Positive and negative affect in adolescents:

An investigation of the 2 × 2 model of perfectionism

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Abstract

Research on the 2×2 model of perfectionism and affect is still limited. Following a variable-centered approach, the present study investigated in a sample of 576 adolescents whether self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) predicted positive and negative affect, comparing four subtypes of perfectionism: pure SOP, pure SPP, mixed perfectionism, and non-perfectionism. Regarding positive affect, all four subtypes differed: Pure SOP predicted the highest levels of positive affect followed by mixed perfectionism, non-perfectionism, and pure SPP. Regarding negative affect, pure SPP and mixed perfectionism predicted higher levels of negative affect than pure SOP and non-perfectionism, but pure SPP did not differ from mixed perfectionism (and pure SOP not from non-perfectionism). Implications of the findings for the 2×2 model are discussed.

Keywords: perfectionism; personal standards; evaluative concerns; affect; adolescence

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Perfectionism is a personality disposition characterized by striving for flawlessness and setting exceedingly high standards of performance accompanied by overly critical evaluations of one's behavior and concerns about negative evaluation and rejection by others if one fails to be perfect (Frost, Marten, Lahart, & Rosenblate, 1990; Hewitt & Flett, 1991). Over the past 20 years, research has produced converging evidence that perfectionism has different facets and is best conceptualized as a multidimensional disposition (e.g., Frost et al., 1990; Hewitt & Flett, 1991; R. W. Hill et al., 2004; Slaney, Rice, Mobley, Trippi, & Ashby, 2001; see Enns & Cox, 2002, for a review).

Two-Factor Model and Tripartite Model

In particular, two dimensions of perfectionism need to be differentiated—personal standards perfectionism (PSP) and evaluative concerns perfectionism (ECP)—following evidence from factor analytic studies that suggest a two-factor model of perfectionism (e.g., Bieling, Israeli, & Antony, 2004; Dunkley, Blankstein, Halsall, Williams, & Winkworth, 2000; Frost, Heimberg, Holt, Mattia, & Neubauer, 1993). PSP (also termed perfectionistic strivings) captures those aspects of perfectionism associated with self-oriented striving for perfection and setting exceedingly high personal standards of performance. In contrast, ECP (also termed perfectionistic concerns) captures those aspects of perfectionism associated with concerns over making mistakes, feelings of discrepancy between one's expectations and performance, and fears of negative social evaluation. Even though the two dimensions are positively correlated and often show considerable overlap, they show different, sometimes opposite relationships. ECP consistently shows positive correlations with characteristics, processes, and outcomes that are generally considered "maladaptive" (e.g., neuroticism, avoidant coping, negative affect), which

suggests that ECP captures aspects of perfectionism that are maladaptive. In contrast, PSP often shows positive correlations with characteristics, processes, and outcomes that are generally considered "adaptive" (e.g., conscientiousness, problem-focused coping, positive affect), particularly when the negative influence of ECP is controlled for (R. W. Hill, Huelsman, & Araujo, 2010), which suggests that PSP captures aspects of perfectionism that may be adaptive (see Stoeber & Otto, 2006, for a comprehensive review).

Most researchers investigating adaptive and maladaptive aspects of perfectionism follow a variable-centered approach investigating individual differences in the two dimensions. Some researchers, however, follow a person-centered approach investigating differences between different subtypes of perfectionists. In the latter approach, the most prevalent model is a tripartite model of perfectionism (e.g., Parker, 1997; Rice & Ashby, 2007; Rice & Slaney, 2002). Today's most prominent tripartite model is Rice and Ashby's (2007). The model differentiates three subtypes of perfectionists: adaptive perfectionists (high PSP, low ECP), maladaptive perfectionists (high PSP, high ECP), and non-perfectionists (low PSP, unspecified level of ECP). When the three subtypes of perfectionists are compared, maladaptive perfectionists consistently show higher levels of negative characteristics, processes, and outcomes (and lower levels of positive characteristics, processes, and outcomes) than both adaptive perfectionists and non-perfectionists, suggesting that the combination of high PSP and high ECP is maladaptive. In addition, adaptive perfectionists often show higher levels of positive characteristics, processes, and outcomes (and lower levels of negative characteristics, processes, and outcomes) than non-perfectionists, suggesting that the combination of high PSP and low ECP may be adaptive (see again Stoeber & Otto, 2006, for a review).

The 2 × 2 Model of Perfectionism

Building on the two-factor model of perfectionism, Gaudreau and Thompson (2010)

introduced the 2×2 model of perfectionism. The 2×2 model represents a challenge to the tripartite model of perfectionism because it suggests that it is important to differentiate not three, but four subtypes of perfectionism: pure PSP (high PSP, low ECP), pure ECP (low PSP, high ECP), mixed perfectionism (high PSP, high ECP), and non-perfectionism (low PSP, low ECP). Pure PSP in the 2×2 model corresponds to adaptive perfectionism in the tripartite model and mixed perfectionism corresponds to maladaptive perfectionism. Pure ECP and non-perfectionism, however, do not have a corresponding subtype in the tripartite model because the latter regards all individuals with low PSP as non-perfectionists and does not differentiate individuals with low PSP and low ECP from individuals with low PSP and high ECP.

Moreover, the 2×2 model puts forward four main hypotheses, with Hypothesis 1 comprising three sub-hypotheses (see also Gaudreau, 2012, 2013). Hypothesis 1a states that pure PSP is more adaptive than non-perfectionism, Hypothesis 1b that pure PSP is more maladaptive than non-perfectionism, and Hypothesis 1c that pure PSP and non-perfectionism do not differ in adaptiveness/maladaptiveness; Hypothesis 2 states that pure ECP is more maladaptive than non-perfectionism; Hypothesis 3 states that mixed perfectionism is less maladaptive than pure ECP; and Hypothesis 4 states that mixed perfectionism is more maladaptive than pure PSP (with "adaptive" being shorthand for showing high levels of positive outcomes or low levels of negative outcomes). Note that Hypotheses 2 and 3 go beyond the tripartite model because they suggest that pure ECP—and not mixed perfectionism, which corresponds to maladaptive perfectionists in the tripartite model—is the most maladaptive combination of PSP and ECP.

Furthermore, note that the four subtypes of perfectionism in the 2×2 model are not to be understood as personality types in the classic sense (see Meehl, 1992) but as within-person combinations of PSP and ECP as continuous variables (Gaudreau, 2013; Stoeber, 2012). This is important because most studies investigating the 2×2 model follow a variable-centered

approach (e.g., employing moderated regression analyses using PSP and ECP as continuous predictors) instead of a person-centered approach (e.g., employing cluster analysis to determine the four subtypes and then comparing differences between cluster groups). In addition, note that—if moderated regression analysis is used as recommended by Gaudreau (2012)—the interaction of PSP and ECP does not have to be significant for the 2×2 model to apply. All of the model's hypotheses can be tested whether the interaction is significant or not (see Gaudreau, 2012, for details). Moreover, note that Hypothesis H1c is a null hypothesis (no differences between subtypes) and cannot be tested using standard statistical procedures (Stoeber, 2012).

The Present Study

The 2×2 model of perfectionism represents an important addition to theory and research on perfectionism and—despite being introduced only in 2010—has already informed a number of studies making significant contributions to our knowledge of how multidimensional perfectionism is related to academic outcomes (Franche, Gaudreau, & Miranda, 2012; Gaudreau, 2012; Gaudreau & Thompson, 2010), body-related concerns and physical symptoms (Cumming & Duda, 2012), burnout symptoms (Cumming & Duda, 2012; A. P. Hill, 2013), depressive symptoms (Douilliez & Lefèvre, 2011), subjective well-being (Gaudreau & Verner-Filion, 2012), and general positive and negative affect (Cumming & Duda, 2012; Gaudreau & Thompson, 2010). Across different outcomes, the studies found substantial support for Hypotheses H1a, H2, H3, and H4 of the 2×2 model (but not H1b), confirming the importance of differentiating pure ECP and non-perfectionism. In addition, the support for Hypotheses H1a and H4 confirmed findings from previous research that high levels of personal standards perfectionism (PSP) are mostly associated with positive outcomes when the negative influence of evaluative concerns perfectionism (ECP) is controlled for (R. W. Hill et al., 2010; Stoeber & Otto, 2006).

There are open questions, however. First, the findings regarding positive and negative affect—which are important indicators for the question whether different forms of perfectionism are adaptive or maladaptive (e.g., Frost et al., 1993; Stoeber & Otto, 2006)—have been mixed. Gaudreau and Thompson (2010) found that pure ECP was associated with more negative affect and less positive affect than all other combinations of perfectionism, which fully supported Hypotheses H2, H3, and H4. However, pure PSP was only associated with more positive affect but not less negative affect than non-perfectionism, which only partially supported Hypothesis H1a.

In contrast, Cumming and Duda (2012) failed to find full support for Hypotheses H2 and H3. In their study, pure ECP was associated with more negative affect than non-perfectionism (supporting H2) and pure PSP, but not mixed perfectionism (not supporting H3). Furthermore, pure ECP was associated with less positive affect only compared to pure PSP, but not compared to mixed perfectionism (not supporting H3) and non-perfectionism (not supporting H2). Finally, Cumming and Duda found only partial support for Hypothesis H4 because pure PSP was associated with less negative affect than mixed perfectionism, but not with more positive affect. They also found only partial support for H1a because pure PSP was associated with higher positive affect than non-perfectionism, but not less negative affect, which replicated Gaudreau and Thompson's finding. However, note that Cumming and Duda used a person-centered approach employing cluster analysis. Whereas they found four cluster groups with perfectionism profiles that showed close correspondence to the four subtypes of perfectionism proposed in the 2×2 model, the pure ECP cluster had significantly lower perfectionistic concerns than the mixed perfectionism cluster, which may explain why Cumming and Duda's study failed to find full support for Hypotheses H2 and H3.

Second, all studies investigating the 2×2 model of perfectionism so far have focused on

university students (e.g., Douilliez & Lefèvre, 2011; Franche et al., 2012; Gaudreau, 2012;

Gaudreau & Thompson, 2010) and athletes (e.g., Cumming & Duda, 2012; Gaudreau & Verner-

Filion, 2012; A. P. Hill, 2013). No study so far has investigated the 2×2 model of perfectionism

in adolescents.[1] This, however, would be important because adolescence is a developmental

period when the individual differences in perfectionism, that have been formed in childhood,

consolidate (Flett, Hewitt, Oliver, & Macdonald, 2002; Stoeber & Childs, 2011). Moreover,

adolescence is a period when individuals' affect may be very "temperamental", showing

significant changes from week to week (Steinberg, 2011; see also Hollenstein & Lougheed,

2013).

Against this background, the present study aimed to reinvestigate the 2×2 model's

hypotheses with respect to positive and negative affect in a large sample of adolescents

employing moderated regression analyses (as did Gaudreau & Thompson, 2010) using the

procedures detailed by Gaudreau (2012). Moreover, we investigated how perfectionism predicted

current positive and negative affect (positive and negative affect experienced in the past weeks)

instead of general positive and negative affect (positive and negative affectivity) to account for

the fact that affect in adolescents may be changeable.

The 2×2 model applies not only to the two main dimensions of perfectionism, PSP and

ECP, but also to the facets of multidimensional perfectionism that are core indicators of the two

main dimensions (Gaudreau, 2013). The majority of previous studies investigating the 2×2

model used self-oriented perfectionism and socially prescribed perfectionism as indicators of

PSP and ECP, respectively (e.g., Franche et al., 2012; Gaudreau, 2012; Gaudreau & Verner-

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[1]The dancers in Cumming and Duda's (2012) study were adolescents, but the study focused on

perfectionism in dance, not general perfectionism.

Filion, 2012). Self-oriented perfectionism (SOP) captures perfectionistic strivings and exceedingly high personal standards of performance. In contrast, socially prescribed perfectionism (SPP) captures perfectionistic concerns about making mistakes and fears of negative evaluation and rejection by significant others if one fails to be perfect (Hewitt & Flett, 1991). Factor analyses examining the two-factor model of perfectionism (e.g., Bieling et al., 2004; Dunkley et al., 2000; Frost et al., 1993) have confirmed that self-oriented perfectionism (SOP) and socially prescribed perfectionism (SPP) are reliable and valid indicators of PSP and ECP (see also Stoeber & Otto, 2006). Consequently, the present study used SOP and SPP as indicators of PSP and ECP investigating differences in positive and negative affect between pure SOP (high SOP, low SPP), pure SPP (low SOP, high SPP), mixed perfectionism (high SOP, high SPP), and non-perfectionism (low SOP, low SPP). Hence, we examined the hypotheses of the 2 $\times$ 2 model with pure SOP and pure SPP representing pure PSP and pure ECP, respectively.

Method

Participants and Procedure

A sample of 576 adolescents (204 male, 336 female, 36 no gender information) was recruited at four high schools near the first author's university. Mean age of adolescents was 17.08 years (SD = 1.14; range = 15-19 years). Participation was voluntary. Adolescents were asked to complete a paper-and-pencil questionnaire in the classroom during school hours. Alternatively, they could opt out of the study and do homework or other school activities. Adolescents received no compensation for their participation. The study was approved by the Faculty of Psychology and Educational Sciences of the first author's university and by the schools' principals through a written collaboration protocol.

Measures

Perfectionism. To measure perfectionism, we used the Child–Adolescent Perfectionism

Scale (Flett Hewitt, Boucher, Davidson, & Munro, 2000) capturing self-oriented perfectionism

(12 items; e.g., "I try to be perfect in everything I do") and socially prescribed perfectionism (10

items; e.g., "Other people think that I have failed if I do not do my very best all the time"). The

scale has demonstrated reliability and validity in numerous studies with adolescents (e.g., Essau,

Leung, Conradt, Cheng, & Wong, 2008; Hewitt et al., 2002). The scale was translated into

Romanian following standard back-translation procedures (Brislin, 1986) using two independent

translators and a third person to finalize the translation. Participants were instructed to think of

themselves in general when rating the items and responded to all items on a scale from 1 (*always*

false for me) to 5 (*always true for me*).

Positive and negative affect. To measure affect, we used the Positive and Negative Affect

Schedule (PANAS; Watson, Clark, & Tellegen, 1988) capturing positive affect (10 items; e.g.,

"interested," "excited") and negative affect (10 items; e.g., "distressed," "afraid"). The PANAS

is a widely-used reliable and valid measure of general affect (e.g., Crawford & Henry, 2004).

The scales were translated into Romanian following the same procedure as with the

perfectionism scales. To measure current affect, participants were asked to rate the extent to

which they experienced each of the 20 emotions "within the past weeks" using a scale from 1

(*not at all*) to 5 (*very much*).

Results

Preliminary Analyses

First, we examined the item responses for missing data. Because only 1% of item

responses were missing, we imputed the missing values with the expectation maximization

algorithm (Graham, 2009) and then computed scale scores by averaging responses across items.

Because multivariate outliers can severely distort the results of correlation and regression

analyses, we next inspected the data for multivariate outliers including gender and age. No

participant showed a Mahalanobis distance larger than $\chi^2(6) = 22.46$, $p < .001$ (Tabachnick & Fidell, 2007). Hence, all participants were included in the data analyses. Finally, we inspected the reliability (internal consistency) of all scale scores by computing Cronbach's alphas. All scores showed satisfactory reliability (alphas $> .70$; see Table 1).

Main Analyses

Next, we computed bivariate correlations between all variables including gender and age (see Table 1). Self-oriented perfectionism (SOP) showed positive correlations with both positive and negative affect whereas socially prescribed perfectionism (SPP) showed a positive correlation only with negative affect. Female gender (effect coded as $+1 =$ female, $-1 =$ male)[2] showed a positive correlation with negative affect and a negative correlation with positive affect, indicating that female adolescents experienced more negative ($M = 2.37$, $SD = 0.63$) and less positive affect ($M = 3.18$, $SD = 0.64$) in the past weeks than male adolescents (negative affect: $M = 2.07$, $SD = 0.63$; positive affect: $M = 3.37$, $SD = 0.63$). In addition, age showed a positive correlation with negative affect (but see Footnote 3).

Next, we conducted two moderated regression analyses with SOP and SPP as predictors and positive and negative affect as dependent variables, following the procedures detailed by Gaudreau (2012). In this, SOP and SPP were standardized ($M = 0$; $SD = 1$) to simplify the production of figures when plotting the results (cf. Frazier, Tix, & Barron, 2004). The regression analyses comprised three steps. In Step 1, we entered female gender to control for the effects of

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[2]Gender was effect coded ($+1/-1$) instead of dummy coded (1/0) so gender $= 0$ would represent the mean effect for gender in the moderated regression analyses and the plots resulting from the regression analyses (Figures 1 and 2) would represent the average effects across gender (Cohen, Cohen, West, & Aiken, 2003).

gender.[3] In Step 2, we entered SOP and SPP. In Step 3, we entered the interaction of SOP and SPP (see Table 2).

SOP showed a positive regression weight in the prediction of positive affect and SPP showed a negative regression weight (see Table 2, Step 2). In contrast, SPP showed a positive regression weight in the prediction of negative affect whereas SOP was not a significant predictor, indicating that the significant overlap with SPP ($r = .42$, $p < .001$) was responsible for the positive bivariate correlation that SOP showed with negative affect (cf. Table 1 with Table 2, Step 2).

Because the interaction of SOP and SPP was nonsignificant for both positive and negative affect (see Table 2, Step 3), we followed Gaudreau (2012) and used the unstandardized regression weights from Step 2 to calculate the predicted values for positive and negative affect for the four subtypes of perfectionism—pure SOP, pure SPP, mixed perfectionism, and non-perfectionism—using the equations detailed in Gaudreau (2012, p. 30, Formulas 1-4). Figures 1 and 2 show the results. In addition, we estimated standardized effect sizes (Cohen's d) by taking the difference in predicted values between perfectionism subtypes and dividing it by the standard deviation of the dependent variable (positive and negative affect, respectively).

Regarding positive affect, results showed that pure SOP was associated with higher levels of positive affect compared to non-perfectionism ($d = 0.74$) and mixed perfectionism ($d = 0.35$), supporting Hypothesis 1a and 4, respectively. In contrast, pure SPP was associated with lower

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[3]When gender and age were entered simultaneously in Step 1 of the regression analyses, only gender had a significant effect on affect, suggesting that the positive correlations between age and negative affect was significant only because age showed a positive correlation with gender (see Table 1). Therefore, we did not include age in the regression analyses.

levels of positive affect compared to non-perfectionism ($d = -0.34$) and mixed perfectionism ($d = -0.72$), supporting Hypotheses 2 and 3. Additional analyses going beyond the hypotheses of the 2×2 model showed that pure SPP was associated with lower levels of positive affect also when compared to pure SOP ($d = -1.08$) and that mixed perfectionism was associated with higher levels of positive affect also when compared to non-perfectionism ($d = 0.38$).

Regarding negative affect, results showed that pure SOP was associated with lower levels of negative affect compared to mixed perfectionism ($d = -0.44$) but not compared to non-perfectionism ($d = -0.02$), supporting Hypothesis 4 but not Hypothesis 1a (or 1b). In contrast, pure SPP was associated with higher levels of negative affect compared to non-perfectionism ($d = 0.44$) but not compared to mixed perfectionism ($d = 0.02$) , supporting Hypothesis 2 but failing to support Hypothesis 3. Additional analyses going beyond the hypotheses of the 2×2 model showed that pure SPP was associated with higher levels of negative affect also when compared to pure SOP ($d = 0.45$).

Discussion

The aim of the present study was to investigate the 2×2 model of perfectionism with respect to positive and negative affect in adolescents using self-oriented perfectionism (SOP) as an indicator of personal standards perfectionism (PSP) and socially prescribed perfectionism (SPP) as an indicator of evaluative concerns perfectionism (ECP). We employed moderated regression analyses to examine differences between the four subtypes suggested by the 2×2 model—pure SOP (high SOP, low SPP), pure SPP (low SOP, high SPP), mixed perfectionism (high SOP, high SPP), and non-perfectionism (low SOP, low SPP)—to test the 2×2 model's hypotheses (see Introduction for details).

Our findings found full support for Hypothesis 4 (pure SOP is more adaptive than mixed perfectionism) and for Hypothesis 2 (pure SPP is more maladaptive than non-perfectionism).

Moreover, we found partial support for Hypothesis 1a (pure SOP is more adaptive than non-perfectionism) and Hypothesis 3 (mixed perfectionism is less maladaptive than pure SPP). Regarding positive affect, pure SOP was associated with higher levels of positive affect compared to non-perfectionism (Hypothesis 1a) and mixed perfectionism (Hypothesis 3) whereas pure SPP was associated with lower levels of positive affect than all other combinations of SOP and SPP (Hypotheses 2 and 3). Regarding negative affect, however, our findings supported only Hypotheses 2 and 4: Pure SPP was associated with higher levels of negative affect than non-perfectionism whereas pure SOP was associated with lower levels of negative affect than mixed perfectionism. However, mixed perfectionism and pure SPP showed similar levels of negative affect, so Hypothesis 3 found no support. Moreover, note that the finding that pure SPP was associated with higher levels of negative affect than non-perfectionism (like the finding that pure SPP was associated with lower levels of positive affect) confirmed the 2×2 model's proposition that is important to differentiate pure SPP and non-perfectionism, instead of combining both into one category of "non-perfectionists" (as does the tripartite model of perfectionism).

In addition, the results of our regression analyses are in line with findings from previous studies showing that personal standards perfectionism is positively associated with positive affect once the negative influence of evaluative concerns perfectionism is controlled for (Stoeber & Otto, 2006), indicating that ECP suppresses PSP's positive associations with positive outcomes (R. W. Hill et al., 2010). Accordingly, SPP appears to be a risk factor reducing positive affect in adolescents, but SOP may act as a compensatory factor against SPP's negative effect (e.g., Fergus & Zimmerman, 2005; cf. Gaudreau, 2012). Moreover, the finding that mixed perfectionism (high SOP, high SPP) was associated with higher levels of positive affect than non-perfectionism (low SOP, low SPP) has important implications for the recent discussions

about the 2×2 model of perfectionism because it shows that one of Stoeber's (2012) assumptions was incorrect. Stoeber assumed that—if Hypotheses 1a, 2, and 4 were supported—the four subtypes could be rank ordered such that pure SOP > non-perfectionism > mixed perfectionism > pure SPP for positive outcomes (and pure SOP < non-perfectionism < mixed perfectionism < pure SPP for negative outcomes). The present study's findings on positive affect, however, show that this is not necessarily the case because Hypotheses 1a, 2, and 4 were supported, but the rank order of predicted positive affect was pure SOP > mixed perfectionism > non-perfectionism > pure SPP (and not pure SOP > non-perfectionism > mixed perfectionism > pure SPP). This corroborates Gaudreau's (2013) view that the four hypotheses of the 2×2 model should not be combined to simplified models rank-ordering perfectionism subtypes but should be investigated separately.

Comparing our findings with those of Gaudreau and Thompson (2010) and Cumming and Duda (2012), our results replicated all findings of Gaudreau and Thompson's regarding positive affect. Moreover, they replicated Cumming and Duda's finding that pure PSP was associated with higher levels of positive affect than non-perfectionism and less negative affect than mixed perfectionism. Taken together, the findings indicate more support for the hypotheses of the 2×2 model regarding positive affect than regarding negative affect, suggesting that the 2×2 model is perhaps better suited to predict differences in positive outcomes than differences in negative outcomes. This would explain why Douillez and Lefèvre (2011) found only partial support for the 2×2 model when investigating depressive symptoms. In their moderated regression analyses, ECP had a positive regression weight on depressive symptoms, but PSP had no negative regression weight, mirroring our findings with negative affect.

The present study has two main limitations. First, the study employed a cross-sectional design. Hence the results of the moderated regression analyses showing that SOP and SPP

predicted current positive and negative affect cannot be interpreted in a causal or temporal sense. Future studies may profit from employing longitudinal correlational designs to examine if the relationships the present study found would replicate longitudinally. Second, the study used self-oriented perfectionism and socially prescribed perfectionism as indicators of personal standards perfectionism (PSP) and evaluative concerns perfectionism (ECP). Future studies need to demonstrate that the findings would generalize to other indicators of PSP and ECP, for example, personal standards and concern over mistakes as measured with Frost et al.'s (1990) scale. Regarding this limitation, however, note that our study partially replicated findings from Gaudreau and Thompson (2010), who combined self-oriented perfectionism and personal standards to measure PSP and socially prescribed perfectionism and concern over mistakes to measures ECP, and findings from Cumming and Duda (2012), who used personal standards as an indicator of PSP and concern over mistakes and doubts about actions as indicators of ECP. Hence we are confident that our findings would generalize to other indicators of PSP and ECP.

Notwithstanding these limitations, the present study makes a significant contribution to the canon of studies investigating the 2×2 model of perfectionism providing further support for the model's proposition that it is important to differentiate non-perfectionism and pure ECP, and not combine non-perfectionism and pure ECP (as the tripartite model of perfectionism suggests). Moreover, by replicating many of the perfectionism subtype differences that Gaudreau and Thompson (2010) found in university students, the present study suggests that the 2×2 model also applies to general perfectionism in adolescents. Finally, the findings of the present study suggest that self-oriented perfectionism may work better as a compensatory factor against socially prescribed perfectionism's negative effects on positive outcomes (e.g., lower positive affect) rather than as a protective factor against socially prescribed perfectionism's positive effects on negative outcomes (e.g., higher negative affect). Because so far only a limited number

of studies have been published investigating the 2×2 model, it remains for future studies to examine further positive and negative outcomes to explore the viability of this suggestion.

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Table 1

Correlations and Descriptive Statistics

Variable	1	2	3	4	5	6
Perfectionism						
1. Self-oriented perfectionism						
2. Socially prescribed perfectionism	.42***					
Past-weeks affect						
3. Positive affect	.31***	.01				
4. Negative affect	.12**	.21***	−.22***			
Control variables						
5. Gender (female)	.03	−.02	−.14**	.23***		
6. Age	.04	.04	−.01	.08*	.10*	
M	3.06	2.78	3.25	2.24	–	17.08
SD	0.56	0.67	0.65	0.66	–	1.14
Cronbach's alpha	.78	.81	.82	.82	–	–

Note. $N = 576$ for all variables except gender ($n = 540$). All scores are mean scores (see Method).

Gender (female) was effect coded as $+1$ = female, $−1$ = male (see Footnote 2). "−" = not

applicable/interpretable.

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

Table 2

Summary of Moderated Regression Analyses Predicting Positive and Negative Affect

Predictor	Positive affect			Negative affect		
	$\triangle R^2$	B	β	$\triangle R^2$	B	β
Step 1: Gender (female)	.021**			.051***		
Gender		−.10**	−.14**		.15***	.23***
Step 2: 2 × 2 model main effects	.111***			.049***		
Gender		−.11***	−.16***		.15***	.23***
Self-oriented perfectionism (SOP)		.42***	.37***		−.01	−.01
Socially prescribed perfectionism (SPP)		−.17***	−.17***		.22***	.22***
Step 3: 2 × 2 model interaction effect	.006			.002		
Gender		−.11***	−.16***		.15***	.23***
SOP		.24***	–		−.01	–
SPP		−.11***	–		.15***	–
SOP × SPP		−.04	–		.03	–

Note. $N = 540$ (listwise exclusion of participants with no gender information). Gender (female) was effect coded as +1 = female, −1 = male (see Footnote 2). B = unstandardized regression weight; β = standardized regression weight. "–" not applicable/interpretable (see Cohen et al., 2003).
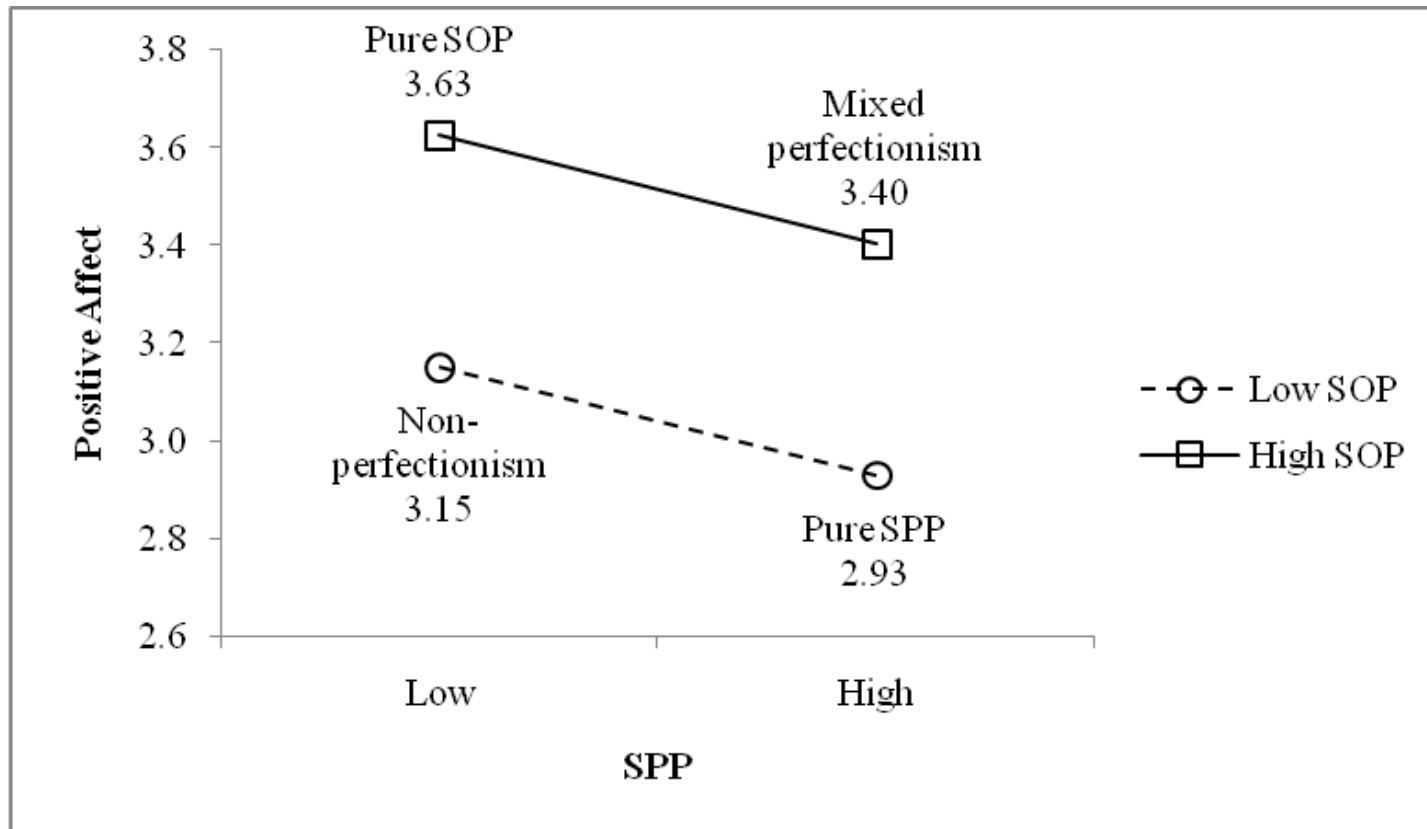
**$p < .01$. ***$p < .001$.

Figure 1. Predicted values of positive affect for the four subtypes of perfectionism. SOP = self-oriented perfectionism (indicating personal standards perfectionism [PSP]); SPP = socially prescribed perfectionism (indicating evaluative concerns perfectionism [ECP]). All differences between subtypes were significant (pure SOP > mixed perfectionism > non-perfectionism > pure SPP).
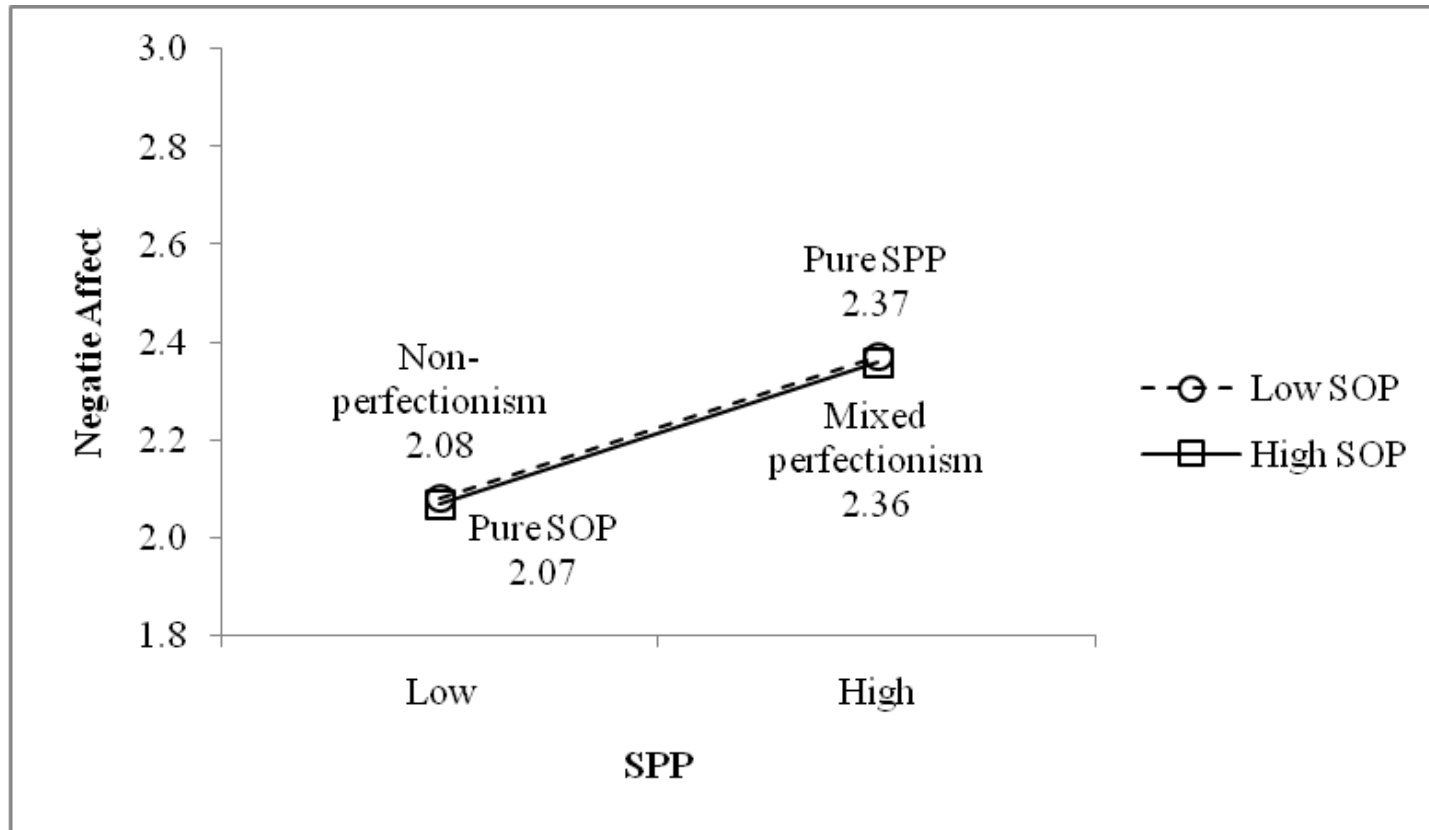
Figure 2. Predicted values of negative affect for the four subtypes of perfectionism. SOP = self-oriented perfectionism (indicating personal standards perfectionism [PSP]); SPP = socially prescribed perfectionism (indicating evaluative concerns perfectionism [ECP]). Pure SPP and mixed perfectionism differed significantly from non-perfectionism and pure SOP (pure SPP, mixed perfectionism > non-perfectionism, pure SOP).