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Perfectionism and Achievement Goals Revisited:

The 3 × 2 Achievement Goal Framework

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### Abstract

*Objectives:* Perfectionistic strivings (PS) and perfectionistic concerns (PC) have shown different profiles with the  $2 \times 2$  achievement goals in sport. Whether PS and PC also show comparable profiles with the achievement goals of the expanded  $3 \times 2$  framework, however, is unclear.

*Design:* Cross-sectional.

*Method:* We examined self-reported perfectionistic strivings, perfectionistic concerns, and the  $3 \times 2$  achievement goals in 136 junior athletes (mean age 17.0 years).

*Results:* The results of structural equation modeling showed that PS were positively associated with task-, self-, and other-approach goals and negatively with task- and self-avoidance goals. In contrast, PC were positively associated with task-, self-, and other-avoidance goals and negatively with task- and self-approach goals.

*Conclusions:* The findings suggest that PS and PC show different profiles also with the  $3 \times 2$  achievement goals which may help explain why the two perfectionism dimensions show differential relations with achievement-related outcomes in sport.

*Keywords:* perfectionistic strivings, perfectionistic concerns, achievement goal theory, mastery goals, performance goals, motivation

### Introduction

Perfectionism is a multidimensional personality disposition characterized by striving for flawlessness and setting exceedingly high standards of performance accompanied by tendencies for overly critical evaluations of one's behavior (Flett & Hewitt, 2002). Factor analyses across various measures of multidimensional perfectionism have provided support for two higher-order dimensions: *perfectionistic strivings* capturing perfectionist personal standards and a self-oriented striving for perfection and *perfectionistic concerns* capturing concerns about making mistakes, feelings of discrepancy between one's standards and performance, and fears of negative evaluation and rejection by others if one fails to be perfect (see Stoeber & Otto, 2006). Differentiating perfectionistic strivings and perfectionistic concerns in sports is important because the two dimensions show different, and often opposite, patterns of relations with sport-related psychological processes and outcomes (Gotwals, Stoeber, Dunn, & Stoll, 2012). Whereas perfectionistic concerns are consistently associated with maladaptive processes and outcomes, perfectionistic strivings are often associated with adaptive processes and outcomes, particularly when the overlap with perfectionistic concerns is controlled for (see Gotwals et al., 2012, for details).

Perfectionism in sport is a paradoxical characteristic with some researchers asserting that

it is a key characteristic of champions (e.g., Gould, Dieffenbach, & Moffett, 2002) whereas others assert that it undermines athletic development and performance (e.g., Flett & Hewitt, 2005). The reasons for the diverging assertions is that, according to the dual process theory of perfectionism (Slade & Owens, 1998), perfectionism is comprised of two motivational orientations: an approach orientation representing the part of perfectionism that drives people to higher aspirations and performance, and an avoidance orientation representing the part of perfectionism that holds people back and undermines their development and performance. Perfectionistic strivings (striving to attain perfection) mainly reflect perfectionism's approach orientation (striving to achieve perfection motivated by hope of success), whereas perfectionistic concerns (avoiding imperfection) mainly reflect its avoidance orientation (avoiding mistakes and imperfection motivated by fear of failure).

Researchers have sought to test these theoretical assumptions by determining factors that may help explain the two dimensions' differential relations with achievement-related outcomes in sport. One such factor is achievement goals because they are hypothesized to direct competence-related behavior (Elliot, 1997). Whereas different models of achievement goals have been developed in the sporting context, the  $2 \times 2$  model of achievement goals (Elliot & McGregor, 2001) suggests that it is important to differentiate mastery and performance goals as well as approach and avoidance orientations. Mastery-approach goals focus on developing competence whereas performance-approach goals focus on displaying competence. In contrast, mastery-avoidance goals focus on avoiding the development of incompetence whereas performance-avoidance goals focus on avoiding the display of incompetence.

Several studies have provided evidence that perfectionistic strivings and concerns show different relations with the  $2 \times 2$  achievement goals in sports (e.g., Stoeber, Stoll, Salmi, & Tiikkaja, 2009; Stoeber, Uphill, & Hotham, 2009; Zarghmi, Ghamary, Shabani, & Varzaneh, 2010). Across studies, perfectionistic strivings have shown positive relations with mastery- and performance-approach goals whereas perfectionistic concerns have shown positive relations with mastery- and performance-avoidance goals, suggesting that perfectionistic strivings are mainly approach-focused whereas perfectionistic concerns are mainly avoidance-focused (cf. Slade & Owens, 1998).

The  $2 \times 2$  model, however, has been criticized because mastery goals fail to differentiate whether individuals' goals focus on the task (improving task performance) or the self (improving one's personal performance). To address this limitation, Elliot, Murayama, and Pekrun (2011) introduced the  $3 \times 2$  model of achievement goals differentiating task, self, and

other goals, as well as approach and avoidance orientations. In this framework, other-approach and other-avoidance goals correspond to the performance-approach and performance-avoidance goals of the  $2 \times 2$  framework. Task-approach, self-approach, task-avoidance, and self-avoidance goals go beyond the  $2 \times 2$  framework allowing an assessment of whether mastery-approach and mastery-avoidance goals are task-focused or self-focused. Studies examining the  $3 \times 2$  achievement goals found that task and self goals show different relationships. For example, task-approach goals showed a positive correlation with perceived competence in athletes and predicted exam performance in university students, but not self-approach goals (Mascret, Elliot, & Cury, 2015; Stoeber, Haskew, & Scott, 2015). By contrast, self-approach goals showed a positive correlation with help seeking in e-learning classes, but not task-approach goals (Yang & Cao, 2013). Consequently, it is important to examine the relations, if any, perfectionistic strivings and perfectionistic concerns show with task and self goals in athletes.

Against this background, the present study explored whether the  $3 \times 2$  model would provide additional insights into the relations that perfectionism shows with achievement goals in sport. In particular, the study examined whether the relations that perfectionistic strivings and perfectionistic concerns show with mastery goals (strivings: positive relations with mastery-approach goals; concerns: positive relations with mastery-avoidance goals) would replicate for both aspects of mastery goals (task goals and self goals). Based on the dual process theory of perfectionism (Slade & Owens, 1998), we hypothesized that the relations would replicate to both aspects of mastery goals.

## Method

### Participants and Procedure

A sample of 136 junior athletes (107 male, 29 female) was recruited at three sports academies (68 from Academy 1, 40 from Academy 2, 28 from Academy 3) to participate in the present study. Participants' mean age was 17.0 years ( $SD = 0.8$ ; range = 16-19 years). Participants were involved in a range of sports (57 in soccer, 38 in basketball, 22 in rugby, 10 in athletics, and 9 in other sports [e.g., cricket, squash]) and trained on average 10.5 hours per week ( $SD = 4.4$ ). The study was approved by the university's ethics committee. Questionnaires were distributed during training in the presence of the first author, or athletes completed an online version of the questionnaire.

### Measures

**Perfectionism.** To measure perfectionism, we followed a multi-measure approach (Stoeber & Madigan, 2016) and used four subscales from two multidimensional measures of

perfectionism in sport: the Sport Multidimensional Perfectionism Scale (SMPS; Dunn et al., 2006) and the Multidimensional Inventory of Perfectionism in Sport (MIPS; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007). To measure perfectionistic strivings, we used two indicators: the 7-item SMPS subscale capturing personal standards (e.g. “I have extremely high goals for myself in my sport”) and the 5-item MIPS subscale capturing striving for perfection (“I strive to be as perfect as possible”), and then standardized the scale scores before combining them to measure perfectionistic strivings (cf. Dunkley, Zuroff, & Blankstein, 2003). To measure perfectionistic concerns, we also used two indicators: the 8-item SMPS subscale capturing concerns over mistakes (“People will probably think less of me if I make mistakes in competition”) and the 5-item MIPS subscale capturing negative reactions to imperfection (“I feel extremely stressed if everything does not go perfectly”), and again standardized the scale scores before combining them to measure perfectionistic concerns. The four subscales have demonstrated reliability and validity in previous studies (e.g., Madigan, Stoeber, & Passfield, in press; Stoeber, Stoll, et al., 2009) and are reliable and valid indicators of perfectionistic strivings and perfectionistic concerns (e.g., Gotwals et al., 2012; Stoeber & Madigan, 2016). Participants responded to all items on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

**3 × 2 achievement goals.** To measure achievement goals, we used the 3 × 2 Achievement Goal Questionnaire for Sport (3 × 2 AGQ-S; Mascret et al., 2015) which is comprised of 18 items with 3 items each capturing task-approach (e.g., “to perform well”), task-avoidance (“to avoid performing badly”), self-approach (“to do better than what I usually do”), self-avoidance (“to avoid having worse results than I had previously”), other-approach (“to do better than others”), and other-avoidance goals (“to avoid doing worse than others”). The 3 × 2 AGQ-S has demonstrated reliability and validity in previous studies (e.g., Lower & Turner, in press; Mascret et al., 2015). Participants responded to all items on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

### **Data Analysis Strategy**

To investigate the relations between perfectionism and the 3 × 2 achievement goals, we first screened the data for outliers and differences between academies and gender. Next, we examined the bivariate correlations between all variables and then computed a structural equation model with manifest variables (also known as path analysis) to examine the unique relations.

## **Results**

### **Preliminary Analyses**

Because very few item responses were missing ( $i = 17$ ), missing responses were replaced with the mean of the item responses of the corresponding scale (Graham, Cumsille, & Elek-Fisk, 2003). Following Tabachnick and Fidell (2007), data were screened for univariate and multivariate outliers, but no participant showed a  $z$  score larger than the critical value of  $\pm 3.29$  or a Mahalanobis distance larger than the critical value of  $\chi^2(8) = 26.12$ ,  $p < .001$ . Furthermore, two Box's  $M$  tests were conducted to examine whether the variance-covariance matrices showed any differences between academies or gender. Both tests were nonsignificant with  $F_s < 1.15$ ,  $p_s > .29$ . Therefore, all further analyses were collapsed across academies and gender. All scales' scores displayed acceptable Cronbach's alphas  $\geq .70$  (see Table 1).

### **Bivariate Correlations**

In line with previous findings, perfectionistic strivings showed significant positive correlations with all approach goals, and perfectionistic concerns showed significant positive correlations with all avoidance goals, with one exception: Perfectionistic concerns also showed a significant positive correlation with other-approach goals (see Table 1).

### **Structural Equation Model**

To further examine the relations between perfectionism and achievement goals, we used Mplus 7.11 (Muthén & Muthén, 1998-2012) and robust maximum likelihood estimation to examine the relations of all variables in one structural equation model, which allowed us to control for the two dimensions' overlap and examine the dimensions' unique relations with the  $3 \times 2$  achievement goals. All variables were modeled as manifest variables. To evaluate model fit, a range of incremental and absolute fit indices were examined in addition to the Satorra-Bentler  $\chi^2$  statistic (Hu & Bentler, 1999): comparative fit index (CFI), Tucker-Lewis Index (TLI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The following cut-off values were used as benchmarks for acceptable model fit: CFI  $> .90$ , TLI  $> .90$ , RMSEA  $< .08$ , and SRMR  $< .10$  (Marsh, Hau, & Wen, 2004).

First, we computed a model including all paths between perfectionism and achievement goals. This model showed nonsignificant paths from perfectionistic strivings to other-avoidance goals, and from perfectionistic concern to other-approach goals. Consequently, we removed these two paths from the model (thereby freeing up two  $df$  so that model fit statistics could be computed; Kline, 2005) and recomputed the model. For this model, the Satorra-Bentler  $\chi^2 = 2.96$  ( $df = 2$ ) was nonsignificant indicating a good model fit as did all the other fit indices (CFI = .99, TFI = .97, RMSEA = .06 [90% confidence interval = .00-.19], SRMR = .05). As Figure 1 shows, perfectionistic strivings showed unique positive relations with all

approach goals as well as unique negative relations with task- and self-avoidance goals. In contrast, perfectionistic concerns showed unique positive relations with all avoidance goals as well as unique negative relations with task- and self-approach goals.

### **Discussion**

The aim of the present study was to explore the relations between perfectionistic strivings, perfectionistic concerns, and achievement goals in sport using the  $3 \times 2$  goal framework (Elliot et al., 2011) which differentiates task-approach, task-avoidance, self-approach, self-avoidance, other-approach, and other-avoidance goals. When structural equation modeling with manifest variables was used to examine the two perfectionism dimensions' unique relations, perfectionistic strivings showed positive relations with all three approach goals whereas perfectionistic concerns showed positive relations with all three avoidance goals. In addition, perfectionistic strivings showed negative relations with task- and self-avoidance goals whereas perfectionistic concerns showed negative relations with task- and self-approach goals. As such, the present findings suggest that the relations that perfectionism shows with mastery goals generalize to task goals and self goals (Elliot et al., 2011).

Previous studies found perfectionistic strivings to show positive relations with mastery-approach goals, and the present study found positive relations with task-approach and self-approach goals. Moreover, previous studies found perfectionistic concerns to show positive relations with mastery-avoidance goals, and the present study found positive relations with task-avoidance and self-avoidance goals. With this, the present study confirms that perfectionistic strivings are primarily approach-oriented whereas perfectionistic concerns are primarily avoidance oriented which demonstrates the importance of approach versus avoidance orientations in perfectionism as was suggested by the dual-process model of perfectionism (Slade & Owens, 1998). Moreover, the present study indicates that the different orientations which the two dimensions of perfectionism show generalize across all goals of the  $3 \times 2$  goal framework—task goals, self goals, and other goals—suggesting that these orientations may help explain why the perfectionism dimensions show differential relations with achievement-related outcomes in sport (e.g., Stoeber, Uphill, & Hotham, 2009). Thus, the combination of self- and task-approach orientations in mastery goals provides perfectionistic strivings with a double-motivation for developing performance, whereas—at the same time—perfectionistic concerns' associations with the respective avoidance orientations “put the brakes” on this development, which further supports the assertion that perfectionism in sport is a double-edged sword (Stoeber, 2014).

The present study had two main limitations. First, the study's sample was predominantly male and exclusively comprised of junior athletes. Future studies should include a larger percentage of female athletes and also examine older athletes. Second, whereas the unique negative relations that perfectionistic concerns showed with task-approach and self-approach goals replicate findings in university students (Verner-Filion & Gaudreau, 2010), the unique negative relations that perfectionistic strivings showed with task-avoidance and self-avoidance goals were unexpected. Consequently, these relations need to be replicated before further conclusions can be drawn.

### Conclusions

Despite these limitations, the present study makes a significant contribution to further our understanding of the relations between perfectionism in sport and achievement goals, showing that the perfectionism dimensions have unique achievement motivation profiles. Furthermore, the present findings may help us understand why the two dimensions of perfectionism show differential relations with achievement-related outcomes in sport.

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Table 1. *Descriptive Statistics, Cronbach's Alphas, and Bivariate Correlations*

Variable	1	2	3	4	5	6	7	8
Perfectionism								
1. Perfectionistic strivings								
2. Perfectionistic concerns	.53***							
3 × 2 achievement goals								
3. Task-approach	.26**	-.02						
4. Task-avoidance	-.11	.18*	.37***					
5. Self-approach	.21*	-.07	.72***	.49***				
6. Self-avoidance	-.11	.21*	.37***	.67***	.38***			
7. Other-approach	.27**	.20*	.60***	.31***	.54***	.37***		
8. Other-avoidance	.03	.30***	.28**	.44***	.20*	.60***	.58***	
<i>M</i>	0.00	0.00	5.54	5.72	5.89	5.40	5.31	5.09
<i>SD</i>	0.93	0.91	1.37	1.21	1.37	1.48	1.34	1.57
Skewness	-0.60	-0.30	-0.79	-1.04	-1.54	-0.64	-0.84	-0.82
Cronbach's alpha	.83	.80	.90	.92	.94	.93	.89	.95

*Note.*  $N = 136$ . Variables were computed by averaging responses across items (means item scores). Perfectionistic strivings and perfectionistic concerns are composites of standardized scores (see Method section for details).  $SE$  (skewness) = 0.21.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

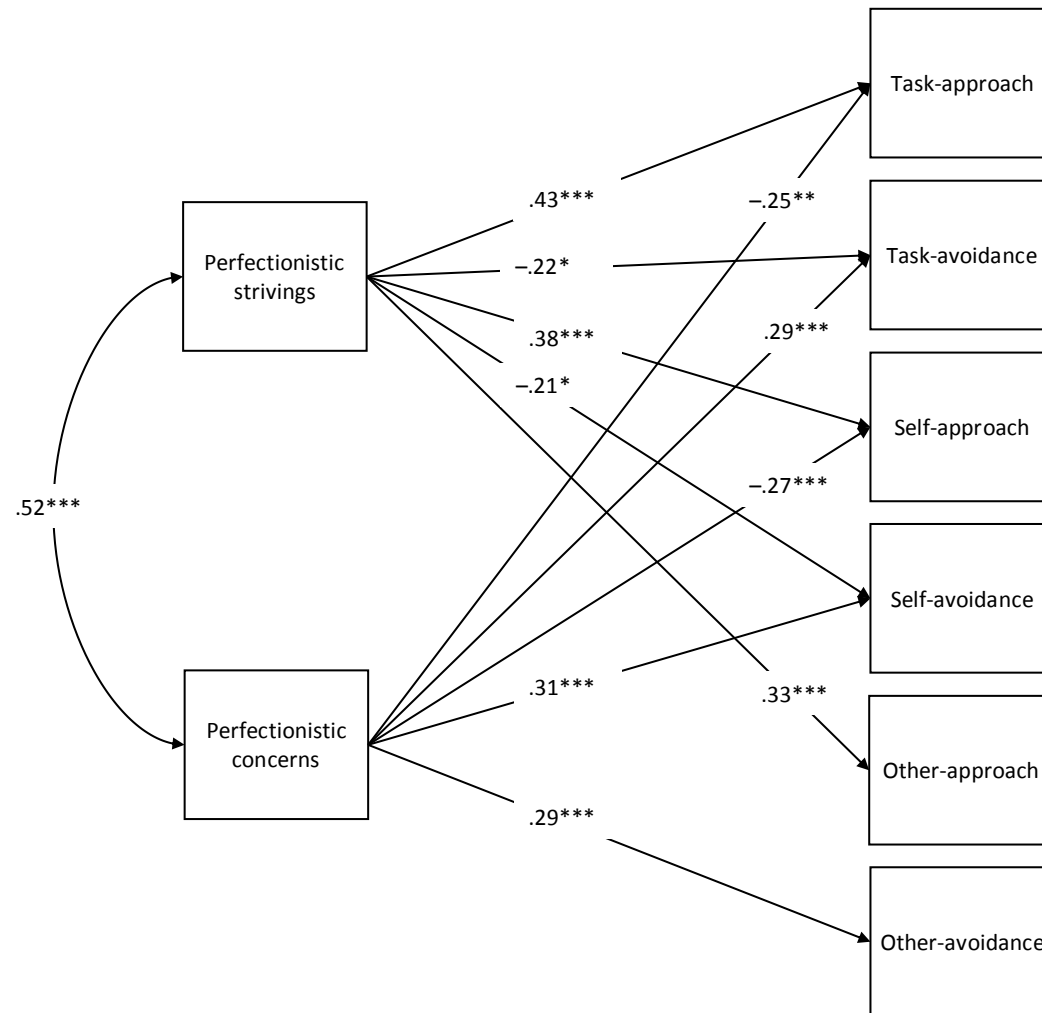


Figure 1. Final structural model. All coefficients are standardized. See Supplementary Material for intercorrelations between achievement goals.  $N = 136$ . \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

## [Supplementary Material]

Intercorrelations between achievement goals from the final structural equation model.

Variable	1	2	3	4	5
1. Task-approach					
2. Task-avoidance	.50***				
3. Self-approach	.70***	.62***			
4. Self-avoidance	.51***	.64***	.51***		
5. Other-approach	.59***	.36**	.54***	.42***	
6. Other-avoidance	.38***	.39***	.29**	.57***	.61***

*Note.*  $N = 136$ .

\*\* $p < .01$ . \*\*\* $p < .001$ .