Relationships Among Values, Achievement Orientations, and Attitudes in Youth Sport

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This research examines the value-expressive function of attitudes and achievement goal theory in predicting moral attitudes. In Study 1, the Youth Sport Values Questionnaire (YSVQ; Lee, Whitehead, & Balchin, 2000) was modified to measure moral, competence, and status values. In Study 2, structural equation modeling on data from 549 competitors (317 males, 232 females) aged 12–15 years showed that moral and competence values predicted prosocial attitudes, whereas moral (negatively) and status values (positively) predicted antisocial attitudes. Competence and status values predicted task and ego orientation, respectively, and task and ego orientation partially mediated the effect of competence values on prosocial attitudes and of status values on antisocial attitudes, respectively. The role of sport values is discussed, and new research directions are proposed.

Keywords: morality, fair play, sportspersonship, motivation, achievement goal theory

It has been widely proposed that "sport develops character" in the sense that moral attitudes developed in sport transfer to other contexts. However, Shields and Bredemeier (2007) conclude that there is little to support this view and, in fact, that participants adopt a different moral framework when competing than otherwise. However, it may be that the focus on the mere content of the activities as the source of personal qualities is misguided and the process by which these activities are encouraged is the determining factor in the developmental process. It is our intention, therefore, to examine the fundamental psychological motivations that result in young athletes exhibiting socially desirable or undesirable attitudes in sport.

Human values have been regarded as dominant influences in society, guiding people's actions and governing their perceptions of reality (e.g., Allport, 1961,

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Rokeach, 1973), but values have received little attention in sport psychology. In contrast, achievement motivation has become a dominant model for the study of motivation in this field (e.g., Duda, 1992). Whereas the role of achievement motives in determining behavior in sport is readily recognizable, that of values is less obvious. However, if values determine how people justify decisions in life, then they will influence attitudes and behavior in sport.

This research, therefore, was developed to examine the relationships among values, achievement orientations, and attitudes in youth sport. Specifically, we examined the role of achievement orientation in mediating the value expressive function of attitudes.

The Nature of Values

Values are defined as beliefs that certain goals or behaviors are more or less preferable to their alternatives (e.g., Rokeach, 1973). They serve the interests of individuals or groups, motivate action by giving it direction and intensity, provide standards by which behavior is evaluated, and are learned by individuals from the dominant values of their social groups and through their own experiences (Schwartz, 1994). Because the same values have been identified in different societies, they are considered universal (Schwartz, 1992).

Values can be organized in terms of system and structure. Since values express preferences among alternatives, individuals and societies develop *value systems* in which values are ranked in importance (Rokeach, 1973).

Value structure refers to the relationship between different types of values. Schwartz (1992) mapped the motivational content of value types (or domains) in spatial relations to other value types. He described a two-dimensional psychological space bisected by two orthogonal bipolar axes. The first describes the tendency to place the interests of others (self-transcendence) above the interests of self (self-enhancement) or vice versa. The second describes the need for change (openness to change) as opposed to the need for stability (conservation). These axes provide a framework for 10 groups of similar values (domains) that are more or less compatible or conflicting according to their relative location in the model. Adjacent domains are compatible and opposing domains are conflicting. This *value structure* facilitates an understanding of the consequences of priorities on one domain for priorities on other domains; for example, it indicates that values associated with power and achievement (both self-enhancing) are compatible but conflict with those representing benevolence and universalism (both self-transcending).

Values and Attitudes

An attitude has been defined as "a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object" (Fishbein and Ajzen, 1975, p. 5). Thus attitudes differ from values because they are bipolar, specific to an attitude object, and they have no hierarchy of importance. One of the functions of attitudes is that of expressing the more general principles embodied in values in relation to specific target objects or issues (Katz, 1960; Rokeach, 1973). Because they are object specific, they are more numerous than values.

Furthermore, many attitudes can arise from a single value, and one attitude can reflect more than one value.

The relative importance given to values demands that they are ranked either by individuals or as a representation of the value system of a social group (see Bardi & Schwartz, 2003). Attitudes have no such relative quality, and two or more may be equally endorsed. Further, values are expressions of the desirable, while attitudes express both positive and negative sentiments. Thus, attitudinal and behavioral decisions result from the relative importance attached to the underlying values. In this research, we use social attitudes as operational proxies for moral attitudes. Specifically, we refer to prosocial attitudes, which are cooperative and supportive of the social situation, and antisocial attitudes, which are disruptive and antagonistic to it.

Values in Sport

Because values are considered to be general principles that guide behavior across situations, they should underpin decision making in sport, and those values that pertain to achievement and morality are particularly significant. However, early studies in this area did little to distinguish values from attitudes, to use values as conceptions of the desirable, or to develop values instruments (Lee, Whitehead, & Balchin, 2000). More recent research has addressed some of these issues (e.g., Cruz, Boixadós, Valiente, & Capdevila, 1995; Kavalir, 2004). Lee and Cockman (1995) identified 18 values spontaneously expressed by young athletes in discussions of moral dilemmas in their sport. Subsequently, Lee et al. (2000) used these to construct the Youth Sport Values Questionnaire (YSVQ), which identified value systems of adolescent athletes.

The YSVQ also identified moral, competence, and status values in an acceptable factorial model (unreported) as particularly relevant for further study. These value types have high ecological validity because they were drawn from young athletes and they relate closely to the universalism, self-direction, and power domains identified by Schwartz (1992). They are appropriate for this study because they provide parsimonious coverage of the nature and structure of salient values in youth sport. They also reflect three dimensions explored by Webb (1969): playing fairly, playing well, and winning. Moral and status values represent a value conflict in accordance with Schwartz's structural model, while competence and status values are expected to underpin different achievement orientations. Lee (1996) explored the value-expressive function of attitudes in sport and found that moral values predicted prosocial attitudes positively and antisocial attitudes negatively.

Our research will further examine the value-expressive function of attitudes by identifying the influence of moral, competence, and status values on antisocial and prosocial attitudes.

Achievement Goal Theory (AGT)

This social-cognitive approach holds that the demonstration of ability is central to achievement and that success is interpreted subjectively according to the concept of ability adopted for each activity. Different psychological consequences arise

from using an effort-based concept of ability and the concept of ability as a capacity which limits the effect of effort. When an effort-based interpretation of ability is used, people are in a state of *task involvement*. They focus on mastering a task and judge success by self-referenced criteria such as understanding and completing it, or overcoming a challenge. When the adequacy of ability in relation to others is paramount, people are in a state of *ego involvement*. They focus on demonstrating ability and judge success by normative criteria such as establishing superiority over others or gaining success more easily. Although these goal *states* are transitory, socialization and experience lead people to develop *dispositional orientations* toward one or other perspective. These more stable orientations underpin the activation of the goal states (Nicholls, 1989).

A Mediating Role for Achievement Orientations.   Achievement orientations are seen as organizing constructs that lead to characteristically different psychological and behavioral outcomes (Duda & Whitehead, 1998). Indeed, composite goal-belief factors generalize across school and sport contexts and are components of personal theories about how the achievement context works (Duda & Nicholls, 1992). Such views include antecedent beliefs about the purpose of sport and consequent social attitudes, and they also include moral content. Nicholls (1989) argued that a preoccupation with winning may be accompanied by a lack of concern for justice, fairness, and the welfare of others in competition.

In a review of correlates of achievement orientations, Biddle, Wang, Kavussanu, and Spray (2003) concluded that task orientation is related to higher moral functioning, prosocial attitudes, and sportspersonship and a belief that the purpose of sport is to develop mastery. Hence task orientation should mediate the effect of competence values on prosocial attitudes. In contrast, ego orientation is related to endorsement of aggression, poor sportspersonship, and beliefs that ability and deception cause success, and that the purpose of sport is to gain social status. Hence, ego orientation should mediate the effect of status values on antisocial attitudes. However, because moral values have no achievement element, we do not expect achievement orientations to mediate the effect of moral values on social attitudes.

Rationale

The value-expressive role of attitudes and achievement goal theory suggest that both values and achievement orientations predict moral attitudes in youth sport. These theories can be integrated to the extent that the prioritizing function of values implies that they should not only prompt the adoption of appropriate attitudes, but also encourage the adoption of achievement orientations that are consistent with underlying values. Furthermore, because values are trans-situational principles that guide behavior and because achievement orientations address behavior only in the achievement domain, values can be considered as antecedents of achievement orientations, and moral attitudes as consequences of both. Thus achievement orientations should mediate the effect of relevant sport values on moral attitudes.

The purpose of the research was twofold. First it was necessary to refine the YSVQ (Lee et al., 2000) to facilitate the measurement of appropriate values types (Study 1). Secondly (Study 2), we tested the following hypotheses. First, values

will have a direct effect on social attitudes: (a) moral values will positively predict prosocial attitudes, (b) moral values will negatively predict antisocial attitudes, (c) competence values will positively predict prosocial attitudes, and (d) status values will positively predict antisocial attitudes. Second, integrating predictions of achievement goal theory, we hypothesize that achievement orientations will mediate some of these effects: (a) task orientation will mediate the effect of competence values on prosocial attitudes and (b) ego orientation will mediate the effect of status values on antisocial attitudes.

Study 1: Modification of the Values Questionnaire (YSVQ-2)

The purpose of this study was to modify the YSVQ (Lee, et al., 2000) to assess moral, competence, and status values. That instrument was constructed to assess the value systems of young athletes, that is, the hierarchical ranking of the importance of their values (Rokeach, 1973). The 18 YSVQ values were drawn directly from adolescent athletes and they represent a comprehensive set of values salient to moral decision making in youth sport. This follows the advice of Braithwaite and Laws (1985), who recommend the development of items from the population of interest. Each value is represented by a proxy item in the form of a personal statement. For example, the value of public image is represented by the item *I look good.* However, the YSVQ consists only of single-item measures; hence, in the current study, it was extended to create multi-item assessment of three higher order value types.

The questionnaire is headed *What is important to me in sport* and respondents are asked to "Please circle one of the numbers beside each item to show how important it is to you in your main sport." Responses are on a 7-point scale with the following response labels, each starting with the phrase "This idea is . . . " *extremely important to me* (5), *very important to me* (4), *important to me* (3), *quite important to me* (2), *slightly important to me* (1), *not important to me* (0), and *the opposite of what I believe* (−1). This asymmetric scale was developed by Schwartz (1992) for cross-cultural research. Although values are conceptions of the desirable, and normally draw approval, there was a need for disagreement to be expressed when a particular value conflicted with the culture.[1,2]

Method

The instrument was revised in two phases. The purpose of the first phase was to identify the most suitable items in the existing data to represent the moral, competence, and status scales. The purposes of the second phase were (a) to construct and pilot a revised instrument and (b) to make exploratory modifications to produce a YSVQ-2 questionnaire that would be cross-validated in Study 2 (see Anderson & Gerbing, 1988).

Reanalysis of Existing Data

During construction of the YSVQ, Lee et al. (2000) identified a seven-item three-factor model that had a fairly good fit ($N = 253$, $\chi^2 = 20.04$, $df = 12$, $p = .07$, RMSEA = .05, SRMR = .06, CFI = .96, NNFI = .93). This model comprised items for three values (contract maintenance, obedience, fairness) that were named *moral values*, two values (achievement, showing skill) that were named *competence values*, and two values (public image, winning) that were named *status values*. The moral and status values had a low negative correlation ($r = -.18$), suggesting that these values may be located near the center of the self-transcendent to self-enhancement axis of the Schwartz (1992) model. Competence values correlated positively with both moral ($r = .74$) and status values ($r = .37$). The higher correlation with moral values locates competence values in the self-direction domain adjacent to universalism.[3] This is logical because our competence values are self-referenced, and Melech (2001) shows that achievement values are located in the self-direction domain for adolescents before moving to the achievement domain at the self-enhancement pole for adults as they take on a comparative rather than a self-referenced context.

In further analyses, we extended the model to include a new moral value, and new items for existing competence and status values; thus, 10 potential items for the new instrument were identified within the existing data.

Construction of the Pilot YSVQ-2 Instrument

A weakness of the 10-item model was that it was drawn from an item pool that included six moral values but only two competence and two status values. Hence, we drew on the literature, including reviews of other instruments and related articles, to add exploratory items that could potentially increase the range of values in the two latter types. These items were conceptually consistent with Schwartz's domains in which we expected our values to be located; hence, we added self-direction items in the competence group. In the status group, we added dominance items to represent the power domain, social recognition items to accompany the public image value, and leadership items because this is salient to sport teams. The pilot YSVQ-2 questionnaire included six moral items, seven competence items, and nine status items.

Participants and Procedure. The participants were 491 school or club competitors (258 males, 233 females) aged 11–16 years ($M = 13.42$, $SD = 1.03$) who were drawn from three state secondary schools in southern England.[4] They competed for their school or club ($n = 385$) or at a higher level ($n = 106$), in a range of team and individual sports. These participants completed the pilot YSVQ-2 and a simplified version of Reynolds's (1982) 11-item Personal Reactions Questionnaire (PRQ), which is a short form of the Crowne-Marlowe Social Desirability Scale. The PRQ was used to detect any response bias because values are, by definition, "conceptions of the desirable" (Kluckhohn, 1951). Questionnaires were answered in a counterbalanced order and administered by teachers using an

institutionally approved administrative protocol, which complied with the APA ethical guidelines. A subsample ($N = 47$) repeated the questionnaire after 4 weeks to ascertain the test–retest reliability of the scales.

In accordance with the two-step approach of Anderson and Gerbing (1988), the individual factors were first examined in a restricted confirmatory framework and modified to produce unidimensional scales with a good fit. This is a necessary step in assigning meaning to latent constructs. A three-factor model formed from these scales was then similarly tested and modified. Problematic items were eliminated after examining the standardized residuals and the Lagrange multiplier (LM) test, then examining the item content to detect any weakness (e.g., redundancy). At each stage, the model was reestimated and a reduction in Akaike's information criterion (AIC) of model fit was required (Bollen, 1989). The CFAs were undertaken with EQS 6.1 (Bentler, 2003) and we adopted the fit indices and criteria recommended by Hu and Bentler (1999).

Results

The moral factor had a good fit with all six items ($\chi^2 = 19.09$, $df = 9$, $p = .02$, RMSEA = .05, SRMR = .02, CFI = .99, NNFI = .98). In the competence factor, three items were eliminated and the four remaining items, which included the new self-direction item, had a very good fit ($\chi^2 = 0.67$, $df = 2$, $p = .71$, RMSEA = .00, SRMR = .01, CFI = 1.00, NNFI = 1.01). In the status factor, five items were eliminated and the four remaining items had a good fit ($\chi^2 = 6.69$, $df = 2$, $p = .04$, RMSEA = .07, SRMR = .02, CFI = 0.99, NNFI = 0.98). The new leadership item was included, but the social-recognition and dominance items did not fit. The three-factor model formed from these unidimensional scales had a good fit ($\chi^2 = 129.43$, $df = 62$, $p < .001$, RMSEA = .05, SRMR = .04, CFI = 0.97, NNFI = 0.96) after elimination of one moral item.[5]

In this 13-item YSVQ-2 model, factor loadings were moderate to high and are given with descriptive statistics in Table 1. Competence correlated significantly with the moral ($r = .85$) and status ($r = .49$) values, whereas moral and status values had a low correlation ($r = .18$). Means were higher for the moral ($M = 3.65$, $SD = .92$) and competence ($M = 3.66$, $SD = .94$) factors than for the status ($M = 1.40$, $SD = 1.40$) factor. Skewness and kurtosis were low (<1.21). Cronbach's alpha coefficients were $\alpha = .79$ for moral values, $\alpha = .74$ for competence values, and $\alpha = .82$ for status values.

A social desirability index was obtained by summing the item scores on the PRQ questionnaire. The correlation between this index and competence values was not significant ($r = -.03$, $p > .05$), whereas significant but low correlations were found between the social desirability index and both moral ($r = .13$, $p < .01$) and status values ($r = -.16$, $p < .01$). Test–retest reliability correlations over 4 weeks ranged from .66 to .72

Discussion of Study 1

These procedures provide good initial evidence that we have constructed a sound instrument to assess moral, competence, and status values in youth sport. The

Table 1   Descriptive Statistics and Factor Loadings for the 13-Item YSVQ-2 Model

Means and items	M	SD	Skewness	Kurtosis	F1	F2	F3	R^2
Moral values (F1)								
I do what I am told	3.49	1.33	-.81	.32	.61	0	0	.38
I show good sportsmanship	3.76	1.21	-.90	-.36	.76	0	0	.58
I help people when they need it	3.67	1.26	-.85	.50	.56	0	0	.32
I always play properly	3.61	1.26	-.88	.37	.73	0	0	.53
I try to be fair	3.64	1.25	-.90	.67	.60	0	0	.36
Competence values (F2)								
I become a better player	3.79	1.19	-1.09	1.21	0	.70	0	.49
I use my skills well	3.73	1.17	-.96	1.05	0	.71	0	.50
I set my own targets	3.31	1.47	-.73	-.13	0	.50	0	.25
I improve my performance	3.80	1.16	-.86	.34	0	.71	0	.50
Status values (F3)								
I show that I am better than others	1.09	1.73	.68	-.60	0	0	.70	.49
I am a leader in the group	0.97	1.58	.74	-.21	0	0	.67	.45
I win or beat others	1.81	1.81	.22	-1.02	0	0	.85	.72
I look good	1.72	1.80	.24	-.99	0	0	.70	.49
Factor Correlations					F1	F2	F3	
				F1				
				F2	.85			
				F3	.18	.49		

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13-item model provides more extended coverage than the 7-item model identified by Lee et al. (2000). The instrument now includes five moral values (obedience, fairness, sportspersonship, helpfulness, and contract maintenance), three competence values (achievement, showing skill, and self-direction), and three status values (winning, public image, and leadership). This broadening is particularly important for the competence and status value types that were underrepresented in the YSVQ. The CFAs demonstrate that the unidimensional scales for moral, competence, and status values can be used independently. These scales had little or no contamination by social desirability and shared no more than 2.5% variance with the social desirability index. Finally, a three-factor model formed from these scales had a good fit to the data, and is suitable for cross-validation in Study 2. Whereas the YSVQ assessed value *systems,* the YSVQ-2 also assesses value *structure,* and it is in this context that it was used in Study 2.

Study 2: Testing the Conceptual Relationships

The central purpose of the second study was to test the conceptual relationships between values, achievement orientations, and sporting attitudes. A secondary purpose, although undertaken first, was to cross-validate the factor solution of the YSVQ-2 obtained in Study 1 with a new sample. Subsequently, measurement models were tested for all constructs, and then a direct model and a mediation model were examined to test the structural relationships hypothesized in the introduction.

Method

Participants and Procedures

Participants ($N = 892$, males = 503, females = 389) aged 12–15 (M age = 13.89, $SD = 1.05$) were recruited in southern England. They were drawn from 22 community sport clubs that represented the 12 most popular sports in the United Kingdom (Mason, 1995), and from four state secondary schools. They competed for their school or club ($n = 617$) or at a higher level ($n = 271$, missing = 4), and in team sports ($n = 531$) or individual sports ($n = 299$, missing = 62). Under controlled and ethically approved conditions, participants completed the three questionnaires described below in a counterbalanced order. The data were collected between 1 and 2 months after the start of the summer and winter sport seasons.

Instruments

The Youth Sport Values Questionnaire-2 (YSVQ-2).   The three-factor 13-item model that provided a good fit in Study 1 was administered.

The Attitudes Measure.   A 23-item attitude instrument was constructed using two antisocial scales from the Sport Attitudes Questionnaire (SAQ; Lee, Whitehead, Ntoumanis, & Hatzigeorgiadis, 2001) and two prosocial scales from the MSOS (Vallerand, Brière, Blanchard, & Provencher, 1997). The SAQ is a longer

version of the Attitudes to Moral Decision-Making in Youth Sport Questionnaire (AMDYSQ; Lee, Whitehead, & Ntoumanis, 2007). We used its two antisocial scales to measure acceptance of cheating (e.g., *I would cheat if I thought it would help me win*) and acceptance of gamesmanship (e.g., *I sometimes try to wind up the opposition*).

The MSOS includes four scales that focus on a prosocial approach to sportspersonship and all were considered conceptually suitable to complement the two antisocial scales. In a pilot test, the two psychometrically strongest prosocial scales were selected and a CFA on the four antisocial and prosocial scales showed an acceptable fit.[5] The selected MSOS scales measured commitment to sport participation (e.g., *I go to every practice*) and respect for social conventions (e.g., *I shake hands with the opposition—win or lose*). The composite questionnaire contained five items for each of these MSOS scales, with six cheating and seven gamesmanship items for the SAQ scales. All responses were made on a 5-point scale anchored by *strongly disagree* (1) and *strongly agree* (5).

Perceptions of Success Questionnaire (POSQ).   The adolescent version of the POSQ (Roberts, Treasure, & Balague, 1998) was selected to measure achievement orientations. In pilot tests, we added two items at the end of the scale (*I do things more easily than others* and *I learn something new to me*) to represent facets of the ego and task orientation constructs that were not in this questionnaire. A preference to succeed without effort improves the identification of ego orientation as a concept of ability, complementing its focus on obtaining superiority over others, while a learning item complements the focus of task orientation on effort. Hence, the POSQ administered in this study comprised seven items for each orientation. Responses were on the 5-point scale described above.

Data Analyses

Cross-validation of the YSVQ-2 was undertaken using participants with complete scores on this instrument ($n = 755$; males = 427, females = 328). Subsequent measurement and structural models were tested using participants with complete scores on all variables ($n = 549$; males = 317; females = 232).[6]

For the hypothesis testing, we selected three indicators (Olmstead & Bentler, 1992) to represent each construct because we had too many items to maintain an acceptable ratio of sample size to estimated parameters. Indicators were selected by three experienced judges to (a) parsimoniously represent the conceptual breadth of a construct, (b) reduce overemphasis on one facet of a construct, and (c) avoid items with similar wording that could inflate paths between constructs.[7] All items that were previously added to the values instrument and achievement orientation scales were included because they met these criteria. The indicators are given in the Table 2.

Measurement Models.   The fit of the indicators selected for each instrument was tested by CFA as described in Study 1. The robust ML method was used because the normalized estimate of Mardia's coefficient indicated multivariate nonnormality. We also examined invariance across gender using the procedure of Byrne, Shavelson, and Muthén (1989).[5]

Table 2   Indicators for the Measurement Models

Item	Loading
Values	
Moral	
I try to be fair	.64
I show good sportsmanship[a]	.77
I help other people when they need it	.57
Competence	
I set my own targets	.62
I use my skills well	.71
I become a better player	.73
Status	
I am a leader in the group	.67
I show that I am better than others	.77
I look good	.52
Attitudes	
Commitment	
I go to every practice	.49
I always try my hardest	.73
I don't give up after mistakes	.51
Conventions	
I shake hands with the opposition—win or lose	.76
I congratulate the opposition for a good play or performance	.69
I congratulate the opposition after I've lost	.77
Cheating	
I would cheat if I thought it would help me win	.73
I cheat if I can get away with it	.84
Sometimes I have to cheat	.81
Gamesmanship	
It's a good idea to upset your opponents	.79
I sometimes try to wind up the opposition	.76
If I don't want another person to do well I put them off a bit	.65
Achievement orientations	
Task orientation	
I learn something new to me	.60
I perform to the best of my ability	.54
I overcome difficulties	.76

Table 2 (*continued*)

Achievement orientations	
Ego orientation	
I do things more easily than others	.75
I do something that others cannot do	.70
I show other people that I am the best	.71

Note. For values items, the stem is *When I do sport it is important to me that*. . . . For attitude items, the instruction is . . . *show how you play in your main sport*. . . . For achievement orientation items, the stem is *In my sport I feel successful when*. . . .

[a]Data were collected before *sportspersonship* became the recognized term.

Structural Models.   A direct model and a mediated model were used to test the hypotheses given in the introductory section. These models were also tested for invariance of path coefficients across gender, as described above.

Results

Cross-Validation of the YSVQ-2

The hypothesized three-factor structure was supported by good fit indices for the total, female, multigender nonconstrained, and constrained models. In the male sample, the CFI and NNFI indices were weaker than RMSEA and SRMR indices (Table 3). Overall, the good fits confirm that we have constructed a psychometrically sound instrument. It is also invariant across gender, as shown by the absence of change in the CFI and RMSEA indices between the constrained and unconstrained models.[8] The correlation between the moral and competence factors was $r = .76$ (smaller than in Study 1), between competence and status factors $r = .43$, and between status and moral factors $r = .18$.

Measurement Models

Fit indices were acceptable for all three measurement models (Table 3). In the values model, correlations were $r = .72$ between moral and competence values, $r = .43$ between competence and status values, and $r = .11$ between status and moral values. In the attitudes model, the correlation between the two antisocial factors was $r = .71$, and between the two prosocial factors $r = .46$. Correlations between prosocial and antisocial factors ranged from $r = -.07$ to $r = -.35$. For achievement orientations, the correlation between task and ego orientation was $r = .28$.[9] Factor loadings for all instruments were moderately high (.49 to .84), and gender invariance of factor loadings and factor correlations was supported.[5]

Structural Models

The structural models and path coefficients for the total sample are shown for the direct and mediated models in Figures 1 and 2, respectively. Based on the YSVQ-2 measurement model, the competence factor was allowed to correlate with the

Table 3 Fit Indices for the Measurement and Structural Models in Study 2

	χ^2	df	CFI	NNFI	RMSEA	90% CI for RMSEA	SRMR
Cross validation of YSVQ-2							
Total	170.64	62	.95	.94	.05	.04–.06	.05
Males	168.04	62	.91	.89	.06	.05–.08	.06
Females	122.11	62	.96	.95	.05	.04–.07	.05
Multigender nonconstrained	256.57	124	.94	.94	.04	.03–.04	.06
Multigender constrained	279.99	137	.94	.94	.04	.03–.04	.08
Measurement models for indicators							
Values (9 items)	53.21	24	.97	.96	.05	.03–.06	.05
Attitudes (12 items)	75.16	48	.98	.98	.03	.02–.05	.04
Achievement orientations (6)	11.36	8	1.00	.99	.03	.00–.06	.03
Structural models							
Direct	310.76	179	.96	.95	.04	.03–.04	.06
Mediated	515.59	310	.95	.94	.04	.03–.04	.06

Note. The Satorra–Bentler chi-square and the fit indices from the robust ML solution are reported, except for SRMR indices, which are from the ML solution. Chi-square $p = .23$ for achievement orientations, and $p < .01$ for other models. Fit indices for the male, female, and multigender models are available from the second author on request. Measurement models were constrained for factor loadings and covariances. Structural models were constrained for structural paths.[5]
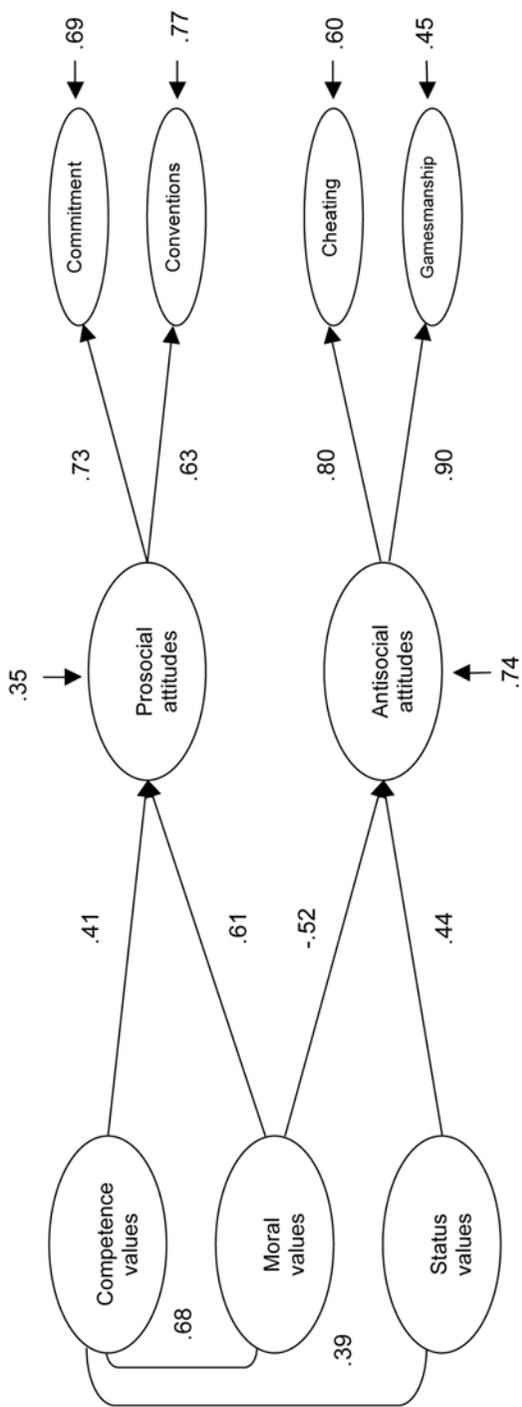
Figure 1 — The direct model: Standardized path coefficients for the total sample. All paths significant at $p < .05$.
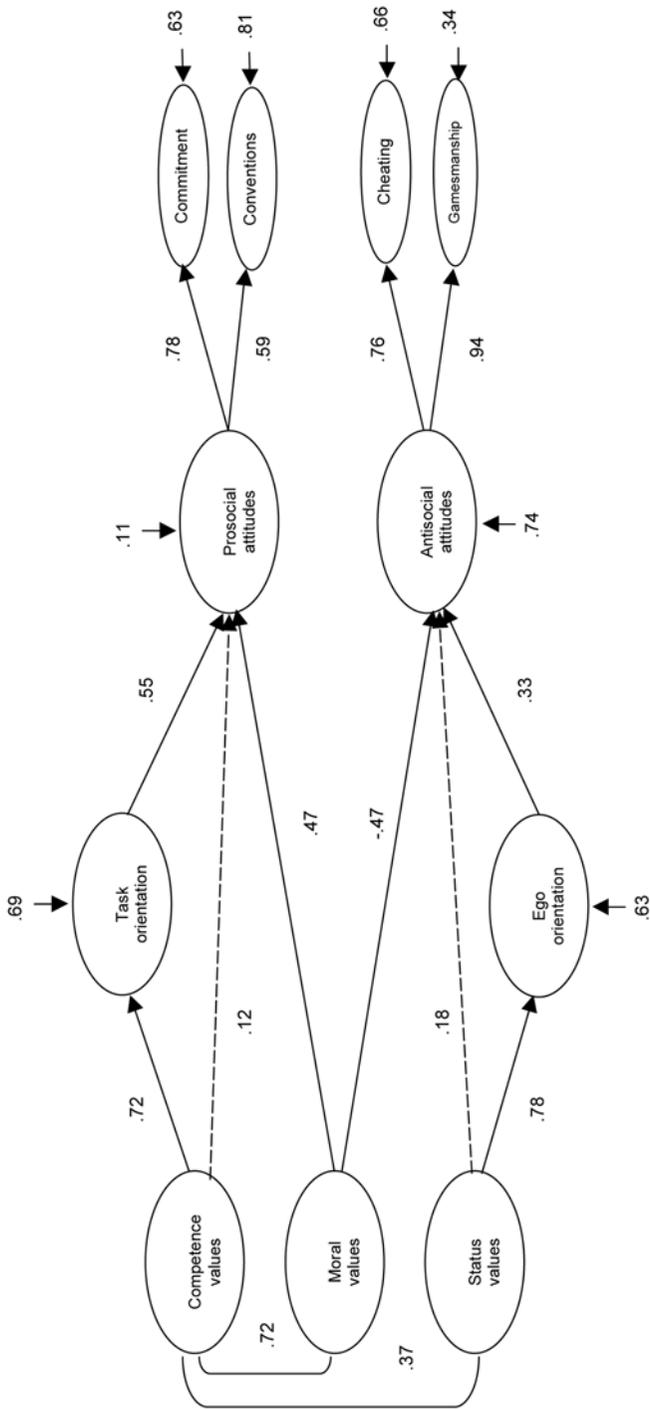
Figure 2 — The mediated model: Standardized path coefficients for the total sample. Paths indicated by solid lines are significant at $p < .05$.

moral and status factors. The four attitude factors were hypothesized to load on two second-order factors representing prosocial (commitment to sport and respect for social conventions) and antisocial (acceptance of cheating and acceptance of gamesmanship) factors. Fit indices for the models discussed below are given in Table 3 and are considered acceptable.

The Direct Model.   As hypothesized, moral values positively predicted prosocial attitudes and negatively predicted antisocial attitudes. Similarly, competence and status values positively predicted prosocial and antisocial attitudes, respectively. All path coefficients were moderate to high and significant, with paths from moral values being higher than those from competence and status values. Loadings of the attitude scales on the second-order factors were high. Overall, the model explained 88% of variance in the prosocial attitudes and 45% of variance in the antisocial attitudes. Common variance was lower between the two prosocial scales than the two antisocial scales.

The Mediated Model.   Baron and Kenny (1986) argue that the mediating role of a variable is determined by the reduction in the original direct path between two variables when a third variable is introduced. If the original path becomes zero, full mediation can be claimed, whereas if it drops partial mediation can be claimed. Hence we inserted paths from competence values to task orientation, and from task orientation to prosocial attitudes. Similarly, we inserted paths from status values to ego orientation, and from ego orientation to antisocial attitudes. Our objectives were (a) to ascertain whether the model had an acceptable fit and (b) to examine any reduction in the direct path coefficients.

The new paths from competence values to task orientation and from status values to ego orientation were high ($\beta = .72$ and $\beta = .78$ respectively, $p < .05$). The new path from task orientation to prosocial attitudes was moderately high ($\beta = .55$, $p < .05$), and the new path from ego orientation to antisocial attitudes was smaller but significant ($\beta = .33$, $p < .05$).

Task orientation partially mediated the effect of competence values on prosocial attitudes, as shown in a reduction of the direct path coefficient from $\beta = .41$ ($p < .05$) in the direct model to $\beta = .12$ (*ns*) in the mediated model. The variance explained by this direct path fell from 17% to 0.01%. Ego orientation partially mediated the effect of status values on antisocial attitudes. The direct path coefficient fell from .44 ($p < .05$) to .18 (*ns*), and the explained variance fell from 19% to .03%. Overall, 99% of variance in prosocial attitudes and 45% of variance in antisocial attitudes was predicted. In all, the mediation model confirms our predictions that sport values underpin achievement orientations, and that achievement orientations mediate the relationships between certain values and attitudes.

Invariance Across Gender.   In both the direct and mediated models, satisfactory fit indices were obtained for the male and female models, and also for invariance of factor pattern across gender in the nonconstrained and constrained models.[5]

Discussion of Study 2

Our research purposes were, first, to examine the direct effect of moral, competence, and status values on prosocial and antisocial attitudes and, second, to examine the

mediating role of achievement orientations. We found that prosocial attitudes were predicted positively by both competence and moral values, whereas antisocial attitudes were predicted positively by status and negatively by moral values. Task orientation partially mediated the effect of competence values on prosocial attitudes, and ego orientation partially mediated the effect of status values on antisocial attitudes. The relationships were gender invariant.

These findings are important for several reasons. First, the direct effects demonstrate the value-expressive function of attitudes (Katz, 1960) in youth sport. The prosocial attitudes of commitment to sport and respect for its social conventions express moral and competence values. Similarly, the antisocial attitudes of cheating and gamesmanship express status values and inversely express moral values. This illustrates that an attitude can reflect more than one value (see Rokeach, 1973) and, moreover, that moral attitudes are derived from both moral and nonmoral values. However, moral values predicted both prosocial and antisocial attitudes.

Second, competence and status values strongly predicted task and ego orientation, respectively. Thus, values underpin achievement orientations, which, by their nature, illustrate personal theories or worldviews about achievement contexts. Our findings are consistent with Rohan's (2000) proposal of a process whereby personal value systems lead through worldviews to attitudes and behavioral decisions. This outcome widens our understanding of possible antecedents of achievement orientations. Nicholls (1989) argued that these orientations arise from cognitive development, socialization, and experience; these are also the roots of value systems (Rokeach, 1973). These data suggest that the role of value systems lies in underpinning achievement orientations and that an institutional value system may function to promote a dominant motivational climate.

Third, and perhaps most importantly, achievement orientations were partial mediators of the effect of competence and status values on attitudes. The mediation was not complete because the direct paths did not drop to zero. This suggests a cognitive mechanism for the influence of these values on attitudes. For example, high competence values lead participants to display commitment and to respect the social conventions of sport because they first adopt an achievement orientation in which success is judged by effort and improvement.

Shields and Bredemeier (2007) argue that achievement orientations include latent moral theories because, in addition to a cognitive interpretation of success, they include a motivational intention. They propose that the motives to make oneself better or to look good are adopted for ethical reasons. It follow that values should be antecedents of achievement orientations as our results show. However, we found the mediation of ego orientation to be based on items focused more on cognitive interpretation than motivational intention.[10]

Ego orientation predicted antisocial attitudes less effectively than task orientation predicted prosocial attitudes. It may be that athletes who want to show superiority only condone cheating and gamesmanship when they doubt their ability to succeed honestly. In our case, however, a supplementary (unreported) test showed no moderation by perceived ability. Alternatively, Elliot (1997) argues that maladaptive outcomes of ego orientation accompany avoidance, rather than approach, motivation. Thus ego-oriented athletes who want to avoid looking bad

are more likely to seek an unfair advantage than those who expect to look good. However, POSQ items measure only ego-approach motivation. The directional effects of approach and avoidance motivation on prosocial and antisocial attitudes should be examined.

General Discussion

These studies have refined the YSVQ (Lee et al., 2000), demonstrated the value-expressive role of attitudes, and examined the role of achievement orientations in mediating the influence of values on pro- and antisocial attitudes in youth sport competitors. Refining the YSVQ produced three scales measuring different value domains that underpinned prosocial and antisocial attitudes. We then introduced a measure of achievement orientation and found that it had a mediating effect on the influence process. These findings lend support to the view that attitudes toward moral decisions in sport are founded in the value system of the actor and in the prevailing interpretation of success by the actor.

Furthermore, we consider that we have identified a psychological mechanism by which moral growth or character development can be achieved through participation in youth sport. If sport is to act as an agent of moral growth, coaches, teachers, and parents should promote moral and competence values rather than status values. This can be achieved by positive modeling on the part of significant others and encouraging both the understanding of moral dilemmas in sport and the importance of making self-referenced evaluations of success. Because competence values are mediated by achievement orientations, encouragement will be facilitated by the creation of task-involving conditions and minimizing ego-involving conditions.

Limitations and Future Directions

This research has the limitations of a cross-sectional study. Longitudinal research is required to examine the change in these variables over time. The study was also restricted to competitors in early or mid-adolescence who displayed generally favorable ethical attitudes. It should be extended to older competitors and higher levels of competition.

Our direct and mediation models were robust across all samples and it was not necessary to add or delete any paths. Further testing should examine the generalization of effects, and the mediation model should be adapted to include both approach and avoidance forms of task and ego orientation. We have found a good model fit in a study which used the TEOSQ (Task Ego Orientation in Sport Questionnaire; Duda & Nicholls, 1992) instead of POSQ to measure achievement orientation (Whitehead, Lee, & Hatzigeorgiadis, 2002). Generalization could also be examined by extending the range of ethical attitudes to include other scales from MSOS and AMDYSQ.

The YSVQ-2 could be extended to examine other issues, such as the conflict between moral and status values. While future research could assess other sport-related values, using multi-item scales would be demanding on the attention span of young athletes, and we have found better reliability with fewer items. We

recommend that values are selected to extend our sampling of compatible and conflicting domains because this could provide insight into mechanisms underpinning value conflict and a basis for intervention.

In the interests of instrument development, the YSVQ-2 or its derivatives would also benefit from a study of the effect of anchoring the scales with adolescent populations. Bardi (personal communication) suggests that anchoring would improve the degree of differentiation between value domains. This should be done in accordance with the protocol described by Schwartz (1992) in which respondents are to read all values statements and identify the most and least important to them. The questionnaire would then be completed by items being rated relative to these extremes.[1] However, this procedure would still leave open the question of the extent to which values could represent a ranking at the individual level.[2]

Some values research might parallel work in achievement orientations, as in exploring how competitors' value systems relate to those of significant others. However, our study opens the way for further combined research, since achievement orientations contribute to worldviews of the achievement context (Duda & Nicholls, 1992), and values can extend this perspective because they cover a more comprehensive motivational field and have a prioritizing function (Schwartz, 1992).

This research was limited to cognitive variables and did not anticipate behavioral outcomes. Bardi and Schwartz (2003) showed that values and behavior yield a common structure across 10 value types. They used recall techniques to assess behavioral tendencies and suggested that value-related behavior is not limited to conscious decision-making processes but can also arise from habitual or spontaneous behavior. Incidents of fair play or cheating in sport are likely to arise from spontaneous decisions on the field of play, for example, deliberately obstructing an opponent in an illegal manner, or from calculated decisions both on and off the field, such as in attempts to deceive a referee or to take drugs to gain a long-term advantage. Hence, it is important to establish in what conditions values and sport behavior are related. Kandel (2006) has shown that spontaneous responses may be initiated 200 ms before a conscious decision can be made; thus, the term *cheating* might be inappropriate for actions not under conscious control.

We suggest that while the observation of real-life sports events, especially with young competitors who rarely cheat, may not yield sufficient data in the time available, suitably modified computer games could yield a good source of behavioral tendencies of both a spontaneous and considered nature in a time-efficient manner.

Conclusion

The view that sport provides a fertile environment for the development of desirable personal and social qualities is commonly expressed by more optimistic educators despite the lack of supporting evidence. However, our data indicate that whether such outcomes are positive (i.e., promote prosocial attitudes) or negative (i.e., promote antisocial attitudes) depends on the value systems that are encouraged and transmitted in the teaching/coaching process. Since sports activities constantly provide situations where competitors are faced with moral dilemmas, significant others can use them to encourage competitors to understand and confront

the moral dimensions of the decisions they take. Such strategies provide opportunities to both express and encourage value transmission in accordance with the prevailing value system held by significant others.

Because values, mediated by achievement orientations, contribute to the development of pro- and antisocial attitudes in youth sport, both contribute to the paradox that faces sport coaches and teachers, that is, how to develop competition between opponents while also promoting fairness. Significant others should, we consider, endeavor to encourage young people to strive for personal excellence and competitive success while, at the same time, encouraging fairness and respect for both the rules and those opponents.

In summary, the unique contributions of this research were the development of a new instrument to measure sport values, the demonstration that these values underpin both ethical attitudes and achievement orientations in youth sport, and that achievement orientations mediate the effect of some values on ethical attitudes. This work provides a basis for future research into values, attitudes, and behavior in youth sport and physical education.

Notes

1.   Our instrument differed from Schwartz's in two ways: (a) the use of a 7-point scale rather than a 9-point scale and (b) the omission of an instruction to anchor the ends of the scale by reading all items and then identifying the items at the extremes of response before completing the rest of the items. We took these steps to simplify the requirements on participants, who were early adolescents, completing a number of questionnaires at one time so that we might maximize response rate.

2.   The interval scale resulting from this format does not lend itself to the identification of a hierarchy of values at the individual level as does the Rokeach Value Survey (see Rokeach, 1973), which requires a ranking of values. However, ranking the resulting mean scores of a sample can be regarded as providing a ranking of values in a specific social group (see also Bardi & Schwartz, 2003).

3.   Schwartz (1994, p. 24) gives a "theoretical model of relations among motivational types of values, higher order value types, and bipolar value dimensions."

4.   Some data from this sample were presented in Study 5 in Lee et al. (2000). The sample was recruited for the current study to develop the new values instrument, but it was relevant to also assess the social desirability of the 18 individual values described in 2000.

5.   Further information is available from the second author on request.

6.   Structural models were also analyzed using the complete sample of 892 and the full information maximum likelihood option in LISREL 8.54 (Jöreskog & Sörbom, 2003) to estimate the likelihood of bias arising from missing data. The mean difference in RMSEA was .002; hence, we conclude that our data are likely to be missing at random.

7.   Ego orientation indicators were selected on a different basis. We found two subfactors, one dominated by I beat others and the other by I do things more easily than others. We selected items on the second factor because it focused less on winning and there is a winning value in status.

8.   For multigroup models, the changes in the CFI and the RMSEA can be used to evaluate model invariance, with differences below .01 supporting the equivalence of constrained parameters across the samples because the significance of chi-square changes are sensitive to sample size (Cheung & Rensvold, 2002; Marsh, Marco, and Aşçı, 2002).

9.   The task-ego correlation is higher than desirable, but our hypotheses did not rest on an assumption of orthogonality, and our analyses showed it to be unnecessary to add a path between these constructs.

10.   We found no ego mediation using the factor comprised only of motivational items.

Acknowledgments

References

Allport, G.W. (1961). *Pattern and growth in personality*. New York: Holt, Rinehart, & Winston.

Anderson, J.C., & Gerbing, D.W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103,* 411–423.

Bardi, A., & Schwartz, S.H. (2003). Values and behavior: Strength and structure of relations. *Personality and Social Psychology Bulletin, 29,* 1207–1220.

Baron, R.M., & Kenney, 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. (2003). *EQS 6 structural equations program manual*. Encino, CA: Multivariate Software.

Biddle, S.J.H., Wang, C.K.J., Kavussanu, M., & Spray, C.M. (2003). Correlates of achievement goal orientations in physical activity: A systematic view of research. *European Journal of Sport Science, 3,* 1–20.

Bollen, K.A. (1989). *Structural equations with latent variables*. New York: Wiley.

Braithwaite, V.S., & Laws, H.G. (1985). Structure of human values: Testing the adequacy of the Rokeach Value Survey. *Journal of Personality and Social Psychology, 49,* 250–263.

Byrne, B.M., Shavelson, R.J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin, 105,* 456–466.

Cheung, G.W., & Rensvold, R.B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modeling, 9,* 233–255.

Cruz, J., Boixadós, M., Valiente, L., & Capdevila, L. (1995). Prevalent values in young Spanish soccer players. *International Review for the Sociology of Sport, 30,* 353–373.

Duda, J.L. (1992). Motivation in sport settings: A goal perspectives approach. In G.C. Roberts (Ed.), *Motivation in Sport and Exercise* (pp. 57–91). Champaign, IL: Human Kinetics.

Duda, J.L., & Nicholls, J.G. (1992). Dimensions of motivation in schoolwork and sport. *Journal of Educational Psychology, 84,* 290–299.

Duda, J.L., & Whitehead, J. (1998). Measurement of goal perspectives in the physical domain. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 21–48). Morgantown, WV: F.I.T. Press.

Elliot, A.J. (1997). Integrating the "classic" and "contemporary" approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In M. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement, vol. 10* (pp. 143–179). Greenwich, CT: JAI Press.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Hu, L., & Bentler, P.M. (1999). Cutoff criteria for fit indices in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6,* 1–55.

Jöreskog, K.G., & Sörbom, D. (2003). *LISREL 8.54*. Chicago, IL: Scientific Software International.

Kandel, K.R. (2006). *In search of memory: The emergence of a new science of mind*. London: W.W. Norton.

Katz, D. (1960). The functional study of attitudes. *Public Opinion Quarterly, 24,* 163–204.

Kavalir, P. (2004). Sport in the value system of Czech adolescents: Continuity and change. *The International Journal of the History of Sport, 21,* 742–761.

Kluckhohn, C. (1951). Value and value-orientations in the theory of action: An exploration in definition and classification. In T. Parsons & E. Shils (Eds.), *Towards a general theory of action* (pp. 388–433). Cambridge, MA: Harvard University Press.

Lee, M.J. (1996). *Young people, sport and ethics: An examination of fairplay in sport*. Technical report to the Research Unit of the Sports Council. London.

Lee, M.J., & Cockman, M.J. (1995). Values in children's sport: Spontaneously expressed values among young athletes. *International Review for the Sociology of Sport, 30,* 337–352.

Lee, M.J., Whitehead, J., & Balchin, N. (2000). The measurement of values in sport: Development of the Youth Sport Values Questionnaire. *Journal of Sport & Exercise Psychology, 22,* 307–326.

Lee, M.J., Whitehead, J., & Ntoumanis, N. (2007). Development of the Attitudes to Moral Decision-making in Youth Sport Questionnaire (AMDYSQ). *Psychology of Sport and Exercise, 8,* 369–392.

Lee, M.J., Whitehead, J., Ntoumanis, N., & Hatzigeorgiadis, A. (2001). Development of the Sport Attitude Questionnaire. In A. Papaioannou, M. Goudas, & Y. Theodorakis (Eds.), *In the dawn of the new millennium, Vol 2: Proceedings of the 10th World Congress of Sport Psychology* (pp.191–192). Thessaloniki, Greece: Christodouli Publications.

Marsh, H.W., Marco, I.T., & Aşçı, F.H. (2002). Cross-cultural validity of the physical self-description questionnaire: Comparison of factor structures in Australia, Spain and Turkey. *Research Quarterly for Exercise and Sport, 73,* 257–270.

Mason, V. (1995). *Young people and sport in England, 1994: A national survey*. London: Sports Council.

Melech, G. (2001). *Value-development in adolescence*. Unpublished doctoral dissertation. The Hebrew University of Jerusalem, Israel.

Nicholls, J.G. (1989). *The competitive ethos and democratic education*. Harvard, MA: Harvard University Press.

Olmstead, R.E., & Bentler, P.M. (1992). Structural equations modeling: A new friend? In F.B. Bryant, J. Edwards, R.S. Tindale, E.J. Posavac, L. Heath, E. Henderson, & Suarez-Balcazar (Eds.), *Methodological issues in applied social psychology* (pp. 135–158). New York: Plenum.

Reynolds, W.M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology, 38,* 119–125.

Roberts, G.C., Treasure, D., & Balague, G. (1998). Achievement goals in sport: The development of the Perception of Success Questionnaire. *Journal of Sports Sciences, 16,* 337–347.

Rohan, M.J. (2000). A rose by any name? The value construct. *Personality and Social Psychology Review, 4,* 255–277.

Rokeach, M. (1973). *The nature of human values*. New York: The Free Press.

Schwartz, S.H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M.P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–65). London: Academic Press.

Schwartz, S.H. (1994). Are there universal aspects in the structure and content of human values? *The Journal of Social Issues, 50,* 19–45.

Shields, D.L.L., & Bredemeier, B.J.L. (2007). Advances in sport morality research. In G. Tenenbaum & R.C. Eklund (Eds.), *Handbook of sport psychology* (3rd ed., pp. 662–684). Indianapolis, IN: Wiley.

Vallerand, R.J., Brière, N.M., Blanchard, C., & Provencher, P. (1997). Development and validation of the Multidimensional Sportspersonship Orientation Scale. *Journal of Sport & Exercise Psychology, 19,* 197–206.

Webb, H. (1969). Professionalization of attitudes towards play among young adolescents. In G.S. Kenyon (Ed.), *Aspects of contemporary sociology* (pp. 161–178). Chicago, Ill: The Athletic Institute.

Whitehead, J., Lee, M.J., & Hatzigeorgiadis, A. (2002). Goal orientations as mediators of the influence of values on ethical attitudes in youth sport: Generalization of the model. *Journal of Sports Sciences, 21,* 364–365.