

York St John University



Curran, Thomas and Hill, Andrew P. and Jowett, Gareth E. and Mallinson-Howard, Sarah H. (2014) The relationship between multidimensional perfectionism and passion in junior athletes. *International Journal of Sport Psychology*, 45 (4). 369 - 384.

Downloaded from: <http://ray.yorksjs.ac.uk/id/eprint/860/>

The version presented here may differ from the published version or version of record. If you intend to cite from the work you are advised to consult the publisher's version:

<http://www.ijsp-online.com/content/abstracts/abstract4504.php#c06>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repository Policy Statement](#)

RaY

Research at the University of York St John

For more information please contact RaY at ray@yorksjs.ac.uk

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30

The relationship between multidimensional perfectionism and passion in junior athletes

Thomas Curran¹, Andrew P. Hill², Gareth E. Jowett³ & Sarah H. Mallinson³

University of Gloucestershire, UK¹

University of Leeds, UK²

York St John University, UK³

Keywords: Motivation, Sport, Youth, Personality

Author Notes

Thomas Curran, Faculty of Applied Sciences, University of Gloucestershire, UK;
Andrew P. Hill, School of Biomedical Sciences, University of Leeds, UK; Gareth, E. Jowett,
Faculty of Health and Life Sciences, York St John University, UK; Sarah H. Mallinson,
Faculty of Health and Life Sciences, York St John University, UK.

Address correspondence to Thomas Curran, Faculty of Applied Sciences, University
of Gloucestershire, Oxstalls Campus, Oxstalls Lane, Gloucester, GL2 9HW, UK; E-mail:
tcurran@glos.ac.uk

Curran, T. Hill, A. P., Jowett, G. E. & Mallinson, S. H. (in press). The relationship between
multidimensional perfectionism and passion in junior athletes. *International Journal of Sport
Psychology*.

1 **Abstract**

2 Research suggests that self-oriented perfectionism and socially prescribed
3 perfectionism have unique and distinct motivational properties that are evident among junior
4 athletes. Likewise, harmonious and obsessive passions encompass distinctive patterns of
5 motivation. Based on suggestions that different dimensions of perfectionism may be
6 associated with varying types of passion, the aim of the current study was to test the
7 possibility that self-oriented and socially prescribed perfectionism could be distinguished
8 based on their relationship with harmonious and obsessive passion in junior athletes. Two
9 hundred and forty-nine athletes (M age = 16.07, SD = 2.22) competing in various youth
10 sports completed measures of perfectionism and passion. Multiple regression and canonical
11 correlation analyses indicated that self-oriented perfectionism predicted higher levels of both
12 types of passion. In contrast, socially prescribed perfectionism predicted only obsessive
13 passion. The findings provide an initial indication that the motivational differences between
14 self-oriented and socially prescribed perfectionism extend to the types of passion they
15 engender. The findings also provide additional insight into the patterns of motivation that are
16 likely to arise from the two dimensions of perfectionism in junior athletes.

17

18

19

20

21

22

23

24

25

1 During their formative years, aspiring junior athletes must accrue the requisite
2 practice and skills necessary to compete at senior elite level. This undertaking is arduous, and
3 requires extraordinary dedication over a period of time that can span childhood to early
4 adulthood (Elferink-Gemser, Jordet, Coelho-E-Silva & Visscher, 2011). The motivational
5 processes that govern whether a junior athlete graduates to elite level or becomes one of the
6 many athletes to dropout (or burnout) of sport are complex. From a personality perspective,
7 some junior athletes may be better suited to this endeavor than others (Hall, 2006). In accord,
8 examination of personality characteristics and the patterns of motivation they engender may
9 provide the basis for better talent identification and the development of future elite athletes.

10 In reviewing the factors associated with Olympic success, Gould and Maynard (2009)
11 identify perfectionism as a potentially important personality characteristic. Perfectionism is a
12 trait broadly defined as a preoccupation with striving for flawlessness in concert with overly
13 critical self-evaluative concerns (Flett & Hewitt, 2002). Hewitt and Flett (1991) have
14 proposed a model in which perfectionism is understood in terms of the direction in which
15 perfectionistic beliefs are focused. When directed towards the self (self-oriented
16 perfectionism) individuals set exceedingly high personal standards and evaluate themselves
17 critically. When perceived to be directed from others (socially prescribed perfectionism)
18 individuals believe that significant others have excessive expectations, appraise them harshly,
19 and exert pressure on them to be perfect. Studies outside of sport suggest that these two
20 dimensions have divergent consequences. Socially prescribed perfectionism tends to be
21 uniformly problematic – contributing to higher levels of stress, anxiety and depression.
22 Conversely, self-oriented perfectionism appears to be highly motivating and best considered
23 only a vulnerability factor for such outcomes (Flett & Hewitt, 2007).

24 Researchers have begun to examine the influence of these dimensions in junior
25 athletes. Self-oriented perfectionism has been found to contribute to a mix of positive and

1 negative outcomes (Gotwals, Stoeber, Dunn, & Stoll, 2012). On one hand, this dimension of
2 perfectionism is positively related to more adept coping and negatively related to burnout,
3 suggesting it is a seemingly desirable characteristic for athletes to possess (Hill, Hall &
4 Appleton, 2010a; Hill, Hall, Appleton & Kozub, 2008). However, on the other hand, self-
5 oriented perfectionism is negatively related to self-acceptance and positively related to a fear
6 of failure (Hill et al., 2008; Hill, Hall & Appleton, 2010b). In addition, there is also evidence
7 that self-oriented perfectionism may contribute to deficits in motivation when performance
8 difficulties arise and thus is notably complex (Hill, Hall, Duda & Appleton, 2011). Socially
9 prescribed perfectionism, by contrast, appears to be much more debilitating for athletes.
10 Research suggests that, unlike self-oriented perfectionism, this dimension is associated with
11 only negative outcomes for junior athletes, such as poorer coping, lower well-being, and
12 higher burnout (e.g., Gaudreau & Verner-Filion, 2012; Hill et al., 2008; Hill et al., 2010a).

13 The divergent outcomes associated with self-oriented and socially prescribed
14 perfectionism for junior athletes are known to reflect contrasting motivational properties.
15 These include, for example, differing patterns of motivation regulation (a combination of
16 autonomous and controlled regulation vs. only controlled regulation; Appleton & Hill, 2012)
17 and contingencies of self-worth (internal contingencies vs. external contingencies; Hill, Hall,
18 & Appleton, 2011). Their divergent features are also likely to include other motivational
19 properties. Of especial note here, Vallerand and colleagues (Vallerand, 2010; Vallerand,
20 Rousseau, et al., 2006) have purported that dimensions of perfectionism may give rise to
21 different types of passion, another important predictor of sport-related outcomes. The current
22 study thus builds on previous research by examining this suggestion and testing whether self-
23 oriented perfectionism and socially prescribed perfectionism can indeed be differentiated by
24 their association with harmonious and obsessive passion.

25 **Passion for sport**

1 Passion reflects a close affinity for activities (such as sport) that people consider self-
2 defining (Vallerand, Blanchard et al., 2003). It develops in a dualistic manner via
3 internalization (a process whereby activities become more or less part of one's sense of self),
4 and can either be harmonious or obsessive (Vallerand, 2010). Harmonious passion emerges
5 from autonomous internalization whereby an activity integrates fully into the self and resides
6 harmoniously alongside pre-existing values and goals (e.g., "my sport reflects the qualities I
7 like about myself"; Vallerand et al., 2003). When activities are regulated by harmonious
8 passion, people identify with, and personally endorse, the relevance of their participation
9 leading to wilful engagement. Obsessive passion emerges from controlled internalization
10 whereby the same activity only partially integrates into the self, leading to internal conflicts
11 between the activity and pre-existing values and goals (e.g., "I often have difficulties
12 controlling the urge to engage in my sport"; Vallerand et al., 2003). Like harmonious passion,
13 when activities are energized by obsessive passion people identify highly with the activity
14 and express personal endorsement of participation. Yet, unlike harmonious passion, this is
15 only the case inasmuch as the activity serves to fulfil some important contingency (e.g., to
16 bolster self-worth or gain approval; Mageau, Carpentier & Vallerand, 2011), resulting in
17 compulsive and inflexible engagement.

18 The experiences of junior athletes will be markedly different depending on the
19 presence of harmonious or obsessive passion. Moreover, while both passions are highly
20 energizing, it is the presence of harmonious passion that provides the basis for long-term
21 participation in sport (Vallerand, Salvy et al., 2007). This is because, in addition to more
22 flexible and enthusiastic patterns of participation, harmonious passion promotes more
23 positive thoughts and feelings towards sport. By contrast, in addition to more rigid and
24 compulsive patterns of participation, obsessive passion promotes less positive and often
25 negative thoughts and feelings towards sport (Vallerand, 2012). For example, harmonious

1 passion is associated with lower levels of negative affect and burnout, and higher levels of
2 well-being among athletes (e.g., Curran, Appleton, Hill & Hall., 2011, 2013; Vallerand et al.,
3 2003). It is the opposite for obsessive passion which is associated with higher levels of
4 negative affect and burnout, and lower levels of well-being in sport (e.g., Vallerand et al.,
5 2003; Vallerand, et al., 2006; Schellenberg, Gaudreau & Crocker, 2013). In tandem, elements
6 of both of these outcomes are evident. The presence of both passions energizes enthusiasm
7 and intense behavioral investment but carries the potential for motivational and psychological
8 difficulties, due to the presence of obsessive passion (Stenseng, 2008; Vallerand, Mageau et
9 al., 2008; Vallerand et al., 2003).

10 **The relationship between perfectionism and passion for sport**

11 There are a number of conceptual similarities between the concepts of perfectionism
12 and passion. Both represent central features of an athlete's self-concept or identity. Similarly,
13 both are motivation-related factors that contribute to junior athletes' cognitions, affect and
14 behavior. Yet perfectionism and passion also differ in important ways. In particular, self-
15 oriented and socially prescribed perfectionism reside at the trait level and influence cognition,
16 affect, and behavior broadly (Flett & Hewitt, 2002), whereas passion is situated at a more
17 immediate, contextual level regulating behavior for specific activities (Vallerand et al., 2003).
18 Accordingly, when considering how perfectionism and passion influence each other,
19 perfectionism should determine the types of passion exhibited in sport (as opposed to vice-
20 versa).

21 Self-oriented perfectionism is likely to contribute to both athletes' harmonious and
22 obsessive passion. This is because self-oriented perfectionism engenders both a personal
23 endorsement of achievement striving that will promote autonomous internalization (a
24 determinant of harmonious passion) and, in concert, an intense desire to preserve self-worth
25 that will promote controlled internalization (a determinant of obsessive passion). Empirical

1 support for this notion is provided by existing research. In particular, self-oriented
2 perfectionism contributes to higher levels of both autonomous regulations (e.g., enjoyment
3 and recognition of personal value of the activity) and controlled regulations (e.g., need to
4 satisfy internal and external contingencies) (e.g., Appleton & Hill, 2012; Miquelon,
5 Vallerand, Grouzet & Cardinal, 2005; Stoeber, Feast & Hayward, 2009). These regulations,
6 and their associated internalization processes (viz. autonomy support and interpersonal
7 control), also collectively characterize both passions (Mageau et al., 2009; Wang, Liu, Chye
8 & Chatzisarantis, 2011). The expected positive relationship between self-oriented
9 perfectionism and both passions is also evident in the complex pattern of motivation, and
10 motivational vulnerability, associated with this dimension of perfectionism (Flett & Hewitt,
11 2005, 2007).

12 Socially prescribed perfectionism is likely to contribute to a different pattern of
13 passion for sport. This is because socially prescribed perfectionism is characterized primarily
14 by the pursuit of external standards with the aim of garnering social approval and bolstering
15 self-worth (Hewitt & Flett, 1991). These features are likely to promote only controlled
16 internalization and obsessive passion. Again, this is evident in extant research, especially
17 studies examining the relationship between this dimension of perfectionism and motivation
18 regulation. These studies indicate that, akin to obsessive passion (but antagonistic to
19 harmonious passion), socially prescribed perfectionism relates predominantly with higher
20 levels of controlled regulations (and amotivation) (e.g., Appleton & Hill, 2012; Mills &
21 Blankstein, 2000; Vallerand, et al., 2007). Based on this research, one would expect a
22 positive association between socially prescribed perfectionism and obsessive passion, along
23 with a negative association with harmonious passion.

24 **The present research**

1 questionnaire was administered in a training session setting, during which a trained research
2 assistant was present to give general instructions and to answer any questions.

3 **Instruments**

4 **Perfectionism.** Perfectionism was measured using a short version of Hewitt and
5 Flett's (1991) Multidimensional Perfectionism Scale (H-MPS; Cox, Enns, & Clara, 2002).
6 This scale contains two subscales that measure self-oriented perfectionism (SOP; 5 items,
7 e.g., "I set very high standards for myself") and socially prescribed perfectionism (SPP; 5
8 items, e.g., "My family expects me to be perfect"). The instructions and the stem of the
9 instrument were modified to focus athletes on their sport and items were measured on a 7-
10 point Likert scale (1 = strongly disagree to 7 = strongly agree). Cox et al. (2002) have
11 demonstrated that this shortened version of the H-MPS is closely related to the original (self-
12 oriented perfectionism $r = .95$; socially prescribed perfectionism $r = .94$) and numerous
13 studies attest to its validity and reliability with samples of junior athletes (e.g., Gaudreau &
14 Antl, 2008; Gaudreau & Verner-Filion, 2012; Hill, 2013).

15 **Passion for sport.** The Passion Scale (Marsh, Vallerand, et al., 2013) was used to
16 assess harmonious passion (6 items; e.g. "Sport allows me to live a variety of experiences")
17 and obsessive passion (6 items; e.g. "I cannot live without sport"). The instructions focused
18 athletes on their sport ("While thinking of your main sport and using the scale below, please
19 indicate your level of agreement with each item"). Athletes responded on a 7-point Likert
20 scale (1 = do not agree at all, 7 = very strongly agree). The validity and reliability of the
21 passion scale has been documented in previous research (see Marsh et al., 2013) including in
22 samples of junior athletes (Curran et al., 2013).

23 **Analytical strategy**

24 A two-stage analytical strategy was employed to test the hypotheses. In the first stage,
25 hierarchical multiple regression analyses were employed to examine univariate relationships

1 and the unique predictive ability of the dimensions of perfectionism in relation to each type
2 of passion (i.e., predicting the two passions separately). In the second stage, canonical
3 correlational analyses were employed to identify multivariate relationships and the predictive
4 ability of the dimensions of perfectionism in relation to both types of passion (i.e., predicting
5 the two passions simultaneously).

6 **Results**

7 **Preliminary analysis**

8 Missing value analysis indicated that there were 200 complete cases and 66 cases with
9 item non-responses. In accordance with the recommendations of Tabachnick and Fidell
10 (2007), cases with item non-responses exceeding 5% were removed. This resulted in the
11 removal of 13 cases. Following removal, the probability of the patterns of missing items
12 diverging from randomness was greater than .05 (MCAR $\chi^2 = 25.34$, $df = 25$, $p = .44$).
13 Therefore, missing values were considered to be absent for non-systematic reasons and were
14 replaced using the mean of the non-missing items from the subscale in each individual case
15 (Graham, Cumsille, & Elek-Fisk, 2003).

16 Subscales were then computed and screened for both univariate and multivariate
17 outliers using the recommendations of Tabachnick and Fidell (2007). Standardised z-scores
18 greater than ± 3.29 ($p < .001$) served as the standard for identifying univariate outliers. A
19 Mahalanobis distance greater than $\chi^2(4) = 18.47$ ($p < .001$) was used to identify multivariate
20 outliers. Four further cases were removed using these criteria ($n = 249$; female $n = 46$; M age
21 = 16.07; $SD = 2.22$). After removal, skewness and kurtosis values indicated that the data was
22 approximately normally distributed. Finally, Cronbach's alpha coefficients indicated that
23 each subscale demonstrated acceptable internal consistency and are displayed in Table 1.

24 **Descriptive statistics and zero-order correlations**

1 The descriptive statistics indicated that the junior athletes reported moderate levels of
2 perfectionism and passion. Consistent with previous research, dimensions of perfectionism
3 were positively correlated (e.g., Hill et al., 2008, 2010a) and so were the two types of passion
4 (e.g., Curran et al., 2011, 2013). Self-oriented perfectionism was positively correlated with
5 harmonious and obsessive passion. Socially prescribed perfectionism was positively
6 correlated with obsessive passion and was uncorrelated with harmonious passion. The
7 magnitudes of the relationships between the two dimensions of perfectionism and two types
8 of passion were typically moderate in size (Cohen, 1988). Descriptive statistics and zero-
9 order correlations are displayed in Table 1.

10 **The predictive ability of dimensions of perfectionism in relation to types of passion**

11 The first hierarchical regression indicated that dimensions of perfectionism explained
12 22% of variance in harmonious passion, $F(2, 248) = 35.70, p < .001$. As expected, self-
13 oriented perfectionism positively predicted harmonious passion ($b = .43, 95\% \text{ BCa CI} = .33$
14 to $.54, \beta = .48, p < .001$). However, in contrast to the hypotheses, socially prescribed
15 perfectionism did not predict harmonious passion ($b = -.04, 95\% \text{ BCa CI} = -.13 \text{ to } .05, \beta =$
16 $.06, p = .32$). Therefore, the analyses indicated that self-oriented perfectionism uniquely
17 predicted higher harmonious passion among the junior athletes. Results of this analysis are
18 reported in Table 2.

19 The second hierarchical regression indicated that the dimensions of perfectionism
20 explained 12% of variance in obsessive passion, $F(2, 248) = 18.31, p < .001$. As expected,
21 self-oriented perfectionism positively predicted obsessive passion ($b = .25, 95\% \text{ BCa CI} =$
22 $.10 \text{ to } .40, \beta = .21, p < .001$). Similarly, in line with the hypotheses, socially prescribed
23 perfectionism also positively predicted obsessive passion ($b = .25, 95\% \text{ BCa CI} = .15 \text{ to } .36,$
24 $\beta = .25, p < .001$). Therefore, the analyses indicated that both self-oriented perfectionism and

1 socially prescribed perfectionism uniquely predicted higher obsessive passion among the
2 junior athletes. Results of this analysis are reported in Table 2.

3 **Canonical correlation analysis**

4 In the canonical correlation analyses the first canonical variate was a linear composite
5 of self-oriented and socially prescribed perfectionism and the second canonical variate was a
6 linear composite of harmonious and obsessive passion. Dimension reduction suggested two
7 significant canonical functions: $R_c = .48$, Wilks' $\lambda = .70$, $p < .001$; $R_c = .29$, Wilks' $\lambda = .92$, p
8 $< .001$.

9 Examination of the canonical loadings for the first canonical function revealed that
10 self-oriented perfectionism was the primary contributor to the first canonical variate ($r_s =$
11 $.99$). Both harmonious ($r_s = .97$) and obsessive ($r_s = .56$) passion made primary contributions
12 to the second canonical variate. The first canonical variate explained an average of 53% of
13 variance in the dimensions of perfectionism and the second canonical variate explained an
14 average of 63% of variance in the types of passion. The corresponding positive loadings of
15 self-oriented perfectionism on the first canonical variate and of harmonious and obsessive
16 passion on the second canonical variate is consistent with the interpretation that self-oriented
17 perfectionism is positively associated with a mix of harmonious and obsessive passion. The
18 canonical correlation was large and corresponded with 23% of shared variance between the
19 two variates.

20 Examination of the canonical loadings for Function 2 revealed that socially prescribed
21 perfectionism was the primary contributor to the first canonical variate ($r_s = .97$). Obsessive
22 passion was the primary contributor to the second canonical variate ($r_s = .83$). The first
23 canonical variate explained an average of 47% of variance in the dimensions of perfectionism
24 and the second canonical variate explained an average of 37% of variance in the types of
25 passion. The corresponding positive loadings of socially-prescribed perfectionism on the first

1 canonical variate and of obsessive passion on the second canonical variate is consistent with
2 the interpretation that socially prescribed perfectionism is positively related to obsessive
3 passion. The canonical correlation between the two variates was moderate and corresponded
4 with 8% of shared variance between the two variates. Results of these analyses are reported
5 in Table 3.

6 **Discussion**

7 The aim of the current study was to examine whether self-oriented and socially
8 prescribed perfectionism could be differentiated by their relationships with harmonious and
9 obsessive passion. It was hypothesized that (1) self-oriented perfectionism would positively
10 predict both harmonious and obsessive passion and (2) socially prescribed perfectionism
11 would positively predict obsessive passion and negatively predict harmonious passion. In
12 addition, it was expected that these relationships would be evident at the univariate level and
13 the multivariate level. At the univariate level, the findings generally supported the
14 hypothesized relationships. As expected, both self-oriented and socially prescribed
15 perfectionism positively predicted obsessive passion. However, while self-oriented
16 perfectionism positively predicted harmonious passion, socially prescribed perfectionism was
17 unrelated to harmonious passion (as opposed to being a negative predictor). Findings were
18 similar at the multivariate level. Self-oriented perfectionism was positively related to a
19 combination of harmonious passion and obsessive passion. Socially prescribed perfectionism
20 was positively related to obsessive passion (but not, as expected, negatively related to
21 harmonious passion).

22 **Self-oriented perfectionism and passion**

23 The findings support Vallerand and colleagues' (Vallerand, 2010; Vallerand, et al.,
24 2006) suggestions that dimensions of perfectionism may influence internalization processes
25 and give rise to different types of passion. In the case of self-oriented perfectionism, it

1 positively predicted both harmonious and obsessive passion. This is indicative of the complex
2 mix of motivational properties evident in self-oriented perfectionism. Previous research in
3 sport (and more widely) has found these properties include an array of motivation regulations
4 (e.g., Appleton & Hill, 2012; Mills & Blankstein, 2000; Van Yperen, 2006) and both the
5 desire to develop personal competence and demonstrate comparative competence (e.g.,
6 Neumeister & Finch, 2006; Van Yperen, 2006; Verner-Filion & Gaudreau, 2010). The
7 current study extends this research by illustrating that this complex mix also includes another
8 important predictor of sport behavior - the type of passion that is likely to be exhibited by
9 junior athletes.

10 Beyond the univariate relationships, it is noteworthy that self-oriented perfectionism
11 was associated with a combination of both types of passion. The presence of both (rather than
12 the presence of one or the other) provides insight into the overall pattern of motivation one
13 might expect from junior athletes who display self-oriented perfectionism. Specifically, when
14 underpinned by both passions, sport participation has the potential to be characterized by a
15 mixture of both flexible and enthusiastic engagement and rigid and compulsive engagement
16 (Stenseng, 2008). This is evident in existing research where self-oriented perfectionism
17 appears on some occasions to be adaptive (e.g., Hill et al., 2010a; Neumeister & Finch, 2006;
18 Stoeber & Otto, 2006) but on others more problematic (e.g., Besser, Flett & Hewitt, 2004;
19 Besser, Flett, Hewitt & Guez, 2008; Hill et al., 2011). The findings suggest the long-term
20 implications of self-oriented perfectionism for junior athletes are likely to be dependent on
21 the maintenance of harmonious passion and keeping obsessive passion at bay (see Bélanger,
22 Lafrenière, Vallerand, & Kruglanski, 2013).

23 **Socially prescribed perfectionism and passion**

24 In the case of socially prescribed perfectionism, it only predicted higher obsessive
25 passion. This is consistent with previous research, which has found socially prescribed

1 perfectionism to be associated primarily with maladaptive motivational properties in sport
2 and other domains (e.g., controlling motivation regulation and performance goals; Appleton
3 & Hill, 2012; Hall, Kerr, & Matthews, 1998). This finding is likely to reflect a number of
4 features within socially prescribed perfectionism that promote the controlled internalization
5 underpinning obsessive passion. These features include the pursuit of external standards with
6 the aim of garnering social approval and bolstering self-worth. As these particular features
7 did not result in an inverse relationship with harmonious passion (as was initially expected),
8 the association between socially prescribed perfectionism and passion appears to be best
9 characterized as one where it promotes more rigid, compulsive engagement but does not
10 undermine (or promote) the development of flexible and enthusiastic engagement. In other
11 words, socially prescribed perfectionism does not explain the presence or absence of
12 harmonious passion among junior athletes.

13 Multivariate analyses further illustrated that socially prescribed perfectionism was
14 characterized primarily by the presence of obsessive passion and an absence of harmonious
15 passion. This is likely to have important ramifications for junior athletes exhibiting this
16 dimension of perfectionism. Specifically, unlike self-oriented perfectionism, no respite is
17 provided by harmonious passion. This will leave junior athletes exhibiting this dimension of
18 perfectionism disposed to a debilitating pattern of motivation energized by defensive, self-
19 protective behaviors (e.g., the desire to protect self-worth and perceptions of competence;
20 Mageau et al., 2011). This may partly explain why socially prescribed perfectionism has
21 consistently been found to positively predict negative cognitive and emotional outcomes,
22 including extreme disaffection such as burnout (e.g., Appleton, Hall & Hill, 2009; Hill et al.,
23 2008; Hill et al., 2010b). With this in mind, the association between socially prescribed
24 perfectionism and only obsessive passion affirms that this dimension of perfectionism is
25 likely to be an undesirable characteristic for junior athletes to possess.

1 **Limitations and future directions**

2 The results must be interpreted in context of the study's limitations. Notably, as the
3 study is cross-sectional, no inference can be made in terms of whether perfectionism precedes
4 passion or vice versa (here, it is based on theoretical grounds). Future research will need to
5 include a temporal element to test causal precedence. Similarly we did not include a third
6 variable in this study, which may have helped to clarify the commonalities and differences
7 between perfectionism and passion. Extending this research should involve the examination
8 of conceptually relevant mediating variables such as contingencies of self-worth and
9 ruminative cognition. The current study also adopted self-report measures, introducing the
10 potential for greater social desirability and common-method bias (Podsakoff, Mackenzie, Lee
11 & Podsakoff, 2003). Future research would benefit from other methods of data collection
12 (e.g., observer ratings) to confirm the pattern of relationships observed in the current study.
13 Finally, we adopted Hewitt and Flett's (1991) model of perfectionism. Adopting other models
14 (e.g., Gotwals & Dunn, 2009) will provide further insight into the perfectionism-passion
15 relationship. In particular, which other specific features of perfectionism account for the
16 relationships observed and whether the same relationships are observed for higher-order
17 dimensions of perfectionism.

18 **Conclusion**

19 The main contribution of the current study is that it illustrates that self-oriented and
20 socially prescribed perfectionism can be distinguished by their association with types of
21 passion. Self-oriented perfectionism appears to contribute to both harmonious and obsessive
22 passion. By contrast, socially prescribed perfectionism appears to contribute to only
23 obsessive passion. Passion can therefore be considered alongside other known differences in
24 the motivational properties of these two dimensions of perfectionism. In addition, those
25 wishing to understand the implications of the two dimensions of perfectionism for junior

- 1 athletes should consider the likely influence of the two passions on the experiences and
- 2 motivation of junior athletes.
- 3

References

- 1
2 Appleton, P. A., & Hill, A. P. (2012). Perfectionism and athlete burnout in junior elite
3 athletes: The mediating role of motivation regulations. *Journal of Clinical Sport*
4 *Psychology*, 6, 129-146.
- 5 Appleton, P. R., Hall, H. K., & Hill, A. P. (2009). Relations between multidimensional
6 perfectionism and burnout in junior-elite male athletes. *Psychology of Sport and*
7 *Exercise*, 10, 457-465.
- 8 Bélanger, J. J., Lafrenière, M. A. K., Vallerand, R. J., & Kruglanski, A. W. (2013). Driven by
9 fear: The effect of success and failure information on passionate individuals'
10 performance. *Journal of personality and social psychology*, 104, 180-195.
- 11 Besser, A., Flett, G. L., & Hewitt, P. L. (2004). Perfectionism, cognition, and affect in
12 response to performance failure vs. success. *Journal of Rational-Emotive and*
13 *Cognitive-Behavior Therapy*, 22, 297-324.
- 14 Besser, A., Flett, G. L., Hewitt, P. L., & Guez, J. (2008). Perfectionism, and cognitions,
15 affect, self-esteem, and physiological reactions in a performance situation. *Journal of*
16 *Rational-Emotive & Cognitive-Behavior Therapy*, 26, 206-228.
- 17 Bonneville-Roussy, A., Lavigne, G. L., & Vallerand, R. J. (2011). When passion leads to
18 excellence: The case of musicians. *Psychology of Music*, 39, 123-138.
- 19 Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Hillsdale, NJ:
20 Erlbaum.
- 21 Cox, B. J., Enns, M. W., & Clara, I. P. (2002). The multidimensional structure of
22 perfectionism in clinically distressed and college student samples. *Psychological*
23 *Assessment*, 14, 365-373.

- 1 Curran, T., Appleton, P. R., Hill, A. P., & Hall, H. K. (2011). Passion and burnout in elite
2 junior soccer players: The mediating role of self-determined motivation. *Psychology*
3 *of Sport and Exercise*, 12, 655-661.
- 4 Curran, T., Appleton, P. R., Hill, A. P., & Hall, H. K. (2013). The mediating role of
5 psychological need satisfaction in relationships between types of passion for sport and
6 athlete burnout. *Journal of Sports Sciences*, 31, 597-606.
- 7 Elferink-Gemser, M. T., Jordet, G., Coelho-E-Silva, M. J., & Visscher, C. (2011). The
8 marvels of elite sports: how to get there? *British journal of sports medicine*, 45, 683-
9 684.
- 10 Flett, G. L., & Hewitt, P. L. (2005). The perils of perfectionism in sports and
11 exercise. *Current Directions in Psychological Science*, 14, 14-18.
- 12 Flett, G. L., & Hewitt, P. L. (2007). When does conscientiousness become
13 perfectionism. *Current Psychiatry*, 6, 49-60.
- 14 Gaudreau, P., & Antl, S. (2008). Athletes' broad dimensions of perfectionism: Examining
15 change in life-satisfaction and the mediating role of motivation and coping. *Journal of*
16 *Sport and Exercise Psychology*, 30, 356-382.
- 17 Gaudreau, P., & Thompson, A. (2010). Testing a 2×2 model of dispositional
18 perfectionism. *Personality and Individual Differences*, 48, 532-537.
- 19 Gaudreau, P., & Verner-Filion, J. (2012). Dispositional perfectionism and well-being: A test
20 of the 2×2 model of perfectionism in the sport domain. *Sport, Exercise, and*
21 *Performance Psychology*, 1, 29-43.
- 22 Gotwals, J. K., & Dunn, J. G. (2009). A multi-method multi-analytic approach to establishing
23 internal construct validity evidence: The Sport Multidimensional Perfectionism Scale
24 2. *Measurement in Physical Education and Exercise Science*, 13, 71-92.

- 1 Gotwals, J. K., Stoeber, J., Dunn, J. G., & Stoll, O. (2012). Are perfectionistic strivings in
2 sport adaptive? A systematic review of confirmatory, contradictory, and mixed
3 evidence. *Canadian Psychology*, 53, 263-279.
- 4 Gould, D., & Maynard, I. (2009). Psychological preparation for the Olympic Games. *Journal*
5 *of sports sciences*, 27, 1393-1408.
- 6 Graham, J.W., Cumsille, P.E., & Elek-Fisk, E. (2003). Methods for handling missing data. In
7 J.A. Schinka & W.F. Velicer (Eds.), *Research Methods in Psychology* (pp. 87–112).
8 New York: Wiley.
- 9 Hall, H. K. (2006). Perfectionism: A hallmark quality of world class performers, or a
10 psychological impediment to athletic development? In D. Hackfort & G. Tenenbaum
11 (Eds.), *Essential processes for attaining peak performance* (Vol. 1, pp. 178-211).
12 Oxford, UK: Meyer & Meyer.
- 13 Hall, H. K., Kerr, A. W., & Matthews, J. (1998). Precompetitive anxiety in sport: The
14 contribution of achievement goals and perfectionism. *Journal of Sport and Exercise*
15 *Psychology*, 20, 194-217.
- 16 Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts:
17 Conceptualization, assessment, and association with psychopathology. *Journal of*
18 *personality and social psychology*, 60, 456-470.
- 19 Hill, A. P. (2013). Perfectionism and burnout in junior soccer players: A test of the 2 x 2
20 model of dispositional perfectionism. *Journal of Sport and Exercise Psychology*, 35,
21 18-29.
- 22 Hill, A. P., Hall, H. K., & Appleton, P. R. (2010a). Perfectionism and athlete burnout in
23 junior elite athletes: The mediating role of coping tendencies. *Anxiety, Stress, &*
24 *Coping*, 23, 415-430.

- 1 Hill, A. P., Hall, H. K., & Appleton, P. R. (2010b). A comparative examination of the
2 correlates of self-oriented perfectionism and conscientious achievement striving in
3 male cricket academy players. *Psychology of Sport and Exercise*, 11, 162-168.
- 4 Hill, A. P., Hall, H. K., Appleton, P. R., & Kozub, S. A. (2008). Perfectionism and burnout in
5 junior elite soccer players: The mediating influence of unconditional self-
6 acceptance. *Psychology of Sport and Exercise*, 9, 630-644.
- 7 Hill, A. P., Hall, H. K., Duda, J. L., & Appleton, P. R. (2011). The cognitive, affective and
8 behavioural responses of self-oriented perfectionists following successive failure on a
9 muscular endurance task. *International Journal of Sport and Exercise Psychology*, 9,
10 189-207.
- 11 Mageau, G. A., Carpentier, J., & Vallerand, R. J. (2011). The role of self-esteem
12 contingencies in the distinction between obsessive and harmonious passion. *European*
13 *Journal of Social Psychology*, 41, 720-729.
- 14 Marsh, H. W., Vallerand, R. J., Lafrenière, M.-A. K., Parker, P., Morin, A. J. S., Carbonneau,
15 N., et al. (2013). Passion: Does one scale fit all. Construct validity of two-factor
16 passion scale and psychometric invariance over different activities and
17 languages. *Psychological Assessment*, 25, 796–809.
- 18 Mills, J. S., & Blankstein, K. R. (2000). Perfectionism, intrinsic vs extrinsic motivation, and
19 motivated strategies for learning: A multidimensional analysis of university
20 students. *Personality and Individual Differences*, 29, 1191-1204.
- 21 Miquelon, P., Vallerand, R. J., Grouzet, F. M., & Cardinal, G. (2005). Perfectionism,
22 academic motivation, and psychological adjustment: An integrative
23 model. *Personality and Social Psychology Bulletin*, 31, 913-924.

- 1 Neumeister, K. L. S., & Finch, H. (2006). Perfectionism in high-ability students: Relational
2 precursors and influences on achievement motivation. *Gifted Child Quarterly*, 50,
3 238-251.
- 4 Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method
5 biases in behavioral research: a critical review of the literature and recommended
6 remedies. *Journal of applied psychology*, 88, 879.
- 7 Schellenberg, B. J., Gaudreau, P., & Crocker, P. R. (2013). Passion and coping: relationships
8 with changes in burnout and goal attainment in collegiate volleyball players. *Journal*
9 *of Sport & Exercise Psychology*, 35, 270-280.
- 10 Stenseng, F. (2008). The two faces of leisure activity engagement: Harmonious and obsessive
11 passion in relation to intrapersonal conflict and life domain outcomes. *Leisure*
12 *Sciences*, 30, 465-481.
- 13 Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence,
14 challenges. *Personality and Social Psychology Review*, 10, 295-319.
- 15 Stoeber, J., Feast, A. R., & Hayward, J. A. (2009). Self-oriented and socially prescribed
16 perfectionism: Differential relationships with intrinsic and extrinsic motivation and
17 test anxiety. *Personality and Individual Differences*, 47, 423-428.
- 18 Tabachnick, B. L., & Fidell, L. S. (2007). *Using multivariate statistics*. (5th ed.). Boston,
19 MA: Pearson.
- 20 Vallerand, R. J. (2010). On passion for life activities: the dualistic model of passion. In M. P.
21 Zanna (Ed.), *Advances in experimental social psychology*, Vol. 42 (pp. 97-193). New
22 York: Academic Press
- 23 Vallerand, R. J. (2012). The dualistic model of passion in sport and exercise. In G. Roberts,
24 & D. Treasure (Eds.), *Advances in motivation in sport and exercise* (pp. 169-206).
25 Champaign, IL: Human Kinetics.

- 1 Vallerand, R. J., Blanchard, C., Mageau, G. A., Koestner, R., Ratelle, C., Léonard, M.,
2 Gagne, M., & Marsolais, J. (2003). Les passions de l'ame: on obsessive and
3 harmonious passion. *Journal of personality and social psychology*, 85, 756-767.
- 4 Vallerand, R. J., Mageau, G. A., Elliot, A. J., Dumais, A., Demers, M. A., & Rousseau, F.
5 (2008). Passion and performance attainment in sport. *Psychology of Sport and*
6 *Exercise*, 9, 373-392.
- 7 Vallerand, R. J., Rousseau, F. L., Grouzet, F. M., Dumais, A., Grenier, S., & Blanchard, C.
8 M. (2006). Passion in sport: A look at determinants and affective experiences. *Journal*
9 *of Sport and Exercise Psychology*, 28, 454-478.
- 10 Vallerand, R. J., Salvy, S. J., Mageau, G. A., Elliot, A. J., Denis, P. L., Grouzet, F. M., &
11 Blanchard, C. (2007). On the role of passion in performance. *Journal of*
12 *Personality*, 75, 505-534.
- 13 Van Yperen, N. W. (2006). A novel approach to assessing achievement goals in the context
14 of the 2× 2 framework: Identifying distinct profiles of individuals with different
15 dominant achievement goals. *Personality and Social Psychology Bulletin*, 32, 1432-
16 1445.
- 17 Verner-Filion, J., & Gaudreau, P. (2010). From perfectionism to academic adjustment: The
18 mediating role of achievement goals. *Personality and Individual Differences*, 49, 181-
19 186.
- 20 Wang, C. K. J., Liu, W. C., Chye, S., & Chatzisarantis, N. L. (2011). Understanding
21 motivation in internet gaming among Singaporean youth: The role of
22 passion. *Computers in Human Behavior*, 27, 1179-1184.

1 Table 1. Descriptive statistics and bivariate correlations.

	M	SD	α	1	2	3	4
1. Self-oriented perfectionism	4.75	0.65	.69	---			
2. Socially prescribed perfectionism	4.15	0.68	.70	.25**	---		
3. Harmonious passion	5.00	0.84	.73	.45**	.01	---	
4. Obsessive passion	4.02	1.09	.73	.26**	.32**	.34**	---

2 $p < .05^*$, $p < .01^{**}$

3

4

5

6

7

8

9

10

11

1 Table 2. The predictive ability of the dimensions of perfectionism in relation to types of passion

2

Variable	b (95% BCa CI)	β
Harmonious passion: $F(2, 248) = 35.70, p < .01; R = .47; R^2 = .22; R \text{ adj}^2 = .22$		
Self-oriented perfectionism	0.43 (0.33 to 0.54)	.48**
Socially prescribed perfectionism	-0.04 (-0.13 to 0.05)	-.06
Obsessive passion: $F(2, 248) = 18.31, p < .01; R = .36; R^2 = .13; R \text{ adj}^2 = .12$		
Self-oriented perfectionism	0.25 (0.10 to 0.40)	.21**
Socially prescribed perfectionism	0.25 (0.15 to 0.36)	.25**

3 Note. R = multiple regression coefficient; b = beta coefficient; β = standardized beta coefficients; F =

4 F statistic; 95% BCa CI = 95% bias corrected accelerated confidence interval (5000 iterations).

5 $p < .01^{**}$

6

1 Table 3. Canonical correlation between dimensions of perfectionism and
 2 types of passion.

3

Variable	Function 1		Function 2	
	r_s	r_s^2	r_s	r_s^2
Self-oriented perfectionism	.99	.98	-.02	.00
Socially prescribed perfectionism	.23	.05	.97	.94
Adequacy		.52		.47
Redundancy		.12		.04
Harmonious passion	.97	.94	-.23	.05
Obsessive passion	.56	.30	.83	.69
Adequacy		.62		.37
Redundancy		.14		.03
Canonical correlation (R_c)		.48		.29
R_c^2		.23		.08

34 Note. r_s = canonical loading; r_s^2 = squared canonical loading

35