The 2 × 2 Model of Perfectionism and School- and Community-Based Sport Participation

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Abstract

This study adopted the 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010) to examine the unique and interactive effects of two dimensions of perfectionism (personal standards perfectionism; PSP and evaluative concerns perfectionism; ECP) on personal and interpersonal indicators of participant experience in youth sport (enjoyment, physical self-worth, and friendship quality). Participants (n = 219, M age = 15.12, SD = 2.02) were recruited from various school- and community-based sports and completed a multi-section questionnaire. Consideration of main and interaction effects indicated that pure PSP (high PSP/low ECP) was associated with the most positive sport experience and pure ECP (low PSP/high ECP) was associated with the least positive sport experience. The findings suggest that subtypes of perfectionism from the 2 × 2 model are predictive of differing experiences in youth sport participation.

Keywords: motivation, achievement striving, sport experience

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Youth sport provides a context in which young people can gain a range of physical health, psychosocial, emotional, and developmental benefits (Fraser-Thomas & Côté, 2006). In terms of the psychosocial and emotional gains, positive youth sport experiences can involve considerable enjoyment, enhanced physical self-worth, and constructive peer relations (Fraser-Thomas & Côté, 2006). Enjoyment captures the positive feelings that can accompany sport such as pleasure and fun (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993), while enhanced physical self-worth relates to how positively individuals can come to view themselves in the physical domain (Fox, 2000). These two outcomes exemplify the personal benefits of youth sport participation. Constructive peer relations, by contrast, concern the quality of friendships in sport and peer acceptance and exemplify how the benefits of youth sport participation can also be interpersonal (Smith, 2007). In order to ensure that these rewards are available for all participants, factors that shape youth sport experiences need to be examined (Fraser-Thomas & Côté, 2006).

Over the past three and a half decades, a social-cognitive approach to motivation has emerged as one of the most popular means of understanding youth sport experiences and related consequences (Roberts, 2012). There are a number of models, grounded in a social-cognitive approach, that have been adopted in this regard. Some of the most influential models include perceived competence theory (Harter, 1978), self-efficacy theory (Bandura, 1997), and achievement goal theory (Nicholls, 1984). Common to these models is the role of the social environment in shaping experiences in sport and the mediating influence of how an individual gives meaning to their achievement-related behavior through perceptions of competence and success (Roberts, 2012; Weiss, 2008). In support of this approach, a substantial amount of

research attests to the importance of social-environmental and individual factors from within these models when predicting patterns of cognition, affect, and behaviors in youth sport (e.g., achievement goals, perceived competence, and the perceived motivational climate; Roberts, 2012). In accord, within this perspective, other factors that give meaning to achievement-related behavior are likely to be important, including personality characteristics such as perfectionism (Flett & Hewitt, 2005).

Multidimensional perfectionism

Perfectionism is a multidimensional personality trait broadly defined as a combination of exceedingly high standards and a preoccupation with harsh critical evaluations (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Consistent with the definition of perfectionism, two dimensions of perfectionism can be differentiated (Stoeber, 2011). The first dimension has been termed personal standards perfectionism (PSP; Gaudreau & Thompson, 2010) and captures aspects of perfectionism that reflect striving for perfection and setting excessively high personal performance standards. The second dimension has been termed evaluative concerns perfectionism (ECP; Gaudreau & Thompson, 2010) and captures aspects of perfectionism that reflect doubts about abilities to meet personally- and socially-imposed perfectionistic standards, concerns over making mistakes, and fears over failure and negative social evaluations. These two dimensions are typically captured using single subscales or a combination of subscales from existing measures. For example, personal standards (i.e., the setting of and striving for high standards; Frost et al., 1990) can be used as a proxy of PSP and concern over mistakes (i.e., an overly critical self-evaluative tendency involving the fear of making mistakes; Frost et al., 1990) and/or doubts about actions (i.e., the sense that a

performance or task has not been satisfactorily completed as well as feelings of uncertainty regarding when a task is complete; Frost et al., 1990) as proxies of ECP (see Stoeber, 2011).

Regarding PSP, it appears to energize achievement striving in a manner similar to how goals can motivate and direct behavior toward satisfying experiences (see Locke & Latham, 1990). In accord, research has found PSP to have largely positive associations with adaptive characteristics in the sport domain, particularly when its association with ECP is controlled for (see Gotwals, Stoeber, Dunn, & Stoll, 2012). Of note, PSP is linked with factors that contribute to a more adaptive approach to defining success and judging one's capabilities, such as greater task-involvement and perceived ability (e.g., Appleton, Hall, & Hill, 2009; Dunn, Causgrove Dunn, & Syrotuik, 2002; Hall, Kerr, & Matthews, 1998; Lemyre, Hall, & Roberts, 2008). Respectively, PSP is associated with indicators of positive sport experiences such as positive affect, satisfaction, self-confidence, self-esteem, and perceived social acceptance (e.g., Appleton et al., 2009; Hill, Hall, Appleton, & Kozub, 2008; Kaye, Conroy, & Fifer, 2008; McArdle & Duda, 2008; Ommundsen, Roberts, Lemyre, & Miller, 2005). It is also inversely associated with indicators of negative sport experiences such as anxiety and athlete burnout (e.g., Appleton et al., 2009; Hall et al., 1998; Hill, 2013). Overall, research suggests that PSP may be associated with more positive experiences in youth sport (at least in the absence of ECP).

In contrast to PSP, ECP captures dysfunctional beliefs and attitudes that appear to distort the meaning given to achievement achievement-related behavior so to contribute to a range of psychologically debilitating outcomes (Hall, 2006). Research supports this, indicating that ECP has positive associations with a range of maladaptive characteristics. This includes factors that contribute to a more maladaptive approach to defining competence and success, such as ego-involvement (e.g., Dunn et al., 2002; Lemyre et al., 2008; Ommundsen et al., 2005). Congruent

with these findings, ECP is positively associated with indicators of negative sport experiences such as negative affect, anger, anxiety, body image concerns, athlete burnout, psychological need thwarting, and peer conflict (e.g., Dunn, Craft, Causgrove Dunn, & Gotwals, 2011; Frost & Henderson, 1991; Hall et al., 1998; Kaye et al., 2008; Mallinson & Hill, 2011; Ommundsen et al., 2005; Vallance, Dunn, & Causgrove Dunn, 2006). It is also often inversely associated with a more adaptive personal meaning of achievement (e.g., task-involvement; Dunn et al., 2002; Lemyre et al., 2008; Ommundsen et al., 2005) and indicators of positive sport experiences (e.g., life satisfaction, subjective vitality, perceptions of self-worth, self-esteem, and sport friendship quality; Gaudreau & Verner-Filion, 2012; Gotwals, Dunn, & Wayment, 2003; Ommundsen et al., 2005; McArdle & Duda, 2008). Collectively, this research suggests that ECP may be associated with a more adverse experience in youth sport.

One important limitation of research that has examined the relationships between perfectionism and outcomes in sport is that the potential interactive effects between PSP and ECP have largely been neglected. As observed by others (e.g., Gaudreau & Verner-Filion, 2012; Gotwals, 2011; Hill, 2013), research has instead focused on the unique effects of the two dimensions (e.g., Appleton et al., 2009; Stoeber, Stoll, Salmi, & Tiikkaja, 2009; Hill et al., 2008). Examining the interaction is important because it can provide insight into whether the relationship between two variables is altered in the presence of another (Baron & Kenny, 1986). Here, it could help to ascertain whether the presence of PSP and ECP alters their respective associations with indicators of participant experience and outcomes in sport. Recent research in sport supports the importance of examining the interaction as the interplay between PSP and ECP accounts for additional variance in burnout in junior soccer players (Hill, 2013) and well-being in junior and senior athletes from a range of sports (Gaudreau & Verner-Filion, 2012).

While this is noteworthy, only one of these studies focused solely on youth athletes (Hill, 2013) and this was in relation to athlete burnout, an issue more pertinent to aspiring elite athletes rather than relevant to the whole range of youth participants who take part in sport at various levels, including school- and community-based sport. In accord, research that examines the unique and interactive effects of PSP and ECP on indicators of experience in youth sport that are relevant across all levels of competition (e.g., enjoyment, physical self-worth, and friendship quality) would be a valuable addition to this area.

The 2 × 2 model of perfectionism

The emphasis on the interplay between dimensions of perfectionism is one of the main strengths of the recently developed 2 × 2 model of perfectionism (Gaudreau, 2012; Gaudreau & Thompson, 2010). According to this model, the two dimensions of perfectionism co-occur to varying degrees within all individuals and their effects are dependent upon the composition of specific combinations or subtypes. The first subtype is non-perfectionism (low PSP/low ECP) and describes individuals who are not personally oriented towards striving for perfection and do not perceive significant others as putting pressure on them to pursue perfectionistic standards. The second subtype is pure PSP (high PSP/low ECP) and describes individuals holding perfectionistic standards derived solely from the self. The third subtype is pure ECP (low PSP/high ECP) and characterizes individuals who strive to meet perfectionistic standards derived from pressures in the social environment. The fourth subtype is mixed perfectionism (high PSP/high ECP) and captures individuals that perceive pressure from significant others to strive towards perfection but are also personally adhering to perfectionistic standards.

In order to assess the comparative effects of the four subtypes, the 2 × 2 model proposes four hypotheses (Gaudreau & Thompson, 2010). The hypotheses are based on concepts derived

mainly from organismic theories of human motivation, such as internalization and regulation of motives and perceived congruence between the self and social environment (see Gaudreau & Thompson, 2010). Hypothesis 1 states that pure PSP will either be more adaptive (H1a), more maladaptive (H1b), or no different (H1c) when compared to non-perfectionism. This reflects the controversy concerning the valence of PSP (Gotwals et al., 2012). Hypothesis 2 posits that pure ECP will be associated with the worst psychological outcomes when compared to all other subtypes. This is based on the assertion that pure ECP represents a non-internalized and externally regulated subtype of perfectionism in which individual motives and values are predominantly derived from pressures in the social environment. Hypothesis 3 states that mixed perfectionism will be more adaptive than pure ECP and hypothesis 4 contends that mixed perfectionism will be more maladaptive than pure PSP. The latter two hypotheses are based on the assertion that mixed perfectionism is a partially internalized subtype of perfectionism in which personal values are considered congruent with pressures from the social environment.

A relatively small (but growing) number of studies have tested the hypotheses of the 2 × 2 model inside and outside of sport. Research involving the two dimensions of perfectionism (as constituted by single subscales or a combination of subscales from existing measures) has found support for the adaptive nature of pure PSP in comparison to non-perfectionism (H1a) and, on occasion, has found no difference between these two subtypes (H1c) (Cumming & Duda, 2012; Douilliez & Lefèvre, 2011; Gaudreau, 2012; Gaudreau & Thompson, 2010; Gaudreau & Verner-Filion, 2012; Hill, 2013). In line with hypothesis 2, pure ECP has typically been found to be the most detrimental subtype, including when compared to mixed perfectionism (i.e., hypothesis 3, Gaudreau, 2012; Gaudreau & Thompson, 2010; Gaudreau & Verner-Filion, 2012; Hill, 2013). Finally, mixed perfectionism has been found to be more maladaptive than pure PSP (i.e.,

hypothesis 4, Douilliez & Lefèvre, 2011; Gaudreau, 2012; Gaudreau & Thompson, 2010; Hill, 2013). This latter comparison is of particular interest as some researchers consider mixed perfectionism the only subtype to fully capture perfectionism (e.g., Hall, Hill, & Appleton, 2012). This is important here because while the motivating effects of PSP are typically accepted in sport, this comparison may enable assessment of the more contentious issue regarding any costs of perfectionism when high levels of PSP are combined with high levels of ECP (see Flett & Hewitt, 2005; Hall et al., 2012).

The current study

The current study aims to examine the unique effects and interaction between PSP and ECP in predicting personal (enjoyment and physical self-worth) and interpersonal (friendship quality) indicators of experiences in youth sport. To do so, the recently developed 2 × 2 model of perfectionism was adopted. This model provides a number of hypotheses that can be tested in relation to the comparative effects of four perfectionism subtypes. Drawing on extant research and the 2 × 2 model of perfectionism it is hypothesized that:

Hypothesis 1 – Pure PSP will be associated with higher levels of enjoyment, physical self-worth, and positive aspects of friendship quality when compared to non-perfectionism (H1a). This is because combinations of perfectionism similar to high PSP and low ECP are associated with positive physical self-perceptions among competitive athletes (Dunn et al., 2011) and have been linked with greater positive affect when compared to dance participants with low PSP and low ECP (Cumming & Duda, 2012). There is also evidence that youth soccer players perceive their relations with peers as being more constructive when ECP is low (Ommundsen et al., 2005).

Hypothesis 2 – Pure ECP will be associated with the least favorable youth sport experiences (i.e., lowest levels of enjoyment, physical self-worth, and positive aspects of friendship quality) when compared to all other subtypes. This is because dance participants with low PSP and high ECP have been linked with greater negative affectivity when compared to dance participants with high PSP and low ECP (Cumming & Duda, 2012) and lower levels of general positive affect have been identified when pure ECP is compared to non-perfectionism in athletes (Gaudreau & Verner-Filion, 2012). In addition, low levels of self-esteem (Gotwals et al., 2003) and negative peer relationships (Ommundsen et al., 2005) have been identified when ECP is high.

Hypotheses 3 and 4 – Mixed perfectionism will be associated with higher levels of enjoyment, physical self-worth, and positive aspects of friendship quality when compared to pure ECP but lower levels of these indicators when compared to pure PSP. This is expected because of the proposed protective effect of high PSP on ECP (Gaudreau & Verner-Filion, 2012) and findings that suggest a combination of perfectionism reflective of high PSP and high ECP is associated with more detrimental athlete self-perceptions (Dunn et al., 2011). It is also supported by research that suggests mixed perfectionism is associated with higher levels of psychological adjustment among athletes compared to pure ECP but lower levels compared to pure PSP (Gaudreau & Verner-Filion, 2012).

Method

Participants

Following institutional ethical approval, 241 young sport participants (n = 98 males, n = 143 females, M age = 15.11 years, SD = 2.03 years, range = 11-19 years) were recruited from various school- and community-based sports. Participants were involved in their sport at a

recreational (*n* = 27), club (*n* = 107), district (*n* = 34), county (*n* = 31), regional (*n* = 28), and/or national level (*n* = 14). On average, participants had taken part in their sport for 3.13 years (*SD* = 2.36) and trained and played for 4.12 hours per week (*SD* = 3.62). The sample reported on a 9-point Likert scale that their sport participation was very important (*M* = 6.93, *SD* = 1.73) in comparison to the other activities in their lives (1 = *not at all important*; 9 = *extremely important*).

Procedure

Initial contact was made with gatekeepers (e.g., coach, club secretary, and/or head teacher) of various school- and community-based sport groups in the North of England to explain the purpose and requirements of the study. For the school- and community-based sport groups willing to take part, an information sheet was distributed to prospective participants and their parents/guardian. Parent/guardian consent and child assent was gained for those willing to participate. Subsequently, participants were invited to complete a multi-section questionnaire. Questionnaires were administered at a time convenient for the organizer of the school- or community-based sport group (e.g., before or after a sports session).

Instruments

Multidimensional perfectionism. The *Sport Multidimensional Perfectionism Scale 2* (Sport-MPS-2; Gotwals & Dunn, 2009) was used to assess PSP and ECP. The Sport-MPS-2 contains 6 subscales labeled Personal Standards (7 items, e.g., 'I have extremely high goals for myself in my sport'), Concern Over Mistakes (8 items, e.g., 'If I fail in competition, I feel like a failure as a person'), Doubts About Actions (6 items, e.g., 'Prior to competition, I rarely feel satisfied with my training'), Organization (6 items, e.g., 'I have and follow a pre-competitive routine'), Perceived Coach Pressure (6 items, e.g., 'My coach sets very high standards for me in

competition') and Perceived Parental Pressure (9 items, e.g., 'My parents expect excellence from me in my sport'). Items are measured on a 5-point Likert scale (1 = *strongly disagree*; 5 = *strongly agree*) and participants are asked to indicate how much they agree or disagree with statements that identify how athletes view certain aspects of their competitive sport experiences. Multiple independent investigations have produced supportive evidence regarding the validity and reliability of the Sport-MPS-2, including evidence regarding the instrument's internal reliability and subscale structure (e.g., Gotwals & Dunn, 2009; Gotwals, Dunn, Causgrove Dunn, & Gamache, 2010). Consistent with the recent recommendations of Stoeber (2011), personal standards was used to reflect PSP and a combination of concern over mistakes and doubts about actions was used to constitute ECP. Prior to adding them together, scores for concern over mistakes and doubts about actions were standardized so to ensure there was equal weighting in the composite. Scores for personal standards were also standardized for ease of interpretation and comparability.

Enjoyment. Perceptions of enjoyment were captured using the sport enjoyment subscale of the *Sport Commitment Model* (Scanlan et al., 1993). The subscale includes 4 items asking about the participant's feelings towards playing their sport that season (e.g., 'Are you happy playing your sport?'). Participants are asked to the rate items on a 5-point Likert scale (1 = *not at all*; 5 = *very much*). Scanlan et al. (1993) have produced supportive evidence regarding adequate internal reliability of the subscale ($\alpha = .94$).

Physical self-worth. Perceptions of participant's physical self-worth were assessed using the physical self-worth subscale of the *Children and Youth Physical Self-Perception Profile* (Whitehead, 1995). The subscale contains 6 items in a structured alternative format (e.g., 'Some kids are proud of themselves physically' but 'Other kids don't have much to be proud of

physically'). The participant is asked to indicate which of the two statements comprising the item is most like them and the degree to which it is "sort of true" or "really true" for them. Responses are scored on a scale of 1 to 4, with 1 corresponding to a "really true" of me response to a negative statement and 4 corresponding to a "really true" of me response to a positive statement. Jones, Polman, and Peters (2009) have provided supportive evidence regarding adequate internal reliability of the subscale ($\alpha \geq .70$).

Sport friendship quality. The *Sport Friendship Quality Scale* (SFQS; Weiss & Smith, 1999) was used to assess participant's perceptions of their relationship with their best sport friend. The SFQS includes 22 items that assess the positive friendship aspects of self-esteem enhancement and supportiveness (SEES; 4 items, e.g., 'After I make mistakes, my friend encourages me'), loyalty and intimacy (LAI; 4 items, e.g., 'My friend looks out for me'), things in common (TIC; 4 items, e.g., 'My friend and I do similar things'), companionship and pleasant play (CPP; 4 items, e.g., 'My friend and I play well together') and conflict resolution (CR; 3 items, e.g., 'My friend and I make up easily when we have a fight'). The instrument also includes a friendship conflict aspect (CON; 3 items, e.g., 'My friend and I fight'). Items are rated on a 5-point Likert scale (1 = *not at all true*; 5 = *really true*). In terms of reliability and validity evidence, Weiss and Smith (1999) have demonstrated a satisfactory factorial structure and acceptable internal reliability for each subscale (α's $\geq .70$).

Results

Preliminary analysis

A series of preliminary analyses (i.e., missing value analysis, assessment of normality, and an internal reliability analysis) were conducted prior to the main analyses. Missing value analysis indicated that there were 160 complete cases and 81 incomplete cases. Consistent with

the recommendations of Tabachnick and Fidell (2007), 5 of the incomplete case participants were removed because their item non-response exceeded 5%. In terms of the remaining incomplete cases (n = 76), none of the participants had item non-response for more than 5 items (M = 1.89, SD = 1.27, range = 1 to 5 items) and the ratio of missing data patterns to the number of incomplete cases was high (ratio = 0.85). As a result, the data was deemed missing in a non-systematic manner and missing values were replaced using the mean of the non-missing items from the subscale in each individual case (see Graham, Cumsille, & Elek-Fisk, 2003).

The data was then assessed for univariate and multivariate normality in accordance with Tabachnick and Fidell's (2007) recommendations. In terms of univariate outliers, 15 participants were removed based on standardized z-scores for subscales larger than 3.29 ($p < .001$, two-tailed). A further 2 participants' scores were considered multivariate outliers and removed because their Mahalanobis distance was greater than $\chi^2_{(10)} = 29.59$ ($p < .001$). The sample for the main statistical analysis comprised the remaining 219 participants (n = 88 males, n = 131 females, M age = 15.12, SD = 2.02, range = 11 to 19 years). Internal reliability was sufficient for all of the subscales as all Cronbach's alpha coefficients were $\geq .70$ (see Table 1).

Descriptive statistics and bivariate correlation coefficients

Based on the Likert scales adopted and range of scores, the sample reported moderate levels of PSP and ECP and moderate-to-high levels of all of the indicators of youth sport experience (see Table 1). PSP had significant positive correlations with enjoyment and four of the sport friendship quality subscales (self-esteem enhancement and supportiveness, things in common, companionship and pleasant play, and conflict resolution). It was unrelated to physical self-worth and the remaining sport friendship quality subscales (loyalty and intimacy and friendship conflict). ECP had significant negative correlations with physical self-worth and one

of the sport friendship quality subscales (self-esteem enhancement and supportiveness). It had a significant positive correlation with friendship conflict and was unrelated to enjoyment and the remaining sport friendship quality subscales (loyalty and intimacy, things in common, companionship and pleasant play, and conflict resolution).

Test of the hypotheses of the 2 × 2 model of perfectionism

The hypotheses of the 2 × 2 model were tested using the guidelines provided by Gaudreau and colleagues (Gaudreau, 2012; Gaudreau & Thompson, 2010). A hierarchical regression analysis was conducted for each of the indicators of youth sport experience. In the first step, scores for PSP and ECP were entered (main effects model). In the second step, the interactive term (i.e., the product of PSP and ECP) was entered (interaction effect model). Where a significant interaction effect did not emerge, the main effects model was interpreted using the heuristic provided by Gaudreau (2012). This allows the hypotheses of the 2 × 2 model to be tested using main effects only. Where a significant interactive effect was identified, simple slopes analyses were conducted. The first simple slope of PSP at low ECP (-1SD) was used to compare pure PSP and non-perfectionism (hypothesis 1a; pure PSP will be more adaptive when compared to non-perfectionism). The second simple slope of PSP at high ECP (+1SD) was used to compare pure ECP and mixed perfectionism (hypothesis 3; mixed perfectionism will be more adaptive than pure ECP). The third simple slope of ECP at low PSP (-1SD) was used to compare pure ECP and non-perfectionism (hypothesis 2; pure ECP will be associated with the least favorable psychological outcomes). The fourth simple slope of ECP at high PSP (+1SD) was used to compare pure PSP and mixed perfectionism (hypothesis 4; mixed perfectionism will be more maladaptive than pure PSP). The final model (interaction effect model or main effects model) for each criterion variable are displayed in Table 2.

Enjoyment. In the interaction effect model, the interactive term between PSP and ECP was a non-significant predictor of enjoyment (B = .03, β =.10, t = 1.62, p = .11). The main effects model indicated that PSP and ECP accounted for a significant proportion of the variance in enjoyment. PSP was a significant positive predictor. ECP was a significant negative predictor. Based on Gaudreau's (2012) heuristic, this provided support for hypotheses 1a, 2, 3, and 4.

Physical self-worth. In the interaction effect model, the interactive term between PSP and ECP was a non-significant predictor of physical self-worth (B = -.00, β = -.02, t = -.24, p = .81). The main effects model indicated that PSP and ECP accounted for a significant proportion of the variance in physical self-worth. PSP was a significant positive predictor. ECP was a significant negative predictor. Based on Gaudreau's (2012) heuristic, this provided support for hypotheses 1a, 2, 3, and 4.

Sport friendship quality. Subscales of the sport friendship quality measure were analyzed separately. In the interaction effect models, the interactive term was a non-significant predictor of four of the sport friendship quality subscales (self-esteem enhancement and supportiveness, B = .04, β = .12, t = 1.84, p = .07, loyalty and intimacy, B = .02, β = .04, t = .65, p = .52, companionship and pleasant play, B = .02, β = .07, t = 1.06, p = .29, and friendship conflict, B =.00, β = .00, t = .05, p = .96) but was a significant predictor of the remaining two sport friendship quality subscales (things in common and conflict resolution). Main effects models indicated that PSP and ECP accounted for a significant proportion of the variance in the four sport friendship quality subscales (self-esteem enhancement and supportiveness, loyalty and intimacy, companionship and pleasant play, and friendship conflict). In the main effects models, PSP was a significant positive predictor of self-esteem enhancement and supportiveness, loyalty and intimacy, and companionship and pleasant play. It was not a significant predictor of

friendship conflict. In contrast, ECP was a significant negative predictor of self-esteem enhancement and supportiveness, loyalty and intimacy, and companionship and pleasant play. It was also a significant positive predictor of friendship conflict. With reference to Gaudreau's (2012) heuristic, results for self-esteem enhancement and supportiveness, loyalty and intimacy, and companionship and pleasant play provided support for hypotheses 1a, 2, 3, and 4. The findings for friendship conflict provided support for hypotheses 2 and 4 (but not 1a or 3).

Interaction effects for things in common and conflict resolution are displayed in Figures, 1 and 2. Simple slopes analyses for things in common demonstrated that the second (B = .33, β = .43, 95% CI = .18 to .47, $p < .05$) and third (B = -.14, β = -.33, 95% CI = -.22 to -.06, $p < .05$) simple slopes were significant. The first (B = .13, β = .17, 95% CI = -.02 to .27, $p > .05$) and fourth (B = -.03, β = -.07, 95% CI = -.11 to .05, $p > .05$) simple slopes were non-significant. These findings support hypotheses 2 and 3 (but not 1a or 4). For conflict resolution, the second (B = .38, β = .45, 95% CI = .22 to .53, $p < .05$) and third (B = -.20, β = -.42, 95% CI = -.29 to -.11, $p < .05$) simple slopes were significant. The first (B = .12, β = .14, 95% CI = -.04 to .27, $p > .05$) and fourth (B = -.05, β = -.11, 95% CI = -.14 to .04, $p > .05$) simple slopes were non-significant. These findings support hypotheses 2 and 3 (but not 1a or 4).

Discussion

The current study examined the unique and interactive effects of two dimensions of perfectionism (PSP and ECP) on personal and interpersonal indicators of experience in youth sport (enjoyment, physical self-worth, and sport friendship quality) using the 2 × 2 model of perfectionism (Gaudreau & Thompson, 2010). Main and interaction effects indicated that pure PSP (high PSP/low ECP) was associated with the most positive sport experience with support for hypothesis 1a of the 2 × 2 model evident in terms of enjoyment, physical self-worth, and three of

the five positive aspects of sport friendship quality (self-esteem enhancement and supportiveness, loyalty and intimacy, and companionship and pleasant play). Pure ECP (low PSP/high ECP) was associated with the least positive sport experience with support evident for hypotheses 2 and 3 of the 2 × 2 model across all of the positive indicators of sport experience examined. Mixed perfectionism (low PSP/high ECP) was associated with a less favorable experience when compared to pure PSP with support for hypothesis 4 of the 2 × 2 model evident across indicators, with the exception of the two aspects of sport friendship quality where interactions were significant (things in common and conflict resolution).

Perfectionism subtypes and indicators of experience in youth sport

Pure PSP was associated with a more positive personal sport experience when compared to non-perfectionism (higher levels of both enjoyment and physical self-worth). This is consistent with the notion that pursuing goals and standards that are of personal value and interest is psychologically rewarding relative to the non-pursuit of such standards (Gaudreau & Thompson, 2010). Similar findings are reported elsewhere by studies examining the 2 × 2 model with regards indicators of psychological adjustment and well-being (Gaudreau & Thompson, 2010). There was more mixed evidence regarding pure PSP's comparative interpersonal sport experience, with some instances where higher levels of sport friendship quality were identified (self-esteem enhancement and supportiveness, loyalty and intimacy, and companionship and pleasant play) and some instances, including interactions, where there were no differences (things in common, conflict resolution, and friendship conflict). However, overall, pure PSP appears to be associated with a more positive sport participation experience for youths in the current study.

As predicted, pure ECP emerged as the subtype with the least favorable outcomes. According to tenets of the 2 × 2 model, this is the most problematic subtype because it is non-internalized, externally regulated, and lacks the buffering presence of PSP (Gaudreau & Verner-Filion, 2012). This was evident here in the comparisons with non-perfectionism. The presence of high ECP unmitigated by PSP was associated with higher levels of friendship conflict and lower levels of enjoyment, physical self-worth, and all five of the positive aspects of sport friendship quality relative to non-perfectionism. This adds to previous research that has found this subtype to be the most problematic relative to non-perfectionism (Douilliez & Lefèvre, 2011; Gaudreau & Thompson, 2010; Gaudreau & Verner-Filion, 2012; Hill, 2013). The same pattern of findings was also evident when compared to mixed perfectionism with the exception of friendship conflict where there was no difference. This is consistent with assertions that the protective effect of high PSP in mixed perfectionism may be more apparent when assessing positive rather than negative outcomes (see Douilliez & Lefèvre, 2011; Hill, 2013).

Of particular interest here were the effects of mixed perfectionism in relation to pure PSP. This is because mixed perfectionism is considered, by some researchers, as the closest proxy of perfectionism as traditionally described (e.g., a combination of both high striving for perfectionistic standards and high evaluative concerns; Blatt, 1995). Therefore, this comparison may provide insight into the issue of whether there are any potential costs associated with energizing performance in sport via this subtype of perfectionism (Flett & Hewitt, 2005; Hall et al., 2012). Of note, mixed perfectionism conveyed comparatively less favorable outcomes than pure PSP in terms of enjoyment, physical self-worth, and four out of the six aspects of sport friendship quality. This was only not the case when a significant interaction was evident in predicting things in common and conflict resolution. These two subtypes did not significantly

differ for these aspects of sport friendship quality. Collectively, the findings suggest that when mixed perfectionism drives participation in sport it may carry some comparative costs in terms of youth sport experiences.

Implications

The study has a number of important implications. The endorsement of high personal standards is an integral part of youth sport participation with the pursuit and attainment of personally valued standards being able to promote a number of psychological, emotional, and interpersonal rewards. Therefore, setting and striving for high personal standards should be encouraged in youth sport. This endorsement is only likely to become problematic when the meaning youth sport participants give to their achievement-related behaviors also includes evaluative concerns and doubts (Hall, 2006; Stoeber, 2011). Within social-cognitive approaches to motivation, one means of waylaying these concerns would be to encourage participants to view competence in terms of personal mastery, promote cooperation (as opposed to social comparison), and reward effort regardless of the outcome. Embedding social cues that promote this approach in the social environment is known to promote more positive youth sport experiences (see Roberts, 2012, for a review). They may also have the added benefit of ensuring a more positive sport experience for youth participants who exhibit problematic subtypes of perfectionism (e.g., pure ECP and mixed perfectionism) (Hall, et al., 2012).

Limitations and future research

Whilst the findings of the current study are noteworthy, they should be considered in terms of the study's limitations. First, the research was cross-sectional and used self-report measures. Re-examining the relationships across time and incorporating multiple different methods of assessment is necessary to corroborate findings. Second, the sample comprised

school- and community-based sport participants from youth sports in the United Kingdom. In light of research that suggests differences exist across varying social-cultural groups in terms of perfectionism subtypes in the 2 × 2 model and psychological outcomes (Franche, Gaudreau, & Miranda, 2012), replicating the current findings cross-culturally would be valuable. Third, we did not account for potential differences in terms of whether individuals were participating in a team or individual sport. It is possible that findings for interpersonal indicators, such as friendship quality, may differ for those involved in team sports where participants may be more dependent on others in terms of performance (Evans, Eys, & Wolf, 2013). This would be an interesting avenue for future research. Fourth, the participants' level of sport participation varied from recreational to national level (capturing the whole range of participants who involve themselves in school- and community-based sports). Considering research in youth football that has found differences in factors that give meaning to achievement-related behavior (i.e., goal orientation) between elite and non-elite samples (see Kavussanu, White, Jowett, & England, 2011), future research may wish to examine the potential moderating influence of competitive level. Finally, the current study adopted a single domain-specific measure approach to constituting the two dimensions of perfectionism. Researchers may wish to adopt other approaches (e.g., Gaudreau & Verner-Filion, 2012; Hill, 2013) with differences in findings being a possibility depending upon the sub-dimensions examined.

Conclusion

The findings of the current study provide evidence that perfectionism subtypes identified in the 2 × 2 model of perfectionism predict personal and interpersonal indicators of experiences in youth sport. Pure PSP typically conveyed more favorable experiences and outcomes when compared to non-perfectionism. Pure ECP largely conferred the least favorable experiences

when compared to all other subtypes. Mixed perfectionism generally provided less favorable experiences when compared to pure PSP. Therefore, in its various guises, perfectionism has important implications for understanding participant experiences in youth sport.

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Table 1

Descriptive statistics and bivariate correlation coefficients between variables (n = 219).

	M	***SD***	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
1. PSP	3.10	.76	.82									
2. ECP	5.52	1.42	.58**	.89								
3. ENJOY	4.59	.57	.20**	-.10	.91							
4. PSW	2.71	.56	.01	-.24**	.21**	.70						
5. SEES	4.08	.70	.17*	-.18**	.41**	.18**	.77					
6. LAI	4.08	.84	.08	-.10	.27**	-.01	.48**	.83				
7. TIC	3.91	.75	.18**	.03	.35**	.06	.40**	.65**	.83			
8. CPP	4.21	.70	.16*	-.05	.35**	.08	.44**	.70**	.62**	.80		
9. CR	3.93	.83	.14*	-.10	.25**	.05	.46**	.41**	.43**	.36**	.78	
10. CON	2.31	1.11	.11	.31**	-.12	-.14*	-.28**	.04	.01	.01	-.12	.86

Note. *$p < .05$; **$p < .01$; internal reliability alpha coefficients are shown on the diagonal; PSP = personal standards perfectionism; ECP = evaluative concerns perfectionism; ENJOY = enjoyment; PSW = physical self-worth; SEES = self-esteem enhancement and supportiveness; LAI = loyalty and intimacy; TIC = things in common; CPP = companionship and pleasant play; CR = conflict resolution; CON = friendship conflict; values presented for PSP and ECP are derived from raw scores.

Table 2

Main and interaction effect models for each criterion variable (n = 219).

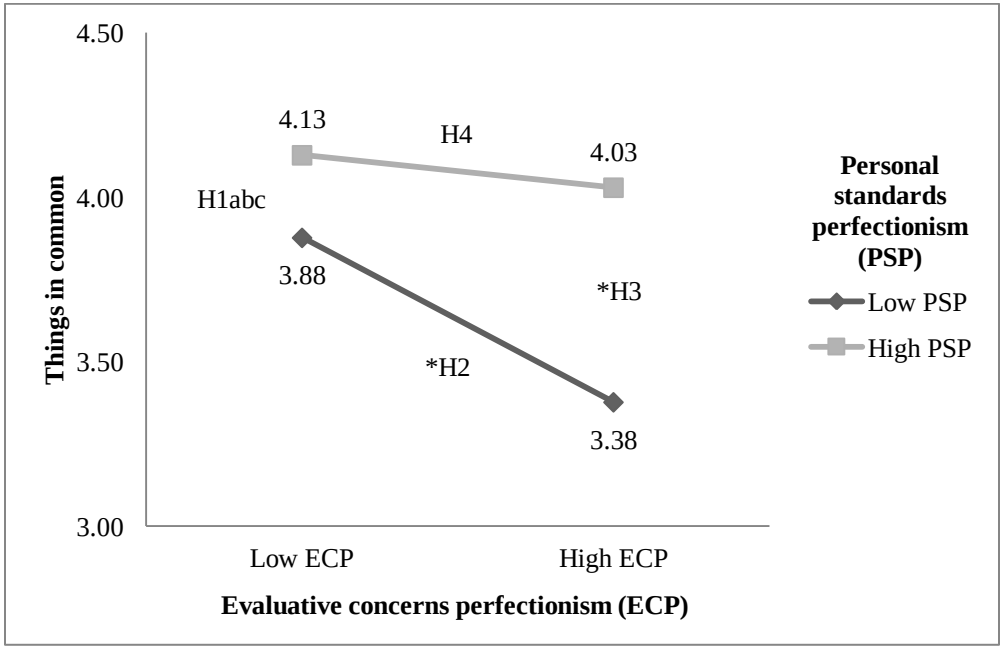
	F	**df**	R^2	ΔR^2	**PSP**	**ECP**	**PSP*ECP**
					β / *B* (*t*)		
Enjoyment (main effects model)							
Step 1	13.50**	(2, 216)	.11		.39** / .22 (4.97)	-.32** / -.11 (-4.10)	
Physical self-worth (main effects model)							
Step 1	9.51**	(2, 216)	.08		.19* / .11 (2.35)	-.35** / -.11 (-4.36)	
Self-esteem enhancement and supportiveness (main effects model)							
Step 1	18.29**	(2, 216)	.15		.41** / .29 (5.31)	-.42** / -.17 (-5.44)	
Loyalty and intimacy (main effects model)							
Step 1	4.21*	(2, 216)	.04		.21*/ .17 (2.53)	-.22** / -.10 (-2.63)	
Things in common (interaction effect model)							
Step 1	6.64**	(2, 216)	.06		.29** / .22 (3.62)	-.20* / -.08 (-2.43)	
Step 2	6.60**	(3, 215)	.08	.03*	.30** / .23 (3.75)	-.20* / -.09 (-2.49)	.16* / .06 (2.49)
Companionship and pleasant play (main effects model)							
Step 1	6.25**	(2, 216)	.06		.28** / .20 (3.45)	-.21** / -.09 (-2.64)	
Conflict resolution (interaction effect model)							
Step 1	7.49**	(2, 216)	.07		.29** / .24 (3.57)	-.27** / -.13 (-3.28)	
Step 2	7.95**	(3, 215)	.10	.04**	.30** / .25 (3.73)	-.27** / -.13 (-3.38)	.19** / .07 (2.89)

Friendship conflict (main effects model)

Step 1	12.63**	(2, 216)	.11	-.10 / -.11 (-1.28)	.37** / .24 (4.70)

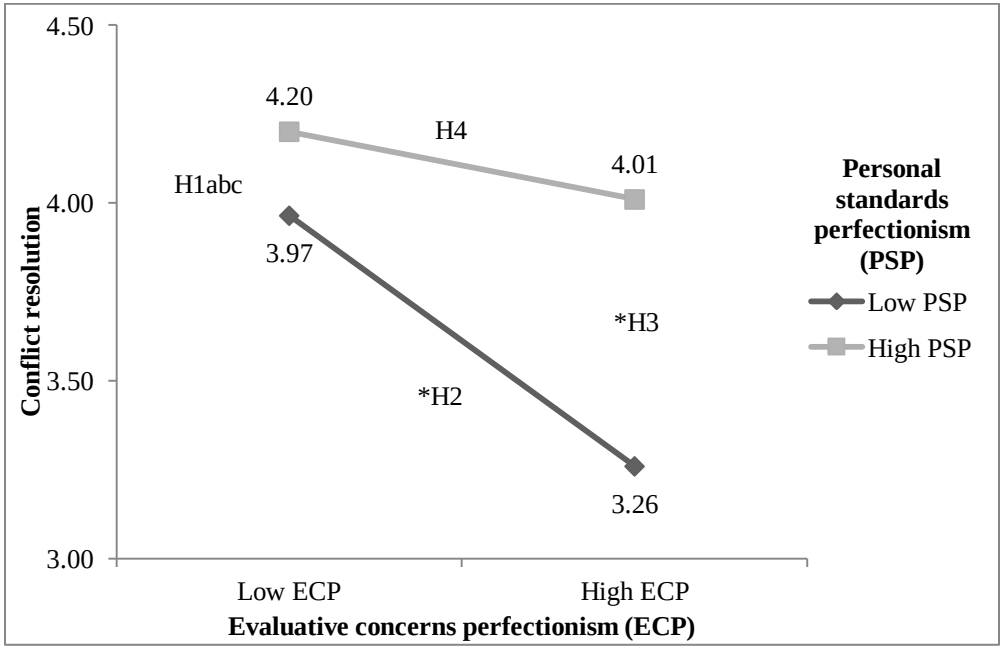
Note. *p < .05; **p < .01; PSP = personal standards perfectionism; ECP = evaluative concerns perfectionism. Any discrepancy between R-squared and R-squared change scores reflects rounding to 2 decimal places.

Figure 1. Simple slopes of the relationship between evaluative concerns perfectionism and things in common at low (-1SD) and high (+1SD) personal standards perfectionism.



Note. H1abc represents a non-significant difference between pure personal standards perfectionism and non-perfectionism, $p > .05$; *H2 represents a significant difference between pure evaluative concerns perfectionism and non-perfectionism, $p < .05$; *H3 represents a significant difference between mixed perfectionism and pure evaluative concerns perfectionism, $p < .05$; H4 represents a non-significant difference between mixed perfectionism and pure personal standards perfectionism, $p > .05$.

Figure 2. Simple slopes of the relationship between evaluative concerns perfectionism and conflict resolution at low (-1SD) and high (+1SD) personal standards perfectionism.



Note. H1abc represents a non-significant difference between pure personal standards perfectionism and non-perfectionism, $p > .05$; *H2 represents a significant difference between pure evaluative concerns perfectionism and non-perfectionism, $p < .05$; *H3 represents a significant difference between mixed perfectionism and pure evaluative concerns perfectionism, $p < .05$; H4 represents a non-significant difference between mixed perfectionism and pure personal standards perfectionism, $p > .05$.