Achievement Goals, Competition Appraisals, and the Well- and Ill-Being of Elite Youth Soccer Players Over Two Competitive Seasons

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Grounded in the 2 × 2 achievement goal framework (Elliot & McGregor, 2001), the purpose of this study was to investigate the temporal relationships between achievement goals, competition appraisals and indices of psychological and emotional welfare among elite adolescent soccer players. A subsidiary aim was to ascertain the mediational role of competition appraisals in explaining the potential achievement goal and well-/ill-being relationships. Ninety-one boys (mean age = 13.82 years) involved in an elite soccer program completed multisection questionnaires capturing the targeted variables. Measures were obtained on five occasions across two competitive seasons. Multilevel regression analyses revealed that MAp goals positively, and MAv goals negatively, predicted within-person changes in well-being over two seasons. PAp goal adoption was positively associated to within-person changes in negative affect. PAv goals corresponded negatively to between-person mean differences in positive affect. The results of the indirect effects showed challenge appraisals accounted for within-person associations between a MAp goal focus and well- and ill-being over time. The present findings provide only partial support for the utility of the 2 × 2 achievement goal framework in predicting young athletes' psychological and emotional functioning in an elite youth sport setting.

Keywords: 2x2 achievement goal framework, stress, optimal functioning, multilevel regression, longitudinal design, youth sport

Organized youth sport programs have the potential to positively impact the psychological and emotional welfare of young athletes. Even so, it is important to realize that engagement in youth sport per se does not necessarily guarantee immediate and long term health benefits (e.g., Fraser-Thomas, Côté, & Deakin, 2008). Investment in youth sport participation has also been associated with decreased motivation, loss of self-esteem, injury and dropout (e.g., Krane, Greenleaf, & Snow,

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1997). According to Duda (2005), differences in achievement emphases can provide insight into variability explaining healthy versus compromised sport engagement. Grounded in the 2 × 2 achievement goal framework (Elliot & McGregor, 2001), the current study tested the hypothesized relationships between achievement goals, competition appraisals and indices of well- and ill-being among participants engaged in an elite youth soccer program over two seasons.

Achievement Goal Frameworks

Achievement goals are defined as cognitive representations used to guide, interpret and explain patterns of cognitions, emotions and behaviors in achievement contexts (e.g., Elliot, 1999; Nicholls, 1984). According to the dichotomous achievement goal perspective (e.g., Nicholls, 1984), competence is construed in two distinct ways that are tantamount to two different types of achievement goals. A task (or mastery) goal is reflected by endorsing an undifferentiated conception of ability and effort (i.e., competence is evaluated in terms of self-/task-referenced criteria). When task-involved, success is realized by expending high levels of energy, achieving mastery, and witnessing personal improvement. In contrast, individuals adopting an ego (or performance) goal differentiate between ability and effort, and infer success by demonstrating high capacity relative to other people (i.e., based on meeting normative criteria). When ego-involved, success is perceived by outperforming others with equal effort, or performing equal to others using less effort (Nicholls, 1984).

Dichotomous goal theorists (e.g., Nicholls, 1984) postulate adaptive achievement-related processes and outcomes for individuals holding a mastery goal. Performance goals are also proposed to render some positive processes and outcomes, but only when individuals perceive their competence to be high. If competence is perceived to be low, performance goals are posited to lead to maladaptive processes and outcomes (Nicholls, 1984). Although the adaptive role of mastery goals has been repeatedly supported, performance goals have been shown to yield a mixed set of findings in the dichotomous goal literature (for a review, see Elliot, 1999). Past meta-analyses (e.g., Rawsthorne & Elliot, 1999) have indicated that when reviewing the dichotomous goal literature, experimental studies could be distinguished on the basis of whether they employed a performance goal manipulation that was approach-oriented (i.e., focused on attaining normative success) or avoidance-oriented (i.e., focused on avoiding normative failure). It was this approach-avoidance distinction of performance goals that was purported to be relevant to the differential prediction of achievement outcomes.

In light of the ambiguous performance goal findings in the dichotomous goal literature, Elliot and colleagues (e.g., Elliot & Church, 1997; Elliot & McGregor, 2001) revised and extended the conventional two goal model by conceptualizing achievement goals along two dimensions of competence: definition (i.e., self-/task-referenced and normatively-referenced standards) and valence (i.e., approach and avoidance). This led to the advancement of the 2 × 2 model (Elliot & McGregor, 2001) which assumes four goals to be operational in achievement contexts: a) mastery approach (MAp; striving to attain self-/task-referenced competence), b) mastery avoidance (MAv; attempting to avoid the demonstration of self-/task-referenced incompetence), c) performance approach (PAp; focusing on the attainment of normatively referenced competence) and, d) performance avoidance (PAv; striving to avoid the demonstration of normatively referenced incompetence).

Aligned with theoretical predictions (Elliot & Conroy, 2005), research in the physical domain has revealed MAp goals to be associated with positive achievement patterns, such as intrinsic motivation (e.g., Cury, Elliot, Sarrazin, Da Fonseca, & Rufo, 2002), enjoyment (Morris & Kavussanu, 2009), and performance (e.g., Elliot, Cury, Fryer, & Huguet, 2006). The adoption of a PAp goal is also expected to lead to some positive consequences, but less than a MAp goal (Elliot & Conroy, 2005). Experimental research has shown that physical education (PE) students induced to a PAp goal group were comparable to participants in a MAp goal group with respect to their levels of intrinsic motivation (i.e., observed free choice behavior; Cury et al., 2002) and performance (Elliot et al., 2006) when completing a basketball dribbling task. In sport research, a PAp goal emphasis has been positively linked to performance (Halvari & Kjørmo, 1999) and extrinsic motivation (Nien & Duda, 2008), but unrelated to intrinsic motivation (e.g., Conroy, Kaye, & Coatsworth, 2006) and enjoyment (Morris & Kavussanu, 2009). The PAp goal findings in the sport literature corroborate theoretical predictions (Elliot & Conroy, 2005).

Sport and PE-based research has provided strong support for the hypothesized relationships between a PAv goal and maladaptive processes and outcomes, including cognitive anxiety (Morris & Kavussanu, 2009), self-handicapping (Elliot et al., 2006), amotivation (Nien & Duda, 2008), and diminished performance (e.g., Elliot et al., 2006). Elliot and Conroy (2005) tentatively proposed that MAv goals should correspond to less positive responses than MAp goals, and less negative consequences than PAv goals. However, the limited studies to date in the sport domain have revealed MAv goals to be associated with maladaptive patterns (e.g., Conroy et al., 2006; Morris & Kavussanu, 2009). In a study of adolescent competitive athletes, Morris and Kavussanu (2009) found that the four approach/avoidance goals explained 12–36% more variance (compared with dichotomous goals) in cognitive anxiety (i.e., worry and concentration disruption), with the MAv goal reported to be the strongest predictor.

Well- and Ill-Being

Outcomes reflective of whether (or not) athletes are witnessing sustained healthy sport participation are indicators of psychological and emotional well- and ill-being (e.g., Fraser-Thomas et al., 2008). Given self-esteem is widely accepted as a marker of psychological functioning and adjustment (Fox, 2000), we assessed the degree to which young elite soccer players formed positive judgments about their selves. We also measured positive and negative affect as indicators of emotional well- and ill-being, respectively.

Achievement Goals and Well- and Ill-Being

Some achievement goal researchers have argued that approach and avoidance mastery and performance goals may account for variability in the psychological and emotional functioning of individuals engaged in achievement contexts (e.g., Conroy, Elliot, & Coatsworth, 2007; Duda, 2005). This supposition has primarily received support in educational settings (e.g., Pekrun, Elliot, & Maier, 2006; Sideridis, 2005). However, the findings in question are limited to the goals captured in the trichotomous goal framework (i.e., MAp, PAp, PAv goals; Elliot & Church,

1997). Less is known regarding the utility of the 2 × 2 achievement goal framework (Elliot & McGregor, 2001), and in particular the role of the MAv goal, in explaining variability in reported well- or ill-being. A recent study by Adie, Duda, and Ntoumanis (2008) examined the interrelationships between the four goals and self-esteem, positive and negative affect in adult team sport settings. Adie and colleagues found a MAp goal focus to be positively associated, and a MAv goal emphasis to be negatively related, with the dimensions of well-being. MAp goals were also inversely linked with negative affect, whereas MAv goal adoption was shown to positively predict this aspect of ill-being. The hypothesized positive links for PAp, and expected negative associations for PAv goals, predicting indices of well-being did not emerge.

The findings by Adie et al. (2008) were drawn from cross-sectional data. This may explain to some extent why their results only partially supported theoretical predictions (e.g., Duda, 2005), especially with reference to the performance-based goals failing to predict indicators of well- (or ill-) being. According to Elliot (1999), there could be long term hidden costs (e.g., compromised well-being) to adopting a PAp goal focus in highly evaluative public settings, such as an elite youth sport program. By employing a cross-sectional design, Adie et al. could not adequately test this proposition. To this end, a gap remains in sport research concerning how changes in performance (and mastery) approach and avoidance goals relate to changes in well- and ill-being among athletes over time.

To our knowledge, only two longitudinal studies within the physical domain have explored the correlates of the goals assumed in the 2 × 2 model. Conroy et al. (2006) examined the interplay between the four goals and motivation regulations of adolescent athletes participating in a six week summer swim league. Warburton and Spray (2008) investigated antecedents of achievement goal adoption among physical education students during the transition from primary to secondary school. Although examining patterns of change over time, neither of these two studies focused on the interplay between the four goals and reported well- and ill-being among their study participants.

Grounded in the 2 × 2 achievement goal framework (Elliot & McGregor, 2001) and centered on the prediction of variability in athletes' welfare, the main purpose of the current study was to replicate and extend the work of Adie et al. (2008) by utilizing a longitudinal research design. Aligned with theoretical predictions and past research (e.g., Adie et al., 2008; Duda, 2005), we hypothesized that a MAp goal would positively predict self-esteem and positive affect, and inversely relate to negative affect over time. Based on theoretical assumptions and past findings (e.g., Adie et al., 2008; Elliot & Conroy, 2005), we tentatively hypothesized a null or weak positive relationship between a PAp goal emphasis and well-being. Lastly, we expected both MAv and PAv goals to negatively predict our indices of well-being, and positively predict our index of ill-being, across the two seasons.

Cognitive Appraisals

The second purpose of this study was to determine the psychological mechanisms by which the four goals differentially predict well- and/or ill-being over time. It is assumed, and preliminary evidence suggests, that variability in cognitive appraisals of the objective environment (e.g., sport competition, classroom examinations) is

relevant to how achievement goals are associated to indices of participants' welfare (Adie et al., 2008; McGregor & Elliot, 2002). According to Lazarus and colleagues (Lazarus, 1999; Lazarus & Folkman, 1984), individuals have a tendency to appraise ongoing relationships with the objective environment as more or less challenging and threatening. That is, some people may perceive the barriers presented in the objective environment as a potential challenge to be overcome, ensuing in personal growth, mastery, and gain. In contrast, other people may have a tendency to anticipate stressful events as being potentially threatening to their personal well-being (e.g., resulting in a loss of self-esteem).

Achievement Goals and Cognitive Appraisals

McGregor and Elliot (2002) argued that achievement goal perspectives provide a perceptual-cognitive framework in which to form cognitive appraisals. Grounded in the trichotomous goal framework (Elliot & Church, 1997), McGregor and Elliot (2002) found that the three achievement goals predicted variability in challenge and threat appraisals before a classroom examination. In a prospective study involving adolescent-aged male soccer players, Nien and Duda (2007) found preseason MAp goals to be positively related to challenge appraisals one week and directly before the first match of the season. The results also showed preseason PAp goal adoption to positively predict threat appraisals directly preceding the game.

Adie and colleagues (2008) investigated the role of the four goals regarding the interpretation of a hypothetical sports competition as more or less challenging and threatening. The findings indicated that MAp goal adoption was positively related to challenge, and negatively linked to threat appraisals. A MAv goal focus corresponded to the view that sport competition was threatening, whereas a PAv goal emphasis was negatively associated with challenge appraisals of sport competition. The endorsement of a PAp goal was positively linked to viewing sport competition as both a challenge and a threat.

Based on previous work (e.g., Adie et al., 2008; McGregor & Elliot, 2002), we expected that a MAp goal focus would positively predict challenge appraisals and negatively predict threat appraisals over the course of the two seasons. It was also hypothesized that PAp goal adoption would positively relate to both challenge and threat appraisals over time. Lastly, it was expected that both PAv and MAv goals would correspond negatively to challenge appraisals, and positively to threat appraisals across both seasons.

Cognitive Appraisals and Well- and Ill-Being

Cognitive appraisals of stressful events are also assumed to hold implications for personal well-being (Lazarus, 1999). Previous research conducted in physical and educational contexts has found variations in challenge and threat appraisals to be relevant to differences in reported psychological and emotional functioning (e.g., Adie et al., 2008; Giacobbi Jr., Tuccitto, & Frye, 2007). For example, Adie et al. (2008) found challenge appraisals to be positively related to self-esteem and feelings of pleasant affect among adult athletes. In contrast, the perception that sport competition is threatening was aligned with reported compromised psychological and emotional functioning.

Aligned with the theorizing of Lazarus (1999) and based on previous research (e.g., Adie et al., 2008), we hypothesized that challenge appraisals would positively relate to positive affect and self-esteem, and be unrelated to negative affect over time. We further expected that threat appraisals would negatively correspond to self-esteem, positively predict negative affect, and be unassociated with positive affect.

Achievement Goals, Cognitive Appraisals, and Well- and Ill-Being

By employing structural equation modeling controlling for measurement error, Adie et al. (2008) also tested the predicted mediating role of challenge and threat appraisals in explicating the relationship between the four achievement goals and indices of well- and ill-being. Variation concerning how athletes appraised a sports competition (i.e., the degree to which the event was deemed challenging and threatening) partially mediated the association of mastery-based goals (i.e., MAp, MAv) to indices of psychological and emotional welfare. The final aim of the current study was to examine the mediational role of competition appraisals in the relationship of the achievement goals to well-and ill-being over time.

Methods

Participants

At the start of the investigation, volunteers were ninety-one male soccer players aged 11–18 years old (M_{age} = 13.82; *SD* = 1.99 years) from a school of excellence (SoE) at a professional club situated in the West Midlands, UK. Nearly half of the participants (n = 40) reported being in their first season within the SoE, twenty-six indicated they were in their second or third season, and the remainder of the sample had played four or more seasons. Participants reported training on average for three days per week with one game at weekends. The sample comprised six teams from the SoE: U12's (n = 13), U13's (n = 15), U14's (n = 13), U15's (n = 15), U16's (n = 14) and youth (n = 21). There was a 41% attrition rate (n = 37) by the end of the study. Reasons for attrition were being cut from the team (n = 23); dropout (n = 6); promotion to the 1st team (n = 5); sustaining long term injury/illness (n = 2); and unknown (n = 1).

Design and Procedure

The researchers were invited by the youth director of the soccer club to examine possible motivational-related predictors of well-being among the players at the SoE. The main purpose of the SoE was to identify and develop highly talented soccer players with the view to them becoming future professionals at the end of the program. Each player recruited by the SoE was signed on a yearly basis except for players in the youth team who were signed on a two year scholarship. The six teams in this study were selected because they all played 11-a-side games (i.e., younger aged based teams played 8-a-side). During the course of the season, participants' progress was regularly monitored and reviewed.

Ethical approval was granted from the researchers' university's ethics committee. The treatment of participants was in accordance with APA ethical guidelines. Consent was obtained from players, parents and coaches before commencing the data collection. The participants were administered a multisection questionnaire measuring the goals, appraisals and indicators of well- and ill-being at five different waves across two competitive seasons. Each participant completed the questionnaire along with their respective team in a classroom setting before training at the beginning of season one (wave 1), near the end of season one (wave 2), and at the beginning (wave 3), middle (wave 4) and end of season two (wave 5).

Measures

Achievement Goals. The Achievement Goal Questionnaire for Sport (AGQ-S; Conroy, Elliot, & Hofer, 2003) was employed to tap the degree to which the participants endorsed different achievement goals in soccer. The AGQ-S is a 12-item scale measuring four goals each with three items: Mastery approach (MAp; e.g., "I want to play as well as it is possible for me to play"), mastery avoidance (MAv; e.g., "Sometimes I'm afraid that I may not play as well as I'd like"), performance approach (PAp; e.g., "It is important for me to play better than other players"), and performance avoidance (PAv; e.g., "My goal is to avoid playing worse than everyone else"). Participants responded on a 7-point scale ranging from *not at all like me* (1) to *completely like me* (7). Past sport research has supported the factorial invariance, temporal stability and predictive validity of the AGQ-S (Conroy et al., 2006).

Cognitive Appraisals of Sport Competition. A 10-item adapted version of the challenge and threat construal measure (McGregor & Elliot, 2002) was employed to assess primary appraisals of soccer competition. The participants were presented with a hypothetical scenario of an upcoming important soccer match in which they would face a strong opposing team whereby the stakes had been evenly contested in the past (i.e., beaten once, lost once). We decided to control for game importance and previous game outcome in the hypothetical scenario to avoid the results being potentially confounded by these variables. In responding to the measure, participants were asked to recall on actual previous experiences and rate the degree to which they would typically appraise such a competitive situation/game as more or less challenging and threatening. A sample item for the challenge scale is "I would view the football match as a positive challenge" and one from the threat scale is "I think the football match could be threatening to me". The challenge and threat construal measure has yielded high internal consistency and predictive validity in classroom (McGregor & Elliot, 2002) and sport settings (e.g., Adie et al., 2008). All responses were indicated on a 7-point scale ranging from *not at all true of me* (1) to *very true of me* (7).

Self-Esteem. The 10-item general self-subscale of the Self Description Questionnaire-II (SDQ-II; Marsh, Parker, & Barnes, 1985) was employed to assess participants' levels of general self-esteem. Five items of the subscale are phrased positively and five items are written to reflect low self-esteem (e.g., "Overall, I have a lot to be proud of" and "I feel that my life is not very useful"). Participants responded on a 7-point scale ranging from 1 = *false* to 7 = *true*. The internal reliability and predictive validity of these items have been psychometrically supported in the sport context (e.g., Adie et al., 2008).

Positive and Negative Affect. Nine items were employed to assess the frequency with which participants were experiencing positive and negative affectivity (Diener & Emmons, 1984) with respect to their typical soccer engagement. The positive affect scale contained four items (e.g., happy, pleased, joyful/thrilled, full of fun), and the negative affect scale included five items (e.g., unhappy, angry, annoyed, worried, very sad/depressed). Participants responded to the stem "When playing soccer, I feel . . ." and indicated their answers on a scale ranging from 1 = *not very often* to 7 = *all the time*. The internal reliability and predictive validity of this measure have received support in previous sport research (Adie et al., 2008).

Data Analysis

The data set in the current study was unbalanced; each participant did not have the same number of waves. That is to say, once a participant had left he did not reenter the program during the period of investigation. Multilevel modeling requires a minimum of three waves so that linear patterns of change can be examined (see Singer & Willett, 2003). Thus, those who were cut/dropped-out from the program could not be included in the analyses. In light of this issue, we conducted repeated-measures ANOVAs to determine potential differences between participants who remained versus those who had left the program from the beginning to the end of season one for goals, appraisals and well- and ill-being indicators.

The main analyses were performed by estimating a series of multilevel regression models using MLwiN (version 2.10; Rasbash, Steele, Browne, & Goldstein, 2009). Multilevel regression is the choice of statistical analysis when the data are hierarchically structured (Singer & Willett, 2003). In the current study, the hierarchy comprised repeated measurements (level 1) nested within individuals (level 2). The four achievement goals and two cognitive appraisals served as the time-varying predictors to explain within-person changes and between-person mean differences in the indicators of well- and ill-being. The time-varying predictors were centered around the unique means for each individual (i.e., group mean centered) and were entered onto the level 1 equations. Further, the mean scores of each predictor, averaged across time, were entered onto the level 2 equations. Time was centered at wave one.

First of all, unconditional models (i.e., no predictors; Model A) were estimated to explore the linear and quadratic slopes for achievement goals, cognitive appraisals and well- and ill-being. Next, conditional models were hypothesized (i.e., with predictors; Models B-D). Model B explored whether the rate of change in well- and ill-being could be explained by within-person changes and between-person mean differences in the four goals. Model C estimated the hypothesized prediction of competition appraisals by achievement goals. Model D tested the expected associations of the time-varying competition appraisal predictors (controlling for the four goals) on indices of well- and ill-being. The interactions between the time-varying predictors and linear/quadratic terms for time predicting the outcome variables were also calculated in Models B to D. We also sought to examine the potential longitudinal mediational effects of competition appraisals in the hypothesized relationships between achievement goals and well- and ill-being via multilevel regression modeling. Mediation was interpreted based on the criteria set out by Krull and MacKinnon (2001).

Results

Descriptive Statistics and Correlations

Table 1 presents the descriptive statistics, Cronbach's alpha coefficients, and bivariate correlations for the study variables at each of the five waves of assessment, as well as the overall scores. Participants exhibited a strong MAp goal focus across all five waves. Participants consistently reported moderately strong scores (i.e., above the midpoint; >3.5) for MAv, PAp and PAv goals at each wave of assessment. However, mean scores for the latter goal tailed off over the course of the two seasons. At each assessment period, participants reported high mean scores for challenge appraisals, self-esteem and positive affect, and low average scores for threat appraisals and negative affect. Levels of skewness were relatively low at each wave of measurement (range = –2.20 to .99).

The Cronbach internal reliability coefficients for the majority of the study variables were close to or exceeded .70 at each wave of assessment. This was not found to be the case for the MAp goal. A problematic item (i.e., "It is important for me to master/perfect all parts of my game") was identified and subsequently removed from this scale on all occasions. As a result, the alpha coefficients for this scale indicated acceptable levels of internal reliability on all but one assessment period (i.e., wave 3). As can be seen in Table 1, the bivariate correlations at each wave and average correlations across all waves were generally in the expected directions.

The Effects of Program Attendance on Achievement Goals, Cognitive Appraisals and Well- and Ill-Being Across Season 1

Given the degree of participant attrition in the current study, we explored the main effects of program attendance (i.e., full versus discontinued participation athletes) and its interaction with time. A series of one-way repeated-measures ANOVAs between these two groups were estimated for wave 1 and wave 2 scores on achievement goals, competition appraisals and our indices of well- and ill-being.

A significant interaction for time and program attendance emerged for MAp goal adoption, Wilks's Lambda = .94, F (1, 70) = 4.65; $p < .05$, $\eta_p^2 = .06$. The results showed a reduction in MAp goal emphasis over the course of season one for players who were later cut/dropped-out of the program ($M_{wave1} = 6.67$; $M_{wave2} = 6.11$), whereas participants who stayed in the program witnessed continued high levels over this same time period ($M_{wave1} = 6.72$; $M_{wave2} = 6.64$). The between-person effects and interactions for MAv, PAp and PAv goals were nonsignificant ($p > .05$).

The significant interactions regarding challenge appraisals, Wilks's Lambda = .87, F (1, 70) = 10.26; $p < .01$, $\eta_p^2 = .13$, indicated that released and dropout players reported decreased scores by the end of season one ($M_{wave1} = 6.00$; $M_{wave2} = 5.34$) compared with marginal increases experienced by participants who remained in the program ($M_{wave1} = 5.93$; $M_{wave2} = 6.05$). There was also a significant interaction, Wilks's Lambda = .92, F (1, 70) = 5.87; $p < .05$, $\eta_p^2 = .08$, for threat appraisals showing increased scores across season one for both groups of participants. However, the increase over season one was greater for participants who subsequently left the program ($M_{wave1} = 2.52$; $M_{wave2} = 3.53$), compared with those players who stayed ($M_{wave1} = 2.36$; $M_{wave2} = 2.50$).

Table 1 Descriptive Statistics, Internal Reliabilities, and Bivariate Correlations for Achievement Goals, Cognitive Appraisals, and Well- and Ill-Being Across Five Waves of Measurement

Variable	1	2	3	4	5	6	7	8	9
					Beginning of Season 1 (Wave 1; n = 91)				
1. Mastery approach	(.67)								
2. Mastery avoidance	–.16	(.82)							
3. Perform. approach	–.06	.10	(.67)						
4. Perform. avoidance	–.15	.17	.65**	(.74)					
5. Challenge appraisals	.39**	–.06	.17	.20	(.78)				
6. Threat appraisals	–.22*	.42**	.32**	.30**	–.21*	(.66)			
7. Positive affect	.31**	–.16	–.13	–.07	.38**	–.22*	(.80)		
8. Negative affect	.02	.09	.16	–.06	–.11	.29**	–.06	(.75)	
9. Self-esteem	.30**	–.23*	–.07	–.01	.41**	–.30**	.89**	–.07	(.86)
M	6.73	4.62	5.20	4.71	5.94	2.37	5.98	2.16	5.89
SD	.51	1.32	1.26	1.58	.69	.87	.74	.85	.74
					End of Season 1 (Wave 2; n = 78)				
1. Mastery approach	(.88)								
2. Mastery avoidance	–.03	(.73)							
3. Perform. approach	.13	.32**	(.83)						
4. Perform. avoidance	–.08	.39**	.61**	(.80)					
5. Challenge appraisals	.60**	–.09	.13	.19	(.77)				
6. Threat appraisals	–.38**	.34**	.14	.18	–.40**	(.82)			
7. Positive affect	.52**	–.15	.01	–.09	.61**	–.29**	(.87)		
8. Negative affect	–.22	.30**	.03	.11	–.29**	.52**	–.43**	(.78)	
9. Self-esteem	.37**	–.23*	.05	–.17	.39**	–.53**	.50**	–.57**	(.84)
M	6.47	4.60	4.80	4.35	5.85	2.80	5.72	2.54	5.72
SD	.88	1.31	1.46	1.53	.80	1.23	.99	1.09	.87

(continued)

Table 1, *continued*

Variable	1	2	3	4	5	6	7	8	9
				Beginning of Season 2 (Wave 3; *n* = 62)					
1. Mastery approach	(.54)								
2. Mastery avoidance	.12	(.68)							
3. Perform approach	.19	.39**	(.84)						
4. Perform avoidance	.05	.31*	.68**	(.75)					
5. Challenge appraisals	.35**	.16	.32*	.16	(.81)				
6. Threat appraisals	–.10	.31*	.19	.27*	–.13	(.75)			
7. Positive affect	–.01	–.09	.10	.08	.40**	–.22	(.84)		
8. Negative affect	.02	.25*	.25*	.13	–.03	.40**	–.35**	(.72)	
9. Self-esteem	.14	–.13	.12	–.03	.51**	–.40**	.49**	–.20	(.80)
M	6.78	4.81	4.75	4.02	6.07	2.58	5.70	2.38	5.80
SD	.36	1.13	1.59	1.61	.83	.99	.94	.86	.70
				Middle of Season 2 (Wave 4; *n* = 61)					
1. Mastery approach	(.68)								
2. Mastery avoidance	–.02	(.73)							
3. Perform. approach	.12	.50**	(.79)						
4. Perform avoidance	.12	.47**	.59**	(.70)					
5. Challenge appraisals	.65**	.04	.25*	.10	(.84)				
6. Threat appraisals	–.14	.54**	.33**	.38**	–.19	(.84)			
7. Positive affect	.13	.04	.27*	.10	.34**	–.07	(.89)		
8. Negative affect	.09	.32*	.03	.00	–.13	.20	–.35**	(.71)	
9. Self-esteem	.25*	–.32*	–.17	–.26*	.42**	–.32*	.36**	–.39**	(.87)
M	6.52	4.44	4.96	4.36	5.98	2.65	5.86	2.37	5.97
SD	.82	1.24	1.20	1.41	.82	1.19	.99	.86	.74

(continued)

Table 1, *continued*

Variable	1	2	3	4	5	6	7	8	9
					End of Season 2 (Wave 5; *n* = 54)				
1. Mastery approach	(.78)								
2. Mastery avoidance	.06	(.76)							
3. Perform. approach	.32*	.23	(.84)						
4. Perform. avoidance	.12	.41**	.62**	(.80)					
5. Challenge appraisals	.54**	–.03	.19	.07	(.84)				
6. Threat appraisals	–.14	.55**	.22	.38**	–.27	(.80)			
7. Positive affect	.50**	–.15	.11	–.15	.46**	–.15	(.92)		
8. Negative affect	–.22	.07	.12	.08	–.30*	.21	–.61**	(.81)	
9. Self-esteem	.41**	–.13	.20	–.02	.50**	–.30**	.48**	–.42**	(.80)
M	6.56	4.51	4.99	3.99	6.08	2.60	5.69	2.57	5.83
SD	.76	1.23	1.44	1.52	.83	1.04	1.10	1.13	.72
					Across all Waves of Assessment (*n* = 54)				
1. Mastery approach	(.71)								
2. Mastery avoidance	–.13	(.74)							
3. Perform. approach	.03	.24*	(.79)						
4. Perform. avoidance	–.05	.33**	.71**	(.76)					
5. Challenge appraisals	.56**	–.07	.22*	.18	(.81)				
6. Threat appraisals	–.24*	.45**	.37**	.37**	–.22*	(.77)			
7. Positive affect	.53**	–.13	–.08	–.11	.52**	–.26*	(.86)		
8. Negative affect	–.14	.24*	.22*	.17	–.27*	.59**	–.41**	(.75)	
9. Self-esteem	.50**	–.28**	–.08	–.16	.55**	–.51**	.67**	–.44**	(.83)
M	6.61	4.60	4.94	4.29	5.98	2.60	5.79	2.40	5.84
SD	.67	1.25	1.39	1.53	.79	1.06	.95	.96	.75

Note. The values along the diagonal represent Cronbach's alpha coefficients. Perform. approach = Performance approach; Perform. avoidance = Performance avoidance.

* $p < .05$; ** $p < .01$.

Significant interactions were also observed for self-esteem, Wilks's Lambda = .94, F (1, 70) = 4.53; $p < .05$, $\eta_p^2 = .06$; positive affect, Wilks's Lambda = .94, F (1, 70) = 4.70; $p < .05$, $\eta_p^2 = .06$; and negative affect, Wilks's Lambda = .95, F (1, 70) = 4.11; $p < .05$, $\eta_p^2 = .06$. Players who were cut/dropped-out had lower self-esteem and positive affect as season one progressed (M_{wave1} = 5.68, 5.76; M_{wave2} = 5.14, 5.11), compared with the stable level of self-esteem and positive affectivity experienced by participants who remained in the program (M_{wave1} = 5.94, 6.01; M_{wave2} = 5.93, 5.98). The interaction for negative affect indicated that the attrition group showed increased emotional ill-being over the course of season one (M_{wave1} = 2.33; M_{wave2} = 3.22), compared with the marginal increases exhibited by the participants who stayed in the program (M_{wave1} = 2.11; M_{wave2} = 2.31).

Main Analyses

As explained previously, we conducted multilevel regression analyses only for the participants who stayed in the program for the entire period of the investigation. This amounted to fifty-four participants with complete data across all five waves. The current sample size is in line with simulation research that has shown that 50 or more level 2 units (in our case athletes) are needed for multilevel modeling (Maas & Hox, 2005).

Stability and Change in Achievement Goals, Cognitive Appraisals and Well- and Ill-Being (Model A)

The results of Model A revealed a significant linear decrease in PAv goal adoption ($B = -.59$; $p < .05$) over the two seasons. No significant effects were found for the quadratic terms for time.

Achievement Goals Predicting Well- and Ill-Being (Model B)

Achievement goals accounted for between 8–11% of the explained variance in well- and ill-being (see Table 2 for the results). MAp goal adoption positively corresponded to within-person changes in both self-esteem ($p < .001$) and positive affect ($p < .001$) across the two seasons. In contrast, a MAv goal emphasis was negatively related to within-person changes in self-esteem ($p < .05$). A PAp goal focus was positively associated to within-person changes in negative affect ($p < .05$). An emphasis on PAv goals was found to negatively predict between-person average differences in positive affect ($p < .05$) across both seasons.

The results further indicated significant interactions between a MAp goal and the linear ($p < .05$) and quadratic terms ($p < .05$) for time, predicting positive affect. When plotting this interaction, the trend that emerged was contrary to what we had expected. More specifically, players with lower levels of MAp goal adoption showed increased positive affect, whereas participants high in a MAp goal focus witnessed a reduction of positive affect, over the course of the two seasons. No other significant interactions emerged.

Table 2 Achievement Goals Predicting Well- and Ill-Being (Model B), and Cognitive Appraisals of Soccer Competition (Model C)

	Model B						Model C			
	Self-Esteem		Positive Affect		Negative Affect		Challenge Appraisals		Threat Appraisals	
Fixed Effects	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***	**Estimate**	***SE***
Intercept	5.93	0.95***	6.03	0.10***	2.15	0.10***	5.95	0.08***	2.86	0.15***
Slope for time (linear)	–0.04	0.14	–0.20	0.18	0.08	0.15	0.12	0.15	0.18	0.23
Slope for time (quadratic)	0.00	0.02	0.02	0.03	0.00	0.03	0.02	0.02	–0.03	0.04
Within-person level										
Mastery approach	0.24	0.07***	0.32	0.09***	–0.06	0.08	0.54	0.07***	–0.46	0.10***
Mastery avoidance	–0.10	0.04*	–0.08	0.05	0.07	0.05	0.01	0.04	0.28	0.06***
Performance approach	0.06	0.05	0.07	0.06	0.11	0.05*	0.07	0.04	0.03	0.07
Performance avoidance	–0.04	0.04	–0.03	0.05	–0.08	0.05	0.01	0.04	0.12	0.06*
Between-person level										
Mastery approach	0.32	0.18	0.32	0.24	–0.27	0.27	0.62	0.17***	–0.34	0.18
Mastery avoidance	–0.10	0.08	–0.07	0.09	0.19	0.11	–0.05	0.07	0.36	0.07***
Performance approach	0.15	0.09	0.13	0.10	0.01	0.13	0.08	0.08	–0.01	0.09
Performance avoidance	–0.11	0.08	–0.18	0.09*	–0.05	0.12	0.01	0.07	0.10	0.08
Interactions with slope for time (linear)										
Mastery approach	–0.24	0.33	–0.96	0.39*	0.14	0.38	–0.23	0.29	–0.67	0.43
Mastery avoidance	–0.15	0.16	–0.06	0.19	0.16	0.18	0.05	0.14	0.07	0.21
Performance approach	0.06	0.19	–0.02	0.23	–0.19	0.22	0.11	0.17	0.09	0.26
Performance avoidance	–0.15	0.16	0.17	0.19	0.14	0.18	–0.23	0.14	–0.16	0.21
Interactions with slope for time (quadratic)										
Mastery approach	0.05	0.05	0.16	0.06*	–0.04	0.06	0.03	0.05	0.12	0.07
Mastery avoidance	0.03	0.03	0.02	0.03	–0.03	0.03	–0.01	0.02	–0.01	0.04
Performance approach	–0.01	0.03	0.00	0.04	0.04	0.04	–0.02	0.03	–0.02	0.04
Performance avoidance	0.03	0.03	–0.02	0.03	–0.03	0.03	0.03	0.03	0.03	0.04

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

Achievement Goals Predicting Cognitive Appraisals (Model C)

Achievement goals explained 27.8% and 29.7% of the variance in challenge and threat appraisals, respectively (for the results, see Table 2). Challenge appraisals were positively predicted by within-person changes and between-person mean differences in MAp goals ($p < .001$). The other three goals were not significant predictors of challenge appraisals. The findings also showed that as MAp goal adoption increased at the within-person level, appraising soccer competition as a threat decreased over time ($p < .001$). MAp goal adoption did not account for between-person mean differences in threat appraisals ($p > .05$). A MAv goal focus was positively associated to within-person changes and between-person mean differences in threat appraisals across the two seasons ($p < .001$). The time-varying PAp goal predictors were unassociated with changes in threat appraisals ($p > .05$). Lastly, PAv goal adoption only corresponded to within-person increases in appraising soccer competition as a threat over time ($p < .05$). No significant interaction terms with time emerged.

Cognitive Appraisals (Controlling for Goals) Predicting Well- and Ill-Being (Model D)

The results of Model D are displayed in Table 3. When controlling for achievement goals, competition appraisals accounted for up to 18% of the variance in the measures of well- and ill-being. More specifically, the findings indicate that challenge appraisals positively predicted within-person changes and between-person mean differences in self-esteem ($p < .001$) and positive affect ($p < .001$) over time. Threat appraisals were unrelated to change in positive affect ($p > .05$), whereas it was negatively related to between-person average differences in self-esteem across the two seasons ($p < .001$). Challenge appraisals were inversely associated to within-person changes in negative affect ($p < .05$), whereas threat appraisals were unrelated to change in this outcome ($p > .05$). The interactions between time and appraisals were all nonsignificant.

Longitudinal Mediation

Aligned with recommendations by Krull and MacKinnon (2001), indirect effects were calculated based on the direct effects of the predictors on the mediators and the mediators on the outcomes variables while controlling for the predictors. Three significant indirect effects emerged at Level 1 (i.e., within-person associations). More specifically, challenge appraisals mediated the within-person associations between MAp goals with self-esteem ($B = .16$; $p < .01$), positive affect ($B = .24$; $p < .01$) and negative affect ($B = –.09$; $p < .01$).

Discussion

Drawing from the tenets of the 2 × 2 achievement goal framework (Elliot & McGregor, 2001), as well as the Lazarus model of stress (Lazarus, 1999), the current study extended and replicated the cross-sectional work of Adie et al. (2008) utilizing a longitudinal design. The hypothesized temporal relationships between

Table 3 Cognitive Appraisals of Soccer Competition (Controlling for Achievement Goals) Predicting Well- and Ill-Being (Model D)

Fixed Effects	Self-Esteem		Positive Affect		Negative Affect	
	Estimate	*SE*	Estimate	*SE*	Estimate	*SE*
Intercept	4.22	1.05***	3.35	1.37*	2.84	1.97
Slope for time (linear)	–0.07	0.13	–0.25	0.18	0.09	0.16
Slope for time (quadratic)	0.01	0.02	0.03	0.03	0.00	0.03
Within-person level						
Challenge appraisals	0.29	0.07***	0.44	0.08***	–0.17	0.08*
Threat appraisals	–0.06	0.05	–0.01	0.06	0.03	0.06
Between-person level						
Challenge appraisals	0.54	0.11***	0.66	0.15***	–0.19	0.21
Threat appraisals	–0.26	0.09***	–0.04	0.12	0.29	0.17
Interactions with slope for time (linear)						
Challenge appraisals	0.00	0.00	1.29	0.83	–1.24	1.01
Threat appraisals	0.00	0.00	–0.41	0.56	0.57	0.64
Interactions with slope for time (quadratic)						
Challenge appraisals	0.00	0.00	–0.35	0.21	0.37	0.25
Threat appraisals	0.00	0.00	0.09	0.15	–0.10	0.16

*$p < .05$; ***$p < .001$.

achievement goals, competition appraisals and indices of well- and ill-being were partially supported. In discussing our findings, we first compare the differences in the targeted variables across season one as a function of program attendance. Next, we discuss the results concerning stability and change of the targeted variables for players who remained in the program. We then proceed to address the findings regarding the interdependencies between achievement goals, competition appraisals, and well-and ill-being. Finally, we discuss the implications of the longitudinal mediational findings.

Program Attendance: Differences Across Season 1

The present findings indicated that MAp goal adoption, challenge appraisals and well-being (indexed by self-esteem and positive affect) remained high over the first season for the group that stayed in the soccer program, compared with the deterioration of scores exhibited by those who left. The results also revealed increased levels of threat appraisals and negative affect among both groups over the course of season one. However, this increase was exacerbated in the attrition group. One way of interpreting these findings is to suggest that, for youth players to continue developing in an elite sport program, it is important that they sustain high levels of a MAp goal focus, challenge appraisals and psychological and emotional well-being and avoid being marked by heightened negative affect and the propensity to see competition as threatening.

Stability and Change among Achievement Goals, Cognitive Appraisals and Well- and Ill-Being

Few studies have addressed change in achievement goals. Fryer and Elliot (2007) examined goal change from two perspectives, namely goal shifting and goal intensification. Goal shifting represents potential changes from one goal to another over time. Future sport research might benefit from examining goal shifting (e.g., does PAp goal adoption lead to subsequent PAv goal emphasis over the course of time?). Goal intensification, investigated in the current study, refers to change in levels of the same goals over time. The present findings showed no significant changes in MAp, MAv, and PAp goals from the beginning of season one through to the end of season two. Our findings differ to other research in the physical domain. Warburton and Spray (2008) reported linear decreases in MAp, PAp and PAv goals from primary to secondary school among PE students. Unlike the former study, a transition phase was not examined in the present investigation, such as from the academy to professional level. Our participants were repeatedly assessed within the same SoE for all assessment periods, and thus no transition period existed.

It is possible that in this particular sample, the players' achievement motives (e.g., fear of failure, need for achievement) and their perceptions of social environmental factors (e.g., coach-created motivational climate) were relatively stable in the SoE. As these variables are assumed to be antecedents of goal adoption (Elliot, 1999), it makes sense that at least three goals were constant across time (Conroy et al., 2003). For a PAv goal focus however, significant linear decreases were observed over a two year period. One possible reason for this reduction in PAv goal striving could be the competence feedback players received in the SoE

program. It is plausible that the players felt more confident as they realized they had a future at the SoE from one season to the next. That is, the players became less concerned regarding their perceived inabilities compared with others when they learnt they were staying in the SoE. Future work is necessary to test patterns of change in goals among elite athletes over time.

There is limited research investigating stability and change in competition appraisals over time. In line with findings from the educational domain (Giacobbi Jr. et al., 2007), the current study found challenge appraisals to be unchanged either in the short or long term. In contrast, Giacobbi Jr. et al. (2007) found significant linear increases in threat appraisals over a 14-day period in the build-up to an actual classroom examination. However, threat appraisals remained unchanged over time in the current study. It is possible that the level of generality and real-life relevance at which appraisals were measured accounted for variation in the findings between the two studies. Giacobbi Jr. and associates repeatedly assessed appraisals at the situational level (i.e., classroom examination), whereas in the current study, we measured appraisals regarding a hypothetical scenario at the contextual level (i.e., soccer competition). In line with Lazarus (1999), the findings of Giacobbi Jr. et al. suggest that as a real-life stressful event draws closer, individuals become increasingly concerned that they have not prepared accordingly (i.e., low perceived coping resources). As a result, they may view the event to be more threatening. In future research, it would be interesting to test the temporal patterns in appraisals in the build-up to a real-life sporting event.

Self-esteem, positive and negative affect were all observed to be stable across time in the current study. However, the results suggest that the current sample sustained high levels of well-being (i.e., self-esteem, positive affect), and experienced low levels of ill-being over the two seasons. In sum, the findings corroborate the assumption that well- and ill-being are separate constructs (e.g., Ryan & Deci, 2001).

Achievement Goals and Well- and Ill-Being

In extending previous work (e.g., Sideridis, 2005), the current longitudinal findings partially supported assumptions that achievement goals explain variability in well-being (Conroy et al., 2007; Duda, 2005). Congruent with predictions, a MAp goal emphasis corresponded to within-person increases in self-esteem and positive affect over time. However, there was also a significant interaction effect. This suggested that players high in a MAp goal focus exhibited reduced levels of positive affect over the course of the two seasons, whereas players low in a MAp goal emphasis witnessed increased levels of positive affect over the same time period. Although this interaction is at odds with theoretical predictions (e.g., Duda, 2005), several points are noteworthy.

Firstly, the long term objective of the SoE was to develop young talented players into future professionals. Because these players were already of a high playing ability, attaining further improvements in performance (e.g., learning an advanced skill) when pursuing a MAp goal could have been viewed as overly challenging among this cohort. Under such conditions, it might not be surprising that in the pursuit of this goal players reported less feelings of positive affect over the two seasons. Second, it is important to note that although a high MAp goal focus was associated with reduced levels of positive affect over the two seasons, players did

not subsequently witness increased levels of negative affect in relation to this goal emphasis. Third, some researchers view positive affect as an indicator of hedonic well-being that is more fleeting and difficult to sustain. Instead, it is argued that a greater emphasis be placed on determining motivational predictors of well-being conceptualized in terms of optimal functioning and eudaimonia (e.g., self-esteem; see Ryan & Deci, 2001 for a review).

With respect to the hypothesized temporal relationships concerning MAv goal adoption and well-/ill-being, our predictions were only partially supported. Extending cross-sectional research (Adie et al., 2008), our findings at the within-person level suggest that players' ongoing concerns regarding self-/task-referenced incompetence have negative ramifications for their self-esteem as they continue training and competing. Incongruent with our hypotheses, MAv goals were unrelated to experiences of positive and negative affect over time. The null relationship may be explained by the way positive and negative affect was measured in the current study. In using a composite measure of affect we may have masked the potential temporal links between MAv goal adoption and distinct types of emotions. Previous research has proposed and supported empirical links between the trichotomous goal model and discrete emotions organized into a 2 (activity/outcome focus) × 2 (positive/negative valence) taxonomy (Pekrun et al., 2006). The hypothesized interplay between a MAv goal emphasis and these discrete emotions (e.g., boredom, anger) are yet to be determined. All in all, our findings partially support theoretical predictions and are aligned with past sport studies that have also witnessed the maladaptive patterns of a MAv goal (e.g., Conroy et al., 2006; Nien & Duda, 2008).

Aligned with our hypotheses and past research (Adie et al., 2008; Pekrun et al., 2006, study 1), we found no relationship between PAp goal adoption and well-being over time. Before concluding that the adoption of a PAp goal has no bearing on athletes' psychological and emotional functioning, the present findings point toward potential long term hidden costs (see Elliot, 1999). Specifically, within-person increases in a PAp goal focus were associated to within-person increases in negative affect over time. For individuals adopting PAp goals, the emphasis is on displaying superior performance over others (e.g., Elliot & Conroy, 2005). By focusing on this type of goal, the players might have been at risk for experiencing anxiety and negative affect, especially considering at an elite level of competition it is not always possible to outperform others.

In partial support of our hypotheses and previous studies (e.g., Pekrun et al., 2006, study 2), a PAv goal was negatively associated with experiences of positive affect, accounting for between person differences. However, a PAv goal emphasis was unrelated to changes in negative affect and self-esteem among the SoE players. Research investigating the relevance of performance-based goals (i.e., PAp, PAv) on well-/ill-being in the sport domain is still in its infancy. Future sport research may wish examine the role of PAp and PAv goals in predicting other measures of well- and ill-being (e.g., subjective vitality, burnout).

Achievement Goals and Cognitive Appraisals

The present findings are aligned with previous empirical research (Adie et al., 2008; Nien & Duda, 2007) and support the assumption that achievement goals provide a perceptual framework in formulating cognitive appraisals of a stressful

event (McGregor & Elliot, 2002). Consonant with past education and sport research (e.g., McGregor & Elliot, 2002, study 1; Nien & Duda, 2007), the current study observed MAp goal adoption to be positively associated with challenge appraisals of a stressful event, accounting for both within-person changes and between-person mean differences. The within-person change findings indicate that as players raised their pursuit of attaining self-/task-referenced competence, they were subsequently more likely to view the obstacles of the hypothetical soccer competition as a positive challenge to overcome. The between-person mean differences results further suggest that players more concerned with developing mastery and personal improvement across time were more likely to interpret competition as an opportunity for personal growth and gain.

The hypothesized negative associations observed between MAp goal adoption and threat appraisals were only partially supported. This relationship, although hypothesized, did not emerge in prospective classroom- and sport-based research (e.g., McGregor & Elliot, 2002, study 1; Nien & Duda, 2007). Because these studies assessed goals at Time 1 (e.g., early semester/preseason) and appraisals at Time 2 (e.g., before an exam/game) only associations at the between-person level could be examined. Incidentally, this relationship was not supported at the between-person level of analysis in the current study. By considering time-varying goal predictors of cognitive appraisals however, we were able to detect a negative *within-person* association between MAp goal adoption and threat appraisals. This result suggests that as players MAp goal focus increased, their personal view regarding soccer competition as a threat subsequently decreased over time.

Consonant with our hypotheses and past sport research (e.g., Adie et al., 2008), the present findings suggested MAv goals were positively related to threat appraisals of soccer competition, and were unrelated to challenge appraisals. For threat appraisals, within-person changes and between-person mean differences emerged. The within-person change finding implies that as players concerns regarding their self-/task-referenced incompetence increased over time, then so too did their interpretation that soccer competition was potentially harmful to the self. The between-person mean difference result suggests that players avoiding the demonstration of their self-/task-referenced soccer inability were susceptible to appraising soccer competition as more threatening across the two seasons.

Incongruent with previous education and sport research (e.g., McGregor & Elliot, 2002, study 1; Nien & Duda, 2007), the expected temporal relationships between PAp goal adoption and cognitive appraisals (i.e., challenge and threat) of soccer competition did not emerge. It is possible to conclude from these findings that an emphasis on PAp goal adoption is irrelevant to how sport participants view stressful events over time. However, more research is warranted to investigate this claim given the mixed findings in the extant literature. For example, past research has found positive associations between PAp goals and challenge appraisals (e.g., McGregor & Elliot, 2002, study 1), threat appraisals (Nien & Duda, 2007) and with both types of appraisals (e.g., Adie et al., 2008).

Our hypotheses were partially supported with regard to the assumed relationships between PAv goal adoption and cognitive appraisals. Similar to McGregor and Elliot (2002, study 1), we found a PAv goal focus corresponded to higher threat appraisals of a stressful event. Only within-person associations were observed. That is to say, players who placed greater emphasis on trying to avoid normative

incompetence were more likely to interpret competition as a threat over time. Adie et al. (2008), in their study with adult team sport participants, did not witness a relationship between PAv goal adoption and threat appraisals, but did reveal a negative association of PAv goals with challenge appraisals. It could be that in an achievement setting where adolescent players are trained with the view to becoming professional (or not), they become more concerned about their inability to succeed compared with others and this has negative implications for their long term outlook on competition.

In summary, our results partially support theoretical predictions and past findings (Adie et al., 2008; McGregor & Elliot, 2002; Nien & Duda, 2007). They also illustrate the importance of adopting MAp goals in terms of viewing competition positively over time.

Cognitive Appraisals and Well- and Ill-Being

The present research partially supported the assumption that cognitive appraisals of a stressful event are relevant to personal well-being (Lazarus, 1999). In line with our hypotheses and past work (e.g., Adie et al., 2008; Giacobbi Jr. et al., 2007), challenge appraisals were positively linked to self-esteem and positive affect. More specifically, it was found that viewing soccer competition as an opportunity for experiencing mastery and personal growth had positive implications for both within-person changes and between-person mean differences in these two markers of well-being over time.

The proposition that holding threat appraisals of a stressful event is potentially harmful to one's personal welfare was only partially supported (Lazarus, 1999). Congruent with past research (e.g., Adie et al., 2008), the present findings implied that appraising soccer competition as a threat was potentially detrimental to players' self-esteem in the long term. More specifically, threat appraisals negatively predicted between-person mean differences in self-esteem. Inconsistent with our hypotheses and past work (Adie et al., 2008; Giacobbi Jr. et al. 2007), threat appraisals were unrelated to negative affect over time. However, appraising soccer competition as a challenge was found to predict within-person changes in negative affect over the two seasons. This finding indicates that as players view the challenges faced in soccer competition as opportunity to develop their skills then they become less likely to experience negative affect over time. In sum, the current results suggest that how the participants viewed competition is relevant to their psychological and emotional development in an elite youth soccer program.

Longitudinal Mediational Role of Competition Appraisals

Cognitive appraisals of a stressful event are proposed to mediate the demands of the objective environment on cognitions, emotions and behaviors (Lazarus, 1999). Following the assumption that achievement goals serve as a perceptual framework for interpreting the objective/achievement environment (McGregor & Elliot, 2002), we examined cognitive appraisals as potential mediators in the observed temporal relationships between achievement goals and well-/ill-being. Only partial evidence was found to support this proposition. The results suggest that increased pursuit of MAp goals corresponded to increased within-person levels of challenge appraisals,

which in turn, raised levels of wellness (i.e., self-esteem and positive affect), and reduced feelings of negative affect, over time.

In terms of the performance-based goals (i.e., PAp, PAv), mediated effects could not be examined on the basis that the conditions set out by Krull and MacKinnon (2001) were not fully met. For example, despite finding PAv goal adoption to predict within-person increases in threat appraisals, the latter were unrelated to well- and ill-being at this same level. Future research may consider exploring other psychological mechanisms (e.g., concentration disruption) that could potentially explain the observed relationships between performance-based goals and well-/ill-being.

Limitations, Additional Future Research Directions, and Conclusions

The main limitation of the current study was that its findings stem from correlational data. Nonetheless, the current study went beyond typical cross-sectional research (e.g., Adie et al., 2008) and tested the theoretically assumed relationships between achievement goals, competition appraisals, and indices of well- and ill-being via a longitudinal design (e.g., Duda, 2005; Lazarus, 1999). To provide information regarding causality, future research could examine the relevance of experimental goal conditions on appraisals and well-being.

Another study limitation was that our measure of the MAp goal fell short of acceptable levels of internal consistency on some of the waves it was administered. Thus, although the present findings concerning the MAp goal mostly support theoretical predictions and past findings (Adie et al., 2008; Elliot & Conroy, 2005), our results should be interpreted with caution. Past sport studies (e.g., Nien & Duda, 2008) have reported and dealt with similar psychometric issues by omitting the same problematic item (i.e., "It is important for me to master/perfect all parts of my game") when employing the MAp subscale of the AGQ-S (Conroy et al., 2003). A closer inspection of this problematic item indicates that it focuses on the "development of competence" (i.e., absolute or task-referenced competence), whereas the content of the other two items (e.g., "It is important to me to perform as well as I possibly can") reflect "performing as well as possible" (i.e., intrapersonal or self-referenced competence). In light of this issue, some researchers have called for the development of measurement instruments to capture absolute and intrapersonal mastery approach (and avoidance) goals (see Elliot & Murayama, 2008). In any event, future research needs to consider developing a new measure of the MAp goal construct or revising the existing AGQ-S subscale (Conroy et al., 2003).

The generalizability of the present findings may be limited to the sport from which the data were collected. It would be worthwhile testing the hypothesized sequence of temporal relationships across other sports. Furthermore, we only considered a two-level hierarchical structure of our data (Singer & Willett, 2003). It is possible that variations among the examined variables could exist at a team level. Unfortunately, the current study comprised only six teams which is an insufficient number of higher level units.[1] Future research could examine whether changes in well- and ill-being as a function of adopting achievement goals (and associated appraisals) varies over time within individuals across different teams (or sports).

Subsequent work in this area may also benefit from testing the full hierarchical model of achievement motivation (see Elliot, 1999; Elliot & McGregor, 2001)

in relation to the prediction of both performance and well-being indicators. Elliot (1999) proposed a series of antecedents (e.g., competence perceptions) that indirectly relate to achievement patterns/well-being, whereas the goals are held to play a proximal role in regulating these outcomes. Such work could advance theoretical and practical understanding by discerning which goal antecedents/goals are optimal for both successful performance and optimal functioning. On a different note, some researchers have begun to employ a multiple goal approach (e.g., MAp/PAp goal combinations; Linnenbrink, 2005) to predict variability in well-being. How different goal combinations relate to indicators of well- and ill-being in an athletic setting would be another interesting line of inquiry for researchers to pursue.

In sum, the current findings only partially supported the hypothesized role of the four achievement goals in explaining variance in well- and ill-being among sport participants (e.g., Duda, 2005). Although to be interpreted with caution, the results provide preliminary evidence of the long term implications of MAp goal adoption in terms of how soccer competition is appraised, and the self perceptions of the participants. Based on our findings, we suggest tentatively that practitioners working in elite youth soccer programs consider strategies to optimize MAp goals to shape how their athletes view competition, and in turn, to build their self-esteem. In terms of this sample, the ramifications of a MAp goal emphasis on positive affect experienced across two competitive seasons are less clear.

Note

1. Because the present sample was also represented at a team level, the standard errors from the regression analyses may have been potentially biased. Normally, the nesting of teams would be accounted for by adding a third level to the analyses. However, this was not a viable option with the very few higher units available (i.e., 6 teams). Following the suggestion of an anonymous reviewer, models A–D were reanalyzed by including five dummy codes to represent the six different teams at the second level of the analyses. After adding these dummy variables and repeating all analyses, only 2 out of 111 regression coefficients changed substantially. More specifically, the regression coefficients for PAp goal adoption predicting within-person changes in negative affect ($B = .11$; $p < .05$), and PAv goal adoption predicting between-person mean differences in positive affect ($B = –.18$; $p < .05$) turned nonsignificant ($p > .05$).

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