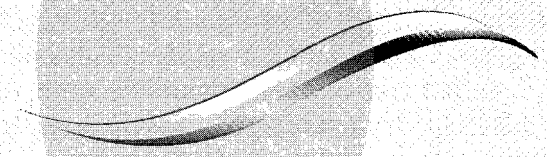
CHAPTER 4

Perfectionism: A Foundation for Sporting Excellence or an Uneasy Pathway Toward Purgatory?



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In the last decade, research into perfectionism has developed rapidly in social, educational, and clinical psychology (Beiling, Israeli, Smith, & Antony, 2003; Flett & Hewitt, 2002, 2006; Owens & Slade, 2008; Parker, 1997; Rice, Vergera, & Aldea, 2006; Shafran, Cooper, & Fairburn, 2002; Stoeber & Otto, 2006). During the same period, research on the influence of perfectionism in sport has begun to emerge (e.g. Anshel & Eom, 2002; Appleton, Hall, & Hill, 2009; Dunn, Gotwals, & Causgrove Dunn, 2005; Flett & Hewitt, 2005; Hall, Kerr, & Matthews, 1998; Hill, Hall, Appleton, & Kozub, 2008; McArdle & Duda, 2008; Ommundsen, Roberts, Lemyre, & Miller, 2005; Stoeber, Stoll, Pescheck, & Otto, 2008). A review of research in the area of sport by Hall (2006) concluded that perfectionism appeared to be an inherently debilitating personality characteristic that undermines the fulfillment of athletic potential in all but the most exceptional circumstances. He concurred with a position put forward by Greenspon (2000) that questioned whether perfectionism could ever be considered a fundamentally beneficial quality, and he concluded that little evidence supported the view that perfectionism of any type was synonymous with adaptive achievement striving in sport. Since the review, a growing body of empirical evidence has accrued that appears to demonstrate that some dimensions of perfectionism are not only associated with positive outcomes but may also underpin adaptive patterns of motivation and enhance athletic performance (Stoeber, Otto, Pescheck, Becker, & Stoll, 2007; Stoeber, Stoll, Pescheck, & Otto, 2008; Stoeber, Uphill, & Hotham, 2009; Stoll, Lau, & Stoeber, 2008; and colleagues' multiple studies). This evidence clearly challenges the position put forward by Hall (2006) and warrants scrutiny.

The purpose of this chapter is to establish whether perfectionism affords a motivational foundation for sporting excellence or whether it provides a framework for performance appraisal that condemns many achievement-obsessed athletes to a life of purgatory because their accomplishments are seldom sufficient to meet their exacting standards. The chapter draws on evidence from extant literature to provide a clear understanding of the meaning and significance of perfectionism in sport. The chapter also revisits questions that have puzzled both sport psychologists and coaches for some time. These include whether striving for perfection can ever be considered to reflect a truly adaptive form of motivation and whether the term *perfectionism* can describe anything other than a fundamentally maladaptive pattern of achievement activity. Two seemingly polarized views on perfectionism have emerged from research in this area (Stoeber & Otto, 2006; Owens & Slade, 2008; Flett & Hewitt, 2005, 2006). One prevailing view considers that because perfectionism reflects a broad array of personal qualities, it may assume multiple forms that can range from motivationally enabling to psychologically debilitating.

Those adhering to this perspective believe that in its most positive guise, perfectionism may depict a largely beneficial personality characteristic that underpins both adaptive and sustained motivation and thereby facilitates an athlete's quest for sporting excellence. In contrast, others endorse the belief that despite the apparent benefits that perfectionism may bring, it is best considered a potentially debilitating attribute because the style of achievement striving that it engenders is fundamentally maladaptive. Over time, this type of achievement striving will not only inhibit athletic performance but also undermine an athlete's psychological well-being. Although these two perspectives may appear to be incompatible, the chapter will provide evidence to suggest that this apparent contradiction may be more about the terminology adopted and the manner in which multidimensional measures have been used than about a fundamental disagreement regarding the underlying psychological processes associated with the construct.

The chapter first describes a number of high-profile athletes to illustrate the influence that perfectionism may have on those performing at the highest level of sport. Beyond achievement striving, the examples reveal a wide range of behavioral and psychological effects that have the potential to lead to both impairment and distress. But because these detrimental outcomes often occur in combination with unrivaled sporting achievement, those interested in performance excellence tend to limit their focus to the energizing features of the disposition. They suggest that perfectionism constrained in this manner might be considered a hallmark quality of elite performance rather than a broadly debilitating personality characteristic (Anshel & Eom, 2002; Dunn, Causgrove Dunn, & Syrotuik, 2002; Hardy, Jones, & Gould, 1996; Henschen, 2000). We believe that the accounts of these elite athletes illustrate that debilitating consequences of perfectionism arise from the same psychological processes that energize high levels of achievement striving.

To evaluate the degree to which the features of perfectionism may be responsible for performance excellence, the chapter then examines how perfectionism has been defined. Various definitions are considered, and, through a synthesis of the literature, we identify the core cognitive and behavioral features of the construct. This synthesis draws attention to the fact that when perfectionism is defined in a constrained manner, using isolated features such as heightened goal striving, it may describe something other than perfectionism. The chapter then considers how, in some instances, perfectionism has been defined by its measures rather than by its core features, and that through the disaggregation of its defining qualities empirical evidence has been accrued to support the notion that certain forms of perfectionism may be universally positive or healthy. Evidence is presented to demonstrate that in the absence of the core defining features of perfectionism, the concept of positive perfectionism bears such a strong resemblance to various adaptive motivational constructs that it makes neither conceptual nor empirical sense to refer to this form of achievement striving as perfectionism.

The chapter reviews empirical literature that has examined perfectionism in sport to illustrate that when perfectionism is measured in a manner that captures its core features simultaneously, it has few positive psychological and performance consequences. This literature challenges notions that perfectionism can be positive and demonstrates that the outcomes are more detrimental when the construct is viewed in its broadest sense. Finally, because little work

has been done to develop effective interventions to manage perfectionism in sport, the chapter builds upon ideas proffered by Flett and Hewitt (2005) that suggest various options for reframing and moderating the cognitions associated with perfectionism to help athletes manage the deleterious consequences.

Perfectionism in Elite Sport Performers

A number of prominent sport psychology practitioners and coaches have noted that at an elite level, many athletes appear to exhibit distinct qualities of perfectionism in their achievement striving (Gould, Dieffenbach, & Moffett, 2002; Stoeber, Uphill, & Hotham, 2009). Some have suggested that these qualities may play a significant role in helping athletes to achieve and maintain performance excellence, leading to a belief that perfectionism is a positive characteristic that should not be discouraged (Hardy, Jones, & Gould, 1996; Henschen, 2000). Mallet and Hanrahan (2004) argue that this pattern of achievement striving may enable some elite athletes to fulfill fundamental needs because it allows them to demonstrate competence, prove their worth to others, and gain a high degree of recognition, all of which contribute to positive self-perceptions. Others have taken a more guarded approach (e.g., Flett & Hewitt, 2005; Hall, 2006). They suggest that although perfectionism may appear to be influential in enabling some athletes to perform at the highest level, this particular type of striving may bring with it significant psychological and personal costs. Growing evidence suggests that this occurs because the beliefs that energize heightened achievement striving also appear to activate a range of debilitating cognitive, affective, and behavioral processes. These processes may ultimately prevent potentially talented athletes from fulfilling their athletic potential and may undermine their psychological well-being. Accounts of elite athletes who are described by themselves or others as perfectionists are not uncommon. But the experiences of athletes who exhibit the core characteristics of perfectionism are rarely positive when one considers the consequences beyond achievement behavior and on their lives more broadly.

The case of Johnny Wilkinson, an England rugby player, is illuminating. Hall (2006) highlighted that during coverage of the 2003 Rugby World Cup, a competition in which Wilkinson kicked the winning drop goal and was the leading points scorer in the tournament, the perfectionistic tendencies that he reported were revered as the source of his exceptional talent. But his perfectionism also appeared to be the source of a number of psychological problems, including relaxation difficulties, worry, and stress. At the time, these issues were consigned to being inconsequential, and perhaps necessary, costs of his success. Wilkinson has since provided vivid accounts of his experiences during this period (Wilkinson, 2004, 2008). According to his recollection, a fear of failure, feelings of guilt associated with even minor deviations from his strict training regimen, and an extreme desire for control over performance outcomes characterized this period of his career. At the time, his response to this intense internal pressure was to practice obsessively, especially his kicking. Wilkinson described this behavior as both exhausting and destructive, in part because it led to numerous back, groin, and leg muscle injuries.

Other top athletes have encountered similar experiences because of their perfectionism. One of these is Victoria Pendleton, currently a six-time world champion, Commonwealth champion, and Olympic champion in track sprint cycling. She is also the current Commonwealth and Olympic record holder in the 200-meter time trial event and the U.K. national record holder in the 200-meter and 500-meter time trial events. When commenting on her successes in 2008, a year in which she won two world championships and an Olympic gold medal (McRae, 2008), she described herself as unsatisfied and under pressure. Despite achieving at the highest level, she recounted being profoundly dissatisfied and unable to take pleasure in her accomplishments. In her words, she described feeling that "she is nowhere near as good as she should be." Pendleton still considers herself "a self-critical perfectionist." She believes that she is striving for something that she will never achieve and consequently often finds herself in a state of emotional turmoil. Given her considerable accomplishments to date, it is unlikely that future achievements will satisfy her desire for perfection.

In the case of Ronnie O'Sullivan, a world-class snooker player, the consequences of failing to cope with perfectionism continue to be debilitating and pathological. Like Pendleton, O'Sullivan experienced major success in sport. He is a four-time world snooker champion, masters champion, and the winner of 22 ranking events. He attributes these successes to a commitment to perfection that he considers instrumental to maintaining his motivation. But O'Sullivan also has a history of drug addiction and depression. This, too, he attributes to his perfectionism. Again, despite his sporting achievements, O'Sullivan has described an inability to derive a sense of satisfaction from his achievements. Moreover, he describes experiencing "a constant sense of failure" because of being unable to achieve the perfectionistic standards that he holds for himself (O'Sullivan, 2004).

Although perfectionism can clearly have a profound personal effect, in team sports it may also have a disruptive influence on the interpersonal dynamics of the group. The behavior of former Irish international footballer and Manchester United F.C. captain Roy Keane illustrates how perfectionism can detrimentally influence team dynamics. As the Irish team prepared for the 2002 World Cup tournament in Japan and Korea, Keane's perfectionism and intense motivation for success was clearly evident through the high expectations that he maintained for himself, his teammates, and the coaching staff. But his incessant demands seemed to undermine cohesion and disrupt team unity because others were perceived as being unable to meet his expectations. Keane's overall dissatisfaction with preparations and complaints about training facilities and the poor professional standards exhibited by others led to arguments, team disunity, and interpersonal conflict, which eventually resulted

in Keane's being ejected from the team's training camp before the World Cup tournament (O'Hagan, 2002).

Although the motivational qualities of perfectionism are evident in all the preceding examples, this pattern of achievement striving clearly contributes to numerous aversive psychological consequences and may ultimately lead to debilitation. But because it encourages a commitment to the pursuit of high standards, some consider it a valued quality for athletes to exhibit and a possible route to sporting success (Stoeber & Otto, 2006; Stoll et al. 2008). The label *perfectionist* is often used loosely to describe athletes who demonstrate this type of commitment, and this labeling contributes to uncertainty among coaches and sport psychologists about its genuine influence. Many find it difficult to see beyond the beneficial performance effects associated with striving to achieve (Hall, 2006). In our view, however, the term *perfectionism* refers to individuals who exhibit more than a commitment to high standards. To understand why perfectionism may energize heightened achievement striving, bring about positive outcomes, but ultimately carry the potential for psychological debilitation, we must consider how the core features of this personality characteristic give rise to psychological processes underpinning this form of achievement behavior.

Definition

The overall uncertainty about the influence of perfectionism on athletes may be attributed, in part, to the absence of a clear definition of the construct. This lack of definitional clarity has been noted by Flett and Hewitt (2002), who identified as many as 21 separate terms that purported to describe perfectionism. These terms have been gleaned from a variety of approaches that differ both in their perspective and in their assumptions about the nature of the construct. Although each holds that distinguishing qualities are at the heart of the disposition, there appears to be little overall agreement about the precise defining characteristics. Similarly, opinion is divided about which of these characteristics must be exhibited for a person to be labeled a perfectionist (e.g., Frost, Marten, Lahart, & Rosenblate, 1990; Shafran & Mansell, 2001). The inability to agree on these issues has effectively blurred the distinction between perfectionism and other forms of achievement behavior that involve striving to excel. Ultimately, some have argued that perfectionism can exist in both adaptive and maladaptive forms (e.g., Enns, Cox, Sareen, & Freeman, 2001; Rice & Lapsley, 2001; Slaney & Ashby, 1996; Slade & Owens, 1998). But when we look beyond the act of perfectionistic striving to identify the core defining qualities of this characteristic, we contend that perfectionism represents a unique disposition whose essential features are distinct from other forms of achievement motivation that may share some, but not all, of the fundamental characteristics of perfectionism.

Although most people accepted that the pursuit of high standards is an important quality of perfectionism, when considered in isolation, this behavior

is insufficient to accurately define the construct (Flett & Hewitt, 2002; Frost et al. 1990). Many believe that perfectionism involves much more than the act of striving (Burns, 1980; Greenspon, 2000; Hamachek, 1978; Hollander, 1965; Flett & Hewitt, 2002). Rather, perfectionism is a psychological commitment to exceedingly high standards that is believed to reflect an extreme way of thinking in which the meaning of achievement becomes distorted by irrational beliefs and dysfunctional attitudes (Ellis, 1962; Hamachek, 1978; Jones, 1968; Weissman & Beck, 1978). When committed to the pursuit of high standards, radical beliefs that consider that success and failure exist as dichotomous extremes and that self-worth is contingent on achievement distort the perceived criteria against which performance is appraised.

When accomplishment is assigned such irrational importance and the margin between success and failure is considered so narrow, anything that is perceived to fall short will evoke self-censure (Flett & Hewitt, 2002). This tendency to engage in excessively harsh self-evaluation while in the pursuit of exceedingly high standards is purported to be a further key distinguishing feature of perfectionism, and it is this tendency that gives rise to many of the cognitive and behavioral patterns that are considered to define the construct (Greenspon, 2000; Hamachek, 1978; Hewitt & Flett, 1991). The use of dichotomous evaluative processes results in the condemnation of anything less than flawlessness, and this circumstance provides perfectionists with little scope for error (Burns, 1980; Hollander, 1965). As a result, perfectionists are extraordinarily concerned about making mistakes and tend to overgeneralize failure experiences beyond any single event (Burns, 1980; Frost et al., 1990; Hamachek, 1978). They also exhibit selective attention to, and a preoccupation with, personal shortcomings. When this is combined with concerns about the potential impact of failure, perfectionists frequently exhibit vague doubts about whether the quality of their performance, their preparation, or their effort will be sufficient to meet extreme standards (Frost et al., 1990). They have difficulty making an independent evaluation about whether they have completed any task satisfactorily, and they may strive obsessively as a compensatory strategy (Frost et al., 1990).

We propose, therefore, that perfectionism does not simply reflect the pursuit of high standards but rather appears to be a multifaceted personality characteristic that encompasses a particular constellation of achievement-related cognition and behavior associated with a commitment to flawlessness in contexts that hold personal relevance (Campbell & Di Paula, 2002; Flett & Hewitt, 2002). The framework on which this pattern of cognition is based pertains to a belief that self-acceptance is inextricably tied to accomplishment. This conditional self-acceptance fosters an overdependence on personal attainment and causes goal striving to become compulsive (Greenspon, 2000; Lundh, 2004; Lundh, Saboonchi, & Wangby, 2008). Although this mindset has the potential to bring about positive outcomes through heightened achievement striving, these beliefs may also provide the basis for psychological difficulties. For some, these negative consequences may go unnoticed, and

their achievement striving leads to personal attainment. Inevitably, however, the harsh self-evaluation that follows perceived failure to meet internalized ideal standards underpins the development of a wide range of debilitating consequences (see Dunkley, Zuroff, & Blankstein, 2006).

When defined in this manner, perfectionism cannot be considered an adaptive motivational pattern. It is thus intriguing that many consider perfectionism a positive characteristic (Stoeber & Otto, 2006; Slade & Owens, 1998; Slaney & Ashby, 1996). The notion that perfectionism may be a constructive quality seems to have originated from the early writings of Adler (1956) and Hollander (1965). The idea was given significant impetus, however, by Hamachek (1978), who coined the terms *normal perfectionism* and *neurotic perfectionism* in an attempt to differentiate between the adaptive and maladaptive psychological processes that underpin striving to reach excessively high standards. Hamachek (1978) considered normal perfectionism an adaptive characteristic because it reflected an appetitive pattern of achievement behavior. This idea implied that individuals sought opportunities to achieve and were able to gain pleasure from the process of striving to meet personally challenging goals, to derive intrinsic satisfaction from task mastery, and to attain self-esteem from goal accomplishment. Hamachek believed that neurotic perfectionism, in contrast, was fundamentally maladaptive because it reflected a failure avoidance pattern in which the threshold for avoidance is the accomplishment of excessive personal demands. The process of striving leads neurotic perfectionists to focus on their deficiencies because it induces incessant worry that any outcomes that fall short of demanding standards will be insufficient to gain either approval or acceptance from significant others (Hamachek, 1978).

Note that in Hamachek's description, the goals toward which neurotic perfectionists strive and the process by which their goals are evaluated are qualitatively different from those of normal perfectionists. The goals of neurotic perfectionists will typically offer a level of challenge that lies beyond the individual's capability. Furthermore, the inflexibility within the appraisal process in comparison to that of normal perfectionists means that the neurotic perfectionist rarely experiences any sense of accomplishment. Normal perfectionists seek goals that are challenging yet flexible, and their self-expectations are realistic, so appraisal tends to be a reflective task-focused process, as opposed to the ruminative self-focused process employed by neurotic perfectionists.

Although Hamachek's description of neurotic perfectionism has informed the conceptual development of some contemporary approaches to perfectionism (Hewitt & Flett, 1991; Frost et al., 1990; Slaney, Ashby, & Trippi, 1995), the notion of normal perfectionism has not always been readily accepted. This has occurred, in part, because some consider this concept to lack many of the core characteristics of perfectionism. Consequently, normal perfectionism demonstrates a large degree of conceptual overlap with other adaptive forms of achievement behavior (Greenspon, 2000, 2008; Flett & Hewitt, 2006; Hall, 2006). For example, normal perfectionism seems to depict what Dweck (2006) has referred to as a growth mind-set in which a person can develop basic qualities through challenge and effort. As a result, it is never clear how normal perfectionism is conceptually and empirically distinct from adaptive forms of achievement behavior in which highly motivated people are simply striving to meet challenging goals. Noting this, Hall (2006) has argued that if it is not possible to make such a distinction, using the term *normal* when referring to perfectionism will do little more than create conceptual confusion.

The notion that perfectionism could be described in any sense as normal has been challenged at a conceptual level by a number of other authors (Greenspon, 2000; Flett & Hewitt, 2006). For example, Flett and Hewitt (2006) question whether the behavioral characteristics exhibited by normal perfectionists are sufficient to be defined as a perfectionist. They argue that striving for perfection by definition goes beyond the pursuit of excellence. That is, when striving for perfection, individuals not only place irrational importance on flawlessness but also retain an inflexible commitment to their goals and hold firmly to a belief that achievement will come about only when they adhere to these rigid, exacting principles. Greenspon (2000, 2008) was especially scathing in his criticism, suggesting that it was inappropriate to attach the label *normal* to perfectionism because perfection was largely an illusory and irrational concept. For this reason he thought it questionable to consider the behavior of individuals who pursue perfection as either normal or psychologically healthy, and he suggested that the term *normal perfectionism* might be regarded as an oxymoron. Greenspon (2000) further claimed that there was neither a valid conceptual reason nor an empirically based argument to support the existence of a construct labeled normal, or healthy, perfectionism and that its existence has been based on uncritical acceptance of Hamachek's ideas rather than on any credible empirical evidence.

Since Greenspon's (2000) initial critique, empirical evidence has emerged that some believe provides support for Hamachek's (1978) original contentions that perfectionism may manifest in either an adaptive or a maladaptive form (e.g., Owens & Slade, 2008; Stoeber & Otto, 2006). The evidence has been drawn from studies that have examined the consequences of various perfectionism dimensions on psychological health, the results of factor analytical studies, and investigations that have examined the consequences of perfectionism after controlling for any relationship between perfectionism dimensions. A critical examination of these strategies highlights a number of concerns about the quality of the evidence that has been generated by available measures.

Disaggregation of Multidimensional Measures of Perfectionism

Only after the development of multidimensional measures have researchers been able to claim empirical support for the existence of positive forms of perfectionism. Multidimensional measures made it possible to capture the broad range of defining qualities, which reflected the personal and social nature of the construct, as well as the source and direction of perfectionistic

behavior (Cox, Enns, & Clara, 2002; Hewitt & Flett, 1991; Frost et al., 1990). Multidimensional measures have also allowed researchers to examine dimensions of perfectionism that reflect a commitment to exceedingly high standards and evaluative concerns independently. The finding that specific subdimensions of perfectionism are associated with various positive outcomes has led some to argue that it is possible to determine the effects of normal or positive perfectionism by disaggregating these dimensions from others that are typically associated with debilitating consequences (Parker & Adkins, 1995; Rice, Ashby, & Slaney, 1998; Rice, Bair, Castro, Cohen, & Hood, 2003). Although it may be convenient to isolate specific dimensions, this approach seems counterintuitive to an argument that perfectionism is best understood as a broad multidimensional construct. Furthermore, the disaggregation strategy is methodologically problematic for a number of reasons. In particular, individual dimensions of perfectionism are not inclusive of all the core features of perfectionism. In fact, in some instances the constructs being examined will bear little resemblance to what theorists would consider perfectionism. Therefore, perfectionism becomes defined by its measures rather than by a clear conceptual basis and agreement on its core qualities.

One scale that has frequently been subjected to this type of disaggregation is Frost's Multidimensional Perfectionism Scale (F-MPS) (Frost et al., 1990). MPS lends itself to this strategy because two subscales reflect generally adaptive behaviors (the pursuit of exceedingly high personal standards and an emphasis on precision and order) and the remaining four subscales reflect more critical and evaluative cognitions (a preoccupation with avoiding mistakes, overall doubt about the quality of one's performance and preparation, perceived parental expectations, and perceived evaluation by parents). But to suggest that the subscales reflecting the pursuit of high standards and organization together constitute a measure of positive perfectionism is conceptually problematic. Frost et al. (1990) argued that the pursuit of high personal standards is not the central defining quality of perfectionism and that the organization dimension is largely peripheral. Therefore, before any judgment about perfectionism can be made, the pursuit of high personal standards must be considered in conjunction with concern about mistakes that Frost et al. (1990) considered the fundamental defining quality. When the individual dimensions of the F-MPS are considered in isolation, they may misrepresent the broader construct of perfectionism and lead to errors of inclusion because a person who obtains a high score on any one dimension may be mislabeled as a perfectionist. Clearly, therefore, disaggregation of the subscales on the F-MPS is a problematic strategy because it fails to recognize the complex multidimensional nature of the construct and obfuscates the meaning of the term *perfectionism*.

Factor Analysis of Multidimensional Perfectionism Scales

A second approach that has provided empirical support for a distinction between normal and neurotic perfectionism is the factor analysis of existing multidimensional perfectionism measures. Factor analyzing the subscales from

Hewitt and Flett's (1991) Multidimensional Perfectionism Scale (H-MPS) and the F-MPS to create composite measures is one strategy that attempts to ensure that the self-critical element of perfectionism is not lost through disaggregation. The H-MPS comprises three subscales that measure essential components of perfectionistic behavior that are thought to be associated with varying levels of psychological impairment and distress. Self-oriented perfectionism reflects a process by which people set exceedingly high personal standards and employ a harsh, self-critical style in response to attempts to meet those standards. Socially prescribed perfectionism describes a slightly different process whereby people strive to meet internalized high standards, which they believe others expect of them. Other-oriented perfectionism is considered to have a similar basis to self-oriented perfectionism, but the behavior is interpersonal in nature. In other words, those high in other-oriented perfectionism direct their unrealistic expectations toward other people and respond to others' attempts to meet expectations in a harsh, critical manner (Flett & Hewitt, 2002; Hewitt & Flett, 1991).

In a number of studies, factor analysis of the various H-MPS and F-MPS subscales (e.g., Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Rice, Ashby, & Slaney, 1998; Stumpf & Parker, 2000) has revealed two higher-order latent factors. The first, labeled personal standards perfectionism, comprises the self- and other-oriented perfectionism scales from the H-MPS, as well as the personal standards and organization scales from the F-MPS. The second, labeled evaluative concerns perfectionism, comprises concern about mistakes, doubts about action, parental expectations, and parental criticism from the F-MPS and socially prescribed perfectionism from the H-MPS. The emergence of these two higher-order factors are purported to be indicative of the normal and neurotic distinction highlighted by Hamachek. A review by Stoeber and Otto (2006) of 15 studies adopting this approach found evidence that a single factor reflecting positive dimensions of perfectionism such as striving for high personal standards, organization, and self-oriented perfectionism was positively associated with adaptive correlates. A second approach has employed either cluster analysis or cutoff scores on various perfectionism measures to derive groups of healthy and unhealthy perfectionists (Stoeber & Otto, 2006). The evidence from 12 out of 20 studies reviewed by Stoeber and Otto (2006) suggests that individuals labeled healthy perfectionists have higher scores on perfectionism subscales that reflect adaptive functioning and lower scores on those that represent maladaptive functioning. After classifying individuals in this manner, it was found that people in the healthy perfectionism cluster groups reported more positive outcomes than did those in the unhealthy or nonperfectionist groups.

Although Stoeber and Otto (2006) concluded that these approaches provided strong support for the existence of two distinct forms of perfectionism, methodological concerns have been raised, which suggest that caution may be warranted before any firm conclusions can be drawn (Flett & Hewitt, 2006; Greenspon, 2000). As with the disaggregation approach, the principal

concern in employing either factor analysis or cluster analysis to define the perfectionism construct is that core elements of perfectionism may be omitted from each identified form. Subsequently, it is possible that neither form provides an adequate conceptual representation of the perfectionism construct. For example, it can be argued that the pursuit of high personal standards should be a core feature of both forms of perfectionism, but in this approach it emerges only as a dimension of positive perfectionism. Again, perfectionism becomes a function of the measures rather than a construct that encompasses all necessary defining qualities.

Partialing the Effects of Dimensions of Perfectionism

Some researchers (e.g., Stoeber, Stoll, Pescheck, & Otto, 2008; Stoll, Lau, & Stoeber, 2008) have examined the consequences of dimensions of perfectionism after partialing out the effects of negative perfectionism (e.g., negative reactions to imperfection) from positive perfectionism (i.e., perfectionistic striving). Predictably, this strategy offers statistical verification of the adaptive consequences of positive perfectionism. But it is again questionable whether it makes conceptual sense to partial out important components that contribute to the broad multidimensional nature of the construct and then make inferences about the construct as a whole. Dimensions of perfectionism typically regarded as maladaptive and adaptive are often positively correlated (Flett and Hewitt, 2006). Indeed, the shared variance between adaptive and maladaptive qualities of perfectionism may represent important, and defining, characteristics of maladaptive forms of perfectionism (see Campbell & Di Paula, 2002). It is at least indicative of the relationship between the commitment to high standards and core debilitating features described by early theorists. Consequently, this strategy creates a further artificial distinction between two core features of perfectionism.

A perusal of the extant literature on perfectionism makes it clear not only that there is little consensus on a definition of perfectionism but also that researchers do not agree on how to measure the construct. Examination of the emerging body of literature concerned with perfectionism in sport reveals that the disaggregation of perfectionism subscales from established measures does not provide a satisfactory approach to the assessment of perfectionism. Employment of this strategy has led researchers to conclude that some forms of perfectionism are uniformly positive whereas others are consistently debilitating. We contend, however, that inferences about the consequences of perfectionism can be made only when the core components are considered together. The following section draws on a body of research that has assessed perfectionism as a broad multidimensional construct. It uses these studies to provide an analysis of the association between perfectionism and various sport-related outcomes and to illustrate that the influence of perfectionism is qualitatively different from the act of striving to achieve perfection.

Empirical Evidence of Perfectionism in Sport

Sport has been identified as an ideal context to examine perfectionism (Flett & Hewitt, 2005; Hall, 2006). This notion is not simply because the highest levels of achievement require individuals to strive for demanding goals, invest considerable effort, and engage in sustained striving (Ericsson, 1996; Hall & Kerr, 2001; Starkes, 2000); rather, it is because for many people, sport is a meaningful context in which identity, self-definition, and self-worth can be established (Hall, 2006). Moreover, because the achievement outcomes and psychological processes associated with striving to achieve in sport are perhaps more transparent than in other contexts, the effect of perfectionism may be more visible. Since Hall's (2006) review, research in sport has demonstrated that perfectionism is associated with a wide variety of cognitive, affective, and behavioral outcomes (e.g., Gaudreau & Antl, 2008; Hall, Hill, Appleton, & Kozub, 2009; Kaye, Conroy, & Fifer, 2008; Lemyre, Hall, & Roberts, 2008; Stoeber, Uphill, & Hotham, 2009). Research has also confirmed that perfectionism may reflect a domain-specific quality rather than a global personality characteristic (Dunn, Gotwals, & Causgrove Dunn, 2005; Dunn, Craft, Causgrove Dunn, & Gotwals, in press; McArdle, 2010). Consequently, sport may elicit perfectionistic behavior in some individuals who consider this domain to be one in which achievement is vital.

Although the volume of research on perfectionism in sport has grown considerably in recent years, the inconsistent use of perfectionism measures hinders a clear interpretation of the available findings. Even though sporting research has broadly endorsed the use of multidimensional measures of perfectionism, a significant number of studies have employed methodologies that we argue are problematic. That is, many have chosen to disaggregate multidimensional perfectionism measures and examine the influence of individual components, thereby overlooking the effects of the broader perfectionism construct on cognitive, affective, and behavioral outcomes. Based on the findings of some of these studies, claims have been made that certain forms of perfectionism are associated with broadly adaptive qualities (Anshel & Eom, 2002; Dunn et al., 2002; Stoeber, Stoll, Salmi, & Tiikkaja, 2009). Some clinical psychologists may therefore be premature in arguing that perfectionism is a fundamentally maladaptive characteristic (e.g. Flett & Hewitt, 2002; Shafran & Mansell, 2001). But to recognize the genuine effect that perfectionism may have on sport-related outcomes, it is necessary to consider the composite influence of multidimensional measures rather than the separate effects of individual dimensions. By employing this strategy researchers will be able to differentiate between striving (for high standards) that is regulated by a desire for improvement or personal growth and striving that has the added dimension of a harsh, self-critical style, which reflects the broad fundamental characteristics of the perfectionism construct. The following review emphasizes studies in sport that have adopted a multidimensional approach to examine the

combined effects of the core dimensions of perfectionism on key outcomes. The review also challenges whether studies that have adopted a narrow or single-dimension approach to the measurement of the construct are genuinely assessing perfectionism in athletes. Finally, the review emphasizes studies that have employed the H-MPS, because this instrument is not subject to the same criticism over disaggregation as others (Hall, 2006). The separate dimensions of self-oriented and socially prescribed perfectionism of the H-MPS appear to capture the broad characteristics of perfectionism, including the pursuit of high standards and self-critical concerns.

Perfectionism and Achievement Goals

In a previous review of perfectionism in sport, Hall (2006) proposed that the underlying differences between perfectionism and adaptive forms of striving may be a function of the motivational goals that regulate achievement cognition and behavior. He argued that unlike adaptive achievement striving, perfectionism may be underpinned by potentially debilitating patterns of achievement goals that energize perfectionistic striving. These patterns impart a particular narrow meaning to success and failure and thus provide little scope for error and the avoidance of failure. Within the perfectionism literature scant attention has been devoted to the motivational processes underpinning perfectionistic achievement striving, although considerable speculation focuses on why an individual may feel compelled to pursue excessively demanding goals (Hewitt & Flett, 1991; Flett & Hewitt, 2006; Slade & Owens, 1998, Owens & Slade, 2008). Clearly, however, contemporary theories of achievement motivation may help to provide much needed insight into the motivational processes that are thought to underpin variations in goal pursuit. For example, it has been argued that when perfectionism is considered to reflect an adaptive form of achievement behavior, striving will be underpinned by a pattern of approach motives (Stoeber, Stoll, et al., 2008). In contrast, it is believed that when perfectionism incorporates a harsh, self-critical style, it will be regulated by a combination of approach and avoidance tendencies and will be governed largely by fear of failure (Flett & Hewitt, 2006; Hall, 2006; Hewitt & Flett, 1991; Hewitt, Flett, Besser, Sherry, McGee, 2003). For those who exhibit this latter form of perfectionism, the primary reason for striving hard to reach exceedingly high standards is to avoid any judgment of failure, incompetence, or inadequacy.

In educational contexts Covington and colleagues (Covington, 1992; Covington & Mueller, 2001) have referred to those who exhibit strong approach and avoidance tendencies as overstrivers. This term describes an extreme way of thinking whereby individuals appear simultaneously attracted to and repelled by thoughts about achievement. That is, they are motivated by a combination of hope that they can meet their exceedingly high standards and constant worry about the consequences of failing. It is easy to see how this particular combination of approach and avoidance motives might underpin perfectionism in sport. This pattern of motives elicits not only a strong desire

to demonstrate ability but also an equally strong desire to avoid failure. With this mind-set, the act of striving may lead to positive outcomes, but it will provide only temporary respite from the potentially aversive consequences of failure. Regardless of accomplishment, satisfaction will tend to be fleeting because self-worth can be maintained only through sustained achievement. Therefore, self-imposed demands to avoid failure will remain unyielding (Hall et al., 1998; Hall, 2006; Hill, Hall, & Appleton, 2010). Although various authors have demonstrated that fear of failure is a key motivational mechanism underlying self-critical forms of perfectionism in sport (Conroy, Willow, & Metzler, 2002; Conroy, Kaye, & Fifer, 2007; Kaye, Conroy, & Fifer, 2008; Sagar & Stoeber, 2009), a combination of both approach and avoidance goals appears to regulate the achievement striving of those who exhibit perfectionism in its broadest sense. The strategy to pursue perfection as a means of failure avoidance seems, therefore, to be reflective of those who demonstrate both a strong commitment to excellence and a belief that self-worth can be established only through achievement.

A number of studies have attempted to explore the degree to which perfectionism in athletes is underpinned by distinct motivational patterns. Based on Covington's (1992) conceptualization, Hall, Kerr, and Matthews (1998) hypothesized that dimensions of perfectionism measured on Frost's MPS would be associated with a combination of high task and high ego orientations. They believed that athletes' exhibiting elevated scores on all dimensions of perfectionism would give meaning to achievement by endorsing a combination of goals whereby competence could be evaluated through both personal improvement and the demonstration of ability. Hall et al. (1998) found that a combination of perfectionism dimensions, including high personal standards, concern over mistakes, doubts about action, parental criticism, and parental expectancies, was positively associated with a combination of high ego and moderate task goals, thereby providing support for their hypothesis. Hall et al. (1998) concluded that even in combination with a strong task orientation, a potent ego orientation may provide the motivational foundation for perfectionistic striving because it heightens self-awareness and encourages a preoccupation with self-validation (Duda & Hall, 2001).

A more recent study by Dunn, Causgrove Dunn, and Syrotuik (2002) sought to extend the work of Hall et al. through the use of a modified version of Frost's MPS. Their findings were in partial agreement with those of Hall et al. and suggested that rather than a constellation of task and ego goals underpinning perfectionism, only a strong ego orientation was associated with a combination of high personal standards, concern about mistakes, and perceived coach and parental pressure. Dunn et al. (2002) did not find that a task orientation was positively related to a combination of perfectionism dimensions. Instead, they found that a task orientation by itself was positively associated with a combination of high personal standards and negatively related with all other dimensions of perfectionism. This finding seems to

confirm that when individuals focus on the pursuit of high standards, are not worried about making mistakes, and perceive no pressure from external sources, their achievement striving exhibits an adaptive motivational pattern, not one that necessarily reflects perfectionism.

Although the previous studies measured perfectionism using Frost's MPS, Appleton, Hall, and Hill (2009) recently examined whether patterns of task and ego goals underpinned self-oriented and socially prescribed perfectionism. Appleton et al. (2009) found evidence that both task and ego goals were associated with self-oriented perfectionism but that neither goal was related to socially prescribed perfectionism. Although unexpected, these findings are not dissimilar from those reported by Flett and Hewitt (2006). Flett and Hewitt explain that although self-oriented perfectionism tends to be associated with a combination of approach and avoidance tendencies, socially prescribed perfectionism is largely underpinned by failure avoidance. Using the findings from Appleton and colleagues' study, we might speculate that self-oriented perfectionism is characterized by overstriving. In contrast, failure avoidance rather than overstriving may be responsible for regulating achievement striving in athletes high in socially prescribed perfectionism. Unfortunately, testing this hypothesis by using a dichotomous goal framework is not possible because this conceptualization of achievement goals does not permit discrimination between approach and avoidance tendencies.

Because most previous investigations had concentrated on testing the relationship between perfectionism and dichotomous goals, Stoeber, Stoll, Pescheck, and Otto (2008) sought to examine whether perfectionism was related to a combination of approach and avoidance goals. They first adopted a trichotomous goal framework (Elliot & Harackiewicz, 1996) and then subsequently a two-by-two goal framework whereby achievement goals could be clearly differentiated into approach or avoidance motives (Elliot, 2005; Elliot & McGregor, 2001). In one study with high school athletes, Stoeber, Stoll, et al. (2008) found that an adaptive dimension of perfectionism, which they labeled striving for perfection, was positively related to both mastery and performance approach goals. A second, self-critical dimension of perfectionism, labeled negative reactions to imperfection, was found to be positively associated with a combination of performance approach and avoidance goals and negatively related to mastery goals. In a follow-up study with sport science students, Stoeber, Stoll, et al. (2008) reported that striving for perfection was again positively related to mastery and performance approach goals, whereas negative reactions to imperfection were related to a combination of mastery avoidance, performance approach, and performance avoidance goals.

The findings from these two studies confirm that a self-critical form of perfectionism appears to be regulated by failure avoidance and worries about not living up to expectations. Moreover, this form of perfectionism appears to be further regulated by a strong desire to demonstrate ability and gain the approval of others, thereby providing support for the notion of overstriving

in sport. Conversely, striving for perfection, which comprises none of the self-critical elements of perfectionism, appears to be largely synonymous with adaptive achievement striving. This idea becomes even more apparent when the shared variance with negative reactions to imperfection is removed. After controlling for shared variance, Stoeber, Stoll, et al. (2008) found that the association between negative reactions to imperfection and performance approach goals was significantly reduced, leaving mastery approach goals to account for the largest proportion of variance in striving for perfection.

Although the findings support a view that the act of striving for perfection is largely adaptive, we might question whether this behavior is genuinely indicative of perfectionism because many of the core characteristics of the perfectionism disposition are absent. Similarly, when Campbell and Di Paula (2002) attempted to disaggregate Hewitt and Flett's (1991) Multidimensional Perfectionism Scale, they found that striving for perfection, a component of self-oriented perfectionism, was associated with conscientiousness and did not contribute to adjustment difficulties. But they found that the desire to be perfect was the component of self-oriented perfectionism that was associated with debilitation. Campell and Di Paula (2002) argued that when the primary concerns of the individual are with achieving success rather than avoiding failure, the act of striving for perfection is not likely to be debilitating. Only when failure avoidance becomes the primary motive does striving for perfection become problematic and lead to adjustment problems. Similarly, it may be ill advised to consider that either striving for perfection or negative reactions to imperfection will independently reflect the core characteristics of perfectionism. Both are rather narrow components of a broader construct, so avoiding their disaggregation would make better conceptual sense.

Considering that Stoeber and colleagues' (Stoeber, Stoll, et al., 2008) findings were largely exploratory and took into account only two dimensions of perfectionism, Stoeber, Uphill, et al. (2009) conducted a follow-up study that examined whether this same pattern would hold up when additional dimensions of perfectionism were considered. Stoeber, Uphill, et al. (2009) constructed composite measures of perfectionistic striving by combining measures of personal standards and striving for perfection. They also constructed a composite measure of perfectionistic concerns by combining the concern about mistakes and negative reactions to imperfection subscales. Subsequent structural equation modeling indicated that the composite measure of perfectionistic striving was associated with a seemingly adaptive pattern of mastery and performance approach goals. In contrast, the measure of perfectionistic concerns was unrelated to mastery approach goals but positively associated with a combination of performance approach goals and mastery and performance avoidance goals.

Stoeber, Uphill, et al. (2009) claimed that the findings provide support for Slade and Owens' (1998) dual-process model that considers perfectionism to be either positively or negatively reinforced by the individual's approach or avoidance behavior. They found that perfectionistic striving was underpinned

by a pattern of approach goals, whereas both approach and avoidance goals regulated the achievement striving of those with perfectionistic concerns. But one must be cautious in concluding support for a dual-process model when the shared variance between the two different forms of perfectionism is almost 48%. Because of this overlap, it is not possible to ascertain whether distinct regulatory patterns underpin striving for perfection and negative reactions to imperfection that act positively or negatively to reinforce perfectionistic behavior. Furthermore, when bivariate correlations indicate that all dimensions of perfectionism are positively associated with all two-by-two goal forms, a strong case can be made that multidimensional perfectionism is associated with a constellation of both approach and avoidance goals and that Covington's notion of overstriving remains a distinct possibility.

Some further empirical evidence to support Covington's (1992) notion of overstriving has been reported in two recent studies. Hall, Hill, and Appleton (2009) found that self-oriented perfectionism was positively associated with mastery and performance approach goals, as well as performance avoidance goals in junior elite swimmers. More recently, in a study of junior elite athletes, Hall, Hill & Jowett (2010) found that self-oriented perfectionism was positively associated with a combination of mastery approach and avoidance goals, as well as with performance approach and avoidance goals. In contrast, socially prescribed perfectionism was positively associated with a combination of performance approach goals, as well as mastery and performance avoidance goals.

In considering the research conducted to date on this issue, the evidence indicates that when perfectionism is considered to involve more than striving to achieve high standards and incorporates a self-critical style, striving to achieve is regulated by a pattern of goals that reflects a combination of approach and avoidance tendencies that resembles overstriving. In contrast, when measures of perfectionism are disaggregated, individual components such as striving for perfection and pursuing high personal standards may appear broadly adaptive because the primary motive with which they are associated is to approach success. Our view, however, is that athletes whose behavior is regulated by this adaptive pattern of achievement striving and who eschew failure avoidance goals do not exhibit the core characteristics of perfectionism.

Perfectionism and Anxiety

One of the fundamental characteristics of perfectionism is that it induces worry. In meaningful achievement contexts where self-worth is threatened, worry manifests as elevated state anxiety (Flett, Hewitt, Endler, & Tassone, 1995; Frost & Marten, 1990). A number of empirical studies have examined the degree to which perfectionism influences achievement-related anxiety in sport. Although some studies have examined how separate dimensions of perfectionism are associated with anxiety, most of these studies have considered perfectionism in its widest multidimensional form. One of the first studies to

examine the relationship between perfectionism and anxiety in athletes was undertaken by Frost and Henderson (1991). Using Frost's multidimensional scale, they found that overall perfectionism, incorporating a composite measure of all 35 items, was associated with elevated levels of trait anxiety. This initial finding confirms that perfectionism may predispose athletes to experience anxiety in competitive situations because these individuals perceive most sporting environments to be high in evaluative threat.

Basing their hypotheses on a theoretical approach to emotion forwarded by Lazarus and Folkman (1984) and Smith's (1986) model of sport performance anxiety, Hall, Kerr, and Matthews (1998) proposed that perfectionism would be a critical antecedent of state anxiety in young distance runners. They argued that perfectionism gave meaning to the appraisal of achievement information and that those unable to employ adequate coping strategies would experience elevated state anxiety. They found that overall perfectionism predicted cognitive anxiety at regular intervals in the lead-up to a competitive event and that concern over mistakes and doubts about action were critical dimensions that contributed to heightened anxiety.

In a novel study that examined various perfectionism profiles exhibited by athletes, Koivula, Hassmen, and Fallby (2002) found that a group of athletes who were high in personal standards, in concern about mistakes, and in doubts about action reported greater levels of cognitive anxiety than a group who were high in personal standards and low in both concern about mistakes and doubts about action, as well those who were low on all three dimensions of perfectionism. The only group that reported higher levels of cognitive anxiety than this group was athletes who were low on the personal standards dimension and high on both concern about mistakes and doubts about action. The findings of Koivula et al. provide further evidence that when high standards and self-critical forms of perfectionism are considered together, the outcomes are potentially debilitating.

Because they believe that some forms of perfectionism can be motivationally adaptive, Stoeber, Otto, Pescheck, Becker, and Stoll (2007) have attempted to counter claims that perfectionism is an inherently debilitating characteristic. They assert that perfectionism does not automatically predispose athletes to experience anxiety, and they explain that when perfectionism is differentiated into adaptive and maladaptive components, only in its maladaptive form does perfectionism demonstrate a positive association with competitive anxiety. They further suggest that athletes who simply strive for perfection are unlikely to experience anxiety. In an empirical test of their assertions, Stoeber et al. (2007) measured overall perfectionism, striving for perfection, negative reactions to imperfection, and state anxiety in four samples of athletes. Although their findings revealed that overall perfectionism was positively associated with cognitive and somatic anxiety in all samples, disaggregation of the perfectionism scales suggested that only negative reactions to imperfection were responsible for a positive association with competitive

state anxiety. Calculating partial correlations to remove shared variance between perfectionism dimensions further revealed that striving for perfection had a negative association with cognitive and somatic anxiety. Stoeber at al. argued that these findings provide support for the idea that perfectionism is not inherently maladaptive and that it may even be considered adaptive if negative reactions to imperfection can be managed.

An alternative perspective on Stoeber and colleagues' findings is that the act of striving for perfection reflects little more than a person's aspirations and an indication of goal-directed behavior. Disaggregating this facet of perfectionism from other self-critical components removes any reference to the cognitive processes that inform the appraisal of achievement information. Because it is not possible to capture these processes in the measurement of the perfectionism construct, there is no conceptual reason for the act of striving for perfection to be systematically associated with achievement-related anxiety or any other emotion. Therefore, the more appropriate conclusion may be that the lack of association between striving for perfection and competitive anxiety reflects the absence of any systematic pattern in the data rather than striving for perfection being an adaptive quality that does not engender achievement anxiety in athletes.

To overcome this limitation, we believe that striving for perfection must be considered in conjunction with negative reactions to imperfection and other self-critical dimensions of perfectionism. The negative reaction to imperfection subscale is the one that reflects the consequences of a cognitive appraisal process in which existential threat is a common outcome. It therefore provides insight into whether striving for perfection will be anxiety producing. When striving for perfection is accompanied by negative self-evaluation, a sense of personal inadequacy, and self-doubt, threat to self-worth will be appraised and achievement anxiety will become elevated. Without negative self-appraisal, perceived threats to self will be unlikely and emotional responses that are more positive will be observed.

Perfectionism and Anger

A further potentially debilitating emotion that has been found to be associated with perfectionism in sport is anger. In the same way that perfectionism is a critical antecedent of anxiety, it may predispose athletes to exhibit anger because it heightens vulnerability to stress and increases the degree to which stressors are considered aversive (Hewitt, Caelian, Flett, Sherry, Collins, & Flynn, 2002). Anger is thought to result when an action has been appraised as unjust, unfair, or demeaning (Averill, 1982; Deffenbacher, 1999; Lazarus, 1991). Thus, in sport, perfectionism may contribute to an elevated sense of injustice or a perception that an outcome is personally demeaning when goals are blocked, failure is perceived, or contingent reinforcement is not forthcoming. Moreover, because perfectionists believe that they should achieve flawlessness, anger may be directed inward because of self-blame (Hamachek, 1978; Horney, 1950) or outward because others are blamed for thwarting goal achievement (Burns, 1980; Hamachek, 1978). A small body of research in social psychology has reported evidence to support the notion that perfectionism may predispose individuals to experience both trait and state anger (Dunkley & Blankstein, 2000; Hewitt & Flett, 1991; Hewitt, Caelian, Flett, Sherry, Collins, & Flynn, 2002; Saboonchi & Lundh, 2003). Recently, research has also begun to explore this association in sporting contexts.

In a sample of Canadian football players, Dunn, Gotwals, Causgrove Dunn, and Syrotuik (2006) found that a combination of high personal standards, concern over mistakes, and perceived coach pressure was associated with two dimensions of trait anger (Spielberger, 1999). These included the disposition to experience anger without provocation and angry feelings that involve frustration and negative evaluations. Clearly, the characteristic pursuit of high standards in combination with a self-critical style and perceived pressure to excel from the coaching staff may underpin a general disposition toward anger, and this tendency might lead to angry outbursts in competitive contexts. Dunn et al. (2006) confirmed this, finding that the same perfectionism dimensions were associated with a combination of angry reactions to mistakes. Thus, the harsh, self-critical tendencies in perfectionists appear to manifest in state anger when mistakes occur. Although some degree of state anger may have an energizing effect for athletes (Lazarus, 1991), it is equally likely to undermine task-focused attention and interfere with sport performance (Abrams & Hale, 2005; Botterill & Brown, 2002; Nideffer, 1989), promote aggressive behavior (Isberg, 2000) and lead to interpersonal conflict (Hall, Hill, & Appleton, 2009).

A follow-up study by Vallance, Dunn, and Causgrove Dunn (2006) again found that trait anger in youth ice hockey players was underpinned by a combination of high personal standards, concern over mistakes, perceived coach pressure, and perceived parental pressure. Furthermore, when Vallance et al. (2006) examined clusters of athletes who had been identified as high, moderate, or low in perfectionism, those who were high in personal standards, concern about mistakes, perceived coach pressure, and perceived parental pressure expressed the highest levels of anger irrespective of the criticality of the situation that they were facing.

A more recent study by Hall, Hill, Appleton, and Ariano (2009) examined whether a similar relationship between perfectionism and anger would be identified when self-oriented, socially prescribed, and other-oriented perfectionism were used. Previous work by Hewitt et al. (2002) indicated that children who perceive that others have exceedingly high expectations of them often respond to these pressures with externally directed expressions of anger and hostility. As in previous sporting studies (Dunn et al., 2006; Vallance et al., 2006), Hall et al. found that a combination of all three dimensions of perfectionism was positively associated with trait anger. Moreover, the combined measures of perfectionism were associated with feeling angry and verbally expressing anger when athletes made mistakes.

Because any outward expression of anger resulting from perfectionism may have a detrimental effect on interpersonal relationships (Hill, Zrull, & Turlington, 1997), Hall, Hill, et al. (2009) further examined whether multidimensional perfectionism was associated with feelings of displaced aggression toward other athletes. Displaced aggression (Denson, Pederson, & Miller, 2006) is a construct that comprises three subdimensions. These have been labeled anger rumination, revenge planning, and displaced aggression. Anger rumination reflects a cognitive preoccupation with the events that caused an individual to feel angry. Revenge planning involves thoughts about how to get back at those who are perceived to be the source of some demeaning offense, and displaced aggression reflects the venting of anger toward others who may not be the cause of the emotion. Hall et al. found that only socially prescribed perfectionism was positively associated with the three dimensions of displaced aggression. A combination of fear of failure, a perception that one must meet the standards of others to gain recognition, and a perceived lack of control over outcomes may be responsible for this relationship. This combination may not only precipitate feelings of rivalry but also generate feelings of interpersonal hostility toward others who may have little to do with circumstances that give rise to the emotion. These feelings may be heightened by the influence that socially prescribed perfectionism has on the appraisal of achievement information so that undesirable sporting outcomes are seen to be unjust or personally demeaning. In sum, the results from this small but emerging body of research add further weight to the suggestion that perfectionism underpins negative emotions in sport.

Perfectionism and Burnout

Because perfectionism carries the potential to underpin chronic debilitating effects in sport, research has recently begun to explore the relationship between perfectionism and athlete burnout (e.g. Appleton, Hall, & Hill, 2009; Hill, Hall, Appleton, & Kozub, 2008; Lemyre, Hall, & Roberts, 2008). It has been argued that perfectionism may be a critical antecedent of burnout because it confers specific meaning to the appraisal of achievement information (Hall, 2006; Hall, Kerr, & Cawthra, 1997; Lemyre et al., 2008) and leads to a process whereby athletes feel entrapped (Raedeke, 1997; Schmidt & Stein, 1991). Although perfectionism may energize heightened achievement striving and lead to recognized accomplishment, personal improvement, and tangible sporting success in the short term, over time the self-critical style used to appraise achievement information means that perfectionistic standards are rarely achieved and performance satisfaction is intermittent at best. For most people, continued disaffection resulting from achievement striving may cause sporting attrition. For many perfectionists, however, dropping out to protect self-worth is not a viable option. Those overstrivers who are serious about their sport and have reached a high standard will have invested considerable resources to reach their current status. Moreover, because identity and self-worth are often inextricably linked with achievement for these individuals, they cannot easily extricate themselves from the sporting context without seriously undermining their own self-definition (Appleton et al., 2009; Hall, 2006; Hall, Kerr, & Matthews, 1998; Hill, Hall, Appleton, & Murray, 2010). Consequently, the burden of obligation to maintain investment ultimately precipitates a sense of emotional exhaustion, a perception of reduced accomplishment, and an eventual devaluation of the sport. The perfectionistic athlete experiences a growing aversion to sport as a direct consequence of sustaining this pattern of achievement striving.

Recognizing this process, Gould (1996) suggested that burnout might be viewed as "motivation gone awry." He argued that burned-out athletes begin their sporting careers striving to achieve and tend to demonstrate a seemingly adaptive pattern of achievement-related cognition, affect, and behavior as they develop and experience relative success. But he argued that athletes' motivation may become increasingly maladaptive later in their careers because of chronic stress. Believing that perfectionism could be a cause of this stress, Gould and his colleagues (Gould, Udry, Tuffey, & Loehr, 1996; Gould, Tuffey, Udry, & Loehr, 1996) compared a group of active junior elite tennis players to a group of burned-out former players to try to determine whether perfectionism was an important discriminating characteristic. They found that burned-out players reported higher scores on a number of perfectionism dimensions. Specifically, these former athletes were higher in concern about mistakes, parental expectations, and parental pressure. Although they reported being lower on the high personal standards dimension than players who remained active, the burned-out players still reported pursuing high standards.

The notion that various dimensions of perfectionism give rise to athlete burnout informed subsequent research by Lemyre, Hall, and Roberts (2008). They measured multidimensional perfectionism, achievement goals, and the perceived motivational climate in a sample of Norwegian elite winter sport athletes at the beginning of a season and athlete burnout at season's end. Cluster analysis of the predictor variables was used to create two athlete profiles. A maladaptive motivational profile reflected individuals who were higher in all dimensions of perfectionism, questioned their ability, had low task goals and high ego goals, and perceived their training environment as being strongly performance oriented. Athletes with this motivational profile scored significantly higher on burnout dimensions at season's end than athletes whose motivational profile appeared more adaptive.

We might speculate that the self-critical nature of these perfectionistic athletes renders them vulnerable to burnout. Repeated exposure of perfectionists to a performance climate not only gives rise to self-focused attention but also ensures that the establishment and maintenance of self-worth through athletic performance remains a salient concern. It has been demonstrated that contingent self-worth is a feature of self-critical forms of perfectionism (e.g., Flett, Besser, Davis, & Hewitt; 2003; Stoeber, Kempe, & Keogh, 2008; Sturman,

Flett, Hewitt, & Rudolph, 2009), and it is likely that as perfectionistic athletes strive to achieve in sport, their self-worth is gradually eroded by a perceived failure to meet personal standards or the expectations of others. This process leads athletes who exhibit perfectionistic qualities to experience burnout.

Hill, Hall, Appleton, and Kozub (2008) set out to explore this line of reasoning. They examined whether contingent self-worth mediated the relationship between dimensions of perfectionism and burnout in a group of elite junior football players. Structural equation modeling revealed that unconditional self-acceptance partially mediated the relationship between multidimensional perfectionism and burnout, suggesting that when self-worth is contingent on achievement, both self-oriented and socially prescribed perfectionism may give rise to burnout. The findings also suggest that when self-worth is not perceived to be contingent on achievement, self-oriented perfectionism may be motivationally benign and or even have constructive consequences. But because self-oriented perfectionism and perceived goal progress were positively correlated, any debilitating effects of self-oriented perfectionism may be masked until athletes experience a systematic struggle with goal achievement.

This evidence from the research by Lemyre et al. (2008) and Hill et al. (2008) has highlighted that particular forms of perfectionism may engender a need for some athletes to repeatedly validate a sense of self through their achievements. Moreover, this pattern of striving may prevent athletes from extricating themselves from the sporting environment when the perceived demands of practice and performance become a source of chronic stress. Dykman (1998) has claimed that the pursuit of self-validation might reflect an active vulnerability factor that underpins motivational difficulties because achievement striving is constantly focused on proving basic worth, competence, or likability. For those focused on validation seeking, self-critical forms of perfectionism will increase the likelihood of perceived failure. Consequently, attempts to validate a sense of self will be undermined, making burnout an inevitable consequence of this process. Using this conceptual reasoning, Hill, Hall, Appleton, and Murray (2010) tested whether both validation seeking and growth seeking had a mediating effect on the relationship between multidimensional forms of perfectionism and athlete burnout. The principal finding from a structural equation model was conceptually consistent with the theoretical premises being tested. The model revealed that validation seeking partially mediated the relationship between socially prescribed perfectionism and burnout. This finding suggests that the failure to fulfill a desire for basic worth, competence, or likability will lead athletes who are high in socially prescribed perfectionism to experience symptoms of burnout.

The same psychological processes that influence patterns of achievement striving may affect the adoption of distinct coping strategies in those who exhibit self-oriented and socially prescribed perfectionism (Hill, Hall, & Appleton, 2010). Thus, coping strategies may be viewed as important mediators of the relationship between perfectionism and burnout. Based on research by

Dunkley and colleagues (Dunkley & Blankstein, 2000; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Dunkley, Zuroff, & Blankstein, 2003), Hill, Hall, and Appleton (2010) hypothesized that socially prescribed perfectionism would be associated with coping strategies that attempt to avoid sources of stress. In contrast, self-oriented perfectionism would be associated with coping strategies that attempt to confront and remove those sources. Hewitt and Flett (1991) earlier argued that such differential patterns of coping emanate from the source and level of perceived control that is associated with different forms of perfectionism. That is, because those high in socially prescribed perfectionism believe that control over achievement lies with others, the use of problem-focused coping strategies that implement personal control is unlikely. Problem-focused strategies are perceived to be ineffective and may simply heighten the threat when athletes reengage with the source of stress (Dunkley et al., 2003; Hill et al., 2010). The use of avoidance strategies is likely to have an immediate effect in reducing the source of stress for those high in socially prescribed perfectionism. But because these strategies will not remove the underlying source of the stress or the belief that achievement is necessary to validate self-worth, burnout is likely when athletes choose to cope in this manner.

Hill et al. (2010) found support for this perspective in a sample of elite junior athletes from a variety of sports. As predicted, avoidance coping was found to mediate the relationship between socially prescribed perfectionism and athlete burnout, and both problem-focused coping and avoidance coping mediated the relationship between self-oriented perfectionism and burnout. But a tendency to spurn avoidance coping contributed more to the inverse relationship between self-oriented perfectionism and burnout than did the use of problem-focused coping.

Moderation of the Perfectionism–Burnout Relationship

Not all athletes characterized by self-critical forms of perfectionism will experience debilitating outcomes. Flett and Hewitt (2005) argued that the perils of perfectionism may be moderated by other important qualities of character or features of the environment. Appleton, Hall, and Hill (2009) considered that some degree of protection against athlete burnout may be achieved by endorsing high-task and low-ego goals and by the experience of high perceived goal satisfaction. But in a sample of elite sport participants, they found no evidence to suggest that athletes' achievement goals moderated the effects of self-oriented or socially prescribed perfectionism on burnout. Further analysis indicated that regardless of the form of perfectionism, greater perceptions of athlete and coach satisfaction with goal progress were associated with lower levels of burnout in the form of reduced accomplishment. The fact that goals did not emerge as moderators of the perfectionism–burnout relationship might be explained by the fact that different patterns of achievement goals are inextricably tied to various forms of perfectionism, as suggested earlier, and

are therefore unlikely to moderate its debilitating qualities. Other goal-related variables, however, may act as key moderators. One of these is the perceived achievement climate. When coaches promote a strong mastery environment and eschew a performance climate, the environment may be perceived as less threatening by those high in self-critical forms of perfectionism (Flett, Hewitt, Endler, & Tassone, 1995; Frost & Marten, 1990). Consequently, the achievement climate may act to moderate any potentially debilitating effects that perfectionism might have.

Appleton, Hall, and Hill (2006) discovered some support for this hypothesis with a sample of junior elite cricketers. First, they found that socially prescribed perfectionism was associated with all three dimensions of burnout, whereas self-oriented perfectionism was inversely related to reduced accomplishment and devaluation of the activity. Moreover, they found that higher perceptions of a performance climate and lower perceptions of a mastery climate were associated with higher reported burnout scores. Finally, in support of moderation, they found that when socially prescribed perfectionism was high and the performance climate was perceived to be low, athletes scored lower on sport devaluation. Because numerous studies have shown that socially prescribed perfectionism has greater potential to cause debilitation, the finding that the achievement climate can help to moderate its debilitating effects is important. Although it might be argued that self-oriented perfectionism does not appear to hold the same potential for debilitation and subsequent athlete burnout, Appleton and colleagues' findings revealed that self-oriented perfectionism was associated with perceived satisfaction regarding goal progress. Clearly, it would be interesting to discover how self-oriented perfectionism influences athletes when they begin to experience repeated failure or encounter difficulties that lead to dissatisfaction with goal progress.

Some evidence of this emerged in a qualitative investigation by Gustaffson, Hassmen, Kentta, and Johansson (2008). They describe the burnout experience of 10 former elite Swedish athletes who had left their sports because of burnout. Most of these athletes described themselves as exhibiting debilitating characteristics of perfectionism, endorsing a strong ego orientation, and having a narrowly defined identity whereby they could establish self-worth only through accomplishment. Toward the latter stages of their careers, these athletes felt entrapped by their level of investment, by perceived social constraints, and by inflexible sporting organizations. But psychological process variables appeared to contribute significantly to a change in motivation and an increase in burnout over the course of a career. Although they experienced initial success and felt self-determined because their competence needs were being fulfilled, these athletes began to experience negative affect, frustration, and irritability associated with their perceived failure to demonstrate requisite ability, as well as significant worry about inadequate performance. They were also striving to achieve in an environment where they perceived excessive performance demands from coaches, low autonomy support, and little social support, and they commonly exhibited avoidance coping strategies when faced with challenge. Collectively, these factors contributed to the onset of burnout. We might speculate, however, that perfectionism provided the overarching framework that underpinned the debilitating pattern of cognition, affect, and behavior that over time led to these athletes' decision to quit their sport.

Perfectionism and Exercise Dependence

The research reviewed earlier demonstrates that self-critical forms of perfectionism contribute to patterns of achievement behavior that may not only heighten perceptions of entrapment but also foster an obligation to maintain investment in sport despite the chronic disaffection that it brings. Perfectionism may also have an influential effect on exercise behavior and cause people to experience other debilitative motivational patterns. One of the first to examine this notion was Coen and Ogles (1993), who tested whether a sample of marathon runners who had been categorized as either high or low in obligatory exercise behavior differed in perfectionism. They found that obligatory exercisers were higher than nonobligatory exercisers on personal standards, concern about mistakes, doubts about action, and organization. Although they argued that perfectionistic qualities did not seem to cause impairment in this sample of marathon runners, Coen and Ogles noted that the obligatory athletes exhibited some of the characteristic symptoms of exercise dependence. These indications included feeling compelled to run, experiencing anxiety when prevented from running, and continually pushing to achieve greater personal goals. Research by Hagan and Hausenblas (2003) more recently provided empirical evidence to support Coen and Ogles' observations, and this evidence has linked perfectionism directly to exercise dependence. They found that in a group of university students, those exhibiting strong symptoms of exercise dependence were significantly higher in overall perfectionism than those who were low in exercise dependence. In a follow-up study, Symons Downs, Hausenblas, and Nigg (2004) demonstrated that students "at risk" of experiencing exercise dependence scored significantly higher in concern about mistakes, personal standards, and doubts about action than did those who were nondependent and asymptomatic.

Although these early studies implicated perfectionism as one possible antecedent of problematic exercise behavior, Hall, Kerr, Kozub, and Finnie (2007) were among the first to examine the degree to which these variables predicted obligatory exercise. They found that a combination of task and ego goals, high perceived ability, high personal standards, and concerns about mistakes accounted for 31% of the variance in obligatory exercise. The dimensions of perfectionism had the strongest predictive influence. These findings provide further evidence that the pursuit of high personal standards may not be an adaptive strategy when it is accompanied by self-critical tendencies.

A more recent study by Hall, Hill, Appleton, & Kozub (2009) has demonstrated that although both socially prescribed and self-oriented forms of

perfectionism are important antecedents of exercise dependence, the association may be a function of different psychological processes. Hall, Hill, et al. (2009) found that in a sample of recreational distance runners both forms of perfectionism were indirectly associated with exercise dependence through their effects on unconditional self-acceptance and labile self-esteem. But only self-oriented perfectionism exhibited a direct relationship with exercise dependence. Using these findings, Hall et al. (2009) argued that when exercise is considered an important domain in which to establish self-worth, both self-oriented and socially prescribed perfectionism may elevate the risk for dependence because individuals feel obligated to exercise to validate self-worth. Fluctuations in self-esteem may also occur when people perceive that they are failing to reach desired standards. This circumstance may influence exercise dependence because individuals find it difficult to revise goals or disengage from an activity that brings about self-validation, even when the action appears to be dysfunctional. In explaining the direct relationship between self-oriented perfectionism and exercise dependence, Hall et al. speculated that disaffection with the outcomes of goal striving may have triggered compulsive bouts of exercise for those high in self-oriented perfectionism. But because successful accomplishment of desired standards is rarely achieved, heightened symptoms of exercise dependence may be the consequence.

A further study by Hall, Hill, and Appleton (2008), which extended this line of research, revealed that the relationships between self-oriented and socially prescribed perfectionism with exercise dependence were mediated by contingent self-worth and rumination. Hall et al. (2008) explained that because perfectionism encourages contingent self-worth, perceived failures lead to rumination, a process that increases the risk of exercise dependence. The findings offer support for claims made by Hausenblas and Symons Downs (2002) that exercise dependence may be a function of both maladaptive cognition and dysfunctional coping associated with perfectionism. The findings further highlight why it is particularly difficult for those high in perfectionism to disengage themselves from potentially debilitating contexts. Specifically, when achievement in exercise is inextricably tied to identity and self-worth, goal disengagement becomes difficult because doing so means rejecting the behaviors and strategies that may bring about self-validation (Pyszczynski & Greenberg, 1987). Clearly, the same psychological processes that contribute to potentially debilitating outcomes in sport manifest in exercise contexts and underpin exercise dependence.

Perfectionism and Athletic Performance

Although evidence suggests that broad self-critical forms of perfectionism contribute to a pattern of achievement-related cognition, affect, and behavior that may have detrimental effects on athletic performance, research on the relationship between perfectionism and sporting performance is in its infancy.

Conceptually, it follows that when athletes manage self-critical appraisal and are able to maintain the act of striving for perfection, perfectionism may have an indirect positive association with performance. This positive association occurs through the athletes' pursuit of high personal standards, the specific goals that they set, and the achievement goals that they endorse, which subsequently regulate the quality of motivation. This further governs the psychological and behavioral strategies that perfectionists adopt as they pursue desired outcomes. Clearly, because sport represents a meaningful context in which athletes can achieve, we would expect that perfectionism would have performance effects because of its motivational energizing qualities. Regardless of how achievement striving is regulated we might expect gains in performance when perfectionistic athletes are in the early stage of their athletic careers, when they are required to perform novel activities, or when they set fresh challenges for themselves. But the association between perfectionism and performance is not straightforward. Over time, we might expect self-critical processes to begin to undermine performance because characteristic dissatisfaction with anything less than flawlessness induces a debilitating pattern of cognition, leads to poor coping behaviors, and causes the use of inappropriate behavioral strategies. This process, although intended to protect self-worth, will ultimately undermine performance.

To date, the relationship between perfectionism and athletic performance has received little empirical attention. Only four studies have included performance as an outcome variable (Anshel & Mansouri, 2005; Hill, Hall, Duda, & Appleton, in press; Stoll, Lau, & Stoeber, 2008; Stoeber, Uphill, & Hotham, 2009). Although the findings from these studies have been mixed, they are conceptually consistent with motivational research in other contexts. For example, Stoeber, Uphill, and Hotham (2009) found that in two studies examining the influence of perfectionism on triathlete performance, only Frost's dimension of high personal standards had significant performance effects. As previously stated, this dimension appears compatible with adaptive achievement striving, and this assertion was confirmed by analyses that revealed that a performance approach–avoidance contrast mediated the relationship between personal standards and performance in both studies. Furthermore, in the second study the act of goal setting also mediated the relationship between performance approach goals and performance. In sum, the findings suggest that elite triathletes who strive to achieve high personal standards, demonstrate performance approach goals, and set themselves challenging goals for competition achieve superior performance. But because performance approach goals have been found to be underpinned by high ability (Harackiewicz, Barron, Elliot, Carter, & Lehto; 1997) the long-term performance effects of striving for perfection may not become clear until research has examined this association over time and under conditions in which athletes experience considerable challenge and difficulty.

One study that has attempted to look at the relationship between perfectionism and performance over time involved athletes who performed a novel basketball training task. Stoll, Lau, and Stoeber (2008) found that in a sample of student–athletes, striving for perfection was positively related to performance on multiple trial blocks. In contrast, negative reaction to mistakes was inversely associated with performance at the beginning of the task but was not in evidence on subsequent trials. We might speculate that for athletes who are experiencing self-critical forms of perfectionism, the performance of a novel task may be threatening, which could undermine initial performance. In the same study, Stoll et al. also found that when average task performance was considered, the largest performance increments were found in those athletes who exhibited the highest levels of both perfectionistic striving and negative reactions to mistakes. This finding suggests that on novel activities, perfectionism may have initial performance effects. But research needs to examine whether these effects can be maintained after athletes begin to experience prolonged dissatisfaction with performance or begin to experience repeated failure.

The experience of receiving failure information was tested by Anshel and Mansouri (2005), who examined how the interaction between dimensions of perfectionism and feedback conditions (negative versus control) affected performance. They found that, with the exception of the need for organization, all dimensions from Frost's MPS and total perfectionism led to performance deterioration on a simple motor task following the provision of negative feedback. Although it confirmed that perfectionism may undermine performance following aversive feedback, this research gave no indication about the psychological processes that are responsible for performance deterioration.

A recent study by Hill, Hall, Duda, & Appleton (in press) has attempted to examine these processes in a laboratory study using student–athletes. Hill et al. compared the cognitive, affective, and behavioral responses of athletes who reported higher and lower levels of self-oriented perfectionism after experiencing two successive manipulated failures on a cycling endurance task. The performance of all participants decreased significantly after the first failure, but no performance differences were found between those higher and lower in self-oriented perfectionism on the two experimental trials. Nor were differences found in terms of reported affect or thoughts of escape because of the two failures. But the analyses did indicate that following failure on the first trial, those higher in self-oriented perfectionism experienced a more pronounced increase in threat, reported significantly greater reduction in effort from the subsequent trial, and reported a decrease in satisfaction. Moreover, the effects on threat and effort remained statistically significant when controlling for differences between the two groups in level of socially prescribed perfectionism. Consequently, there is at least some indication that beyond the documented benefits of pursuing exceptionally high standards, perfectionism may have a number of negative psychological consequences that may act to undermine performance in some circumstances.

Note, however, that empirical evidence is currently insufficient to draw any firm conclusions about the effect of perfectionism on performance. We might speculate that because achievement striving and personal performance outcomes tend to carry irrational importance for perfectionists (Besser et al., 2004; Hewitt et al., 1989) and because failure is associated with a number of negative consequences that include shame and embarrassment (Conroy, Kaye, et al., 2007; Flett, Blankstein, Hewitt, & Koledin, 1992), performance contexts provide perfectionists with an interesting dilemma. Extremely high levels of effort are required to attain flawless standards so immediate performance improvements may occur. But by exerting effort, people may fail, thus exposing themselves to perceptions of inadequacy (Covington, 1992; Thompson, 1993). Consequently, perfectionists are more likely to use various defensive strategies to protect themselves from negative self-perceptions (Covington, 1992; Crocker & Park, 2004). Over time, these strategies are likely to lead to learning and performance deficits that may undermine the fulfillment of athletic potential (Crocker & Park, 2004; Kernis, 2003). Although little research in sport is available to draw on, some evidence outside sport suggests that this may be the case. For example, people higher in self-oriented perfectionism have been found to use self-handicapping behaviors when they perceive a lack of control over successful outcomes (Hobden & Pliner, 1995) and experience failure (Doebler, Schnick, Beck, & Astor-Stetson, 2000). Further empirical research of a longitudinal nature is clearly necessary to begin to test these contentions in sport.

Perfectionism and Psychological Well-Being in Sport Participants

One area in which little research has been done to date in sport concerns how perfectionism might affect the psychological well-being of athletes. Research in this area is required because high-profile examples such as Johnny Wilkinson and Victoria Pendleton have suggested that although perfectionism may have been the energizing force behind their unprecedented sporting achievements, they also experienced emotional turmoil because of their self-critical personality characteristics. From the research conducted to date, two studies have reported that self-critical dimensions of perfectionism are associated with lower self-esteem (Gotwals, Dunn, & Wayment, 2002) and higher, labile self-esteem (McArdle & Duda, 2008) in athletes. A further study by Gaudreau and Antl (2008) examined the process by which perfectionism might affect life satisfaction. They found that a self-critical form of perfectionism, labeled evaluative concerns perfectionism, was negatively related to life satisfaction. Moreover, this relationship was mediated by non-self-determined motivation, disengagement coping strategies, and perceived failure to achieve sporting goals. In contrast, perfectionism that included high personal standards and self-oriented perfectionism was unrelated to life satisfaction, but it appeared to encourage the use of self-determined forms of motivation and task-oriented coping, which resulted in strong perceptions of goal attainment. Gaudreau and

Antl (2008) suggested that because personal standards perfectionism included a measure of self-oriented perfectionism that is known to be underpinned by both approach and avoidance goals, it may be subject to antagonist mediation processes that both promote and thwart feelings of life satisfaction. Clearly, this area is an important one to explore to gain better understanding of the processes that lead to variations in psychological well-being in perfectionistic athletes.

Another area of research that sport psychologists should consider developing further concerns the influence that perfectionism might have on interpersonal relationships in sport. Habke and Flynn (2002) have proposed that intense self-focus is an important mechanism that may begin to undermine interpersonal relations. They suggest that perfectionists' preoccupation with their own achievement standards and their hypersensitivity toward criticism adversely affect their interpersonal relationships. These contentions have received some initial indirect confirmation in the social psychology literature (Blatt & Zuroff, 1992; Hill, Zrull, & Turlington, 1997; Hewitt & Flett, 1991; Flett, Hewitt, Blankstein, & Dynin; 1994; Nielson et al.; 1997). Taken together, the findings suggest that perfectionism may underpin the development of an aversive interpersonal style. This style may stimulate negative responses from those with whom perfectionists interact in the social environment and directly affect the appraisal of interpersonal interactions by perfectionistic individuals. To date, only one study has examined the influence of perfectionism on interpersonal relations in sporting contexts (Ommundsen, Roberts, Lemyre, & Miller, 2005). This research found that heightened perfectionism was associated with lower peer acceptance, poorer quality of peer relations, and greater conflict with friends who played on the same soccer team. In light of their findings, Ommundsen et al. proposed that examining the effects of perfectionism on interpersonal dynamics may be a productive avenue for future sport research.

Research Evidence Summary

The analysis provided in this review has concentrated largely on studies that examined perfectionism as a multidimensional construct and simultaneously considered various core dimensions. This body of research indicates that when considered in this manner, perfectionism does not appear to be either adaptive or healthy. Although perfectionism may lead to heightened achievement striving and bring about various positive outcomes, it also induces a psychological process that underpins potentially debilitating cognition, affect, and behavior that may undermine psychological well-being. It might therefore be argued that when perfectionism governs an athletes' achievement striving, performances will rarely be considered sufficient to meet exacting standards, and when the underlying cognitive processes give rise to a state of chronic disaffection, further sustained achievement striving is more likely to contribute to motivational debilitation than to a sense of performance excellence and accomplishment.

Practical Applications

In a formalized treatment setting, perfectionism has a reputation for being difficult to treat (e.g., Greenspon, 2008; Sorotzkin, 1998; Ramsey & Ramsey, 2002). Psychologists with counseling experience of perfectionism have identified a number of reasons this is the case. The beliefs that encapsulate perfectionism are deeply entrenched in one's sense of identity, so bringing about substantive structural change is difficult. In addition, because people often attribute successes to their commitment to perfection, they may be reluctant to relinquish their belief in its efficacy, despite any negative concomitants. Some psychologists have also argued that perfectionists may resist change because doing so requires them to acknowledge that their dedication to their domain of interest (e.g., sport, exercise, dance) and their achievements in that domain may reflect an unhealthy commitment to high standards rather than a genuine interest, love, or enthusiasm for the activity as an end in itself. Finally, some dimensions of perfectionism are thought to undermine the therapeutic process by engendering negative attitudes toward treatment (Ey, Henning, & Shaw, 2000; Oliver, Hart, Ross, & Katz, 2001) and corroding the therapeutic alliance required for effective treatment (Blatt, Zuroff, Hawley, & Auerbach, 2010).

The most common approach adopted in the treatment of perfectionism is cognitive-behavioral therapy (CBT). There is, however, currently some disagreement about the focus of this treatment when aimed at reducing perfectionism. Flett and Hewitt (2008) and Hewitt, Flett, Besser, Sherry, and McGee, 2003 argue that perfectionism should be treated as a multidimensional trait because it requires long-term treatment that addresses the need for perfection and a conditional sense of acceptance associated with its etiology. In other words, substantial structural change to beliefs embedded in the self-schema is required. In contrast, Shafran and colleagues (Riley, Lee, Cooper, Fairburn, & Shafran, 2007; Glover, Brown, Fairburn, & Shafran, 2007) have argued that when perfectionism is considered more narrowly as psychopathology that is maintained by maladaptive cognitions and behaviors rather than a personality trait, relatively shorter treatments focused on the mechanisms that sustain perfectionism (e.g., irrational self-evaluative processes) may also be effective.

Given the potential pathological consequences of higher levels of perfectionism, those responsible for safeguarding the welfare of athletes should be mindful of the level of the perfectionism reported by athletes. Norms are available for some measures of perfectionism (e.g., H-MPS, Hewitt & Flett, 2004; APS-R, Rice & Slaney, 2007). Although it is not yet clear whether the norms developed in community and clinical samples are applicable to athletes, they provide a point of comparison and guidance for referring athletes for counseling. Obviously, the role of coaches, parents, and other figures in the sport context is limited to helping athletes manage subclinical perfectionism and its negative consequences. But because those in this domain heavily influence and can change patterns of cognition and behavior exhibited by athletes, their role may be considerable.

To date, little research has examined variables that may ameliorate the aversive effects of perfectionism for athletes (e.g., Appleton et al., 2009; Dunn et al., 2002; Hall et al., 1998; Vallance, Courneya, Jones, & Reiman, 2006). Flett and Hewitt (2005) and others (e.g., Dunn et al., 2002; Hall et al., 1998) have speculated that a number of factors may provide resiliency to the perils of perfectionism for athletes. These include the adoption of adaptive strategies for dealing with excessive demands and setbacks, the development of heightened control beliefs, greater levels of task focus, and positive perceptions of meeting standards. Some of these possibilities are explored in the next section.

Perfectionism and Coping

One potential strategy for managing perfectionism is to teach athletes to become more adept at coping with the inevitable achievement difficulties that will arise when striving unremittingly for increasingly more difficult goals. For example, the promotion of problem-focused coping tendencies, as opposed to avoidance coping, may have a number of beneficial consequences. Hill, Hall, and Appleton (2010) have recently found that the relationship between self-oriented and socially prescribed dimensions of perfectionism and athlete burnout is mediated by coping tendencies so that dealing with achievement difficulties using problem-focused coping, and eschewing avoidant coping, may help to manage the potentially debilitating consequences of perfectionism. Gaudreau and Antl (2008) have also demonstrated similar findings with respect to goal attainment and life satisfaction reported by athletes. The consequences of problem-focused coping are likely to extend to other salutogenic outcomes such as positive emotional adjustment when dealing with stress (Dunkley, Zuroff, & Blankstein, 2003). Consequently, promoting problem-focused strategies when dealing with achievement difficulties may have a number of benefits for athletes who exhibit higher levels of perfectionism.

But for a number of reasons, coping tendencies may be unlikely to be an effective long-term strategy. In particular, there is mixed support for the moderating role of coping in the perfectionism–distress relationship. Some studies outside sport have found support for the moderating role of coping variables (e.g., O'Connor & O'Connor, 2003; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000), whereas others have not (e.g., Rice & Lapsley, 2001; Blankstein, Lumley, & Crawford, 2007). Dunkley, Zuroff, and Blankstein (2003) have found evidence that suggests that problem-focused coping may be ineffective in mitigating stress when individuals exhibit higher levels of socially prescribed perfectionism. Differences in coping variables, however, do appear to distinguish dimensions of perfectionism. For example, self-oriented and socially prescribed perfectionism can be distinguished based on their relationship with variables associated with the coping process (e.g., problem-solving confidence, constructive thinking, learned resourcefulness; Flett, Hewitt, Blankstein, & O'Brien, 1991; Flett et al., 1996; Flett, Russo, & Hewitt, 1994), as well as coping strategies (Hewitt, Flett, & Endler, 1995). Similarly, Dunkley and colleagues (Dunkley & Blankstein, 2000; Dunkley, Blankstein, et al., 2000; Dunkley, Sanislow, Grilo, & McGlashan, 2006; Dunkley, Zuroff, & Blankstein, 2003) have found that higher-order factors of perfectionism (evaluative concerns perfectionism and personal standards perfectionism) encourage different coping strategies (e.g., problem-focused versus avoidance) and that coping is an important partial mediator of the relationship between these dimensions of perfectionism and psychological distress (e.g., anxiety, negative affect, anger, and depression). Overall, further research appears to be needed to clarify the relationship between dimensions of perfectionism and coping in athletes before coping can be recommended as the basis for effective interventions to manage perfectionism in the sport domain.

Basic Psychological Skills Training

The management of perfectionism may be built in to the psychological skills training aimed at maximizing psychological performance. This training could include attempts to educate athletes about the difference between perfectionism and more adaptive achievement striving, as well as effective strategies for dealing with the negative cognition and affect that arise because of perfectionism. In an educational context some evidence suggests that basic cognitive restructuring can be effective when attempting to attenuate the immediate negative cognitions and emotions evoked by evaluative tasks. DiBartolo and colleagues (DiBartolo, Frost, Dixon, & Almodovar, 2001), for example, found that a short bout of cognitive restructuring focused on ameliorating the overestimation of the probability of negative events, decatastrophizing feared outcomes, and enhancing perceived coping efficacy reduced levels of anxiety and negative appraisals associated with a public speaking task. Kearns, Forbes, and Gardiner (2007) have also described cognitive behavioral coaching (CBC) that is specifically aimed at nonclinical populations. This coaching includes goal-setting exercises whereby individuals identify obstacles and patterns of behavior that may prevent the attainment of the goal, as well as the costs associated with the patterns identified. Basic psychological skills such as relaxation, mental rehearsal, and self-talk may also have the potential to moderate the perfectionism–distress relationship.

The use of effective goal setting is an especially intuitive strategy when considering the management of perfectionism. The benefits of flexible and optimally challenging goals are well documented. Many of the intervention strategies that have led to decreases in perfectionism outside sport have entailed large goal-setting components (e.g., Egan & Hine, 2008; Kearns, Forbes, & Gardiner, 2007; Kutlesa & Arthur, 2008). But it is noteworthy that empirical evidence suggests that striving for perfection is not in itself problematic, even when standards are perceived to be imposed by others (Campbell & Di Paula, 2002). In terms of goal setting, the focus should therefore be on goal flexibility and evaluation rather than on reducing standards. The negative reactions to mistakes and the meaning given to personal failure is what lead to difficulties for perfectionists. To address these issues, fundamental change to the beliefs associated with perfectionism is required.

Perfectionism, Achievement Goals, and the Achievement Climate

A number of sport psychologists have suggested that promoting task involvement and reducing ego involvement may ameliorate some of the negative consequences of perfectionism for athletes (Appleton et al., 2009; Dunn et al., 2002; Hall et al., 1998). Consequently, the promotion of a task orientation may be another means of managing perfectionism. Hall et al. (1998) and Appleton et al. (2009) have examined the possibility that dispositional achievement goals moderate the relationship between perfectionism and anxiety and burnout for athletes. To date, however, no support has been found for the moderating role of dispositional achievement goals. Rather, dispositional achievement goals appear to be relatively stable and defining characteristics of perfectionism. Achievement goals may therefore be better considered regulators of the achievement striving associated with perfectionism rather than moderating variables (Appleton et al., 2009)

It remains possible, and in fact may be likely, that perceptions of the achievement climate moderate the relationship between perfectionism and its negative consequences. The achievement climate is presumed to influence the immediate goal involvement adopted by athletes, and over time it may influence dispositional achievement goals (Ames, 1992c; Dweck & Leggett, 1988). Consequently, perceptions of the achievement climate may have the potential to promote task involvement directly, as well as indirectly, through their influence on dispositional achievement goals. In support of this possibility, empirical examination of the influence of perceptions of the achievement climate has found that the motivational climate moderates the relationship between dispositional achievement goals and achievement-related outcomes (e.g., Swain & Harwood, 1996; Treasure & Roberts, 1998; Newton & Duda, 1999) and contributes to achievement-related outcomes above the variance accounted for by dispositional goals (e.g., Seifriz, Duda, & Chi, 1992; Treasure & Roberts, 1998, 2001). In terms of perfectionism, as a short-term strategy, promoting a mastery climate may have the potential to temper any immediate negative consequences of perfectionism in achievement settings. In the long-term, manipulating the achievement climate to promote mastery goals may be a strategy for bringing about fundamental change by socializing more adaptive beliefs about the purpose of sport and the causes of success (Dunn et al., 2002; Hall et al., 1998).

Autonomy-Supportive Environments

Other models suggest that similar strategies may provide an opportunity to address the debilitating beliefs that underpin perfectionism. Models of self-worth offer a number of possible means of mitigating the effects of perfectionism by directly addressing the sense of conditional acceptance that underpins perfectionism. Alternatives to the pursuit of contingent self-worth include the development of unconditional self-acceptance (Ellis, 2003), unconditional positive regard (Rogers, 1959), authenticity (Kernis, 2003), and true self-esteem

(Deci & Ryan, 1995). According to self-determination theory (Ryan & Deci, 2002), true self-esteem is developed through the fulfillment of the psychological needs for competence, autonomy, and relatedness. This is achieved by providing social contexts in which an individual can act autonomously and experience a sense of efficacy within the context of authentic relationships. Autonomy-supportive environments in the context of sport include providing choice in tasks, offering rationales for decisions, acknowledging and valuing athletes' feelings, and avoiding controlling behaviors such as self-criticism and controlling competence (Mageau & Vallerand, 2003). The explicit focus on creating a social context in which people are able to feel accepted by others and eventually themselves (Deci & Ryan, 1995) has the potential to alter contingencies of self-worth associated with perfectionism and bring about substantial change in the motives associated with perfectionism (see Adie, Duda, & Ntoumanis, 2008; Alvarez, Balaguer, Castillo, & Duda, 2009). Future empirical research is required to examine this possibility.

Perfectionistic Cognitions

It is possible that perfectionism may be managed by focusing on the cognitive components of perfectionism. Flett and colleagues have also argued that in addition to trait dimensions, perfectionism entails a number of cognitive components that include a ruminative response style and the experience of automatic thoughts that reflect the need to be perfect (Flett, Hewitt, Blankstein, & Gray, 1998). Perfectionistic cognitions are frequent automatic thoughts and images that involve the need to be perfect. They indicate a preoccupation with the attainment of perfection and the regularity with which individuals engage in self-evaluation against an ideal, perfect self (Flett et al., 1998; Hewitt & Genest, 1990). Research has found that individual differences in the frequency of these perfectionistic cognitions explain additional unique variance in the psychological distress reported by perfectionists (Ferrari, 1995; Flett, Madorsky, Hewitt, & Heisel, 2002; Flett et al., 1998; Flett, Greene, & Hewitt, 2004; Rudolph, Flett, & Hewitt, 2007) beyond trait perfectionism dimensions. Consequently, the experience of ruminative cognition is an important target for the management of perfectionism (Flett et al., 1998). Moreover, in comparison to trait perfectionism, the experience of perfectionistic cognition may be more amenable to change (Moore & Barrow, 1986; Flett et al., 2007). Therefore, targeting athletes' experience of these cognitions may provide an opportunity to ameliorate the negative effects of trait perfectionism, at least in the short term. In the long term, because of the unique predictive ability of trait dimensions of perfectionism and perfectionistic cognitions, both must be the focus of interventions (Flett et al., 2007).

Any attempt to manage subclinical perfectionism in athletes is likely to create a significant dilemma for coaches and sport psychologists when there is widespread disagreement on both its definition and long-term consequences. Because perfectionism is a characteristic that reflects a strong commitment

to high standards and may stimulate fervent achievement striving, it seems to have become a socially valued quality to many in the world of sport, where both achievement and excellence are highly prized. Interventions aimed at managing perfectionism are clearly unnecessary for people who strive to achieve high personal standards, endorse mastery approach goals, eschew avoidance goals, and engage in reflective performance appraisal rather than self-critical derision. We agree with Stoeber, Uphill, and Hotham (2009) that this motivational pattern appears adaptive. Unlike Stoeber et al., however, we do not believe that this pattern of achievement striving reflects perfectionism. Targeted interventions are therefore clearly warranted for athletes who exhibit the core characteristics of perfectionism described earlier. The achievement striving of these athletes may occasionally result in positive performance outcomes. Coaches and sport psychologists need to understand, however, that the same mind-set that energizes achievement striving also gives rise to an array of debilitating psychological processes that may ultimately lead to considerable impairment and distress.

Directions for Future Research

Research into perfectionism in sport is still in its infancy, and thus there is considerable scope to advance knowledge about the nature and influence of this personality characteristic in sporting contexts. Although advances have occurred in the measurement of multidimensional perfectionism, the assessment of perfectionism in sport has been hindered by the fact that the dispositional measures used in clinical and social psychology contexts do not transfer easily. There is an obvious need to develop and validate measures that better reflect the core characteristics of the disposition as it manifests in sport. New measures must enable users to differentiate between the construct of perfectionism and behavior that is reflective of adaptive achievement striving.

Another area that sport researchers must consider is how perfectionism develops in athletes. Shafran, Egan, and Wade (2010) suggested that between 24% and 49% of perfectionism may be inherited. Of course, that means that our social environment plays a considerable role in the development of this personality construct. Parents are thought to play a significant role (Flett, Hewitt, Oliver, & McDonald, 2002; Frost, Laharte, & Rosenblate, 1991; Spiers Neumeister, Williams, & Cross, 2009), but little is known about whether sport might be a vehicle through which perfectionistic beliefs and attitudes are transmitted from parents to their children. Appleton, Hall, & Hill (2010) have recently begun to examine the role played by family members in this development of perfectionism, and further research must explore the psychological mechanisms by which parents transmit perfectionistic behavior to their children. Additionally, research should address the process by which coaches might influence perfectionistic achievement striving through the environment that they create.

Research in sport must also begin to consider the mechanisms by which perfectionistic achievement striving becomes destructive. Little research of a longitudinal nature has been conducted to date. Research of this type might specifically begin to examine the degree to which self-oriented perfectionism is a vulnerability factor rather than a dimension of "adaptive perfectionism." Cleverly designed diary studies may allow researchers to understand more about the dynamics of perfectionism. The data generated would provide more detail about the cognitive and affective processes experienced by athletes as they strive to reach perfectionistic standards. Future research might also consider how different forms of perfectionism exhibited by both athletes and coaches might influence the interpersonal dynamics within teams because interpersonal factors may indirectly influence various outcome measures ranging from performance to enjoyment.

Summary

The productivity of a number of research groups has advanced our understanding of perfectionism in sport. For example, both Stoeber and colleagues (Stoeber & Becker, 2008; Stoeber & Otto, 2006; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007; Stoeber, Stoll, Pescheck, & Otto, 2008; Stoeber, Uphill, & Hotham, 2009; Stoll, Lau, & Stoeber, 2008) and Dunn and colleagues (Dunn, Causgrove Dunn, & Syrotuik, 2002; Dunn, Craft, Causgrove Dunn, & Gotwals, in press; Dunn, Gotwals, & Causgrove Dunn, 2005; Dunn, Causgrove Dunn, Gotwals, Vallance, Craft, & Syrotuik, 2006; Dunn, Gotwals, Causgrove Dunn, & Syrotuik, 2006; Gotwals & Dunn, 2009; Vallance, Dunn, & Causgrove Dunn, 2006) have made substantial contributions to the conceptual understanding and measurement of perfectionism in sport. At a recent gathering of perfectionism researchers hosted by Joachim Stoeber at the University of Kent, one of the delegates expressed the view that those researching in this area should be more accepting of the diverse approaches to the study of perfectionism, many of which differ markedly from one another both conceptually and methodologically. Our position is that it behooves researchers to reflect on areas of disagreement and engage in critical discourse that will help to develop and refine ideas and bring about greater understanding of the subject. Our aim in writing this chapter was not to discredit the invaluable contribution of colleagues who help shape our thinking or others who do not share our viewpoint. The purpose was to explain the arguments that inform our beliefs surrounding the influence of perfectionism in sport and to outline why we are not convinced by either the conceptual or empirical evidence offered in support of the notion that perfectionism contributes to adaptive motivation and sporting excellence.

What we have challenged within the chapter is the idea that an individual can be defined as a perfectionist without exhibiting the core characteristics of this personality disposition. We have also challenged the value

of disaggregating multidimensional measures and the notion of adaptive perfectionism. Our views are not wholly incongruent with those of other groups who are examining perfectionism in sport because we believe that self-critical forms of perfectionism are fundamentally debilitating, and we believe, like others (e.g. Greenspon, 2000, Flett & Hewitt, 2006), that what has been labeled positive perfectionism is simply adaptive achievement striving. Moreover, the empirical evidence points clearly to the fact that, although adaptive achievement striving provides a sustainable route to fulfilling a person's sporting potential, perfectionism is not a foundation for excellence. Rather, it is an uneasy pathway toward purgatory because it gives rise to an array of debilitating processes that athletes will encounter as they strive to reach the unattainable.