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Clarifying the Link between Perceived Parental Psychological Control and Adolescents' Depressive Feelings: A Test of Reciprocal versus Unidirectional Models of Influence

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Research has demonstrated a significant positive relationship between parental psychological control and adolescents' depressive feelings. However, due to a dearth of well-designed longitudinal studies the direction of influence remains unclear. The present study used a cross-lagged longitudinal design to address this issue in two samples of late (Study 1; *N* = 396) and middle (Study 2; *N* = 679) adolescents. Three models were estimated and compared, that is, a psychological control main-effects model, an adolescent adjustment main-effects model, and a reciprocal model. SEM-analyses generally favored the reciprocal model over each of the main-effect models. Study 1 additionally showed that the cross-lagged effects of perceived psychological control remained significant after controlling for parental responsiveness and behavioral control. Study 2 showed that whereas perceived paternal psychological control predicted increases in depressive feelings for male and female middle adolescents, perceived maternal psychological control was only predictive of depressive feelings in male middle adolescents. Suggestions for future research on psychological control and adjustment are advanced.

Introduction

Ever since the pioneering work of Schaefer (1965), empirical studies have documented the maladjustment correlates of parental psychological control. In particular, it has been shown that psychological control is consistently related to higher levels of internalizing problems and depressive feelings (Barber & Harmon, 2002). In line with classical thinking about socialization (e.g., Maccoby & Martin, 1983), the positive association between psychological control and depressive feelings has typically been interpreted as a parenting effect. Psychological control is thought to represent a (causal) antecedent factor in the development of depressive feelings. Despite such claims, to date there is limited evidence documenting the direction of effects in the link between psychological control and adolescent adjustment and the few studies that addressed this issue have yielded equivocal results. Accordingly, the central aim of the present study was to examine the nature of the relation between psychological control and adolescents' depressive feelings by using a cross-lagged longitudinal design.

Psychological Control and Adolescent Adjustment

Psychological control is defined as characteristic of parents who engage in manipulative and intrusive behaviors towards their children, such as guilt-induction, shaming, and conditional approval (Barber, 1996). Although psychological control may be expressed in a rather subtle and covert fashion (e.g., by giving a child "the silent treatment"), this parenting dimension is thought to have a detrimental impact on children's well-being (Barber & Harmon, 2002; Grolnick, 2003). Psychologically controlling parents are preoccupied by their personal position in the relation with the child and with their personal needs and, as a result, lack the empathic capacities necessary to be attuned to the child's needs. For this reason, psychological control is thought to frustrate the child's need for autonomy, thereby creating a vulnerability to a range of adjustment problems, both among western (e.g., Barber & Harmon, 2002) and eastern populations (e.g., Vansteenkiste, Zhou, Soenens, & Lens, 2005).

To illustrate, various cross-sectional studies have shown that psychological control is related to depression (e.g., Barber, Olsen, & Shagle, 1994; Barber, 1996) and low self-esteem (e.g., Soenens,

Vansteenkiste, Luyten, Duriez, & Goossens, 2005), even after controlling for other parenting dimensions such as responsiveness and behavioral control (e.g., Gray & Steinberg, 1999; Herman, Dornbusch, Herron, & Herting, 1997). Some studies have also shown that psychological control is associated with a higher frequency of problem behaviors (e.g., Barber, 1996; Conger, Conger, & Scaramella, 1997) and lower school achievement (e.g., Bean, Bush, McKenry, & Wilson, 2003; Vansteenkiste, Simons, Lens, Soenens, & Matos, 2005). Despite the consistency of these findings, the cross-sectional nature of most of these studies precludes any inference about the direction of effects. Although it is typically assumed that psychological control exerts an influence on adolescent adjustment, the possibility also exists that adolescents' adjustment influences parents' use of psychological control or that the relation between psychological control and adolescent adjustment is a reciprocal one, as we will discuss more extensively in the following section.

Three Models on the Link between Psychological Control and Adjustment

An examination of the direction of effects between psychological control and adolescent adjustment requires a longitudinal research design. Unfortunately, the few longitudinal studies that have been conducted to date did not reveal a coherent picture of the nature of these effects. Varying from study to study, evidence has been obtained for one of three models, that is, a psychological control main-effects model, an adolescent adjustment main-effects model, and a reciprocal model.

Psychological Control Main Effects Model. In line with the idea that psychological control represents a risk factor for or an antecedent to adolescent maladjustment, some studies have demonstrated that psychological control prospectively predicts maladjustment. For instance, Steinberg, Elmen, and Mounts (1989) demonstrated that psychological control predicted a decrease in adolescents' school grades and psychosocial maturity scores over a one-year period. Using a similar design, Herman, Dornbusch, Herron, and Herting (1997) found that psychological control predicted increases in somatic (but not psychological) symptoms. Conger et al. (1997) found that psychological control predicted increases in internalizing and behavioral problems and decreases in self-confidence,

albeit only among boys. Soucy and Larose (2000) found that paternal (but not maternal) psychological control predicted decreasing emotional and social adjustment to college as well as lower grades over the course of a semester.

Together, these studies seem to suggest that psychological control exacerbates, rather than simply accompanies adolescents' negative adjustment. It should be noted, however, that the stability (versus change) of psychological control was not controlled for in these studies. Each of these studies examined whether psychological control, as assessed at the onset of the study, predicted later adjustment, thereby only controlling for earlier adjustment. Although such an analysis gives an indication of the relation between psychological control and over-time changes in adjustment, it does not allow drawing sound inferences about the direction of effects (Burkholder & Harlow, 2003). Any relationship between psychological control at Time 1 (T1) and adjustment at Time 2 (T2) may have been spuriously caused by the stability of psychological control from T1 to T2 and by a significant concurrent association between psychological control at T2 and adjustment at T2. Moreover, any design in which psychological control is only measured at T1 does not allow for an examination of effects of adolescent adjustment on subsequent parental use of psychological control. Hence, these studies did not actually consider the possibility that adolescent maladjustment elicits psychological control over time.

Adolescent Adjustment Main Effects model. In line with the growing recognition that parenting does not only affect child behavior but that children's behavior also serves to elicit particular parental reactions (e.g., Bell & Chapman, 1986; Stattin & Kerr, 2000), some studies found that aspects of children's earlier adjustment are predictive of parents' later use of psychological control. For instance, Rogers, Buchanan, and Winchell (2003) reported that early adolescents' initial level of internalizing problems predicted more perceived psychological control one year later. Interestingly, in contrast to the studies cited in the preceding paragraph, psychological control did not predict later internalizing problems. These findings lend support to the notion that poor adjustment in adolescents - and internalizing problems in particular - may be a source of stress for parents, which makes them resort to

intrusive parenting. The withdrawn and moody behavior of depressed adolescents may frustrate the expectations parents have for their children and, as such, elicit stronger and more intrusive parental attempts to make their children behave according to parental needs and aspirations.

However, if parents' use of psychological control could be fully accounted for by adolescents' adjustment problems, this would imply that parental psychological control is simply a response to children's -- possibly dispositional -- vulnerability to depression. The adolescent adjustment main-effects model therefore contradicts Barber and Harmon's (2002) claim that psychological control is at least partly rooted in parents' own functioning and developmental history instead of being a mere reaction to the child's behavior. In line with this claim, recent research indicates that parents' use of psychological control is significantly predicted by parental characteristics such as perfectionism (Soenens, Elliot, Goossens, Vansteenkiste, Luyten, & Duriez, 2005) and separation anxiety (Soenens, Vansteenkiste, Duriez, & Goossens, in press). Given that parantal characteristics account for a substantial part of the variability in parents' use of psychological control, it is unlikely that only child effects would account for the link between psychological control and adolescent adjustment. Instead, a reciprocal model may provide a better description of this link.

Reciprocal Model. Reciprocal models are strongly favoured within transactional models of socialization (e.g., Magnusson, 1988; Sameroff & Fiese, 2000), which consider developmental outcomes as the product of a continuous dynamic interaction between parents' and children's behavior and characteristics. With regard to psychological control, transactional theories would predict that parents of less adjusted adolescents would be more likely to rely on psychologically controlling strategies which, in turn, would further increase children's susceptibility to depression. To the best of our knowledge, few studies provided evidence for such transactional processes. In one of the most extensive longitudinal studies of psychological control to date, Barber, Stolz, and Olsen (2005) examined cross-lagged effects between psychological control and depression using a four-wave longitudinal design. Through structural equation modelling, the analyses controlled for stability in both

psychological control and depression. Barber et al. (2005) found cross-lagged effects of psychological control on subsequent levels of depression, as well as cross-lagged effects of depression on subsequent reports of psychological control.

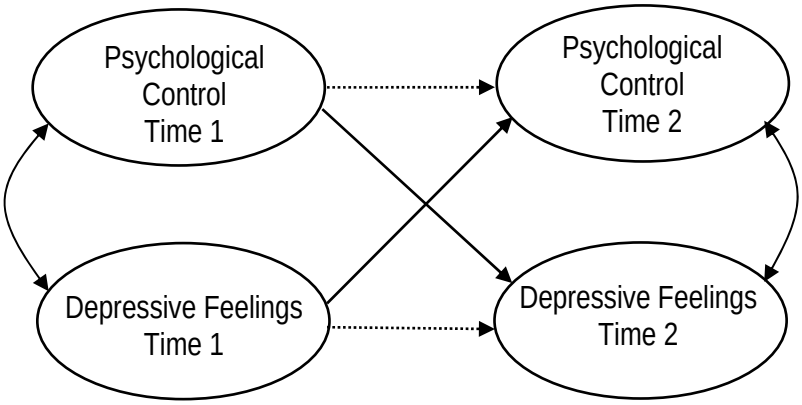
Although these findings seem indicative of a reciprocal relation between psychological control and depression, the study by Barber et al. (2005) did not control for within-time associations between psychological control and depression. In the models that were tested, each data wave included *either* psychological control (Wave 1 & 3) *or* depression (Wave 2 & 4). Although such a design allows controlling for prior levels of each construct (i.e., stability effects) it does not allow to simultaneously controlling for associations between the constructs within each wave. As a consequence, the cross-lagged paths that were found may have been spuriously caused by the stability in each construct and the (non-observed) association between the constructs *within* each wave. To illustrate this, the positive effect of psychological control at Time 1 on depression at Time 2 might be due to the stability in psychological control between Time 1 and Time 2 and the positive concurrent relation between psychological control at Time 2 and depression at Time 2. However, this possibility could not be examined in the study by Barber et al. (2005) because psychological control at Time 2 was not included in the model.

The Present Study

The present study aims to examine the nature of the relation between perceived psychological control and feelings of depression in a sample of late (Study 1) and in a sample of middle (Study 2) adolescents. We focused on depressive feelings because this is the outcome variable that is, both theoretically and empirically, most closely linked to psychological control (Barber, 1996). Our review of the extant literature above leads to the following two conclusions. First, past studies have yielded inconclusive results about the direction of effects in the relation between psychological control and adjustment. Hence, the present research seems both timely and needed to further examine these links. Second, from a statistical viewpoint, the findings of past studies need to be interpreted with caution,

because researchers did typically not simultaneously control (a) for stability in *both* psychological control and adolescents' adjustment and (b) for *within-time* associations between psychological control and adjustment. Failing to control for such potential confounds may spuriously inflate the estimates of the cross-lagged paths. The present study remediated these limitations by relying on on a full cross-lagged longitudinal design with annual assessments of both psychological control and depression, as suggested by Rueter and Conger (1998) and Burkholder and Harlow (2003). Figure 7.1 depicts our conceptual model. As shown in Figure 7.1, the cross-lagged paths were estimated controlling for both autoregressive (stability) effects and cross-sectional covariances.

Figure 7.1. *Conceptual model of the associations between perceived parental psychological control and adolescent depression. Whereas the dashed arrows depict autoregressive effects, the full arrows depict cross-lagged paths.*



The design of this study thus allows for a direct comparison between the three models proposed in the introduction. The '*psychological control main-effects model*' would receive support if, besides the autoregressive paths and the cross-sectional covariances, only the cross-lagged paths from perceived psychological control to adolescent depression would be significant. Conversely, evidence for the '*adolescent adjustment main-effects model*' would be obtained if only the cross-lagged paths from adolescent depression to perceived psychological control reached significance. Finally, the '*reciprocal model*' would be evidenced by significant cross-lagged paths in both directions. Based on transactional

theories of development, we hypothesize that the relation between perceived psychological control and adolescents' depressive feelings is indeed a reciprocal one.

In addition to the general aim of examining cross-lagged relations between perceived psychological control and depressive feelings, we aimed to examine some additional issues, including (a) the unique value of the parenting dimension psychological control in predicting depressive feelings (i.e., controlling for responsiveness and behavioral control), (b) the possible moderating role of age in longitudinal relations between psychological control and depressive feelings, and (c) the possible moderating role of parent and adolescent gender in these relations. These three issues are considered in greater detail below.

Unique Predictive Value of Psychological Control. We aimed to establish whether effects of perceived psychological control on adolescent depressive feelings, if any, can be attributed specifically to the influence of psychological control. More specifically, Study 1 examined whether perceived psychological control would predict depressive feelings after controlling for the effects of two other crucial parenting dimensions, namely responsiveness and behavioral control (Barber, Stolz, et al., 2005). Responsiveness refers to the degree to which adolescents experience a positive, involved and warm relationship with their parents, and behavioral control involves the provision of sufficient regulation of children's behavior. Although cross-sectional studies have provided quite consistent evidence for a specialized relation between psychological control and depressive feelings (Barber et al., 1994; Gray & Steinberg, 1999), the present study is among the first to assess this specialized effect using a longitudinal framework (see Barber, Stolz, et al., 2005 for an exception).

Age Differences. Next, we aimed to examine whether the hypothesized longitudinal associations between perceived psychological control and depressive feelings would hold across adolescent age or, instead, would be moderated by age. It could be argued, for instance, that the relationship between manipulative and intrusive parental behaviors and depressive symptomatology will decrease as adolescents grow older because the influence of non-parental adults (e.g., teachers and

mentors), peers, and romantic partners becomes increasingly important (Steinberg & Silk, 2002). Conversely, one could argue that, with increasing age, adolescents' representations of their parents' behavior become increasingly stable and internalized, so that these representations continue to affect adolescents' functioning in late adolescence (e.g., Soucy & Larose, 2000). Consistent with this, Soucy and Larose (2000) found that psychological control predicts deteriorated adjustment in late adolescents. Furthermore, in a sample of early adolescents, Rogers et al. (2003) reported that psychological control did not predict over-time changes in adjusment, but adjustment predicted over-time changes in psychological control. The latter findings may indicate that, in earlier phases of adolescence, child characteristics (such as resilience and vulnerability to depression) have a greater impact on parents' use of psychological control than later on, when parents and adolescents have already developed a relatively stable interaction pattern that has been internalized by adolescents.

Whereas each of these perspectives assumes that associations between psychological control and depression are moderated by adolescent age, other theories assume that these associations are not age-bound. Self-determination theory (SDT; Deci & Ryan, 2000), for instance, claims that (representations of) inconsistent and controlling parenting will detract from optimal functioning at any given age, because such parenting would frustrate the satisfaction of an innate need for autonomy which is essential to optimal functioning across the lifespan (Grolnick, 2003). Moreover, in keeping with this line of reasoning, parents could also be expected to react to adolescents' depressive feelings with increased control irrespective of adolescents' age because the underlying process that is assumed to trigger parental control (e.g., anxiety and worry about the adolescent's development) is essentially the same for younger and older adolescents.

The present study puts these contrasting perspectives to an empirical test by examining the longitudinal associations between psychological control and depressive feelings in a sample of late adolescents (i.e., college students; Study 1) and in a sample of middle adolescents (i.e., high school students; Study 2). On the basis of Self-Determination Theory and transactional developmental theories,

we hypothesize that reciprocal relations between psychological control and depressive feelings will be found in both the late adolescent sample of Study 1 and the middle adolescent sample of Study 2.

Gender Differences. Past studies have found small but significant gender differences in psychological control, with males typically reporting somewhat higher levels of psychological control than females (Barber, Bean, & Erikson, 2002). Gender differences are also typically found in depression, with females obtaining higher scores than males (e.g., Leadbeater, Kuperminç, Blatt, & Herzog, 1999). For this reason, we controlled for the possibly confounding influence of adolescent gender in all analyses.

Furthermore, it is important to assess whether the hypothesized longitudinal structural relationships vary by adolescent and parent gender. Rogers et al. (2003) performed the most explicit and detailed examination of this issue to date. Rogers et al. (2003) hypothesized that the association between psychological control and depressive feelings would be most pronounced in mother-daughter dyads because mother-daughter relationships have been found to be particularly emotionally intense, both with regard to closeness and conflict. However, Rogers et al. did not obtain clear-cut evidence for any of these hypotheses. Similarly, Barber, Stolz, et al. (2005) found that the reciprocal associations between psychological control and depression were generally consistent across parent and adolescent gender. However, the latter study did not formally test for gender differences (e.g., through multi-group analysis). Given the paucity of research on this topic, the present study aimed to contribute to the literature by further evaluating the possible moderating role of gender in Study 2.

STUDY 1

The aims of Study 1 were (a) to compare the three models of longitudinal associations between perceived psychological control and depressive feelings using a three-wave cross-lagged design; (b) to assess the unique predictive value of perceived psychological control relative to the two other fundamental parenting dimensions (i.e., responsiveness and behavioral control). These research objectives were addressed in a sample of late adolescents (i.e., college students).

Method

Participants

The data for this study were collected at a large university in the centre of Belgium (Europe) in the context of a larger longitudinal project on identity development (Luyckx, Goossens, & Soenens, 2006). The first wave of this study was conducted at the end of 2002. At Time 1, all participants were freshmen from the Faculty of Psychology and Educational Sciences, consisting of a predominantly female student population. This sample comprised 565 students consisting of 482 women (85.3%). Mean age was 18 years and 8 months (*SD* = 7.6 months). These participants were followed with two bi-annual measurements each year (one in the Fall semester and one in the Spring semester). Data for the present paper are taken from the first, the third and the fifth measurement wave because the measurements of interest to this study were only administered at these three time points. These three measurement waves were one year apart.

Approximately 70% of the initial sample participated in each of the three measurement waves. This longitudinal sample of 396 participants was the sample of interest and consisted of 351 women (88.6%). Eighty-four percent of the participants lived in an intact family with parents being married and/or living together. Thirteen percent had parents being divorced and 3% had one deceased parent. It is important to note that the large majority of university students in Belgium (i.e., > 95%) still lives with parents (i.e., commuters) or returns home every week during the weekends (see Luyckx et al., 2006). Hence, with few exceptions, Belgian university students still live with their parents and have frequent contacts with them.

A logistic regression analysis tested if sample attrition (dummy coded as drop-out = 0 and retention = 1) was predicted by age, gender (dummy coded as female = 0 and male = 1), and all study variables at Time 1. Age and gender were entered in Step 1. The three parenting dimensions and depression were entered in Step 2. Model χ^2 for Step 1 was significant ($\chi^2(2) = 19.56$, $p < .01$). Retention was significantly predicted by being female (odds ratio (OR) = .51, $p < .01$) and being younger

(OR = .65, $p < .01$). Step 2 did not significantly add to the multivariate prediction of retention ($\chi^2(4) = 8.77$, $p > .05$). In short, students who participated at all three waves were more likely to be female and younger than those who participated at only one or two waves, but no substantial differences were found on any of the study variables at Time 1, demonstrating the a-selectivity of our longitudinal sample compared to the initial sample.

Procedure

Permission to undertake this study was granted by the ethical commission of the researchers' department. Letters describing the purpose and content of the study were distributed among adolescents eligible for participation in the present study. The adolescents signed a standard consent form before answering the questionnaire at the first occasion, and were informed that they could refuse or discontinue participation at any time. All students received a unique code to protect their identity so that the questionnaires collected at different measurement occasions could be matched; anonymity was guaranteed. At each measurement occasion, questionnaires were distributed in lecture halls or by mail and participants were asked to complete the questionnaires as soon as possible. This request was repeated two weeks later. Three weeks later, a new questionnaire was sent to those who did not complete the questionnaire. Seventy-three students refused to participate for reasons unknown at the first measurement occasion. This resulted in a participation rate of approximately 89% ($n = 565$) at the first measurement occasion.

Measures

Parenting Style. Participants completed 21 items derived from the Children's Report on Parent Behavior Inventory (CRPBI; Schaefer, 1965; Soenens, Vansteenkiste, et al., 2005), and rated these for both parents together. Cronbach's alphas for the psychological control scale (7 items, e.g., "My parents are less friendly to me if I don't see things like they do.") were .82, .85, and .86 at Time 1, Time 2, and Time 3, respectively. Cronbach's alphas for responsiveness (7 items, e.g., "My parents make me feel better after I discussed my worries with them") were .91, .90, and .91 at Time 1, Time 2, and Time

3, respectively. Cronbach's alphas for behavioral control (7 items, e.g., "My parents allow me to do anything I want" – reverse coded) were .81, .83, and .84 at Time 1, Time 2, and Time 3, respectively.

Depressive Feelings. Participants completed a 12-item shortened version of the Center for Epidemiologic Studies Depression Scale (CESD; Radloff, 1977), indicating how often they experienced specific depressive symptoms during the past week. Ratings were made on a scale ranging from *(0) rarely or none of the time (less than one day)*, over *(1) a couple of times (1-2 days)*, and *(2) sometimes or regularly (3-4 days)*, to *(3) most or all of the time (5-7 days)*. For each individual, a total severity of depression score was calculated by taking the mean of the responses. Cronbach's alphas were .88, .87, and .88 at Time 1, Time 2, and Time 3, respectively.

Results

Preliminary Analyses and Descriptive Statistics

Correlations among the study variables are presented in Table 7.1. Stability coefficients of the three parenting constructs were higher (ranging from .67 to .79) compared to stability coefficients of depressive feelings (ranging from .38 to .48). As expected, psychological control was positively correlated with depressive feelings, both across and within measurement waves. In contrast, parental responsiveness was generally negatively correlated with depressive feelings. Correlations between behavioral control and depressive feelings, if any, were slightly positive. Table 7.1 also presents the means and standard deviations of the study variables. In order to assess mean-level changes in the parenting constructs and in adolescents' depressive feelings, a repeated measures ANOVA was performed, with measurement time as the within-subjects variable and each study variable as dependent variable. No mean-level changes were observed in psychological control (F (1, 395) = 1.74, $p > .05$). In contrast, both parental responsiveness and behavioral control were found to linearly decrease across the three measurement points (F (1, 395) = 6.63, $p < .01$ and F (1, 395) = 132.61, $p < .01$, respectively). Finally, depressive feelings showed a significant quadratic trend (F (1, 395) = 3.98, $p < .05$): A decrease took place between Time 1 and Time 2, but not between Time 2 and Time 3.

Table 7.1 *Means, Standard Deviations, and Correlations among All Study Variables (Study 1)*

Scale	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	*M*	*SD*
1. Psychological control T1	.70***	.67***	-.64***	-.54***	-.51***	.38***	.24***	.31***	.37***	.39***	.27***	1.94	0.63
2. Psychological control T2	--	.73***	-.51***	-.60***	-.51***	.32***	.29***	.34***	.36***	.39***	.37***	1.94	0.65
3. Psychological control T3		--	-.48***	-.49***	-.62***	.34***	.27***	.41***	.32***	.42***	.45***	1.98	0.68
4. Responsiveness T1			--	.78***	.74***	-.19***	-.04	-.08	-.29***	-.29***	-.18***	3.72	0.84
5. Responsiveness T2				--	.79***	-.11*	-.08	-.10	-.22***	-.33***	-.20***	3.70	0.77
6. Responsiveness T3					--	-.19***	-.09	-.21***	-.25***	-.34***	-.31***	3.64	0.77
7. Behavioral control T1						--	.74***	.70***	.09	.17**	.16**	3.12	0.69
8. Behavioral control T2							--	.77***	.04	.09	.09	2.93	0.70
9. Behavioral control T3								--	.09	.18***	.17**	2.81	0.72
10. Depressive feelings T1									--	.43***	.38***	1.79	0.51
11. Depressive feelings T2										--	.48***	1.71	0.50
12. Depressive feelings T3											--	1.72	0.51

Note: T1 = Time 1; T2 = Time 2; T3 = Time 3. * $p < .05$. ** $p < .01$. *** $p < .001$.

Finally, in order to assess gender differences in the study variables, ANOVAs were performed with gender as between subjects-variable and with parenting constructs and depression scores at the three measurement points as dependent variables. At Time 1, significant gender differences were obtained in responsiveness (F (1, 394) = 10.96, p < .01) and psychological control (F (1, 394) = 6.05, p = .01). Female participants reported higher levels of responsiveness (M = 3.77; SD = 0.83) and lower levels of psychological control (M = 1.91; SD = 0.61) than did male participants (M = 3.34; SD = 0.74 and M = 2.16; SD = 0.68, respectively). At Time 2, gender differences were obtained in responsiveness (F (1, 394) = 16.74, p < .01) and behavioral control (F (1, 394) = 10.47, p < .01). Females reported higher responsiveness (M = 3.73; SD = 0.80) and higher behavioral control (M = 3.31; SD = 0.87) than did males (M = 3.29; SD = 0.78 and M = 2.93; SD = 0.90, respectively). At Time 3, a gender difference was observed for responsiveness (F (1, 394) = 11.94, p < .01). Again, females reported higher levels of responsiveness (M = 3.69; SD = 0.79) than did males (M = 3.27; SD = 0.64). Given the substantial number of gender differences in study variables across the three waves, we controlled for gender effects in the primary analyses.

Primary Analyses

Structural equation modeling (SEM) with latent variables was used to examine the study hypotheses. SEM with latent variables reduces shared method variance, which is particularly important in studies where only a single informant is used. Analysis of the covariance matrices was conducted using LISREL 8.54 (Jöreskog & Sörbom, 1996), and solutions were generated on the basis of maximum-likelihood estimation. In the analyses, each construct was represented by parcels rather than by individual scale items. Parceling has several advantages in the modeling of latent variables, relative to the use of individual items. Parcels are likely to have a stronger relationship to the latent variable, are less likely to be affected by method effects, and are more likely to meet assumptions of normality (Marsh, Hau, Balla, & Grayson, 1998). Three randomly created parcels were computed for each construct and the same parceling procedure was used to represent the constructs at the three

measurement points. Several fit indices were used to evaluate the models. The Satorra-Bentler Scaled chi-square statistic (*SBS*-χ^2; Satorra & Bentler, 1994) should be as small as possible. The Root Mean Square Error of Approximation (RMSEA) should be less than .06 and the Comparative Fit Index (CFI) should exceed .95 (Hu & Bentler, 1999).

Psychological Control and Depressive Feelings. A first set of models tested longitudinal relations between psychological control and adolescents' depressive feelings. Before testing the structural models, we conducted a Confirmatory Factor Analysis (CFA) to assess the longitudinal invariance of the measurement model. The baseline model without invariance constraints included six latent variables (i.e., psychological control at three measurement points and depressive feelings at three measurement points) and 18 observed indicators (i.e., parcels). The measurement errors of the same indicators at different measurement points were allowed to covary (Burkholder & Harlow, 2003). This model showed an adequate fit to the data (SBS-χ^2 (120) = 250.96; CFI = 0.98; RMSEA = .05). Next, a model was estimated in which the factor loadings were set equivalent across the three measurement points. Compared to the model with freely varying factor loadings, the latter model did not result in a significant loss in model fit (SBS-χ^2_{diff} (8) = 14.65; $p > .05$), indicating that the measurement model was equivalent across measurement waves. Moreover, all constrained factor loadings were highly significant ($p < .001$), ranging from .66 to .89 (mean lambda = .83). In sum, evidence was obtained for a reliable and longitudinally invariant measurement model, which was used in all of the subsequent models.

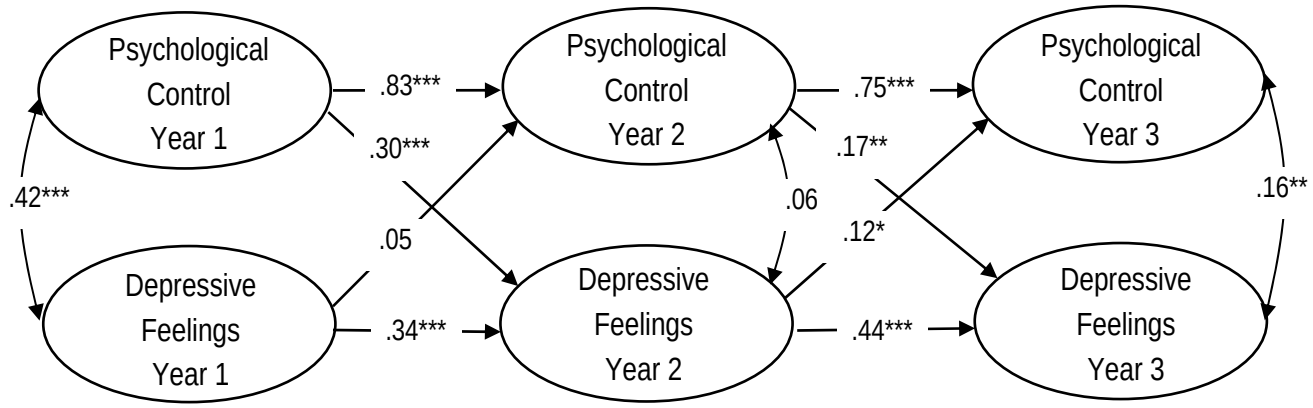
In a first step, we estimated a baseline autoregressive model, which specified only autoregressive effects and within-time correlations between psychological control and depressive feelings. As such, this model assumes that cross-lagged effects do not exist. This model (as well as all subsequent models) included gender as a control variable by allowing paths from gender to each of the six latent constructs. The baseline model yielded an acceptable fit (SBS-χ^2 (136) = 367.99; CFI = 0.97; RMSEA = .07).

In a second step, we estimated the two unidirectional cross-lagged models, that is, the psychological control main-effects model and the adolescent adjustment main-effects model. The

psychological control main-effects model (SBS-χ^2 (134) = 325.46; CFI = 0.98; RMSEA = .06) provided a better fit to the data compared to the baseline autoregressive model (SBS-χ^2_{diff} (2) = 42.76; p < .001). Similarly, the adolescent adjustment main-effect model (SBS-χ^2 (134) = 350.28; CFI = 0.98; RMSEA = .06) fitted the data better compared to the baseline model (SBS-χ^2_{diff} (2) = 17.82; p < .001).

In a third and final step, we estimated the reciprocal model which specifies both cross-lagged paths from psychological control to depressive feelings and vice versa. The reciprocal model (SBS-χ^2 (132) = 315.85; CFI = 0.98; RMSEA = .06) was found to provide a better fit to the data than either the psychological control main-effects model (SBS-χ^2_{diff} (2) = 9.31; p < .01) or the adolescent adjustment main-effects model (SBS-χ^2_{diff} (2) = 32.48; p < .001). This final model is depicted in Figure 7.2 and shows that all but one of the cross-lagged structural paths is significant. Whereas the two cross-lagged paths from psychological control to depressive feelings are significant (βs = .30 and .17, p < .01 respectively), only the path from depressive feelings at T2 to psychological control at T3 is significant (β = .12, p < .05; but not the path from depressive feelings at T1 to psychological control at T2).

Figure 7.2. *Structural model of the associations between perceived parental psychological control and adolescent depression. The coefficients are standardized path coefficients. For sake of clarity, the effects of gender are not shown. * p < .05. ** p < .01. *** p < .001.*



As suggested by Burkholder and Harlow (2003), we also tested whether the reciprocal associations between psychological control and depressive feelings would hold across a 2-year interval. This was done by including only the latent constructs of psychological control and depressive feelings at T1 and T3. It was found that whereas the cross-lagged path from psychological control to depressive feelings was still significant (β = .16; p < .05), the path from depressive feelings at T1 to psychological control at T3 was not significant (β = .04; p > .05).

Unique Predictive Value of Psychological Control. In an additional set of analyses it was examined whether psychological control is longitudinally predictive of depressive feelings after controlling for the effects of parental responsiveness and behavioral control. To this aim, in addition to the paths specified in Figure 7.2, cross-lagged paths were specified from responsiveness and behavioral control at Time 1 to depressive feelings at Time 2 and from responsiveness and behavioral control at Time 2 to depressive feelings at Time 3. The model also controlled for stability in responsiveness and behavioral control and for within-time associations with both psychological control and depressive feelings. As in the previous set of models, the factor loadings of the indicators on their respective latent factors were set invariant across the three measurement waves. Estimation of the model with responsiveness and behavioral control as additional predictors of adolescents' depressive feelings yielded an adequate fit (SBS-χ^2 (577) = 1018.62; CFI = 0.98; RMSEA = .04). Whereas the two cross-lagged paths from psychological control to depressive feelings remained significant (β = .29; p < .01 and β = .29; p < .01, respectively), none of the cross-lagged paths from responsiveness (β = .02; p > .05 and β = .11; p > .05, respectively) or behavioral control (β = .04; p > .05 and β = -.04; p > .05, respectively) to depressive feelings reached significance.

Brief Discussion

Evidence was obtained for reciprocal relationships between perceived parental psychological control and late adolescents' depressive feelings. First, psychological control was found to predict increases in college students' depressive feelings, both between Year 1 and Year 2 and between Year 2

and Year 3. As such, these findings support the idea that psychological control is an antecedent rather than a mere concomitant or consequence of adolescents' depressive feelings. Moreover, the effects of psychological control on depressive symptoms were found to remain significant after controlling for the effects of two other fundamental parenting dimensions, namely responsiveness and behavioral control. Second, college students' level of depressive feelings additionally predicted an increase in perceived parental psychological control, although this effect was only obtained between Year 2 and Year 3. The findings suggest that parents' use of psychological control is at least partially elicited by adolescents' own levels of adjustment. Confronted with high levels of depressed mood and behavior in their adolescent child, parents appear to behave increasingly intrusive towards their child.

STUDY 2

In Study 2, we aimed (a) to provide further evidence for a reciprocal model of relationships between perceived psychological control and adolescent depressive feelings using a 2-wave cross-lagged design and (b) to explore a number of issues which could not be addressed in Study 1. First, as Study 1 involved a sample of late adolescents, it is important to examine whether these findings generalize to younger adolescents. Study 2 therefore samples middle adolescents. Second, because the sample of Study 1 was predominantly female, we sampled a more balanced sample with regard to adolescent gender, which allowed us to adequately examining the moderating role of adolescent gender. Third, whereas Study 1 assessed the overall level of perceived psychological control used by both parents, Study 2 included separate assessesments of maternal and paternal of psychological control to study the impact of both adolescent and parent gender on the link between perceived psychological control and depressive feelings.

Method

Participants and Procedure

The data for this study were collected in 6 secondary schools in Flanders (Belgium). The first wave was conducted at the end of 2004. At Time 1, all participants were in 10th grade. All students

attended a regular high school (academic track). The initial sample consisted of 441 females (49%) and 463 males (51%). Mean age of the participants at the onset of the study was 14.94 years (*SD* = 0.50). The second measurement wave took place one year later. A total of 724 students (i.e., 80% of the initial sample) participated in the second wave. This longitudinal sample was the sample of interest and consisted of 368 females (51%) and 356 males (49%). A total of 94% percent of the participants lived in an intact family with parents being married and/or living together, 13% percent had parents being divorced and 3% had at least one deceased parent. Questionnaires were administered during a class period. Anonymity was guaranteed. Students had approximately 45 minutes to complete the survey.

A logistic regression analysis tested if sample attrition (dummy coded as drop-out = 0 and retention = 1) was predicted by age, gender (dummy coded as female = 0 and male = 1), and all study variables at Time 1. Age and gender were entered in Step 1. The three parenting dimensions and depression were entered in Step 2. Model χ^2 for Step 1 was significant ($\chi^2(2) = 7.40$, $p < .05$). Retention was significantly predicted by being younger of age (OR = .50, $p < .01$) but not by gender. Step 2 did not significantly add to the multivariate prediction of retention ($\chi^2(3) = 2.11$, $p > .05$). In short, as in Study 1, no substantial differences emerged between those who participated and those who dropped out.

Measures

Psychological Control. Participants completed a 6-item version of the same psychological control scale that was used in Study 1. One item was dropped from the original 7-item scale because it had a low loading on the underlying factor in previous research (Soenens, Vansteenkiste, et al., 2005). Cronbach's alphas for paternal and maternal ratings of psychological control were .82 and .79 and .82 and .79 at Time 1 and Time 2, respectively.

Depressive Feelings. Participants completed the 12-item version of the Center for Epidemiologic Studies Depression Scale (CESD; Radloff, 1977) which was also used in Study 1. Cronbach's alphas were .88 and .87 at Time 1 and Time 2, respectively.

Results

Preliminary Analyses and Descriptive Statistics

As shown in Table 7.2, all correlations among maternal psychological control, paternal psychological control and depressive feelings within and across time points were positive and significant. Further, mean-level differences between Time 1 and Time 2 were found on both maternal and paternal psychological control (F (1, 660) = 60.21, $p < .01$ and F (1, 660) = 47.57, $p < .01$, respectively). As shown in Table 7.2, adolescents perceived both their mothers and their fathers as becoming increasingly psychologically controlling from Grade 10 to Grade 11. Gender differences were found in two study variables. At Time 2, males reported higher levels of paternal and maternal psychological control (M = 2.34; SD = 0.73; M = 2.50; SD = 0.86) than did females (M = 2.20; SD = 0.83; M = 2.27; SD = 0.87), F (1, 659) = 5.78, $p < .05$ and F (1, 659) = 12.14, $p < .01$, respectively.

Table 7.2 *Means, Standard Deviations, and Correlations among All Study Variables (Study 2)*

Scale	2.	3.	4.	5.	6.	*M*	*SD*
1. Paternal psychological control T1	.44***	.26***	.57***	.27***	.25***	2.05	0.79
2. Maternal psychological control T1	--	.21***	.26***	.53***	.15***	2.16	0.84
3. Depressive feelings T1		--	.27***	.20***	.49***	1.14	0.52
4. Paternal psychological control T2			--	.39***	.31***	2.27	0.74
5. Maternal psychological control T2				--	.24***	2.38	0.78
6. Depressive feelings T2					--	1.12	0.52

Note: T1 = Time 1; T2 = Time 2. *** $p < .001$.

Primary Analyses

As in Study 1, we estimated SEM models with latent variables to examine the study hypotheses. Again, we used parceling to create three observed indicators for each construct in the estimated models (i.e., psychological control and depressive feelings). The same parceling procedure was used to represent the constructs at the two measurement points.

Analyses were performed separately for maternal and paternal ratings of psychological control. Furthermore, to examine the possible moderating role of adolescent gender, multi-group analyses were performed to compare results for male and female adolescents. Multi-group analysis compares a constrained model, that is, a model in which the structural coefficients are set equal across gender to an unconstrained model, that is, a model in which these coefficients are allowed to vary across gender. Models are compared 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.

Paternal Psychological Control and Depressive Feelings. A first set of models tested longitudinal associations between paternal psychological control and adolescents' depressive feelings. First, a CFA was performed to test whether the measurement model would be invariant across the two measurement waves and across adolescent gender. This measurement model contained four latent constructs (psychological control at T1 and T2 and depressive feelings at T1 and T2), each indicated by three parcels. Initially, we tested a measurement model without invariance constraints, that is, factor loadings were freely estimated across the two measurement occasions and across gender. The measurement errors of the same indicators at different measurement points were allowed to be correlated. Estimation of this measurement model yielded an acceptable fit (SBS-χ^2 (100) = 127.44; CFI = 0.99; RMSEA = .03). Constraining the factor loadings to be invariant across measurement waves or across adolescent gender did not significantly worsen model fit (SBS-χ^2_{diff} (8) = 16.61; $p > .05$ and SBS-χ^2_{diff} (4) = 2.16; $p > .05$, respectively), indicating that the measurement model was invariant across measurement waves and across gender. In the final constrained measurement model, all factor loadings were highly significant ($p < .001$) (mean lambda = .79).These findings suggest that the constructs of psychological control and depressive feelings had the same meaning across measurement occasions and for both male and female adolescents.

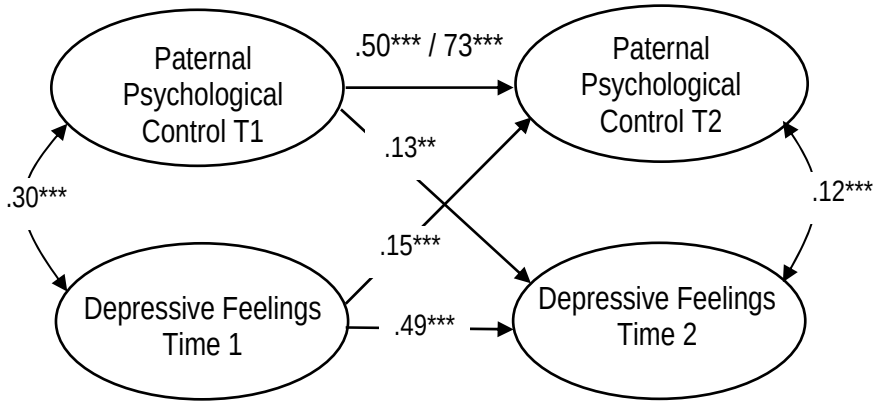
Next, we tested the four structural models of longitudinal associations between paternal psychological control and adolescent depressive feelings. Initially, these models were tested as

constrained models, that is, the structural paths were assumed to be equal for males and females. First, the baseline autoregressive model had an acceptable fit to the data (SBS-χ^2 (114) = 172.60; CFI = 0.99; RMSEA = .04). However, both the psychological control main-effects model (SBS-χ^2 (113) = 165.74; CFI = 0.99; RMSEA = .04) and the adolescent adjustment main-effect model (SBS-χ^2 (113) = 161.51; CFI = 0.99; RMSEA = .04) provided a better fit to the data in comparison to the baseline autoregressive model (SBS-χ^2_{diff} (1) = 6.86; $p < .01$ and SBS-χ^2_{diff} (1) = 11.09; $p < .01$, respectively). The reciprocal effects model (SBS-χ^2 (112) = 155.66; CFI = .99; RMSEA = .03), however, provided an even better fit in comparison to either the psychological control main-effects model (SBS-χ^2_{diff} (1) = 10.08; $p < .01$) or the adolescent adjustment main-effects model (SBS-χ^2_{diff} (1) = 5.85; $p < .01$), indicating that a reciprocal model provides the best representation of the longitudinal associations between paternal psychological control and adolescent depressive feelings. In this final model, both the effect of paternal psychological control T1 on depressive feelings T2 ($\beta = .13$; $p < .01$) and the effect of depressive feelings T2 on paternal psychological control ($\beta = .14$; $p < .01$) were significant, even when controlling for the stability in paternal psychological control ($\beta = .62$; $p < .01$) and depressive feelings ($\beta = .48$; $p < .01$) and for the within-time associations between both constructs at T1 ($r = .30$; $p < .01$) and T2 ($r = .12$; $p < .01$).

To test whether this best fitting model is invariant across adolescent gender, the constrained reciprocal effects model was compared to an unconstrained model in which the structural paths of the model (i.e., the two stability coefficients and the two the cross-lagged paths) were set free across adolescent gender. The model in which the stability coefficients were set free fitted the data somewhat better than the constrained model (SBS-χ^2_{diff} (2) = 7.81; $p < .01$). This was due to a significant difference in the stability coefficient of paternal psychological control which was more pronounced in females ($\beta = .73$; $p < .01$) than in males ($\beta = .49$; $p < .01$). However, a model in which the two central cross-lagged paths between psychological control and depressive feelings were allowed to vary by gender did not fit the data better than the constrained model (SBS-χ^2_{diff} (2) = 0.08; $p > .05$), indicating that paternal

psychological control and depressive feelings are reciprocally related in both male and female adolescents. The final model for paternal psychological control is depicted in Figure 7.3.

Figure 7.3 *Structural model of the associations between perceived paternal psychological control and adolescent depression. For those paths which were significantly moderated by gender, separate coefficients for males and females are given. The first coefficient is for males, the second coefficient is for females. * p < .05. ** p < .01. *** p < .001.*



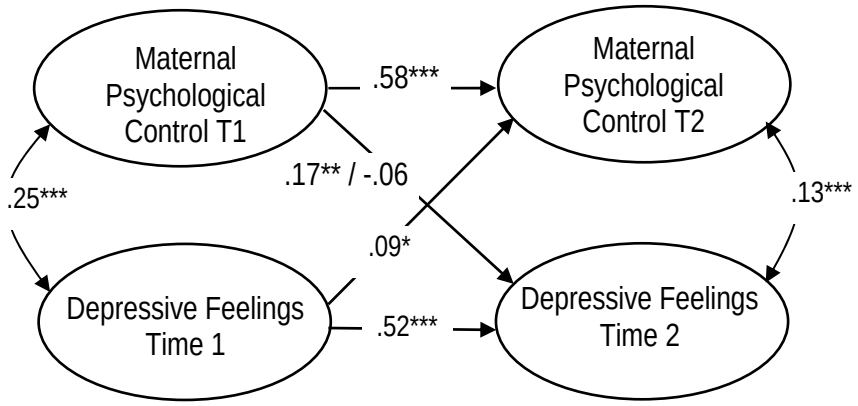
Maternal Psychological Control and Depressive Feelings. As for the maternal ratings, we performed a similar series of analyses as for the paternal ratings. Initial estimation of a model without invariance constraints yielded an acceptable fit (SBS-χ^2 (100) = 131.57; CFI = 0.99; RMSEA = .03). Constraining the factor loadings across measurement waves or across adolescent gender did not significantly worsen model fit (SBS-χ^2_{diff} (8) = 13.94; p > .05 and SBS-χ^2_{diff} (4) = 1.67; p > .05, respectively), indicating that the measurement model for maternal ratings was invariant across measurement waves and across gender. All factor loadings of this constrained model were highly significant (p < .001) (mean lambda = .80).

Next, the four hypothesized structural models were again tested. Initially, the structural parameters of the models were constrained across adolescent gender. The baseline autoregressive model had an acceptable fit to the data (SBS-χ^2 (114) = 150.63; CFI = 0.99; RMSEA = .03). Unexpectedly, the psychological control main-effects model (SBS-χ^2 (113) = 150.35; CFI = 0.99;

RMSEA = .03) did not provide a comparatively better fit to the data (SBS-χ^2_{diff} (1) = 0.28; $p > .05$). The adolescent adjustment main-effect model (SBS-χ^2 (113) = 146.20; CFI = 0.99; RMSEA = .03), however, did fit the data better compared to the baseline autoregressive model (SBS-χ^2_{diff} (1) = 4.43; $p < .05$). The reciprocal effects model (SBS-χ^2 (112) = 146.04; CFI = .99; RMSEA = .03), finally, provided a better fit to the data in comparison to the psychological control main effects model (SBS-χ^2_{diff} (1) = 4.31; $p < .05$) but not in comparison to the adolescent adjustment main effects model (SBS-χ^2_{diff} (1) = 0.16; $p < .05$). These findings suggest that the adolescent adjustment main effects model is the most parsimonious and best fitting model for the maternal data, at least when the structural paths are set equal for male and female adolescents. In this model, adolescent depression T1 positively predicted psychological control T2 ($\beta = .09$; $p < .05$) after controlling for the stability in maternal psychological control ($\beta = .58$; $p < .01$) and depressive feelings ($\beta = .54$; $p < .01$) as well as for the within-time associations between both constructs at T1 ($r = .26$; $p < .01$) and T2 ($r = .13$; $p < .01$).

A multi-group analysis was then conducted to examine gender differences in longitudinal associations between maternal psychological control and depressive feelings. This analysis was conducted on the reciprocal effects model because this model contains all possible structural paths between the constructs. Although we did not find a significant difference between both models regarding the stability coefficients of maternal psychological control and depression (SBS-χ^2_{diff} (2) = 3.11; $p > .05$), a significant difference did emerge at the level of the cross-lagged paths between both constructs (SBS-χ^2_{diff} (2) = 6.46; $p < .05$). Follow-up analyses showed that this difference was uniquely due to the path from maternal psychological control T1 to adolescent depression T2, which was significant for males ($\beta = .17$; $p < .01$) but not for females ($\beta = -.06$; $p > .05$). In contrast, the significant path from adolescent depression at T1 to maternal psychological control at T2 was not moderated by gender. The final model for maternal psychological control is depicted in Figure 7.4.

Figure 7.4 *Structural model of the associations between perceived maternal psychological control and adolescent depression. For those paths which were significantly moderated by gender, separate coefficients for males and females are given. The first coefficient is for males, the second coefficient is for females. * p < .05. ** p < .01. *** p < .001.*



Brief Discussion

The pattern of findings in Study 2 was consistent with the findings of Study 1 in that the reciprocal effects model generally provided the best fit to the data. However, a notable difference emerged between the models for paternal and maternal parenting. Strong evidence was obtained for a reciprocal effects model in associations between paternal psychological control and adolescent depressive feelings. This model was found to fit the data equally well for male and female adolescents. In contrast, the reciprocal effects model did not provide the best fit to the data for maternal ratings of psychological control and depression. Instead, the adolescent adjustment effects model provided the best fit. A small but significant positive effect of adolescent depression on maternal psychological control was found. However, multi-group analyses nevertheless indicated that the association between maternal psychological control and depressive feelings was qualified by adolescent gender. It was found that, whereas maternal psychological control predicted increases in boys' depressive feelings, it did not predict increases in females' depressive feelings. Overall, Study 2 evidences main effects of perceived psychological control on future levels of adolescent depressive feelings in all four parent-child dyads,

except for the mother-daughter dyad. Moreover, main effects of adolescent depression on both paternal and maternal psychological control were evident irrespective of parents' and adolescents' gender.

General Discussion

The general aim of the present research was to explicitly test and compare three conceptual models on the relations between perceived parental psychological control and adolescent depressive feelings. By simultaneously controlling for prior levels of each construct (i.e., stability effects) and for within-time associations between psychological control and depression at each consecutive wave, the present studies provide, to our knowledge, one of the most rigorous tests of the longitudinal associations between psychological control and depression to date.

Across the 6 cross-lagged paths between psychological control and depression (i.e., 2 in Study 1 and 4 in Study 2) examined in this article, a significant positive effect between psychological control and adolescent depression emerged in 5 cases (with one notable exception which will be commented upon further on). Thse results suggest that perceived psychological control does not merely correlate with adolescents' depressive feelings but instead leads to increased levels of depressive feelings over time. Study 1 additionally demonstrated that these effects remain significant after controlling for the effects of two other fundamental parenting dimensions (i.e., responsiveness and behavioral control), a finding which replicates past demonstrations of the specialized effects of psychological control (Barber & Harmon, 2002) at the longitudinal level. Together, the findings suggest that parents who are perceived to use intrusive socialization techniques such as love withdrawal, shame-induction and guilt-instilling, are likely to increase adolescents' feelings of depression.

Moreover, the consistent evidence for parent effects in this study is fully in line with the claim made by Barber and Harmon (2002) that parental psychological control is not only a function of the reaction to children's maladjustment, but is also rooted in parents' own functioning and developmental history. This claim was also underscored by two recent studies demonstrating that parental characteristics such as perfectionism and separation anxiety are strong predictors of parents' use of

psychological control (Soenens, Elliot, et al., 2005; Soenens et al., in press). To the extent that psychological control arises from relatively stable parental characteristics (which most likely originate themselves from parents' own developmental history), it is logical that psychological control predicts increases in depressive feelings. Note that the high stability coefficients of psychological control obtained in the present study provide further evidence for this line of reasoning.

Future research may explore the mediating mechanisms of these longitudinal effects of psychological control on adolescent well-being. In a recent cross-sectional study, Soenens, Vansteenkiste, et al. (2005) demonstrated that the association between psychological control and depression was accounted for by adolescents' maladaptive (but not their adaptive) perfectionism. It appears that children of psychologically controlling parents develop highly self-critical and conditionally approving self-representations which, in turn, put them at risk for internalizing problems. Other recent cross-sectional studies (Vansteenkiste, Zhou et al., 2005) show that psychologically controlling parenting results in a more controlled or pressured and less volitional or autonomous functioning, whicn in turn, predicts lower well-being and achievement. However, longitudinal research is needed to actually establish whether psychological control predicts increases in these mediators (i.e., maladaptive perfectionism and autonomous functioning) and whether changes in these mediators serve to explain the longitudinal associations between psychological control and adolescents' depressive feelings.

Furthermore, the current findings also suggest that adolescents' own adjustment explains at least part of the variance in parents' use of psychological control. Although only one of the two possible adolescent adjustment effects in Study 1 was significant, Study 2 provided consistent evidence for an effect of adolescent depression on parental psychological control, irrespective of parental and adolescent gender. That is, across the two studies, depressive children elicited more psychologically controlling parenting in 5 out of the 6 cases. Together, the findings strongly suggest that adolescents who are vulnerable to depressive feelings perceive their parents to become increasingly intrusive.

Thus, adolescent depression can be considered as an antecedent of psychological control, in addition to the personality features that have been identified in past research. The identification of adolescent effects on parenting behavior is one of the most intriguing findings of this study which merits further investigation. Future research may for instance examine the underlying processes explaining this linkage. Parents' affective reactions to the observation that their child is having emotional problems may at least partly explain their use of psychological control (Dix, 1991). Parents of a depressed adolescent may experience disappointment, frustration, worry, or even anxiety. As parents try to overcome their own negative emotions, they may be more likely to resort to the use of psychological control because they become more focused on their personal needs rather than their children's and because the use of pressuring and intrusive language is, in their view, the most important mean to revitalize their children. However, it is clear that such parenting may cause more harm than do good and may even further strengthen a negative vicious cycle of intrusive and controlling parenting and adolescent maladjustment.

Another important aim for future research may be to determine the relative contribution of parental characteristics (such as perfectionism and separation-anxiety) and child characteristics (such as vulnerability to depression) in the prediction of parental psychological control. Moreover, future research may examine how child and parent characteristics interact to predict psychological control. For instance, it could be hypothesized that although perfectionist parents are generally more likely to use psychological control than non-perfectionist parents, they will even be more likely to engage in intrusive parenting when their child shows symptoms of depression. Perfectionist parents are known to set high standards for their children and to engage in harsh evaluation of their children's behavior (Soenens, Elliot, et al., 2005). Perfectionist parents may therefore more easily consider depressive feelings and withdrawn behavior in their child as a signal of failure and worthlessness, which may elicit even stronger attempts to force the child live up to parental expectations. Given their vulnerable status, depressive children will experience such parental attempts as highly intrusive which may, in turn, further exacerbate their negative emotional state (Pettit & Laird, 2002). Such a model positing interactions between child

and parent characteristics (in addition to separate main-effects) would be consistent with transactional theories of socialization (e.g., Magnusson, 1988). These theories assume that neither parents nor children are uniquely responsible for the interaction style that develops, but that the combination of child and parent characteristics determines the interaction and subsequent adjustment outcomes.

It is notable that the reciprocal effects between perceived psychological control and adolescent depressive feelings were generally evident in both middle and late adolescents. Although a direct comparison between both samples was not possible due to design-related differences, the reciprocal effects model was generally the best supported model in both studies, suggesting (a) that psychological control creates a vulnerability to depressive feelings irrespective of adolescents' age, and (b) that parents react in a similar fashion to adolescent depression (i.e., by increasing their use of psychological control) across age. Together, such findings are in line with perspectives assuming that intrusive and autonomy-inhibiting socialization poses a threat to children's optimal functioning at any given age because it frustrates a basic need for autonomy (see e.g., Barber, Stolz, et al., 2005; Deci & Ryan, 2000; Grolnick, 2003). It is important to note, however, that the present research represents one of the first attempts to examine age as a moderator of the longitudinal associations between psychological control and adolescent adjustment. Moreover, given that adolescent adjustment effects were somewhat less consistently evident in Study 1 (late adolescents) compared to Study 2 (middle adolescents), future studies could add to our findings by more directly comparing the strength of longitudinal associations between psychological control and depression across age groups, which might also include early adolescence and childhood (see e.g. Morris et al., 2002 for initial steps in this direction). Such research could provide a more stringent test of the idea that psychological control "speaks quite basically to human development" (Barber et al., 2005, p. 114).

Some evidence was obtained for a moderating effect of gender on longitudinal associations between psychological control and depressive feelings in Study 2. Specifically, it was found that psychological control prospectively predicted depression in three out of four parent-child dyads (father-

son, father-daughter, and mother-son) but not in the mother-daughter dyad. The reverse effect (from depression to maternal psychological control) was not moderated by gender, however. Because the evidence for the moderating effect of gender was in general modest, the importance of the one single finding that mothers' psychological control does not predict daughters' depressive symptoms should not be overstated. Additional research is needed to replicate this finding. Still, it is a rather intriguing finding, as it has been argued by some that it is precisely in the mother-daughter dyad that one may anticipate the strongest associations between psychological control and maladjustment. Rogers et al. (2003), for instance, argued that the mother-daughter dyad is characterized by high levels of intense emotional exchanges, so that maternal psychological control might have the most pervasive effect among girls. No evidence for this hypothesis was found in their study and the present study even suggests that psychological control is least predictive of maladjustment in the mother-daughter dyad.

Limitations

In spite of the strenghts of the present research, some important limitations need to be mentioned. First, both psychological control and depressive feelings were assessed through adolescent self-reports, which may increase the likelihood of shared method variance. We attempted, however, to minimize the effect of shared method variance by using SEM with latent variables. Moreover, in previous work on psychological control, it has been demonstrated that using both parent and adolescent reports as indicators of the psychological control construct yields results which are highly similar to the use of adolescent self-reports only (e.g., Soenens, Elliot, et al., 2005). In addition, there are good theoretical reasons to focus on adolescents' own representations of their parents' use of psychological control. Most likely, it is the degree to which adolescents subjectively experience their parents as guilt-inducing and intrusive which will ultimately determine their own development. Despite these arguments, future longitudinal research might do well in using multiple informants to assess the construct of psychological control.

Second, the present study examined the longitudinal effect of psychological control on depressive symptoms only. Depression was chosen as the dependent variable in this study because it has been argued both theoretically and from the empirical literature that psychological control is linked particularly to internalizing problems and depression (Barber & Harmon, 2002). Nevertheless, it would be worthwhile to examine longitudinal associations between psychological control and a broader range of adjustment variables because recent cross-sectional studies demonstrate that psychological control is related to adverse developmental outcomes in many areas of development, such as academic achievement (Bean et al., 2003; Vansteenkiste et al., 2005), externalizing problems (Barber, 1996; Conger et al., 1997) and social competence (Nelson & Crick, 2002). Such research would help to clarify whether the transactional dynamics evidenced in this article extend to adolescents' general psychosocial and behavioral functioning.

Conclusion

The findings of this study show that adolescent perceptions of psychological control and depression form a mutually reinforcing pattern of interactions: Psychological control predicts increases in depressive feelings over time, which in turn elicit more psychologically controlling parenting. Hence, practitioners would do well to alert parents to this sequence of events and to teach parents how to break this negative cycle, that is, how they can avoid the use of psychologically controlling practices such as shaming, guilt-induction, and conditional approval.

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