 Means, Standard Deviations, and Correlations of All Variables**

Variable	<i>M</i>	<i>SD</i>	Correlations		
			Sport particip.	Ego orient.	Task orient.
Sport participation	8.33	4.05			
Ego orientation	3.91	.69	.26**		
Task orientation	4.44	.46	-.08	.15**	
Judgment					
Lie to an official	2.89	1.27	.09	.25**	-.15*
Break a rule	2.93	1.01	.13	.30**	-.12
Risk injuring opponent	2.22	1.16	.17*	.27**	-.10
Delib. hurting opponent	1.90	1.09	.16*	.28**	-.09
Intention					
Lie to an official	2.87	1.26	.15*	.23**	-.15*
Break a rule	3.05	1.06	.14*	.34**	-.08
Risk injuring opponent	2.01	1.07	.14*	.21**	-.10
Delib. hurting opponent	1.97	1.10	.16*	.27**	-.07
Behavior					
Lie to an official	2.12	1.21	.18**	.23**	-.18**
Break a rule	2.62	1.13	.16*	.29**	-.19**
Risk injuring opponent	1.86	1.10	.17*	.13**	-.06
Delib. hurting opponent	1.74	1.05	.16*	.23**	-.06
Social desirability	5.12	2.05	-.05	-.23**	-.02

*Note:* High scores on judgment, intention, and behavior denote low levels of moral functioning. Except for sport participation, all variables were measured on a 1–5 scale. Particip. = participation; Orient. = orientation; Delib. = deliberately.

\* $p < .05$ ; \*\* $p < .01$

examined the factorial structure of POSQ and moral functioning and then tested the hypothesized structural model.

*Examining the Factorial Structure of POSQ.* Confirmatory factor analysis (CFA) was used to examine the factorial structure of POSQ. The following goodness-of-fit indices were used to evaluate the CFA solution:  $\chi^2$  statistic; Bentler-Bonett non-normed fit index (NNFI); comparative fit index (CFI); standardized root mean square residual (SRMR); and root mean square error of approximation (RMSEA) and its 90% confidence interval (CI). A good model fit, i.e., a good factor structure, is inferred when the NNFI and CFI values are close to .95, the SRMR is close to .08, the RMSEA is close to .06 (Hu & Bentler, 1999), and the lower bound of the 90% CI of the RMSEA includes the value of .05 (Browne & Cudeck, 1993).

The maximum likelihood estimation method provided by EQS 5.7 (Bentler, 1995) was used for the CFA. The hypothesized two-factor structure had a poor fit:  $\chi^2(54) = 157.03$ ,  $p < .01$ , NNFI = .78, CFI = .83, SRMR = .11, RMSEA (90% CI)

= .11 (.10–.13). Inspection of the Lagrange modification indices and the standardized residual matrix suggested that two items from the task orientation subscale and one item from the ego orientation subscale had to be deleted to improve model fit. These items were: “I work hard,” “I show clear personal improvement,” and “I accomplish something others can’t do.” Deleting items to improve the factorial structure of an instrument is regarded as a legitimate process in measurement evaluation, as it retains the general structure of the originally hypothesized factor model but with only the best available indicators (Hofmann, 1995). The modified 9-item model had an excellent fit:  $\chi^2(27) = 35.06, p > .05$ , NNFI = .97, CFI = .98, SRMR = .08, RMSEA (90% CI) = .05 (.01–.08). All factor loadings were significant at  $p < .01$ . Alpha coefficients were .73 and .82 for the revised task and ego orientation subscales, respectively.

*Examining the Factorial Structure of Moral Functioning.* Because the three indices of moral functioning (judgment, intention, and behavior) were measured across four dilemmas, the CFA approach to multitrait-multimethod (MTMM) analysis was considered the most suitable method for examining the factorial structure of moral functioning (see Marsh & Grayson, 1995). The three indices of moral functioning were regarded as traits, whereas the four dilemmas were considered as different methods employed to assess the different traits. In the CFA MTMM approach, different models that posit trait and method factors are defined, and the ability of these models to fit the data is tested. The purpose of this analysis is to ascertain the relationship among traits, when the effects of method variance and random error are present. The CFA MTMM analysis assesses convergent validity, discriminant validity, and method effects. Large loadings on trait factors provide support for convergent validity, which refers to the stability of traits across different methods (see Marsh & Grayson, 1995). Very large correlations among trait factors suggest lack of discriminant validity among traits. Finally, large loadings on method factors indicate method effects, that is, variation in the responses which is specific to each dilemma.

According to Marsh and Grayson (1995), four major MTMM models should be tested and compared. All models posit correlated trait factors; in this study three correlated trait factors were posited: judgment, intention, and behavior. However, the first model posits *only* trait factors (3CT in Table 2). If this model fits the data well, then method effects are negligible. The second and third models posit both trait and method factors. Four method (i.e., dilemmas) factors were postulated; however, in the second model the method factors were correlated whereas in the third model they were uncorrelated. Thus Model 2 postulated three correlated trait and four correlated method factors (3CT 4CM), whereas Model 3 postulated three correlated trait and four uncorrelated method factors (3CT 4UM). The second and third models are compared in order to assess the extent to which method factors are correlated (Marsh, 1989). The last model also posits trait factors, but method effects are inferred from correlated uniqueness terms among measured variables assessed by the same method (3CTCU). Method effects are inferred when the correlations among the uniqueness terms are moderate to large and when the model has a considerably better fit than the trait-only model (Marsh, 1989). In addition, the last model is compared to Models 2 and 3 in order to assess whether method effects are multidimensional or unidimensional, that is, whether effects associated with a particular method can be represented by a single latent method factor (Marsh & Grayson, 1995).

Table 2 Goodness-of-Fit Indices for Moral Functioning and the Hypothesized Path Models

Model	Solution	$\chi^2$	df	NNFI	CFI	SRMR	RMSEA (90% CI)
Moral Functioning: 4 methods							
3CT	Improper	1103.45**	51	.38	.52	.21	.32 (.30 – .33)
3CT 4CM	Improper	60.13**	33	.98	.99	.03	.06 (.04 – .09)
3CT 4UM	Proper	136.34**	39	.93	.96	.11	.11 (.09 – .13)
3CTCU	Proper	136.34**	39	.93	.96	.11	.11 (.09 – .13)
Moral Functioning: 3 methods							
3CT	Improper	570.11**	24	.49	.66	.16	.33 (.31 – .35)
3CT 3CM	Improper	14.43	12	1.00	1.00	.02	.03 (.00 – .08)
3CT 3UM	Proper	16.92	15	1.00	1.00	.02	.03 (.00 – .07)
3CTCU	Proper	16.92	15	1.00	1.00	.02	.03 (.00 – .07)
Hierarchical 3CTCU	Proper	16.92	15	1.00	1.00	.02	.03 (.00 – .07)
Hypothesized path model	Proper	192.37**	139	.97	.98	.08	.04 (.03 – .06)

Note: CT = Correlated traits; CM = Correlated methods; CU = Correlated uniqueness; Hierarchical = Model with moral functioning as a second-order factor; NNFI = Non-normed fit index; CFI = Comparative fit index; SRMR = Standardized root mean square residual; RMSEA = Root mean square error of approximation; 90% CI = 90% confidence interval of RMSEA.  
 \*\*  $p < .01$

The most appropriate model is selected based on (a) an evaluation of the fit indices, and (b) whether the model has converged to a proper solution, that is, whether parameter estimates are within the range of permissible values (Marsh & Grayson, 1995). If a model fails to converge, or if it converges to an improper solution, then it is not deemed credible. The CT  $\times$  CM and CT  $\times$  UM models are often likely to result in improper solutions (Marsh & Bailey, 1991).

Table 2 shows the fit indices of the competing MTMM models which represent, in different ways, the factorial structure of the three moral variables measured across the four dilemmas. It is worth noting that when there are three traits in CFA MTMM analysis, the CT  $\times$  UM and CT  $\times$  CU models are statistically equivalent (Marsh & Grayson, 1995), which explains the identical fit of the last two models. Based on the two criteria outlined above, none of these models were considered acceptable (see Table 2). Inspection of the standardized residual matrix and the modification indices suggested that one method factor be deleted, specifically, the lying-to-an-official dilemma. Because some of the problems encountered in the solutions of MTMM models can be solved by deleting one method factor (Eid, 2000), the suggested modification was accepted and the four competing models were reanalyzed postulating three method factors.

Results of this analysis are also presented in Table 2. The 3CT 3UM and the 3CTCU were the only models that had an excellent fit and also resulted in proper solutions. The 3CTCU model was selected for the subsequent SEM, because CT  $\times$  CU models are considered the most rigorous of the MTMM models (Marsh & Grayson, 1995). However, in practical terms both models in this study would have produced identical results.

The trait factor loadings and the uniqueness variances of the 3CTCU model were almost identical to those in Figure 1. The trait factor loadings associated with the first dilemma were moderate whereas the loadings associated with the other two dilemmas were large (median of trait factor loadings = .76). The overall pattern of trait factor loadings indicated a moderate degree of convergent validity. Almost all correlations between the uniqueness terms of observed variables assessed by the same method were above .50 (median  $r = .66$ ), indicating the presence of relatively large method effects. The correlations among the trait factors were .93 between judgment and intention, .83 between judgment and behavior, and .89 between intention and behavior, indicating low discriminant validity. However, one should note that factor correlations are higher than Pearson's correlations because they do not contain measurement error. Furthermore, the CT  $\times$  CU model tends to be a conservative test of discriminant validity (Marsh & Bailey, 1991).

*Testing the Hierarchical Model of Moral Functioning.* In this study we examined judgment, intention, and behavior as indices of moral functioning. This hypothesis implies a hierarchical model with moral functioning being a second-order factor defined by the first-order factors of judgment, intention, and behavior. Thus it was important to examine the model fit of the proposed hierarchical structure. The results showed that the first-order 3CTCU and the hierarchical 3CTCU models had identical fit (see Table 2). This is generally the case when there are three first-order factors, because the degrees of freedom needed to explain the relations among the first-order factors, i.e., three first-order factor correlations, are the same as the degrees of freedom needed to explain the relations among the first- and higher-order factors (i.e., three higher-order factor loadings).

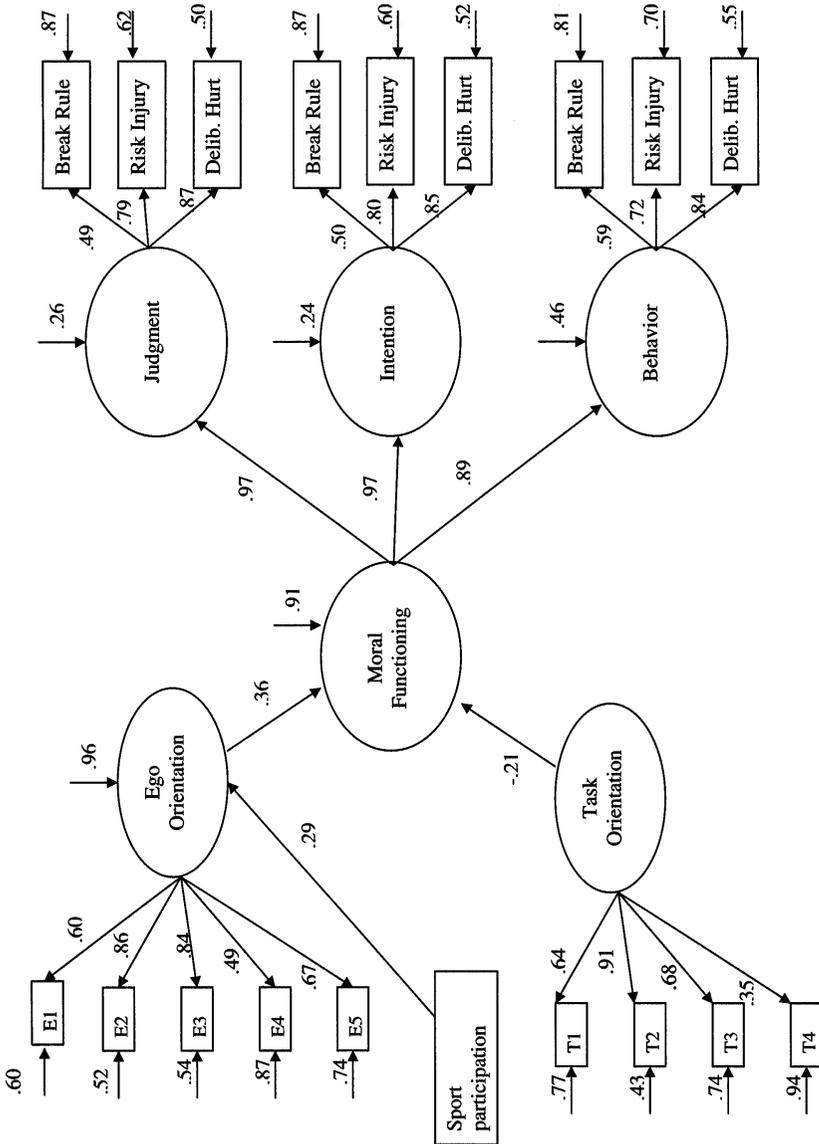


Figure 1 — Hypothesized model of the relationships among sport participation, goal orientations, and moral functioning (the correlated uniqueness terms are omitted for simplicity but are available upon request from the second author). Delib. = Deliberately; E = Ego item; T = Task item. *Note:* Boxes represent observed variables; rectangles represent latent factors. High scores on indices of moral functioning reflect low levels of moral functioning.

The first- and second-order trait loadings were almost identical to those presented in Figure 1. The second-order loadings were substantially high (median = .96) and accounted for a large percentage of the variance of the first-order factors (median percentage of explained variance = 93%). The hierarchical model, rather than the first-factor model, was used in subsequent SEM analysis, because a higher order moral functioning model requires the testing of fewer paths and thus results in a more parsimonious path model.

*Testing the Hypothesized Path Model.* In this study we proposed that extent of sport participation would influence moral functioning through ego orientation. Therefore sport participation was hypothesized to positively predict ego orientation, which in turn was hypothesized to correspond to low levels of moral functioning. High levels of task orientation were expected to correspond to high levels of moral functioning. First the hypothesized model including all variables was tested. Then the mediating role of ego orientation in the relationship between sport participation and moral functioning was examined.

The same fit indices described earlier were used here to examine model fit. The indices showed a very good fit of the model to the data (see Table 2). All parameter estimates were significant and are shown in Figure 1. Sport participation positively predicted ego orientation ( $\beta = .29$ ), which in turn positively predicted moral functioning ( $\beta = .36$ ). As hypothesized, task orientation was a negative predictor of moral functioning ( $\beta = -.21$ ). Due to the way moral functioning was measured—high scores denoting low levels of moral functioning—a positive relationship between ego orientation and moral functioning implies that high ego orientation corresponds to low levels of moral functioning. Similarly, a negative relationship between task orientation and moral functioning implies that high task orientation corresponds to high levels of moral functioning.

To examine whether ego orientation mediates the influence of sport participation on moral functioning, we followed the four steps proposed by Baron and Kenny (1986). The first step establishes whether the initial variable predicts the mediator. As Figure 1 shows, sport participation significantly predicted ego orientation. The second step establishes whether the initial variable predicts the outcome variable. To examine this, we tested a model in which sport participation had a direct path leading to moral functioning. The paths from sport participation to ego orientation and from ego orientation to moral functioning were constrained to zero. The direct path was  $\beta = .21$  and significant. The third step tests whether the mediator predicts the outcome variable after controlling for the initial variable. As Figure 1 shows, ego orientation was a significant predictor of moral functioning after controlling for sport participation.

The last step, performed in the same model as Step 3, examines whether in the presence of the mediator the direct path from the initial variable to the outcome variable is reduced to zero (i.e., complete mediation), or whether it is reduced in absolute size but is still different from zero (i.e., partial mediation). In Figure 1 a direct path was added from sport participation to moral functioning; this path was  $\beta = .11$ , nonsignificant, and smaller than the original path of  $\beta = .21$ . The Wald modification index suggested that the removal of this path would not significantly deteriorate the fit of the model. Thus it was concluded that ego orientation partially mediates the effect of sport participation on moral functioning.

*Gender and Type of Sport.* In this study we used male and female athletes participating in four sports. Gender mean differences emerged (Pillai's criterion =

.94),  $F(5, 213) = 4.44$ ;  $p = .001$ , indicating that men, compared to women, had higher scores on judgment ( $M = 2.58$  vs. 2.18), intention ( $M = 2.59$  vs. 2.12), and behavior ( $M = 2.26$  vs. 1.82), indicating lower levels of moral functioning. Men also had higher ego orientation ( $M = 3.98$  vs. 3.73) and lower task orientation ( $M = 4.40$  vs. 4.55) than women. Significant sport type mean differences in moral functioning were also identified (Pillai's criterion = .22),  $F(15, 639) = 3.33$ ;  $p < .001$ . Specifically, basketball players had lower judgment scores than rugby and hockey players ( $M = 2.19$  vs. 2.62 vs. 2.69), and lower intention ( $M = 2.15$  vs. 2.84) and behavior scores ( $M = 1.82$  vs. 2.39) than hockey players. No other significant differences were found.

Ideally, we would have liked to conduct multisample analyses to determine whether the hypothesized model is invariant across gender and sport type. Unfortunately we were unable to do so due to the small and unbalanced sample size between genders and across different types of sport. However, to obtain preliminary evidence regarding the relationships among the variables of interest, an examination of the correlation matrix within each gender and sport type group seemed warranted. Small differences in the size of correlations across groups would provide relatively good evidence for the invariance of the model. With respect to gender, the differences in the size of correlations were very small. More than 90% of the differences in correlation sizes were  $\leq .16$ . The median of differences in correlations was .09. Regarding sport type, the differences in correlations among all possible pairs of sports were also small, with median differences ranging from .08 to .10. Thus we were reasonably confident that the model would be relatively invariant across gender and type of sport. However, a stringent test of this assumption requires multisample testing with a much larger sample size.

## Discussion

The present study attempted to shed light on the processes that operate in the context of medium and high contact sports, by examining whether ego orientation mediates the relationship between participation in these sports and moral functioning in the sport context. Task orientation was also examined, as some work (Duda et al., 1991; Dunn & Dunn, 1999) has demonstrated a positive relationship between task orientation and some aspects of morality. Based on Rest's model (1984), moral judgment, intention, and behavior were examined as indices of moral functioning.

An important difference between the present study and other work using Rest's model in sport (e.g., Kavussanu & Roberts, 2001; Stuart & Ebbeck, 1995) is the use of the MTMM approach to simultaneously examine the extent to which the three indices of moral functioning would vary across a number of moral dilemmas. Previous research has averaged judgment, intention, and behavior across different dilemmas to derive composite scores (e.g., Kavussanu & Roberts, 2001; Stuart & Ebbeck, 1995). However, this approach masks differences in judgment, intention, and behavior across different dilemmas. In contrast, the MTMM analysis assesses the stability of the moral functioning indices across dilemmas. This analysis revealed that athletes' responses to the moral dilemmas were relatively variable. This finding makes sense, if we consider that the moral dilemmas referred to different behaviors. For example, it is reasonable to expect that an athlete may be more inclined to break the rules in order to win a critical game, but less inclined to intentionally injure an opposing player.

As hypothesized, extent of participation in medium and high contact sports had a negative effect on athletes' moral functioning, and this effect was mediated by ego orientation. Indeed, the significant direct effect of sport involvement on moral functioning was reduced substantially when ego orientation was introduced in the model, confirming the mediating role of the latter construct in the relationship between the first two variables. Thus, athletes with a long history of involvement in their respective sport were more likely to report high ego orientation, which in turn influenced their levels of moral functioning. This finding is important because it points to factors that are key to the relationship between sport participation and morality. Moreover, this finding suggests that it is not sport per se but the adopted goal perspective that at least partly explains the negative effects of extensive involvement in certain sports on athletes' moral functioning (Duda et al., 1991; Kavussanu & Roberts, 2001).

A number of studies (Bredemeier & Shields, 1986a; Bredemeier et al., 1986, 1987; Conroy et al., 2001; Silva, 1983) have revealed that athletes who have participated extensively in medium or high contact sports display aggressive tendencies, judgments that injurious acts are legitimate, or low levels of moral reasoning. Such relationships, however, have not been identified in athletes of noncontact sports such as swimming, gymnastics, or golf (Bredemeier & Shields, 1986b; Bredemeier et al., 1986; Conroy et al., 2001). In interpreting these findings, Bredemeier et al. (1987) reasoned that high contact sports promote moral transgression because they are accompanied by a combat mentality that encourages a negative view of others and discourages altruistic interaction. Bredemeier et al. also posited that the highly regulated structure of sport plays a key role in legitimating aggressive game tactics, as participants often transfer moral responsibility to the coaches and officials. Although these are viable explanations, it is likely that there are also other processes that could further explain the debilitating effects on moral functioning of medium and high contact sports.

As the findings of the present study suggest, these sports have the potential to enhance participants' ego orientation, which seems to partly account for the low levels of moral functioning evident in some athletes. Although all types of sports might have this potential to a certain degree, as objective success in sport is measured using other-referenced criteria, contact sports contain additional elements that may augment this effect. In these sports, athletes unavoidably interact with the opponent; this interaction is the vehicle through which they attempt to establish superiority. Success is dependent on dominating one's competitor; establishing and maintaining superiority over the opponent is essential. More important, this endeavor for domination is continuous throughout participation, and athletes are constantly aware of how they fare compared to others. This awareness is further augmented by the reactions of the coach and fans which underscore the significance of normative success. These facets of medium and high contact sports create conditions that compel the athlete to compare his or her ability level to that of the opponent throughout participation. Thus, in the context of these sports, athletes may be more likely to develop the tendency to use other-referenced criteria to evaluate their competence, thereby strengthening ego orientation over time. This is not the case in noncontact sports, where participants do not come in direct contact with the opponent but instead must focus on performing the task at hand in order to succeed. Extensive participation in these sports may actually promote task orientation. This hypothesis awaits further research.

Goal orientations had the anticipated effects on moral functioning. Consistent with past research (Kavussanu & Roberts, 2001), the higher the athletes' ego orientation, the more likely they were to report low levels of moral functioning. Task orientation had the opposite effect, with high levels of task orientation corresponding to high levels of moral functioning. This finding is in accord with some research examining similar issues in sport (e.g., Duda et al., 1991; Dunn & Dunn, 1999). Other studies, however, have not identified a link between task orientation and various aspects of morality (e.g., Kavussanu & Roberts, 2001; Stephens, 2000; Stephens & Bredemeier, 1996). Since the relevant evidence to date has been inconsistent, further research is needed to clarify the role of task orientation on moral functioning in sport. Overall, however, it appears that the effect of task orientation on moral functioning, albeit positive, is not particularly strong.

Consistent with contentions of moral development theorists (e.g., Blasi, 1980; Rest, 1984; Shields & Bredemeier, 1995) that motivation is a significant determinant of moral action, our findings demonstrate that the athletes' motives, as reflected in their goal orientation, have important implications for their moral functioning in the sport context. Being primarily motivated to outperform others and demonstrate competence in the normative sense contributes to ignoring written and unwritten rules to achieve victory. In contrast, the motivation to exert maximum effort and perform at one's best is conducive to moral functioning in sport. Thus motivation is clearly important for one's moral judgments, intentions, and behaviors in the context of sport. As Vallerand and Losier (1994) have put it, the reasons athletes play the game (the motivational component) influence how they behave in it (the moral component).

Overall, this study demonstrated that extensive involvement in medium and high contact sports influences moral functioning in the sport context through its effects on ego orientation. These findings beg the question: Is the nature of these sports such that moral transgression is unavoidable? We would like to take an optimistic stance on this issue. Although these sports may have a stronger potential to enhance ego orientation due to their interactive nature, how we go about structuring the social context of sport is of primary importance to how the athlete plays the game. Sport is an achievement context, and as such it elicits feelings of success and failure. How athletes are socialized to interpret success and failure is crucial. Encouraging athletes to use self- rather than other-referenced criteria to judge their level of competence, and emphasizing the importance of doing one's best, could alleviate the potentially negative effects on moral functioning of extensive involvement in certain sports.

We need to teach athletes to focus on the process rather than the product. More important, we need to divert attention from the excessive focus on winning and deter athletes from using any and all means to establish superiority over others. Yet it should be recognized that this is not an easy task, especially in light of the incentives (tangible rewards, reinforcement by fans) offered to athletes to seek their own gain or the gain of the team, neglecting the needs of their opponents.

This study attempted to look into some of the processes that operate in the context of certain sports; however, there are some limitations and our findings need to be interpreted in light of these. The first limitation concerns the small sample size that precluded us from testing the model invariance across gender and sport type. Although inspection of the correlation matrix within genders and different sports revealed that the relationships among the variables did not differ sub-

stantially, future research using a larger sample size is needed to test whether the present relationships hold across gender and type of sport.

A second limitation involves the cross-sectional nature of the study, which renders assertions regarding the direction of causality tentative. For example, we do not know whether sport participation enhanced athletes' ego orientation, or whether highly ego oriented individuals were attracted to medium and high contact sports. Longitudinal research could provide strong evidence for the direction of causality and investigate whether sport participation affects moral functioning through ego orientation over the long run. Finally, our findings are limited to university athletes who participate in medium and high contact sports. We do not know whether the same processes hold for athletes participating in different types of sports and at different competitive levels. Further research is needed to examine the generalizability of the present findings to other athletic populations.

In conclusion, the present study extends previous work that has identified relationships between sport involvement and various aspects of morality, and further underscores the role of motivation on moral functioning revealed in past research. However, as with all aspects of human interaction, moral functioning in sport is a complex phenomenon influenced by multiple variables. Motivational orientations constitute only one such influence, and ego orientation may be only one of a range of variables that mediate the relationship between participation in some sports and moral functioning. Other potential mediators include moral reasoning and one's aggressive tendencies, and more research is needed to examine these variables. In addition, future research might examine the role of social goals on athletes' moral functioning. It has been argued (Urdañ & Maehr, 1995) that a consideration of social goals will enhance our understanding of behavior in achievement contexts.

Finally, while achievement motivation has been shown to carry moral implications, moral motivation is its own area of study, and future work could address the relationship between achievement and moral motivation. In short, more research is needed to examine other variables and unravel the processes through which they influence moral functioning in sport. If our aim is to eliminate unsports-personlike conduct from the athletic context, the first step involves understanding the processes that operate in this context. This knowledge will enable us to develop interventions that will optimize athletes' moral functioning.

## References

- Ames, C. (1992). Achievement goals, motivational climate, and motivational processes. In G.C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
- Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modelling in practice: A review and recommended two-step approach. *Psychological Bulletin*, **103**, 411-423.
- Baron, R.M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, **51**, 1173-1182.
- Bentler, P.M. (1995). *EQS: Structural equations program manual*. Encino, CA: Multivariate Software, Inc.
- Blasi, A. (1980). Bridging moral cognition and moral action: A critical review of the literature. *Psychological Bulletin*, **88**, 1-45.

- Bredemeier, B.J., & Shields, D.L. (1984). The utility of moral stage analysis in the investigation of athletic aggression. *Sociology of Sport Journal*, **1**, 138-149.
- Bredemeier, B.J., & Shields, D.L. (1986a). Moral growth among athletes and nonathletes: A comparative analysis. *Journal of Genetic Psychology*, **147**, 7-18.
- Bredemeier, B.J., & Shields, D.L. (1986b). Game reasoning and interactional morality. *Journal of Genetic Psychology*, **147**, 257-275.
- Bredemeier, B.J., Weiss, M.R., Shields, D.L., & Cooper, B.A.B. (1986). The relationship of sport involvement with children's moral reasoning and aggression tendencies. *Journal of Sport Psychology*, **8**, 304-318.
- Bredemeier, B.J., Weiss, M.R., Shields, D.L., & Cooper, B.A.B. (1987). The relationship between children's legitimacy judgments and their moral reasoning, aggression tendencies and sport involvement. *Sociology of Sport Journal*, **4**, 48-60.
- Browne, M.W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & S.J. Long (Eds.), *Testing structural equation models* (pp. 136-162). Newbury Park: CA: Sage.
- Chaumeton, N., & Duda, J.L. (1988). Is it how you play the game or whether you win or lose? The effect of competitive level and situation on coaching behaviors. *Journal of Sport Behavior*, **11**, 157-174.
- Conroy, D.E., Silva, J.M., Newcomer, R.R., Walker, B.W., & Johnson, M.S. (2001). Personal and participatory socializers of the perceived legitimacy of aggressive behavior in sport. *Aggressive Behavior*, **27**, 405-418.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, **16**, 297-334.
- Crowne, D.P., & Marlow, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology*, **24**, 349-354.
- Duda, J.L., Olson, L.K., & Templin, T.J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and the perceived legitimacy of injurious acts. *Research Quarterly for Exercise and Sport*, **62**, 79-87.
- Dunn, J.G.H., & Dunn, J.C. (1999). Goal orientations, perceptions of aggression, and sportspersonship in elite male youth ice hockey players. *The Sport Psychologist*, **13**, 183-200.
- Eid, M. (2000). A multitrait-multimethod model with minimal assumptions. *Psychometrika*, **65**, 241-261.
- Gibbons, S.L., Ebbeck, V., & Weiss, M.R. (1995). Fair play for kids: Effects on the moral development of children in physical education. *Research Quarterly for Exercise and Sport*, **66**, 247-255.
- Hall, E.R. (1981). *Moral development levels of athletes in sport specific and general social situations*. Unpublished doctoral dissertation, Texas Woman's University, Denton.
- Hofmann, R. (1995). Establishing factor validity using variable reduction in confirmatory factor analysis. *Educational and Psychological Measurement*, **55**, 572-582.
- Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, **6**, 1-55.
- Kavussanu, M., & Roberts, G.C. (2001). Moral functioning in sport: An achievement goal perspective. *Journal of Sport & Exercise Psychology*, **23**, 37-54.
- Kohlberg, L. (1984). *Essays on moral development: Vol. 2: The psychology of moral development*. San Francisco: Harper & Row.
- Marsh, H.W. (1989). Confirmatory factor analysis of multitrait-multimethod data: Many problems and a few solutions. *Applied Psychological Measurement*, **13**, 335-361.

- Marsh H.W., & Bailey, M. (1991). Confirmatory factor analysis of multitrait-multimethod data: A comparison of alternative models. *Applied Psychological Measurement*, **15**, 47-70.
- Marsh, H.W., & Grayson, D. (1995). Latent variable models of multitrait-multimethod data. In R.H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues and applications* (pp. 177-198). Thousand Oaks, CA: Sage.
- Nicholls, J. G. (1989). *The competitive ethos and democratic education*. Cambridge: Harvard University Press.
- Ogilvie, B., & Tutko, T. (1971). Sport: If you want to build character, try something else. *Psychology Today*, **5**, 60-63.
- Rest, J.R. (1984). The major components of morality. In W. Kurtines & J. Gewirtz (Eds.), *Morality, moral behavior, and moral development* (pp. 356-429). New York: Wiley.
- Rest, J.R. (1994). *Moral development in the professions: Psychology and applied ethics*. Hillsdale, NJ: Erlbaum.
- Roberts, G.C., Treasure, D.C., & Balague, G. (1998). Achievement goals in sport: The development and validation of the Perception of Success Questionnaire. *Journal of Sports Sciences*, **16**, 337-347.
- Shields, D.L., & Bredemeier, B.J.L. (1995). *Character development and physical activity*. Champaign, IL: Human Kinetics.
- Silva, J.M., III. (1983). The perceived legitimacy of rule violating behavior in sport. *Journal of Sport Psychology*, **5**, 438-448.
- Stephens, D. (1993). *Goal orientation and moral atmosphere in youth sport: An examination of lying, hurting, and cheating behavior in girls' soccer*. Unpublished doctoral dissertation, University of California at Berkeley.
- Stephens, D.E. (2000). Predictors of likelihood to aggress in youth soccer: An examination of coed and all-girls teams. *Journal of Sport Behavior*, **23**, 311-325.
- Stephens, D.E., & Bredemeier, B.J.L. (1996). Moral atmosphere and judgments about aggression in girls' soccer: Relationships among moral and motivational variables. *Journal of Sport & Exercise Psychology*, **18**, 158-173.
- Stuart, M., & Ebbeck, V. (1995). The influence of perceived social approval on moral functioning in youth sport. *Pediatric Exercise Science*, **7**, 270-280.
- Todd, D., & Hodge, K. (2001). Moral reasoning and achievement motivation in sport: A qualitative inquiry. *Journal of Sport Behavior*, **23**, 307-327.
- Urduan, T.C., & Maehr, M.L. (1995). Beyond a two-goal theory of motivation and achievement: A case for social goals. *Review of Educational Research*, **65**, 213-243.
- Vallerand, R.J., & Losier, G.F. (1994). Self-determined motivation and sportsmanship orientations: An assessment of their temporal relationship. *Journal of Sport & Exercise Psychology*, **16**, 229-245.
- White, S.A., & Duda, J.L. (1994). The relationship of gender, level of sport involvement, and participation motivation to task and ego orientation. *International Journal of Sport Psychology*, **25**, 4-18.

---

### Acknowledgment

This study was completed while the first author was a lecturer at Loughborough University. It was supported by a research grant awarded to the first author by the School of Sport and Exercise Sciences, Loughborough University.