Perfectionism in School Teachers:

Relations with Stress Appraisals, Coping Styles, and Burnout

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Abstract: Many school teachers suffer from stress and burnout, and perfectionism is a personality characteristic that has been associated with increased stress, maladaptive coping, and burnout. Recent findings, however, show that perfectionism has both positive and negative facets. To investigate how these facets are related to stress, coping, and burnout in teachers, a sample of 118 secondary school teachers completed multidimensional measures of perfectionism, stress appraisals, coping styles, and burnout. Multiple regression analyses showed that striving for perfection was positively related to challenge appraisals and active coping and inversely to threat/loss appraisals, avoidant coping, and burnout whereas negative reactions to imperfection were positively related to threat/loss appraisals, avoidant coping, and burnout and inversely to challenge appraisals and active coping. Perceived pressure to be perfect showed differential relationships depending on the source of pressure: Whereas pressure from students was positively related to loss appraisals and pressure from students' parents was positively related to burnout, pressure from colleagues was inversely related to threat appraisals and burnout. The findings suggest that striving for perfection and perceived pressure from colleagues do not contribute to stress and burnout in teachers, whereas negative reactions to imperfection and perceived pressure from students and students' parents may be contributing factors.

Keywords: perfectionism, stress, coping, burnout, teachers, school, students, parents

Introduction

Being a teacher is stressful. This goes particularly for school teachers. Across different countries, school teachers are among those professionals with the highest levels of job stress and burnout on the job, and many teachers retire early because they feel burned out (e.g., Cano-García, Padilla-Muñoz, & Carrasco-Ortiz, 2005; Enzmann & Kleiber, 1989; Farber, 1991; Hakanen, Bakker, & Schaufeli, 2006; Tang, Au, Schwarzer, & Schmitz, 2001). Consequently, international research and practice has made great efforts to understand and prevent teacher burnout (Vandenberghe & Huberman, 1999). Besides contextual factors such as job demands and job resources (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), research has now started to look at personality characteristics which may predict differences in teachers' stress and burnout (e.g., Cano-García et al., 2005). One personality characteristic that has been suggested to play an important role in teacher stress and burnout is perfectionism (Flett, Hewitt, & Hallett, 1995; Friedman, 2000). Unfortunately, so far only one empirical study has investigated perfectionism and stress in teachers (Flett et al., 1995), whereas there is no study on perfectionism and burnout in teachers. Moreover, there is yet no research on how perfectionism relates to teachers' coping with job stress. Consequently, the aim of the present research was to investigate how individual differences in perfectionism are related to teachers' stress appraisals, coping styles, and burnout.

Perfectionism is a personality style characterized by striving for flawlessness and setting of excessively high standards for performance accompanied by tendencies for overly critical evaluations of one's behavior (Flett & Hewitt, 2002; Frost, Marten, Lahart, & Rosenblate, 1990). Moreover, perfectionists often put great importance on the evaluation of others (Frost et al., 1990; Hewitt & Flett, 1991). Consequently, perfectionists may perceive a great deal of pressure to excel because they feel that they have to live up both to their own high standards and to those of others. Thus, it comes as no surprise that perfectionism has been associated with higher levels of stress and burnout (Gould, Udry, Tuffey, & Loehr, 1996; Mitchelson & Burns, 1998).

However, perfectionism is a multidimensional and multifaceted characteristic (Frost et al., 1990; Hewitt & Flett, 1991). Moreover, research has shown that two major dimensions of perfectionism can be differentiated: perfectionistic strivings and perfectionistic concerns (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006). The dimension of perfectionistic strivings comprises those facets of perfectionism that may be considered normal, healthy, or adaptive—such as striving for perfection, self-oriented perfectionism, and high personal standards—and has shown associations with positive characteristics, processes, and outcomes (particularly, when the overlap between perfectionistic strivings and perfectionistic concerns was controlled for). In contrast, the dimension of perfectionistic concerns comprises those facets of perfectionism that are considered neurotic, unhealthy, or maladaptive—such as concern over mistakes and doubts about actions, socially prescribed perfectionism, perceived pressure to be perfect, feelings of discrepancy between expectations and results, and negative reactions to imperfections—and has shown close associations with negative characteristics, processes, and outcomes (see Stoeber & Otto, 2006 for a comprehensive review).

Even though perfectionistic strivings and perfectionistic concerns may show substantial correlations (Stoeber & Otto, 2006), the distinction between the two dimensions is important with regard to how perfectionism relates to stress, coping, and burnout. Regarding stress, a number of studies have investigated how self-oriented perfectionism and socially prescribed perfectionism—which represent core facets of perfectionistic strivings and perfectionistic concerns, respectively (Frost et al., 1993; Stoeber & Otto, 2006)—re-

late to perceived stress and "daily hassles," that is, subjective appraisals of daily events as being stressful. While both self-oriented perfectionism and socially prescribed perfectionism have shown positive correlations with perceived stress in clinical samples (e.g., Hewitt & Flett, 1993), studies with non-clinical samples have found a differentiated pattern of the two dimensions of perfectionism with perceived stress. In studies with college students (e.g., Chang, 2006; Chang & Rand, 2000; Dunkley & Blankstein, 2000), only socially prescribed perfectionism showed positive correlations with perceived stress and daily hassles, whereas self-oriented perfectionism was unrelated to perceived stress and hassles. Parallel findings were obtained in further studies with college students that measured perfectionistic strivings by combining measures of perfectionistic personal standards and organization, and perfectionistic concerns by combining measures of perfectionistic concerns over mistakes, doubts about actions, and perceived parental pressure to be perfect (Blankstein & Dunkley, 2002; Chang, Watkins, & Banks, 2004; Dunkley, Zuroff, & Blankstein, 2003). Again only perfectionistic concerns showed positive correlations with perceived stress and daily hassles, whereas perfectionistic strivings were unrelated to perceived stress. Moreover, perfectionistic strivings were unrelated to daily hassles, once the overlap between perfectionistic strivings and perfectionistic concerns was controlled for. Taken together, the findings suggest that it is primarily perfectionistic concerns which are related to higher levels of stress, whereas perfectionistic strivings are not associated with higher levels of stress.

Regarding perfectionism and coping with stress, perfectionistic strivings and perfectionistic concerns have also shown differential patterns of correlations in that perfectionistic strivings are generally associated with an active coping style and perfectionistic concerns with an avoidant coping style.[1] Regarding coping styles as measured with the Coping Inventory for Stressful Situations (Endler & Parker, 1999), self-oriented perfectionism showed a positive correlation with task-oriented coping whereas socially prescribed perfectionism showed a positive correlation with avoidance-oriented coping (Dunkley & Blankstein, 2000). Further studies measured coping styles with the COPE inventory (Carver, Scheier, & Weintraub, 1989) combining COPE subscales to measure active coping (active coping, planning, and suppression of competing activities) and avoidant coping (denial, behavioral disengagement, and mental disengagement). When facets of perfectionism were combined to measure perfectionistic strivings (perfectionistic personal standards and self-oriented perfectionism) and perfectionistic concerns (perfectionistic concerns over mistakes and doubts about actions), perfectionistic strivings showed a positive correlation with active coping and perfectionistic concern a positive correlation with avoidant coping (see also J. C. Dunn, Whelton, & Sharpe, 2006). Similar findings were reported by Rice and Lapsley (2001) who measured coping styles with the COPE and differentiated three groups of perfectionists: adaptive perfectionists (high perfectionistic strivings and low perfectionistic concerns), maladaptive perfectionists (high perfectionistic strivings and high perfectionistic concerns) and nonperfectionists (low perfectionistic strivings). When the three groups were compared, adaptive perfectionists showed higher levels of active coping (active coping, planning, and seeking social support) and lower levels of avoidant coping (denial, disengagement, and use of alcohol or drugs) than both maladaptive perfectionists and nonperfectionists.

In comparison to research on perfectionism, stress, and coping, there exist only few studies that have examined the relationship between perfectionism and burnout. Still, the

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[1]With Compas (1987), we understand coping styles to characterize individuals' preferred ways of coping in response to stress either across different situations or over time within a given situation.

studies have produced converging evidence showing that only perfectionistic concerns are associated with higher levels of burnout, whereas perfectionistic strivings either are unrelated to burnout or show an inverse relationship with burnout. The latter was found in a study with competitive athletes comparing a group of junior tennis players, who displayed high levels of burnout, with a matched control group, who displayed normal levels (Gould et al., 1996). Results indicated that burned-out athletes showed higher levels of perfectionistic concerns (perfectionistic concerns over mistakes) and lower levels of perfectionistic strivings (perfectionistic personal standards) than the control group. Moreover, burned-out athletes showed higher levels of parental pressure to be perfect (parental expectations and criticism) which indicates that perceived pressure to be perfect may be an important factor when investigating relationships between perfectionism and burnout. This was corroborated by a study on perfectionism and fatigue in nurses (Magnusson, Nias, & White, 1996). While perfectionistic strivings (perfectionistic personal standards) were unrelated to fatigue, perfectionistic concerns (perfectionistic doubts about action) showed a positive correlation with persistent mental fatigue; and perceived pressure to be perfect (perfectionistic parental expectations) showed positive correlations with persistent mental and physical fatigue. Similar relationships were found in a study on perfectionism and burnout in "career mothers", that is, women who worked at least 25 hours a week and had a child under nine years of age (Mitchelson & Burns, 1998). When correlations between dimensions of perfectionism and dimensions of work-related burnout (emotional exhaustion, cynicism) were inspected, self-oriented perfectionism was unrelated to burnout, whereas socially-prescribed perfectionism showed positive correlations with both aspects of work-related burnout, which again indicates that perfectionistic concerns about others' approval and perceived pressure to be perfect are intimately related to burnout.

Regarding perfectionism and stress, coping, and burnout, only one published study so far has looked at school teachers investigating how self-oriented perfectionism and socially prescribed perfectionism in teachers relate to frequency of stress, intensity of stress, and fatigue associated with stress (Flett et al., 1995). In line with other studies on perfectionism and stress, socially prescribed perfectionism was associated with both frequency and intensity of stress showing that teachers with high levels of socially prescribed perfectionism experienced more frequent and more intense professional distress (e.g.., lack of recognition, lack of control over school-related matters), more frequent and more intense emotional manifestations of stress (e.g., feeling vulnerable, feeling depressed), and more frequent and more intense physiological fatigue (e.g., physical exhaustion, physical weakness). In comparison, self-oriented perfectionism showed only one significant correlation with stress, namely a positive correlation with the frequency of professional distress, but not with intensity.

While the study of Flett et al. (1995) provides a first look at how perfectionism in teachers relate to stress and the fatigue component of burnout, the study has a number of limitations. First, it investigated only fatigue and did not include other aspects of burnout. Whereas fatigue (or exhaustion) is the central aspect of burnout, job burnout is complex syndrome that is commonly defined by three dimensions: emotional exhaustion, depersonalization (or cynicism), and lack of personal accomplishment (or inefficacy) (Maslach & Jackson, 1986; Maslach, Schaufeli, & Leiter, 2001). Moreover, Flett et al.'s study investigated only the frequency and intensity of stress, not the appraisal of stress. Regarding the appraisal of stress, an important differentiation in theory and research on stress and coping is that between challenge appraisals and threat or loss appraisals, because only the latter appraisals are indicative of distress (Lazarus, 1991; Lazarus & Folkman, 1984). Finally, the study did not include measures of coping so it remains unclear whether perfectionism

in school teachers shows differential relationships with respect to how teachers cope with the stressors they usually encounter on the job.

Against this background, the aim of the present study was to further investigate how perfectionism in teachers is related to stress, coping, and burnout by examining the relationships between different facets of perfectionism and stress appraisals (challenge, threat, and loss appraisals), coping styles (active and avoidant coping), and burnout and its components (emotional exhaustion, depersonalization, and lack of personal accomplishment). Regarding the two dimensions of perfectionism, two facets were examined: striving for perfection (as a facet of perfectionistic strivings) and negative reactions to imperfection (as a facet of perfectionistic concerns). Previous research with high school students and student athletes has shown that striving for perfection is associated with positive characteristics, processes, and outcomes, whereas negative reactions to imperfection are associated with negative characteristics, processes, and outcomes (Stoeber & Becker, in press; Stoeber & Eismann, 2007; Stoeber, Otto, Pescheck, Becker, & Stoll, 2007; Stoeber & Rambow, 2007; Stoeber, Stoll, Pescheck, & Otto, in press). Consequently, we expected striving for perfection to be positively related to challenge appraisals and active coping and unrelated (or negatively related to) to threat and loss appraisals, avoidant coping, and burnout whereas we expected negative reactions to imperfection to be positively related to threat and loss appraisals, avoidant coping, and burnout and to be unrelated (or negatively related) to challenge appraisals and active coping. In addition, we examined perceived pressure to be perfect. Perceived pressure to be perfect is a facet of perfectionism that traditionally has been associated with the perfectionistic concerns dimensions of perfectionism and usually concerns parental pressure (see Stoeber & Otto, 2006 for a review). Recent studies, however, have begun to explore other sources of perceived pressure to be perfect such as coach pressure in athletes (J. G. H. Dunn, Gotwals, Dunn, & Syrotuik, 2006) or teacher pressure in young musicians (Stoeber & Eismann, 2007). Research has shown that school teachers may perceive social pressure from three main sources: their colleagues, their students, and the parents of their students (e.g., Pelletier, Séguin-Lévesque, & Legault, 2002; Travers & Cooper, 1996). Consequently, we included perceived pressure from colleagues, students, and students' parents in our study to explore if these three sources of perceived pressure to be perfect showed differential relationships with teachers' stress appraisals, coping styles, and burnout.

Method

Participants and Procedure

A sample of $N = 118$ school teachers (40 male, 78 female) was recruited at eight secondary schools in Saxony Anhalt and Lower Saxony, Germany. The mean age of teachers was 47.1 years ($SD = 8.7$, range: 25-65 years), and the mean years of teaching in the profession was 20.4 years ($SD = 10.6$; range: <1-43 years). Questionnaires were distributed by the second author who visited the schools between October and December 2004. Overall, 250 questionnaires were distributed. With 47% percent, the return rate was acceptable considering that participation was voluntary and teachers were not reimbursed for participation.

Measures

Perfectionism. To measure perfectionism in teachers, the subscales measuring striving for perfection, negative reactions to imperfection, and perceived pressure to be perfect from the Multidimensional Inventory on Perfectionism in Sports (Stöber, Otto, & Stoll, 2004) were adapted to apply to teachers and the school context. To measure perfec-

tionism, adaptations of the five-item scales capturing striving for perfection and negative reactions to imperfection were employed (Stoeber et al., 2007). Both scales have shown high convergent correlations with comparable scales of the Frost Multidimensional Perfectionism Scale (FMPS; Frost et al., 1990) in that striving for perfection showed a correlation of $r = .72$ with FMPS Personal Standards and negative reactions to imperfection a correlation of $r = .72$ with FMPS Concern over Mistakes in a large undergraduate sample (Stoeber, 2005). Moreover, the scales have shown high factorial validity (Stoeber et al., 2007), predictive validity (Stoeber & Kersting, 2007), and a differentiated pattern of correlations with motivation, achievement, and well-being in adolescent school students (Stoeber & Rambow, 2007). To measure perceived pressure to be perfect, adaptations of the eight-item scale measuring perceived pressure from parents (Stoeber & Rambow, 2007) were employed to capture the three main sources of pressure for teachers: perceived pressure from colleagues, perceived pressure from students, and perceived pressure from students' parents. Instructions to all scales asked participants to indicated how they usually went about their job, and participants responded to items on a scale from 1 = "never" to 6 = "always". All perfectionism measures' scores displayed high reliabilities (Cronbach's αs = .92-.96). The Appendix shows the English version of all items.

Stress appraisals. To measure teachers' stress appraisals, the challenge, threat, and loss appraisal scale of Jerusalem (1999) was employed. The scale comprises eight items capturing teachers' appraisals of job-related stress with two items measuring challenge appraisals (e.g., "I am confident to master the challenges of my job"), three items measuring threat appraisals (e.g., "I worry that the demands of my job are too much for me"), and three items measuring loss appraisals (e.g., "I am depressed because my job situation is so bad"). Participants responded to items on a scale from 1 = "do not agree at all" to 6 = "agree completely". In line with previous findings (Jerusalem, 1993, 1999), all three measures' scores displayed high reliabilities (αs = .83-.89).

Coping styles. To measure teachers' active and avoidant coping style with stress on the job, the respective scales from the Erfurt Stress Inventory for Teachers (Böhm-Kasper, Bos, Jaeckel, & Weishaupt, 2000, Teacher Coping Scales 1 and 3) were employed. These comprise four items to measure active coping (e.g., "change the stressful situation") and four items to measure avoidant coping (e.g., "avoid the stressful situation"). Participants were asked how they usually dealt with stressful situations on the job, and responded on a scale from 1 = "never" to 6 = "always". Both measures' scores displayed acceptable reliabilities (active coping: $\alpha = .60$; avoidant coping: $\alpha = .70$).

Burnout. To measure teachers' burnout, the German version of the Maslach Burnout Inventory (Maslach & Jackson, 1986; German version: Enzmann & Kleiber, 1989) was employed in the version for teachers published and validated by Schwarzer and Jerusalem (1999). The inventory comprises 22 items that form three subscales with nine items measuring emotional exhaustion (e.g., "At the end of the school day, I feel drained"), five items measuring depersonalization (e.g., "With some students, I do not care what becomes of them"), and eight items measuring lack of personal accomplishment (e.g., "I have achieved many important things in my work", reverse-coded). Participants responded to items on a scale from 1 = "do not agree at all" to 6 = "agree completely". All three measures' scores displayed high reliabilities (αs = .80-.91), as did the total burnout score which was computed by averaging responses across all 22 items ($\alpha = .93$).

Analytic Strategy and Preliminary Analyses

To investigate the relationships between perfectionism and stress appraisal, coping styles, and burnout we decided to compute a series of multiple regression analyses with

stress appraisals, coping styles, and burnout as dependent variables. In this, we followed a hierarchical approach entering gender and years of teaching in Step 1, striving for perfection and negative reactions to imperfection in Step 2, and perceived pressure from colleagues, students, and students' parents in Step 3. The reason to enter gender and year of teaching in Step 1 was to control for the influence of these variables because gender (coded as 0 = male, 1 = female) showed a positive correlation with negative reactions to imperfection, $r = .28$, $p < .01$, and years of teaching showed positive correlations with negative reactions to imperfection, $r = .23$, and with perceived pressure from students, $r = .21$, both ps $< .05$. The reason to enter perceived pressure from colleagues, students, and students' parents in Step 3 was to explore whether perceived pressure to be perfect would explain additional variance in stress appraisals, coping styles, and burnout above the variance already explained by perfectionistic strivings and negative reactions to imperfection.

Because multivariate outliers may distort the results of multivariate analyses, variables were screened for multivariate outliers following the procedures outlined by Tabachnick and Fidell (2007, pp. 99-104). Two participants were detected who represented significant outliers showing a Mahalanobis distance greater than the critical value of $\chi^2(15) = 36.69$, $p < .001$. They were deleted from all consecutive analyses.

Results

Because perceived pressure from colleagues, students, and students' parents were measured with the same items and thus were directly comparable (see Appendix), a repeated measures ANOVA with source of pressure (colleagues, students, students' parents) as within-participants factor was computed which yielded a highly significant effect for source of pressure, $F(2, 106) = 11.61$, $p < .001$. Pairwise comparisons with Bonferroni adjustment of alpha level showed that perceived pressure from students' parents was significantly higher than both perceived pressure from colleagues and perceived pressure from students, adjusted ps $< .05$, whereas pressure from colleagues and pressure from students did not differ significantly (see Table 1): Thus, teachers overall perceived the highest pressure to be perfect to come from students' parents, not from colleagues or students.

Next, we inspected the correlations between the different facets of perfectionism (see Table 2).[2] In line with previous findings (e.g., Stoeber & Becker, in press; Stoeber et al., 2007; Stoeber & Rambow, 2007), striving for perfection showed a substantial correlation with negative reactions to imperfection, indicating that teachers who strive for perfection are also likely to react negatively when they do not achieve perfect results. Moreover, both striving for perfection and negative reactions to imperfection showed high correlations with perceived pressure to be perfect, indicating that pressure to be perfect plays an important role not only for perfectionism in school students (Stoeber & Rambow, 2007; Stumpf & Parker, 2000), but also for perfectionism in school teachers, a finding that dovetails with previous research on socially-prescribed perfectionism in teachers (Flett et al., 1995). Moreover, the three sources of pressure showed substantial intercorrelations indicating that teachers, who perceived great pressure to be perfect from their colleagues, also perceived great pressure to be perfect from their students and from their students' parents.

Despite the high intercorrelations, the different facets of perfectionism displayed differential patterns of relationships with stress appraisals, coping styles, and burnout that already showed in the bivariate correlations (see Table 3): Whereas striving for perfection

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[2]A table with the correlations between all variables is available from the corresponding author upon request.

showed a positive correlation with active coping and was unrelated to all other variables, negative reactions to imperfection showed an inverse correlation with challenge appraisals and positive correlations with threat and loss appraisals, avoidant coping, and all aspects of burnout (emotional exhaustion, depersonalization, and lack of personal accomplishment) as well as total burnout, as was predicted. Unexpectedly, negative reactions to imperfection also showed a positive correlation with active coping. (However, this was due to the overlap of negative reactions to imperfection with striving for perfection; see the following regression analyses.) In contrast, perceived pressure to be perfect displayed few differential relationships with stress appraisals, coping styles, and burnout. While perceived pressure from all three sources—colleagues, students, and students' parents—showed positive correlations with threat and loss appraisals and with avoidant coping, only perceived pressure from colleagues and students were associated with active coping. Regarding burnout, all sources of perceived pressure showed significant positive correlations with emotional exhaustion, depersonalization, and total burnout, whereas only pressure from student and from students' parents (but not from colleagues) showed significant positive correlations with lack of personal accomplishment. However, note that the correlations differed in that pressure from students' parents showed the highest correlations and pressure from colleagues the smallest correlations with burnout. Consequently, we turned to the multiple regressions to explore which facets of perfectionism predicted stress appraisals, coping styles, and burnout once the overlap between facets was controlled for.

First, we regarded the multiple regression analyses predicting stress appraisals (see Table 4). Regarding Step 1, gender was a significant predictor of threat appraisals (female teachers showed higher levels of threat appraisals than male teachers) whereas years of teaching did not predict stress appraisals. Regarding Step 2, both striving for perfection and negative reactions to imperfection added significantly to the prediction of all three stress appraisals, but with opposite signs. Striving for perfection predicted higher levels of challenge appraisals and lower levels of threat and loss appraisals, whereas negative reactions to imperfection predicted lower levels of challenge appraisals and higher levels of threat and loss appraisals. Regarding Step 3, results showed that perceived pressure to be perfect explained additional variance only in threat and loss appraisals, but not in challenge appraisals. Moreover, the different sources of pressure showed differential relationships. Pressure from students predicted higher levels of loss appraisals, whereas pressure from colleagues predicted lower levels of threat appraisals.

Next, we regarded the regression analyses predicting coping styles (see Table 5). Regarding Step 1, gender was a significant predictor of active coping (female teachers showed higher levels of active coping than male teachers) whereas years of teaching did not predict coping styles. Regarding Step 2, striving for perfection and negative reactions to imperfection added significantly to the prediction of coping styles. However, when regression coefficients were regarded, only striving for perfection was a significant predictor of both active coping and avoidant coping (predicting higher levels of active coping and lower levels of avoidant coping), whereas negative reactions to imperfection were a significant predictor of avoidant coping only (predicting higher levels of avoidant coping). Regarding Step 3, perceived pressure to be perfect did not explain any additional variance in coping styles.

Finally, we regarded the regression analyses predicting burnout (see Table 6). Regarding Step 1, neither gender nor years of teaching were significant predictors of burnout. Regarding Step 2, both striving for perfection and negative reactions to imperfection added significantly to the prediction of burnout components and total burnout, but again with opposite signs. Striving for perfection predicted lower levels of emotional exhaustion, de-

personalization, lack of personal accomplishment, and total burnout, whereas negative reactions to imperfection predicted higher levels. Regarding Step 3, results showed that perceived pressure to be perfect explained additional variance in emotional exhaustion, lack of accomplishment, and total burnout, but not in depersonalization. Furthermore, when regression coefficients were regarded, only pressure from colleagues and pressure from students' parents emerged as predictors of burnout, but not pressure from students. Moreover, the two sources showed opposite signs in these predictions. Pressure from students' parents predicted higher levels of lack of personal accomplishment and total burnout, whereas pressure from colleagues predicted lower levels of emotional exhaustion, lack of personal accomplishment, and total burnout.

Discussion

The findings of the present study show that individual differences in perfectionism may be an important factor in teachers' job-related stress appraisals, coping styles, and burnout. Moreover, the findings show that different facets of perfectionism show different, sometimes opposite relationships. When multiple regressions were computed to tease out the differential relationships of the different facets of perfectionism, striving for perfection was positively related to challenge appraisals and active coping and inversely to threat and loss appraisals, avoidant coping, and burnout (emotional exhaustion, depersonalization, lack of personal accomplishment, and total burnout). In contrast, negative reactions to imperfection were positively related to threat and loss appraisals, avoidant coping, and burnout and inversely to challenge appraisals and active coping. Moreover, perceived pressure to be perfect showed differential relationships depending on the source of pressure: Whereas perceived pressure from students was positively related to loss appraisals and perceived pressure from students' parents was positively related to burnout (lack of personal accomplishment, total burnout), perceived pressure from colleagues was inversely related to threat appraisals and burnout (emotional exhaustion, lack of personal accomplishment, total burnout) when overlap with all other facets of perfectionism was controlled for.

By showing that negative reactions to imperfection are associated with threat and loss appraisals of stress and avoidant coping with stress, the present findings provide further evidence that negative aspects of perfectionism play an important role in teacher stress (Flett et al., 1995). Moreover, the findings show that negative aspects of perfectionism also play an important role in teacher burnout. In this, the close relationship between negative reactions to imperfection and emotional exhaustion is particularly noteworthy because emotional exhaustion has been shown to be the component of burnout that predicts teachers' intention to quit the teaching profession (Leung & Lee, 2006). Furthermore, the present findings corroborate findings from previous studies that looked at other populations and found that only socially prescribed perfectionism and facets of the perfectionistic concerns dimension of perfectionism were associated with higher levels of burnout, whereas facets of the perfectionistic strivings dimension were not (Gould et al., 1996; Magnusson et al., 1996; Mitchelson & Burns, 1998). Finally, the present findings show that it is important to differentiate between different sources of perceived pressure to be perfect. While the sources of perceived pressure to be perfect showed high intercorrelations, they made unique predictions in the multiple regressions when their intercorrelations were controlled for: Whereas perceived pressure from students predicted higher levels of loss appraisals and perceived pressure from students' parents predicted higher levels of burnout, perceived pressure from colleagues predicted lower levels of threat appraisals and lower levels of burnout.

The latter finding dovetails with recent findings showing that different sources of perceived pressure to be perfect may display different correlations. Regarding negative characteristics associated with perceived pressure to be perfect, a study with teenage football players showed that only perceived pressure from coaches displayed substantial positive correlations with anger reactions to mistakes whereas perceived pressure from parents was not significantly correlated with anger reactions (J. G. H. Dunn et al., 2006). Regarding positive characteristics associated with perceived pressure to be perfect, a study with young musicians showed that only perceived pressure from music teachers predicted identified reasons for pursuing music whereas pressure from parents did not predict young musicians' motivation (Stoeber & Eismann, 2007). Consequently, future research on perfectionism looking at correlates and effects of socially prescribed perfectionism and perceived pressure to be perfect should take different sources of perceived social pressure into account.

Finally, the present finding that striving for perfection in teachers was related to challenge appraisals and active coping may explain why perfectionistic strivings are seldom associated with higher levels of stress (Bieling, Israeli, Antony, 2004; Hewitt & Flett, 1993; Stoeber & Otto, 2006). Individuals who strive for perfection seem to perceive potential stressors as challenges, not as threats and losses, and show a preference for active coping, not avoidant coping. Consequently, they may not become stressed out when facing problems, but instead actively try to change the situation to the better. This finding is in line with findings from a recent review on positive conceptions of perfectionism which showed that perfectionistic strivings are mostly related to positive characteristics, processes, and outcomes (Stoeber & Otto, 2006). Moreover, the findings dovetail with findings from a number of recent studies which show that striving for perfectionism is associated with higher self-confidence (Stoeber et al., 2007), higher achievement motivation (Stoeber & Rambow, 2007; Van Yperen, 2006), sustained goal-directed behavior (Campbell & Di Paula, 2002), and better test results (Stoeber & Kersting, 2007). Thus, striving for perfection may be regarded as a kind of "healthy pursuit of excellence" rather than a clinical condition that requires counseling and treatment (Shafran, Cooper, & Fairburn, 2002).

Taken together, the present findings indicate that possible interventions aimed at alleviating negative effects of perfectionism (e.g., Antony & Swinson, 1998; Pleva & Wade, 2007) should primarily target negative reactions to imperfection, but not necessarily striving for perfection. However, the present study has some limitations. First, the return rate of completed questionnaires was below 50% which leaves questions about the generalizability of our findings because we did not collect any data that would have allowed us to conduct an empirically based non-response analysis. Second, because of the multitude of significance tests that we conducted, there is the possibility of inflation of Type I error. However, we decided against an adjustment of alpha level, for example, by introducing a Bonferroni correction, because of the associated problems of such corrections (e.g., irrelevant null hypothesis, inflation of Type II error, and reduction of statistical power; see Nakagawa, 2004; Perneger, 1998). Still, because we are aware that some of our findings would not be significant with a Bonferroni correction of alpha level, the findings need to be replicated in future studies. Third, the present study investigated only two coping styles: active coping and avoidant coping. While these may represent the coping styles that have received the greatest attention in research on maladaptive perfectionism (Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Dunkley, Sanislow, Grilo, & McGlashan, 2006; J. C. Dunn et al., 2006), future studies should include further dimensions of coping and particularly look at coping strategies that have been found to be helpful for self-critical perfectionists such as positive reinterpretation coping and acceptance

coping (Dunkley et al., 2003; Lundh, 2004). Moreover, regarding burnout, future studies should take up new developments in theory and research on burnout and include relative burnout (i.e., how burned-out individuals feel compared to others; Halbesleben & Buckley, 2006) and positive aspects of functioning at work such as job engagement (Hakanen, Bakker, & Schaufeli, 2006; Leiter & Maslach, 2005). In addition, the present findings may be limited to the specific facets of perfectionism that we investigated. While we are confident that our measures of striving for perfection and perceived pressure to be perfect capture the main aspects of the perfectionistic strivings dimension and social-prescribed perfectionism, we are less confident that our measure of negative reactions to imperfection captures the main aspects of the perfectionistic concerns dimension (Stoeber & Otto, 2006). Consequently, future studies on perfectionism in teachers should additionally include other multidimensional measures of perfectionism that directly address this dimension such as the Frost Multidimensional Perfectionism Scale (Frost et al., 1990) or the Perfectionism Inventory (Hill et al., 2004), which both contain subscales measuring concerns over mistakes. Finally, the current study was cross-sectional. Consequently, we cannot make any claims about temporal or causal relationships in the associations found. Therefore, future studies should employ longitudinal designs to help clarify the temporal and causal relationships between facets of perfectionism and their relations with teachers' stress appraisals, coping, and burnout.

Nonetheless, the present findings have important implications for the understanding of perfectionism in teachers and perfectionism in general. Regarding teachers, they provide first evidence that perfectionism is a personality factor that not only plays a role in teacher stress (Flett et al., 1995), but also in teacher burnout. Moreover, they show that it is not striving for perfection that is associated with burnout, but negative reactions to failure to achieve perfection (Friedman, 2000). Finally, they demonstrate teachers' perceptions that others expect them to be perfect may play a prominent role in the experience of burnout, particularly if teachers perceive this pressure as coming from their students' parents. Regarding perfectionism in general, they provide further support for the view that striving for perfection does not have to be a source of stress and distress, but may be associated with adaptive processes if perfectionists are not overly concerned about making mistakes. Only perfectionists, who are concerned about mistakes and feel that they have to be perfect, are likely to experience lack of personal accomplishment, become cynical about their job and careless about the people they should care for, and are at risk of physical and emotional burnout. Perfectionists, who are not overly concerned about mistakes and who do not feel that they have to be perfect to be accepted by others, should not worry that their perfectionistic strivings will be detrimental for their mental and physical health or will lead to burnout. Instead their perfectionistic strivings may help them to actively cope with the challenges of their jobs.

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Table 1

Perfectionism, Stress Appraisal, Coping, and Burnout in School Teachers: Means and Standard Deviations

Measure	*M*	*SD*
Perfectionism		
Striving for perfection	3.87	1.18
Negative reactions to imperfection	2.82	0.98
Perceived pressure to be perfect		
Pressure from colleagues	2.38	1.05
Pressure from students	2.53	0.91
Pressure from students' parents	2.76	1.19
Stress appraisals		
Challenge appraisals	4.96	0.76
Threat appraisals	2.57	1.08
Loss appraisals	1.86	1.09
Coping styles		
Active coping	3.56	0.72
Avoidant coping	2.23	0.67
Burnout		
Emotional exhaustion	2.58	1.03
Depersonalization	1.97	0.86
Lack of personal accomplishment	2.43	0.55
Total burnout	2.38	0.73

Note. N = 108-116. Total burnout = combined score of emotional exhaustion, depersonalization, and lack of personal accomplishment. All scores are mean scores with a possible range of 1-6.

Table 2

Striving for Perfection, Negative Reactions to Imperfection, and Perceived
Pressure to Be Perfect in School Teachers: Intercorrelations

Perfectionism	1	2	3	4
1. Striving for perfection				
2. Negative reactions to imperfection	.56			
Perceived pressure to be perfect				
3. Pressure from colleagues	.45	.51		
4. Pressure from students	.41	.50	.67	
5. Pressure from students' parents	.40	.57	.71	.84

Note. N = 108-116. All correlations are significant with *p* < .001.

Table 3

Striving for Perfection, Negative Reactions to Imperfection, and Perceived Pressure to Be Perfect in School Teachers: Correlations with Stress Appraisal, Coping, and Burnout

Measure	Striving for perfection	Negative reactions to imperfection	Perceived pressure to be perfect		
			Pressure from colleagues	Pressure from students	Pressure from students' parents
Stress appraisals					
Challenge appraisals	.14	−.20*	−.07	−.13	−.18
Threat appraisals	.13	.59***	.22*	.34***	.44***
Loss appraisals	.13	.54***	.34***	.45***	.47***
Coping styles					
Active coping	.32***	.24*	.25**	.25**	.16
Avoidant coping	−.15	.23*	.19*	.24*	.26**
Burnout					
Emotional exhaustion	.07	.59***	.21*	.33***	.43***
Depersonalization	−.01	.35***	.21*	.30***	.36***
Lack of personal accomplishment	−.05	.39***	.07	.19*	.35***
Total burnout	.03	.54***	.20*	.32***	.44***

Note. $N = 108\text{-}116$. Total burnout = combined score (see Table 1).

*p < .05. **p < .01. ***p < .001.

Table 4

Hierarchical Regression Analyses for Perfectionism Predicting Stress Appraisals in School Teachers, Controlling for Gender and Years of Teaching

Variable	Challenge appraisals		Threat appraisals		Loss appraisals	
	β	ΔR^2	β	ΔR^2	β	ΔR^2
Step 1		.020		.057*		.025
Gender (female)	−.08		.21*		.08	
Years of teaching	.12		.12		.13	
Step 2		.123***		.357***		.317***
Gender	.00		.04		−.07	
Years of teaching	.17		−.04		−.02	
Striving for perfection	.32**		−.24*		−.20*	
Negative reactions to imperfection	−.44***		.75***		.70***	
Step 3		.013		.060*		.082**
Gender	−.03		.05		−.01	
Years of teaching	.17		−.03		−.02	
Striving for perfection	.34**		−.22*		−.25*	
Negative reactions to imperfection	−.36**		.69***		.58***	
Pressure from colleagues	.03		−.31**		−.14	
Pressure from students	−.06		.12		.40***	
Pressure from students' parents	−.10		.25		.00	

Note. N = 108. Gender coded as 0 = male, 1 = female.

*p < .05. **p < .01. ***p < .001.

Table 5

Hierarchical Regression Analyses for Perfectionism Predicting Coping Styles in School

Teachers, Controlling for Gender and Years of Teaching

Variable	Active coping		Avoidant coping	
	β	ΔR^2	β	ΔR^2
Step 1		.082*		.007
Gender (female)	.29**		.01	
Years of teaching	.01		.08	
Step 2		.110**		.133***
Gender	.24**		−.07	
Years of teaching	−.07		.03	
Striving for perfection	.30**		−.35**	
Negative reactions to imperfection	.07		.45***	
Step 3		.038		.042
Gender	.29**		−.01	
Years of teaching	−.09		.02	
Striving for perfection	.24*		−.40***	
Negative reactions to imperfection	.01		.31*	
Pressure from colleagues	.19		.02	
Pressure from students	.24		.19	
Pressure from students' parents	−.24		.06	

Note. N = 108. Gender coded as 0 = male, 1 = female.

p < .05. ***p* < .01. ****p* < .001.

Table 6

Hierarchical Regression Analyses for Perfectionism Predicting Burnout in School Teachers, Controlling for Gender and Years of Teaching

Variable	Emotional exhaustion		Depersonalization		Lack of personal accomplishment		Total burnout	
	β	Δ*R²*	β	Δ*R²*	β	Δ*R²*	β	Δ*R²*
Step 1		.026		.015		.004		.006
Gender (female)	.15		−.12		.05		.07	
Years of teaching	.06		−.01		.04		.04	
Step 2		.405***		.214***		.276***		.398***
Gender	−.02		−.25**		−.08		−.10	
Years of teaching	−.10		−.12		−.07		−.10	
Striving for perfection	−.32***		−.27*		−.39***		−.36***	
Negative reactions to imperfection	.81***		.59***		−.68***		.81***	
Step 3		.049*		.035		.113***		.063*
Gender	−.01		−.21*		−.10		−.09	
Years of teaching	−.09		−.12		−.04		−.09	
Striving for perfection	−.30**		−.28*		−.32**		−.34***	
Negative reactions to imperfection	.75***		.49***		.63***		.73***	
Pressure from colleagues	−.26*		−.10		−.37**		−.28*	
Pressure from students	.11		.11		−.23		.03	
Pressure from students' parents	.23		.18		.58***		.34*	

Note. $N = 108$. Gender coded as 0 = male, 1 = female. Total burnout = combined score (see Table 1).

*$p < .05$. **$p < .01$. ***$p < .001$.

Appendix: Perfectionism Scales and Items

Striving for Perfection

At school, ...

I strive to be as perfect as possible.
It is important to me to be perfect in everything I attempt.
I feel the need to be perfect.
I am a perfectionist as far as my targets are concerned.
I have the wish to do everything perfectly.

Negative Reactions to Imperfection

At school, ...

I feel extremely stressed if everything doesn't go perfectly.
I get completely furious if I make mistakes.
I get frustrated if I do not fulfill my high expectations.
I feel depressed if I have not been perfect.
I am dissatisfied with the whole day if something doesn't go perfectly.

Perceived Pressure to Be Perfect:

Pressure From Colleagues, Students, and Students' Parents

X expect my performance to be perfect.
X criticize everything I do not do perfectly.
X are dissatisfied with me if my performance is not top class.
X expect me to be perfect.
X demand nothing less than perfection of me.
X make extremely high demands of me.
X set extremely high standards for me.
X are disappointed in me if my performance is not perfect.

Note. For the scale *Pressure from Colleagues,* X was replaced with "My colleagues"; for the scale *Pressure from Students*, it was replaced with "My students"; and for the scale *Pressure from Students' Parents*, it was replaced with "The parents of my students".