

Stoeber, J., & Rambow, A. (2007). Perfectionism in adolescent school students: Relations with motivation, achievement, and well-being. *Personality and Individual Differences*, 42(7), 1379-1389.

Perfectionism in Adolescent School Students:
Relations with Motivation, Achievement, and Well-Being

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Abstract

Positive conceptions of perfectionism (Stoeber & Otto, 2006) suggest that striving for perfection is associated with positive characteristics and adaptive outcomes. To investigate whether this also holds for adolescent school students, a sample of 121 ninth-graders completed measures of perfectionism at school (striving for perfection, negative reactions to imperfection), perceived parental pressure to be perfect, motivation, school achievement, and well-being. Results showed that negative reactions to imperfection were related to fear of failure, somatic complaints, and depressive symptoms; and perceived parental pressure was related to somatic complaints. In contrast, striving for perfection was related to hope of success, motivation for school, and school achievement. Moreover, striving for perfection showed a negative correlation with depressive symptoms, once the influence of negative reactions to imperfection was partialled out. The findings show that striving for perfection in adolescent school students is associated with positive characteristics and adaptive outcomes and thus may form part of a healthy pursuit of excellence. Negative reactions to imperfection and perceived parental pressure to be perfect, however, are associated with negative characteristics and maladaptive outcomes and thus may undermine adolescents' motivation and well-being.

Keywords: perfectionism; adolescence; motivation; fear of failure; hope of success; academic achievement; well-being; depression

Author Note

We would like to thank Franziska Reschke and two anonymous reviewers for helpful comments and suggestions on earlier versions of this article. Address correspondence concerning this article to Joachim Stoeber, Department of Psychology, University of Kent, Canterbury, Kent CT2 7NP, United Kingdom; phone: +44-1227-824196; fax: +44-1227-827030; e-mail: J.Stoeber@kent.ac.uk

Introduction

Individuals with high levels of perfectionism are characterized by striving for flawlessness and setting of excessively high standards for performance accompanied by tendencies for overly critical evaluations of their behavior (Flett & Hewitt, 2002; Frost, Marten, Lahart, & Rosenblate, 1990). This may have positive and negative consequences: While setting high standards may have positive consequences such as higher motivation and higher achievement (Bieling, Israeli, Smith, & Antony, 2003), being overly self-critical may reduce well-being and put individuals at risk for depression (Dunkley, Blankstein, Masheb, & Grilo, 2006). Consequently, when investigating perfectionism, it is important to differentiate between two major dimensions of perfectionism (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Stoeber & Otto, 2006). On the one hand, there is the positive dimension of perfectionistic strivings representing perfectionists' high standards for performance. This dimension has also been described as normal, healthy, or adaptive perfectionism. On the other hand, there is the negative dimension of perfectionistic concerns representing perfectionists' negative attitudes towards mistakes, harsh self-criticism, and feelings of discrepancy between performance and expectations. This dimension has also been described as neurotic, unhealthy, or maladaptive perfectionism (Hamachek, 1978; Rice, Ashby, & Slaney, 1998; Stumpf & Parker, 2000; Terry-Short, Owens, Slade & Dewey, 1995).

In a recent review on the differences between these two dimensions (Stoeber & Otto, 2006), the perfectionistic strivings dimension was found to be related to positive characteristics such as conscientiousness, endurance, positive affect, and satisfaction with life. Moreover, it was found to be related to academic achievement, regarding both specific exams and overall academic performance: College students with higher levels of perfectionistic strivings received higher grades in a mid-term exam than those with lower levels of perfectionistic strivings (Bieling et al., 2003). Furthermore, students classified as adaptive perfectionists (high perfectionistic strivings and low perfectionistic concerns) showed a higher grade point average than maladaptive perfectionists (high perfectionistic strivings and high perfectionistic concerns) and nonperfectionists (low perfectionistic strivings) (Grzegorek et al., 2004; Rice & Slaney, 2002). In contrast, the perfectionistic concerns dimension was found to be related only to negative characteristics, the most prominent of these being depression and anxiety (Stoeber & Otto, 2006).

While there is a plethora of studies on perfectionism in college students, our knowledge about perfectionism in adolescent school students is still very limited. So far, only four studies have investigated how perfectionism relates to motivation, school achievement, and well-being in adolescent school students (Accordino, Accordino, & Slaney, 2000; Einstein, Lovibond, & Gaston, 2000; Nounopoulos, Ashby, & Gilman, 2006; Vandiver & Worrell, 2002). Employing Hewitt and Flett's multidimensional measure of perfectionism (Hewitt & Flett, 1991), Einstein et al. (2000) investigated how self-oriented and socially prescribed perfectionism related to motivation, school engagement, and well-being in high school students prior to a period of major exams. They found that self-oriented perfectionism—which is a core facet of the perfectionistic strivings dimension (Stoeber & Otto, 2006)—was related to self-reported motivation for the upcoming exams and number of hours spent studying per week, indicating that students who strive for perfection are more motivated and more engaged at school than students who do not strive for perfection. Moreover, self-oriented perfectionism was also related to stress, indicating that school students who strive for perfection may also feel under greater pressure than students who do not strive for perfection. However, the relationship between self-oriented perfectionism and stress was only small and failed to reach significance once the influence of socially

prescribed perfectionism—a core facet of the perfectionistic concerns dimension—was partialled out. Socially prescribed perfectionism was unrelated to motivation and engagement, but showed significant correlations with stress, depression, and anxiety. Employing Slaney et al.'s multidimensional measure of perfectionism (Slaney, Rice, Mobley, Trippi, & Ashby, 2001), Accordino et al. (2000) found that discrepancy between performance and expectations—another core facet of perfectionistic concerns—was related to higher depression in school students of grades 10 to 12. In contrast, high standards—a core facet of perfectionistic strivings—were related to mastery orientation (indicating a preference for challenging tasks), work orientation (reflecting the desire to work hard), and higher grade point average. Similar findings are reported by two further studies (Nounopoulos et al., 2006; Vandiver & Worrell, 2002) that investigated perfectionism and school engagement in middle school students, and that also found high standards to be related to higher grade point average.

While the studies suggest that perfectionistic strivings in adolescent school students are related to higher levels of motivation, achievement, and well-being, there remain some questions. First, the studies indicate that students who strive for perfection are more motivated. However, they do not address the question of whether they are more motivated by the motive to achieve success (hope of success) or by the motive to avoid failure (fear of failure) (Atkinson, 1957). Studies have shown that hope of success and fear of failure may have contrary effects on students' achievement and task engagement and that perfectionism is related to both motives (Frost & Henderson, 1991; Slade & Owens, 1998). In a series of studies on perfectionism in athletes (Stoeber & Becker, submitted; Stoeber, Otto, & Stoll, 2005), negative reactions to imperfection were found to be related to fear of failure and somatic complaints. In contrast, striving for perfection was found to be related to hope of success and number of hours of training, suggesting that only striving for perfection is related to success motivation and greater engagement whereas negative reactions to imperfection are related to failure motivation and lower well-being. Consequently, it would be important to differentiate striving for perfection from negative reactions to imperfection. Moreover, it would be important to take into account recent findings that perfectionistic tendencies in school may differ from global perfectionistic differences (Dunn, Gotwals, & Dunn, 2005). Therefore, when looking at perfectionism in relation to motivation, achievement, and well-being in school students, this would suggest the need to investigate students' perfectionism at school, not their global perfectionism. Finally, it would be important to investigate the role that parental pressure to be perfect plays in the relationship between perfectionism and school students' motivation, achievement, and well-being. Previous research has found perceived parental pressure—comprising perceived parental expectations to be perfect and perceived parental criticism for not being perfect (Stöber, 1998; Stumpf & Parker, 2000)—to be related to psychological maladjustment, somatic complaints, and depressive symptoms in both sixth-graders and college students (Hill et al., 2004; Stöber, 1998; Stumpf & Parker, 2000). Thus parental pressure to be perfect is a factor that should be taken into account when looking at perfectionism in adolescent school students.

Against this background, the aim of the present study was to investigate further the relationship between perfectionism and motivation, school achievement, and well-being in adolescent school students by examining how two aspects of perfectionism at school (striving for perfection, negative reactions to imperfection) relate to motivation (hope of success, fear of failure, motivation for school), school achievement (grades), and well-being (somatic complaints, depressive symptoms), and what role perceived parental pressure plays in these relationships. In line with evidence that striving for perfection is related

to healthy and adaptive characteristics whereas negative reactions to imperfection are related to unhealthy and maladaptive characteristics (e.g., Stoeber & Otto, 2006; Stoeber et al., in press; Stoeber & Rennert, 2005), we expected striving for perfection to be related to hope of success and higher achievement. In contrast, we expected negative reactions to imperfection and perceived parental pressure to be related to fear of failure and lower well-being.

Method

Participants and Procedure

A sample of $N = 121$ adolescent school students (59% female) attending ninth grade was recruited at two high schools in Saxony-Anhalt, Germany. Mean age of participants was 14.6 years ($SD = 0.7$, range = 14-17). Questionnaires were administered in the classrooms during class time. While a school teacher was present to ensure student attendance, all distribution and collection of questionnaires were handled by the second author as were all instructions. As all students were under the age of 18, informed consent was obtained from both students and parents.

Measures

Perfectionism. To measure perfectionism at school (striving for perfection, negative reactions to imperfection), the ten items that Stoeber et al. (in press) used to measure striving for perfection and negative reactions in sport were employed, modified to apply to the school context (see Appendix). To measure perceived parental pressure to be perfect, the Perceived Parental Pressure subscale of the Multidimensional Inventory of Perfectionism in Sport (Stöber, Otto, & Stoll, 2004 [available from first author upon request]) was employed which comprises eight items that make no special reference to sport and consequently were left unmodified (see Appendix). To all items, participants responded on a 6-point scale from 1 = “never” to 6 = “always.”

Motivation. Two measures of motivation were included. First, as a general measure, the Achievement Motivation Scale (Gjesme & Nygard, 1970; German version in Dahme, Jungnickel, & Rathje, 1993) was employed. The scale comprises 30 items, of which 15 measure hope of success (e.g., “I enjoy tasks that are challenging”) and 15 fear of failure (e.g., “I don’t enjoy working on tasks that I am not sure to master”). Second, as a school-specific measure, participants responded to the Motivation for School scale (Stöber, 2002 [available upon request]) which comprises nine items measuring students’ motivation for school (e.g., “In the morning, I look forward to going to school and learning something new”). To all items, participants responded on a 6-point scale from 1 = “totally disagree” to 6 = “totally agree.”

Grades. To measure school achievement, participants self-reported the grades they had received in German, English, and Math on their last report. These three subjects are the core subjects of the German school curriculum and mandatory for all ninth-grade students. Grades were averaged across the three subjects to form a mean score of grades (see Table 1). Because grades in Germany range from 1 = “very good” to 6 = “unsatisfactory,” comparable to grades A to F in US American schools, mean scores were reversed before computing correlations so that higher grades indicate higher achievement.

Well-being. To measure well-being, participants responded to the somatic complaints subscale of the Bern Subjective Well-Being Questionnaire for Adolescents (Grob et al., 1991) which comprises eight items measuring common somatic complaints of adolescents (e.g., headache, feeling dizzy). Moreover, they responded to the short form of the Center for Epidemiologic Studies Depression Scale (Radloff, 1977; German version, ADS-K, by Hautzinger & Bailer, 1993) which comprises 15 items measuring depressive symp-

toms in the general population (e.g., feeling sad, restless sleep). For both scales, participants indicated how often they had experienced each symptom during the past week responding on a 4-point scale from 0 = “seldom or not at all (less than 1 day)” to 3 = “more often than not or all the time (5-7 days).”

Preliminary Analyses

All measures displayed satisfactory reliability (see Table 1). In line with previous findings (Pomerantz, Altermatt, & Saxon, 2002), female students reported higher grades, $t(117) = 2.16, p < .05$ and lower well-being, showing both more somatic complaints, $t(117) = 2.67, p < .01$ and more depressive symptoms, $t(117) = 2.04, p < .05$ than male students. Consequently, we examined whether the covariance matrices of the nine variables under study were equal for male and female students using Box’s M test, which is highly sensitive to violations of homogeneity of covariance (Tabachnick & Fidell, 2001). Because the test was nonsignificant with Box’s $M = 44.40, F(45, 306664) < 1$, data were collapsed across gender. Table 1 shows the sample means and standard deviations.

Results

First, the correlation of the two aspects of perfectionism was inspected. In line with previous findings (Stoeber et al., in press), striving for perfection showed a significant correlation with negative reactions to imperfection, $r = .65, p < .001$, indicating that adolescent students who strive for perfection at school tend to react negatively when they do not achieve perfect results. Moreover, the high correlation suggested that, in addition to zero-order correlations, partial correlations should be computed to control for the overlap between the two aspects of perfectionism (cf. Stoeber & Otto, 2006; Stoeber et al., in press). When correlations between perfectionism at school and perceived parental pressure to be perfect were inspected, results showed that both aspects of perfectionism at school correlated with perceived parental pressure: striving for perfection with $r = .18, p < .05$ and negative reactions to imperfection with $r = .28, p < .01$. However, when partial correlations were computed to control for the overlap between the two aspects of perfectionism, only negative reactions to imperfection still showed a significant correlation with parental pressure, $pr = .22, p < .05$, whereas striving for perfection did not, $pr = .00, ns$ dovetailing with previous findings that parental pressure is more closely related to negative aspects of perfectionism than to positive aspects (Stöber, 1998; Stumpf & Parker, 2000).

Next, zero-order correlations of perfectionism at school and perceived parental pressure with motivation, achievement, and well-being were inspected (see Table 2). In line with expectations, striving for perfection was related to hope of success, motivation for school, and higher achievement as indicated by higher grades in German, English, and Math. In contrast, negative reactions to imperfection were related to fear of failure, depression, and somatic complaints; and perceived parental pressure showed a significant correlation with somatic complaints. Unexpectedly, negative reactions to imperfection were also related to higher grades. However, when partial correlations were computed to control for the overlap between striving for perfection and negative reactions to imperfection, this correlation was reduced to near-zero (see Table 2). Furthermore, striving for perfection showed an inverse correlation with depressive symptoms, when the influence of negative reactions to imperfection was partialled out.

Finally, interaction effects of the two aspects of perfectionism at school on motivation, achievement, and well-being were explored by computing moderated regression analyses with interactions between continuous predictors (see Aiken & West, 1991, Chap. 2). These analyses found a significant interaction of striving for perfection and negative

reactions to imperfection on depressive symptoms, $B = 0.08$, $SE B = 0.03$, $\beta = .23$, $p < .01$. To understand the nature of this interaction, regression graphs for values of 1 SD above and below the means of the two interacting variables were plotted (see Aiken & West, 1991, pp. 12-14 for details). The resulting graphs showed that the negative correlation between striving for perfection and depressive symptoms was dependent on students' negative reactions to imperfection such that it was more pronounced in students with lower levels of negative reactions to imperfection than in students with higher levels (see Figure 1).

Discussion

The aim of the present research was to investigate further how perfectionism in adolescent school students relates to motivation, achievement, and well-being, by examining two aspects of perfectionism at school (striving for perfection, negative reactions to imperfection) and perceived parental pressure to be perfect. As expected, striving for perfection was related to hope of success and motivation for school whereas negative reactions to imperfection were related to fear of failure, supporting Slade and Owens's (1998) dual process model of perfectionism which states that positive perfectionism is associated with approach motivation (approach success) and negative perfectionism with avoidance motivation (avoid failure). Moreover, striving for perfection was related to higher achievement as reflected in higher grades in curricular core subjects. While perceived parental pressure showed a significant correlation with somatic complaints, corroborating previous findings with colleges students (Hill et al., 2004), negative reactions to imperfection correlated with two indicators of low well-being, namely somatic complaints and depressive symptoms. Regarding depressive symptoms, further analyses showed that striving for perfection was inversely related to depressive symptoms in students once the influence of negative reactions to imperfection was partialled out, and that the inverse correlation was more pronounced for students with lower levels of negative reactions to imperfection than for students with higher levels. This finding indicates that adolescent students, who strive for perfection at school, but do not get stressed, angry, or frustrated when results are not perfect, show higher well-being than students, who do not strive for perfection, thus providing further support for the view that perfectionistic strivings—with proper control of perfectionistic concerns—are positive (Stoeber & Otto, 2006; Stoeber et al., in press).

Some limitations apply, however. First, parental pressure to be perfect was measured only as perceived by the adolescents. While perceived parental expectations and criticism are an important aspect of perfectionism (Frost et al., 1990), research has shown that adolescents' perceptions of parental rearing may show discrepancies with parental rearing as reported by the parents themselves (e.g., Paulson & Spota, 1996). Consequently, future studies should include parents' self-reports of expectations and criticism they have for their children and any perfectionistic aspirations they have regarding their own parenting role (Snell, Overbey, & Brewer, 2005). Moreover, the study was cross-sectional. Thus, it was not possible to determine which factors in the investigated relationships represented antecedents and which consequences. This may be particularly important for the relationships between positive and negative aspects of perfectionism (striving for perfection, negative reactions to imperfection) and achievement motives (hope of success, fear of failure) as it is unclear whether approach and avoidance achievement motives represent antecedents of positive and negative perfectionism or consequences (Slade & Owens, 1998). Future studies should therefore employ longitudinal designs to allow for a causal analysis of the relationships. Finally, the present study investigated only three aspects of perfectionism—striving for perfection, negative reactions to imperfection, and perceived parental pressure to be perfect—using scales originally developed for athletes,

not students. While there is evidence that the perfectionism measures employed in the present study are valid measures of perfectionism when applied to school and university students (Eismann, 2006; Stoeber & Kersting, submitted), future studies should investigate whether the present findings generalize to other aspects of perfectionism and also hold for other measures of perfectionism than those employed in the present study.

Nonetheless, the present findings have important implications as they provide further support for the notion that striving for perfection should be considered a positive characteristic as it is, more often than not, related to positive attributes and adaptive outcomes (Stoeber & Otto, 2006). Moreover, they provide support that this holds also for adolescent school students. Thus, not all aspects of perfectionism are neurotic, unhealthy, or maladaptive. On the contrary, striving for perfection can form part of a healthy pursuit of excellence (Shafran, Cooper, & Fairburn, 2002) and may be adaptive in achievement situations where perfectionistic strivings could provide students with additional motivation to do their best and thus achieve better grades. Parental pressure to be perfect and negative reactions to imperfection, however, are associated with the motivation to avoid failure and low well-being and thus may undermine healthy adolescent development.

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Table 1
Descriptive Statistics

Measure	<i>M</i>	<i>SD</i>	α
Perfectionism at school			
Striving for perfection	3.13	1.20	.88
Negative reactions to imperfection	2.85	0.98	.78
Perceived parental pressure	2.73	1.25	.94
Motivation			
Hope of success	62.33	11.89	.89
Fear of failure	47.97	13.78	.92
Motivation for school	29.84	7.85	.79
Grades	2.50	0.79	.76
Well-being			
Somatic complaints	4.77	4.24	.76
Depressive symptoms	14.62	8.03	.86

Note. $N = 119$ - 121 adolescent school students. Perceived parental pressure = perceived parental pressure to be perfect. In line with previous publications, mean scores were computed for striving for perfection, negative reactions to imperfection, and perceived parental pressure to be perfect (cf. Stöber et al., 2004; Stoeber et al., in press). Grades are self-reported grades for which mean scores are reported (i.e., the average grades in German, English, and Math). For all other measures, sum scores are reported. α = Cronbach's alpha.

Table 2

Perfectionism at School and Perceived Parental Pressure to Be Perfect: Correlations

Measure	Perfectionism at school				
	Correlation		Partial correlation		Perceived parental pressure
	Striving for perfection	Negative reactions to imperfection	Striving for perfection	Negative reactions to imperfection	
Motivation					
Hope of success	.35***	.12	.35***	-.14	.08
Fear of failure	.06	.27**	-.16	.31***	-.04
Motivation for school	.41***	.15	.41***	-.16	.03
Grades	.37***	.21*	.33***	-.05	-.01
Well-being					
Somatic complaints	.06	.22*	-.11	.23*	.19*
Depressive symptoms	.04	.38***	-.29**	.47***	.14

Note. $N = 119-121$ adolescent school students. Correlation = zero-order correlation. Perceived parental pressure = perceived parental pressure to be perfect. Grades were reversed so that higher grades indicate higher achievement.

* $p < .05$, ** $p < .01$, *** $p < .001$, two-tailed.

Appendix

Perfectionism At School and Perceived Parental Pressure to Be Perfect: 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 feel depressed if I have not been perfect.

I get absolutely furious if I make mistakes.

I get frustrated if I do not fulfill my high expectations.

I am dissatisfied with the whole school day if one class doesn't go perfectly.

Perceived parental pressure

My parents expect my performance to be perfect.

My parents criticize everything I do not do perfectly.

My parents are dissatisfied with me if my performance is not top class.

My parents expect me to be perfect.

My parents demand nothing less than perfection of me.

My parents make extremely high demands of me.

My parents set extremely high standards for me.

My parents are disappointed in me if my performance is not perfect.

Figure Caption

Figure 1. Interaction of striving for perfection and negative reactions to imperfection on depressive symptoms.

