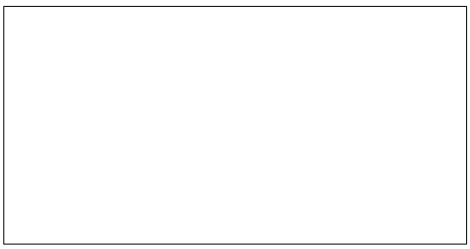

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A comparative examination of the correlates of self-oriented perfectionism and conscientious achievement striving in male cricket academy players.

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Abstract

Objectives: Recent research suggests that self-oriented perfectionism may be similar to conscientious achievement striving. Flett and Hewitt (2006) have argued, however, that despite some similarities, there are also critical theoretical differences. The purpose of the current investigation was to examine differences between self-oriented perfectionism and conscientious achievement striving in terms of their relationship with core dimensions of perfectionism.

Method: A sample comprising 255 male cricket players (age M = 15.51 SD = 1.63) from British county cricket academies completed measures of self-oriented perfectionism, conscientious achievement striving and various other dimensions of perfectionism (e.g., high standards, perfectionistic striving, self-criticism, and fear of failure).

Results: Analyses indicated that self-oriented perfectionism and conscientious achievement striving shared an association with high standards and perfectionistic striving. However, self-oriented perfectionism was also positively related to concern over mistakes, a fear of failure and negative reactions to imperfection. Further, the relationship between self-oriented perfectionism and both high standards and perfectionistic striving remained significant after controlling for conscientious achievement striving.

Conclusion: The findings suggest that these two achievement related personality factors are distinct and are likely to have divergent consequences for junior athletes.

A comparative examination of the correlates of self-oriented perfectionism and conscientious achievement striving in male cricket academy players.

Few athletes are equipped to cope with the intense physical and psychological demands associated with striving for elite status. For the majority of athletes, this process is characterised by intense investment, frustration and personal failure. Based upon research examining the characteristics of world class performers, some sport psychologists have suggested that perfectionism may be a hallmark quality of elite athletes (Anshel & Eom, 2002; Dunn, Causgrove Dunn, & Syrotuik, 2002; Hardy Jones, & Gould, 1996). However, Flett and Hewitt (2005) have argued that despite the necessity for perfect performance in some sports, performance and psychological difficulties are likely to be experienced by those characterised by high levels of perfectionism. Consequently, because the motivational influence of perfectionism may have widely differing consequences (see Hall, 2006), it remains unclear if perfectionism is a characteristic that should be actively encouraged in sports performers or whether it should be effectively managed in order to avoid any potentially deleterious effects (Flett & Hewitt, 2005; Hall, 2006).

One of the reasons why it is unclear whether perfectionism is likely to foster or undermine athletic development is because there is currently no agreed definition of perfectionism (Hall, 2006). It is generally accepted, however, that perfectionism is a broad multidimensional personality characteristic and that it energises the pursuit of exceedingly high standards (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Early theorists considered perfectionism to be a largely undesirable and debilitating quality that contributes to numerous psychological difficulties because goal pursuit is underpinned by irrational beliefs and accompanied by harsh self-critical appraisal (Burns, 1980; Hollander, 1965; Pacht, 1984). However, following

the development and validation of numerous multidimensional measures, it has been argued that some dimensions of perfectionism may have predominately adaptive effects (e.g., Hill et al., 2004; Slaney, Rice, Mobley, Trippi, & Ashby, 1998; Stöber, Otto, & Stoll, 2004; Terry-Short, Owens, Slade, & Dewey, 1995). These include dimensions indicative of the total commitment to exceptionally high standards that is considered essential for sporting success (Weinberg, Burton, Yukelson, & Weigand, 2000).

Those that support the distinction between positive and negative dimensions of perfectionism claim that specific features of perfectionism such as the setting of high personal standards, or the act of striving for perfection, will lead to positive consequences, especially when they are considered independently from other negative dimensions of the construct (e.g., Haase & Prapavessis, 2004; Slade & Owens, 1998). These assertions have gained consistent support (see Stoeber & Otto, 2006, for a review). However, a number of researchers have questioned whether when conceptualised in this manner perfectionism is likely to reflect patterns of cognition, affect and behaviour beyond those associated with adaptive achievement motivation (Flett & Hewitt, 2006; Greenspon, 2000; Hall, 2006). Hall (2006), in particular, has argued that exceedingly high personal standards may be necessary, but alone insufficient, to adequately define perfectionism. Others have further argued that by failing to differentiate between the broader defining characteristics of perfectionism and more restrictive qualities that simply reflect a commitment to exceedingly high standards, the term perfectionism may be incorrectly equated with socially desirable patterns of behaviour such as striving for excellence (Flett & Hewitt, 2006; Greenspon, 2000).

Flett and Hewitt (2002, 2006, 2007) have argued that because a core characteristic of self-oriented perfectionism is the pursuit of exceedingly high personal standards, it is often mislabeled as a dimension of positive perfectionism. Flett and Hewitt do not define self-oriented perfectionism as adaptive achievement striving, but suggest that it is characterised by compulsive striving for perfection and self-improvement and the tendency to respond to substandard performance with self-criticism. Moreover, although the endorsement of perfectionistic standards carries the potential for high levels of achievement behaviour, it also corresponds with the experience of psychological difficulties. In accord, Flett, Hewitt and colleagues (e.g., Besser, Flett, & Hewitt, 2004; Flett, Besser, Davis, & Hewitt, 2003) have found evidence that suggests that while this dimension of perfectionism may energise achievement striving and may contribute to positive outcomes, it will eventually lead to distress, psychological maladjustment and motivational deficits. Recently, however, research aimed at classifying perfectionism dimensions using factor analytical strategies has challenged arguments made by Flett and Hewitt. The findings of this research suggest that because self-oriented perfectionism has been found to be associated with many predominantly adaptive qualities, it may be better considered a component of adaptive achievement striving (e.g., Bieling, Israeli, & Antony 2004; Enns, Cox, & Clara, 2002; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Slade & Owens, 1998).

Some of those who have suggested that self-oriented perfectionism represents an adaptive dimension of striving have emphasised the similarities between the pursuit of high personal standards associated with this dimension of perfectionism and conscientiousness (see Hill, McIntire, & Bacharach, 1997; Cox, Enns, & Clara, 2002; Slade & Owens, 1998). The findings of research which has examined the relationship

between self-oriented perfectionism and conscientiousness suggest that the two constructs are typically moderately to highly positively correlated, particularly the achievement striving facet of conscientiousness (see Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006; Dunkley & Kyparissis, 2008; Cox et al., 2002; Enns, Cox, Sareen, & Freeman, 2001; Flett, Russo, & Hewitt, 1994; Hill, et al. 1997; Rice, Ashby, & Slaney, 2007). Stoeber, Otto and Dalbert (2009) have also recently found that conscientiousness predicts an increase in self-oriented perfectionism over time. However, according to Flett and Hewitt (2002, 2006) self-oriented perfectionism entails a characteristically more extreme form of striving that is underpinned by a complex set of achievement related beliefs and a combination of goals not associated with conscientiousness. These include simultaneous approach and avoidance tendencies (see Kaye, Conroy, & Fifer, 2008; Speirs Neumeister & Finch, 2006; Van Yperen, 2006) and both intrinsic and extrinsic forms of motivational regulation (see Mills & Blankstein, 2000; Miquelon, Vallerand, Grouzet, & Cardinal, 2005). Furthermore, because perceived achievement is necessary for feelings of acceptance in those with higher levels of self-oriented perfectionism, this characteristic is associated with a vulnerability to distress in the absence of positive achievement experiences (see Flett, et al. 2003; Hill, Hall, Appleton, & Kozub, 2008). This pattern is not typically associated with conscientiousness. Consequently, the forms of achievement striving associated with self-oriented perfectionism and conscientiousness ought to be considered as distinct (Flett & Hewitt, 2002, 2006, 2007).

Flett and Hewitt (2006) have argued that a comparative analysis of conscientiousness and self-oriented perfectionism would provide much needed insight into the conceptual and empirical differences between the achievement striving

associated with these two personality dispositions. Such a comparison may also provide insight into the likely consequences of perfectionism for athletes. Therefore, the purpose of the current study is to compare the relationship between self-oriented perfectionism, conscientious achievement striving and a number of typically assessed dimensions of perfectionism in elite junior athletes. Consistent with previous research, it is hypothesised that self-oriented perfectionism and conscientious achievement striving would demonstrate a large positive association. Furthermore, based on the arguments of Flett and Hewitt it is hypothesised that the two constructs would display a divergent relationship with core qualities of perfectionism. That is, conscientious achievement striving will be associated with the setting of high standards and perfectionistic striving but will not be associated with the more negative features of perfectionism such as fear of failure, concern over mistakes, doubts about action, self-criticism, and negative reactions to imperfection. In contrast, self-oriented perfectionism will be associated with both adaptive and maladaptive dimensions of perfectionism and confirm the views of Flett and Hewitt that self-oriented perfectionism is a dimension of overstriving that goes beyond conscientious achievement striving. Finally, as there is sufficient theoretical and empirical evidence to suggest that self-oriented perfectionism entails more than an endorsement of the high aspirations, diligence and desire for success associated with conscientiousness (see Flett & Hewitt, 2006), it is hypothesised that self-oriented perfectionism will retain its relationship with personal standards and perfectionistic striving when its association with conscientious achievement striving is statistically controlled.

Method

Participants

A sample comprising 255 male junior cricketers (age *M* = 15.51 years, *SD* = 1.63, range 13-20) was recruited from a number of British county cricket academies. Immediately following a preseason training session, athletes completed a multi-section questionnaire that included the instruments described below. Informed consent was gained from each participant or parent/guardian when appropriate. The athletes reported that they had been affiliated with the cricket academy for an average of 4.13 years (*SD* = 2.31) and had trained for an average of 6.75 hours per week (*SD* = 5.65). They also indicated that in comparison to other activities in their lives, their participation in cricket was considered very important (*M* = 8.05, *SD* = 1.05 on a nine-point Likert scale 1 = *not at all Important* to 9 = *extremely important*).

Instruments

Self-oriented perfectionism. Self-oriented perfectionism was assessed using Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (HMPS). The stem of the instrument was adapted to focus the athletes on their participation in sport ("Listed below are a number of statements concerning the way some people feel about their participation when they are practicing or playing their sport."). Responses to the Self-Oriented Perfectionism subscale reflect self-directed perfectionistic cognition and behaviours such as the pursuit of exceedingly high standards and stringent self-evaluation (e.g. "I must always be successful in activities that are important to me." "I demand nothing less than perfection of myself."). The subscale has 15-items and responses are measured on a seven-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). The findings of research which has examined the psychometric properties of the subscale have supported the validity and reliability of measure (α = .89 and test-retest reliability *r* = .88; Hewitt & Flett, 1991, 2004).

Campbell and Di Paula (2002) have argued that self-oriented perfectionism may be subdivided into motivational and evaluative facets. To facilitate examination of the separate influence of each of these components, two discrete composite scores were calculated from the H-MPS based on Campbell and Di Paula's suggestions. Perfectionistic Striving (SOP-PS) and the Importance of Being Perfect (SOP-IBP) each comprise 5-items (SOP-PS "I strive to be as perfect as I can be."; SOP-IBP "It is very important that I am perfect in everything I attempt."). In previous research, these subscales have demonstrated acceptable levels of internal consistency in athlete samples (SOP-PS α = .78 and SOP-IBP α = .87; Stoeber, Kempe, & Keogh, 2008; Van Yperen, 2006).

Conscientious achievement striving. Conscientious achievement striving was assessed using the Achievement Striving subscale (C-AS) of Costa and McCrae's (1992) Revised NEO Personality Inventory (NEO-PI-R). This subscale reflects high aspirations, diligence and a desire for success (e.g. "I strive to achieve all I can." "I strive for excellence in everything I do."). Of the conscientiousness subscales on the NEO-PI-R this scale was considered to be the closest measure of the positive achievement behaviours associated with self-oriented perfectionism (see Stoeber & Kersting, 2007). The subscale contains 8-items and is scored on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Findings from research that has examined the psychometric properties of this subscale supports both the validity and reliability of the measure (α = .67; Costa & McCrae, 1992).

Multidimensional perfectionism. Three subscales from Frost et al.'s (1990) Multidimensional Perfectionism Scale (FMPS) were used to assess three core dimensions of perfectionism. The Pursuit of High Personal Standards (PS) subscale reflects the setting of exceedingly high standards and their importance for self

evaluation ("It is important to me that I be thoroughly competent in everything I do." "I set higher goals than most people." 7-items). The Concern Over Mistakes (CM) subscale reflects negative reactions to mistakes, a tendency to interpret mistakes as failure, and the belief that others will withdraw respect following failure ("People will probably think less of me if I make a mistake." "The fewer mistakes I make, the more people will like me." 9-items). The Doubts About Actions (DA) subscale reflects a vague sense of doubt about the ability to fulfil the requirements of tasks completely ("Even when I do something very carefully, I often feel that it is not quite right." "It takes me a long time to do something 'right'." 4-items). Three other subscales that measure the need for organisation, parental criticism and parental expectations were excluded from this investigation because questions remain regarding whether these dimensions capture the central features of the perfectionism construct (see Stoeber & Otto, 2006). Participants were instructed to focus on their participation in sport and they responded to the items on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Initial examination of the psychometric properties of these subscales support their validity and reliablity (PS α = .83, CM α = .88, and DA α =.77; Frost et al., 1990).

Multidimensional inventory for perfectionism for sport. Two further measures of perfectionism were assessed using the Multidimensional Inventory of Perfectionism in Sport (MIPS; Stöber et al., 2004). The instrument contains two subscales; Striving for Perfectionism (SP) and Negative Reactions to Imperfection (NRI). The Striving for Perfection subscale differs conceptually from the Personal Standards subscale of Frost et al. (1990) in that athletes responses reflect the pursuit of perfection rather than the pursuit of high standards ("I strive to be as perfect as possible."). Similarly, the response to the Negative Reactions to Imperfection subscale

reflect reactions to falling short of perfectionistic standards rather than reactions to mistake's per se ("I feel extremely stressed if everything does not go perfectly."). Participants respond to 5-items for each subscale on a five-point Likert scale (1 = *never* to 5 = *always*). Participants were asked to focus their response on how they feel during competition. Previous research findings indicate that the two subscales are internally consistent in athlete samples (SP α = 90, NRI α = .84; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007).

Fear of failure. Fear of failure was included as it is considered a central regulatory feature of perfectionism (Blatt, 1995). To measure fear of failure Conroy, Willow and Metzler's (2002) short version of the Performance Failure Appraisal Inventory was used. The scale is a measure of cognitive appraisals associated with the fear of failure ("When I am failing I am afraid that I might not have enough talent."). The scale contains 5-items to which participants respond on a 5-point Likert scale (1 = *do not believe at all* to 5 = *believe 100% of the time*). Initial examination of the psychometric properties of the scale supports the reliability and validity of scales (α = .72; Conroy et al., 2002). The short-form of the scale is also highly correlated with the long-form supporting the concurrent validity of the scale (*r* = .92; Conroy et al., 2002).

Self-criticism. A measure of self-criticism was included as it is considered a central feature of self-critical, and motivationally debilitating, dimensions of perfectionism (Dunkley, Zuroff, & Blankstein, 2006). Self-criticism was assessed using the Self-Citicism subscale of the Attitudes Toward Self Scale (ATS; Carver & Ganellen, 1983). Reponses to this subscale reflect an intolerance of a discrepancy between attainment and desired standards and the tendency to engage in self-criticism in response (4-items) ("I get unhappy with anything less than what I expected of

myself." "I get angry with myself if my efforts don't lead to the results I wanted."). The subscale has 4-items to which participants respond on a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*).). Initial examination of the psychometric properties of the subscale supported its validity and reliablity (α = .65; Carver & Ganellen, 1983).

Results

Preliminary analysis

Participants were removed who did not respond to all the items in the instrument (n = 39) . The data were then screened for univariate outliers using the protocol described by Tabachnick and Fidell (2007). Standardised z-scores were inspected and those larger than 3.29 (p < .001, two-tailed) were considered to be univariate outliers and removed. This procedure led to the removal of 3 participants. The remaining data (n = 213) were deemed to be approximately univariate normal (absolute skewness M = .34, SD = 0.23, SE = .17, absolute kurtosis M = 0.24, SD = 0.60, SE = .33). Internal reliability analyses were conducted on each scale (Cronbach's α) (Table 1). A criterion of .60 was used to determine sufficient internal consistency with scales less than 5 items and .70 for subscales with more items (Loewenthal, 2001). Although the internal reliability of the conscientious achievement striving scale was below .70, this scale has 8 items and the level of internal consistency demonstrated in the current investigation is consistent with its initial validation. Therefore, the internal reliability of this scale was considered acceptable.

Descriptive Analyses

Table 1 displays the descriptive statistics for all the measured variables. Participants reported moderate to high levels of self-oriented perfectionism. Moderate levels of conscientious achievement striving and other dimensions of perfectionism

were also generally reported. The sample tended to report higher levels of the personal standards and striving dimensions of perfectionism (e.g., personal standards, perfectionistic striving) than the maladaptive dimensions (e.g., concern over mistakes, fear of failure, negative reactions to imperfection). The descriptive statistics are generally comparable to those reported elsewhere in similar samples (e.g., Hill et al., 2008; Stoeber, Stoll, Pescheck, & Otto, 2008; McArdle & Duda, 2004).

Zero-order and semi-partial correlation coefficients

The aim of this investigation was to examine the differences between self-oriented perfectionism and conscientious achievement striving in terms of their relationship with core dimensions of perfectionism. To do so, it was first necessary to examine the degree of association between self-oriented perfectionism and conscientious achievement striving. Second, it was necessary to examine the association between self-oriented perfectionism, conscientious achievement striving and core components of perfectionism that are typically considered adaptive and maladaptive dimensions of the construct. In order to examine these relationships a series of zero-order and semi-partial correlational analyses were undertaken. Table 2 displays the zero-order and semi-partial correlation coefficients between dimensions of perfectionism and conscientious achievement striving. Zero-order correlations indicate that self-oriented perfectionism displayed a large significant positive relationship with conscientious achievement striving (self-oriented perfectionism r = .52, self-oriented perfectionism-personal standards r = .50, self-oriented perfectionism-importance of being perfect r = .37, ps < .01). As hypothesised, self-oriented perfectionism displayed a pattern of zero-order correlations that included significant positive relationships with both adaptive (personal standards, perfectionistic striving) and maladaptive dimensions of perfectionism (concern over

mistakes, fear of failure, self-criticism, and negative reactions to imperfection). Whereas the associations between self-oriented perfectionism and measures of personal standards and perfectionistic striving were large in magnitude, the relationship between self-oriented perfectionism and maladaptive dimensions of perfectionism were moderate to large (Cohen, 1992). In contrast, conscientious achievement striving demonstrated a more limited relationship with core dimensions of perfectionism. It was positively associated with adaptive dimensions (personal standards, perfectionstic striving) and unrelated to maladaptive dimensions (concern over mistakes, doubts about actions, fear of failure, and negative reactions to imperfection). Unexpectedly, conscientious achievement striving was found to have a small to moderate significant positive relationship with self-criticism. Neither conscientious achievement striving or self-oriented perfectionism had significant relationships with doubts about action

To further assess these relationships and examine whether self-oriented perfectionism had a significant association with dimensions of perfectionism beyond variance shared with conscientious achievement striving, semi-partial correlation coefficients were calculated that controlled for the relationship between self-oriented perfectionism and conscientious achievement striving. Assessment of whether differences between semi-partial correlation coefficients and zero-order correlations were statistically significant was then estimated using Hoteling's *t* with Malgady's (1987) modification (see Hittner, Finger, Mancuso, & Silver, 1995). The results of these analyses indicated that the relationship between self-oriented perfectionism, personal standards, perfectionistic striving and self-criticism decreased significantly. There was no significant change in the relationship between self-oriented perfectionism, concern about mistakes, doubts about actions and negative reactions to

imperfection. The relationship between self-oriented perfectionism and a fear of failure increase significantly. All semi-partial correlations were statistically significant.

Additional analyses were also undertaken to further examine the potential source of the association between self-oriented perfectionism and dimensions of perfectionism. Semi-partial correlations between self-oriented perfectionism and core dimensions of perfectionism were estimated controlling for the relationship between self-oriented perfectionism and its importance of being perfect facet. This is because Campbell and Di Paula (2002) have suggested that this aspect of self-oriented perfectionism may be responsible for it remaining a vulnerability factor in meaningful achievement contexts. The association between self-oriented perfectionism and all dimensions of perfectionism decreased significantly. Self-oriented perfectionism was no longer significantly related to a fear of failure and negative reactions to imperfection and its relationship with concern over mistakes became negative. The relationship between self-oriented perfectionism, personal standards, doubts about action, self-criticism, and perfectionistic striving were statistically significant. The zero-order and partial-correlation coefficients are displayed in Table 2.

Discussion

It is currently unclear whether perfectionism is a hallmark quality of elite athletes or a personality factor that is likely to render athletes vulnerable to psychological and motivational difficulties (Flett & Hewitt, 2005; Hall, 2006). Because self-oriented perfectionism energises the pursuit of high personal standards, and has been found to contribute to various positive outcomes, it may be construed as a positive dimension of perfectionism similar to conscientious achievement striving (e.g., Bieling et al., 2004; Frost et al., 1990). However, Flett and Hewitt (2002, 2006,

2007) have argued that there are critical differences between the patterns of achievement behaviour that arise as a consequence of self-oriented perfectionism and those associated with conscientious achievement striving. In order to investigate the theoretical differences between these two personality factors, the current study examined the relationship between conscientious achievement striving and self-oriented perfectionism and compared the degree to which both constructs were associated with a number of core dimensions of perfectionism in a sample of elite junior athletes.

Consistent with previous research, it was hypothesised that self-oriented perfectionism and conscientious achievement striving would demonstrate a large positive relationship. Based on the arguments of Flett and Hewitt (2006), it was further hypothesised that the association between conscientious achievement striving and core dimensions of perfectionism would be limited to dimensions of perfectionism that reflect adaptive motivational qualities (i.e., the pursuit of high standards and striving for perfection). Self-oriented perfectionism, on the other hand, was hypothesised to be associated with a broad array of core perfectionism dimensions that include both adaptive and maladaptive dimensions. Finally, it was also hypothesised that the strength of association between self-oriented perfectionism and the pursuit of exceedingly high personal standards and perfectionistic striving would remain high following the removal of the shared variance between self-oriented perfectionism and conscientious achievement striving.

Examination of the zero-order and semi-partial correlation coefficients supported these assertions. Specifically, conscientious achievement striving and self-oriented perfectionism demonstrated a large positive correlation. In addition, both personality factors were positively related to personal standards, perfectionistic

striving and self-criticism. However, only self-oriented perfectionism demonstrated a positive association with concern over mistakes, fear of failure and negative reactions to imperfection. After controlling for self-oriented perfectionism's association with conscientious achievement striving, the strength of its relationships with personal standards and perfectionistic striving decreased significantly. However, these correlations remained statistically significant. Supplementary semi-partial correlational analysis indicated that the relationship between self-oriented perfectionism and maladaptive dimensions of perfectionism (concern over mistakes, fear of failure, and negative reactions to imperfection) was largely a function of the belief that it was important to be perfect.

The findings support previous research that indicate that self-oriented perfectionism is not only associated with conscientious achievement striving but also with a fear of failure, self-criticism, and other dimensions of perfectionism typically considered to have negative consequences (e.g., Dunkley et al., 2006; Frost et al., 1993; Hill, et al., 1997; Kaye et al., 2008). The findings also extend previous research by indicating that self-oriented perfectionism is strongly associated with both perfectionistic striving and negative reactions to imperfection. Together the findings suggest that rather than being similar to conscientious achievement striving, self-oriented perfectionism entails a commitment to the pursuit of exceedingly high standards, a tendency to engage in self-criticism and an aversion to mistakes and failure. The multifarious consequences of endorsing these particular qualities in achievement contexts is provided by the work of Stoeber and colleagues (e.g., Stoeber, & Kersting, 2007; Stoeber et al., 2007; Stoeber et al., 2008). The findings of their research have demonstrated convincingly that perfectionistic striving can contribute to positive motivational consequences but negative reactions to

imperfection are indicative of the potential for psychological impairment. Therefore, the current findings provide support for Flett and Hewitt's (2005) arguments that self-oriented perfectionism is best considered a vulnerability factor for athletes.

The relationship between self-oriented perfectionism and core dimensions of perfectionism beyond any shared variance with conscientious achievement striving indicates that although the commitment to the pursuit of exceedingly high standards associated with self-oriented perfectionism can, in part, be attributed to the lofty aspirations, diligence and desire for success associated with conscientiousness, it is also likely to be underpinned by other regulatory factors. These include a heightened concern about mistakes, a fear of failure and the possibility of imperfect performance (see Kaye et al., 2008; Spiers Neumeister & Finch, 2006; Van Yperen, 2006). The supplementary analysis suggested that the origins of these less adaptive regulatory factors may be the belief that it is important to perform perfectly (Campbell & Di Paula, 2002; Stoeber et al., 2008; Van Yperen, 2006). The supplementary analysis also indicated that this belief contributes significantly to the high standards and perfectionistic striving associated with self-oriented perfectionism. Consequently, it appears that it is a combination of motivational and evaluative components of self-oriented perfectionism that energizes achievement behavior. However, it is this permutation that is also likely to provide the basis for numerous psychological problems experienced by athletes as a result of achievement difficulties (see Besser et al., 2004; Frost et al., 1995; Frost et al., 1997).

Implications for practitioners

The conceptual and empirical similarities between self-oriented perfectionism and conscientiousness are currently being keenly debated (Flett & Hewitt, 2006, 2007; Slade & Owens, 1998; Owens & Slade, 2008). The findings of this study suggest that

a concern over mistakes, fear of failure and negative reactions to imperfections are features that distinguish the achievement striving associated with the two personality factors. Those responsible for the development of elite athletes should therefore be aware that there may be a qualitative difference between the achievement striving associated with self-oriented perfectionism and a healthy commitment to high standards (Greenspon, 2000; Hall, 2006). These differences will be reflected in the goals and motives that athletes report. While the achievement striving associated with a healthy commitment to high standards will be aimed at personal mastery and stem from positive and stable perceptions of self-worth, the achievement striving associated with self-oriented perfectionism is at least partly aimed at validating a sense of self and stems from a sense that perfect performance is necessary in order to gain self-acceptance (Flett & Hewitt, 2006; Greenspon, 2000; Hall, 2006). The current findings suggest that if athletes are to be protected from negative consequences of self-oriented perfectionism strategies are required that alter beliefs regarding the relationship between performance and self-worth and reduce the irrational sense of importance that is attached to performing perfectly.

Limitations and future studies

Although the current study provides an insight into the differences between self-oriented perfectionism and conscientious achievement striving, no direct indicators of their psychological consequences were measured. Consequently, future studies may wish to extend the current investigation by providing a comparative examination of the psychological adjustment associated with these dimensions of achievement striving. This extension would also help begin to identify whether differences in the long-term mental and emotion health of athletes results from endorsement of these achievement related personality factors (e.g. psychological

welfare, moral functioning, and social relations) (see Duda, 2005). The current study was also limited in that only the achievement striving facet of conscientiousness was assessed. Other facets of conscientiousness may provide further insight into the differences between self-oriented perfectionism and conscientiousness. Future research should also consider examining the degree to which the observed relationships generalise beyond male cricket academy players (e.g., gender, sport, level of expertise). Finally, given the current findings, examining the degree to which conscientious achievement striving accounts for the adaptive consequences of self-oriented perfectionism would appear important. Conscientious achievement striving may be an important covariate for future research when examining the potential of self-oriented perfectionism to lead to psychological and motivational difficulties.

Conclusion

The findings of the current study suggest that conscientious achievement striving is distinct from self-oriented perfectionism. Unlike conscientious achievement striving, self-oriented perfectionism appears to entail less adaptive motives. In particular, self-oriented perfectionism is likely to impart an irrational belief that it is important to perform perfectly. The presence of such beliefs may be a distinguishing feature of perfectionistic achievement striving, be a source of motivational and psychological difficulties and imperil the adaptive desire for personal development that is shared between self-oriented perfectionism and conscientious achievement striving (see Flett, Hewitt, Blankstein & Mosher, 1991).

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References

Anshel, M. H., & Eom, H. (2002). Exploring the dimensions of perfectionism in sport. *International Journal of Sport Psychology, 34,* 255-271.

Besser**,** A., Flett**,** G. L., & Hewitt, P. L. (2004). Perfectionism, cognition, and affect in response to performance failure versus success. *Journal of Rational-Emotive & Cognitive Behavior Therapy, 22,* 301-328.

Bieling, P. J., Israeli, A. L., & Antony, M. M. (2004). Is perfectionism good, bad, or both? Examining models of the perfectionism construct. *Personality and Individual Differences, 36,* 1373-1385.

Blatt, S. J. (1995). The destructiveness of perfectionism. *American Psychologist, 50,* 1003-1020.

Burns, D. D. (1980). The perfectionists script for self-defeat. *Psychology Today*, 34-51.

Campbell, J. D., & Di Paula, A. (2002). Perfectionistic self-beliefs: Their relation to personality and goal pursuit. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment.* (pp. 181-198). Washington, DC: American Psychological Association.

Carver, C. S., & Ganellen, R. J. (1983). Depression and components of self-punitiveness: High standards, self-criticism, and overgeneralization. *Journal of Abnormal Psychology, 92,* 330-337.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112,* 155-159.

Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of perfectionism in clinically distressed and college student samples. *Psychological Assessment, 14,* 365-373.

Costa, P. T., & McCrae, R. R. (1992). *NEO PI-R. Professional manual*. Odessa, FL: Psychological Assessment Resources Inc.

Conroy, D. E., Willow, J. P., & Metzler, J. N. (2002). Multidimensional measurement of fear of failure: The Performance Failure Appraisal Inventory. *Journal of Applied Sport Psychology, 14,* 76-90.

Duda, J.L. (2005). Motivation in sport: The relevance of competence and achievement goals. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 318-335). New York: Guildford Publications.

Dunkley, D. M., Blankstein, K. R., Zuroff, D. C., Lecce, S. and Hui, D. (2006). Self-critical and personal standards factors of perfectionism located within the five-factor model of personality. *Personality and Individuals Differences, 40,* 409-420.

Dunkley, D. M., & Kyparissis, A. (2008). What is DAS self-critical perfectionism really measuring? Relations with the five-factor model of personality and depressive symptoms. *Personality and Individual Differences, 44,* 1295-1305.

Dunkley, D. M., Zuroff, D. C., and Blankstein, K. R. (2006). Specific perfectionism components versus self-criticism in predicting maladjustment. *Personality and Individuals Differences, 40,* 665-676.

Dunn, J. G. H., Causgrove Dunn, J. & Syrotuik, D. G. (2002). Relationship between multidimensional perfectionism and goal orientations in sport. *Journal of Sport & Exercise Psychology, 24,* 376-395.

Enns, M. W., Cox, B. J., & Clara, I. (2002). Adaptive and maladaptive perfectionism: developmental origins and association with depression proneness. *Personality and Individual Differences, 33,* 921-935.

Enns, M. W., Cox, B. J., Sareen, J. & Freeman, P. (2001). Adaptive and maladaptive perfectionism in medical students: A longitudinal investigation. *Medical Education, 35*, 1034-1042.

Flett, G. L., Besser, A., Davis, R. A., & Hewitt, P., L. (2003). Dimensions of perfectionism, unconditional self-acceptance, and depression. *Journal of Rational-Emotive and Cognitive Behavior Therapy, 21*, 119-138.

Flett, G. L., & Hewitt, P., L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment.* (pp. 5-31). Washington, DC: American Psychological Association.

Flett, G. L., & Hewitt, P., L. (2005). The perils of perfectionism in sports and exercise. *Current Directions in Psychological Science, 14*, 14-18.

Flett, G. L., & Hewitt, P. L. (2006). Positive versus negative perfectionism in psychopathology. *Behaviour Modification, 30,* 472-495.

Flett, G. L., & Hewitt, P. L. (2007). When does conscientiousness become perfectionism. *Current Psychiatry, 6,* 49-64.

Flett, G. L., Hewitt, P. L., Blankstein, K. R., & Mosher, S. W. (1991). Perfectionism, self-actualization, and personal adjustment. *Journal of Social Behavior and Personality, 6*, 147-160.

Flett, G. L., Russo, F. A., & Hewitt, P. L. (1994). Dimensions of perfectionism and constructive thinking as a coping response. *Journal of Rational-Emotive and Cognitive Behaviour Therapy, 12*, 163-179.

Frost, R. O., Heimberg, R. G., Holt, C. S., Mattia, J. I., & Neubauer, A. L. (1993). A comparison of two measures of perfectionism. *Personality and Individual Differences, 14*, 119-126.

Frost, R. O., Marten, P., Lahart, C., & Rosenblate, R. (1990). The Dimensions of Perfectionism. *Cognitive Therapy and Research, 5,* 449-468.

Frost, J. R., Trepanier, K. L., Brown, E. J., Heimberg. R. G., Juster, H. R., Markis, G. S., & Leung, A. W. (1997). Self-monitoring of mistakes among subjects high and low in perfectionistic concern over mistakes. *Cognitive Therapy and Research, 21,* 209-222.

Frost, R. O., Turcotte, T. A., Heimberg, R. G., Mattia, J. I., Holt, C. S., & Hope, D. A. (1995). Reactions to mistakes among subjects high and low in perfectionistic concern over mistakes. *Cognitive Therapy and Research, 19,* 195-205.

Greenspon, T. S. (2000). "Healthy perfectionism" is an oxymoron! Reflections on the psychology of perfectionism and the sociology of science. *The Journal of Secondary Gifted Education, 11,* 197-208.

Hall, H. K. (2006). Perfectionism: A hallmark quality of world class performers, or a psychological impediment to athletic development? In D. Hackfort & G. Tenenbaum (Eds.), *Perspectives in Sport and Exercise Psychology; Essential processes for attaining peak performance* (Vol. 1, pp. 178-211). Oxford UK: Meyer & Meyer Publishers.

Hardy, L., Jones, G., & Gould, D. (1996). *Understanding Psychological Preparation for Sport: Theory and Practice of Elite Performers*. Wiley: Chichester.

Haase, A., M., & Prapavessis, H. (2004). Assessing the Factor Structure and Composition of the Positive and Negative Perfectionism Scale in Sport. *Personality and Individual Differences, 36,* 1725-1740.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60,* 456-470.

Hewitt, P. L., & Flett, G. L. (2004). *The Multidimensional Perfectionism Scale: Technical Manual*. Toronto: Multihealth Systems Inc.

Hill, A. P., Hall, H. K., Appleton, P, R., & Kozub, S. R. (2008). Perfectionism and burnout in junior elite soccer players: The mediating influence of unconditional self-acceptance. *Journal of Sport and Exercise Psychology, 9,* 630-644.

Hill, R. W., Huelsman, T. J., Furr, R. M., Kibler, J., Vincente, B. B., & Kennedy, C. (2004). A new measure of perfectionism: The Perfectionism Inventory. *Journal of Personality Assessment, 82,* 80-91.

Hill, R. W., McIntire, K., & Bacharach. V. R. (1997). Perfectionism and the big five factors. *Journal of Social Behaviour and Personality, 12,* 257-270.

Hittner, J. B., Finger, M. S., Mancuso, J, P., & Silver, N. C. (1995). A Microsoft fortran 77 program for contrasting part correlations and related statistics. *Educational and Psychological Measurement, 55,* 777-784.

Hollander, M. H. (1965). Perfectionism. *Comprehensive Psychiatry, 6,* 94-103.

Kaye, M.P., Conroy, D.E., & Fifer, A.M**.** (2008). Individual differences in incompetence avoidance: A comparison of multiple dimensions of perfectionism and fear of failure. *Journal of Sport and Exercise Psychology, 30,* 110-132.

Loewenthal, K. M. (2001). *An introduction to psychological tests and scales* (2nd ed.). London: UCL Press.

McArdle, S., & Duda, J. L. (2004). Exploring the social contextual correlates of perfectionism in adolescents: A multivariate perspective. *Cognitive Therapy and Research, 28,* 765-788.

Malgady, R. G. (1987). Contrasting partial correlations in regression models. *Educational and Psychological Measurement, 47,* 961-965.

Mills, J. S., & Blankstein, K. R. (2000). Perfectionism, intrinsic vs. extrinsic motivation, and motivated strategies for learning: a multidimensional analysis of university students. *Personality and Individual Differences*, *29*, 1191-1204.

Miquelon, P., Vallerand, R. J., Grouzet, F. M. E., & Cardinal, G. (2005). Perfectionism, academic motivation and psychological adjustment: An integrative model. *Personality and Social Psychology Bulletin*, *31*, 913-924.

Owens, R. G. & Slade, P. D. (2008). So Perfect It's Positively Harmful? Reflections on the Adaptiveness and Maladaptiveness of Positive and Negative Perfectionism. *Behaviour Modification, 32*, 928-397.

Pacht, A. J. (1984). Reflections on perfection. *American Psychologist*, *39*, 386-390.

Rice, K. G., Ashby, J. S., & Slaney, R. B. (2007). Perfectionism and the five-factor model of personality. *Assessment, 14*, 385-398.

Slade, P.D., & Owens, R.G. (1998). A dual process model of perfectionism based on reinforcement theory. *Behavior Modification*, *22*, 372–390.

Slaney, R. B., Rice, K. G., Mobley, M., Trippi J., & Ashby, J. S. (1998). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development*, *34*, 130-145.

Spiers Neumeister, K. & Finch, H. (2006). Perfectionism in High-Ability Students: Relational Precursors and Influences on Achievement Motivation. *Gifted Child Quarterly, 50,* 238-251.

Stoeber, J., Kempe, T., & Keogh, E. J. (2008). Facets of self-oriented and socially

prescribed perfectionism Does striving for perfectionism enhance or undermine performance. *Personality and Individual Differences, 44,* 1506-1516.

Stoeber, J., & Kersting, M. (2007). Perfectionism and aptitude test performance: Testees who strive for perfection achieve better test results. *Personality and Individual Differences, 42,* 1093-1103.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence and challenges. *Personality and social Psychology Review, 10,* 295-319.

Stoeber, J., Otto, K., & Dalbert, C. (2009). Perfectionism and the Big Five: Conscientiousness predicts longitudinal increases in self-oriented perfectionism. *Personality and Individual Differences, 47,* 363-368.

Stoeber, J., Otto, K., Pescheck, E., Becker, C., & Stoll, O. (2007). Perfectionism and competitive anxiety in athletes: Differentiating striving for perfection and negative reactions to imperfection. *Personality and Individual Differences, 42,* 959-969.

Stoeber, J., Stoll, O., Pescheck, E., & Otto, K. (2008). Perfectionism and achievement goals in athletes: Relations with approach and avoidance orientations in mastery and performance goals. *Psychology of Sport and Exercise, 9,* 102-121.

Stöber, J., Otto, K., & Stoll, O. (2004). Mehrdimensionales Inventar zu Perfektionismus im Sport (MIPS) [Multidimensional Inventory of Perfectionism in Sport (MIPS)]. In J. Stöber, K. Otto, E. Pescheck, & O. Stoll (Eds.), *Skalendokumentation* "*Perfektionismus im Sport*". *Hallesche Berichte zur Pädagogischen Psychologie* (Vol. 7, pp. 4–13). Halle, Saale, Germany: University of Halle-Wittenberg.

Terry-Short, L. A., Owens, R. G., Slade, P. D., & Dewey, M. E. (1995). Positive and negative perfectionism. *Personality and Individual Differences, 18,* 663-668.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics,* 5th ed. Boston Allyn and Bacon.

Van Yperen, N., W. (2006). A novel approach to assessing achievement goals in the context of the 2 x2 framework: Identifying distinct profiles of individuals with different dominant achievement goals. *Personality and Social Psychology Bulletin, 32,* 1432-1445.

Weinberg, R., Burton, D., Yukelson, D. & Weigand, D. (2000). Perceived goal setting practices of Olympic athletes: An exploratory investigation. *The Sport Psychologist, 14,* 279-295.

Table 1 *Descriptive statistics of dimensions of perfectionism, contentious achievement striving, fear of failure and self-criticism.*

	Likert Scale	*M*	*SD*	A
1. Self-Oriented Perfectionism	1-7	5.14	0.80	.85
2. SOP-Perfectionistic striving	1-7	5.72	0.84	.68
3. SOP-Importance of Being Perfect	1-7	4.48	1.06	.71
4. Conscientiousness-Achievement Striving	1-5	3.63	0.48	.65
5. FMPS-Personal Standards	1-5	3.52	0.59	.72
6. FMPS-Concern Over Mistakes	1-5	2.50	0.68	.73
7. FMPS-Doubts About Action	1-5	2.76	0.70	.63
8. Fear of Failure	1-5	2.73	0.84	.80
9. Self-Criticism	1-5	2.56	0.76	.79
10. MIPS-Perfectionstic Striving	1-5	4.11	1.00	.87
11. MIPS-Negative Reactions to Imperfection	1-5	3.51	1.06	.86

Table 2 *Zero-order correlation coefficients and semi-partial correlation coefficients between dimensions of perfectionism, contentious achievement striving, fear of failure and self-criticism.*

	Zero-order Correlations (*r*)				Semi-partial correlations controlling for C-AS (*sr*)			Semi-partial correlations controlling for SOP-IBP (*sr*)
	SOP	SOP- PS	SOP-IBP	C-AS	SOP	SOP-PS	SOP-IBP	SOP
1. FMPS-PS	.66**	.64**	.51**	.50**	.46**†	.45**†	.35**†	.44**†
2. FMPS-CM	.36**	.10	.49**	.04	.40**	.10	.51**	-.14*†
3. FMPS-DA	.05	-.02	.12	-.09	.11	.03	.16*	-.11†
4. Fear of Failure	.18**	.03	.23**	-.10	.28**†	.09	.29**†	-.04†
5. Self-Criticism	.38**	.29**	.34**	.24**	.30**†	.20**†	.27**†	.18**†
6. MIPS-PS	.69**	.49**	.63**	.46**	.53**†	.30**†	.50**†	.28**†
7. MIPS-NRI	.40**	.18*	.45**	.11	.41**	.15*	.44**	.03†

Note: SOP = Self-oriented perfectionism; SOP-PS = Self-oriented perfectionism perfectionistic striving; SOP-IBP = Self-oriented perfectionism importance of being perfect; C-AS = Conscientiousness achievement striving; FMPS-PS = Personal standards; FMPS-CM = Concern over mistakes; FMPS-DA = Doubts about Action; MIPS-PS = Perfectionistic striving; MIPS-NRI = Negative reactions to imperfection.

† denotes a significant difference between semi-partial correlation coefficient and zero-order correlation coefficient ($p < .05$).

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