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Julien Bois, Julien Lalanne, Catherine Delforge

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1 Running Head: PARENTING PRACTICES, PARENTAL PRESENCE AND  
2 ANXIETY

3

4 The influence of parenting practices and parental presence on children's and  
5 adolescents' pre-competitive anxiety

6

7 Julien E. Bois

8 University of Pau, France

9 Julien Lalanne

10 University of Pau, France

11 Catherine Delforge

12 University of Reims, France

13

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18

19 Corresponding author:

20 Julien E. Bois

21 University of Pau and Countries of Adour

22 Laboratoire d'Analyse de la Performance Sportive

23 Département STAPS

24 Quartier Bastillac

25 65000 TARBES

- 1 France
- 2 Email : [Julien.bois@univ-pau.fr](mailto:Julien.bois@univ-pau.fr)
- 3 Tel: 00 33 (0)5 62 56 61 24
- 4 Fax : 00 33 (0)5 62 56 61 10
- 5



## Introduction

1  
2 Parents have been recognised as critical contributors to their children's experience in  
3 sport. For example, parents' contributions to the Olympic achievement of elite  
4 athletes (e.g. Gould, Dieffenbach, & Moffett, 2002) or parents' involvement in their  
5 children's day-to-day physical activities have been extensively advocated in the  
6 literature (Brustad, 1992; Greendorfer, Lewko, & Rosengren, 1996; Fredricks &  
7 Eccles, 2003; Bois & Sarrazin, 2006; Horn & Horn, 2007). However, this has been  
8 supported less often by empirical articles. Since the early 1990's, researchers have  
9 started to investigate how and to what extent parents can affect their children's  
10 experience in sport and physical activity. Several theoretical models, including  
11 competence motivation theory (Harter, 1999), achievement goal theory (e.g.  
12 Nicholls, 1984) and social learning theory (Bandura, 1986) have been used as a basis  
13 for these investigations.

14 The theoretical framework proposed by Eccles (e.g. Eccles [Parsons], Adler, &  
15 Kaczala, 1982; Eccles, Freedman-Doan, Frome, Jacobs, & Yoon, 2000) provides a  
16 heuristic and thorough examination of social influences on achievement beliefs and  
17 behaviours. This model has been used mainly in the academic domain (Jacobs &  
18 Eccles, 1992; Frome & Eccles, 1998) as well as in the sports domain (Eccles &  
19 Harold, 1991; Fredricks & Eccles, 2002).

20 This theoretical approach posits that parents' beliefs and perceptions are  
21 based on antecedents such as the gender of their child or their own stereotypes.  
22 Important components of parental belief systems include parents' perceptions of the  
23 child's competencies in various achievement domains, parents' beliefs about the  
24 relative value or importance of various achievement domains (e.g. academic, art,  
25 music, sport) and parents' expectations that their child will attain success in a given

1 domain. Following the model, parental beliefs and perceptions are hypothesised to  
2 influence specific behaviours and climates concerning their children. Some examples  
3 of these behaviours are the pattern of interaction with the child, the extent of  
4 encouragement, the provision of opportunities and experiences, the affective tonality  
5 of the relationship. Eventually, these behaviours affect youngsters' target variables  
6 such as perceived competence, values, expectations of success, affective reactions or  
7 sport involvement.

8         Several studies based on this model have revealed that parents can affect their  
9 children's perceived competence (e.g. Babkes & Weiss, 1999; Bois, Sarrazin,  
10 Brustad, Trouilloud, & Cury, 2002) and this can subsequently predict children's  
11 levels of physical activity (e.g. Bois, Sarrazin, Brustad, Trouilloud, & Curry, 2005;  
12 Fredricks & Eccles, 2005). Children's physical activity was also found to be directly  
13 influenced by parental modelling (e.g. Freedson & Evenson, 1991). However,  
14 although hypothesised in Eccles's model, parents' influences on short time  
15 consequences such as affective reactions were investigated less frequently (Gould,  
16 Eklund, Petlichkoff, Peterson, & Bump, 1991; Collins & Barber, 2005).

### 17 *The construct of anxiety*

18         Anxiety is generally defined as an emotional response consisting of cognitive  
19 concerns and physiological arousal to perceived threat (Smoll & Smith, 1996).  
20 Scholars have distinguished between competitive trait anxiety, a relatively stable  
21 personality disposition (Martens, 1977) and competitive state anxiety, the symptoms  
22 experienced in a particular sporting situation (Simon & Martens, 1979).  
23 Subsequently, physiological and cognitive components of anxiety have been  
24 conceptualised: somatic anxiety represents the physiological component associated  
25 with autonomic arousal (i.e. muscular tension, increased heart rate), whereas

1 cognitive anxiety relates to negative thoughts, worry and negative expectations  
2 (Martens, Vealey, & Burton, 1990). Numerous researchers have investigated the  
3 antecedents and consequences of anxiety. Relevant results with regard to the focus of  
4 this study indicate that: a) individual sport is associated with higher anxiety than  
5 team sport (Simon & Martens, 1979); and b) when gender differences occur females  
6 are more likely to indicate higher anxiety levels (Martens et al., 1990; Thatcher,  
7 Thatcher, & Dorling, 2004). Parental influence on children's pre-competitive anxiety  
8 was also observed (e.g. Gould et al., 1991) and is detailed below.

### 9 *Parental influence on anxiety*

10         The term parenting practices refers to behaviours defined by specific content  
11 and socialisation goals (Darling & Steinberg, 1993, p. 492). It is different from  
12 parenting style which is a “constellation of attitudes toward the child that are  
13 communicated to the child and create an emotional climate” (Darling & Steinberg,  
14 1993, p. 493) in which the parenting practices are expressed. Parenting style is  
15 therefore a more general concept “expressed partly through parenting practices  
16 because these are some of the behaviours from which children infer the emotional  
17 attitudes of their parents” (p.493). A recent descriptive study (Holt, Tamminen,  
18 Black, Mandigo, & Fox, 2009) has emphasised the interest of differentiating  
19 parenting practices and parenting styles in the sport domain. Several dimensions of  
20 parenting practices have been linked with children's anxiety in the sport domain.  
21 Parental pressure represents the situation where parents push their child hard to  
22 compete and/or to win and when parental affection may be conditioned by sport  
23 participation and/or results. Perceived parental expectations refer to the level of  
24 performance the child thinks their parents are expecting for him/her. Perceived  
25 parental importance relates to the extent to which it is important for the parents, as

1 perceived by the child, that he/she performs well. A final dimension, perceived  
2 parental involvement, is the extent to which parents participate in their child's  
3 involvement in sport by allocating him/her time, money and interest.

4         Historically, parental pressure was the first dimension to be studied (Scanlan  
5 & Lewthwaite, 1984): in this study parental pressure predicted pre-match anxiety in  
6 9 to 14 year old wrestlers. Following this line of research, some investigations  
7 (Lewthwaite & Scanlan, 1989; Gould et al., 1991) supported the results of Scanlan  
8 and Lewthwaite. For example, Gould et al., (1991), with a sample of 202 male  
9 wrestlers aged between 13 and 14, found that parental pressure predicted pre-  
10 competitive state anxiety. Surprisingly, this line of research remains under-explored.  
11 Collins and Barber (2005) used a sample of 416 female field hockey players to  
12 examine the relationships firstly between athletes' pre-competitive anxiety and  
13 perceived parental expectations, secondly between athletes' pre-competitive anxiety  
14 and perceived parental importance and thirdly between athletes' pre-competitive  
15 anxiety and perceived parental involvement. Results indicated that: a) children who  
16 perceived their parents to have hold high expectations were more confident than  
17 whose who perceived their parents to have lower expectations; b) children who  
18 perceived their parents to attribute higher levels of importance to doing well had  
19 greater levels of confidence and higher cognitive anxiety than children who  
20 perceived their parents to place less importance on doing well; c) no relationship was  
21 found between levels of perceived parental involvement and pre-competitive anxiety.  
22 In essence, research investigating parental influence on children's anxiety  
23 emphasises the role of parental pressure and importance on doing well in promoting  
24 pre-competitive anxiety. However, higher perceived parental importance and  
25 expectations were associated with greater self-confidence. Hence, when investigating



1 parental influence either specific dimensions have been used (i.e. parental  
2 perceptions of children's competence, parental values toward sport, parental ideas  
3 about the importance of doing well and parental expectations) or more general  
4 constructs (pressure, involvement) have been used. At this point, research on parental  
5 influence suffers from lack of congruence in the definition and assessment of  
6 parenting practices and lack of systematic assessments of parental influence on  
7 children's target variables such as anxiety. One of the goals of this study is to focus  
8 on the effect of several dimensions of parenting practices on children's pre-  
9 competitive anxiety, which has been poorly explored in the literature of parental  
10 influence.

11         Based on the observation that different dimensions of parenting practices  
12 were assessed differently across studies, some researchers started to develop a  
13 specific tool to assess parenting practices(Lee & MacLean, 1997; Wuerth, Lee, &  
14 Alfermann, 2004). The parental involvement in sport questionnaire (PISQ; Lee &  
15 MacLean, 1997) evaluates children's perceptions of four dimensions of parenting  
16 practices: active involvement, directive behaviour, praise and understanding, and  
17 pressure (see method section for a definition of these concepts). To our knowledge  
18 the parental involvement in sport questionnaire has not yet been used as a predictor  
19 of child outcome variables. Lee and MacLean (1997) investigated desired and  
20 exhibited parental behaviours, as assessed by the parental involvement in sport  
21 questionnaire in a sample of 82 male and female adolescent competitive swimmers.  
22 This procedure enabled them to compute discrepancy scores indicating excessive  
23 directive behaviours and pressure, insufficient praise and understanding but  
24 satisfactory active involvement (there were no discrepancies between desired and  
25 exhibited parental behaviour).

1           Wuerth et al., (2004) used the parental involvement in sport questionnaire  
2 with 193 young athletes (aged 10 to 20) of various disciplines and both of their  
3 parents. Parental involvement was assessed a first time by all the members of the  
4 triad and a second time one year later by the athlete only. Youngsters' phases of  
5 career development were also assessed. Results indicated significant differences of  
6 parenting practices between athletes at different phases of career development:  
7 beginners perceived significantly more directive behaviours, more pressure but also  
8 more praise and understanding than athletes in phases of development or mastery.  
9 Significant results also emerged with regard to the position of the family member:  
10 athletes' perceptions of parental involvement differed from their parents' view, but  
11 mothers' and fathers' perspectives also differed from each other. Mothers reported  
12 more praise and understanding than fathers but fathers reported higher directive  
13 behaviours and pressure. Athletes indicated less parental pressure and support than  
14 their parents.

15           A final variable of interest with regard to family influence is parental  
16 presence during competition. When talking with coaches it is often acknowledged  
17 that the performance of children and adolescents is affected by the presence of  
18 fathers, mothers or the family in general. Zajonc's (1965) social facilitation theory  
19 has for a long time proposed that the presence of others can increase arousal for the  
20 performer. This arousal is then supposed to facilitate the occurrence of the dominant  
21 response. Some authors (Cottrell, Wack, Sekerak, & Rittle, 1968) have argued that  
22 arousal is enhanced only if others can evaluate performance. As this is certainly the  
23 case for parents attending their children's sport performance we believe that parental  
24 presence during competition should be taken into account when studying youngsters'



1 mean age 13.46, SD = 2.34, age range 10 to 18). Athletes trained an average of 2.7  
2 times (SD = 1.64) a week for an average of 4.8 hours (SD = 2.99). They competed at  
3 local (n = 152; average training hours/week = 3.1), provincial (n = 134; average  
4 training hours/week = 5.5) or national level (n = 54; average training hours/week =  
5 7.6). The participant sample comprised primarily middle and upper-class families. In  
6 terms of family structure, 80% of the children lived in two parent homes, whereas  
7 20% lived in single-parent homes. Two participants chose not to report any  
8 information about their family structure.

### 9 *Procedure*

10 Basketball and tennis players were contacted first through their clubs. The  
11 participants and the coaches were informed of the general goal of the study, in  
12 particular the necessity to assess anxiety a few minutes before a real competition. For  
13 players and teams interested in the study, parental and participant consent forms were  
14 given to the child to complete at home and to return to the club one week later.  
15 During the second meeting, a decision was made about the date when the  
16 questionnaire would be filled in. Different competitions (regional tournaments or  
17 regular championships) were used as a basis for the investigation and questionnaires  
18 were filled in by the participants between one hour and thirty minutes before  
19 competition. The project was approved by the ethics committee of the first author's  
20 university.

### 21 *Measures*

22 *Anxiety.* The French version (Debois & Fleurance, 1998) of the Competitive  
23 State Anxiety Inventory (CSAI-2, Martens et al., 1990) was used to assess pre-  
24 competitive anxiety. Only the cognitive and somatic anxiety scales were used in this

1 study. Internal consistency was satisfactory for cognitive anxiety (Cronbach  $\alpha =$   
2 0.88) as well as somatic anxiety ( $\alpha = 0.80$ ).

3 *Parenting practices.* The parental involvement in sport questionnaire (PISQ;  
4 Lee & MacLean, 1997; Wuerth et al., 2004) was used to assess parental behaviour  
5 within the sport context. In its original version, this questionnaire assessed 4  
6 dimensions: the active involvement scale, composed of five items, evaluates parental  
7 activity in the club either during competition or practice (e.g. do your parents take an  
8 active role in running your club?); the directive behaviours scale, with ten items,  
9 measures the extent to which parents control their children's behaviour in sport (e.g.  
10 before a contest do your parents tell you how to do your competition?); the praise  
11 and understanding scale, with four items assesses parental behaviours such as praise  
12 and empathy (e.g. after a contest do your parents praise you for trying hard?); the  
13 pressure scale consisted of a unique item (e.g. do your parents put pressure on you  
14 concerning your sport?). Wuerth et al. (2004) proposed a four item assessment of this  
15 construct that estimates the extent to which parents push their child to compete  
16 and/or to win. The questionnaire was first translated using the back translation  
17 method (Brislin, 1986). Then some items were slightly reworded to fit with both the  
18 context of basketball and tennis. Eventually as proposed by Wuerth et al., (2004)  
19 some new items were generated for the pressure scale to enhance psychometric  
20 properties of this assessment. However, to keep the length of the questionnaire  
21 reasonable, we also chose to remove three of the directive behaviours scale items  
22 (originally composed of ten items). Hence the French version of the parental  
23 involvement in sport questionnaire used in this study was composed of twenty items:  
24 five items for the active involvement scale, seven items for the directive behaviours

1 scale, four items for the praise and understanding scale and four items for the  
2 pressure scale.

3 To test for the construct validity of the scale, a principal component analysis was first  
4 conducted with varimax normalised rotation. Only factors explaining at least 5% of  
5 variance and items with a loading of .40 or more were retained (Guttman, 1954;  
6 Vallerand, 1989). This resulted in a four factor solution with 14 items, each item  
7 contributing only to one factor with a loading over .40. Factor 1 consisted of the 4  
8 pressure items and explained 22.05% of variance. Factor 2 comprised three praise  
9 and understanding items and explained 15.75% of variance. Factor 3 was composed  
10 of three active involvement items and explained 11.78% of variance. Factor 4 had  
11 four directive behaviours items and explained 18.1% of variance. Subsequently, a  
12 confirmatory factor analysis, using covariance matrix and maximum likelihood  
13 method of estimation was performed with Lisrel 8.54. The model provided a good  
14 fit to the data and supported the construct validity of the questionnaire:  $\chi^2$  (71, N =  
15 341) = 125.25,  $p < .001$ , root mean square error of approximation (RMSEA) = .047,  
16 goodness of fit index (GFI) = .95, nor-normed fit index (NNFI) = .98, standardized  
17 root mean square residual (SRMR) = .051. Cronbach coefficients were .87, .80, .58,  
18 .82 respectively for pressure, praise and understanding, active involvement and  
19 directive behaviours scales.

20 *Parental presence.* Each participant indicated who was present at the target  
21 competition used for the study. Participants completed a four-point response format:  
22 1 for father only, 2 for mother only, 3 for both parents and 4 for none.

23 *Demographic information.* Diverse information was collected: participants'  
24 age and sex, current family structure, the number of practice sessions for their sport  
25 per week, the number of hours of basketball/tennis per week, competition level (1

1 local, 2 provincial, 3 national, 4 international). Only one player participated at an  
2 international level and was therefore excluded when competition level was used in  
3 the subsequent analysis.

#### 4 Results

##### 5 *Data analysis*

6 Descriptive statistics and preliminary data analysis were first performed. Analysis of  
7 variance (ANOVA) was then used to investigate the effects of participants' gender,  
8 activity and parental presence on levels of anxiety. A second ANOVA was used to  
9 study the variation of parenting practices according to gender, activity and  
10 performance level. Finally, canonical correlation analysis was completed to evaluate  
11 the influence of parenting practices on participants' pre-competitive anxiety.

##### 12 *Descriptive statistics and preliminary analysis*

13 Means and standard deviation of the variables are displayed, by gender and sport, in  
14 Table 1.

15

16 -----< Insert Table 1 here > -----

17

18 *Hypothesis 1: testing the effects of gender, sport and parental presence on child*  
19 *anxiety.*

20 A multivariate analysis of covariance (MANCOVA) was used to test the influence of  
21 participants' gender, sport and parental presence on their pre-competitive somatic  
22 and cognitive anxiety. Age and performance level were used as covariates. There  
23 were significant main effects of gender (Wilks  $\Lambda$  (2, 322) = .94,  $p < .001$ ) and sport  
24 (Wilks  $\Lambda$  (2, 322) = .89,  $p < .001$ ), although the parental presence main effect was not  
25 significant (Wilks  $\Lambda$  (6, 644) = .96,  $p > .05$ ). The two-way interaction between

1 gender and sport was significant (Wilks  $\Lambda$  (2, 322) = .98,  $p < .05$ ) as well as the  
2 three-way interaction (gender X sport X parental presence; Wilks  $\Lambda$  (6, 644) = .95,  $p$   
3  $< .05$ ). The other interaction effects were not significant. Group means are displayed  
4 in Figure 1 for basketball players and in Figure 2 for tennis players.

5

6 -----< Insert Figure 1 and 2 here > -----

7

8 The hypotheses that girls would be more anxious than boys and that tennis players  
9 would be more anxious than basketball players were rejected because of the presence  
10 of the three-way interaction effect, which indicates a more complex pattern of  
11 relationships. Examination of the univariate effects of the three-way interaction  
12 effect revealed non significant results for cognitive anxiety ( $F_{3,323} = 2.01$ ,  $p > .05$ )  
13 and for somatic anxiety ( $F_{3,323} = 1.05$ ,  $p > .05$ ). We used contrast analysis to test for  
14 more specific hypotheses as proposed by some authors (e.g. Rosenthal & Rosnow,  
15 1985). The first specific hypothesis proposed that players are more anxious when one  
16 or two parents is/are watching compared to the situation where nobody is attending  
17 the competition. We used a contrast (-1, -1, -1, 3) grouping the three categories  
18 (father alone, mother alone, both parents) against the last one (none). This contrast  
19 was tested for the 4 participant categories: female basketball players, male basketball  
20 players, female tennis players and male tennis players. The multivariate effect of this  
21 contrast was not significant across all four participant categories. The second specific  
22 hypothesis stated that the most anxious situation would be when both parents are  
23 attending the competition. Another contrast (-1, -1, 3, -1) grouping the father alone,  
24 mother alone and none groups against the both parents group was used to test for this  
25 hypothesis across the four participant categories. The multivariate effect was



1 significant for three groups out of four: for female basketball players Wilks  $\Lambda$  (2,  
2 322) = .976,  $p < .05$ , univariate effects indicated significant differences for cognitive  
3 anxiety ( $F_{1,323} = 7.99$ ,  $p < .01$ ;  $\eta^2 = .024$ ) with girl basketball players in the presence  
4 of both parents reporting more anxiety compared to the mean of the three other  
5 groups. For male basketball players the contrast was also significant: Wilks  $\Lambda$  (2,  
6 322) = .977,  $p < .05$ ; univariate effects indicated significant differences for somatic  
7 anxiety ( $F_{1,323} = 4.5$ ,  $p < .05$ ;  $\eta^2 = .014$ ) with boy basketball players reporting more  
8 anxiety when both parents are present compared to the mean of the three other  
9 groups. For female tennis players the contrast was also significant: Wilks  $\Lambda$  (2, 322)  
10 = .98,  $p < .05$ ; univariate effects indicated significant differences for somatic anxiety  
11 ( $F_{1,323} = 5.24$ ,  $p < .05$ ;  $\eta^2 = .016$ ) with girl tennis players reporting more anxiety  
12 when both parents are present compared to the mean of the three other groups. Hence  
13 the second specific hypothesis was supported except for male tennis players.  
14 According to Cohen's (1988) interpretation guidelines an eta square value ( $\eta^2$ ) of .01  
15 indicates a small effect, .09 indicates a medium effect and .25 indicates a large effect.  
16 Hence the effects reported in this analysis can be considered as small.

17 *Hypothesis 2: are parenting practices different across gender, activity and*  
18 *performance level?*

19 A MANCOVA was used to test for this hypothesis: the four parenting practices  
20 variables were used as dependant variables; gender, activity and performance level  
21 were the independent variables and age was used as a covariate. Results indicated  
22 significant main effect of activity (Wilks  $\Lambda$  (4, 324) = .92,  $p < .001$ ) and performance  
23 level (Wilks  $\Lambda$  (8, 648) = .90,  $p < .001$ ). Gender main effect was marginally  
24 significant (Wilks  $\Lambda$  (4, 324) = .97,  $p = .053$ ). The three-way interaction (activity x  
25 gender x performance level) was significant (Wilks  $\Lambda$  (8, 648) = .94,  $p < .01$ ).

1 Examination of the univariate effects of the three-way interaction revealed  
2 significant effect for the pressure dimension ( $F_{2,327} = 4.06, p < .05, \eta^2 = .024$ ) and  
3 marginally significant effect for praise and understanding ( $F_{2,327} = 2.91, p = .056, \eta^2$   
4  $= .018$ ). According to Cohen (1988), these effects can be considered as small. For the  
5 pressure dimension (see Figure 3) Tukey HSD post hoc comparisons revealed that  
6 girl tennis players at provincial level (N=22, M = 3.25) had significantly higher  
7 scores than all other groups, except female tennis players at national level . This last  
8 group (N=21, M = 2.42) presented higher scores than male basketball players at  
9 provincial level and all the other male and female players at local level. For praise  
10 and understanding, no significant differences were found.

11

12 -----<Insert Figure 3 here>-----

13

14 *Hypothesis 3: testing the relationships between parenting practices and pre-*  
15 *competitive anxiety*

16 Canonical correlation analysis was used to estimate the relationships between  
17 parenting practices and pre-competitive anxiety. Cognitive and somatic anxiety were  
18 used as criterion variables and the four parenting practices variables served as  
19 predictors. Four canonical analyses were performed corresponding to the four  
20 participants categories: male and female basketball players, male and female tennis  
21 players. For male basketball players, the multivariate relationship was not  
22 significant: Wilks'  $\Lambda = .96, \chi^2 (8) = 3.7, p > .05, r_c = .18$ . This was also the case for  
23 female basketball players: Wilks'  $\Lambda = .92, \chi^2 (8) = 7.75, p > .05, r_c = .23$ . A  
24 significant multivariate relationship was found for male and female tennis players,  
25 where only the first canonical variate was significant (see Table 2). For

1 interpretation, canonical loadings of .3 or higher are considered to be significant  
2 (Tabachnick & Fidell, 1996). For male tennis players, the function indicated that  
3 cognitive and somatic anxiety were positively related to directive behaviour and  
4 pressure ( $r_c = .55$ ). The redundancy index for the criterion variables was 23%, which  
5 is higher than the 10% recommended as a significant and meaningful cutoff for  
6 interpretation (Pedhazur, 1982). For female tennis players, results indicated that  
7 cognitive and somatic anxiety were positively associated with directive behaviour  
8 and pressure and negatively associated with praise and understanding ( $r_c = .70$ ). The  
9 redundancy index for the criterion variables was 42%.

10

11

-----<Insert Table 2 here>-----

12

13

## Discussion

14

The influence of parents on their children's experience and achievement in the sports domain is widely acknowledged (Bois & Sarrazin, 2006; Horn & Horn, 2007). This study provides new perspectives on this topic by focusing on some under-explored variables: athletes' pre-competitive anxiety and parenting practices. To our knowledge, the effect of parental presence was also investigated for the first time. More specifically, we had three main goals: a) to examine the variation of athletes' pre-competitive anxiety in relation to their gender, their sport and the presence of their parents during competition; b) to investigate possible variations of parenting practices across gender, sport and performance level; c) to study the relationships between parenting practices and athletes' pre-competitive anxiety.

24

*Effects of gender, sport and parental presence on children's pre-competitive anxiety*

1 We examined gender, sport and parental presence effects on athletes' pre-  
2 competitive anxiety using MANCOVA, with age and performance level as  
3 covariates. A first hypothesis proposed that girls would be more anxious than boys.  
4 The results do not support this hypothesis as gender effect appears dependent on  
5 sport and parental presence. It was also anticipated that tennis players would present  
6 higher levels of anxiety compared to basketball players. For the same reason,  
7 interaction with gender and parental presence, this hypothesis was not supported.  
8 Most importantly, the three-way interaction was significant, thus indicating that  
9 parental presence acts in conjunction with gender and sport in affecting athletes' pre-  
10 competitive anxiety. In order to more precisely understand this complex interaction,  
11 and to test for two specific hypotheses, contrast analysis (Rosenthal & Rosnow,  
12 1985) was used. The hypothesis that athletes are less anxious when no parent is  
13 present compared to any other situation was not supported. Thus, it seems that  
14 parental absence during competition does not limit anxiety before competition.  
15 However, when testing the second specific hypothesis, it was found that athletes  
16 were significantly more anxious when both parents were present. This result was  
17 supported for male and female basketball players and for female tennis players only.  
18 Hence it seems, as supposed by many coaches, that parental presence does affect  
19 emotional reactions. However, although the presence of both parents appears to be a  
20 factor increasing pre-competitive anxiety, except for male tennis players, the absence  
21 of both parents was not associated with lower levels of pre-competitive anxiety. It is  
22 likely that competition in itself constitutes a stimulus that increases pre-competitive  
23 anxiety. Therefore, even in the absence of both parents, it is likely that anxiety  
24 remains relatively high and makes it difficult to observe an effect of parental absence  
25 because this is mixed with the effect of competition itself. In any case, this is the first

1 time, to our knowledge, that that there has been an attempt to estimate the effect of  
2 the presence of parents during competition. Our results are consistent with social  
3 facilitation theory (Zajonc, 1965) which proposes that the presence of an audience  
4 enhances arousal. More research is needed to support this finding and/or to extend  
5 these results to other populations. Applications of these results are important for  
6 parents deeply involved in their children's achievement in sport. Whatever may be  
7 the influence of pre-competitive anxiety on performance, the presence of both  
8 parents during the competition seems to constitute a factor of anxiety for athletes,  
9 especially for girls.

#### 10 *Parenting practices variations across gender, sport and performance level*

11 Another aim of the study was to provide descriptive information on the parenting  
12 practices of the athletes. Due to its exploratory nature no specific hypotheses were  
13 made on this point. The results of a MANCOVA revealed a significant three-way  
14 interaction (gender x sport x performance level), thus showing a variation of the four  
15 dimensions of parenting practices. For the pressure dimension, it appears that female  
16 tennis players at provincial and national level perceived significantly higher levels of  
17 pressure from their parents than most of the other groups. This result is consistent  
18 with Wolfenden and Holt's (2005) study on elite tennis athletes. These authors report  
19 the presence of parental pressure for elite adolescent tennis players and indicate that  
20 this could be a consequence of parental over-involvement. It seems that female tennis  
21 players at relatively high levels of performance might be a group at risk, given that  
22 this study shows that they experience higher levels of parental pressure. Hence, they  
23 might be more likely to experience higher levels of anxiety, consistent with the  
24 results of hypothesis 1 and 3. However, further investigation is needed to confirm  
25 these results.

1 *Relationships between parenting practices and pre-competitive anxiety*

2 It was hypothesised that directive behaviours and pressure would have facilitative  
3 effects on anxiety whereas praise and understanding would have a protective effect.  
4 No specific hypothesis was made for parental involvement. In general, the results  
5 support the hypotheses. Canonical correlation analysis revealed significant  
6 relationships between parenting practices and anxiety for male and female tennis  
7 players although no significant results emerged for male and female basketball  
8 players. Directive behaviours and pressure were positively related to anxiety for all  
9 tennis players, whereas praise and understanding was negatively associated with  
10 anxiety, but only for female tennis players. The facilitative effect of parental pressure  
11 on athletes' anxiety is consistent with the existing literature (Scanlan & Lewthwaite,  
12 1984; Lewthwaite & Scanlan, 1989; Gould et al., 1991; Wolfenden & Holt, 2005).  
13 This result raises concerns about the potential negative role of parents when they put  
14 pressure on their children. Excessive parental interest in their children's achievement  
15 in sport may lead to maladaptive behaviours with negative consequences such as a  
16 decrease in motivation and enjoyment, negative emotional experience and this may  
17 lead to children dropping out of sport altogether.

18 Another potentially negative role of parents can be explored by studying their  
19 controlling behaviours. By excessive use of controlling behaviours parents can also  
20 foster negative emotional experience in sport. It is interesting to note that this  
21 dimension is moderately correlated with pressure ( $r = .49$ ). High directive behaviours  
22 could then be another aspect of negative patterns of parenting practices. Negative  
23 influences of these two dimensions can be understood in relation to self-  
24 determination theory (Deci & Ryan, 2002). In general, controlling behaviours  
25 diminish intrinsic motivation by preventing satisfaction of the need for autonomy,

1 which, according to Deci and Ryan (2002), is one of the three basic psychological  
2 needs. Lack of autonomy and intrinsic motivation may then lead to negative  
3 emotional experience such as anxiety and potentially poorer performance. For  
4 example, in a cognitive task Grolnick, Gurland, DeCoursey and Jacob (2002)  
5 demonstrated that mothers' controlling behaviours negatively predicted their  
6 children's performances. It is not possible to discuss any such effects on performance  
7 in this study, since this variable was not assessed. Nevertheless, the negative  
8 contribution of parents to their children's affective experience in sport is in itself  
9 very useful for its potential applications. No matter how passionate parents are, or  
10 how involved they are in their children's achievement, they should be aware of their  
11 potentially counterproductive behaviours. Finally, it is noteworthy that the highest  
12 scores on somatic and cognitive anxiety were obtained by girl tennis players and they  
13 also reported the highest scores on directive behaviours and pressure (see table 1).  
14 This was also revealed by the relatively high association between parenting practices  
15 and anxiety in the canonical correlation analysis ( $r_c = .70$ ).

16 At this point, the results discussed only show a role of parenting practices in  
17 *increasing* athletes' anxiety in tennis players. However children's perceptions of  
18 praise and understanding behaviours from parents were likely to protect youngsters  
19 from anxiety in the case of female tennis players. Although the influence of praise  
20 and understanding behaviours on anxiety has not been examined in previous studies,  
21 some consistencies can be found. Some studies found parental support to be  
22 positively related to pleasure and motivation (Leff & Hoyle, 1995; Hoyle & Leff,  
23 1997); other studies positively linked parental encouragement and perceived  
24 competence (Brustad, 1993, 1996). In essence, these results seem congruent and  
25 indicate that when parents support and encourage, showing interest and

1 understanding, they foster positive experience in relation to their children's  
2 participation in sport. However, it was unexpected that only female tennis players  
3 would benefit from perceived praise and understanding behaviours. It is possible that  
4 due to personality differences, female tennis players are more sensitive than male  
5 tennis players to parenting practices. Their higher scores compared to males, on the  
6 scales of neuroticism and extraversion (Schmitt, Realo, Voracek, & Allik, 2008) may  
7 reflect a more significant emotional sensibility and explain why they can be affected  
8 both positively and negatively by parenting practices. Nevertheless, this  
9 interpretation does not hold for female basketball players. With regard to the  
10 differentiated results between basketball and tennis we believe this is probably due to  
11 the opportunities these activities offer for parents to participate in their children's  
12 sport activity. In collective sports such as basketball, the team usually provides  
13 transportation for the players, or it is provided by some of the parents on a rotating  
14 basis. However, for tennis players, due to the individual nature of the sport, parents  
15 are more likely to be present during competition since transportation is rarely  
16 collective. Hence parents of tennis players probably have more opportunities to  
17 affect their children. This important difference is probably the origin of the non  
18 significant relationship between parenting practices and anxiety in basketball players.  
19 These players are more sensitive to parental presence, as indicated by hypothesis 1,  
20 which is more unusual for them than for tennis players. We speculate that this  
21 activity effect supersedes the gender differences in personality that are usually used  
22 to explain differences between male and female tennis players.

23         With regard to the influence of parental involvement, no significant  
24 relationship with anxiety was found, which is consistent with the results of the study  
25 of female hockey players by Collins and Barber (2005). This might indicate that





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- 50

1 *Table 1: Means and standard deviation of the variables by gender and sport.*

	Basket				Tennis				Range
	Boys		Girls		Boys		Girls		
	M	SD	M	SD	M	SD	M	SD	
Age	14.17	1.65	14.30	1.79	13.37	2.25	13.55	2.47	9-18
Cognitive Anxiety	1.91	0.60	2.41	0.70	2.15	0.75	2.45	0.75	1-4
Somatic Anxiety	1.72	0.49	1.93	0.59	2.11	0.61	2.48	0.83	1-4
Directive Behaviour	2.43	1.10	2.47	0.96	2.58	1.19	2.90	1.21	1-5
Active Involvement	3.00	1.03	3.25	1.03	2.42	0.88	2.77	0.85	1-5
Praise and understanding	3.35	1.04	3.58	0.88	3.44	0.97	3.20	1.08	1-5
Pressure	1.75	0.86	1.68	0.88	1.69	0.84	2.41	1.31	1-5
Number of practice/week	2.80	1.12	2.54	1.10	2.27	1.94	3.39	2.33	1-12
Number of hours/week	5.58	2.30	4.92	2.24	3.40	3.32	5.16	3.93	1-22

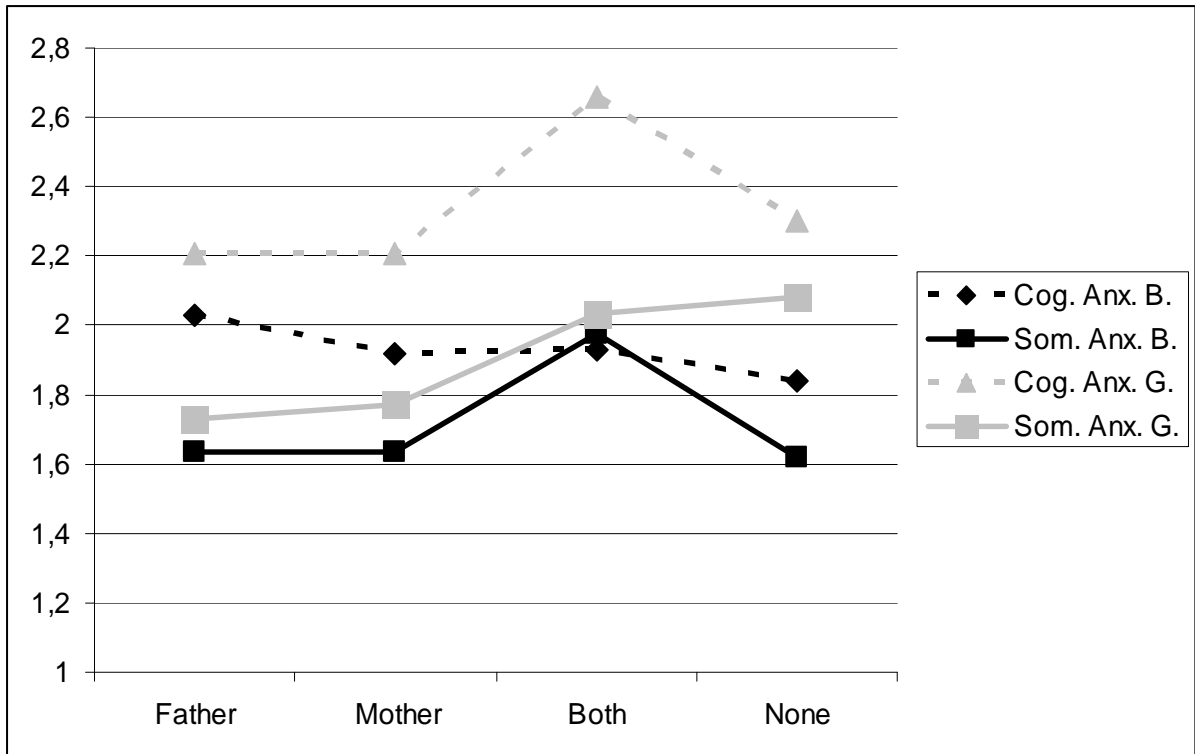
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1 Table 2 : Canonical loadings, percents of variance, redundancies and canonical correlations  
 2 between anxiety and parenting practices for male and female tennis players  
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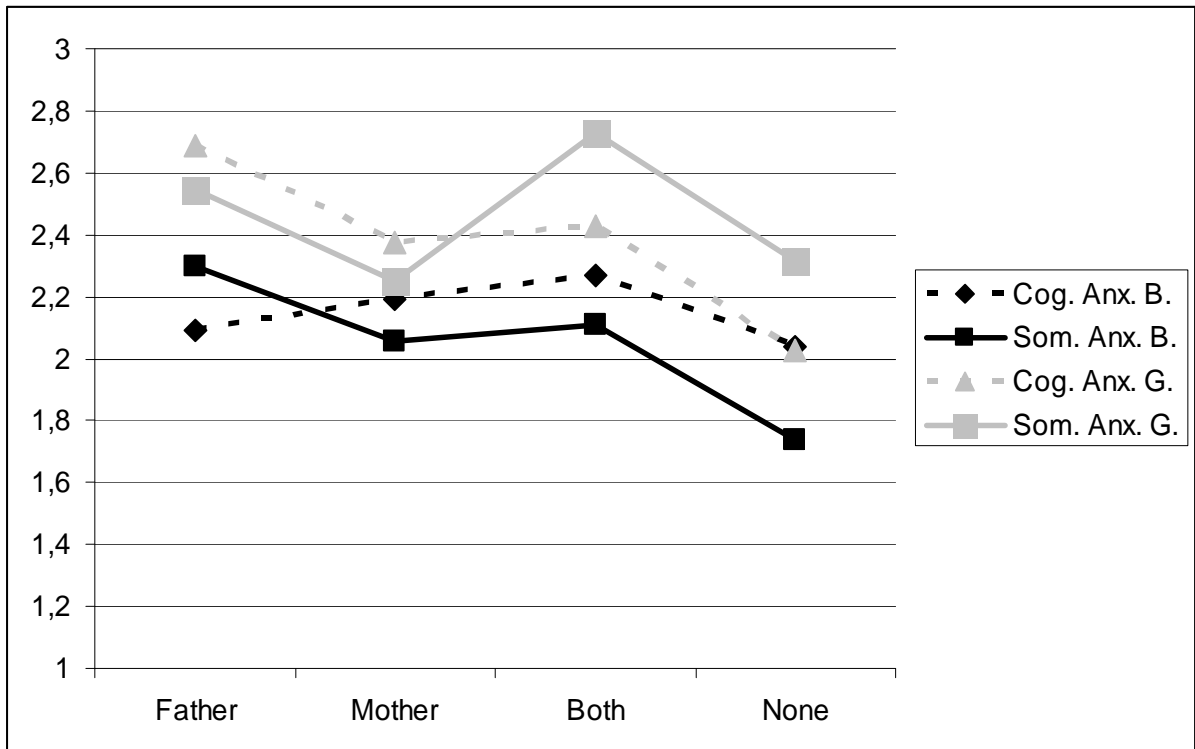
	Male tennis players <sup>a</sup>	Female tennis players <sup>b</sup>
Criterion variables		
Cognitive anxiety	-.81	-.92
Somatic Anxiety	-.93	-.92
Percents of Variance	.76	.85
Redundancy	.23	.42
Predictor variables		
Directive. Behavior	-.74	-.38
Active Involvement.	-.11	.05
Praise / Understanding	.19	.64
Pressure	-.73	-.93
Percents of Variance	.28	.35
Redundancy	.09	.18
Canonical Correlation	.55	.70

4  
 5 Note: <sup>a</sup> Wilks'  $\Lambda = .68, \chi^2 (8) = 27.99, p < .001$  ; <sup>b</sup> Wilks'  $\Lambda = .49, \chi^2 (8) = 41.10, p < .001$   
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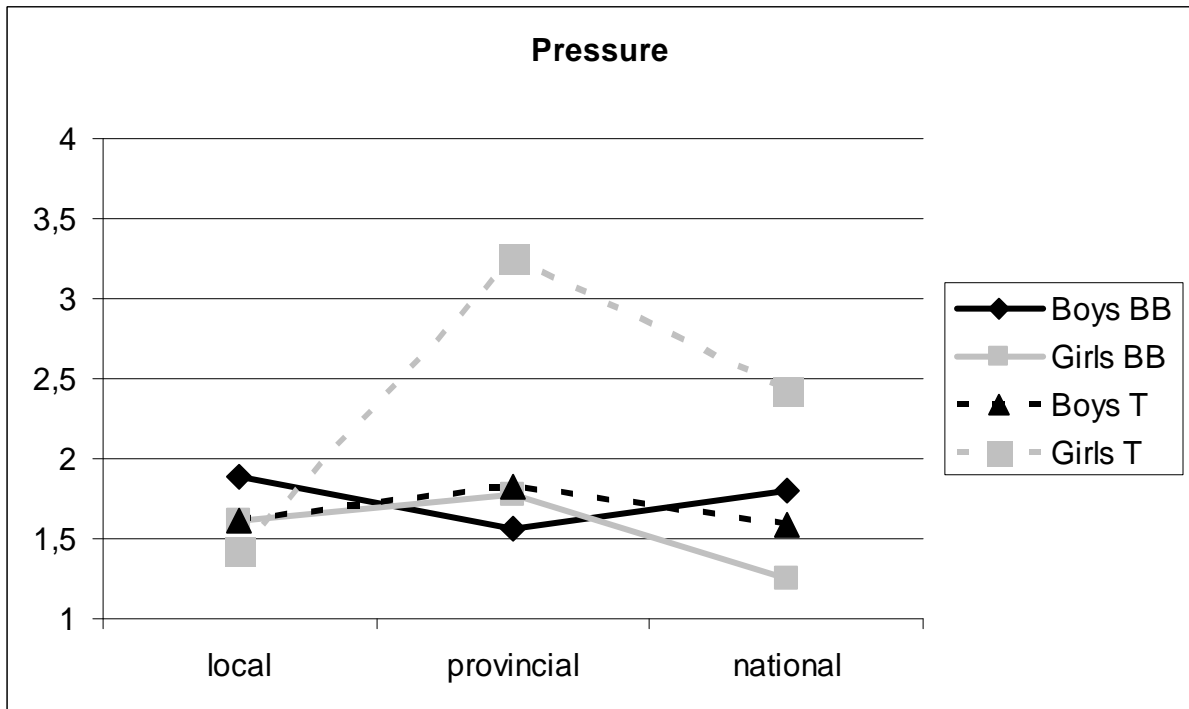
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Figure 1: Cognitive and somatic anxiety of basketball players by gender and parental presence.



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Figure 2: Cognitive and somatic anxiety of tennis players by gender and parental presence.



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Figure 3 : Pressure means by activity, gender and performance level.