

Maladaptive Perfectionism as an Intervening Variable Between Psychological Control and Adolescent Depressive Symptoms: A Three-Wave Longitudinal Study

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Maladaptive perfectionism has been postulated as an intervening variable between psychologically controlling parenting and adolescent internalizing problems. Although this hypothesis has been confirmed in a number of cross-sectional studies, it has not yet been examined from a longitudinal perspective. Findings from this 3-wave longitudinal study show that parental psychological control (as indexed by parent and adolescent reports) at age 15 years predicted increased levels of maladaptive perfectionism 1 year later. Maladaptive perfectionism, in turn, predicted increased levels of adolescent depressive symptoms again 1 year later and acted as a significant intervening variable between parental psychological control at Time 1 and depressive symptoms at Time 3. Multigroup analyses show that the model tested was consistent across gender for paternal psychological control but not for maternal psychological control. Suggestions for future research are outlined.

Keywords: psychological control, parenting, perfectionism, depressive symptoms, longitudinal

There is ample evidence that controlling and intrusive parenting renders children vulnerable to internalizing problems (Barber & Harmon, 2002; Grolnick, 2003). Current socialization research has established *psychologically controlling parenting* as a particularly strong and specific predictor of internalizing problems (Barber, 1996). In line with diverse theoretical perspectives (e.g., Hamachek, 1978), a limited body of cross-sectional research has established perfectionism as an intervening variable in associations between controlling parenting and child internalizing problems (e.g., Soenens, Vansteenkiste, Luyten, Duriez, & Goossens, 2005). The main aim of this study is to further examine this hypothesized intervening role of perfectionism from a longitudinal perspective.

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Psychologically Controlling Parenting

Psychological control is characteristic of parents who pressure their children to think, feel, and behave in ways they themselves dictate (Barber, 1996). Specifically, psychologically controlling parents would intrude upon the child's psychological world through the use of manipulative and insidious tactics, including guilt induction, invalidation of the child's perspective, and love withdrawal (Barber & Harmon, 2002). As such, psychological control is supposed to have a detrimental impact on children's self-processes. Consistent with this reasoning, psychological control was found to relate more strongly to internalizing than to externalizing problems (Barber, 1996), and this relation was obtained even after controlling for the effects of other parenting dimensions, such as responsiveness and behavioral control (Gray & Steinberg, 1999). Until recently, however, little was known about the psychological dynamics explaining the relation between psychological control and internalizing problems (Barber & Harmon, 2002). Recently, perfectionism has been proposed as an intervening variable (Flett, Hewitt, Oliver, & MacDonald, 2002): Children of psychologically controlling parents would develop a more perfectionist attitude, which, in turn, would render them vulnerable to internalizing problems.

Perfectionism and Adolescent Adjustment

Perfectionism is conceptualized as a multidimensional construct comprising both maladaptive and relatively adap-

tive features (Dunkley, Blankstein, Masheb, & Grilo, 2006). The distinction between maladaptive and more adaptive types of perfectionism is consistent with Hamachek's (1978) distinction between normal and neurotic perfectionism. A central feature of perfectionism is the setting of high achievement standards, which is, in itself, not pathological. To the extent that people are able to adjust their standards according to situational demands, holding high standards may provide people with a sense of goal directedness and purpose. As such, the endorsement and pursuit of high standards may be relatively adaptive. According to Hamachek, whereas adaptive perfectionists set realistic goals and feel free to be less precise as the situation permits, maladaptive perfectionists would feel that their efforts are never good enough. Maladaptive perfectionists would adhere to unrealistic standards that are pursued in a rigid fashion (Shafran & Mansell, 2001). They would engage in negative self-evaluations, characterized by concerns about failure, harsh self-scrutiny, and continuous doubts about their actions (Hamachek, 1978). Across time, they would develop deep-seated feelings of inferiority and ineffectiveness because they rarely feel able to attain their standards, resulting in an "endless cycle of self-defeating overstriving in which each task becomes a threatening challenge" (Blatt, 1995, p. 1007).

Research is increasingly documenting the validity of the distinction between maladaptive and more adaptive forms of perfectionism. It has been found, for instance, that the scales of the Frost Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990) can be represented by two higher order factors: Positive Striving or Adaptive Perfectionism (marked by the Personal Standards scale) and Evaluative Concerns or Maladaptive Perfectionism (marked by the Doubts About Actions and the Concern Over Mistakes scales; Dunkley et al., 2006). Research has also shown that both dimensions relate differentially to maladjustment. After controlling for the variance shared by the two perfectionism components, adaptive perfectionism is typically unrelated or negatively related to maladjustment, whereas maladaptive perfectionism is positively related to psychopathology, including depression, suicidal ideation, and eating disorders (Shafran & Mansell, 2001).

Perfectionism as an Intervening Variable

Diverse theories, such as Blatt's (1995, 2004) psychodynamic theory of depression and the social expectations model of perfectionism (Flett et al., 2002; Hamachek, 1978), have suggested that controlling parenting is involved in the development of perfectionism and maladaptive perfectionism in particular. Maladaptive perfectionism would develop in families in which parents approve of the child's behavior depending on whether the child meets the parental demands for performance and behavior. When a child fails to meet these standards, parents would criticize the child and induce guilt. As a consequence of being exposed to such psychological control, children would adopt their parents' harsh and rigid standards and gradually learn to impose these standards on themselves. Further, they would engage

in negative self-evaluations (e.g., guilt, self-scrutiny, and worthlessness) when they felt incapable of meeting these socially prescribed and self-imposed standards (Flett et al., 2002).

Although childhood is considered a first crucial period for the genesis of perfectionism, Blatt (1995) recognized that important changes in the development of perfectionism take place later in life as well. Adolescence would constitute a particularly sensitive period for this because it is characterized by increases in self-consciousness and by a growing awareness of social standards and achievement expectations (Flett et al., 2002). The experience of controlling parenting at a time when adolescents are already more self-critical and sensitive to social pressure would render adolescents particularly sensitive for the development of an enduring perfectionist orientation. Accordingly, we studied relations between controlling parenting and perfectionism during middle to late adolescence.

As psychologically controlling parenting is thought to lead to maladaptive perfectionism, which would in turn relate to internalizing problems, maladaptive perfectionism is hypothesized to mediate the relation between psychological control and adolescent depressive symptoms. Studies have already provided evidence for this hypothesized sequence of events. Kenney-Benson and Pomerantz (2005) found that the association between controlling parenting (as assessed through observational ratings) and depressive symptoms in young children was accounted for by socially prescribed perfectionism (i.e., an indicator of maladaptive perfectionism), and other studies sampling adolescents have provided evidence for the intervening role of maladaptive perfectionism between perceptions of harsh, critical, and controlling parenting and depression (e.g., Enns, Cox, & Clara, 2002; Randolph & Dykman, 1998). Soenens, Vansteenkiste, et al. (2005) additionally examined the specificity of parental psychological control in predicting perfectionism. After controlling for the effects of other parenting dimensions (i.e., support and behavioral control), psychological control was found to be a unique predictor of maladaptive perfectionism.

The Present Study

The few studies addressing the hypothesis that maladaptive perfectionism is an intervening variable between controlling parenting and proneness to internalizing problems show some important limitations, including reliance on self-report measures of parenting (see Kenney-Benson & Pomerantz, 2005, for an exception) and cross-sectional research designs. These shortcomings limit the conclusions that can be drawn from previous research. First, self-reports of parenting, perfectionism, and distress may lead to an overestimation of the associations among these constructs. The problem of shared method variance is of particular relevance for the association between controlling parenting and perfectionism. Maladaptive perfectionists may project the expectations that they hold for themselves onto their environment (including their parents; Hewitt & Flett, 1991). Consequently, a maladaptive perfectionist's experience of

his or her parents as imposing high expectations may not accurately reflect parents' actual behavior style but may be driven by his or her own maladaptive perfectionist functioning. To obtain a more reliable and valid assessment of parental psychological control, in the present study we relied on both adolescent and parent reports of psychological control, and we used both reports as indicators of a single underlying construct (see, e.g., Soenens, Elliot, et al., 2005).

Second, the cross-sectional nature of extant work precluded the examination of the intervening role of perfectionism between controlling parenting and adolescent distress across time. A longitudinal examination of this hypothesized sequence is important because intervening effects, by definition, pertain to dynamic processes that unfold over time. In the current study, the three main variables were assessed at three time points, separated by 1-year intervals. The choice of spacing between measurement waves was informed by evidence that parenting has stronger value to predict changes in adolescent functioning across 1-year intervals compared with longer intervals (Barber, Stolz, & Olsen, 2005). Specifically, we examined whether psychological control assessed at age 15 years would predict increases in maladaptive perfectionism 1 year later (i.e., controlling for initial levels of maladaptive perfectionism) and whether maladaptive perfectionism would, in turn, predict increases in depressive symptoms again 1 year later (i.e., controlling for initial levels of depressive symptoms). The latter part of the hypothesized model already received some support because a number of longitudinal studies showed that perfectionism predicts increases in depressive symptoms (e.g., Chang & Rand, 2000). However, to our knowledge, neither the relation between controlling parenting and perfectionism nor the intervening role of perfectionism has been examined longitudinally.

Research has shown mean-level gender differences in a number of constructs central to this study. Boys have tended to perceive their parents as more psychologically controlling than girls (Barber & Harmon, 2002), and girls have been found to report higher levels of depressive symptoms than boys (Leadbeater, Kuperminc, Blatt, & Herzog, 1999). Thus, it was deemed important to control for gender effects in the main analyses. In addition, it has been argued that the strength of the relations between psychological control and adolescent adjustment may differ depending on gender (Rogers, Buchanan, & Winchell, 2003), with girls being more susceptible to parental control than boys. Accordingly, multigroup analyses were conducted to assess the moderating role of gender.

Method

Participants and Procedure

Participants were 10th–12th-grade students from seven secondary schools in Flanders (Belgium) and their parents. Two weeks prior to the adolescent data collection, adolescents were provided with a package for their parents containing (a) an instruction letter explaining the purpose of the

study, (b) a parent survey, and (c) an informed consent form. Adolescents were invited to deliver this package to their parents. In the instruction letter, parents were first asked to fill out a form if they did not want their child to participate. Less than 2% of the parents did not allow this. Parents were also invited to fill out the survey and to return their completed surveys in a closed envelope to the main teacher of their child's class by the time data collection would take place (i.e., 2 weeks later). Adolescent questionnaires were administered during class periods in the presence of the principal researcher of this project. Students had approximately 45 min to complete the survey. Prior to the administration of the adolescent surveys, adolescents were asked to fill out an active consent form. None of the adolescents refused participation. It was emphasized to both parents and adolescents that participation was voluntary and that they could refuse participation at any time. Confidentiality was guaranteed.

At initial assessment, this procedure resulted in a sample of 677 adolescents (337 boys and 340 girls) ranging in age from 15 to 18 years at Time 1 (T1), with 95% of the adolescents between the ages of 15 and 16 years ($M = 15.65$, $SD = 0.36$). Of the adolescents, 87% came from intact families, 10% had divorced parents, and 3% came from a family in which one of the parents had deceased. Of the adolescents, 82% had at least one parent who participated. No differences were found between youths whose parents participated and youths whose parents did not participate on the study variables or on demographic variables (all $ps > .05$). A total of 540 mothers (80%) and 473 fathers (70%) participated. Mothers' mean age was 44 years ($SD = 3.73$). On a 6-point scale, their mean educational attainment was 3.65 ($SD = 1.12$), indicating an average of 12 years of education. Fathers' mean age was 46 years ($SD = 3.83$). Their mean educational attainment was 3.91 ($SD = 1.35$), indicating an average of 15 years of education.

The initial adolescent sample was followed with two subsequent assessments. The three measurement waves were 1 year apart. Of the initial sample, 78% participated in all three waves. This longitudinal sample of 434 participants consisted of 47% male adolescents. A logistic regression analysis tested whether sample attrition (dummy coded as dropout = 0, and retention = 1) was predicted by age, gender (dummy coded as male = 1, and female = 2), and all study variables at T1. Age and gender were entered in Step 1. The measures of psychological control, perfectionism, and depressive symptoms were entered in Step 2. Model chi-square for Step 1 was not significant, $\chi^2(2) = 4.46$, $p > .05$. Step 2 added to the multivariate prediction of retention, $\chi^2(7) = 16.82$, $p < .05$. This effect was uniquely due to the negative effect of depressive symptoms (odds ratio = 0.96, $p < .01$), indicating that adolescents who participated at all three waves experienced lower levels of depression at the onset of the study ($M = 12.29$, $SD = 8.71$) compared with those who dropped out ($M = 16.21$, $SD = 12.26$). Despite this, a direct comparison of the correlation matrices of the study variables at T1 revealed no significant differences between longitudinal participants ($n = 434$) and dropouts ($n = 121$), $\chi^2(28) = 24.61$, $p = .65$. Hence,

despite the mean-level difference in depressive symptoms at T1, the pattern of associations among the study variables at T1 was equivalent for longitudinal participants and drop-outs.

Measures

All questionnaires were translated into Dutch, the participants' native language, according to the guidelines of the International Test Commission (Hambleton, 1994). Unless otherwise indicated, items were scored on 5-point Likert scales, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Psychological control. We assessed psychological control at T1 using the eight-item Psychological Control Scale—Youth Self-Report (Barber, 1996). This scale taps three major psychologically controlling tactics, that is, guilt-induction (“My mother/father blames me for other family members’ problems”), invalidation of feelings (“My mother/father is always trying to change how I feel or think about things”), and love withdrawal (“My mother/father will avoid looking at me when I have disappointed her/him”). This scale is widely used and validated in developmental research (Barber, 1996), and the Dutch version of this scale was shown to correlate in theoretically predicted ways with the parenting dimensions of support and behavioral control (e.g., Soenens, Vansteenkiste, et al., 2005). Moreover, substantial convergence ($r > .30$) between parent reports and child reports of this scale was demonstrated (e.g., Soenens, Elliot, et al., 2005). Adolescents rated the items for both mother and father. Parents rated the items with respect to their own parenting behavior. For this purpose, the items were slightly revised to make them amenable to parent self-report (e.g., the prior sample item was revised to “I tend to be less friendly to my son/daughter if he/she does not see things like I do”). In the present study, Cronbach’s alphas for adolescent reports of maternal and paternal psychological control were .82 and .79, respectively; Cronbach’s alpha was .69 for both mother and father self-reports.

Perfectionism. At T1 and Time 2 (T2), adolescents completed three scales from the Frost Multidimensional Perfectionism Scale (Frost et al., 1990), namely Personal Standards (seven items; e.g., “I set higher goals for myself than most people”), Concern Over Mistakes (nine items; e.g., “People will probably think less of me if I make a mistake”), and Doubts About Actions (four items; e.g., “Even when I do something very carefully, I often feel that it is not quite right”). Past research identified the Personal Standards scale as an indicator of adaptive perfectionism and the other two scales as indicators of maladaptive perfectionism (Frost et al., 1990). The internal structure and external validity of the Dutch version were shown to be highly similar to those of the original instrument (Soenens, Vansteenkiste, et al., 2005).

To assess the validity of the distinction between adaptive and maladaptive perfectionism in the present sample, we performed a confirmatory factor analysis (CFA) on the items of the three perfectionism scales at T1 and T2. At both

waves, model comparisons favored a model that included two latent factors (i.e., adaptive and maladaptive perfectionism) over a model that included a single latent factor (i.e., general perfectionism): ΔSBS (Satorra–Bentler scaled)- $\chi^2(1, N = 434) = 256.29, p < .001$, and $\Delta\text{SBS}-\chi^2(1, N = 434) = 166.52, p < .001$, respectively. All items tapping maladaptive perfectionism and adaptive perfectionism had significant ($ps < .001$) and high (.40) loadings on their corresponding factors. Accordingly, the items from the Personal Standards scale were averaged to form a measure of adaptive perfectionism, and a Maladaptive Perfectionism scale was constructed by averaging the items tapping Concern Over Mistakes and Doubts About Actions. Cronbach’s alpha for adaptive perfectionism was .80 and .81 at T1 and T2, respectively. Cronbach’s alpha for maladaptive perfectionism was .87 at both T1 and T2.

Depressive symptoms. At T1 and Time 3 (T3), adolescents completed the 20-item Center for Epidemiological Studies—Depression (CES–D) scale (Radloff, 1977), indicating how often they experienced specific depressive symptoms during the past week. The CES–D assesses symptoms in three domains: behavioral (e.g., “My sleep was restless”), cognitive (e.g., “I thought my life had been a failure”), and affective (“I felt depressed”). Ratings were made on the following 4-point scale: 0 (*rarely or none of the time [less than one day]*), 1 (*a couple of times [1–2 days]*), 2 (*sometimes or regularly [3–4 days]*), and 3 (*most or all of the time [5–7 days]*). For each individual, a total severity of depression score was calculated by summing the responses. This produced a possible range of scores from 0 to 60. The CES–D has been shown to be strongly related ($rs > .60$) to other scales of depressive symptoms as well as to clinician ratings of depressive symptoms (Radloff, 1977). It is important to note that the CES–D was designed to assess depressive symptoms in the general population and, as such, does not substitute for measures of clinical depression (Roberts, Lewinsohn, & Seeley, 1991). In this study, Cronbach’s alphas were .91 and .92 at T1 and T3, respectively.

Results

Descriptive Statistics and Correlation Analyses

Means and standard deviations are shown in Table 1. Univariate analyses of variance were performed with gender as a between-subjects variable and each of the study variables as dependent variables. Gender had an effect on depressive symptoms at T1 and T3, with girls reporting more depressive symptoms at T1 ($M = 15.13, SD = 10.63$) and at T3 ($M = 13.66, SD = 10.77$) than boys ($M = 11.27, SD = 8.53$, and $M = 10.33, SD = 8.35$, respectively), $F(1, 675) = 27.21, p < .001, \eta^2 = .06$, and $F(1, 557) = 12.13, p < .001, \eta^2 = .04$, respectively. No other significant gender differences emerged.

The correlations in Table 1 show that the associations between reports of psychological control and maladaptive perfectionism were generally significant, as were the correlations between maladaptive perfectionism and depressive symptoms. Correlations between adaptive perfectionism

Table 1
Means, Standard Deviations, and Correlations Among Study Variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10
1. Psychological control, father-AR	2.12	0.66	—									
2. Psychological control, father-PR	2.28	0.56	.32***	—								
3. Psychological control, mother-AR	2.04	0.67	.45***	.24***	—							
4. Psychological control, mother-PR	2.19	0.57	.25***	.27***	.31***	—						
5. Maladaptive perfectionism, Time 1	2.14	0.63	.38***	.14**	.34***	.13**	—					
6. Adaptive perfectionism, Time 1	2.67	0.69	.17***	.09	.21***	.00	.52***	—				
7. Maladaptive perfectionism, Time 2	2.14	0.61	.31***	.10*	.26***	.07	.62***	.39***	—			
8. Adaptive perfectionism, Time 2	2.74	0.70	.07	-.01	.10*	-.05	.32***	.61***	.53***	—		
9. Depressive symptoms, Time 1	12.29	8.71	.38***	.14**	.26***	.08	.44***	.14**	.36***	.08	—	
10. Depressive symptoms, Time 3	12.25	9.99	.26***	.05	.10*	.00	.29***	.11*	.34***	.11**	.44***	—

Note. AR = adolescent report; PR = parent report.
* $p < .05$. ** $p < .01$. *** $p < .001$.

and measures of psychological control and depressive symptoms were generally less pronounced.

To examine the associations between adaptive and maladaptive perfectionism and the other study variables after controlling for the variance that the perfectionism components have in common, we computed partial correlations. After controlling for adaptive perfectionism, maladaptive perfectionism at T1 and T2 was positively related to psychological control, irrespective of parental gender and type of reporter (parent vs. adolescent) and depressive symptoms (all $ps < .05$). In contrast, after controlling for the maladaptive component, adaptive perfectionism was generally unrelated to psychological control and depressive symptoms. Three partial correlations were even negative ($ps < .05$), that is, the correlations with T1 depressive symptoms ($r = -.17$), T2 mother-reported psychological control ($r = -.11$), and T3 depressive symptoms ($r = -.13$). As expected, findings show that after controlling for the variance that maladaptive and adaptive perfectionism have in common, only maladaptive perfectionism is positively related to psychological control and depressive symptoms. Consequently, only this form of perfectionism is considered as a potential intervening variable.

Finally, it is important to note that parent and adolescent reports of both paternal and maternal psychological control were positively correlated ($rs = .32$ and $.31$, $ps < .001$, respectively). The magnitude of these relationships is similar to those observed in other research that has used parent and child reports (e.g., Schwarz, Barton-Henry, & Pruzinsky, 1985). Therefore, parent and adolescent reports were used as indicators of the same underlying latent construct. Through latent factor analysis, the variance that is shared by parents' and adolescents' reports of psychological control is estimated. This common variance is thought to reflect the level of psychological control that parents and adolescents agree upon and thus provides a more valid assessment of psychological control (Simons, Whitbeck, Conger, & Chyi-In, 1991).

Primary Analyses

Structural equation modeling with latent variables was used to examine the main hypotheses. We conducted anal-

ysis of the covariance matrices using LISREL 8.54 (Jöreskog & Sörbom, 1996), and we generated solutions using maximum-likelihood estimation. Psychological control was modeled as a latent factor with two indicators, namely parent and adolescent reports of psychological control. All other latent variables (i.e., maladaptive perfectionism at T1 and T2 and depressive symptoms at T1 and T3) were represented by three randomly computed parcels (Marsh, Hau, Balla, & Grayson, 1998). In line with previous studies on perfectionism in general (Stoeber & Otto, 2006) and parenting and perfectionism in particular (Kenney-Benson & Pomerantz, 2005), scores for maladaptive perfectionism were adjusted for adaptive perfectionism scores. This procedure is thought to result in a more pure assessment of the core psychopathological features of maladaptive perfectionism (Stoeber & Otto, 2006). Specifically, each maladaptive perfectionism parcel was regressed on adaptive perfectionism, and the residualized scores were used as indicators of maladaptive perfectionism.

Data screening of the indicator variables indicated partial data nonnormality (i.e., skewness and kurtosis) at the univariate and multivariate level. Therefore, in all subsequent models, we used the asymptotic covariance matrix between the indicators as input and inspected the Satorra-Bentler scaled chi-square (Satorra & Bentler, 1994). To evaluate model goodness of fit, we selected the standardized root-mean-square residual (SRMR) and the root-mean-square error of approximation (RMSEA). According to Hu and Bentler (1999), combined cutoff values close to .08 for SRMR and .06 for RMSEA indicate good model fit. Structural equation modeling proceeded in three steps. First, the quality of the measurement model (i.e., the relations between indicators and latent constructs) was assessed through CFA. Second, having established appropriately fitting measurement models, we estimated structural models testing the hypothesized relations between the latent variables. Third, we performed multigroup analyses on the final models to test the moderating role of gender.

Measurement models. Separate CFAs were conducted to test the measurement model for the paternal and the maternal data. Gender was indexed by a single indicator. Each CFA contained six latent factors (gender, psycholog-

ical control, maladaptive perfectionism at T1 and T2, and depressive symptoms at T1 and T3) and 15 indicators. For constructs assessed at different measurement points (i.e., maladaptive perfectionism and depressive symptoms), the measurement errors of the same indicators at different measurement points were allowed to correlate. In addition, to ensure over-time measurement model equivalence, the factor loadings of the same indicators at different measurement points were set equal. Adding these constraints did not result in a significant loss of model fit ($ps > .05$). Estimation of the measurement model for the paternal data yielded acceptable fit, $SBS-\chi^2(76, N = 364) = 128.05$, SRMR = .06, RMSEA = .04, and all factor loadings were significant ($p < .001$), ranging from .34 to .96 (mean $\lambda = .77$). Estimation of the maternal measurement model also yielded acceptable fit, $SBS-\chi^2(76, N = 434) = 103.90$, SRMR = .06, RMSEA = .03, and all factor loadings were significant ($p < .001$), ranging from .37 to .91 (mean $\lambda = .76$). In sum, evidence was obtained for reliable and longitudinally invariant measurement models.

Inspection of the correlations between the latent variables revealed that paternal and maternal psychological control were related to maladaptive perfectionism at T1 ($rs = .43$ and $.45$, $ps < .001$, respectively) and T2 ($rs = .41$ and $.39$, $ps < .001$, respectively). Paternal and maternal psychological control were also related to depressive symptoms at T1 ($rs = .39$ and $.35$, $ps < .001$, respectively) and T3 ($r = .26$, $p < .001$, and $r = .13$, $p < .05$, respectively). Finally, maladaptive perfectionism scores at T1 and T2 were positively related to depressive symptoms at T1 ($rs = .66$ and $.41$, $ps < .001$, respectively) and T3 ($rs = .28$ and $.35$, $ps < .001$, respectively).

Structural models. In the hypothesized structural model, psychological control at T1 predicts maladaptive perfectionism at T2 (controlling for maladaptive perfectionism at T1), and maladaptive perfectionism at T2 predicts depressive symptoms at T3 (controlling for depressive feelings at T1). All analyses were performed for maternal and paternal variables separately, and, in each model, the effect of gender was controlled for by allowing correlations between gender and the independent variable and by adding paths from gender to the intervening and dependent variables.

Before testing the hypothesized model, the direct effect of T1 psychological control on T3 depression was examined controlling for initial T1 depression levels. Estimation of the paternal model, $SBS-\chi^2(21, N = 364) = 59.85$, SRMR = .04, RMSEA = .07, showed that psychological control did not predict depressive symptoms at T3 ($\beta = .04$, $p > .05$) beyond the stability in depressive symptoms from T1 to T3 ($\beta = .62$, $p < .001$). Similarly, in the maternal model, $SBS-\chi^2(21, N = 434) = 47.96$, SRMR = .04, RMSEA = .06, psychological control did not predict depressive symptoms at T3 ($\beta = -.03$, $p > .05$) beyond the stability in depressive symptoms from T1 to T3 ($\beta = .59$, $p < .001$).

Although psychological control at T1 did not yield a direct effect on depressive symptoms across time, it is still possible that psychological control at T1 yields an indirect

effect on depressive symptoms over time through its effect on maladaptive perfectionism at T2. According to Holmbeck (1997), two types of intervening effects can be distinguished, that is, mediated effects and indirect effects. Mediation is evident when there is an initial significant association between the independent and the dependent variable that is substantially reduced after taking the intervening variable into account. An indirect effect is evident when there is no initial relation but when there is a significant indirect effect of the independent variable on the dependent variable through the intervening variable. Sobel's (1982) test can be used to assess the significance of an indirect effect. Given the lack of a direct effect of T1 psychological control on T3 depressive symptoms, we could only test for indirect effects.

The hypothesized model that included maladaptive perfectionism as an intervening variable fit the data well for paternal ratings of psychological control, $SBS-\chi^2(77, N = 364) = 172.53$, SRMR = .04, RMSEA = .06. As shown in Figure 1, psychological control at T1 predicted maladaptive perfectionism at T2 ($\beta = .14$, $p < .01$) after controlling for stability in maladaptive perfectionism ($\beta = .72$, $p < .001$). Maladaptive perfectionism at T2, in turn, predicted depressive symptoms at T3 ($\beta = .19$, $p < .001$) after controlling for stability in depressive symptoms ($\beta = .54$, $p < .001$). The indirect effect of psychological control at T1 to depressive symptoms at T3 through maladaptive perfectionism at T2 was significant ($z = 2.05$, $p < .05$). For maternal ratings of psychological control, the hypothesized model also fit the data well, $SBS-\chi^2(77, N = 434) = 172.53$, SRMR = .04, RMSEA = .06. The path from psychological control at T1 to maladaptive perfectionism at T2 ($\beta = .10$, $p < .05$) was significant after controlling for stability in maladaptive perfectionism ($\beta = .72$, $p < .001$). The path from maladaptive perfectionism at T2 to depressive symptoms at T3 was significant ($\beta = .17$, $p < .001$) after controlling for stability in depressive symptoms ($\beta = .50$, $p < .001$). The indirect effect of psychological control at T1 to depressive symptoms at T3 through maladaptive perfectionism at T2 approached significance ($z = 1.87$, $p = .06$).

Multigroup analysis. To examine whether gender moderated the relations in the final model, we used multigroup analyses that compared a constrained model (i.e., a model in which the structural coefficients are set equal across gender) with an unconstrained model (i.e., a model in which these coefficients are allowed to vary across gender) in terms of the chi-square difference corresponding to the number of degrees of freedom. A significant difference implies that the model differs significantly across gender. The paternal model (depicted in Figure 1) was not moderated by gender, neither at the level of the stability coefficients, $\Delta SBS-\chi^2(2) = 0.33$, $p > .05$, nor at the level of the cross-lagged paths, $\Delta SBS-\chi^2(2) = 2.69$, $p > .05$. The maternal model (also depicted in Figure 1) was not significantly moderated by gender at the level of the stability coefficients, $\Delta SBS-\chi^2(2) = 1.06$, $p > .05$. However, multigroup analysis did reveal a difference at the level of the cross-lagged effects, $\Delta SBS-\chi^2(2) = 6.33$, $p < .05$. Follow-up analyses pointed out that this was due to the fact that gender moderated the

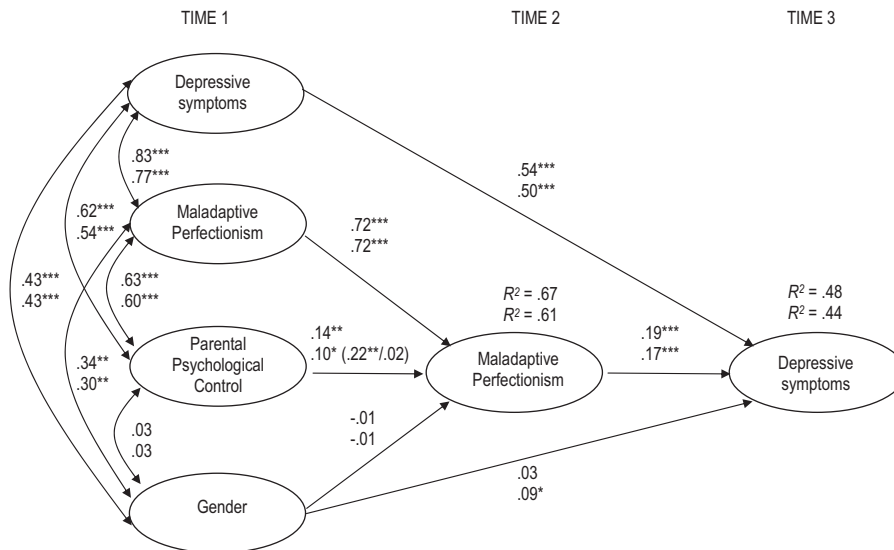


Figure 1. Structural model of relationships among parental psychological control (Time 1 [T1]), maladaptive perfectionism (Time 2 [T2]), and adolescent depressive symptoms (Time 3 [T3]), controlling for initial levels of maladaptive perfectionism and depressive symptoms at T1. Coefficients are standardized path coefficients. The upper coefficients refer to the paternal data, and the lower coefficients refer to the maternal data. Separate coefficients for male and female adolescents are provided for paths found to differ significantly by gender. The first coefficient is for male adolescents, the second coefficient is for female adolescents. R² = the amount of variance explained in the constructs at T2 and T3. *p < .05. **p < .01. ***p < .001.

path from psychological control at T1 to maladaptive perfectionism at T2; this path was significant for boys ($\beta = .22, p < .01$) but not for girls ($\beta = .02, p > .05$; see Figure 1). In addition, whereas the indirect effect of psychological control at T1 on depressive symptoms at T3 through maladaptive perfectionism at T2 was significant for boys ($z = 2.10, p < .05$), it was not for girls ($z = 0.01, p > .05$).

Discussion

The aim of this study was to provide further support for the hypothesis that adolescent maladaptive perfectionism is an intervening variable in the relation between parental psychological control and adolescents' depressive symptoms. Before discussing the main results, we would like to discuss the importance of the distinction between maladaptive and relatively more adaptive perfectionism, which has recently stirred considerable debate (Stoeber & Otto, 2006). Consistent with previous work (e.g., Dunkley et al., 2006), only maladaptive perfectionism was found to relate to psychological control and depressive symptoms. In contrast, after accounting for the variance shared by both perfectionism components, adaptive perfectionism was unrelated to psychological control and depressive symptoms. Thus, our findings support the distinction between adaptive and maladaptive perfectionism. Nevertheless, we would like to make a few critical observations regarding this distinction. First, it should be noted that adaptive perfectionism was generally unrelated (rather than negatively related) to depressive symptoms. As an adherence to high personal stan-

dards does not protect against maladjustment, the term "adaptive" perfectionism may not be appropriate. Second, both types of perfectionism were substantially correlated, suggesting that a strong adherence to high standards typically goes hand in hand with maladaptive perfectionist self-evaluations. The possibility thus exists that an adherence to high personal standards gives rise to maladaptive perfectionism in the long run and may as such indirectly render individuals vulnerable to maladjustment.

Having made these observations, we now discuss our primary findings. It was shown that psychological control at age 15 years predicted relative increases in adolescent maladaptive perfectionism, which, in turn, predicted increases in depressive symptoms. It should be noted that the effect of maternal control on perfectionism was qualified by adolescent gender, a finding that is commented upon later in the article. Also unexpectedly, this study did not document a direct significant effect of psychological control on relative change in depressive symptoms from T1 to T3. Longitudinal associations between psychological control and depressive symptoms have been most consistently demonstrated with 1-year lags between measurement waves (Barber et al., 2005). The longer time interval in this study may thus account for the lack of a direct effect. In spite of the absence of a direct relation, psychological control was found to relate indirectly to increases in depressive symptoms through its effect on increases in maladaptive perfectionism. This indirect effect suggests that psychological control primarily affects the development of an underlying vulnerabil-

ity to depressive feelings (i.e., maladaptive perfectionism) rather than the development of depressive symptoms per se. Together, our findings support theoretical accounts (Blatt, 1995; Flett et al., 2002; Hamachek, 1978) positing that adolescents of controlling parents are likely to develop a maladaptive perfectionist orientation, characterized by negative self-evaluations that, in turn, make them vulnerable to depressive symptoms.

The finding that psychological control predicts relative increases in maladaptive perfectionism is intriguing because it shows that maladaptive perfectionism is susceptible to developmental change and to socialization influence during middle to late adolescence. Because adolescence is characterized by increased levels of self-consciousness and an increased awareness of social standards, it is indeed considered a key period for the development of perfectionism (Flett et al., 2002). This finding also suggests that perfectionism should be considered as a relatively malleable personality feature that is affected by social-contextual influences rather than as a fully stable personality trait.

The role of controlling parenting in the development of perfectionism also has clinical relevance. Recent findings show that although perfectionism is predictive of poor treatment outcome for depression and eating disorders, it is possible to reduce perfectionism through cognitive-behavioral and psychodynamic therapeutic interventions (e.g., Blatt, 2004). However, given that a controlling family environment contributes to the development and maintenance of perfectionism, it seems possible that such an environment may override any personality change obtained in individual therapy. As long as an adolescent experiences his or her parents as demanding and psychologically controlling, perfectionist cognitions are likely to be maintained such that long-lasting and profound reductions in perfectionism may not be realized. A combination of individual therapy with a family-based intervention (focusing on a reduction of controlling interactions among family members) may therefore prove more effective than individual therapy alone.

A final interesting finding is the relative consistency of findings across parents' and adolescents' gender. There was one notable exception to the general pattern, namely the lack of a prospective relation between psychological control and maladaptive perfectionism in mother-daughter dyads. Although this finding may suggest that the detrimental effect of maternal psychological control is less pronounced in daughters than in sons, another possibility is that maternal control relates to daughters' depressive symptoms through a different pathway, that is, through dependency. This suggestion fits with Blatt's (2004) distinction between two qualitatively different personality vulnerabilities to depression, that is, an introjective and an anaclitic vulnerability. Whereas perfectionism is considered a key marker of an introjective vulnerability, dependency represents a key marker of an anaclitic vulnerability. Dependency has been defined as typical of individuals with excessive concerns about interpersonal relations, as expressed in anxiety about separation and loss (Blatt, 2004). Like perfectionism, dependency would develop in response to a pressuring and

manipulative parent-child relationship (Blatt, 2004). Interestingly, a dependent orientation has been found to be more typical of girls, and mothers have been found to be more strongly involved in the development of dependency than fathers. Accordingly, in mother-daughter dyads, dependency rather than perfectionism may be the intervening mechanism linking controlling parenting to depressive symptoms.

Limitations

Although this study supports a prospective relation between parental psychological control and maladaptive perfectionism, suggesting an influence of psychological control on the development of perfectionism, the opposite direction of effects could not be tested. As psychological control was only assessed at T1, we could not examine whether initial maladaptive perfectionism levels increase parental psychological control over time. The possibility still exists that maladaptive perfectionists evoke more intrusive reactions in their parents (i.e., an evocative transaction) because of their hostile and dismissing interpersonal style. Future research would do well to administer all measures at all measurement points to provide a more complete picture of the dynamics involved in the relation among psychological control, maladaptive perfectionism, and adjustment. Furthermore, although perfectionism is conceptually and empirically related to depressive symptoms, perfectionism has also been found to predict other expressions of psychopathology, including anxiety and eating disorders (Shafran & Mansell, 2001; Soenens et al., 2008). Accordingly, future research may address the role of perfectionism in relations between parenting processes and a broader range of psychopathology.

Our findings were obtained in a sample of well-educated White adolescents primarily living in intact families. It remains open to examination whether the findings will replicate in more heterogeneous samples in terms of family structure, cultural background, education, and socioeconomic status. Although there is increasing evidence that the detrimental effects of parental control (e.g., Barber et al., 2005; Vansteenkiste, Zhou, Lens, & Soenens, 2005; Wang, Pomerantz, & Chen, 2007) and perfectionism (e.g., Chang, Watkins, & Banks, 2004) generalize across cultures, the proposed full mediation model remains to be examined from a cross-cultural perspective. Related to this, it is important to note that adolescents with elevated levels of depressive symptoms were somewhat more likely to drop out from this study, limiting the generalizability of our findings to adolescents with severe depressive symptoms. More generally, this study relied on a community sample of adolescents with low to moderate scores on parental control, perfectionism, and depression. It remains open to examination whether our model generalizes to populations with clinically elevated levels of these variables.

Finally, although the use of both adolescent and parent reports increases the validity of our assessment of psychological control, the possibility still exists that the strength of the association between psychological control and perfec-

tionism is overestimated. Family members may develop a common distorted perception of both adolescents' perfectionism and the degree of psychological control within the family. It seems unlikely, however, that relations between ratings of psychological control and perfectionism can be fully accounted for by distorted perceptions of the intrafamilial climate because at least one study showed that observational ratings of controlling parenting also relate significantly to child perfectionism (Kenney-Benson & Pomerantz, 2005). Although studies that use observational assessments of controlling parenting are needed, in our view, it remains important to continue assessing family members' own perceptions and representations of the family climate because these perceptions may most directly affect family members' functioning. In this respect, there is evidence that patients' self-reported (i.e., perceived) criticism on the part of family members is a stronger predictor of relapse in depressed patients than independent measures of criticism (Hooley & Parker, 2006).

Conclusion

The present prospective study provides evidence that maladaptive perfectionism represents an important process through which earlier experiences of psychologically controlling parenting carry over into later levels of depressive symptoms. Adolescents from psychologically controlling homes become increasingly self-critical, doubting, and concerned with failure. Such a maladaptive perfectionist orientation, in turn, makes them vulnerable to increasing experiences of depression.

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Received June 6, 2007

Revision received January 11, 2008

Accepted January 14, 2008 ■