

**Young Tennis Players' Competitive Task Involvement and  
Performance: The Role of Goal Orientations, Contextual  
Motivational Climate, And Coach-Initiated Motivational Climate**

**QUERY SHEET**

- Q1.** Au: Cumming in text is spelled CummiMg in references. Which is correct?
- Q2.** Au: Deligneres in text is spelled DelignIÈres in references. Which is correct?
- Q3.** Au: DeKnop in text is spelled de Knop (lower-case d, space btw e and K) in reference. Which spelling is correct?
- Q4.** Au: Hollenbeak in text is HolleMbeak in refs. Which is correct?
- Q5.** Au: Please add month when the meeting was held to the date for Garcia Calvo reference.
- Q6.** Au: Deligneres in text is spelled DelignIÈres in references. Which is correct?
- Q7.** Au: DeKnop in text is spelled de Knop (lower-case d, space btw e and K) in reference. Which spelling is correct?

## Young Tennis Players' Competitive Task Involvement and Performance: The Role of Goal Orientations, Contextual Motivational Climate, And Coach-Initiated Motivational Climate

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10 The purpose of this study was to examine the role of situational and dispositional factors in contributing to competitive task involvement and performance in young tennis players. One hundred fifty-one adolescent tennis players and their coaches participated in the study. Participants responded to instruments measuring pre-game dispositional goal orientations and perceptions of the motivational climate and post-game task involvement in the competition by  
15 assessing concentration, loss of self-consciousness, and autotelic experience, (perceptions of coach-initiated motivational climate in competition and self-evaluation of game performance). In addition, coaches evaluated the players' performance. Results showed that task involvement was predicted by players' perceptions of a coach-initiated learning motivational climate in  
20 competition. Loss of self-consciousness was predicted by the players' perceptions of a coach-initiated performance climate in competition. Finally, coaches' and players' assessment of performance were predicted by autotelic experience, concentration and by perception of coach-initiated learning and performance orientation in competition.

A major focus of research in sport psychology involves efforts to identify and understand the ways in which motivational characteristics affect psychological states and performance  
25 (Harwood, Cumming & Fletcher, 2004; Kowal & Fortier, 1999, 2000; Newton & Duda, 1995). A growing body of research indicates that relationships exist among motivational variables and psychological states, such as pre-competitive anxiety, and flow (e.g. Cecchini, González, Carmona, & Contreras, 2004; Jackson, Kimiecik, Ford, & Marsh, 1998). However, relatively few investigations have been conducted that have assessed the interrelationships  
30 among individuals' personal motivational characteristics, perceived situational variables, and performance in sport (Gernigon, d'Arripe-Longueville, Deligneres, & Ninot, 2004; Q1 Q2

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- Halliburton & Weiss, 2002; Harwood & Swain, 2001, 2002; Theeboom, DeKnop, & Weiss, 1995). The present study aims to extend existing work by examining these relationships.
- Q3 Achievement goal theory (Nicholls, 1989) is an appropriate theoretical perspective from which to undertake motivational research in sport psychology and physical education. 35  
Achievement goal theory is an interactionist theory in that it ascribes considerable importance to both the motivational dispositions of the person, as well as to the situational elements that are present in the environment. A key component of achievement goal theory involves the individual differences that exist among people in the criteria that they use to judge their competence in achievement settings, and the differential effects of using these success criteria 40  
upon subsequent behavior in achievement settings. When individuals evaluate their own ability in relation to the ability of others in such a way that they feel success when they demonstrate greater ability than others they possess an “ego orientation.” However, when individuals assess their success according to self-referenced criteria that reflect feelings of personal improvement, effort, and task mastery, they are considered to have a “task orientation” toward achievement. 45
- In addition to a personal disposition, or tendency, to prefer the use of one type of success criteria as opposed to another, the social environment can also have considerable impact upon the success criteria that are used in any given moment (Ames, 1992). When individuals perceive that the achievement environment emphasizes norm-based evaluation and competition with others, it is much more likely that they will adopt an ego-involved state (Ames & Archer, 1988; 50  
Pensgaard & Roberts, 2000). However, if the individual perceives that the context emphasizes learning and personal skill mastery, and if effort is rewarded, then he or she is more likely to be engaged in a task-involved goal state. Thus, the social environment may also affect the criteria that an individual uses to assess their success.
- Various researchers who have utilized achievement goal theory (Duda, 2001; Duda & Hall, 55  
2000; Roberts, 2001) argue that the motivational climate is multi-dimensional in nature. As Duda and Hall (2000) commented, “differential structures such as the standards, methods, and criteria underlying evaluation, the nature of recognition and the manner in which it is expressed, the source of authority, the way tasks are structured, and the manner in which individuals are grouped are held to constitute the overriding climate operating in achievement 60  
settings” (p. 419).
- A task-involved state is believed to result in more adaptive achievement behaviors than an ego-involved state in that the person is more likely to persist in the face of failure, to exert effort, to select challenging tasks, and to have interest in the task (Duda, 1992; Dweck, 1986; Roberts, 2001; Roberts, Treasure, & Kavussanu, 1997). On the other hand, if the individual is ego- 65  
involved, he or she is more likely to manifest maladaptive motivational patterns, particularly when perceived ability is low because he or she does not wish to demonstrate low ability to others. Independent of the perception of ability, individuals who are ego-involved are motivated to demonstrate high ability with correspondingly little effort (Nicholls, 1989; Roberts, 2001).
- Goal orientations interact with context to determine states of goal involvement, which in 70  
turn contribute to influence the adoption of specific motivational patterns. If the environmental cues are stronger than the dispositional tendency, it is very probable that the individual will adapt to the success criterion that is predominant within a particular environment. Conversely, if the individual’s dispositional goal orientation is stronger than the situational cues, the dispositional orientation should override the situational characteristics. In any given moment, 75  
an individual’s state of involvement is dependent upon the relative influence of these two contributors.
- Although dispositional goal orientations are considered to be orthogonal (one can use a combination of success criteria), individuals can fluctuate between states of goal involvement over time and across tasks. Some researchers have indicated that goal states represent two 80

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different motivational processes that cannot be present simultaneously in a particular situation and an individual will thus have a primary state of involvement specific to a given achievement context (Duda & Hall, 2000; Nicholls, 1989; Treasure, Duda, Hall, Roberts, Ames & Maehr, 2001).

85 Nonetheless, there exists other research that seems to indicate that goal states are very transitory forms of involvement that can be experienced at various times while engaged in a particular task suggesting the possible orthogonality of these goal states (Gernigon et al. 2004; Harwood & Hardy, 2001; Harwood & Swain, 2001, 2002). In a recent work with judo athletes conducted by Gernigon et al. (2004), the researchers found that states of task involvement  
90 fluctuated in accordance with specific aspects of each competitive situation. These authors proposed that different “attractors” in the setting can serve to influence individuals toward a particular state of task involvement in each situation. For example, the verbal information provided by the coach immediately prior to competition can affect the state of involvement. Although different aspects can be present at any one time, these authors have proposed that  
95 certain elements are more likely to be predominant at any given moment and shape the state of goal involvement. As Gernigon et al. (2004) commented, “Future research on the dynamics of goal involvement states should attempt to identify the combination of dispositional, contextual, and situational factors that could constitute attractors capable of stabilizing the levels of involvement toward the same goals” (p. 591). One of our principal objectives in this study  
100 is to follow this line of reasoning to examine how the combination of factors can affect goal involvement.

An important consideration in the study of states of goal involvement involves the need to develop quality measures that appropriately and fully assess one’s state of goal involvement. State of goal involvement has been characterized as including a cognitive component, an  
105 attentional aspect, and an affective component, in addition to the athlete’s own subjective success appraisal (Duda, 2001; Duda & Hall, 2000). Consequently, measures of states of goal involvement need to reflect each of these components. In accordance with this desire, Papaioannou and Kouli (1999) used three subscales from the Flow State Scale (Jackson & Marsh, 1996) to assess the motivational characteristics of task involvement in a concrete  
110 situation, in this case a physical education class. These researchers measured the cognitive component through the loss of self-consciousness subscale, the attentional component through the concentration subscale and the affective component through the autotelic experience subscale. These researchers also assessed the effect of motivational climate perceptions on task involvement state. The results of this experimental work indicated that when the students  
115 were exposed to a task-involving lesson that they had stronger perceptions of a task-involving motivational climate, and that goal orientation and perception of task-involving motivational climate were predictors of task involvement, along the flow dimensions of concentration, autotelic experience and loss of self-consciousness.

Some researchers from the social cognitive perspective consider that social influences can  
120 affect motivation on different levels. Specifically, Vallerand and Rousseau (2000) have argued that social dimensions of influence can manifest themselves in three ways: at the global level, at the contextual level and at the situational level. The global level refers to the general social factors that are present in the environment. The contextual level includes the social factors that are related to a specific context, such as an educational, work or sport context,  
125 as well as the interpersonal relationships that are present within that context. The situational level includes the social dimensions perceived by individuals relative to a specific activity at a specific moment in time. These levels are interrelated but have different motivational effects. As Vallerand and Rousseau (2000) commented, “global motivation should lead to global consequences (e.g. life satisfaction); contextual motivation should lead to contextual

consequences (i.e. consequences specific to a given context in such sport or education); and 130  
situational motivation should lead to situational consequences related to the activity being  
performed at a given point in time” (p. 406).

Vallerand and Rousseau (2000) contended that motivation at the global level is similar 135  
to a personality trait, and pertains to the manner in which the individual generally interacts  
with the environment. In reference to achievement goal theory, Nicholls (1989) assumed that  
motivational orientations are dispositional in nature and remain relatively stable for individuals  
across achievement contexts as they have been acquired through the individual’s socialization  
history and thus are the product of general socialization patterns. Nonetheless, certain authors  
(e.g. Standage & Treasure, 2002) have suggested that motivational orientations ought to 140  
be considered as personal tendencies that are relatively stable but also influenced by the  
achievement context. Other researchers have highlighted the possibility that dispositional  
orientations serve as a frame of reference from which individuals perceive situational  
cues within the environment (Roberts, 2001). This perspective stems from the idea that a  
hierarchical structure exists with regard to achievement goal orientations in that dispositional  
orientations are dominant in that they influence an individual’s perception of situationally 145  
specific motivational cues.

On the other hand, the motivational climate in a specific context refers to those cues  
perceived in a given context, in this case the sport environment. At the situational level, some  
researchers have indicated the need to assess the immediate contextual factors that might have 150  
an influence on athletes’ motivation (Harwood & Swain, 1998; Swain & Harwood, 1996).  
Nevertheless, as Duda and Hall (2000) commented, a great number of investigations have  
analyzed the effect of the prevailing or prototypical (Kaplan and Maehr, 1999) motivational  
climate, but researchers have yet to extensively assess the influence of immediate environmental  
factors (or situational motivational climate) on an athlete’s goal state. Kowall and Fortier’s 155  
(2000) work has been the first to differentiate the influence of contextual and situational  
levels of motivational climate, and the distinct motivational consequences corresponding to  
these levels of influence. In this case, they found that the perception of a situational mastery  
climate was positively related to state of flow as experienced by expert swimmers during  
swim practice. Following in the same line of work as that conducted by Kowall and Fortier 160  
(2000), we attempted to conduct an in-depth examination of the effects of dispositional  
goal orientations, and situational and contextual cues on motivational patterns during  
competition.

Different social contexts exist that can have differing motivational climates, such as the  
academic, sport, and other achievement contexts. When referring to motivational climate, it is  
important to refer to the individual’s perception of the motivational climate in a given moment. 165  
Furthermore, the motivational orientations that will be acted upon in a general contextual  
level could influence one’s preferences for environmental cues that will be attended to, and  
can ultimately affect his or her state of task involvement (Roberts, 2001). This is the area of  
study that we have pursued in the present study with the goal of increasing our knowledge 170  
of the relationships that are present among dispositional goal orientations, the motivational  
climate, and the states of task involvement in competition in relation to different contextual  
and situational variables. More specifically, we wished to determine whether motivational  
orientations, contextual perceptions of the motivational climate that are habitually perceived  
in sport practice, and the specific motivational climate that the individual perceived before and 175  
during the sporting competition would predict the level of task involvement of the individual.  
In the same way, we wanted to examine whether the state of task involvement would predict the  
players’ and coaches’ assessments of performance quality in competition. Our two hypotheses  
were grounded in the perspective of achievement goal theory (Dweck & Leggett, 1988) in

that the motivational climate perceived in a particular situation, in combination with the dispositional goal orientation should predict state of goal involvement.

Our first hypothesis was that perceived motivational climate during competition would be a better predictor of state of competitive task involvement than would the contextual elements, as reflected by the habitual contextual motivational climate. Related to this first hypothesis was the expectation that a dispositional task orientation in combination with the perception of a coach-initiated learning orientation in competition would predict a more adaptive motivational pattern resulting in a stronger state of task involvement in competition. The three dimensions (loss of self-consciousness, concentration, and autotelic experience) of the Flow State Scale-2 (FSS) developed by Jackson and Eklund (2002) were employed to reflect the state of task involvement in our study. Our second hypothesis was that the greater the state of task involvement, the higher the level of personal performance in competition would be as assessed by both athletes and coaches.

## METHOD

### Participants

One hundred and sixty-seven tennis players constituted the initial sample of participants involved in the study. One hundred fifty-one participants (97 males, 54 females) completed all study questionnaires and were thus included in the final study sample. The players were aged between 12 and 16 years ( $M = 13.7$  years;  $SD = 1.8$  years). All participants were involved in a pre-elite tennis program for youth tennis players in a major city in Spain. This program included the best young tennis players in the region and they participated in a specific schedule of competitions. One important difference from adult tennis play is that the league officials permit some feedback between coach and players during the matches of these young players. Permission to participate in the study was previously obtained from the athletes' parents, their coaches, and from the athletes themselves. The athletes were informed of the general purpose of the research, their rights as study participants and all provided written consent to participate.

### Measures

A total of six measures were included in this study. These measures assessed achievement goal orientations, perceptions of the contextual motivational climate, perception of the coach-initiated motivational climate, state of task involvement, and actual performance as assessed by both players and their coaches. The scoring format for each of the scales was the same and was structured to conform to the manner of evaluation in the Spanish academic context. In this context, all evaluations of pupils' academic performance range from 0 to 10. Since the players were all currently in school and familiar with this system, the same 11-point system was employed using Likert scales that were anchored by strongly disagree (0) to strongly agree (10).

### Goal Orientations

A Spanish version of the Perception of Success Questionnaire (POSQ, Cervelló, Escartí, & Balagué, 1999; Roberts, Treasure, & Balagué, 1998) was used to measure dispositional goal orientations. This 12-item inventory consists of two factors measuring task orientation (e.g., "I feel successful when I reach a personal goal"), and ego orientation (e.g., "I feel successful when I am the best"). In this investigation, the questionnaire showed acceptable internal consistency (Cronbach  $\alpha = .73$  for task orientation and .84 for ego orientation).

### ***Perception of Contextual Motivational Climate***

To measure the athletes' perceptions of the motivational climate in sport, we employed the version translated into Spanish by Balaguer, Guivernau, Duda and Crespo (1997) of the Perception of Motivational Climate in Sport Questionnaire-2 (Newton & Duda, 1993; Newton, Duda, & Yin, 2000). The Spanish version of this questionnaire consists of two second-order dimensions that measure the perception of task-involving motivational climate, the perception of ego-involving motivational climate and five first-order factors. For this investigation, only the second-order factors were examined. In the Spanish version, the task-involving climate factor is comprised of 11 items. Examples of the perception of a task-involving climate subscale included: "Players feel good when they try their best" and "Players help each other to learn." The perception of an ego-involving climate subscale includes 13 items (e.g. "coach has his or her own favorites"). The original Spanish language measure (Balaguer et al., 1997) had previously been validated with Spanish tennis players. As part of this validation process, the subscales of "role importance" and some items from the subscale "punishment of errors" were eliminated.

The studies carried out on Spanish athletes have shown factor patterns and internal consistency coefficients similar to those found for athletes and students in other countries (Balaguer et al., 1997; Cervelló & Santos-Rosa, 2000). For this study, the initial Cronbach alpha values were .68 for the perception of ego-involving motivational climate factor and .72 for the perception of a task involving motivational climate. Four items from the perception of the ego-involving motivational climate subscale (items 6, 11, 16 and 19) and one item from the perception of the task-involving motivational climate subscale (item 22) were deleted due to their low item-total correlation, which improved the internal consistency of the measure. The resulting Cronbach alpha values were .77 for perception of task-involving climate and .84 for perception of ego-involving climate.

### ***Perception of Coach-Initiated Motivational Climate***

To measure perceptions of the competitive motivational climate shaped by the coach in competition, an instrument was developed specifically for this study. This instrument assessed each player's perceptions of the coach's success definition in relation to a specific upcoming competition. Even though it is safe to assume that there exist other social influences (e.g., parents, teammates) that may influence players' orientation toward success in competition, our data indicated that roughly 90% of the time the coach was the only relevant significant other present during competitions for the players. In addition, some investigations have demonstrated relationships between coaches' behaviors and athletes' perceptions of the motivational climate (Smith, Fry, Ethington, & Li, 2005). For these reasons, questions on this scale only referred to the coach.

The instrument is based on previous work by Papaioannou and Kouli (1999) in their intervention study in physical education classes in which they looked at the beliefs and behaviors of physical education teachers. Similar to Papaioannou's study, we were interested in measuring the perceived situational motivational climate at a specific moment in time involving the pre-game and game time behaviors of the coach. The instrument was completed by the players after the match. The stem for each question was "In this competition..." and the items referred specifically to the previous match. Two subscales were employed to measure perceptions of task-involving and ego-involving climate, containing six and five items, respectively. These subscales were modified for the sport context from the Teacher-Initiated Learning Orientation scales included in the Learning and Performance Orientations in Physical Education Questionnaire (Papaioannou, 1994), and the Teacher-Initiated Performance

Orientation subscale used by Papaioannou and Kouli (1999), and previously developed by  
270 Papaioannou (1994). For this investigation, the initial instrument had fourteen items. The  
initial Cronbach alphas were .70 for the perception of coach-initiated performance orientation  
in competition subscale and .72 for the perception of coach-initiated learning in competition  
subscale, but the deletion of three items significantly improved the reliability of the subscales.  
The eleven-item version constituted the final version of the instrument.

275 The coach-initiated performance orientation in competition subscale included six items  
(e.g. *In this competition*, “I feel my coach is primarily concerned about winning and losing”;  
“My coach seems worried when I lose an important point”; “I believe that my coach only  
cared that I won even if I play poorly”; “My coach was happy when I played better than  
my opponent”; “My coach was hoping above all else that I won”; and “I felt that I would  
280 let my coach down if I lost this match”) to measure competition ego-involving motivational  
climate. The perception of a task-involving motivational climate in competition was measured  
by the subscale of coach-initiated learning orientation in competition (e.g. *In this competition*  
“My coach was satisfied when I showed a technical improvement in the game”; “My coach  
encouraged me to give maximum effort during the match”; “My coach advised me to focus on  
285 my game and not on my opponent during this match”; “It did not matter to my coach that I tried  
difficult strokes in this game even though I might have failed”; and “My coach recognized my  
efforts to improve.”) The reliabilities for the six-item coach-initiated performance orientation  
in competition subscale (Cronbach  $\alpha = .93$ ) and the coach-initiated learning orientation  
subscale (Cronbach  $\alpha = .91$ ) reflected high internal consistency.

### 290 ***Task Involvement***

State of task involvement in competition was measured through the three subscales of the  
Flow State Scale-2 (FSS-2) developed by Jackson and Eklund (2002). This measure assesses  
three dimensions of task involvement: concentration, indicating a total focus on the activity  
by the participant (e.g. “My attention was focused entirely on what I was doing”), autotelic  
295 experience, which assesses dimensions of enjoyment and intrinsic reward (e.g., “I found  
the experience extremely rewarding”), and loss of self-consciousness, which reflects that an  
individual is not self-conscious while engaged in the activity (e.g., “I am not concerned with  
how others may be evaluating me”). The validity of the Spanish translation of this instrument  
has been supported in a recent study conducted by García-Calvo, Jiménez, Santos-Rosa, and  
300 Cervelló (2003). For this investigation, Cronbach’s alpha levels were .83 for the Concentration  
factor, .88 for Autotelic Experience, and .81 for the Loss of Self-consciousness subscale.

### ***Performance***

Some researchers have recommended that when a psychological state of interest is related to  
a performance outcome, that it is advisable to use two independent assessments of performance  
305 outcome, reflecting both the athlete’s and coach’s assessment (Butt, Weinberg, & Horn, 2003;  
Randle & Weinberg, 1997). Based on these recommendations, we used two measures of  
performance in the form of a Likert scale that ranged from 0 (played much worse than  
usual) to 10 (played much better than usual). The players’ self-assessment form and coaches’  
assessment of each athlete’s performance was completed immediately after the game. Similar  
310 to work conducted by Butt et al. (2003), the coach was asked to respond to the following  
statement, “In relation to this player’s usual performance, rate how you perceived his or her  
performance in today’s match.” The players also responded to this question in relation to their  
personal performance.

### Protocol

The instruments for measuring demographic variables, goal orientations and contextual motivational climate were administered one week prior to competition and during a training session. The coach was not present when the questionnaires were completed. The measures were given to all athletes in the same order. Each participant took 10–15 minutes to complete the questionnaires and responses to the instrument remained anonymous. The participants were told to ask for help if needed to clarify the intent of the questions. No problems were encountered in completing either of the inventories or in understanding the nature of the questions. 315

The instruments measuring perceived competition motivational climate, task involvement and performance (coach and player measures) were completed after the competition, and prior to any verbal contact between coach and player to ensure no post-game contaminant effects. 320

### Data Analysis

Descriptive statistics were obtained and preliminary data analyses were conducted to investigate possible violation of recommended values of skewness and kurtosis (Mardia, 1974). Simple correlations were calculated to test the relationships between variables. Finally, regression analyses were employed to assess the relationships among the predictor and outcome variables. 325

## RESULTS

### Descriptive Statistics

The relevant descriptive statistics, including means, standard deviations, skewness and kurtosis statistics are presented in Table 1. The sample reported relatively high levels of task orientation ( $M = 8.94$ ,  $SD = .91$ ), perceptions of task-involving motivational climate ( $M = 8.42$ ,  $SD = 1.10$ ) and perceptions of coach-initiated learning orientation in competition ( $M = 8.08$ ,  $SD = 2.03$ ). They also reported moderate to high ( $M = 8.08$ ,  $SD = 2.03$ ) scores on concentration, autotelic experience, loss of self-consciousness, players' assessments of performance and coaches' assessments of performance. Finally, moderate scores (4 to 6) were observed in ego orientation and perception of coach-initiated performance orientation in 335

**Table 1**  
Descriptive statistics for each measure

	Mean	SD	Skewness	Kurtosis
Task orientation	8.94	.91	-.88	.53
Ego orientation	5.97	2.24	-.68	.09
Task-Involving Climate	8.42	1.10	-.63	-.07
Ego-Involving Climate	2.89	1.98	.29	-.59
Coach-Initiated learning in comp.	8.08	2.03	-1.81	3.29
Coach-Initiated performance in comp.	5.05	2.72	-.39	-.91
Concentration	7.12	2.24	-.92	.47
Autotelic experience	6.47	2.78	-.79	-.38
Loss of self-consciousness	6.05	2.89	-.50	-.73
Coach performance assessments	6.54	2.78	-.80	-.30
Players performance assessments	7.88	1.69	-.90	.80

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**Table 2**  
**Bivariate correlations among variables**

	1	2	3	4	5	6	7	8	9	10	11
Task orientation (1)											
Ego orientation (2)	.10										
Task-Involving Climate (3)	.62	-.20									
Ego-Involving Climate (4)	-.09	.40	-.20								
Coach-Initiated learning (5)	.19	-.04	.25	-.05							
Coach-Initiated performance (6)	-.09	.50	-.15	.24	.37						
Concentration (7)	.11	-.01	.12	-.06	.43	.17					
Autotelic experience (8)	.06	.03	.14	-.11	.65	.32	.58				
Loss of self-consciousness (9)	.08	.18	.08	.02	.29	.37	.25	.30			
Coach performance assessments (10)	.03	.16	.05	-.05	.55	.36	.45	.69	.30		
Players performance assessments (11)	.25	.10	.18	.09	.31	.05	.33	.30	-.01	.33	

Note: Correlations of .16 and above are significant at  $p < .05$ ; correlations of .24 and above are significant at  $p < .01$ .

competition and moderate to low (2 to 4) scores on perception of task-involving motivational climate.

345 Table 1 also indicates that responses to the perception of coach-initiated learning orientation scale in competition had a high value for kurtosis exceeding the maximal recommended value of 2.0 (Mardia, 1974). Given the nature of this kurtosis, we conducted a quadratic transformation of this variable (Cea, 2002). With this transformation, the kurtosis level value dropped to .31, reflecting normality. For all subsequent analyses, the transformed value was employed.

### 350 Correlation Analysis

355 Table 2 presents the correlation matrix for all of the variables in the study. As indicated in this table, task orientation was strongly correlated with perception of task-involving motivational climate ( $r = .63$ ), with the perception of a coach-initiated learning orientation in competition ( $r = .19$ ), and with the players' assessments of their performances ( $r = .25$ ). Ego orientation was correlated with the perception of an ego-involving motivational climate ( $r = .41$ ), with the perception of a coach-initiated performance orientation in competition ( $r = .50$ ), with coaches' assessments of performance ( $r = .17$ ), and with a loss of self-consciousness ( $r = .19$ ). The perception of contextual task-involving motivational climate was related positively with coach-initiated performance climate in competition ( $r = .25$ ). Perception of task-involving motivational climate was positively related with coach-initiated learning orientation in competition ( $r = .25$ ), and with players' assessments of performance ( $r = .18$ ). The situational climate, defined by the perception of coach-initiated learning orientation in competition, and the perception of coach-initiated performance orientation in competition were related with all the dimensions of task involvement (concentration, autotelic experience and loss of self-consciousness).

### Regression Analysis

370 Prior to conducting the regression analysis, we examined possible collinearity among the independent variables. Cea (2002) argued that when a regression analysis is employed, it is necessary to assure normality of variables, and to determine the possibility of collinearity among the independent variables. In this case, the examination of possible collinearity was

particularly important because we included the variable of motivational climate at two different levels of the analysis. The analysis went through three steps to control collinearity by first examining the correlations among the variables, then by assessing the tolerance values for the independent variables and, finally, by analyzing the *Variance Inflation Factor* (VIF) coefficients.

It has been proposed that collinearity is present when the correlation between two variables exceeds .60 (Tacq, 1997). Upon the detection of a correlation greater than .60, it is wise to calculate the values of Tolerance (TOL) and the VIF. Values below .10 for tolerance and above 10 for VIF indicate collinearity between the independent variables (Menard, 1995), but other researchers consider values below .20 for TOL and above 5 in VIF problematic (Cea, 2002). To control for the possibility of collinearity, we calculated TOL and VIF for all factors prior to inclusion in the regression analyses. The ranges for TOL and VIF in all independent variables were between .51 to .99 and 1.01 to 1.94, respectively, indicating no collinearity among variables.

### ***Prediction of Task Involvement***

We conducted three separate hierarchical analyses to examine predictors of task involvement. In these analyses, the concentration, autotelic experience and loss of self-consciousness variables constituted the dependent variables. In each case, the dispositional measures of goal orientation were included at Step 1. To analyze the increment of variance explained by contextual variables, perception of motivational climate was entered in Step 2 and the specific situational variables (perceptions of specific competition motivational climate) were included at Step 3.

Table 3 shows the summary of the relationships that significantly predicted task involvement. The concentration factor was predicted by the main effects of perception of coach-initiated learning, which explained 17% of the variance. The perception of coach-initiated learning, also predicted the autotelic experience in competition, explaining a considerable amount of variance (42%). Finally, loss of self-consciousness was predicted by ego orientation at Steps 1 and 2

**Table 3**  
**Summary of hierarchical regression analysis for variables predicting concentration, autotelic experience and loss of self-consciousness**

Variables	$\beta$	SEB	$t$	$\Delta R^2$
Concentration				
Step 3				.17**
Coach-Initiated learning	.41	.00	4.53**	
Autotelic experience				
Step 3				.42**
Coach-Initiated learning	.62	.00	8.21**	
Loss of self-consciousness				
Step 1				.04
Ego orientation	.17	.10	2.16*	
Step 2				.02
Ego orientation	.25	.12	2.60*	
Step 3				.12**
Coach-Initiated performance	.29	.11	2.74*	

p < .05; \*\*p < .001.

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**Table 4**  
**Canonical correlation between assessment of performance and competition task involvement**

	Canonical loadings
Dependent variables	
Coaches' assessment of performance	.89
Players' assessment of performance	.51
Predictor variables	
Concentration	.48
Autotelic Experience	.70
Loss of self-consciousness	.28

(but the percentage of explained variance was not significant), and significantly by perception of coach-initiated performance orientation in competition (12% of explained variance).

**Prediction of Performance**

- 400 To assess whether task involvement predicted performance, and to determine how much of the variance was explained by the set of variables, a multivariate multiple regression analysis was conducted. The dependent variables in this analysis were the two measures of performance (coaches' and players' assessments of performance). These variables were moderately correlated ( $r = .33$ ). The predictor variables were the task involvement factors
- 405 (concentration, autotelic experience, and loss of self-consciousness). A significant relationship was found between the two sets of variables, Wilks' lambda .93;  $F(6, N = 151) = 9.82$ ;  $p < .01$ . To identify which variables in the dependent and predictor sets contributed significantly to the multivariate relationship, canonical correlation analysis was conducted with canonical loadings exceeding .30 considered to be significant (Pedhazur, 1982). The loadings are presented in
- 410 Table 4. Thus, only concentration and autotelic experience were significantly predictive of

**Table 5**  
**Canonical correlation between assessment of performance, goal orientations, perception of motivational climate and perception of coach-initiated motivational climate in competition**

	Canonical loadings
Dependent variables	
Coaches' assessment of performance	.98
Players' assessment of performance	.47
Predictor variables	
Ego orientation	.28
Task orientation	.10
Ego-involving climate	.05
Task-involving climate	.11
Coach-initiated performance	.56
Coach-initiated learning	.92

performance. The redundancy index indicated that 11% of the variance in performance was explained by the set of predictor variables.

Due to the small amount of variance in performance that was explained by the factors comprising the state of task involvement variable, and with the purpose of determining the extent to which the dispositional, contextual, and situational variables could directly predict sport performance of the tennis players, a second multiple regression analysis was conducted. This analysis included performance (players' and coaches' assessments) as the outcome variable with motivational orientation, the perception of motivational climate and perception of the coach-initiated learning and coach-initiated performance climates as predictor variables. A significant multivariate relationship was obtained, Wilks' lambda .55;  $F(12, N = 151) = 83.93$ ;  $p < .001$ . The loadings presented in Table 5 indicate that the coach-initiated learning and coach-initiated performance climates explained a significant amount of variance in performance. Overall, these variables combined to explain 28% of the variance in the criterion variable.

## DISCUSSION

Achievement goal theory considers that goal involvement in achievement contexts and activities varies as a function of the interplay between goal orientations and situational factors. As various researchers have shown, it is necessary to apply an interactionist perspective to an understanding of the motivational phenomena that occur among dispositional goal orientations and situational factors (Newton & Duda, 1999; Standage, Duda, & Ntoumanis, 2003; Treasure & Roberts, 1998). Other researchers have proposed that in order to understand social influence on motivational processes, it is necessary to consider different levels of analysis and to adopt a hierarchical level of analysis (Hollebeak & Amorose, 2005; Vallerand and Rousseau, 2000). Nonetheless, we know of no research that considers whether two levels of social influence (contextual and situational) can predict, in distinct ways, the cognitive, affective, and behaviors responses to the social environment, and, in turn predict psychological dimensions of competitive sport performance. This has been the objective of the present study.

In accordance with a goal orientation perspective (Dweck & Leggett, 1988), we have hypothesized that those social variables perceived in a particular situational context, specifically the participant's perception of the competitive motivational climate, would be the best predictors of the individual's responses (as reflected by his or her level of task involvement) in that environment. Our hypothesis was that the perceptions of the situational context, defined as the individual's perception of the competitive motivational climate, would be better predictors of the cognitive response to competition as reflected by levels of task involvement than would the contextual climate. We also anticipated that we would find that a task orientation would, in combination with the perception of a coach-initiated learning orientation in competition, be associated with higher levels of task involvement in competition.

The obtained results have supported some of our hypotheses. First, we have found that perceptions of the situational motivational climate in competition are better predictors of task involvement than perceptions of the contextual motivational climate, indicating that situational variables were more important components of the motivational process than were contextual elements for the athletes in this study. This finding would support certain assumptions of achievement goal orientation theory (Dweck & Leggett, 1988; Nicholls, 1989), that highlights the importance of situational factors. If we assess the predictive capacity of each of the dimensions of task involvement, we encounter the finding that two of the states that characterize task involvement (concentration and autotelic experience) are significantly explained by the perception of a coach-initiated learning orientation in competition, while the loss of

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self-consciousness factor has been significantly related to the coach-initiated performance orientation in competition.

Curiously, in no instance did the dispositional motivational orientations explain a significant amount of the variance in state of task involvement, although the loss of self-consciousness factor was significantly predicted by dispositional ego orientation indicating that the situational motivational climate has been more influential than the dispositional motivational orientations in the state of task involvement. Various studies in the physical education (Papaioannou & Kouli, 1999; Treasure & Roberts, 2001) and sport contexts (Theeboom et al., 1995) have found that motivational orientations, in addition to the perceived motivational climate, explain the behavior of individuals in a given situation. Nonetheless, in this case, the dispositional motivational orientations have not significantly contributed to the explanation of motivational patterns with regard to the state of task involvement. These findings are consistent with Treasure's (1993) study in suggesting that when the strength of the situational cues is very strong, the role of individual dispositions is diminished. Our results suggest that the presence of a strong social environment has minimized the effect of the dispositional orientations, including the habitual motivational climate that the athletes typically perceive in the training sessions. This finding could spur future investigations that could assess whether the lack of an identified relationship found in our investigation occurs as well in other environments such as recreational sport or physical education classes.

The findings also show that the dimensions of the task involvement that have been predicted by the perception of a coach-oriented learning orientation in competition were primarily attributable to a coach-initiated performance orientation in competition. This finding was contrary to our expectations. Achievement goal theory assumes that a task-oriented motivational climate should result in more adaptive motivational patterns than would a performance-oriented motivational climate (Ames, 1992), which is also a finding that has received empirical support in the physical education context (Morgan & Carpenter, 2002; Papaioannou & Kouli, 1999; Treasure & Roberts, 2001). Our results appear to contradict these findings. However, it should be mentioned that in a study by Stein, Kimiecik, Daniels and Jackson (1995) with athletes involved in various sports at differing levels of ability, the researchers found that contexts that emphasize competitive outcomes as much as learning outcomes can still result in the presence of flow characteristics for the participants. Our findings are consistent with the findings of Stein et al. (1995), in that the perception of a performance-oriented motivational climate was associated with one dimension of state of task involvement, in this case loss of self-consciousness.

The final goal of the research was to determine whether high levels of task involvement would be associated with a high quality of performance outcomes as evaluated by the athletes themselves and their coaches. Our results have shown, in essence, that the level of task involvement only weakly explained performance evaluations as obtained from the players as well as their coaches. Only the concentration and autotelic experience dimensions were found to significantly contribute to the explanation of variance in performance, although the actual amount of variance explained by these variables was quite low. These results follow in the line of other findings that have identified these same states of task involvement with subjective (Jackson & Eklund, 2002; Jackson et al., 1998) and objective (Jackson, Thomas, Marsh, & Smethurst, 2001) performance criteria.

Nevertheless, the coach-initiated learning climate was a much stronger contributor to explaining variance in the players' performances. These results suggest that sport performance is affected as much by situational cues relative to personal improvement as it is by social comparison cues. As has been previously mentioned, research also exists that shows the compatibility between ego-oriented motivational climates and adaptive performance-related

consequences (Stein et al., 1995). However, it is much more appropriate to foster task-oriented learning climates in order to facilitate desirable orientations toward competition in athletes. Probably, the inclusion of task-oriented learning cues before and after the competition enabled the athletes to evaluate their performance according to personal standards as opposed to social comparison criteria, which resulted in more favorable competition-related orientations. It was interesting to note that athletes' dispositional orientations did not significantly affect these relationships. 510

The findings of this study also show certain limitations to the research. First, perceived ability is an important variable in achievement goal theory that was not included in the present study. From the perspective of this theory's authors (Ames, 1992; Nicholls, 1989; Dweck, 1986, 1999), individuals with high perceived ability and an ego orientation can demonstrate adaptive behavioral patterns although the same is not the case for ego-oriented individuals with low perceptions of ability. Future researchers are encouraged to examine the interaction between state of task involvement and situationally related ability perceptions so that we might have a better understanding of how these influences interact in achievement contexts. 515 This question also points to the benefits of developing distinct measures of state involvement to assess the cognitive, affective, and behavioral dimensions of these involvement states and to assess how these dimensions interact to influence situationally related perceptions of ability. In the same way, it is very probable that situationally related ability perceptions could explain the relationship between perceptions of an ego-related motivational climate in competition and performance outcomes. As suggested by achievement goal theorists (Nicholls, 1989; Roberts, 2001), those individuals who perceive high levels of ability in any given situation are more likely to demonstrate adaptive behavioral patterns. Similarly, it is necessary to continue efforts to develop appropriate measurement instruments to identify the situational cues that athletes perceive in their environment. In terms of the measure of situational motivational climate, further research could examine more thoroughly the specific components of the motivational climate. In this regard, certain limitations of the present measure might be identified. For instance, the item "My coach advised me to focus on my game and not on my opponent during this match", belongs to the coach-initiated learning in competition dimension and is intended to reflect the idea that irrespective of the current competitive status of the match that the important thing was to focus on the performance execution and not on the result. Nonetheless, it is possible that there could be a lack of clarity about what was intended from the respondents. In the future, this item ought to be redone so that it states "my coach advised me to focus on my game and not on *the result* during this match". Such a change might improve the measure by more fully reflecting the intention of the question. It would also be helpful to identify more specifically the dimensions that define the motivational climate at the situational level and to assess the strength of each of the dimensions. 520 525 530 535

We did not find that dispositional and contextual factors were predictors at the situational level of task involvement and performance. One of the possible reasons for the fact that no relationships were found among the different motivational levels could be due to the characteristics of the instruments employed to measure motivational climate. Although we have utilized a version of the PMCSQ-2 previously modified for use in tennis (Balaguer et al., 1997), this measure was originally designed to assess contextual motivation in team sports (Duda and Hall, 2000). Additional investigations in other sport and other age groups need to be conducted to determine if the absence of relationships among the various motivational levels was a finding specific to this study or is a general characteristic to be encountered when the instrument is used in the sport domain. 545 550

From a social psychological perspective, there are other elements that have not been included in this investigation that ought to be considered in future research, such as the influence of

- 555 socialization agents including parents and peers in affecting sport-related motivational patterns. From a practical perspective, these results seem to indicate that the implicit and explicit feedback provided by the coach seems to have a strong influence on motivational patterns. Traditionally, intervention studies in this area have focused on the experimental manipulation of different aspects of the motivational climate (e.g., Harwood & Swain, 2002), but there
- 560 have been few investigations that have examined how the coach's behavior influences athletes' motivation (e.g., Hollenbeak & Amorose, 2005). Our findings have corresponded with those of previous studies and highlight the need to provide information and training to coaches that is specifically designed to develop their ability to design an appropriate motivational climate in both competitive and training situations. Q4
- 565 In conclusion, further in-depth investigations are warranted that examine the role of situational variables in contributing to psychological outcomes for athletes in both competitive and practice contexts. Our results highlight the need to design more experimental interventions from the perspective of goal orientation theory, particularly interventions that complement the existing knowledge base, assess the changes produced in behavior in competitive contexts
- 570 (particularly in young athletes, as has been the case in this study), and permit in-depth analysis of the processes that contribute to the patterns of task involvement.

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