

Perfectionism in the Workplace

By

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Perfectionism in the Workplace

By Timur Ozbilir

Abstract

This study explores the impact of perfectionism on health, achievement, and distress in the workplace, focusing on its relations to performance, engagement, strain, and burnout. In two samples of working adults from Canada and Turkey, both the setting of high standards and self-oriented perfectionism were associated with higher levels of performance and engagement. Hierarchical regressions were conducted to test the effects of adaptive and maladaptive perfectionism on the four workplace outcomes. Although having high standards did not predict outcomes above and beyond conscientiousness, achievement striving, and achievement motivation, perceived discrepancy between standards and perceived performance was associated with higher levels of strain and burnout, and lower levels of performance and engagement. Adaptive and maladaptive perfectionism, operationalized as an interaction between high standards and discrepancy, did not significantly predict performance, engagement, strain, or burnout. The implications of these findings for theory and practice are discussed.

August 31, 2011

Perfectionism in the Workplace

Perfectionists have been defined as individuals with a neurotic need to mould themselves into an idealized image of perfection (Horney, 1950). Over the last few decades, a growing body of research has been devoted to understanding perfectionism in relation to other personality and life outcomes. Through extensive studies involving clinical populations (e.g., Frost et al., 1990; Hewitt, Flett, & Weber, 1994), we now have a better understanding of how perfectionism contributes to individual performance, well-being, and distress in the clinical domain. Despite these important implications of health and performance for employees and organizations, however, little is known about the impact of perfectionism in the workplace.

Some early theorists (e.g. Adler, 1956) have argued that striving for excellence is key to personal growth and improvement. Aspiring for perfection is considered a valuable goal in many areas of performance. In the corporate world, for example, perfectionism is generally viewed by recruiters and employers as a desirable quality that leads to increased efficiency. However, this view of perfectionism is at odds with the view that has been predominant in the psychological literature for many years, in which perfectionism is described as an inherently negative trait associated with psychopathology and maladjustment (e.g. Burns, 1980; Frost et al., 1990; Hewitt & Flett, 1991a). Perfectionists have been defined as individuals who are demanding and over-critical of themselves, striving for high achievement, and unable to receive satisfaction from their performance (Burns, 1980; Dunkley & Blankstein, 2000; Flett & Hewitt, 2002). Conceptualized in this way, perfectionism has been associated with a number of

clinical disorders such as obsessive-compulsive disorder, eating disorders, depression, and stress (Flett & Hewitt, 2002).

Some authors (e.g., Slaney, Ashby, & Trippi, 1995) have suggested that this all-negative view of perfectionism was a result of a general tendency in the field of psychology to focus on the negative rather than recognizing the positive. In part based on Hamachek's (1978) work on *normal* and *neurotic* perfectionists, a new conceptualization of perfectionism emerged which identified positive aspects of the construct. According to this conceptualization, adaptive perfectionists are individuals who set high goals and personal standards and take pleasure in their performance, whereas maladaptive perfectionists are those with unattainably high standards accompanied by an inability to derive pleasure from their performance and/or doubt about their capabilities (Cox, Enns, & Clara, 2002).

The distinction between adaptive and maladaptive perfectionism has received consistent support in the literature (Stoeber & Otto, 2006); however, these types of perfectionism have been studied mostly in clinical and educational settings. Consequently, it remains unclear whether or not the distinction between adaptive and maladaptive perfectionism extends to the workplace. There also has been a lack of consensus in the literature regarding how to operationalize and measure adaptive and maladaptive perfectionism, resulting in inconsistent findings (Stoeber & Otto, 2006). Finally, the extent to which adaptive perfectionism is a distinct construct that predicts outcomes above and beyond similar achievement-related constructs is unknown. Therefore, in this study, I use a new operationalization of adaptive and maladaptive

perfectionism (Blasberg, 2006) to examine how the two types of perfectionism contribute to work-related performance, engagement, strain, and burnout, even after controlling for similar constructs such as conscientiousness, achievement motivation, and achievement striving.

Perfectionism: Origins and Definitions

The concept of perfectionism as a unidimensional construct is attributed to Burns (1980), who described perfectionists as individuals whose unattainable standards and tendency to measure their self-worth entirely in terms of accomplishments placed them in a self-defeating situation. Although this conceptualization of perfectionism as an inherently negative construct provided a foundation for the multi-dimensional conceptualizations of perfectionism in the 1990s, it was Hamachek's 1978 article that laid the groundwork for the constructs of adaptive and maladaptive perfectionism.

According to Hamacheck (1978), perfectionism is a two-dimensional construct. *Normal* perfectionists are those who derive pleasure from exerting laborious effort to meet their expectations, but allow themselves to be less stringent when the situation permits. *Neurotic* perfectionists, on the other hand, feel that they never live up to their own expectations and always feel they can do better. Another distinction is that normal perfectionists are able to assess their strengths and weaknesses more realistically (Hamachek, 1978). Different from other theorists of the same period, Hamachek based his definition of perfectionism on outcomes rather than antecedents such as family, child, or environmental factors (see Flett et al., 2002 for a review). He identified six behaviours, each of which constituted a continuum from normal to neurotic: depressive symptoms, a

nagging 'I should' feeling, shame and guilt feelings, face-saving behaviour, shyness, and procrastination. Neurotic perfectionists scored high on all of these continuums.

In the 1990s, two separate groups of researchers integrated different definitions of perfectionism to develop and validate two widely used measures of multidimensional perfectionism. Frost, Marten, Lahart, and Rosenblate's (1990) Multidimensional Perfectionism Scale (F-MPS) consists of six components: Standards, organization, parental expectations, parental criticism, concern over mistakes, and doubts over actions. Hewitt and Flett's (1991a) Multidimensional Perfectionism Scale (MPS) assesses three dimensions of the construct: self-oriented perfectionism (which involves setting excessively high personal standards, accompanied by a strong motivation to attain perfection), other-oriented perfectionism (which is characterized by a tendency to hold exceedingly high standards for other people), and socially prescribed perfectionism (which describes the individual's need to live up to the exceptionally high standards placed on them by significant others; Hewitt & Flett, 1991a). While Frost et al.'s (1990) model focuses on the childhood causes of perfectionism, Hewitt and Flett's (1991a) model involves the social environment giving rise to motivations for perfectionism (Bousman, 2007).

Both of these measures have been used to assess perfectionism in a variety of populations (e.g., clinically diagnosed participants, gifted children, adolescents, college students). Research using these measures has demonstrated associations between high levels of perfectionism and psychological problems including anorexia nervosa (Bastiani, Rao, Weltzin & Kaye, 1995; Cockell et al., 2002; Nilson et al., 2008), depression (Frost

et al., 1990; Hewitt & Flett, 1991a), social anxiety (Alden, Bieling, & Wallace, 1994; Juster, Heimberg, Frost, & Holt, 1996), suicidal ideation (Hewitt, Flett, & Weber, 1994; Hewitt, Norton, Flett, Callander, & Cowan, 1998), obsessive compulsive disorder (Frost et al., 1990; Rheume, Freeston, Dugas, Letarte & Ladouceur, 1995), and negative affect (Frost, Heimberg, Holt, Mattia, & Neubauer 1993). These associations with psychological dysfunction were in line with the negative conceptualization of perfectionism upon which the measures were based. However, research utilizing these measures has showed that the subscales differ in their associations with positive and negative outcomes. More specifically, the personal standards subscale of the F-MPS and the self-oriented perfectionism subscale of the MPS were also associated with positive outcomes, such as positive affect (Frost et al., 1993), better classroom performance, and higher grade point average (Brown et al., 1999). These findings led researchers to consider perfectionism as a construct with positive and negative aspects, with different researchers labeling the two types of perfectionism positive and negative perfectionism (Terry-Short, Owens, Slade, & Dewey, 1995), active and passive perfectionism (Adkins & Parker, 1996), healthy and unhealthy perfectionism (Parker, 1997), and functional and dysfunctional perfectionism (Rheume et al., 2000).

Another model of positive and negative perfectionism, and the most commonly used, was proposed by Slaney, Rice, Mobley, Trippi, and Ashby (2001), who developed the Almost Perfect Scale – Revised (APS-R). The APS-R consists of three subscales: The Standards scale measures the setting of high personal standards; Order measures the need for order and organization; and Discrepancy measures the perceived discrepancy

between one's ideal and actual performance. Slaney et al. defined adaptive perfectionists as individuals who set high standards for themselves, but do not experience negative feelings associated with imperfection. They defined maladaptive perfectionists as those who feel like their actual performance never matches their expectations. Research using the APS-R has shown that adaptive perfectionism is positively correlated with higher levels of life satisfaction, self-esteem, grade point average, social interest, internal locus of control, and positive affect, whereas maladaptive perfectionism is correlated with higher levels of depression, anxiety, somatic complaints, and self-criticism (Gilman, Ashby, Sverko, Florell, & Varjas, 2005; Grzegorek, Slaney, Franze, & Rice, 2004; Mobley, Slaney, & Rice, 2005; Periasamy & Ashby, 2002; Rice & Slaney, 2002).

Perfectionism and Workplace Outcomes

Because most research has examined perfectionism in relation to psychopathology and psychological dysfunction in the clinical domain, our knowledge of perfectionism in the workplace is relatively limited. However, albeit few in number, studies involving work-related outcomes indicate that perfectionism is a personality characteristic that warrants further investigation in the work context due to its important implications for employees and organizations, especially in terms of achievement, health, and well-being. More specifically, researchers have begun to view perfectionism as a contributing factor in important workplace outcomes such as performance, strain, burnout, and engagement, which are also the focus of this study.

Strain is an occupational outcome argued to be one of the main causes of absenteeism (Darr & Johns, 2008), costing organizations millions of dollars every year in

lost working days and loss of productivity (Childs & Stoeber, in press). Burnout, described as a psychological condition caused by unrelieved work strain (Maslach, 1982), comprises exhaustion (which refers to the depletion of emotional resources), cynicism (which reflects an indifferent or distant attitude to work), and reduced efficacy (which is characterized by feeling incompetent and unable to solve work-related problems; Maslach, Jackson, & Leiter, 1996; Schaufeli et al., 1996). Burnout has also been related to absenteeism, as well as workaholism, physical symptoms, depression, alcohol and drug abuse, and marital and family problems (Maudgalya, Wallace, Daraisch, & Salem, 2006; Schaufeli et al., 1996; Shirom, 2002; and Taris, 2006). Conversely, engagement is defined as a positive, fulfilling, work-related state of mind characterized by vigour (which is described as the energy an employee invests in work and experiences when working), dedication (which is described as the sense of significance, enthusiasm, inspiration and pride an employee experiences with regard to their work), and absorption (which refers to being happily engrossed in one's work; Schaufeli, Salanova, González-Romá, & Bakker, 2002). Engagement has been associated with higher levels of psychological well-being, organizational commitment, and lower levels of turnover (Atridge, 2009; Bakker, Demerouti, & Verbeke, 2004; De Lange, De Witte, & Notelaers, 2008; Hakanen, Schaufeli, & Ahola, 2008; Schaufeli & Bakker, 2004).

Past research investigating how perfectionism relates to performance, strain, burnout, and engagement has focused on perfectionism mainly as a negative trait (e.g., Fairlie & Hewitt, 2003). According to this view, perfectionists are goal-oriented individuals who are characterized by striving for flawlessness and setting of excessively

high standards, accompanied by a tendency for overly critical evaluations of one's behaviour (Flett & Hewitt, 2002; Burns, 1980). Therefore, it is not surprising that perfectionism has been linked to higher performance in several domains including athletic, artistic, and scholastic (Fairlie & Flett, 2003). Furthermore, it is plausible to expect perfectionists to have higher job performance than non-perfectionists based on their higher scores on both reasoning tests and work sample tests typically used for personnel selection (Stoeber & Kersting, 2007). On the other hand, perfectionists' tendency to be over-critical of their own behaviours and performance (Flett & Hewitt, 2002) might make them more vulnerable to strain and burnout (Stoeber & Rennert, 2008). Both self-oriented perfectionism and socially prescribed perfectionism have been related to higher levels of strain and burnout in clinical, non-clinical, and work samples (e.g., Dunkley & Blankenstein, 2000; Hewitt & Flett, 1993; Mitchelson, 2009), although self-oriented perfectionism has been linked to lower levels of strain and burnout as compared to socially prescribed perfectionism in several studies (e.g., Mitchelson & Burns, 1998). Finally, only one study (Childs & Stoeber, *in press*) has investigated how perfectionism relates to engagement in the workplace, finding that self-oriented perfectionists tend to be more engaged at work compared to socially prescribed perfectionists.

While this body of work provides general evidence of the relevance of perfectionism to performance, strain, burnout, and engagement, it is limited in several ways. For example, past research on perfectionism in the work environment has been conducted either on student samples or on narrow working populations such as career

mothers (Mitchelson & Burns, 1998), musicians (Dews & Williams, 1989), and teachers (Stoeber & Rennert, 2008). Furthermore, past research has relied solely on the interpersonal orientation of perfectionism to make inferences about the adaptiveness/maladaptiveness of perfectionism. Perfectionistic standards, when self-imposed, are related to positive outcomes more often than when they are imposed by others (e.g., Childs & Stoeber, in press). Consequently self-oriented perfectionism has been viewed as the more 'adaptive' perfectionism dimension. However, the inconsistency of self-oriented perfectionism in predicting positive outcomes suggests that the link between setting high standards and outcome variables may change as a function of another factor, possibly the individual's own critical evaluations of themselves (Flett & Hewitt, 2002). Therefore, the present study uses Slaney et al.'s (2001) conceptualization, whereby perfectionism is defined as the setting of high standards, and adaptive and maladaptive forms of perfectionism are determined by the individual's level of perceived discrepancy between their standards and performance. It is expected that the results will mirror the pattern of findings of clinical research using the same conception; that is, adaptive perfectionists (i.e., individuals with high standards and a strong concordance between setting goals and meeting them) will have higher performance, be more engaged, and experience less strain and burnout at work. Conversely, maladaptive perfectionists (i.e., individuals with high standards and a strong discord between goals and meeting them) will experience higher levels of strain and burnout with low levels of performance and engagement.

Conceptions of Adaptive and Maladaptive Perfectionism

Although the assertion that perfectionism can be adaptive or maladaptive has gained support in the literature, the lack of consensus on how to operationalize or measure the two forms of perfectionism has created inconsistent findings, causing some researchers (e.g., Flett & Hewitt, 2002) to question the existence of adaptive perfectionism as a unique construct. Researchers have typically operationalized adaptive and maladaptive perfectionism in one of two ways. Some researchers (e.g., Haase & Prapavessis, 2004; Slade & Owens, 1998) have used higher scale scores on particular subscales as indicative of adaptive or maladaptive perfectionism. For example, higher scores on the self-oriented perfectionism subscale of the MPS or the standards subscale of the APS-R have been construed as adaptive perfectionism based on their association with positive outcomes. The socially prescribed perfectionism subscale of the MPS and the discrepancy subscale of the APS-R have been construed as maladaptive perfectionism, based on their associations with negative outcomes. Although self-oriented perfectionism and high standards tap into individuals' high expectations of themselves, labelling them both as adaptive perfectionism based only on their associations with positive outcomes fails to take into account the psychological difficulties associated with perfectionism (Flett & Hewitt, 2002). In other words, studies should consider the possible overlap between self-oriented perfectionism or setting high standards and the negative aspects of perfectionism such as self-critical evaluations or discrepancy in order to make inferences about the adaptiveness/maladaptiveness of perfectionism (Stoeber & Otto, 2006).

Taking into account the influence of multiple dimensions, other researchers (e.g. Ashby, Bieschke et al., 1997; Ashby and Kottman, 1996; Ashby, Kottman et al., 1998; LoCicero & Ashby, 2000) have taken a group-based approach and have used either cluster analysis or a median split to identify adaptive and maladaptive perfectionists. For example, Kottman & Ashby (1999) has identified perfectionists as those with scores above the 67th percentile on the Standards scale of the APS-R. Within the perfectionists (top 1/3 of Standards), they used a median split on the Discrepancy scale to define adaptive and maladaptive perfectionists. Research employing a group-based approach has linked adaptive perfectionism with positive outcomes including higher self-esteem (Accordino, Accordino, & Slaney, 2000; Slaney et al., 2001), life satisfaction (Gilman, Ashby, Sverko, Florell, & Varjas, 2005), and academic performance (Grzegorek et al., 2004; Mobley et al., 2005), and maladaptive perfectionism with negative outcomes such as depression, self-criticism, and lower self-esteem (Accordino, Accordino, & Slaney, 2000; Blatt, D'Afflitti, & Quinlan, 1976). However, the clustering approach has proved problematic due to the difficulty of establishing the reliability of the clusters in small samples. In addition, analyses have resulted in varying number of clusters across samples, making it difficult to determine the correct number of clusters in any particular study (Rice & Ashby, 2007). Similarly, dichotomization of continuous data is not a preferred methodology as it discards information that can be more valuable in its continuous form (Maxwell & Delaney, 1993; Aiken & West, 1991).

Instead of dichotomizing perfectionism dimensions, Blasberg (2006) has suggested using regression to test the interaction between the standards and discrepancy

subscales of the APS-R, whereby the relation between perfectionism and outcome variables is moderated by discrepancy. Indeed, Slaney et al.'s (2001) conceptualization essentially describes an interaction, whereby the setting of high standards accompanied by low levels of perceived discrepancy is related to positive outcomes, and the setting of high standards accompanied by high levels of perceived discrepancy is related to negative outcomes. Moreover, keeping the variables continuous allows us to capture the entirety of the scale range while testing the intersection of the two key dimensions, resulting in a statistical model that is both analytically parsimonious and theoretically informative.

To sum up, because both the self-oriented subscale of the MPS and the Standards subscale of the APS-R are thought to represent the more positive aspects of perfectionism and have been labelled as adaptive perfectionism, both scales are expected to positively correlate with each other and demonstrate the same pattern of relations with similar variables and outcome variables¹. Adaptive and maladaptive perfectionism will be operationalized as the interaction of high standards and discrepancy such that individuals with high standards and low levels discrepancy (adaptive perfectionists) are expected to have higher levels of performance and engagement, whereas those with high standards and high levels of discrepancy (maladaptive perfectionists) are expected to have higher levels of strain and burnout.

¹ Because self-oriented perfectionism of the MPS and the high standards subscale of the APS-R are based on different views of perfectionism, some exploratory analyses were run on the two subscales. Based on the results of the factor analysis and multiple regression in Appendix C, self-oriented perfectionism appears to consist of three components: lack of perfectionistic concerns, striving for excellence (or setting high standards – very similar to High Standards of APS-R), and striving for perfection. It appears that it is only perfectionistic striving that is positively associated with discrepancy, which may explain the inconsistent results in the literature.

Perfectionism and Achievement

Perfectionism correlates with achievement motivation (Accordino, Accordino & Slaney, 2000; Einstein, Lovibond & Gaston, 2000; Frost & Henderson, 1991; Wang, Slaney & Rice, 2007), achievement striving (Cox et al., 2002; Dunkley, Blankstein, Zuroff, Lecce, & Hui, 2006; Dunkley & Kyparissis, 2008; Enns, Cox, Sareen, & Freeman, 2001; Flett, Russo, & Hewitt, 1994; Hill et al., 1997; Rice, Ashby, & Slaney, 2007), and conscientiousness (Cox, Enns & Clara, 2002; Dunkley, Blankstein, Zuroff, Lecce & Hui, 2006; Hill, McIntire & Bacharach, 1997). Although some researchers have viewed these associations as evidence for adaptive perfectionism (e.g., Accordino et al., 2000; Stumpf & Parker, 2000), others have suggested that adaptive perfectionism may be a combination of these factors rather than a distinct construct (e.g., Hewitt & Flett, 2008). Because perfectionists' tendency to set excessively high standards for themselves is thought to be a more extreme form of striving that goes beyond these constructs (e.g., Flett & Hewitt, 2002, 2006), adaptive perfectionism should predict outcomes above and beyond achievement, if it is indeed a distinct construct.

Perfectionism and Culture

The paucity of studies involving different racial and cultural groups has been identified as a weakness of the perfectionism literature, limiting the generalizability of results beyond majority groups (Chang, Watkins, & Banks, 2004; Mobley, Slaney, & Rice, 2005). However, the existing studies have suggested that there may be differences in the form and function of perfectionism across diverse groups. For example, American students have reported higher levels of perfectionism than Croatian students with

personal standards and discrepancy predicting different values across life satisfaction domains for the two groups (Gilman et al., 2005), and European American students have reported setting higher standards than African American students (Mobley, Slaney, and Rice, 2005). Although a cross-cultural examination is not the main focus of the present study, the perfectionism model in Canada will be compared with Turkey, and any similarities and differences will be highlighted. Furthermore, as the APS-R has not been used within the working population in Turkey, the factor structure of the measure will be compared across samples through principle component analysis.

Summary and Hypotheses

Over the past few decades, perfectionism has emerged as a prominent factor in understanding how personality contributes to individual achievement, health, and well-being. Although numerous studies have examined how perfectionism relates to psychological functioning (see Flett & Hewitt, 2002 for a review), little is known about its impact in the workplace. This oversight is conspicuous, given the implications of perfectionism not only for the individual, but also for the organization.

Although there is no consensus on a single definition of perfectionism in the literature, the setting of high standards is generally accepted as the core aspect of the construct (Slaney et al., 2001). Therefore, it is not surprising that perfectionism has been linked to higher performance in several domains including scholastic, athletic, and artistic (Fairlie & Hewitt, 2003). However, it is not known whether or not this relation extends to the workplace. Furthermore, past research on perfectionism in the workplace suggests that perfectionism may be a vulnerability factor giving rise to strain and burnout (e.g.,

Fairlie & Hewitt, 2003; Stoeber & Rennert, 2008), which have been identified as causes of absenteeism, workaholism, depression, alcohol and drug abuse (Darr & Johns, 2008; Maudgalya, Wallace, Daraiseh, & Salem, 2006; Schaufeli et al., 1996; Shirom, 2002; and Taris, 2006). For example, socially prescribed perfectionism has been found to be related to higher levels of strain and burnout as compared to self-oriented perfectionism; that is, perfectionistic standards, when perceived to be imposed by others, may be more detrimental than when they are set by the individual (Flett & Hewitt, 2002). On the other hand, self-oriented perfectionism has been associated with higher levels of work engagement. (Childs & Stoeber, in press).

Although past research has shown that setting high personal standards is a relevant quality in the workplace, with both positive and negative aspects, this assertion has been based on the interpersonal orientation of these standards (i.e., self-imposed or imposed by others). Furthermore, self-oriented perfectionism has not consistently predicted positive outcomes as a clinical variable (e.g. Enns et al., 2001). In response, Slaney et al. (2001) have suggested another conceptualization of perfectionism, with adaptive and maladaptive dimensions. According to this conceptualization, adaptive perfectionism represents the positive aspects of perfectionism, such as the setting of high standards, and maladaptive perfectionism represents the negative aspects of perfectionism, such as the tendency to be overly self-critical of one's performance (Slaney et al., 2001).

This model of perfectionism has gained support from researchers (Stoeber & Otto, 2006); however, there is currently no consensus on how to operationalize adaptive and

maladaptive perfectionism. Researchers have typically used one of two operationalizations. Some researchers (e.g., Haase & Prapavessis, 2004; Slade & Owens, 1998) have used the self-oriented perfectionism subscale of the MPS or the standards subscale of the APS-R to assess adaptive perfectionism, and the discrepancy subscale of the APS-R to assess maladaptive perfectionism. Other researchers (Kottman & Ashby, 1999) have identified perfectionists as those with scores above the 67th percentile on the standards scale of the APS-R. Within the perfectionists (top 1/3 of Standards), they used a median split on the discrepancy scale to further differentiate adaptive from maladaptive perfectionists. It has been argued that the evidence in support of the distinction between adaptive and maladaptive perfectionism is the result of the particular operationalization or the statistical analyses used in a given study (e.g., Flett & Hewitt, 2002, Blasberg, 2006). More recently, Blasberg (2006) has suggested examining the interaction between standards and discrepancy in predicting outcomes. Similar to Ashby and Kottman's (1998) operationalization, adaptive and maladaptive perfectionism are determined as a function of the individuals' perceived discrepancy between their high standards and performance; however, the continuous nature of the variables is maintained.

Finally, some researchers have questioned the existence of adaptive perfectionism as a distinct construct (Flett & Hewitt, 2002) due to its conceptual and statistical overlap with other achievement-related outcomes, such as conscientiousness, achievement striving, and achievement motivation. The associations between adaptive perfectionism and these concepts have led some researchers to think adaptive perfectionism may just be one or a combination of these constructs (Blasberg, 2006; Flett & Hewitt, 2002).

Based on this body of work and the important achievement and health implications of perfectionism for the employee and the organization, I will examine the relation of adaptive and maladaptive perfectionism to performance, engagement, strain, and burnout within a working population. First, the 3-factor structure of the APS-R is expected to hold up in both samples. Second, if the standards subscale of the APS-R and the self-oriented perfectionism subscale of the MPS both measure adaptive perfectionism, they should be correlated. Third, the two subscales should correlate with other achievement-related constructs - conscientiousness, achievement striving, and achievement motivation. Fourth, if setting high standards represents the positive aspect of perfectionism, it should be associated with higher performance and engagement, and lower strain and burnout, even after controlling for achievement-related constructs. Conversely, discrepancy should be associated with higher levels of strain and burnout, and lower performance and engagement, even after controlling for achievement-related constructs. Finally, operationalized as an interaction between standards and discrepancy, adaptive perfectionism (i.e., high standards, low discrepancy) should predict positive outcomes, and maladaptive perfectionism (i.e., high standards and discrepancy) should predict negative outcomes, even after controlling for achievement-related constructs.

Hypotheses:

Hypothesis 1: The 3-factor structure of the APS-R will be supported in both samples.

Hypothesis 2a: The Standards subscale of the APS-R will demonstrate good construct (convergent) validity such that it will correlate with the Self-Oriented Perfectionism subscale of the MPS in both samples.

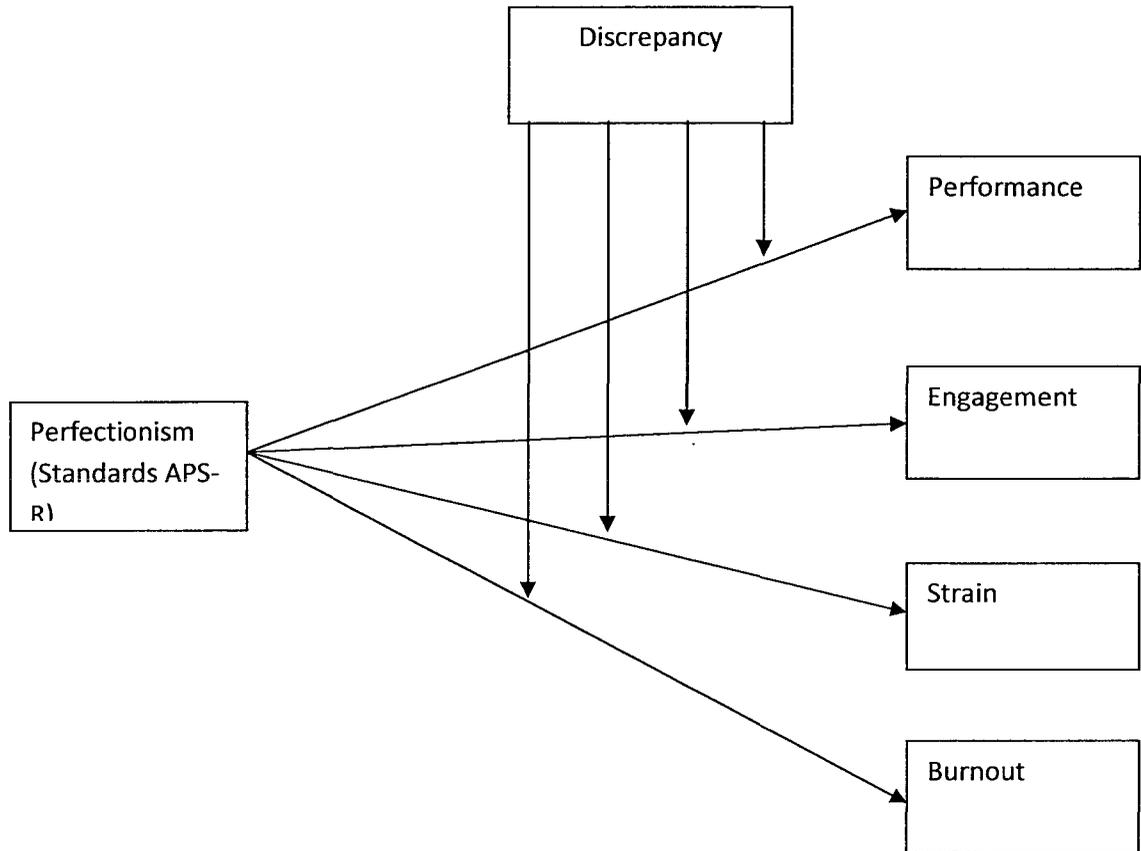


Fig.1 The proposed interaction.

Hypothesis 2b: The Standards subscale of the APS-R and the Self-Oriented Perfectionism subscale of the MPS will be positively correlated with conscientiousness, achievement striving, and achievement motivation in both samples.

Hypothesis 3. The Standards subscale of the APS-R and the Self-Oriented Perfectionism subscale of the MPS will be positively correlated with performance and engagement, and negatively correlated with strain, exhaustion, and cynicism in both samples.

Hypothesis 4a. The Standards subscale of the APS-R will be associated with higher scores on performance and engagement, and lower scores on strain and burnout, even

after controlling for conscientiousness, achievement striving, and achievement motivation.

Hypothesis 4b. The Discrepancy subscale of the APS-R will be associated with higher scores on strain and burnout, and lower scores on performance and engagement, even after controlling for conscientiousness, achievement striving, and achievement motivation.

Hypothesis 5: There will be an interaction between Standards and Discrepancy such that

(a) high levels of standards with low levels of discrepancy (adaptive perfectionism) will be associated with higher levels of performance and engagement, even after controlling for conscientiousness, achievement striving, and achievement motivation.

(b) high levels of Standards with high levels of discrepancy (maladaptive perfectionism) will be associated with higher levels of strain and burnout, even after controlling for conscientiousness, achievement striving, and achievement motivation.

Method

Participants and Procedure

An online survey was administered to a total of 345 participants in Canada and Turkey. One hundred and seventy-eight Canadian participants were recruited through a data collection company in Nova Scotia, Canada, and 167 Turkish participants were recruited by the researcher through a convenience sample. Participants in both countries used a link to access the survey, hosted on LimeSurvey, and were offered a chance to

enter a draw to win a Visa card worth \$200. All participants were over the age of 18 and working more than 30 hours per week.

The Canadian sample consisted of 119 (68%) females and 56 (32%) males. Three (1.7%) participants did not report gender. Of the categories listed for ethnicity, 157 (88.2%) were Caucasian, 4 (2.2%) Asian, 3 (1.7 %) were South Asian, and 7 (3.9%) were of other ethnicities. Seven participants (3.9%) did not report their ethnicity. The age distribution indicated that 81 (46%) participants were 26-40 years old, 72 (40.9%) were 41 years old or older, 23 (13.1%) participants were 18-25 years old. Two participants (1.1%) did not report their age. As for distribution across industries, the highest frequency was in healthcare with 31 (17.4 %) participants, followed by 16 (9%) in administrative and support services, 15 (8.4%) in finance and accounting. Sixty-three (34.3%) worked between 30-40 hours, sixty-five participants (36.5%) worked 40 hours per week, and 30% worked more. Participants had been with their company for an average of 82 months (6.8 years).

The Turkish sample consisted of 108 (64.7%) females and 58 (34.7 %) males. One (.6 %) participant did not report gender. Of the categories listed for ethnicity, 41 (36%) were Caucasian, 23 (13.8%) Asian, 21 (12.6%) were Middle Eastern, and 28 (15.6%) were of other ethnicities. The age distribution indicated that 122 (73.6%) participants were 26-40 years old, 36 (22.6%) were 18-25 years old, 9 (5.4%) were 41 years old or older. As for distribution across industries, the highest frequency was in education/child care with 26 (15.6%) participants, followed by 16 (9.6%) in healthcare, 15 (9%) in advertising. In all, 31.7% of the respondents worked 40 hours per week,

17.1% worked between 30-40 hours, 50.6% worked more. Participants had been with their company for an average of 38 months (3.1 years).

A power analysis was run using G*Power (Faul, Erdfelder, Buchner, & Lang, 2009) to ensure that sufficient participants would be recruited in order to test the hypotheses of interest. Based on a power of 0.80 and a small incremental proportion of variance of 3%, a total of N-256 participants would be required to detect the highest order, triple interaction among country, standards, and discrepancy. Thus, sufficient power can be assumed for all lower-order effects.

Measures

All demographic questions were posed first. These included country of residence, sex, age, ethnicity, job area, number of hours worked per week, and tenure with company.

Perfectionism. Perfectionism was assessed with two measures in this study:

The Almost Perfect Scale. The Almost Perfect Scale – Revised (APS-R, Slaney et al., 1996, 2001) consists of 23 items designed to assess both adaptive and maladaptive components of perfectionism. The inventory comprises three subscales that measure different aspects of perfectionism. Standards (7 items, e.g., -‘I set very high standards for myself’) measures personal standards, Order (4 items, e.g., -‘Neatness is important to me’) measures organization and need for order, and Discrepancy (12 items, e.g., -‘I am hardly ever satisfied with my performance’) measures the distress caused by the discrepancy between performance and standards. Participants respond to the items using a 7-point Likert scale ranging from *Strongly Disagree* (1) to *Strongly Agree* (7). Although

Order is associated with perfectionism, it is not regarded as a core dimension of perfectionism. In fact, most studies (e.g. Ashby et al., 2003; Martin & Ashby, 2004; Rice & Ashby, 2007) have used the Standards and Discrepancy subscales to identify adaptive and maladaptive perfectionists. Therefore, the Order subscale was included to preserve the psychometric properties of the scale for the principle component analysis, but it was not used for hypothesis testing. In the Canadian sample, the internal reliability of the Standards subscale was $\alpha = .77$, with item-total correlations ranging from .24 to .69; the internal reliability of the Discrepancy subscale was $\alpha = .93$, with item-total correlations ranging from .31 to .84. In the Turkish sample, the internal reliability of the Standards subscale was $\alpha = .81$, with item-total correlations ranging from .42 to .68; the internal reliability of the Discrepancy subscale was $\alpha = .92$, with item-total correlations ranging from .52 to .79.

Self-Oriented Perfectionism. Self-oriented perfectionism was measured using 15 items from the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991). Sample items include 'I demand nothing less than perfection for myself', and 'One of my goals is to be perfect at everything I do'. Participants respond to items on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). In the Canadian sample, the internal reliability of this scale was $\alpha = .89$, with item-total correlations ranging from .35 to .74; in the Turkish sample the internal reliability was $\alpha = .90$, with item-total correlations ranging from .26 to .73.

Achievement striving. Achievement striving was measured with 7 items from Spence et al.'s (1987) Type A Behaviour Pattern measure. The achievement striving

dimension of the Type A behaviour has been linked to job performance (Barling, Cheung, & Kelloway, 1996). Sample items include 'How much does your work stir you into action?' and 'How seriously do you take your work?' Employees responded to items on a scale from 1 to 7. In the Canadian sample, the internal reliability of this scale was $\alpha = .78$, with item-total correlations ranging from .35 to .67; in the Turkish sample the internal reliability was $\alpha = .70$, with item-total correlations ranging from .17 to .61.

Conscientiousness. Conscientiousness was measured with 10 items from the Goldberg International Personality Item Pool (International Personality Item Pool, 2001) (e.g., - I am always prepared). Employees responded to items on a scale from *very inaccurate* (1) to *very accurate* (5). In the Canadian sample, the internal reliability of this scale was $\alpha = .86$, with item-total correlations ranging from .47 to .64; in the Turkish sample the internal reliability was $\alpha = .78$, with item-total correlations ranging from .21 to .66.

Achievement motivation. Achievement motivation was measured with the 14-item Ray-Lynn Achievement Motivation Scale (AM; Ray, 1979). The AM measures an individual's drive for personal achievement and the tendency to strive for excellence (e.g. - Are you an ambitious person?, and - Have you always worked hard in order to be among the best in your own field?). and seven of the items are reverse-scored. Employees responded to items on a rating scale of *no* (1), *don't know* (2), and *yes* (3). In the Canadian sample, the internal reliability of this scale was $\alpha = .66$, with item-total correlations ranging from .13 to .40; in the Turkish sample the internal reliability was $\alpha = .70$, with item-total correlations ranging from .10 to .47. Although the AM scale shows

lower level of internal consistency than usually acceptable (Nunnally, 1978), it is similar to previously reported coefficients alpha in other samples (Ray, 1979; Blasberg, 2009).

Performance. Seven items adapted from Wayne and Ferris (1990) were used to assess overall performance. To reduce the likelihood of bias associated with self-report data, participants were asked how their supervisors would rate them on each of seven dimensions: Quality of work, cooperation, knowledge of the job, dependability, initiative and judgment, supervisor or technical potential, overall job performance (Shatt & Frone, 2010). Each item used the following response anchors: (1) poor, (2) fair, (3) good, (4) very good, and (5) excellent. In the Canadian sample, the internal reliability of this scale was $\alpha = .87$, with item-total correlations ranging from .47 to .84; in the Turkish sample the internal reliability was $\alpha = .81$, with item-total correlations ranging from .36 to .75.

Engagement. Engagement was measured with the 17-item Utrecht Work Engagement Scale (UWES) (Schaufeli et al., 2002). The UWES measures vigor (6 items; e.g., —At my job, I feel strong and vigorous), dedication (5 items; e.g., —I am enthusiastic about my job), and absorption (6 items; e.g., —When I am working, I forget everything else around me). Employees responded to items on a scale from *never* (1) to *always* (7). As in a study by Sonnentag (2003), a clear 3-factor structure was not found in either sample; therefore, the total score was used as a measure of work engagement. In the Canadian sample, the internal reliability of this scale was $\alpha = .94$, with item-total correlations ranging from .39 to .84; in the Turkish sample the internal reliability was $\alpha = .96$, with item-total correlations ranging from .61 to .89.

Strain. Strain was measured with the 12-item General Health Questionnaire (GHQ-12), used to identify minor psychiatric and psychological problems as well as a general lack of wellbeing (e.g., -‘Have you recently been able to concentrate on whatever you’re doing?’, and – ‘Have you recently lost much sleep over worry?’). Participants respond to the items using a 7-point Likert scale ranging from *Not at all* (1) to *All of the time* (7). In the Canadian sample, the internal reliability of this scale was $\alpha = .78$, with item-total correlations ranging from .33 to .76; in the Turkish sample the internal reliability was $\alpha = .76$, with item-total correlations ranging from .29 to .73.

Burnout. Burnout was measured with the 16-item Maslach Burnout Inventory-General Survey (MBI-GS) (Schaufeli et al., 1996). The MBI-GS measures exhaustion (5 items; e.g., ‘I feel used up at the end of the work day’), cynicism (5 items; e.g., ‘I doubt the significance of my work’), and reduced efficacy (6 items; e.g., ‘I can effectively solve the problems that arise in my work’ reverse coded). Participants will respond to the items on a scale from *never* (1) to *always* (7). Consistent with the burnout literature which suggests that exhaustion and cynicism represent the core of the burnout experience (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), only the two subscales were used in this study. In the Canadian sample, the internal reliability of the Exhaustion subscale was $\alpha = .90$, with item-total correlations ranging from .64 to .82; the internal reliability of the Cynicism subscale was $\alpha = .88$, with item-total correlations ranging from .56 to .81. In the Turkish sample, the internal reliability of the Exhaustion subscale was $\alpha = .89$, with item-total correlations ranging from .63 to .86; the internal reliability of the Cynicism subscale was $\alpha = .87$, with item-total correlations ranging from .45 to .80.

Results

Preliminary Analyses

Prior to analysis, data were screened for outliers, data transfer errors, and violations of assumptions related to regression analysis. Eleven participants who reported working fewer than 30 hours per week, and 1 participant who reported being a student were excluded from analyses. The scores of 13 participants who reported working 8, 9, or 12 hours a week were changed to 40, 45, and 60 hours. Because part-time jobs are not commonplace in Turkey, these participants were assumed to have misread the question and entered the number of hours they worked per day. Another score of 4045 was changed to 42.5, assuming this participant worked 40 to 45 hours a week. Analyses were run with and without these participants to see if there any differences. In addition, a data point of 99, and another 305, for age were deleted. Next, all variables were checked for outliers. Eleven extreme scores with standardized values above the cut-off of 3.3 (Tabachnick & Fidell, 2007) were winsorized. In addition, because regression is sensitive to multivariate outliers, which can influence slope estimates, 5 cases that exceeded the critical chi-square value were deleted using a $p < .001$ criterion for Mahalanobis distance (or a $\chi^2 > 27.88$). Normality and homoscedasticity were examined through histograms and probability plots. Several of the study variables (e.g., standards, performance, and engagement) were negatively skewed, but their Kurtosis statistics were below the upper threshold of 3.29 for large samples (Field, 2000). A missing value analysis revealed that between Little's MCAR test was not significant, indicating that the data were missing completely at random. Turkish participants' higher dropout rate was attributed to the

difference in recruitment strategy. Missing data were treated using listwise deletion.

Sample sizes for each analysis are presented in the associated table or figure captions.

Before testing the main hypotheses, a principle components analysis (due to low N for a CFA) was conducted with oblique rotation to determine if the proposed 3-factor structure of APS-R could be supported in both samples. The 3-factor structure accounted for 53.94% of the total variance in the Turkish sample, with all of the items loading onto the theoretically relevant factor with the exception of one item (i.e., 'If you don't expect much out of yourself, you will never succeed'). Similarly, the 3-factor structure explained 58.02% of the total variance in the Canadian sample, with all of the items loading onto the theoretically relevant factor with the exception of the same item. The analyses were run with and without this item to see if there was a difference. The pattern matrices for these analyses are presented in Appendix A.

Table 1 shows the mean scores, standard deviations, and correlations among the study variables for each sample. An inspection of the mean scores revealed that Canadian participants scored significantly higher on standards ($M = 5.98$, $SD = .73$, $r = .40$, $p < .01$), conscientiousness ($M = 4.07$, $SD = .59$, $r = .26$, $p < .01$), achievement striving ($M = 3.74$, $SD = .63$, $r = .11$, $p < .05$), achievement motivation ($M = 2.54$, $SD = .31$, $r = .27$, $p < .01$), performance ($M = 4.51$, $SD = .50$, $r = .29$, $p < .01$), and engagement ($M = 4.35$, $SD = 1.23$, $r = .30$, $p < .01$). Turkish participants scored higher on discrepancy ($M = 3.72$, $SD = 1.27$, $r = .30$, $p < .01$), strain ($M = 3.51$, $SD = .87$, $r = .44$, $p < .01$), exhaustion ($M = 3.43$, $SD = 1.54$, $r = .25$, $p < .01$), and cynicism ($M = 2.90$, $SD = 1.69$, $r = .38$, $p < .01$). Such findings are in line with previously reported cultural differences in perfectionism

(e.g., Gilman et al., 2005) and may be explained by Hofstede's (1980) theory of individualism versus collectivism, which posits individualist cultures, such as Canada's, emphasize personal fate, personal achievement, and competition, whereas in collectivist cultures, such as Turkey's, emphasis is placed on in-group fate and in-group achievement.

Despite the mean differences, Steiger's (1980) test of the difference between independent correlations found that most of the correlations (80%) in the matrix were statistically equal between the Canadian and Turkish samples. Correlations that were statistically different are bolded in Table 1. Furthermore, all the correlations between the APS-R (standards and discrepancy) were in the expected direction for both samples, with positive relationships found between standards and positive outcomes, and positive relationships with discrepancy and negative outcomes.

Although the factorial and correlational analyses were conducted separately, the main regression analyses were conducted on the combined data (see Table 2 for mean scores, standard deviations, and correlations among the study variables for the combined data, included for illustrative purposes only). However, because the differences outlined above may influence the results of the main analyses, the impact of country was tested. Specifically, country was included as a main effect predictor, as well as a moderator in three interaction terms, namely Country x Standards, Country x Discrepancy, and Country x Standards x Discrepancy. The main analyses are followed up with post hoc analyses for each sample wherever any of these interactions is significant.

Table 1
Intercorrelations among the study variables split by country (Turkish sample (N = 110) is above diagonal, and the Canadian sample (N = 153) is below the diagonal)

Variable	M(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	M(SD)
1 Gender	1.32(.47)	-	-.06	.12	-.13	-.03	.01	-.06	-.19 ^b	-.13	-.07	-.03	-.08	-.02	.08	.04	1.35(.48)
2 Age	40.24(11.46)	.06	-	-.10	.43 ^b	-.20 ^b	-.13	-.23 ^b	.13	-.05	.02	.14	.01	-.04	-.04	.03	30.58(6.11)
3 Hours	41.84(6.86)	.12	.15 ^a	-	-.19 ^a	.20 ^b	.20 ^b	.22 ^b	.13	.15	.18 ^b	.04	.03	-.03	.22 ^a	.00	44.33(7.06)
4 Tenure	85.81(89.53)	.19 ^a	.45 ^b	.07	-	-.18 ^b	-.11	-.23 ^b	.09	.04	.05	.03	-.02	.05	.03	.13	42.04(47.30)
5 Standards	5.98(.73)	-.18 ^a	.00	.16 ^a	.06	-	.27 ^c	.70 ^c	.31 ^c	.40 ^c	.41 ^c	.15	.24 ^b	-.16	.02	-.15	5.24(.97)
6 Discrepancy	2.98(1.10)	.00	-.06	-.12	-.16 ^a	.10	-	.34 ^c	-.02	-.07	-.15	-.18 ^b	-.11	.39 ^c	.22 ^a	.30 ^b	3.72(1.27)
7 SOP	4.67(.93)	-.14 ^a	-.01	.17 ^a	.00	.64 ^c	.16 ^a	-	.38 ^c	.45 ^c	.38 ^c	.27 ^c	.24 ^b	-.04	.09	-.12	4.72(1.07)
8 AStriving	3.74(.63)	-.17 ^a	.15 ^a	.26 ^b	.10	.62 ^c	-.10	.46 ^c	-	.50 ^b	.33 ^c	.13	.43 ^b	-.11	-.19 ^a	-.36 ^b	3.59(.69)
9 AMotivation	2.54(.31)	-.17 ^a	.00	.19 ^a	.04	.55 ^c	-.07	.49 ^c	.52 ^c	-	.43 ^c	.10	.36 ^b	-.35 ^c	-.05	-.31 ^b	2.36(.30)
10 Conscientious	4.07(.59)	-.17 ^a	.17 ^a	.07	.23 ^b	.47 ^c	-.30 ^b	.41 ^c	.55 ^c	.42 ^c	-	.35 ^c	.24 ^b	-.35 ^c	-.03	-.20	3.75(.57)
11 Performance	4.51(.50)	-.17 ^a	.22 ^b	-.03	.27 ^b	.31 ^c	-.25 ^b	.24 ^c	.41 ^c	.39 ^c	.49 ^c	-	.25 ^b	-.22 ^b	-.06	-.18 ^a	4.20(.49)
12 Engagement	4.67(1.00)	-.20 ^b	.39 ^b	.17 ^a	.16 ^a	.37 ^b	-.18 ^a	.33 ^c	.48 ^c	.37 ^c	.39 ^c	.52 ^c	-	-.28 ^c	-.47 ^c	-.62 ^c	3.91(1.40)
13 Strain	2.73(.72)	.01	-.25 ^b	.05	-.22 ^b	-.10	.44 ^b	.07	-.20 ^b	-.18 ^b	-.39 ^c	-.38 ^c	-.42 ^c	-	.43 ^c	.48 ^c	3.51(.87)
14 Exhaustion	2.64(1.51)	-.04	-.17 ^a	.04	-.10	-.04	.17 ^a	.01	-.13	.02	-.15 ^b	-.05	-.24 ^c	.51 ^c	-	.68 ^c	3.43(1.54)
15 Cynicism	1.58(1.51)	.07	-.23 ^b	-.06	-.18 ^a	-.18 ^a	.34 ^b	-.18 ^b	-.34 ^c	-.26 ^b	-.33 ^c	-.35 ^c	-.64 ^c	.63 ^c	.51 ^c	-	2.90(1.69)

Note: Gender was coded 0 = Female, 1 = Male, SOP = Self-oriented perfectionism. Bold indicates significantly different correlations.

^a $p < .05$, ^b $p < .01$, ^c $p < .001$, one-tailed.

Table 2

Means, standard deviations, and intercorrelations among the study variables

	M(SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Country	.41(.49)	-															
2.Sex	.33(.47)	.04	-														
3.Age	36.19(10.69)	-.45 ^c	.00	-													
4.Hours	42.79(6.93)	.19 ^c	.13 ^a	-.02	-												
5.Tenure (months)	67.50(77.77)	-.28 ^c	.08	.50 ^c	-.06	-											
6. Standards	5.66(.91)	-.40 ^c	-.11 ^a	.13 ^a	.09	.09	-										
7.Discrepancy	3.28(1.23)	.30 ^c	.01	-.20 ^c	.09	-.21 ^c	.04	-									
8.SOP	4.69(.98)	.03	-.10 ^a	-.08	.20 ^c	-.07	.60 ^c	.24 ^c	-								
9.AchieveStriving	3.67(.66)	-.11 ^a	-.18 ^c	.17 ^c	.18 ^c	.12 ^a	.46 ^c	-.09	.41 ^c	-							
10.AchieveMotivation	2.46(.31)	-.27 ^c	-.16 ^b	.11 ^a	.11 ^a	.11 ^a	.53 ^c	-.14 ^b	.44 ^c	.52 ^c	-						
11.Conscientiousness	3.93(.60)	-.26 ^c	-.13 ^a	.22 ^c	.06	.24 ^c	.49 ^c	-.29 ^c	.37 ^c	.46 ^c	.46 ^c	-					
12.Performance	4.38(.51)	-.29 ^c	-.12 ^a	.29 ^c	-.05	.26 ^c	.32 ^c	-.28 ^c	.24 ^c	.31 ^c	.33 ^c	.47 ^c	-				
13.Engagement	4.35(1.23)	-.30 ^c	-.14 ^a	.33 ^c	.04	.16 ^c	.38 ^c	-.22 ^c	.26 ^c	.46 ^c	.41 ^c	.36 ^c	.43 ^c	-			
14.Strain	3.05(.87)	.44 ^c	.00	-.34 ^c	.09	-.23 ^c	-.28 ^c	.49 ^c	.03	-.18 ^c	-.34 ^c	-.44 ^c	-.39 ^c	-.42 ^c	-		
15.Exhaustion	2.96(1.56)	.25 ^c	.02	-.22 ^c	.16 ^c	-.13 ^a	-.11 ^a	.25 ^c	.05	-.18 ^c	-.08	-.16 ^c	-.13 ^a	-.40 ^c	.52 ^c	-	
16.Cynicism	2.13(1.71)	.38 ^c	.06	-.29 ^c	.04	-.18 ^c	-.29 ^c	.39 ^c	-.13 ^a	-.36 ^c	-.35 ^c	-.35 ^c	-.35 ^c	-.67 ^c	.63 ^c	.62 ^c	-

Note: $N = 263$, Gender was coded 0 = Female, 1 = Male, Country was coded 0=Canada, 1=Turkey, SOP = Self-oriented perfectionism

^a $p < .05$, ^b $p < .01$, ^c $p < .001$, one-tailed.

Hypothesis Testing

Correlations. Hypotheses 2a and 2b predicted that the standards subscale of the APS-R would correlate with the self-oriented perfectionism subscale of the MPS, and both subscales would be positively correlated with conscientiousness, achievement striving, and achievement motivation. As expected, setting high standards was correlated with self-oriented perfectionism in the Turkish sample ($r = .70, p < .001$), and the Canadian sample ($r = .64, p < .001$). Setting high standards was positively correlated with achievement striving, achievement motivation, and conscientiousness in both the Turkish sample ($r = .31, p < .001, r = .40, p < .001, r = .41, p < .001$, respectively) and the Canadian sample ($r = .62, p < .001, r = .55, p < .001, r = .47, p < .001$, respectively). Similarly, self-oriented perfectionism was correlated with achievement striving, achievement motivation, and conscientiousness in both the Turkish sample ($r = .46, p < .001, r = .49, p < .001, r = .41, p < .001$, respectively), and the Canadian sample ($r = .38, p < .001, r = .45, p < .001, r = .38, p < .001$, respectively).

Hypothesis 3 predicted that the Standards subscale of the APS-R and the Self-Oriented Perfectionism subscale of the MPS would be positively correlated with performance and engagement, and negatively correlated with strain, exhaustion, and cynicism. Support for this hypothesis was mixed. In the Canadian sample, both standards and self-oriented perfectionism were positively correlated with performance ($r = .31, p < .001, r = .24, p < .001$, respectively) and engagement ($r = .37, p < .001, r = .33, p < .001$, respectively), and negatively correlated with cynicism ($r = -.18, p < .05, r = -.18, p < .01$, respectively). Neither scale was significantly correlated with strain or exhaustion in the

Canadian sample. In the Turkish sample, setting high standards was only significantly correlated with engagement ($r = .24, p < .01$), whereas self-oriented perfectionism was significantly correlated with performance and engagement ($r = .27, p < .001, r = .24, p < .01$, respectively).

Moderated Hierarchical Regression Analyses. Hypothesis 4a predicted that standards would be associated with higher scores on performance and engagement, and lower scores on strain and burnout, even after controlling for conscientiousness, achievement striving, and achievement motivation; hypothesis 4b predicted that discrepancy would be associated with higher scores on strain and burnout, and lower scores on performance and engagement, even after controlling for conscientiousness, achievement striving, and achievement motivation.

Hypothesis 5 predicted an interaction between standards and discrepancy such that high standards with low discrepancy would be associated with higher levels of performance and engagement, and high standards with high discrepancy would be associated with higher levels of strain and burnout, even after controlling for conscientiousness, achievement striving, and achievement motivation.

A series of regression analyses were run to test hypotheses 4a, 4b, and 5. First, the effects of standards and discrepancy were tested – with and without controlling for the three achievement-related variables – to determine whether or not these two perfectionism subscales accounted for any unique variance, over and above mere achievement (See Tables 3 and 4). Next, the interaction between standards and discrepancy was added to see if it explained any incremental variance. Finally, country

was tested as a moderator of the effects and standards, discrepancy, and their interaction, with demographics in Step 1, achievement-related variables in Step 2, standards and discrepancy in Step 3, three two-way interactions (standards x country, standards x discrepancy, discrepancy x country) in Step 4, and the 3-way interaction of standards x discrepancy x country in Step 5 (see Appendix C).

In the analysis with control and perfectionism measures, only, (see Table 3), there was a main effect of Standards on performance ($\beta = .28, p < .001, sr^2 = .07$), engagement ($\beta = .32, p < .001, sr^2 = .09$), strain ($\beta = -.21, p < .001, sr^2 = .04$), and cynicism ($\beta = -.22, p < .001, sr^2 = .04$). However, the main effect of standards was not significant for any of the outcome variables when conscientiousness, achievement striving, and achievement motivation were controlled for (Table 4). Therefore, hypothesis 4a was partially supported.

In the analyses with perfectionism and control variables only (see Table 3), there was a main effect of discrepancy on performance ($\beta = -.24, p < .001, sr^2 = .05$), engagement ($\beta = -.18, p < .01, sr^2 = .03$), strain ($\beta = .40, p < .001, sr^2 = .15$), exhaustion ($\beta = .19, p < .01, sr^2 = .03$), and cynicism ($\beta = .33, p < .001, sr^2 = .10$). After controlling for conscientiousness, achievement striving, and achievement motivation, discrepancy still positively related to strain ($\beta = .33, p < .001, sr^2 = .09$), exhaustion ($\beta = .18, p < .01, sr^2 = .03$), cynicism ($\beta = .27, p < .001, sr^2 = .06$), and negatively related to performance ($\beta = -.14, p < .05, sr^2 = .01$) and engagement ($\beta = -.11, p < .05, sr^2 = .01$) (see Table 4). Therefore, hypothesis 4b was supported.

When they were controlled for, conscientiousness, achievement striving, and achievement motivation, accounted for a significant amount of additional variance in performance ($R^2_{\text{change}} = .15, p < .001$), engagement ($R^2_{\text{change}} = .17, p < .001$), strain ($R^2_{\text{change}} = .13, p < .001$), exhaustion ($R^2_{\text{change}} = .03, p < .05$), and cynicism ($R^2_{\text{change}} = .12, p < .001$). Each of the achievement-related variables accounted for a significant amount of unique variance in at least two of the outcomes: Conscientiousness was positively related to performance ($\beta = .32, p < .001, sr^2 = .07$), and negatively related to strain ($\beta = -.31, p < .001, sr^2 = .07$), and cynicism ($\beta = .13, p < .001, sr^2 = .01$). Achievement striving was positively related to engagement ($\beta = .26, p < .001, sr^2 = .04$), and negatively related to exhaustion ($\beta = -.16, p < .001, sr^2 = .01$) and cynicism ($\beta = -.20, p < .001, sr^2 = .03$). Achievement motivation was positively related to engagement ($\beta = .17, p < .01, sr^2 = .02$) and negatively correlated to strain ($\beta = -.17, p < .001, sr^2 = .02$).

Finally, the interaction between standards and discrepancy did not account for any significant amount of variance in any of the variables except performance in the Canadian sample when the achievement-related variables were not controlled for ($\beta = .18, p < .05, sr^2 = .03$). However, the interaction did not account for any significant amount of variance in any of the variables when the achievement-related variables were controlled for (R^2_{Δ} ranging from .00 to .04, ns). Therefore, hypothesis 5 was not supported.

Effect of Country. I also conducted a hierarchical regression on the combined sample, with country moderating the effects of standards and discrepancy entered after the main effects, and the 3-way interaction between standards, discrepancy, and country

entered in the last step. These steps were followed to test whether or not country moderated the primary effects of interest. Neither the 2-way interactions nor the 3-way interaction was significant. The regression table for the moderation tests are in Appendix C.

Table 3
Results of regression analyses for each outcome variable controlling for demographics only

Step and Variable	Performance (N = 275)		Engagement (N = 279)		Strain (N = 272)		Exhaustion (N = 275)		Cynicism (N = 272)	
	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ
Step 1.		.13 ^c		.15 ^c		.21 ^c		.08 ^c		.13 ^c
Country	-.29 ^c		-.31 ^c		.44 ^c		.22 ^c		.38 ^c	
Gender	-.10		-.14 ^a		.00		.00		.05	
Age	.12		.17 ^a		-.11		-.13		-.09	
Tenure	.11		.01		-.03		.01		.00	
Hours per week	.03		.10		.02		.13 ^a		-.02	
Step 2.		.11 ^c		.11 ^c		.17 ^c		.04 ^b		.13 ^c
Country	-.29 ^c		-.30 ^c		.44 ^c		.21 ^c		.37 ^c	
Gender	-.05		-.10		-.03		-.02		.02	
Age	.14 ^a		.20 ^c		-.13 ^a		-.13 ^a		-.11	
Tenure	.08		-.01		.01		.03		.03	
Hours per week	-.02		.03		.06		.15 ^a		.02	
Standards	.28 ^c		.32 ^c		-.21 ^c		-.09		-.22 ^c	
Discrepancy	-.24 ^c		-.18 ^c		.40 ^c		.19 ^c		.33 ^c	
Step 3.		.01		.00		.01		.01		.00
Country	-.30 ^c		-.31 ^c		.45 ^c		.22 ^c		.37 ^c	
Gender	-.05		-.10		-.03		-.02		.02	
Age	.14 ^a		.20 ^c		-.12 ^a		-.13		-.11	
Tenure	.08		-.01		.01		.03		.03	
Hours per week	-.02		.04		.05		.14 ^a		.02	
Standards	.30 ^c		.33 ^c		-.22 ^c		-.10		-.22 ^c	
Discrepancy	-.26 ^c		-.19 ^c		.42 ^c		.21 ^c		.33 ^c	
Stand*Disc	.08		.03		-.09		-.10		-.02	
Total		.25 ^c		.26 ^c		.39 ^c		.13 ^c		.28 ^c

Note. Gender was coded 1 = Female, 2 = Male, Country was coded 0=Canada, 1=Turkey; Stan = Standards, Disc = Discrepancy

^a $p < .05$, ^b $p < .01$, ^c $p < .001$, one-tailed.

Table 4
Results of regression analyses for each outcome variable controlling for demographics and achievement-related variables

Step and Variable	Performance (N = 270)		Engagement (N = 275)		Strain (N = 269)		Exhaustion (N = 271)		Cynicism (N = 269)	
	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ
Step 1		.15 ^c		.15 ^c		.21 ^c		.08 ^b		.15 ^c
Country	-.31 ^c		-.30 ^c		.44 ^c		.22 ^c		.37 ^c	
Gender	-.11		-.14 ^b		.00		.00		.05	
Age	.12		.18 ^b		-.11		-.12		-.10	
Hours per week	.02		.09		.02		.12 ^a		-.02	
Tenure	.12		.00		-.03		.01		.00	
Step 2		.15 ^c		.17 ^c		.13 ^c		.03 ^a		.12 ^c
Country	-.30		-.30 ^c		.43 ^c		.22		.37 ^c	
Gender	-.03		-.05		-.06		-.03		-.04	
Age	.11		.15 ^b		-.13 ^a		-.10		-.08	
Hours per week	-.05		-.01		.08		.16 ^b		.07	
Tenure	.06		-.04		.02		.02		.04	
Achievement Striving	.07		.26 ^c		.09		-.16 ^a		-.20 ^c	
Conscientiousness	.32 ^c		.10		-.31 ^c		-.07		-.13	
Achievement Motivation	.09		.17 ^b		-.17 ^c		.05		-.12	
Step 3		.02 ^a		.06		.09 ^b		.03 ^a		.06 ^b
Country	-.30 ^c		-.30 ^c		.44 ^c		.22 ^c		.37 ^c	
Gender	-.04		-.05		-.05		-.03		-.03	
Age	.12 ^a		.16 ^c		-.13 ^a		-.10		-.07	
Hours per week	-.05		-.01		.07		.15 ^b		.06	
Tenure	.06		-.05		.05		.04		.06	
Achievement Striving	.05		.24 ^c		.09		-.15		-.20 ^c	
Conscientiousness	.26 ^c		.04		-.20 ^c		-.02		-.06	
Achievement Motivation	.06		.14 ^b		-.16 ^c		.06		-.11	
Standards	.10		.12		-.08		-.04		-.04	
Discrepancy	-.14 ^a		-.11 ^b		.33 ^c		.18 ^b		.27 ^c	
Step 4		.00		.00		.04		.01		.00
Country	-.31 ^c		-.30 ^c		.44 ^c		.23 ^c		.37 ^c	
Gender	-.04		-.05		-.05		-.02		-.03	
Age	.12 ^a		.16 ^c		-.13 ^a		-.10		-.03	
Hours per week	-.05		-.01		.06		.14 ^a		.06	
Tenure	.05		-.05		.04		.03		.06	

Achievement Striving	.05	.24 ^c	.09	-.14	-.21 ^c
Conscientiousness	.25 ^c	.04	-.19 ^c	-.00	-.06
Achievement Motivation	.07	.14 ^a	-.16 ^b	.06	-.11
Standards	.11	.12	-.10	-.06	-.04.
Discrepancy	-.15 ^a	-.11	.35 ^c	.20 ^a	.26 ^c
Standards*Discrepancy	.04	-.00	-.07	-.08	.02
Total R		.31^c	.33^c	.43^c	.14^c
					.34^c

Note: Gender was coded 1 = Female, 2 = Male, Country was coded 0=Canada, 1=Turkey

^a $p < .05$, ^b $p < .01$, ^c $p < .001$, one-tailed.

Discussion

The present study is one of the first to examine the impact of adaptive and maladaptive perfectionism in the workplace. First, the factor structure of the APS-R was tested in two cultural contexts, namely in Canada and Turkey. Next, two measures of adaptive perfectionism were compared in the two samples in terms of their relations to three achievement-related outcomes (i.e., conscientiousness, achievement motivation, and achievement striving) and four work-related outcomes (i.e., performance, engagement, strain, and burnout). Second, the relation of perfectionism dimensions, standards and discrepancy, to workplace outcomes was examined. Finally, adaptive and maladaptive perfectionism were operationalized as an interaction between standards and discrepancy to predict workplace outcomes.

Results showed that the 3-factor structure of the APS-R was supported in both samples, thus supporting Hypothesis 1. This finding is consistent with the results of previous studies (e.g., Mobley, Rice, & Slaney, 2005). The high standards subscale of the APS-R and the self-oriented perfectionism subscale of the MPS were correlated with each other in both samples, providing empirical evidence for the construct validity of these scales; therefore, Hypothesis 2a was supported. This finding suggests that self-oriented perfectionism and high standards are essentially measures of high personal standards, the core aspect of perfectionism. As expected, both subscales were also positively correlated with conscientiousness, achievement striving, and achievement motivation, which have also been conceptualized as setting high standards, striving for

excellence, and high attention to detail (Parker, 1997; Stoeber & Becker, 2008). These results support Hypothesis 2b.

Regarding work-related outcomes, both self-oriented perfectionism and standards were related to higher performance and engagement, and lower cynicism in the Canadian sample. The findings are consistent with previous research on the relation between perfectionism and performance in other domains, such as athletic and academic (Fairlie & Flett, 2003), and provides evidence that this relationship also extends to the workplace. Moreover, the results regarding the relationship between self-oriented perfectionism and engagement support previous findings (Childs & Stoeber, in press), and are consistent with previous research on perfectionism and intrinsic motivation (Stoeber, Feast, & Hayward, 2009). The present study also replicated the findings of previous studies on perfectionism and burnout (Fairlie & Flett, 2003; Mitchelson & Burns, 1998). In the Turkish sample, however, setting high standards was only related to higher levels of engagement, whereas self-oriented perfectionism was related to both higher performance and engagement. These findings may be due to cultural differences or sample characteristics. For example, setting high standards was significantly correlated with discrepancy in the Turkish sample but not in the Canadian sample. Turkish participants' higher level of discrepancy between their standards and performance may have negatively influenced their perceptions of how their supervisors would rate their performance.

Taken together, these results highlight the similarities as well as differences between self-oriented perfectionism and high standards. Although, for the most part, the

high standards subscale mirrored the pattern of relationships demonstrated by self-oriented perfectionism with regard to positive and negative outcomes, the cultural differences in the relationship between high standards and performance point to discrepancy as a possible source of inconsistency in findings. It appears that self-orientated perfectionism involves a dose of self-critical self-evaluation (also see Appendix C) which is stable across cultures, and perhaps individuals, whereas setting high standards may or may not be related to discrepancy. Indeed, previous research has reported non-significant (e.g., Ashby & Kottman, 1996) to significantly positive (e.g., Wang, Slaney, & Rice, 2007), or significantly negative (e.g., Mobley, Slaney, & Rice, 2007) correlations between the two subscales. In other words, the relationships between setting high standards and positive outcomes may be conditional on whether or not the individual is attaining those standards. In this case, it is possible that Turkish participants, living in a developing country where there are more roadblocks to success as compared to Canada, felt they fell short of meeting their high standards. This possibility brings to question how attributions of success and failure impact the relationships between discrepancy and outcomes.

Another difference between the two perfectionism measures, or the two conceptions of adaptive perfectionism, may be their relationship to other achievement-related constructs. Previous research has shown that perfectionism overlaps with these achievement-related constructs both conceptually and statistically (e.g., Accordino et al., 2000; Stumpf & Parker, 2000), which have been interpreted by some as evidence for the adaptiveness of perfectionism (e.g., Stumpf & Parker, 2000), and others as evidence that

adaptive perfectionism conceptualized as the setting of high standards is the same as or a combination of conscientiousness, achievement striving, and achievement motivation. Although self-oriented perfectionism differs from other achievement-related constructs by a self-critical evaluative style and a tendency to set excessively high standards (Flett & Hewitt, 2002), we do not know yet whether or not setting high standards is a distinct construct; therefore, it is necessary to control for these variables in research involving high standards.

For this reason, I tested hypothesis 4 and 5 with and without controlling for conscientiousness, achievement striving, and achievement motivation. Results showed that although setting high standards was significantly associated with performance, engagement, strain, and cynicism, these relationships were no longer significant when the achievement-related variables were controlled for. In other words, setting high standards did not explain any incremental variance in the dependent variables, suggesting that setting high standards, or adaptive perfectionism as conceptualized by some researchers (e.g., Accordino, Accordino, & Slaney, 2000), may be a combination of conscientiousness, achievement striving, and achievement motivation. Therefore, hypothesis 4a was partially supported. On the other hand, discrepancy, conceptualized by some as maladaptive perfectionism, was significantly associated with all of the outcome variables. More specifically, discrepancy was negatively associated with performance and engagement, and positively associated with strain, exhaustion, and cynicism in the workplace, thus supporting hypothesis 4b. These findings are consistent with studies in which the negative aspects of perfectionism (e.g., socially prescribed perfectionism) were

related to lower performance (Flett, 2009) and engagement (Stoeber & Childs, in press), and higher strain and burnout (Fairlie & Flett, 2003; Mitchelson & Burns, 1998).

However, to my knowledge, no study to date has related the individual's perceived discrepancy between their standards and performance to work outcomes.

Adaptive and maladaptive perfectionism were operationalized as an interaction between high standards and discrepancy, which fits well with the conceptualization that adaptive and maladaptive perfectionism are dependent on the individual's level of discrepancy (Rice & Ashby, 2007; Rice & Slaney, 2002). The results indicated that the interaction was not significant in predicting the outcomes when controlling for conscientiousness, achievement striving, or achievement motivation; therefore, Hypothesis 5 was not supported. This finding suggests that the relationships between high standards and workplace outcomes do not vary at different levels of discrepancy, and that findings of previous research may have been due to clustering or dichotomization (Blasberg, 2006; Stoeber & Otto, 2006).

Finally, results of the regression analyses showed that country did not moderate any of the effects of standards, discrepancy, or their interaction. This finding implicates that despite differences in levels of perfectionism between Canada and Turkey, the tested perfectionism model works in similar ways in both cultures.

Overall, the present study contributes to the literature in several ways. First, a comparison of the two widely used perfectionism measures, both of which have been used to measure adaptive perfectionism, suggested that although these two measures tap into similar constructs, self-oriented perfectionism is a measure of perfectionism as an

inherently negative construct, and standards is a measure of striving for excellence. However, based on the results of regression analyses with workplace outcomes as dependent variables, perfectionistic striving, or adaptive perfectionism as measured by the high standards subscale of the APS-R, appears to be a combination of conscientiousness, achievement striving, and achievement motivation. Perhaps the standards subscale of the APS-R would benefit from a revision to reflect the important distinction between perfectionistic standards and these constructs by focusing on the level of such standards. Perceived discrepancy between standards and performance, which was found to be associated with lower performance and engagement, and higher strain and burnout, emerged as a vulnerability factor in the workplace. Finally, differences in samples highlighted the instability of the discrepancy dimension across cultures, suggesting that the inconsistencies in findings with regard to the relationship between high standards and positive outcomes may be due to changes in the level of discrepancy as well as attributions of success and failure. Conversely, the similarities between the two samples underline the relevance of perfectionism in the workplace across cultures.

Limitations and Future Research

There are several limitations to this study. First, the current study is cross-sectional in nature and the same limitations regarding causality apply here as in previous research. Future studies should employ longitudinal designs to examine causal pathways between the variables. Second, although the pattern of correlations and the results of the principle components analyses were similar for both samples, a more rigorous statistical method such as confirmatory factor analysis could be used to confirm the invariance of

factor loadings in the samples. Third, the study relied on rather subjective performance ratings, which increase the opportunity for measurement error. Also, the achievement motivation scale in this study showed lower level of internal consistency than conventionally accepted. To gain a better understanding of perfectionism in the workplace, future studies should use more objective performance measures, such as supervisor performance ratings, and perhaps include organizational data such as absenteeism rates, and consider job demands and job resources.

While the findings of this study indicate that adaptive perfectionism may just be a combination of conscientiousness, achievement motivation, and achievement striving, more studies are required to understand what type of workplace outcomes are predicted by specific combinations of these constructs. Furthermore, positive and negative perfectionism in the workplace could also be examined in light of self-determination theory to assess the degree to which the level of perceived control over goal-setting impacts the relations of the two dimensions to outcomes.

Discrepancy, which was consistently associated with negative outcomes in this study, also warrants further exploration. Longitudinal studies should investigate the fluctuations in perceived discrepancy over time in contexts where individuals experience success and failure. To provide a more comprehensive picture of perceived discrepancy in the workplace, researchers should also consider how negative feelings associated with work, such as cynicism and emotional exhaustion, contribute to levels of discrepancy. In addition, perceived discrepancy without the presence of perfectionistic striving should be investigated, perhaps in relation to attributions of success and failure.

Finally, the mean differences between Canadian and Turkish participants in this study were attributed to differences typically witnessed in individualistic/collectivistic cultures. These differences could be investigated further with appropriate measures of individualism/collectivism. Furthermore, because Canada has a large immigrant population, the impact of acculturation on the intergenerational transmission of achievement values could also be taken into account.

Practical Implications

The findings of this study should be of interest to human resources professionals and managers. One of the most important implications of this research is that perfectionism is a multidimensional concept that can have both positive and negative aspects. Positive, or adaptive, perfectionism comprises the setting of high standards, is linked to positive employee outcomes such as higher performance and engagement. Adaptive perfectionism is also related to conscientiousness, achievement striving, and achievement motivation, which are qualities that should be encouraged in the workplace. Conversely, maladaptive perfectionism is characterized by a perceived discrepancy between standards and performance. Individuals who feel that their performance does not live up to their high standards or expectations are more likely to experience higher levels of strain and burnout and lower levels of performance and engagement. Although selection criteria should not be based on this knowledge, human resource professionals could use this information to determine what kinds of characteristics should be rewarded in the workplace and to identify possible sources of (job-related) distress so that they can better design employee assistance programs to help their employees.

Conclusion

The present study yielded novel evidence highlighting the differences between self-oriented perfectionism and the setting of high standards, drawing into question the common practice of labelling both as adaptive. It appears that self-oriented perfectionism goes beyond adaptive perfectionism as measured by high standards subscale of the APS-R, and involves a more extreme form of striving characterized by the setting of perfectionistic standards. Self-oriented perfectionism also seems to be consistently associated with discrepancy, which fits well with the view of perfectionism as an inherently negative construct.

The APS-R, on the other hand, purports to measure the setting of high standards or striving for excellence as an aspect of perfectionism; however, it fails to take into account the difference between striving for excellence and striving for perfection, which are not equivalent goals. As such, 'adaptive perfectionism', as measured by the APS-R, seems to be nothing more than a combination of conscientiousness, achievement striving, and achievement motivation.

This study attempted to fill a void in research by examining the relationship between perfectionism, which has traditionally studied in the clinical domain in relation to psychopathology, and workplace outcomes (i.e., performance, engagement, strain, and burnout). The findings not only corroborate previous research findings indicating perfectionism is a relevant variable in workplace research, but also introduce individuals' perceived discrepancy between their expectations and performance as a vulnerability factor in the workplace.

Finally, the present study adds to a growing body of cross-cultural research on perfectionism and extends it to the workplace. The findings provide additional evidence that while perfectionism levels may vary across cultures, the relationship between perfectionism dimensions and outcomes do not, indicating that perfectionism is a relevant personality variable in the workplace across cultures.

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Appendix A

Table A – 1
Pattern matrix for Principle Components Analysis of the APS-R for the Canadian sample (N = 155)

		Component		
		1	2	3
D	I am hardly ever satisfied with my performance	.86	-.09	-.10
D	Doing my best never seems to be enough	.83	.03	.11
D	My performance rarely measures up to my standards	.83	-.18	.02
D	I am seldom able to meet my own high standards of performance	.80	-.02	-.06
D	My best just never seems to be good enough for me	.79	.09	.10
D	I often feel disappointment after completing a task because I know I could have done better	.78	-.01	-.14
D	I am never satisfied with my accomplishments	.76	.08	.06
D	I am not satisfied even when I know I have done my best	.76	.07	-.18
D	I rarely live up to my high standards	.75	-.05	-.13
D	I often worry about not measuring up to my own expectations	.70	.22	-.07
D	I hardly ever feel that what I've done is good enough	.90	.06	-.04
D	I often feel frustrated because I can't meet my goals	.45	-.21	.27
S	I have high expectations for myself	-.01	.82	.02
S	I have a strong need to strive for excellence	.12	.79	-.17
S	I expect the best from myself	.06	.78	.01
S	I set very high standards for myself	.09	.78	.12
S	I try to do my best at everything I do	-.09	.53	.19
S	I have high standards for my performance at work or school	-.15	.48	.09
S	If you don't expect much out of yourself, you will never succeed	.29	.30	.07
O	I think things should be put away in their place	.05	-.13	.85
O	Neatness is important to me	-.04	.10	.83
O	I like to be organized and disciplined	-.14	.24	.75
O	I am an orderly person	-.09	.21	.64
Eigenvalues		7.23	4.22	1.89
% of variance		31.44	18.36	8.22

Note: Factor loadings above .40 are bolded and italicized. D = Discrepancy, S = Standards, O = Order

Table A – 2
Pattern matrix for Principle Components Analysis of the APS-R for the Turkish sample (N = 123)

		Component		
		1	2	3
D	I am hardly ever satisfied with my performance	.88	-.11	-.12
D	I hardly ever feel that what I've done is good enough	.83	-.03	-.09
D	I am never satisfied with my accomplishments	.77	.20	-.09
D	I am not satisfied even when I know I have done my best	.74	.03	.01
D	I am seldom able to meet my own high standards of performance	.74	-.23	.08
D	I often feel disappointment after completing a task because I know I could have done better	.73	.10	-.05
D	My performance rarely measures up to my standards	.71	-.17	.15
D	Doing my best never seems to be enough	.71	.08	-.06
D	My best just never seems to be good enough for me	.68	.23	.12
D	I rarely live up to my high standards	.68	.06	-.02
D	I often feel frustrated because I can't meet my goals	.62	-.09	.18
D	I often worry about not measuring up to my own expectations	.60	.30	-.01
S	I have high expectations for myself	.07	.83	-.01
S	I expect the best from myself	-.10	.78	.07
S	I set very high standards for myself	.15	.74	-.06
S	I have high standards for my performance at work or school	-.09	.63	-.00
S	I think things should be put away in their place	.09	.51	.09
S	I have a strong need to strive for excellence	.10	.50	.19
S	If you don't expect much out of yourself, you will never succeed	.00	.34	.28
O	Neatness is important to me	-.06	.05	.79
O	I am an orderly person	.06	-.05	.77
O	I like to be organized and disciplined	.08	.06	.75
O	I try to do my best at everything I do	-.14	.34	.47
Eigenvalues		7.11	3.99	1.31
% of variance		30.90	17.33	5.71

Note: Factor loadings above .40 are bolded and italicized. D = Discrepancy, S = Standards, O = Order

Table A – 3

Pattern matrix for Principle Components Analysis of the MBI for the Canadian sample (N = 148)

	Component	
	1	2
C I doubt the significance of my work	.90	-.15
C I have become more cynical about whether my work contributes anything	.86	.01
C I have become less enthusiastic about my work	.83	.09
C I have become less interested in my work since I started this job	.81	.09
C I just want to do my job and not be bothered	.66	.05
E I feel used up at the end of the workday	-.15	.96
E I feel emotionally drained from my work	-.11	.82
E I feel tired when I get up in the morning and I have to face another day on the job	.15	.82
E Working all day really is a strain for me	.20	.75
E I feel burned out from my work	.29	.68
Eigenvalues	5.28	1.82
% of variance	52.77	18.22

Note: Factor loadings above .40 are bolded and italicized. C = Cynicism, E = Exhaustion

Table A – 4
Pattern matrix for Principle Components Analysis of the MBI for the Turkish sample (N = 102)

		Component	
		1	2
E	I feel used up at the end of the workday	.98	.16
E	I feel tired when I get up in the morning and I have to face another day on the job	.87	-.04
E	I feel burned out from my work	.84	.00
E	Working all day really is a strain for me	.75	-.09
E	I feel emotionally drained from my work	.70	-.07
C	I just want to do my job and not be bothered	.46	-.20
C	I doubt the significance of my work	-.08	-.96
C	I have become more cynical about whether my work contributes anything	-.03	-.89
C	I have become less interested in my work since I started this job	.13	-.79
C	I have become less enthusiastic about my work	.16	-.77
Eigenvalues		5.83	1.54
% of variance		58.27	11.54

Note: Factor loadings above .40 are bolded and italicized. C = Cynicism, E = Exhaustion

Table A – 5
Pattern matrix for Principle Components Analysis of the UWES for the Canadian sample (N = 127)

		Component		
		1	2	3
D	I find the work that I do full of meaning and purpose	.98	-.21	-.03
D	My job inspires me	.83	.10	-.02
D	To me my job is challenging	.82	-.03	-.27
D	I am proud of the work that I do	.82	-.06	.34
A	Time flies when I'm working	.77	.13	-.15
D	I am enthusiastic about my job	.64	.33	.21
V	At my job I feel strong and vigorous	.62	.35	.06
A	I am immersed in my work	.61	.33	-.18
V	When I get up in the morning I feel like going to work	.58	.25	.33
A	I feel happy when I'm working intensely	.54	.23	.51
A	I get carried away when I am working	.44	.29	-.33
V	I can continue to work for very long periods of time	.05	.83	.01
V	At my job I am very resilient mentally	.10	.77	.13
A	It is difficult to detach myself from my job	-.16	.70	-.19
V	At my work I feel bursting with energy	.25	.59	.28
V	At my work I always persevere even when things do not go well	.22	.52	-.22
A	When I am working I forget everything else around me	.20	.28	-.65
Eigenvalues		9.11	1.71	.89
% of variance		53.57	10.03	5.20

Note: Factor loadings above .40 are bolded and italicized. D = Dedication, A = Absorption, V = Vigor

Table A – 6
Pattern matrix for Principle Components Analysis of the UWES for the Turkish sample (N = 96)

		Component		
		1	2	3
A	Time flies when I'm working	.92	-.18	-.07
D	I am enthusiastic about my job	.85	.14	-.05
V	At my job I feel strong and vigorous	.85	.03	-.02
V	When I get up in the morning I feel like going to work	.83	.13	-.08
D	I find the work that I do full of meaning and purpose	.78	.09	-.01
A	I feel happy when I'm working intensely	.78	.06	.08
D	I am proud of the work that I do	.76	.25	.08
D	My job inspires me	.72	.25	.14
V	At my work I feel bursting with energy	.69	-.28	.18
A	When I am working I forget everything else around me	.61	.13	.26
A	I am immersed in my work	.60	-.22	.28
A	I get carried away when I am working	.47	.38	.29
D	To me my job is challenging	.27	.73	.10
A	It is difficult to detach myself from my job	-.13	.07	.97
V	At my work I always persevere even when things do not go well	.29	-.16	.68
V	I can continue to work for very long periods of time	.27	.08	.59
V	At my job I am very resilient mentally	.16	.48	.49
Eigenvalues		10.62	.99	.88
% of variance		62.46	5.8	5.1

Note: Factor loadings above .40 are bolded and italicized. D = Dedication, A = Absorption, V = Vigor

Appendix B

Results of regression analyses for each outcome variable (controlling for achievement-related variables)

Step and Variable	Performance (N = 270)		Engagement (N = 275)		Strain (N = 269)		Exhaustion (N = 271)		Cynicism (N = 269)	
	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ	β	R2 Δ
Step 1.		.15 ^c		.15 ^c		.22 ^c		.08 ^b		.15 ^c
Country	-.31 ^c		-.30 ^c		.44 ^c		.22 ^c		.37 ^c	
Gender	-.12		-.14 ^b		.00		.00		.05	
Age	.12		.18 ^b		-.11		-.12		-.10	
Hours per week	.02		.09		.02		.12 ^a		-.02	
Tenure	.12		.00		-.03		.01		.00	
Step 2.		.15 ^c		.17 ^c		.13 ^c		.03 ^a		.12 ^c
Country	-.30 ^c		-.30 ^c		.43 ^c		.22 ^c		.37 ^c	
Gender	-.03		-.05		-.06		-.03		-.04	
Age	.11		.15 ^b		-.13 ^a		-.10		-.08	
Hours per week	-.05		-.01		.08		.16 ^b		.07	
Tenure	.06		-.04		.02		.02		.04	
Achievement Striving	.07		.26 ^c		.09		-.16 ^a		-.20 ^c	
Conscientiousness	.31 ^c		.10		-.31 ^c		-.07		-.13 ^b	
Achievement Motivation	.09		.17 ^b		-.17 ^c		.05		-.12	
Step 3.		.02		.06		.09 ^c		.03 ^a		.06 ^c
Country	-.30 ^c		-.30 ^c		.44 ^c		.22 ^c		.37 ^c	
Gender	-.04		-.05		-.05		-.03		-.03	
Age	.12 ^a		.16 ^c		-.13 ^a		-.10		-.07	
Hours per week	-.05		-.01		.07		.15 ^b		.06	
Tenure	.06		-.05		.05		.04		.06	
Achievement Striving	.05		.24 ^c		.09		-.15		-.20 ^c	
Conscientiousness	.26 ^c		.04		-.20 ^c		-.02		-.06	
Achievement Motivation	.07		.14 ^b		-.16 ^c		.06		-.11	
Standards	.10		.12		-.08		-.04		-.04	
Discrepancy	-.14 ^a		-.11 ^a		.33 ^c		.18 ^b		.27 ^c	
Step 4.		.00		.00		.01		.01		.00
Country	-.31 ^c		-.30 ^c		.44 ^c		.23 ^c		.37 ^c	
Gender	-.03		-.06		-.05		-.02		-.02	
Age	.13 ^a		.16 ^c		-.13 ^a		-.10		-.08	
Hours per week	-.06		-.01		.06		.14 ^a		.06	

Tenure	.05	-.04	.03	.03	.06
Achievement Striving	.05	.25 ^c	.09	-.15	-.21 ^c
Conscientiousness	.26 ^c	.04	-.18 ^c	.00	-.05
Achievement					
Motivation	.07	.14 ^a	-.16 ^b	.06	-.11
Standards	.14	.06	-.02	-.03	.01
Discrepancy	-.19 ^a	-.10	.36 ^c	.20 ^a	.26 ^c
SxD	.03	.01	-.09	-.09	.00
SxC	-.06	.09	-.13	-.05	-.08
DxC	.07	-.03	.00	.02	.01
Step 5		.01	.00	.00	.01
Country	-.29 ^c	-.30 ^c	.43 ^c	.21 ^c	.35 ^c
Gender	-.12	-.05	-.05	-.03	-.04
Age	.12 ^a	.16 ^b	-.13 ^a	-.09	-.07
Hours per week	-.06	-.01	.06	.14 ^a	.06
Tenure	.06	-.04	.03	.02	.05
Achievement Striving	.05	.25 ^c	.08	-.15 ^a	-.22 ^c
Conscientiousness	.24 ^c	.03	-.18 ^c	.01	-.04
Achievement					
Motivation	.07	.14 ^a	-.16 ^b	.06	-.12
Standards	.13	.06	-.01	-.02	.02
Discrepancy	-.22 ^a	-.11	.38 ^c	.22 ^b	.29 ^c
Standards*Discrepancy	.14	.04	-.14	-.18	-.10
Standards*Country	-.08	.09	-.12	-.03	-.06
Discrepancy*Country	.11	-.02	-.02	-.01	-.02
Stan*Disc*Country	-.16	-.05	.07	.13	.15
Total		.32^c	.34^c	.44^c	.15^c
					.35^c

Note. Gender was coded 1 = Female, 2 = Male

^a $p < .05$, ^b $p < .01$, ^c $p < .001$, one-tailed

Appendix C

Pattern matrix for Principle Components Analysis of the Self-oriented perfectionism scale (N = 300)

	Component		
	1	2	3
One of my goals is to be perfect at everything I do	.86	-.02	-.02
It is very important that I am perfect in everything I attempt	.82	.04	-.02
I demand nothing less than perfection of myself	.76	-.07	-.22
I am perfectionistic in setting my goals	.61	-.04	-.22
I strive to be as perfect as I can be	.56	.19	-.12
I do not have to be the best at whatever I am doing (R)	.52	.41	.10
When I am working on something, I cannot relax until it is perfect	.45	-.02	-.40
I never aim for perfection in my work (R)	.03	.79	-.11
I do not have very high goals for myself (R)	-.33	.70	-.42
I seldom feel the need to be perfect (R)	.30	.67	.13
I set very high standards for myself	-.10	.10	-.84
I strive to be the best at everything I do	.13	.04	-.68
I must always be successful at school or work	.19	-.04	-.65
I must work to my full potential at all times	.21	-.06	-.61
It makes me uneasy to see an error in my work	.02	.05	-.54
Eigenvalues	5.93	1.63	1.23
% of variance	39.52	10.86	8.19

Note: Factor loadings above .40 are bolded and italicized.

It appears that there are three components to self-oriented perfectionism: Perfectionistic striving, striving for excellence (or setting high standards), and lack of perfectionistic concerns. A multiple regression analysis involving these components with discrepancy as the dependent variable revealed that perfectionistic striving was positively associated with discrepancy ($\beta = .44, p < .001$), lack of perfectionistic concerns was negatively associated with discrepancy ($\beta = .44, p < .001$). Striving for excellence (or setting high standards), on the other hand, was not significantly associated with discrepancy, $ns > .98$.



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