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The Dual Nature of Perfectionism in Sports:
Relationships with Emotion, Motivation, and Performance

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Abstract

Perfectionism is a prevalent characteristic in athletes. Yet some researchers have argued that perfectionism in sports is maladaptive because it undermines athletes' performance and stifles athletic development. This argument, however, neglects that perfectionism is a multidimensional characteristic and that only some dimensions of perfectionism are clearly maladaptive, whereas others are not. This review argues that perfectionism is comprised of two main dimensions—perfectionistic strivings and perfectionistic concerns (Stoeber & Otto, 2006)—that show different and unique pattern of relationships with athletes' emotion, motivation, and performance. In support of this argument the review will present findings indicating that only perfectionistic concerns show unique positive relationships with competitive anxiety, fear of failure, and avoidance goal orientations. In contrast, perfectionistic strivings show unique positive relationships with self-confidence, hope of success, approach goal orientations, and performance in training and competitions. The findings suggest that only perfectionistic concerns are clearly maladaptive, whereas perfectionistic strivings may form part of a healthy striving for excellence. Implications for applied sport psychology are discussed as are open questions for future research.

Keywords: perfectionism; sports; emotion; motivation; performance

Perfectionism

Perfectionism is a personality characteristic defined by striving for flawlessness and setting exceedingly high standards for performance accompanied by tendencies for overly critical evaluations (Flett & Hewitt, 2002; Frost, Marten, Lahart, & Rosenblate, 1990).

Perfectionism is a prevalent characteristic. Most people have at least one domain in life where they are perfectionistic (Stoeber & Stoeber, 2009). Consequently, it comes as no surprise that perfectionism is a common characteristic in competitive athletes (Dunn, Gotwals, & Causgrove Dunn, 2005) particularly in athletes competing at the highest levels (Gould, Dieffenbach, & Moffett, 2002).

Because research on perfectionism originates in clinical psychology and psychiatry, traditional views of perfectionism saw perfectionism as a maladaptive, dysfunctional and unhealthy characteristic and a sign of psychological maladjustment and mental disorder (e.g., Burns, 1980; Pacht, 1984). Moreover, early research on perfectionism regarded perfectionism as a one-dimensional characteristic (Burns, 1980; Garner, Olmstead, & Polivy, 1983). In the 1990s, however, a more differentiated view emerged regarding perfectionism as a multidimensional and multifaceted characteristic (Frost et al., 1990; Hewitt & Flett, 1991; see Enns & Cox, 2002, for a review). Moreover, it emerged that two main dimensions of perfectionism should be differentiated (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006). The first dimension—perfectionistic strivings—captures those aspects of perfectionism associated with striving for perfection and setting exceedingly high standards of performance. The second dimension—perfectionistic concerns—captures those aspects associated with concerns over making mistakes, fear of negative evaluation by others, feelings of discrepancy between one's expectations and performance, and negative reactions to imperfection.

The differentiation between the two dimensions is of central importance to the understanding of perfectionism. Whereas the two dimensions often show high positive correlations—most people who have elevated levels of perfectionistic strivings also have elevated levels of perfectionistic concerns—they show different, sometimes opposite, patterns of associations. Only perfectionistic concerns show strong and consistent negative associations, that is, positive relationships with negative characteristics, processes, and outcomes (e.g., neuroticism, maladaptive coping, negative affect) and indicators of psychological maladjustment and mental disorder (e.g., depression). In contrast, perfectionistic strivings often show positive associations, that is, positive relationships with positive characteristics, processes, and outcomes (e.g., conscientiousness, adaptive coping, positive affect) and indicators of subjective well-being and good psychological adjustment (e.g., satisfaction with life) (see Stoeber & Otto, 2006, for a comprehensive review).

However, it is important to note that the positive associations of perfectionistic strivings are often suppressed by the negative associations of perfectionistic concerns. Therefore, perfectionistic strivings' positive associations sometimes show only when the overlap between perfectionistic strivings and perfectionistic concerns is controlled for (R. W. Hill, Huelsman, & Araujo, 2010; Stoeber & Otto, 2006). Consequently, some researchers adopt a group-based approach to examine the different associations of perfectionistic strivings and concerns differentiating three groups of perfectionists (see Figure 1): healthy perfectionists (also called adaptive perfectionists) who are defined as people with high levels of perfectionistic strivings and low levels of perfectionistic concerns, unhealthy perfectionists (also called maladaptive perfectionists) defined as people with high levels of perfectionistic strivings and high levels of perfectionistic concerns, and nonperfectionists defined as people with low levels of

perfectionistic strivings (Rice & Ashby, 2007; Stoeber & Otto, 2006).¹

Perfectionism in Sports

Like general perfectionism, perfectionism in sports is often seen as a maladaptive, dysfunctional, and unhealthy characteristic (e.g., Flett & Hewitt, 2005; Hall, 2006). In particular, Flett and Hewitt's (2005) review, focusing on findings showing the negative associations of perfectionism, argued that perfectionism in sports is a negative characteristic that may prevent the very outcomes that it seeks to promote. The authors argued:

A perfectionism paradox exists—that is, despite the fact there are many sports in which absolute perfection is required, negative, self-defeating outcomes and unhealthy patterns of behavior are evident among those athletes who are characterized by an extreme, perfectionistic personality and who are focused cognitively on attaining perfection. (Flett & Hewitt, 2005, p. 14)

In contrast, this review will argue that perfectionism is an ambivalent characteristic that has both positive and negative sides. To support this argument, the review will show that, if one differentiates perfectionistic strivings and perfectionistic concerns, only perfectionistic concerns consistently show negative associations (i.e., positive relationships with negative or negative relationships with positive characteristics, processes, and outcomes) whereas perfectionistic strivings often show positive associations (i.e., positive relationships with positive or negative relationships with negative characteristics, processes, and outcomes). The review will have three foci. First, it will focus on perfectionism in sports and only refer to studies with athletes engaged in competitive sports including studies with university students majoring in sport and exercise sciences (as the great majority of these students are engaged in competitive sports). Second, the review will focus on emotion, motivation, and performance to investigate the positive and

negative associations of perfectionism in sports instead of exclusively focusing on negative characteristics, processes, and outcomes. Finally, the review will focus on studies that (a) followed a multidimensional conception of perfectionism, (b) used measures that capture perfectionistic strivings and perfectionistic concerns, and (c) reported analyses that controlled for the overlap between perfectionistic strivings and concerns and thus show the unique relationships of the two dimensions.

Perfectionistic Strivings and Concerns

While perfectionistic strivings and concerns influence athletes' behaviors, they are not directly observable. Perfectionism is in the mind. Thus, individual differences in perfectionistic strivings and perfectionistic concerns mainly manifest themselves in athletes' thoughts (e.g., perceptions, evaluations, beliefs). For example, one athlete anticipating an upcoming competition may mainly think about getting all aspects of his or her performance perfectly right (manifesting perfectionistic strivings) while another athlete anticipating the same competition may mainly think about not getting any aspects wrong focusing on possible mistakes and how to avoid them (manifesting perfectionistic concerns).

To capture perfectionistic strivings and concerns in sports, it is recommended to use sport-specific measures of perfectionism or general measures of perfectionism adapted to measure perfectionism in sports. The reason is that perfectionism is often domain-specific (Stoeber & Stoeber, 2009). Consequently, measures of general perfectionism may not capture individual differences in perfectionism in sport (see also McArdle, 2010; Dunn, Craft, Causgrove Dunn, & Gotwals, 2011; Dunn et al., 2005;). Moreover, it is preferable to use multiple measures for each dimension (e.g., Gaudreau & Antl, 2008; Kaye, Conroy, & Fifer, 2008; Stoeber, Stoll, Salmi, & Tiikkaja, 2009; Zarghmi, Ghamary, Shabani, & Varzaneh, 2010).

When using multiple measures is not feasible (researchers often need to keep questionnaires brief), one may use single measures that represent reliable and valid indicators of the two dimensions. Regarding perfectionistic strivings, good indicators are personal standards measured with the Sport Multidimensional Perfectionism Scale (Sport-MPS; Dunn, Causgrove Dunn, & Syrotuik, 2002; Dunn et al., 2006; Version 2: Gotwals & Dunn, 2009) and striving for perfection measured with the Multidimensional Inventory of Perfectionism in Sports (MIPS; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007). Other indicators—if items and instructions are adapted to capture perfectionism in sports—are personal standards measured with the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990), self-oriented perfectionism measured with the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991), high standards measured with the revised Almost Perfect Scale (APS-R; Slaney, Rice, Mobley, Trippi, & Ashby, 2001), and striving for excellence measured with the Perfectionism Inventory (PI; R. W. Hill et al., 2004).²

Regarding perfectionistic concerns, good indicators are concern over mistakes measured with the either version of the Sport-MPS, the combination of concern over mistakes and doubts about actions measured with the Sport-MPS Version 2, and negative reactions to imperfection measured with the MIPS. Other indicators—again if items and instructions are adapted to sports—are concern over mistakes measured with the FMPS, the combination of concern over mistakes and doubts about actions measured with the FMPS (Stöber, 1998), socially prescribed perfectionism measured with the MPS, discrepancy measured with the APS-R, and concern over mistakes measured with the PI.

Knowledge of which measures are indicators of which dimensions is important to understand the findings of studies that do not use multiple measures to capture the two

dimensions of perfectionism. Moreover, this knowledge helps to understand the findings of studies that follow a group-based approach differentiating between healthy perfectionists, unhealthy perfectionists, and nonperfectionists (see Figure 1) using a single measure for each of the two dimensions (e.g., Rice & Ashby, 2007; Stoeber, Harris, & Moon, 2007). While the group-based approach is more popular in perfectionism research outside sports, there are studies on perfectionism in sports that follow a group-based approach (e.g., Koivula, Hassmén, & Fallby, 2002). Consequently, it is important to be aware of this approach when examining differences between perfectionistic strivings and concerns in sports.

Relationships with Emotion, Motivation, and Performance in Sports

Emotion

Positive and negative affect. Research on perfectionism outside sports has gathered converging evidence that perfectionistic strivings are associated with general positive affect and perfectionistic concerns with general negative affect, but—as is the case with positive life events (R. W. Hill et al., 2010)—the positive relationships between perfectionistic strivings and positive affect are often “masked” by the overlap between strivings and concern and may only show when the overlap is controlled for (see Stoeber & Otto, 2006, for a review).

To my knowledge, so far only one study (Kaye et al., 2008), examining student athletes, has investigated the relationships of the two perfectionism dimensions with general positive and negative affect in athletes. Regarding the bivariate correlations Kaye and colleagues report, both indicators of perfectionistic strivings (personal standards, self-oriented perfectionism) showed a positive correlation with positive affect. In contrast, both indicators of perfectionistic concerns (concern over mistakes, socially prescribed perfectionism) showed a positive correlation with negative affect. Unexpectedly, one indicator of perfectionistic strivings (self-oriented

perfectionism) also showed a positive correlation with negative affect. Because the study did not control for the overlap between perfectionistic strivings and concerns, however, it is unclear if the overlap is responsible for this correlation.

Another study (Sagar & Stoeber, 2009), also examining student athletes, investigated the relationships of the two perfectionism dimensions with positive and negative affect after success and failure. Because this study controlled for the overlap between perfectionistic strivings and concerns, it showed a much clearer picture. Athletes were presented with two scenarios: one success scenario (where they imagined achieving their goals in an important competition) and a failure scenario (where they imagined failing to achieve their goals). Afterwards athletes indicated how positive and negative they felt in each scenario. When multiple regressions controlling for the overlap between the two perfectionism dimensions were computed, perfectionistic strivings predicted higher positive affect after success. In contrast, perfectionistic concerns predicted higher negative affect after failure.

Competitive anxiety. An important emotion that has received much attention in sport psychology is competitive anxiety, an emotional state characterized by feelings of apprehension, tension, and activation in competitive situations (Martens, Burton, Vealey, Bump, & Smith, 1990). Regarding competitive anxiety, Martens and colleagues differentiate three subcomponents: cognitive anxiety, somatic anxiety, and self-confidence (Martens et al., 1990). Cognitive anxiety involves cognitions about possible failure, and somatic anxiety involves the perception of bodily symptoms and heightened negative arousal. In contrast, self-confidence involves cognitions that one is up to the task and capable of giving one's best possible performance. Consequently, self-confidence prior to and during competitions is usually associated with low competitive anxiety. Moreover, and more importantly, self-confidence

shows positive relationships with sports performance (Craft, Magyar, Becker, & Feltz, 2003).

A number of studies have examined the relationships between perfectionism and competitive anxiety in athletes (Frost & Henderson, 1991; Gotwals, Dunn, Causgrove Dunn, & Gamache, 2010; Hall, Kerr, & Matthews, 1998; Koivula et al., 2002; Martinent & Ferrand, 2006, 2007; Martinent, Ferrand, Guillet, & Gauthier, 2010; Stoeber et al., 2007). However, only three studies have analyzed their data in ways that show the unique relationships of perfectionistic strivings and concerns. The first study (Hall et al., 1998) investigated perfectionism and competitive anxiety in high school athletes before they competed in a cross-country meet, measuring cognitive anxiety, somatic anxiety, and self-confidence at four points of time: one week, two days, one day, and 30 minutes before the competition. Perfectionistic strivings showed a positive correlation with self-confidence at all points of time. Moreover, when multiple regressions were computed controlling for the overlap between the perfectionism dimensions, perfectionistic strivings predicted lower levels of somatic anxiety two days and one day before the competition. In contrast, perfectionistic concerns showed a positive correlation with cognitive anxiety at all points of time.

The second study (Koivula et al., 2002) investigated competitive anxiety in Swedish elite athletes comparing different groups of perfectionists. Four of the groups are of particular interest in the present context: the first group comprised athletes with high levels of perfectionistic strivings and low levels of perfectionistic concerns, the second athletes with high levels of perfectionistic strivings and high levels of perfectionistic concerns, the third athletes with low levels of perfectionistic strivings and high levels of perfectionistic concerns, and the fourth athletes with low levels of perfectionistic strivings and low levels of perfectionistic concerns. Note that the first and second group correspond to healthy and unhealthy perfectionists in our

model (see Figure 1) whereas the third and fourth group correspond to “pure evaluative concerns perfectionists” and “nonperfectionists” in Gaudreau and Thompson’s (2010) 2×2 model of perfectionism (see Footnote 1). When the four groups were compared regarding mean levels of competitive anxiety, healthy perfectionists showed the highest level of self-confidence and the lowest levels of cognitive and somatic anxiety followed by the non-perfectionists. Pure evaluative concerns perfectionists showed the highest levels of cognitive and somatic anxiety and the lowest level of self-confidence followed by unhealthy perfectionists, suggesting that athletes with high perfectionistic concerns and low perfectionistic strivings are even more prone to experience competitive anxiety than athletes with high perfectionistic concerns and high perfectionistic strivings.

The third and final study (Stoeber et al., 2007) investigated how the two perfectionism dimensions were related to competitive anxiety in four samples of athletes (high school athletes, female soccer players, and two samples of university student athletes). When bivariate correlations were inspected, only perfectionistic concerns showed positive correlations with cognitive and somatic anxiety and negative correlations with self-confidence across all four samples. Perfectionistic strivings did not. On the contrary, when partial correlations were computed controlling for the overlap with perfectionistic concerns, perfectionistic strivings showed negative correlations with cognitive and somatic anxiety and positive correlations with self-confidence.

Motivation

Achievement motives. Motivation is another variable of key interest in sport psychology, particularly achievement motivation (Duda, 2005). An important predictor of athletes’ achievement motivation are achievement motives, that is, stable individual differences in

learned, affectively charged anticipatory responses to achievement situations that energize and direct people's behaviors (McClelland, 1985). Regarding achievement motives, research traditionally differentiates between two basic motives: hope of success (motivating people to achieve success) and fear of failure (motivating people to avoid failure) (Atkinson, 1957; DeCharms & Davé, 1965).

There are four studies that have investigated the relationship between perfectionism and achievement motives in sports (Frost & Henderson, 1991; Kaye et al., 2008; Sagar & Stoeber, 2009; Stoeber & Becker, 2008) of which two have analyzed their data in ways that show the unique relationships of perfectionistic strivings and concerns. The first study (Stoeber & Becker, 2008) investigated hope of success and fear of failure in female soccer players. When partial correlations were conducted controlling for the overlap between perfectionistic strivings and concerns, perfectionistic strivings showed a positive correlation with hope for success and a negative correlation with fear of failure. In contrast, perfectionistic concerns showed a positive correlation with fear of failure.

Examining student athletes, the second study (Sagar & Stoeber, 2009) investigated further into the relationships between perfectionism and fear of failure by following Conroy's multidimensional model of fear of failure. The model differentiates five fears of failure: fear of experiencing shame and embarrassment, fear of devaluing one's self-estimate, fear of having an uncertain future, fear of important others losing interest, and fear of upsetting important others (Conroy, Willow, & Metzler, 2002). When regression analyses were conducted controlling for the overlap between perfectionistic strivings and concerns, perfectionistic strivings predicted lower fear of experiencing shame and embarrassment. In contrast, perfectionistic concerns predicted higher fears of failure in all five dimensions.

Achievement goal orientations. Whereas the traditional approach focuses on motives and investigates differences in how strongly individuals are motivated and energized, the contemporary approach to achievement motivation focuses on achievement goal orientations and investigates differences in why individuals are motivated to achieve (Elliot, 1997).

In sport psychology, the prevalent model for investigating achievement goal orientations is Duda and Nicholls's (1992) model. The model differentiates two orientations: ego orientation and task orientation. The two orientations have different foci and different functionalities. In task orientation, athletes are focused on meeting the demands of the task, exerting effort, and developing their competence. Hence task orientation is considered a functional motivational orientation. In ego orientation, athletes are focused on demonstrating superior competence with respect to others or normative standards which may result in greater apprehension about one's ability. Hence ego orientation is often considered a dysfunctional motivational orientation, particularly in combination with low task orientation (see Duda, 2005, for a review).

Regarding perfectionism and achievement goal orientations in sports, most studies followed Duda and Nicholl's model and examined the relationships of perfectionism with task and ego orientation (Appleton, Hall, & Hill, 2009; Dunn et al., 2002; Hall, Kerr, & Matthews, 1998; Hall, Kerr, Kozub, & Finnie, 2007; Lemyre, Hall, & Roberts, 2008; Ommundsen, Roberts, Lemyre, & Miller, 2005). Unfortunately, no study used analyses that showed the unique relationships of perfectionistic strivings and concerns. If we regard the bivariate correlations, perfectionistic strivings showed positive correlations with both task orientation and ego orientation in all studies, except one where they showed a positive correlation only with ego orientation (Lemyre et al., 2008). In contrast, perfectionistic concerns did not show a clear pattern of correlations across the studies. In some studies, perfectionistic concerns showed

positive correlations with ego orientation and negative correlations with task orientation (Dunn et al., 2002; Lemyre et al., 2008; Ommundsen et al., 2005); in some studies, they showed a positive correlation with ego orientation and a nonsignificant correlation with task orientation (Hall et al., 1998; Hall et al., 2007); and in one study, they showed nonsignificant correlations with both task orientation and ego orientation (Appleton et al., 2009). Even though the pattern of findings is not consistent across studies, the findings suggest that perfectionistic strivings (showing positive correlations with ego and task orientation) are associated with a less dysfunctional pattern of motivational orientations than perfectionistic concerns (showing positive correlations with ego, but not with task orientation).

One reason why perfectionistic strivings and concern do not show a consistent pattern with ego and task orientation may be that the Duda and Nicholl's model does not differentiate between approach and avoidance goal orientations. Differentiating approach and avoidance is not only important for understanding different forms of achievement motivation (Elliot, 1997). It is also important for understanding different forms of perfectionism. According to the dual process theory of perfectionism (Slade & Owens, 1998), approach and avoidance is an important distinction for understanding differences between positive forms and negative forms of perfectionism because positive forms (such as perfectionistic strivings) are suggested to drive approach behaviors whereas negative forms (such as perfectionistic concerns) drive avoidance behaviors.

The distinction between approach and avoidance is central to the 2×2 model of achievement goals (Conroy, Elliot, & Hofer, 2003; Elliot & McGregor, 2001). The model differentiates two dimensions—definition (performance vs. mastery orientation) and valence (approach vs. avoidance orientation)—resulting in four different goal orientations: performance-

approach, mastery-approach, performance-avoidance, and mastery-avoidance goal orientation. As detailed by Conroy et al. (2003), performance-approach goals represent the motivation to demonstrate normative competence (e.g., striving to do better than others) and mastery-approach goals the motivation to achieve absolute or intrapersonal competence (e.g., striving to master a task). In contrast, performance-avoidance goals represent the motivation to avoid demonstrating normative incompetence (e.g., striving to avoid doing worse than others) and mastery-avoidance goals the motivation to avoid absolute or intrapersonal incompetence (e.g., striving to avoid doing worse than one has done previously).

Compared to the studies following the dichotomous model, the studies following the 2×2 model have produced a much clearer pattern of findings. This goes in particular for the three studies that used analyses controlling for the overlap between perfectionistic strivings and concerns (Stoeber, Stoll, Pescheck, & Otto, 2008; Stoeber, Stoll, et al., 2009; Zarghmi et al., 2010). The first study (Stoeber et al., 2008) examined student athletes' achievement goal orientations in training and in competition. When partial correlations were computed controlling for the overlap between perfectionistic strivings and concerns, perfectionistic strivings showed positive correlations with performance-approach and mastery-approach goal orientations. In contrast, perfectionistic concerns showed positive correlations with performance-avoidance, performance-approach, and mastery-avoidance goal orientations. The pattern of relationships was (partially) replicated in two studies that used multiple indicators to measure the two perfectionism dimensions and structural equation modeling to examine the relationships with the 2×2 goal orientations: a study examining young elite athletes (Stoeber, Stoll, et al., 2009) and a study examining adult elite athletes (Zarghmi et al., 2010). Whereas Zarghmi and colleagues failed to replicate the positive relationship between perfectionistic concerns and performance-

approach goal orientations, both studies replicated the previous finding that perfectionistic strivings showed positive relationships with performance-approach and mastery-approach goal orientations, suggesting that perfectionistic strivings are associated with functional motivational orientations. Moreover, both studies replicated the finding that perfectionistic concerns showed positive relationships with performance-avoidance and mastery-avoidance goal orientations, suggesting that perfectionistic concerns are associated with dysfunctional motivational orientations.

Performance

While the findings that perfectionistic strivings are associated with positive emotions and functional motivational orientations are important, the central question is if perfectionistic strivings also help athletes to achieve a better performance—or if they undermine athletes' performance as researchers who see perfectionism as a maladaptive characteristic have suggested. Unfortunately, only three studies so far have investigated the relationships of perfectionism and performance in athletes (Anshel & Mansouri, 2005; Stoeber, Uphill, & Hotham, 2009; Stoll, Lau, & Stoeber, 2008). Moreover, only two of the studies investigated sport performance and controlled for the overlap between perfectionistic strivings and concerns.

The first study (Stoll et al., 2008) examined student athletes and investigated performance in training. The study used a prospective correlational design. First, athletes completed measures of perfectionistic strivings and concerns in training. Then they performed a series of four trials with a new basketball training task that required scoring baskets from a nonstandard position. When partial correlations were analyzed controlling for the overlap between perfectionistic strivings and concerns, perfectionistic concerns showed a negative correlation with scoring performance in the first trial, but nonsignificant correlations with performance in the remaining

trials and with overall scoring performance (performance across all four trials). In contrast, perfectionistic strivings showed positive correlations with scoring performance in the first, second, and fourth trial. Moreover, perfectionistic strivings showed a positive correlation with overall scoring performance suggesting that perfectionistic strivings may help athletes' achieve higher performance in training.

The second study (Stoeber, Uphill, & Hotham, 2009) examined triathletes and investigated performance in competitions. The study examined triathletes' performance in two races: one race over the half-Ironman distance (1.9 km swimming, 90 km cycling, 21 km running) and one over the Olympic distance (1.5 km swimming, 40 km cycling, 10 km running). In both races, the study used a prospective correlational design. One day before the race, athletes completed the perfectionism measures and indicated their previous performance level (seasonal best). The next day athletes raced, their times were recorded, and athletes' race performance (time, rank) were taken from the official race results. When regression analyses were conducted controlling for the overlap between perfectionistic strivings and perfectionistic concerns, perfectionistic strivings predicted triathletes' performance in both studies whereas perfectionistic concerns was unrelated to performance. What is more, perfectionistic strivings predicted triathletes' performance beyond what was expected from their seasonal best. In both studies, athletes high in perfectionistic strivings outperformed athletes low in perfectionistic strivings, suggesting that perfectionistic strivings may help athletes achieve higher performance not only in training, but also in competitions.

Summary

The findings presented in this review demonstrate that is important to differentiate between perfectionistic strivings and perfectionistic concerns when investigating perfectionism

in sports. Moreover, they demonstrate that is important to control for the overlap between perfectionistic strivings and concerns to examine the unique relationships of the two dimensions. When doing so, it becomes apparent that perfectionistic strivings and concern show different, sometimes opposite, relationships and associations with variables from areas that are of key interest in sport psychology. Regarding three such areas—emotion, motivation, and performance—this review found that perfectionistic strivings showed positive relationships with positive emotions, competitive self-confidence, hope of success, task orientation, performance-approach and mastery-approach goals, and performance in training and competition. In addition, perfectionistic strivings showed negative relationships with competitive anxiety and fear of failure. In contrast, perfectionistic concerns showed positive relationships with negative emotions, competitive anxiety, fear of failure, and performance-avoidance and mastery-avoidance goals. With this, only perfectionistic concerns showed a pattern of relationships indicating maladaptive, dysfunctional, and unhealthy orientations and reactions in training and competitions. In contrast, perfectionistic strivings—when regarded in isolation from perfectionistic concerns—showed a pattern of relationships indicating adaptive, functional, and healthy orientations and reactions in training and competitions. Consequently, perfectionism in sports is not a through-and-through maladaptive characteristic. Rather perfectionism in sports is an ambivalent characteristic with positive and negative sides.

Implications for Applied Sport Psychology

The findings that perfectionistic strivings show unique positive relationships with positive emotions and functional motivational orientations and predicts higher performance in training and competition have important implications for our understanding, and evaluation, of perfectionism in sports. Particularly Flett and Hewitt's (2005) statement that “negative, self-

defeating outcomes and unhealthy patterns of behavior are evident in athletes ... who are focused cognitively on attaining perfection” (p. 14) needs to be reconsidered because perfectionistic strivings—which involve being focused on attaining perfection—show mostly positive associations and not negative associations, when the overlap with perfectionistic concerns is controlled for. Only perfectionistic concerns typically show negative associations. Consequently, it is not the focus on attaining perfection that is problematic. What is problematic is the focus on *not* attaining perfection—as expressed by concern over mistakes and negative reaction to imperfection. Therefore, the paradox that Flett and Hewitt (2005) see with regard to perfectionism in sports is not that competitive sports often require perfection and perfectionism impairs competitive performance. Rather, perfectionism itself is a paradoxical construct: on the one hand, it comprises aspects that are associated with positive affect, functional motivational orientations, and higher performance. On the other hand, it comprises aspects that are associated with negative affect and dysfunctional motivational orientations (but not always with lower performance).

Moreover, the findings have important implications for athletes, coaches, and personal trainers because they show that perfectionism is not necessarily a debilitating characteristic that is certain to undermine sport performance and prevent athletic development (Flett & Hewitt, 2005; Hall, 2006). Instead, perfectionistic strivings may help motivate athletes to achieve their best and may boost their performance in training and competitions.

However, there is one problem with perfectionistic strivings in sports. Perfectionistic strivings usually show high positive correlations with perfectionistic concerns (e.g., Gaudreau & Antl, 2008; Stoeber, Stoll, et al., 2009; Zarghmi et al., 2010), meaning that most athletes who have elevated levels of perfectionistic strivings also have elevated levels of perfectionistic

concerns. This is a problem because perfectionistic concerns—apart from being associated with negative emotions and dysfunctional motivational orientations—have shown close associations with further characteristics and processes that may impair performance and represent a risk to athletes' well-being and development such as an angry temperament (i.e., the disposition to experience anger without specific provocation), self-depreciating attributions of success and failure, low self-esteem, and low perceived athletic competence (Dunn et al., 2006; Gotwals, Dunn, & Wayment, 2003; Stoeber & Becker, 2008). Moreover, studies have shown that perfectionistic concerns are associated with athlete burnout (e.g., Gould, Udry, Tuffy, & Loehr, 1996; A. P. Hill, Hall, Appleton, & Kozub, 2008; Lemyre et al., 2008). Therefore, perfectionistic concerns represent an aspect of perfectionism that is clearly maladaptive, dysfunctional, and unhealthy. Consequently, a “healthy perfectionist approach” applied to sports should not aim at increasing perfectionistic strivings in athletes, but reducing perfectionistic concerns. In particular, this means that such an approach should try moving athletes who are in the unhealthy quadrant of our model (high perfectionistic strivings and high perfectionistic concerns) into the healthy quadrant (high perfectionistic strivings, but low perfectionistic concerns) by addressing these athletes' perfectionistic concerns.

But how can sport psychologists address perfectionistic concerns and how can coaches and personal trainers help athletes who suffer from perfectionistic concerns cope with their concerns? Unfortunately, so far no studies have investigated the effectiveness of programs and techniques in reducing perfectionistic concerns in athletes. However, there are studies in clinical psychology that have demonstrated the effectiveness of cognitive-behavioral techniques and guided self-help to reduce perfectionistic concerns in people with clinically high levels of perfectionism (Pleva & Wade, 2007; Riley, Lee, Cooper, Fairburn, & Shafran, 2007; Steele &

Wade, 2008). Many of these techniques—such as identifying, challenging, and changing maladaptive perfectionistic thoughts, feelings, and behaviors—have been summarized in two self-help guides (Antony & Swinson, 2009; Shafran, Egan, & Wade, 2010). The techniques could be easily adapted to the sport context and may represent a useful tool kit for future research in applied sport psychology to trial and test interventions addressing perfectionistic concerns in athletes.

Open Questions and Future Directions

There are further questions for future research on perfectionism in sport. First, we still know little about how individual differences in perfectionism develop. While there is general agreement that perfectionism has its roots in childhood and parents play a key role in the development of perfectionism (Flett, Hewitt, Oliver, & Macdonald, 2002; Stoeber & Childs, in press), only two studies so far have investigated the role athletes' parents play in perfectionism in sports (Appleton, Hall, & Hill, 2010; Sapieja, Dunn, & Holt, 2011). While representing important first steps in answering the question, both studies used cross-sectional designs which cannot tell us how parents contribute to the *development* of perfectionism. For this longitudinal studies are needed.

Second, we do not know anything about the long-term consequences of perfectionism in sports. In particular, we need to learn more about the long-term consequences of perfectionistic strivings on performance, as some researchers have argued that perfectionistic strivings—while boosting performance in the short run—are detrimental to sustained performance and athletic development because they may have negative consequences in the long run, for example, athlete burnout (e.g., Hall, 2006). Third, we need to know more about how perfectionism affects team cohesion and team performance. While there are a number of studies that have investigated

perfectionism in athletes engaged in team sports (e.g., Dunn et al., 2002; Hill et al., 2008; Stoeber et al., 2009), these studies have focused on how individual athletes' perfectionism affects the athletes, but not how it affects the team. Moreover, we need to know how teams (e.g., via perceived team environment or perceived team pressure) affect individual athletes' perfectionism. While there are studies that have started investigating the role that perceived coach pressure plays in athletes' perfectionism (Dunn et al., 2006; Sagar & Stoeber, 2009), the role of perceived team pressure is yet unexplored.

Finally, we need to know more about potential mediators and moderators of the relationships that perfectionistic strivings and concerns show with key variables in sports (cf. Baron & Kenny, 1986). Potential mediators will tell us more about the psychological processes that explain the effects of perfectionistic strivings and concerns. Potential moderators will tell us about characteristics that qualify the relationships of perfectionistic strivings and concerns. So far only a few studies have investigated moderator effects—and found either no or only limited evidence for moderation (e.g., Appleton et al., 2009, 2010). Studies investigating mediating effects have been more frequent—and more successful. For example, Stoeber and colleagues found that the effect of perfectionistic strivings on triathletes' race performance could be explained by differences in performance-approach versus performance-avoidance goal orientations (Stoeber, Uphill, & Hotham, 2009; see also Stoeber & Crombie, 2010). However, further studies investigating mediators are needed, particularly studies using prospective and longitudinal designs that do not measure perfectionism, mediators, and outcomes concurrently, but capture the time course of the mediation effects (Cole & Maxwell, 2003). Moreover, future studies on the effects of perfectionism in sports should take both cognitive (e.g., appraisals) and physiological factors (e.g., cardiac and vascular activity) into account and integrate the

differential effects of perfectionistic strivings versus perfectionistic concerns into existing theoretical frameworks that explain how individual differences in personality characteristics influence athletes' cognitive appraisals, motivational orientations, and emotional and physiological processes and the consequences they have for competitive performance (cf. Jones, Meijen, McCarty, & Sheffield, 2009).

Conclusions

While some researcher have argued that perfectionism in sports is a negative characteristic because it undermines athletes' performance and stifles athletic development, this review shows that perfectionism has a dual nature with positive and negative sides. This dual nature is represented in the two main dimensions of perfectionism—perfectionistic strivings and perfectionistic concerns—that show different and unique relationships with athletes' emotion, motivation, and performance. The pattern of findings suggests that only perfectionistic concerns are clearly maladaptive. In contrast, perfectionistic strivings appear to have an emotional and motivational quality that give athletes an additional “boost” to do their best, make an additional effort, and achieve the best possible results. Even some clinical psychologists are beginning to recognize that there is nothing unhealthy or maladaptive about perfectionistic strivings as such (e.g., Lundh, 2004). On the contrary, perfectionistic strivings may form part of a “healthy pursuit of excellence” (Shafran, Cooper, & Fairburn, 2002, p. 778). However, this may only be the case when perfectionistic strivings are not accompanied by perfectionistic concerns, because perfectionistic concerns are clearly unhealthy and maladaptive and—while they may have no direct negative effects on performance—represent a serious risk to athletes' motivation, self-esteem, and mental and physical health.

Footnotes

¹Gaudreau and Thompson (2010) recently proposed an alternative, 2×2 model of perfectionism. This model suggests to refer only to people who are low in perfectionistic strivings and low perfectionistic concerns as “nonperfectionists,” and refer to people low in perfectionistic concerns, but high in perfectionistic concerns as “pure evaluative concerns perfectionists.” Whereas Gaudreau and Thompson provided some initial evidence for their model (see, however, Douilliez & Lefèvre, 2011), I personally consider the strivings component of perfectionism an integral element of the definition of perfectionism (see also Shafran, Cooper, & Fairburn, 2002) and I am therefore unconvinced that people who only show the concerns component of perfectionism, but not the strivings component should be referred to as “perfectionists” (see also Rice & Ashby, 2007).

²There are some caveats when using the FMPS and MPS to measure perfectionistic strivings. First, the FMPS personal standards scale contains items that measure conditional self-worth. Consequently, it is preferable to use only the items measuring “pure personal standards” (see DiBartolo, Frost, Chang, LaSota, & Grills, 2004). Second, the MPS self-oriented perfectionism scale captures two different aspects of self-oriented perfectionism: perfectionistic striving and importance of being perfect (Campbell & Di Paula, 2002). Consequently, it is preferable to use only the perfectionistic striving items if one aims to capture perfectionistic strivings (see Stoeber & Childs, 2010; for a sports example, see A. P. Hill, Hall, & Appleton, 2010).

References

- Anshel, M. H., & Mansouri, H. (2005). Influences of perfectionism on motor performance, affect, and causal attributions in response to critical information feedback. *Journal of Sport Behavior, 28*, 99-124.
- Antony, M. M., & Swinson, R. P. (2009). *When perfect isn't good enough: Strategies for coping with perfectionism* (2nd ed.). Oakland, CA: New Harbinger.
- Appleton, P. R., Hall, H. K., & Hill, A. P. (2009). Relations between multidimensional perfectionism and burnout in junior-elite male athletes. *Psychology of Sport and Exercise, 10*, 457-465.
- Appleton, P. R., Hall, H. K., & Hill, A. P. (2010). Family patterns of perfectionism: An examination of elite junior athletes and their parents. *Psychology of Sport and Exercise, 11*, 363-371.
- Atkinson, J. W. (1957). Motivational determinants of risk-taking behavior. *Psychological Review, 64*, 359-372.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology Today, 14*(6), 34-52.
- 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* (pp. 181-198). Washington, DC: American Psychological Association.

- Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data: Questions and tips in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558-577.
- Conroy, D. E., Elliot, A. J., & Hofer, S. M. (2003). A 2 × 2 achievement goals questionnaire for sport: Evidence for factorial invariance, temporal stability, and external validity. *Journal of Sport & Exercise Psychology, 25*, 456-476.
- Conroy, D. E., Willow, J. P., & Metzler, J. N. (2002). Multidimensional fear of failure measurement: The Performance Failure Appraisal Inventory. *Journal of Applied Sport Psychology, 14*, 76-90.
- Craft, L. L., Magyar, T. M., Becker, B. J., & Feltz, D. L. (2003). The relationship between the Competitive State Anxiety Inventory-2 and sport performance: A meta-analysis. *Journal of Sport and Exercise Psychology, 25*, 44-65.
- DeCharms, R., & Davé, P. N. (1965). Hope of success, fear of failure, subjective probability, and risk-taking behavior. *Journal of Personality and Social Psychology, 1*, 558-568.
- DiBartolo, P. M., Frost, R. O., Chang, P., LaSota, M., & Grills, A. E. (2004). Shedding light on the relationship between personal standards and psychopathology: The case for contingent self-worth. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 22*, 241-254.
- Douilliez, C., & Lefèvre, F. (2011). Interactive effect of perfectionism dimensions on depressive symptoms: A reply to Gaudreau and Thompson (2010). *Personality and Individual Differences, 50*, 1147-1151.
- 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: Guilford.

- Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology, 84*, 290-299.
- 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.
- Dunn, J. G. H., Craft, J. M., Causgrove Dunn, J., & Gotwals, J. K. (2011). Comparing a domain-specific and global measure of perfectionism in competitive female figure skaters. *Journal of Sport Behavior, 34*, 25-46.
- Dunn, J. G. H., Gotwals, J. K., & Causgrove Dunn, J. (2005). An examination of the domain specificity of perfectionism among intercollegiate student-athletes. *Personality and Individual Differences, 38*, 1439-1448.
- Dunn, J. G. H., Gotwals, J. K., Causgrove Dunn, J., & Syrotuik, D. G. (2006). Examining the relationship between perfectionism and trait anger in competitive sport. *International Journal of Sport and Exercise Psychology, 4*, 7-24.
- Elliot, A. J. (1997). Integrating the “classic” and “contemporary” approaches to achievement motivation: A hierarchical model of approach and avoidance achievement motivation. In P. Pintrich & M. Maehr (Eds.), *Advances in motivation and achievement* (Vol. 10, pp. 143-179). Greenwich, CT: JAI Press.
- Elliot, A. J., & McGregor, H. A. (2001). A 2×2 achievement goal framework. *Journal of Personality and Social Psychology, 80*, 501-519.
- Enns, M. W., & Cox, B. J. (2002). The nature and assessment of perfectionism: A critical analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism* (pp. 33-62). Washington, DC: American Psychological Association.

- Flett, G. L., & Hewitt, P. L. (2002). Perfectionism and maladjustment: An overview of theoretical, definitional, and treatment issues. In P. L. Hewitt & G. L. Flett (Eds.), *Perfectionism* (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., Oliver, J. M., & Macdonald, S. (2002). Perfectionism in children and their parents: A developmental analysis. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 89-132). Washington, DC: American Psychological Association.
- 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., & Henderson, K. J. (1991). Perfectionism and reactions to athletic competition. *Journal of Sport & Exercise Psychology, 13*, 323-335.
- Frost, R. O., Marten, P. A., Lahart, C., & Rosenblate, R. (1990). The dimensions of perfectionism. *Cognitive Therapy and Research, 14*, 449-468.
- Garner, D. M., Olmstead, M. P., & Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15-34.
- Gaudreau, P., & Antl, S. (2008). Athletes' broad dimensions of dispositional perfectionism: Examining changes in life satisfaction and the mediating role of sport-related motivation and coping. *Journal of Sport & Exercise Psychology, 30*, 356-382.
- Gaudreau, P., & Thompson, A. (2010). Testing a 2×2 model of dispositional perfectionism. *Personality and Individual Differences, 48*, 532-537.

- Gotwals, J. K., & Dunn, J. G. H. (2009). A multi-method multi-analytic approach to establish internal construct validity evidence: The Sport Multidimensional Perfectionism Scale 2. *Measurement in Physical Education and Exercise Science, 13*, 71-92.
- Gotwals, J. K., Dunn, J. G. H., Causgrove Dunn, J., & Gamache, V. (2010). Establishing validity evidence for the Sport Multidimensional Perfectionism Scale-2 in intercollegiate sport. *Psychology of Sport and Exercise, 11*, 423-432.
- Gotwals, J. K., Dunn, J. G. H., & Wayment, H. A. (2003). An examination of perfectionism and self-esteem in intercollegiate athletes. *Journal of Sport Behavior, 26*, 17-38.
- Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology, 14*, 172-204.
- Gould, D., Udry, E., Tuffey, S., & Loehr, J. (1996). Burnout in competitive junior tennis players: I. A quantitative psychological assessment. *The Sport Psychologist, 10*, 322-340.
- 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.), *Essential processes for attaining peak performance* (Vol. 1, pp. 178-211). Oxford, UK: Meyer & Meyer.
- Hall, H. K., Kerr, A. W., Kozub, S. A., & Finnie, S. B. (2007). Motivational antecedents of obligatory exercise: The influence of achievement goals and multidimensional perfectionism. *Psychology of Sport and Exercise, 8*, 297-316.
- Hall, H. K., Kerr, A. W., & Matthews, J. (1998). Precompetitive anxiety in sport: The contribution of achievement goals and perfectionism. *Journal of Sport & Exercise Psychology, 20*, 194-217.

- 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.
- Hill, A. P., Hall, H. K., & Appleton, P. R. (2010). A comparative examination of the correlates of self-oriented perfectionism and conscientious achievement striving in male cricket academy players. *Psychology of Sport and Exercise, 11*, 162-168.
- Hill, A. P., Hall, H. K., Appleton, P. R., & Kozub, S. A. (2008). Perfectionism and burnout in junior elite soccer players: The mediating influence of unconditional self-acceptance. *Psychology of Sport and Exercise, 9*, 630-644.
- Hill, R. W., Huelsman, T. J., & Araujo, G. (2010). Perfectionistic concerns suppress associations between perfectionistic strivings and positive life outcomes. *Personality and Individual Differences, 48*, 584-589.
- Hill, R. W., Huelsman, T. J., Furr, R. M., Kibler, J., Vicente, B. B., & Kennedy, C. (2004). A new measure of perfectionism: The Perfectionism Inventory. *Journal of Personality Assessment, 82*, 80-91.
- Jones, M., Meijen, C., McCarthy, P. J., & Sheffield, D. (2009). A theory of challenge and threat states in athletes. *International Review of Sport and Exercise Psychology, 2*, 161-180.
- Kaye, M. P., Conroy, D. E., & Fifer, A. M. (2008). Individual differences in incompetence avoidance. *Journal of Sport & Exercise Psychology, 30*, 110-132.
- Koivula, N., Hassmén, P., & Fallby, J. (2002). Self-esteem and perfectionism in elite athletes: Effects on competitive anxiety and self-confidence. *Personality and Individual Differences, 32*, 865-875.

- Lemyre, P.-N., Hall, H. K., & Roberts, G. C. (2008). A social cognitive approach to burnout in athletes. *Scandinavian Journal of Medicine & Science in Sports, 18*, 221-234.
- Lundh, L.-G. (2004). Perfectionism and acceptance. *Journal of Rational-Emotive & Cognitive-Behavior Therapy, 22*, 255-269.
- Martens, R., Burton, D., Vealey, R. S., Bump, L. A., & Smith, D. E. (1990). Development and validation of the Competitive State Anxiety Inventory-2. In R. Martens, R. S. Vealey, & D. Burton (Eds.) *Competitive anxiety in sport* (pp. 117-190). Champaign, IL: Human Kinetics.
- Martinet, G., & Ferrand, C. (2006). A cluster analysis of perfectionism among competitive athletes. *Psychological Reports, 99*, 723-738.
- Martinet, G., & Ferrand, C. (2007). A cluster analysis of precompetitive anxiety: Relationship with perfectionism and trait anxiety. *Personality and Individual Differences, 43*, 1676-1686.
- Martinet, G., Ferrand, C., Guillet, E., & Gauthier, S. (2010). Validation of the French version of the Competitive State Anxiety Inventory-2 Revised (CSAI-2R) including frequency and direction scales. *Psychology of Sport and Exercise, 11*, 51-57.
- McArdle, S. (2010). Exploring domain-specific perfectionism. *Journal of Personality, 78*, 493-508.
- McClelland, D. C. (1985). How motives, skills, and values determine what people do. *American Psychologist, 40*, 812-825.
- Ommundsen, Y., Roberts, G. C., Lemyre, P.-N., & Miller, B. W. (2005). Peer relationships in adolescent competitive soccer: Associations to perceived motivational climate, achievement goals and perfectionism. *Journal of Sports Sciences, 23*, 977-989.
- Pacht, A. R. (1984). Reflections on perfection. *American Psychologist, 39*, 386-390.

- Pleva, J., & Wade, T. D. (2007). Guided self-help versus pure self-help for perfectionism: A randomised controlled trial. *Behaviour Research and Therapy*, *45*, 849-861.
- Rice, K. G., & Ashby, J. S. (2007). An efficient method for classifying perfectionists. *Journal of Counseling Psychology*, *54*, 72-85.
- Riley, C., Lee, M., Cooper, Z., Fairburn, C. G., & Shafran, R. (2007). A randomised controlled trial of cognitive-behaviour therapy for clinical perfectionism: A preliminary study. *Behaviour Research and Therapy*, *45*, 2221-2231.
- Sagar, S. S., & Stoeber, J. (2009). Perfectionism, fear of failure, and affective responses to success and failure: The central role of fear of experiencing shame and embarrassment. *Journal of Sport & Exercise Psychology*, *31*, 602-627.
- Sapieja, K. M., Dunn, J. G. H., & Holt, N. L. (2011). Perfectionism and perceptions of parenting styles in male youth soccer. *Journal of Sport & Exercise Psychology*, *33*, 20-39.
- Shafran, R., Cooper, Z., & Fairburn, C. G. (2002). Clinical perfectionism: A cognitive-behavioural analysis. *Behaviour Research and Therapy*, *40*, 773-791.
- Shafran, R., Egan, S., & Wade, T. (2010). *Overcoming perfectionism: A self-help guide using cognitive behavioral techniques*. London: Robinson.
- 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. (2001). The revised Almost Perfect Scale. *Measurement and Evaluation in Counseling and Development*, *34*, 130-145.
- Steele, A. L., & Wade, T. D. (2008). A randomised trial investigating guided self-help to reduce perfectionism and its impact on bulimia nervosa: A pilot study. *Behaviour Research and Therapy*, *46*, 1316-1323.

- Stöber, J. (1998). The Frost Multidimensional Perfectionism Scale: More perfect with four (instead of six) dimensions. *Personality and Individual Differences, 24*, 481-491.
- Stoeber, J., & Becker, C. (2008). Perfectionism, achievement motives, and attribution of success and failure in female soccer players. *International Journal of Psychology, 43*, 980-987.
- Stoeber, J., & Childs, J. H. (2010). The assessment of self-oriented and socially prescribed perfectionism: Subscales make a difference. *Journal of Personality Assessment, 92*, 577-585.
- Stoeber, J., & Childs, J. H. (in press). Perfectionism. In R. J. R. Levesque (Ed.), *Encyclopedia of adolescence*. New York: Springer.
- Stoeber, J., & Crombie, R. (2010). Achievement goals and championship performance: Predicting absolute performance and qualification success. *Psychology of Sport and Exercise, 11*, 513-521.
- Stoeber, J., Harris, R. A., & Moon, P. S. (2007). Perfectionism and the experience of pride, shame, and guilt: Comparing healthy perfectionists, unhealthy perfectionists, and nonperfectionists. *Personality and Individual Differences, 43*, 131-141.
- Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*, 295-319.
- 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., & Stoeber, F. S. (2009). Domains of perfectionism: Prevalence and relationships with perfectionism, gender, age, and satisfaction with life. *Personality and Individual Differences, 46*, 530-535.

- 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.
- Stoeber, J., Stoll, O., Salmi, O., & Tiikkaja, J. (2009). Perfectionism and achievement goals in young Finnish ice-hockey players aspiring to make the Under-16 national team. *Journal of Sports Sciences, 27*, 85-94.
- Stoeber, J., Uphill, M. A., & Hotham, S. (2009). Predicting race performance in triathlon: The role of perfectionism, achievement goals, and personal goal setting. *Journal of Sport & Exercise Psychology, 31*, 211-245.
- Stoll, O., Lau, A., & Stoeber, J. (2008). Perfectionism and performance in a new basketball training task: Does striving for perfection enhance or undermine performance? *Psychology of Sport and Exercise, 9*, 620-629.
- Zarghmi, M., Ghamary, A., Shabani, S. E. H. S., & Varzaneh, A. G. (2010). Perfectionism and achievement goals in adult male elite athletes who compete at the national level and above. *Journal of Human Kinetics, 26*, 147-155.

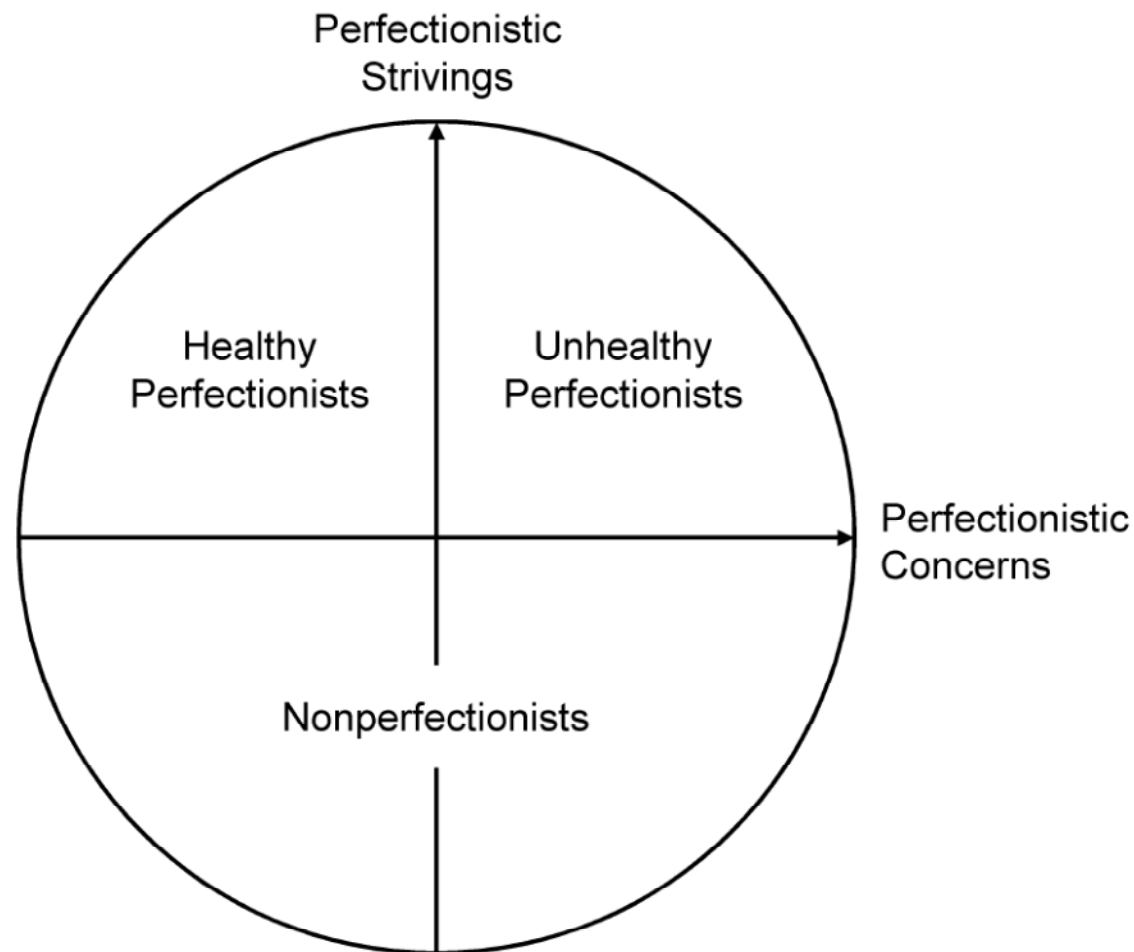


Figure 1. Across multidimensional models of perfectionism, two main dimensions of perfectionism can be distinguished (perfectionistic strivings, perfectionistic concerns) which can be used to differentiate between three groups of perfectionists (healthy perfectionists, unhealthy perfectionists, nonperfectionists). Adapted from “Positive conceptions of perfectionism: Approaches, evidence, challenges,” by J. Stoeber and K. Otto, *Personality and Social Psychology Review*, 10, p. 296. Copyright 2006 by Lawrence Erlbaum Associates, Inc.