

## **Cognitive and Affective Concomitants of Task and Ego Goal Orientations During the Middle School Years**

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Recent research with young adolescents (Duda, Fox, Biddle, & Armstrong, 1992) and with older adolescents (Duda, 1989) has reported a conceptually coherent relationship between individuals' achievement goal orientations and their beliefs about competitive sport. The purpose of the present study was to extend this line of research and examine the cognitive and affective concomitants of task and ego goal orientations (Nicholls, 1980, 1984, 1989) at three different ages during adolescence. Specifically, beliefs about the purposes of sport, causes of success, and satisfaction in sport were examined. A robust pattern of results emerged from canonical correlation procedures. For all three ages, a task orientation was related to prosocial and adaptive achievement beliefs about sport participation. In contrast, an ego orientation was related to negative social aspects and maladaptive achievement beliefs about sport involvement. The results suggest that a task orientation is likely to facilitate adaptive cognitive and affective patterns in competitive sport during adolescence.

**Key words:** adolescence, sport, perceived ability

The construct of perceived ability has been one of the most popular psychological variables attended to by motivational researchers in the sport domain (see Roberts, 1992). The predominant focus in this literature has been to ascertain the cognitive, affective, and behavioral antecedents and consequences of varying levels of perceived ability (e.g., Feltz, 1992; Roberts, Kleiber, & Duda, 1981). For the most part, the self-perception of ability has been assumed to refer to how much ability an individual has relative to others in these studies. Recent research from an achievement goal perspective, however, suggests that more than one conception of ability exists (Nicholls, 1984, 1989), and that individuals' cognitive and affective patterns are determined by the conception of ability adopted.

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## The Achievement Goal Perspective

Nicholls (1980, 1984, 1989) contends that two conceptions of ability manifest themselves in achievement contexts, namely, an undifferentiated conception of ability and a differentiated conception of ability. Based on developmental work with children, Nicholls concluded that the development of the concept of ability is a process of differentiating the concepts of luck, task difficulty, and effort from ability. Following a series of experiments, Nicholls (1984; Nicholls & Miller, 1984) concluded that by age 12, children were able to differentiate task difficulty, luck, and effort from ability. In the sport domain, Watkins and Montgomery (1989) have reported similar findings. In a study examining the determinants of athletic excellence, they found that prior to age 12, children believed that effort was the cause of athletic success. In contrast, the subjects over the age of 12 believed that ability and effort were the determinants of athletic success.

Reaching this developmental stage, however, does not necessarily dictate that a differentiated conception of ability will be automatically invoked by individuals over the age of 12. Rather, individuals will approach a task with certain goals of action that reflect their personal perceptions and beliefs about the particular achievement activity in which they are engaged (Dennett, 1978; McArthur & Baron, 1983; Nicholls, 1980, 1984, 1989). The conception of ability they employ and the ways they interpret their performance can be understood in terms of these perceptions and beliefs. These perceptions and beliefs form a personal theory of achievement at the activity (Nicholls, 1989). The adopted personal theory of achievement affects one's beliefs about how to achieve success at the activity. Therefore, people will differ in the conceptions of ability they use and in how they use these conceptions based on their personal theories of achievement.

Nicholls (1984) contends that the two conceptions of ability are embedded within two orthogonal achievement goal orientations. These two goal orientations are related to the conception of ability adopted by an individual and act as goals of action reflecting the individual's personal theory of achievement within a particular achievement context. In this paper, the terms *task* and *ego* will be used to describe the two goal orientations (Nicholls, 1980, 1984, 1989). An individual who is task oriented utilizes an undifferentiated conception of ability, focusing on developing skills, learning new skills, and demonstrating mastery at the task. The demonstration of ability is based on maximum effort and is self-referenced. In contrast, an individual who is ego oriented utilizes a differentiated conception of ability, focusing on demonstrating ability by being successful with minimum effort and by outperforming others.

In addition to reflecting personal criteria for success, individuals' personal goals are also assumed to be linked to their world views in a conceptually coherent fashion (Nicholls, 1989). In the educational context, Nicholls and his colleagues (e.g., Nicholls, Chueng, Lauer, & Patashnick, 1989; Nicholls, Patashnick, & Nolen, 1985) have established evidence that task and ego orientations are associated with different beliefs about the wider purposes of education. A task orientation has been found to be associated with the belief that one should undergo education so that one's commitment to society and desire to continue learning should be enhanced. In contrast, an ego orientation is associated with the belief that education is a means to an end, namely wealth and enhanced social status.

This research has also indicated that the more ego oriented individuals are (i.e., the more committed they are to outperforming their peers), the more they see ability and attempts to do better than others as causes of success. On the other hand, the more task oriented individuals are, the more they believe that success depends on effort, interest, and attempts to learn new skills.

### **Personal Goals and the Sport Experience**

Recent research has applied and tested the conceptual relevance of the achievement goal perspective to the domain of sport during adolescence. Congruent with the classroom domain, this research has consistently shown that achievement goal orientations are pertinent to the sport experience. Duda (1989) replicated Nicholls et al.'s (1985) study with a sample of 17-year-old high school students and demonstrated that an ego orientation was related to the belief that sport participation is a means to an end, namely personal gains in social status. In contrast, a task orientation was related to the belief that sport participation should foster cooperation and personal learning.

Duda, Fox, Biddle, and Armstrong (1992) replicated the findings of Duda (1989) with a sample of 10- to 11-year-old British children. Correlational and factor analysis procedures revealed that a task orientation was linked to a focus on cooperation and the belief that success stems from effort. A task orientation was also positively correlated with reported enjoyment of sport and was negatively related to the amount of boredom experienced. In contrast, an ego orientation was associated with an emphasis on work avoidance and the view that the possession of ability or deceptive tactics and external factors are the causes of success in sport. Subjects who were high in ego orientation also tended to find sport more boring than those subjects who were low in ego orientation.

The purpose of this study was to examine whether the pattern of relationships that have been reported in previous research with younger adolescents (Duda et al., 1992) and older adolescents (Duda, 1989) was consistent across the middle school years in a cross-sectional study. Specifically, we examined the cognitive and affective concomitants of task and ego goal orientations at three different ages during adolescence. Consistent with this line of research, we examined the relationship of adolescents' achievement goal orientations and their beliefs about the purposes of sport and the causes of success in sport. Given the research that has suggested that positive affect is a key variable in understanding behavior in youth sport contexts (e.g., Scanlan & Simons, 1992), we also wanted to examine the determinants of children's satisfaction in sport. In contrast to previous research in sport (Duda, 1989; Duda et al., 1992) that has defined and measured satisfaction as the intrinsic interest derived from participation in sport, we hypothesized that the determinants of satisfaction would vary, depending on the achievement goal adopted.

We hypothesized that a task orientation would be positively related to prosocial aspects of sport involvement (a belief that effort is the cause of success) and to satisfaction being derived from mastery experiences. In contrast, an ego orientation was expected to be associated with antisocial aspects of sport involvement, the belief that ability or external factors are the cause of success in sport, and the belief that satisfaction is derived from normative success.

## Method

### *Subjects and Procedure*

The sample consisted of 330 children. All of the children attended a large comprehensive school in a major city in Britain. Forty-eight girls and 48 boys were in the first year of the school (mean age = 11.3), 78 girls and 78 boys were in the third year (mean age = 13.4), and 44 girls and 34 boys were in the fifth year (mean age = 15.3). Subsequently, the groups will be referred to as the youngest, middle, and oldest groups. The children completed the questionnaire during their physical education lessons. The questionnaires were distributed by an investigator who explained the purpose of the study. The investigator helped any subject who had questions pertaining to the wording or meaning of any of the items on the questionnaire. All the subjects in the present study had participated, or were currently participating, in competitive sport.

### *Measures of Goal Orientations*

In order to assess habitual achievement goal dispositions, Nicholls (1989) suggested that individuals should be asked what makes them feel successful in a given achievement situation. Accordingly, subjects' dispositional achievement goal orientations were differentiated by their responses to the Perception of Success Questionnaire (POSQ) (Roberts & Balague, 1989, 1991). The POSQ is a 12-item scale consisting of 6 task and 6 ego items. The subject responds to the stem "I feel most successful in sport when. . . ." Each item is rated on a 5-point Likert scale anchored by *strongly disagree* (1) and *strongly agree* (5).

The POSQ has been developed over the past 5 years as a sport-specific measure of task and ego achievement goal orientations. Utilizing normal scale development procedures, Roberts and Balague (1989, 1991) developed a large pool of 48 questions and then submitted these questions to a panel of experts to arrive at a reduced pool of 29 questions. Factor analytical procedures were then utilized to arrive at the current 6 task and 6 ego items. The robustness of the POSQ was confirmed in a recent study with parents whose children are involved in the competitive sport experience (Roberts, Treasure, & Hall, in press). The POSQ was administered to the parents, and following a principal axis factor analysis with orthogonal and oblique rotations, two factors emerged reflecting a task and ego orientation identical to other populations (see Roberts & Treasure, in press). Cronbach alpha coefficients for the Task and Ego subscales were .90 and .84, respectively. The item loadings for the two subscales were very similar and the intercorrelation between the subscales was low ( $r = .14$ ).

For the purposes of the present study, the construct validity of the POSQ for all three groups was examined by means of principal axis factor analysis with both orthogonal and oblique rotations. For all three groups, two factors were extracted, reflecting an ego and task achievement goal orientation. The intercorrelation between the two factors was .07, .12, and -.27 for the youngest, middle, and oldest age groups, respectively, and confirmed the proposed orthogonality of task and ego achievement goal orientations (Nicholls, 1989). Due to the similarity of the item loadings and because the intercorrelation between the

**Table 1** Structure Matrix Coefficients for Task and Ego Factors

Item	Task			Ego		
	Youngest	Middle	Oldest	Youngest	Middle	Oldest
Reach a goal <sup>a</sup>	.652	.746	—			
Show personal improvement	.778	.800	.874			
Perform to the best of ability	.718	.774	.848			
Work hard	.718	.823	.797			
Overcome difficulties	.834	.747	.816			
Master something I could not do before	.813	.653	.867			
I am the best				.827	.858	.865
Do better than opponents				.739	.737	.851
Show others I am the best				.792	.825	.746
I am clearly superior				.691	.798	.711
I beat other people				.708	.767	.817
Accomplish something others cannot do				.487	.600	.785
Eigenvalue	3.87	3.30	3.58	3.09	3.85	4.37
% variance	32.2	27.5	29.8	25.8	32.0	36.4
Cronbach alpha	.88	.85	.90	.82	.85	.89

<sup>a</sup>Reach a goal did not load high enough to be included as an item in the task subscale for the oldest group.

two factors was low, only the results from the factor analyses with an orthogonal rotation are presented (see Table 1).

The internal consistency of the POSQ subscales was determined via the calculation of alpha coefficients. These ranged from .85 to .90 for the Task subscales and from .82 to .89 for the Ego subscales. Based on the data, it was concluded that the POSQ had demonstrated acceptable internal consistency and a stable factor structure for the three age groups.

### *Belief Scales*

To confirm the hypothesized factor structure of the Purposes of Sport, Causes of Success in Sport, and Satisfaction in Sport belief subscales, principal axis factor analysis procedures were conducted with both orthogonal and oblique rotations. A minimum .4 factor weight was required before an item was deemed to load on a factor, and a factor had to have an eigenvalue greater than 1 and had to account for at least 5% of the variance. Due to the degree of intercorrelation between the belief subscales, the results of the factor analyses followed by an oblique rotation were interpreted. The internal validity of the various belief subscales was determined by the calculation of Cronbach alpha coefficients.<sup>1</sup>

*Purposes of Sport.* The subjects' beliefs about the purposes of sport were

assessed by a 15-item scale. Based on the findings of previous research on the purposes of sport (Roberts, Hall, Jackson, Kimiecik, & Tonymon, 1991), this scale consisted of three Purpose of Sport subscales: (a) Enhance Social Status (e.g., "Give me status in school," "Make me look and feel important in front of other people"), (b) Lifetime Health (e.g., "Motivate me to keep fit throughout my life," "Teach me the importance of good health"), and (c) Personal Development (e.g., "Teach me self-discipline," "Teach me to respect authority"). The subjects responded to the stem "A very important thing sport does for me is . . ." on a 5-point Likert scale anchored by *strongly agree* (1) and *strongly disagree* (5).

Results of the factor analyses confirmed the structure of the Social Status and Personal Development subscales for all three age groups (alphas ranged from .79 to .82, and .80 to .84, respectively), and the Lifetime Health subscale for the middle group (alpha .82).

*Causes of Success.* The subjects' beliefs about the causes of success in sport was determined by a 15-item scale. Congruent with previous research (Duda et al., 1992), the subjects' beliefs about the causes of success in sport were expected to be reflected by three subscales: (a) Motivation/Effort (e.g., "They try hard," "They help each other"), (b) Ability (e.g., "They are talented," "They try to beat other players"), and (c) External Factors (e.g., "They act as if they like the coach," "They dress right"). The subjects responded to the stem "What is most likely to help someone do well in sport?" on a 5-point Likert scale anchored by *strongly agree* (5) and *strongly disagree* (1). To maintain the focus on the causes of success, in contrast to personal criteria underlying subjective success elicited by the POSQ, the stem for each of the items was asked in the third person.

Results of the factor analyses confirmed the structure of Motivation/Effort and Ability subscales for the oldest group (alpha .88 and .78) and the Motivation/Effort and External Factors subscales for the youngest and middle groups (alphas were .61 and .82, and .70 and .71 for the two subscales, respectively).

*Satisfaction.* The subjects responded to the stem "In your sport how much satisfaction do you feel when you . . ." for 11 items developed for this study. This measure consisted of three subscales reflecting three commonly experienced sport related outcomes: (a) Mastery Experiences (e.g., "Learn new skills," "Find playing challenging"), (b) Social Approval (e.g., "Please the teacher or your parents," "Please your friends"), and (c) Normative Success, (e.g., "Do better than others," "Win"). The items were rated on a 5-point Likert scale ranging from *a little* (1) to *a lot* (5).

Results of the factor analyses confirmed the structure of the Mastery Experiences and Social Approval subscales for all three groups (alphas ranged from .69 to .81, and from .74 to .85, respectively), and the Normative Success subscale for the middle group and oldest group (alphas were .62 and .65, respectively).

## Results

### *Canonical Correlations*

It was hypothesized that individuals' personal goals would be linked to their views about the purposes of sport, causes of success in sport, and satisfaction

in sport in a conceptually coherent fashion. To examine this hypothesis, we conducted canonical correlational analyses for all three age groups, using the means of the goal orientation subscales and the beliefs subscales as the two linear combinations of criterion and predictor variables. We considered values greater than .30 to be significant contributors to the multivariate relationships (Pedhazur, 1982; Tabachnick & Fidell, 1989).

*Youngest Group.* Two significant canonical functions emerged for the youngest group (Wilks's lambda = .56;  $r_{C1} = .40$  for Function 1 and  $r_{C2} = .57$  for Function 2).<sup>2</sup> As shown in Table 2, there was a high, positive loading for ego orientation and a low, negative loading for task orientation on Function 1. This ego goal orientation was related to the belief that the purpose of sport is to enhance social status, that external factors cause success, and that satisfaction is derived from social approval.

Function 2 had a high, positive loading for task orientation and a low, positive loading for ego orientation. This task orientation was positively related to the belief that the purpose of sport is to facilitate personal development and that satisfaction is derived from gaining social approval. This goal orientation was also negatively related to the belief that success in sport is caused by external factors. The strength of the relationship between goal orientations and beliefs about the purposes of sport, causes of success in sport, and satisfaction in sport can be observed through the redundancy statistic. In this study, a redundancy value of 10% or greater was considered significant and meaningful (Pedhazur, 1982; Tabachnick & Fidell, 1989). The total redundancy statistic revealed that

**Table 2** Canonical Loadings: Goal Orientations and Cognitive and Affective Concomitants Youngest Group

	Function 1 loading	Function 2 loading
<i>Criterion variables</i>		
Task	-.062	.998
Ego	.990	.143
<i>Predictor variables</i>		
<i>Purposes of sport</i>		
Personal development	-.173	.407
Status	.866	-.213
Lifetime health	—	—
<i>Causes of success</i>		
Motivation/effort	-.160	.104
External factors	.547	-.301
Ability	—	—
<i>Satisfaction</i>		
Mastery experiences	-.103	.088
Normative success	—	—
Social approval	.441	.809

for the youngest group, goal orientations accounted for 29% of the variance in the subjects' cognitive and affective responses (Function 1 and Function 2 accounted for 16% and 13% of the variance, respectively).

*Middle Group.* Two significant canonical functions emerged for the middle group (Wilks's lambda = .40;  $r_{C1}$  = .51 for Function 1 and  $r_{C2}$  = .68 for Function 2). As shown in Table 3, there was a high, positive loading for ego orientation and a low, negative loading for task orientation on Function 1. This ego goal orientation was related to the belief that the purpose of sport is to enhance social status, that external factors cause success, and that satisfaction is derived from normative success. This goal orientation was also negatively related to the belief that motivation/effort is a cause of sport success.

Function 2 had a high loading for task orientation and a low, positive loading for ego orientation. The canonical loadings indicated that a task orientation was positively related to the belief that the purpose of sport is to facilitate personal development and lifetime health, that motivation/effort causes success, and that satisfaction is derived from gaining mastery experiences. This goal orientation was also moderately related to normative success as a source of satisfaction. The redundancy statistic revealed that, for the middle group, goal orientations accounted for 36% of the variance in the subjects' cognitive and affective responses (Function 1 and Function 2 accounted for 23% and 13% of the variance, respectively).

**Table 3** Canonical Loadings: Goal Orientations and Cognitive and Affective Concomitants Middle Group

	Function 1 loading	Function 2 loading
<i>Criterion variables</i>		
Task	-.029	1.000
Ego	.998	.154
<i>Predictor variables</i>		
Purposes of sport		
Personal development	-.050	.386
Status	.863	.207
Lifetime health	-.110	.748
Causes of success		
Motivation/effort	-.326	.547
External factors	.428	-.179
Ability	—	—
Satisfaction		
Mastery experiences	-.063	.877
Normative success	.524	.348
Social approval	.206	.093



*Oldest Group.* Once again, two significant canonical functions emerged (Wilks's  $\lambda = .27$ ;  $r_{C1} = .64$  for Function 1 and  $r_{C2} = .74$  for Function 2). As shown in Table 4, there was a high, positive loading for ego orientation and a moderate, negative loading for task orientation on cause of success and that satisfaction is derived from normative success.

Function 2 had a high loading for task orientation and a moderate, positive loading for ego orientation. The canonical loadings for Function 2 indicated that a task goal orientation was positively related to the belief that both motivation/effort and ability cause success and that satisfaction is derived from mastery experiences and gaining social approval. For the oldest group, the redundancy statistic revealed that goal orientations accounted for 48% of the subjects' cognitive and affective responses (Function 1 and Function 2 explained 31% and 17% of the variance, respectively).

## Discussion

Congruent with previous research conducted with adolescents in the sport context (Duda, 1989; Duda et al., 1992), the results from the present study revealed a conceptually coherent relationship between individuals' achievement goal orientations which reflect personal criteria for success, and their cognitive responses to the competitive sport experience. In addition, the findings suggest that individuals' affective responses are also related to task and ego goal orientations in a similar fashion. Specifically, beliefs concerning the purposes of sport,

**Table 4** Canonical Loadings: Goal Orientations and Cognitive and Affective Concomitants Oldest Group

	Function 1 loading	Function 2 loading
<i>Criterion variables</i>		
Task	-.442	.897
Ego	.952	.305
<i>Predictor variables</i>		
Purposes of sport		
Personal development	-.178	.273
Status	.810	.189
Lifetime health	—	—
Causes of success		
Motivation/effort	.030	.735
External factors	—	—
Ability	.535	.544
Satisfaction		
Mastery experiences	-.171	.611
Normative success	.380	.015
Social approval	-.090	.515

causes of success in sport, and satisfaction in sport were significantly predicted by whether an individual utilized a differentiated or undifferentiated conception of ability.

Although the factor structure of the various belief scales was not invariant across the three age groups, the pattern of relationships between goal orientations and beliefs about the competitive sport experience remained remarkably robust. Indeed, it is suggested that the differences that did emerge reflect the changing nature of the sport experience during adolescence rather than any substantial divergence from achievement goal theory. For example, the subjects in the oldest group believed that motivation/effort and ability were the causes of success in sport. In contrast, the youngest group believed that motivation/effort and external factors were the determinants of success. In addition, the results showed that normative success was a more important source of satisfaction in sport for the older adolescents. Although it is not possible to determine whether these differences are representative of individual change across the life span of the present study, they are consistent with research that has demonstrated the increasingly ego-involving nature of the sport experience during adolescence (e.g., Scanlan, 1978).

As hypothesized, the results demonstrated that a task orientation was related to the prosocial aspects of sport involvement. First, a task orientation was found to be related to the belief that sport facilitates personal development, for example teaching participants to respect authority, self-discipline, and cooperation with others. Beyond character development, a task orientation was also related to the belief that sport fosters a commitment to lifetime health. As Duda (1989) suggests, because a task orientation entails an emphasis on skill mastery and an interest in the activity for its own sake, it should also be expected that a task-oriented individual would stress the "inherent capacity of competitive sport to enhance lifetime physical fitness" (p. 330).

In contrast, an ego orientation was related to negative social aspects of sport involvement. Specifically, the higher the level of ego orientation, the greater the view that sport participation is a means to an end, namely acquiring status in school and providing an opportunity to feel important. These results support Duda's (1989) interpretation of previous sport research that has indicated that sport may not be a major contributor to the developmental and educational goals of adolescence (see Weiss & Bredemeier, 1990). Specifically, the present findings suggest that, during the middle school years, it is not sport itself but the structure of the achievement context that emphasizes ego involvement that should be examined.

One of the fundamental tenets of achievement goal theory is that beliefs about the causes of success are dependent on the achievement goal adopted by an individual (e.g., Ames, 1992a; Nicholls, 1989). The results of the present study indicate that an ego orientation was related to the belief that external factors are a major cause of success in sport for the youngest and middle groups. Although individuals who are dependent on performing better than others to feel successful may consider external factors (such as currying favor with the coach) as adaptive forms of achievement behavior, such a belief is not a sound basis for sustained and desirable patterns of achievement striving. In contrast, for the middle and oldest groups, finding that a task orientation positively related to the belief that motivation/effort is the cause of sport success reflects a more adaptive pattern

of achievement beliefs. Indeed, from a motivational standpoint, individuals have much to gain from believing that success in sport is achieved through hard work, a factor that is clearly within their control.

Interestingly, a task orientation was also found to be correlated to ability as a cause of success for the oldest group. As Nicholls (1989) contends, however, it is important not to confuse the realization of the importance of ability as a cause of success with self-evaluation of oneself in terms of ability differences. Consequently, only when ability is associated with an ego orientation should there be cause for concern. In the oldest group, an ego orientation was indeed found to be related to the belief that ability is the cause of success in sport. According to Nicholls (1989) and Dweck (1986; Dweck & Leggett, 1988), believing that ability is a major cause of success may result in motivational difficulties for those ego-oriented individuals who begin to doubt their ability. In these cases, it is hypothesized that in an attempt to prevent demonstrating low ability, these individuals may stop exerting effort, and choose tasks that are too easy or too hard in order to avoid challenge (Dweck, 1986).

Previous research in sport (Duda et al., 1992; Duda & Nicholls, 1992) has examined the relationship between achievement goal orientations and satisfaction. In these studies satisfaction has been defined and measured as the amount of intrinsic interest derived from participation. Not surprisingly, therefore, a significant positive association between task orientation and satisfaction has emerged. We suggest, however, that the results of the present study indicate that the determinants of satisfaction in sport will vary, depending on the achievement goal that is adopted. Specifically, task-oriented individuals will derive greater feelings of satisfaction from mastery experiences, given that one is concerned with demonstrating ability by learning and developing skills. For ego-oriented individuals, however, it is unlikely that mastery experiences will be sufficient to derive satisfaction in sport, as the demonstration of ability necessitates outperforming others. Consistent with this, for the middle and oldest groups, an ego orientation was found to be correlated with nonmotive success.

The finding that social approval was related to both a task and ego goal orientation suggests that although these subjects may derive satisfaction from pleasing significant others, they do so in qualitatively different ways. Specifically, the results suggest that ego-oriented individuals believe they are likely to receive social approval by outperforming others and demonstrating high normative ability. In contrast, task-oriented individuals are likely to perceive that social approval is dependent on demonstrating high effort and personal improvement. This result may have interesting implications, given that recent research has suggested that significant others, especially parents, may play a significant role in determining which achievement goal is adopted (Roberts et al., in press). By making social approval dependent on winning and outperforming others, the adolescent receives a rather clear message as to what is most important. In contrast, if social approval is dependent on trying hard and personal improvement, a qualitatively different picture emerges.

## Conclusion

Overall, the results of this study support the findings from previous research and confirm the robustness of the relationship between individuals' personal

criteria for success, their achievement goal orientations, and their beliefs about the competitive sport experience during adolescence (Duda, 1989; Duda et al., 1992). Specifically, the findings demonstrate that adolescents' cognitive and affective responses in sport can be differentiated based on the conception of ability they choose to adopt.

From a practical perspective, the pattern of relationships that emerged suggests that a task orientation, in contrast to an ego orientation, is likely to facilitate adaptive cognitive and affective patterns in competitive sport during adolescence. But an achievement goal orientation is not a trait in the traditional understanding of such constructs. Although there is reliability in the goal orientation adopted, the goal orientation is malleable over time and can be reconstructed by interventions or environmental influences (Ames, 1992; Nicholls, 1989). Indeed, Ames (1992) has successfully demonstrated the power of environmental interventions in changing the adopted achievement goal of children. The cross-sectional nature of the current study, however, limits the extent to which the findings can be interpreted in terms of the benefits of adopting an undifferentiated conception of ability over time. Longitudinal research is therefore needed to examine whether the pattern of relationships found in this study are representative of individual change across the adolescent lifespan.

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### *Notes*

<sup>1</sup>The results of the factor analyses on the subjects' beliefs about the purposes of sport, the causes of success in sport, and satisfaction in sport are available from the first author.

<sup>2</sup>The first function in all analyses was considered to represent an ego goal orientation, and Function 2 was considered to represent a task orientation.

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