The Role of Parenting Styles in Children’s Problem Behavior

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This study investigated the combination of mothers’ and fathers’ parenting styles (affection, behavioral control, and psychological control) that would be most influential in predicting their children’s internal and external problem behaviors. A total of 196 children (aged 5–6 years) were followed up six times from kindergarten to the second grade to measure their problem behaviors. Mothers and fathers filled in a questionnaire measuring their parenting styles once every year. The results showed that a high level of psychological control exercised by mothers combined with high affection predicted increases in the levels of both internal and external problem behaviors among children. Behavioral control exercised by mothers decreased children’s external problem behavior but only when combined with a low level of psychological control.

Problem behavior in children can be manifested in either externalizing or internalizing behavior. Externalizing behavior consists of disinhibited behaviors and other expressions of undersocialization (Kovacs & Devlin, 1998). In this type of problem behavior, negative emotions are directed against others, manifested as anger, aggression, and frustration (Roeser, Eccles, & Strobel, 1998). Children with externalizing problem behaviors have underdeveloped self-regulation skills, leading to undercontrolled behaviors (Cole, Zahn-Waxler, Fox, Usher, & Welsh, 1996). Internalizing behavior, by contrast, includes withdrawal, fearfulness, inhibition, and anxiety (Eisenberg et al., 2001; Roeser et al., 1998). In this type of problem behavior negative emotions are directed at oneself rather than others (Roeser et al., 1998). Internalizing problem behavior originates from overly strong self-regulation (Block & Block, 1980; Cole et al., 1996). Both internal and external problem behaviors have been shown to be rather stable from the early school years onwards (see, e.g., Denham et al., 2000; Kovacs & Devlin, 1998). Furthermore, both these behavior types lead to problems in various life domains, including school, peer relationships, and mental health (Hinshaw, 1992; Roeser et al., 1998).

Much research has been published on the role of the family in children’s and adolescents’ problem behaviors. Of the many parenting variables, parenting styles have been among the most frequently investigated (Steinberg, 2001; Wood, McLeod, Sigman, Hwang, & Chu, 2003). In the dimensional approach to parenting styles the focus has been on the impacts of three dimensions (Hart et al., 2003; Schaefer, 1965): affection (e.g., responsiveness, involvement, supportiveness) refers to parents’ connectedness to the
child and their interactional warmth (Galambos et al., 2003; Wood et al., 2003); behavioral control (e.g., maturity demands, monitoring, limit setting) consists of the regulation of the child's behavior through firm and consistent discipline (Barber, 1996; Galambos et al., 2003); and psychological control (e.g., love withdrawal, guilt induction) refers to parents' control of the child's emotions and behavior through psychological means (Barber, 1996).

The three parenting style dimensions have each been shown to be associated with child and adolescent problem behaviors. For example, a high level of behavioral control is related to low levels of externalizing problems, such as antisocial behavior and conduct disorders, both among adolescents (Barber & Olsen, 1997; Eccles, Early, Frasier, Belansky, & McCarthy, 1997; Pettit, Laird, Dodge, Bates, & Criss, 2001; Stice & Barrera, 1995) and among elementary school children (Barber, 1996; Lewis, 1981). These results have been ascribed to the fact that behavioral control fosters self-regulation and compliance (Hart et al., 2003; Lewis, 1981). Similarly, it has been suggested that parental affection facilitates children's adjustment (Gray & Steinberg, 1999; Siequeland et al., 1996). However, the findings on parental affection are contradictory. For example, Miller, Cowan, Cowan, Hetherington, and Clingempeel (1993) and Dodge, Pettit, and Bates (1994) found that maternal warmth was negatively related to externalizing problems among preschoolers, whereas Galambos et al. (2003) showed that parental support was not related to adolescents' problem behaviors (see also Stice & Barrera, 1995). Psychological control, in turn, is associated with internalizing problems, such as depressed mood and anxiety, among both adolescents (Barber et al., 1994; Conger, Conger, & Scaramella, 1997; Pettit et al., 2001; Wolfradt, Hempel, & Miles, 2003) and children (Siequeland et al., 1996; Barber & Harmon, 2002; Olsen et al., 2002).

Some studies have also found an association between a high level of psychological control and externalizing problem behaviors (for a review, see Barber & Harmon, 2002; Yang et al., 2004).

However, many researchers have suggested that it is certain combinations of parenting style variables rather than their unique impacts that contribute to children's and adolescent's adjustment (Baumrind, 1989, 1991; Darling & Steinberg, 1993; Steinberg, 2001). Part of this argumentation has its origins in the traditional parenting style paradigm that described parenting as a combination of various levels of behavioral control and affection (Maccoby & Martin, 1983). For example, authoritative parenting, characterized by a high level of both parental affection and behavioral control, was shown to be positively associated with adjustment in children of various ages (Baumrind, 1966, 1989; Hart et al., 2003; Maccoby & Martin, 1983). By contrast, authoritarian parenting, characterized as high behavioral control (or, in some conceptualizations, harsh and punitive control; for a review, see Hart et al., 2003) but low affection, and permissive parenting, typified by low behavioral control, are related to various kinds of maladjustment, such as withdrawn behavior, low peer affiliation, and conduct disorders (Baumrind, 1989; Heller, Baker, Henker, & Hinshaw, 1996; Jewell & Stark, 2003; Wolfradt et al., 2003).

Previous research on the role of parenting styles, and the importance of their combinations in particular, has at least two limitations. First, in the majority of studies, the role of psychological control has not been examined, or it has not been operationalized as a separate dimension from behavioral control and affection (Barber, 1996). Second, only a few systematic efforts have been made to differentiate between the main effects of the three parenting style dimensions and their interactions. As far as we know, only three studies have examined the extent to which the impacts of the three parenting style dimensions are moderated by the two others. In one of these studies, Galambos et al. (2003) found that parents' high level of psychological control combined with a high level of behavioral control was related to externalizing problems (substance use, antisocial behavior, and misconduct at school) among adolescents. They suggested that behavioral control may not be uniformly effective when combined with less desirable parenting. In another study, Pettit and Laird (2002) found that a high level of psychological control combined with a low level of parental involvement was associated with delinquent behavior among adolescents, whereas a high level of psychological control combined with a high level of parental involvement was not. Similarly, Gray and Steinberg (1999) also found that, among adolescents, parental affection prevented internal distress more when combined with a high level of psychological control than when it was combined with a high level of autonomy granting. They suggested that a high level of affection compensated for the negative effects of psychological control. Gray and Steinberg (1999) found further that affection promoted adolescents' psychosocial development, particularly when combined with a high level of behavioral control (see also Forehand & Nousiainen, 1993).

Earlier studies on the extent to which combinations of the three parenting style variables predict problem behaviors are limited in two ways. First,
most of the research in the field has examined adolescents, and hence little is known about how the three parenting style dimensions interact in the prediction of children’s problem behavior. Although in one recent study Gadeyne, Ghesquière, and Onghena (2004) examined the prospective relationships between parenting styles and children’s problem behaviors from kindergarten to the second grade, their study was limited to two parenting style dimensions (i.e., affection and restrictive control). Moreover, the study did not make a systematic effort to differentiate between the main effects of parenting dimensions and their interactions. The second limitation is that, in most of the previous studies on the interaction between parenting dimensions, maternal and paternal parenting has been aggregated to measure overall parenting in the family (Galambos et al., 2003; Gray & Steinberg, 1999). Thus it has not been possible to examine whether some of the parenting patterns found to influence problem behaviors are different for mothers and fathers (for an exception, see Forehand & Nousiainen, 1993). This study investigated the impacts of both mothers’ and fathers’ affection, behavioral control, and psychological control on children’s internal and external problem behaviors, and whether these impacts are moderated by different for mothers and fathers (for an exception, see Forehand & Nousiainen, 1993). This study investigated the impacts of both mothers’ and fathers’ affection, behavioral control, and psychological control on children’s internal and external problem behaviors, and whether these impacts are moderated by the two other parenting style dimensions.

In most research on parenting, the key assumption has been that parenting styles affect children’s adjustment (for a review, see Maccoby, 1992). However, it has been suggested that children and their adjustment may also influence their parents’ child-rearing patterns (Bell, 1968; Harris, 1995; Hart et al., 2003). In the present study, we used cross-lagged longitudinal data to examine the possibility that children’s adjustment also affects their mothers’ and fathers’ parenting.

The present study sought to answer the following research questions. First, do mothers’ and fathers’ parenting styles, that is, affection, behavioral control, and psychological control, predict their children’s subsequent internal and external problem behaviors during the transition from kindergarten to primary school? The following hypotheses were posited: (1a) lack of parental behavioral control would increase children’s externalizing problem behaviors (Barber, 1996; Barber & Olsen, 1997; Galambos et al., 2003); (1b) a high level of psychological control exercised by parents would increase children’s internalizing problem behaviors (Barber & Harmon, 2002) and externalizing problem behaviors (Olsen et al., 2002; Yang et al., 2004); (1c) a high level of parental affection would decrease internal and external child problem behaviors (Dodge et al., 1994; Miller et al., 1993). The second question was to what extent is the impact of a particular parenting style variable on children’s internal and external problem behaviors moderated by the other two parenting style variables? In other words, is it the combination of parenting style variables rather than their unique impacts that is influential? The following hypotheses were posited: (2a) a high level of affection combined with a high level of behavioral control would decrease internal and external problem behaviors to a greater extent than either a high level of affection with low behavioral control or a low level of affection with high behavioral control (Baumrind, 1989; Forehand & Nousiainen, 1993; Gray & Steinberg, 1999); (2b) a high level of behavioral control combined with a low level of psychological control would decrease a child’s externalizing problem behaviors; however, if combined with a high level of psychological control, the impact would be reversed (Galambos et al., 2003); (2c) a high level of psychological control combined with high affection would have a less negative impact on a child’s internal and external problem behavior than a high level of psychological control combined with a low level of affection (Gray & Steinberg, 1999; Pettit & Laird, 2002). The third question addressed was to what extent do children’s internal and external problem behaviors predict the kind of parenting their mothers and fathers display?

Method

Participants and Procedure

Children. The study reported here is part of the Jyväskylä Entrance into Primary School (JEPS) study (Nurmi & Aunola, 1999). JEPS is an ongoing research project that tracks children’s academic and motivational development during their transition from kindergarten to primary school, and the role that the family and classroom contexts play in this development. The sample selected for the study (N = 210) consisted of all the 5- to 6-year-old children (age at baseline M = 75 months, SD = 3.30 months) born in 1993 in two medium-sized districts in central Finland. Consistent with Finnish school population in general, the sample was homogeneous in terms of race and cultural background (all children were Caucasian and spoke Finnish as their native language). Parental permission to gather data from their children was obtained in August 1999. Permission was given by the parents of 207 children. A representation of the measurement points and variables of the study is shown in Table 1.
The children participating in the study were examined six times (Time points 1, 3, 4, 6, 7, and 9; see Table 1): twice during their kindergarten year, that is, in October 1999 (N = 207) and in April 2000 (N = 199); twice during their first primary school year, that is, in October 2000 (N = 196) and in April 2001 (N = 196); and twice during their second primary school year, that is, in October 2001 (N = 197) and in March 2002 (N = 196). Data from all six measurement points were gathered from 196 (104 boys, 92 girls) children. Children’s internalizing and externalizing problem behaviors were assessed by means of structured interviews performed by trained investigators. The interviews took place in a suitable room on the kindergarten or primary school premises. Children who were absent from school on the day of testing (e.g., due to illness) were examined as soon as they were back at school again. The attrition of 11 children was due to the fact that the families of these children moved to other districts and were thus lost to the study.

Background information was gathered from the parents of 191 children. A total of 83.2% of the children were from families with two parents, 9.9% of the families consisted of the mother or the father living with her/or his new spouse and their children, and 6.8% of the children were living with their single mother. The number of children per family ranged from 1 to 11 (M = 2.80, SD = 1.50). Preliminary analyses showed that children living with two biological parents showed a lower level of externalizing problem behavior at Time 4 and Time 9 than those living with their remarried parents, and a lower level of external problem behavior at Time 9 than those living with their single mother.

Table 1
Means (M) and Standard Deviations (SD) for the Observed Internal and External Problem Behavior Variables and Mothers’ and Fathers’ Parenting Styles at Times 2, 5, and 8

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<td>External problem behavior</td>
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whose fathers did not return any of the three questionnaires (n = 25) showed a higher level of internal problem behavior at Times 4, 6, and 9, and a higher level of external problem behavior at Times 6 and 9, than those whose fathers returned at least one of the questionnaires (n = 182).

**Measurements**

**Problem behavior.** Problem behavior was measured by means of a questionnaire (Aunola & Nurmi, 1999a) based on the Johns Hopkins Depression Scale (Joshi, Cappozoli, & Coyle, 1989) and the Strengths and Difficulties Questionnaire (Goodman, Meltzer, & Bailey, 1998). The questionnaire contained 14 statements (9 for internal problem behavior and 5 for external problem behavior), which were read to the children in the structured individual interview situation. Children were asked to respond to each statement in a dichotomized manner, either “not true” or “true.” On the basis of confirmatory factor analysis for categorical items, two final summary scores were created. The summary score for internalizing problem behavior consisted of 5 statements focusing on assessment of children’s depressive symptoms (“I am worried about many things,” “I often feel like crying,” “I often have stomach ache,” “I often feel tired to do anything,” “I often get annoyed”). The summary score for externalizing problem behavior consisted of four of the statements mainly assessing antisocial behavior and problematic relations with peers (“I often end up having trouble with the other kids,” “Other children annoy me,” “I often get mad and lose my temper,” “I often get into fights”).

The test–retest reliability was .82 for internalizing problem behavior and .78 for externalizing problem behavior. Internal consistency assessed with the Kuder–Richardson 20 (K-R 20) coefficient at successive measurement points was .69, .68, .64, .62, .57, .64 for internalizing problem behavior and .68, .64, .66, .66, .64, .78 for externalizing problem behavior. Split-half reliability (Unequal-length Spearman–Brown) at the same points was .72, .79, .68, .64, .63, .69 for internalizing problem behavior and .66, .70, .68, .71, .72, .80 for externalizing problem behavior. The low internal consistency of the scales at some of the measurement points was partly due to the skewed distributions of the individual items.

To test the construct validity of the problem behavior measurements (i.e., whether the factor structure would be invariant in different measurement points), confirmatory factor analyses were conducted across different time points using the Mplus statistical package (version 3; L. K. Muthén & Muthén, 1998–2004). Separate models were performed for the internalizing (five items) and externalizing (four items) problem behavior constructs. Because the individual items were not normally distributed, the parameters of the models were estimated using a nonnormality robust estimator (MLR; L. K. Muthén & Muthén, 1998–2004). Invariance of factor structure (i.e., factor loadings) was tested by comparing an unconstrained model with a constrained model (i.e., factor loadings were constrained to be equivalent across time). A test of chi-square difference between these two models using the Satorra–Bentler scaled chi-square showed that factor loadings were invariant across six measurement points for both internalizing ($\chi^2_{\text{diff}}(20, N = 207) = 13.99, p \ ns$) and externalizing ($\chi^2_{\text{diff}}(15, N = 207) = 10.08, p \ ns$) problem behaviors.

In an earlier data set, the correlation between the scale for internalizing problem behavior and teacher-rated task avoidance among kindergartened- aged children was .68 (p < .01; Aunola & Nurmi, 1999b). In the present sample, there was a statistically significant correlation between the scale for external problem behavior and received negative peer nominations (from $r = .22, p < .01$ to $r = .25, p < .01$). Both scales in the present sample also negatively predicted children’s reading skill development (Halonen, Aunola, Ahonen, & Nurmi, in press).

In the present sample, the scale for external problem behavior showed statistically significant correlations with mothers’ rating of external problem behaviors ranging from .18 (p < .05) to .26 (p < .01). No correlations were found between child- and mother-reported internalizing problem behaviors. Similarly, in previous research, child and parent evaluations of children’s depression have also shown either no or only low correlations (Engel, Rodrigue, & Geffken, 1994; Ialongo, Edelsohn, & Kellam, 2001; Kazdin, 1990; Kemper, Gerhardtstein, Repper, & Kistner, 2003; Leftkowitz & Tesiny, 1984; Weissman, Orvaschel, & Padian, 1980). It has also been suggested that, because the majority of symptoms of depression are private and internal (Kazdin, 1990; Sacco & Graves, 1985) and are not apparent through interactions, self-reports are particularly important in assessing internal problem behaviors (Angold, 1988; Ialongo et al., 2001).

**Parenting styles.** Mothers’ and fathers’ parenting styles were measured using a Finnish version of the Block’s Child Rearing Practices Report (CRPR; Roberts, Block, & Block, 1984), which includes items tapping child-rearing attitudes, values, and behaviors. On the basis of the factor analyses (for a
more detailed description see Aunola & Nurmi, 2004), summary scores for the three parenting style dimensions were calculated separately for each measurement point. Affection, including items reflecting a positive relationship with the child (10 items; e.g., “I often tell my child that I appreciate what he/she tries out or achieves,” “I often show my child that I love him/her”). Behavioral control, including items showing that misbehavior would have clear consequences and parental willingness to confront a child who disobeys (Baumrind, 1991; Maccoby & Martin, 1983) (6 items; e.g., “My child should learn that we have rules in our family,” “When I am angry with my child, I let him/her know about it,” “If my child misbehaves I usually rebuke him/her”). The operationalization of behavioral control has varied from one study to another. For example, in some studies, behavioral control has been operationalized as monitoring (parental knowledge; Kerr & Stattin, 2000) or supervision (Gray & Steinberg, 1999; Pettit et al., 2001), whereas in some other studies it has been operationalized as demandingness, limit setting, or maturity demands (either with or without reasoning about rules and the consequences of misbehavior; Baumrind, 1989, 1991; Maccoby & Martin, 1983; Hart et al., 2003). Moreover, in some studies, the term control has been used to refer to restrictive, harsh, or punitive control (e.g., Gadeyne et al., 2004; Pettit, Bates, & Dodge, 1997). In the present study, the behavioral control scale was characterized by parents’ limit setting and maturity demands on the child (Baumrind, 1991) rather than by harsh control or restrictiveness. The scale used in the present study assessed directive rather than reasoning-oriented behavioral control. The original questionnaire included items which also measured monitoring and parental knowledge of their children’s whereabouts. However, because in the present sample these items showed only slight variance, they were excluded from the analyses. Psychological control (Control by guilt), including items that reflected parental attitudes appealing to guilt and expressing disappointment (Barber, 1996; Schaefer, 1965) (4 items; e.g., “I believe a child should be aware of how much I have done for him/her;” “I let my child see how disappointed and ashamed I am if he/she misbehaves”).

The respective Cronbach’s alpha reliabilities for the three parenting style dimensions for mothers were .89, .82, and .88. The respective Cronbach’s alpha reliabilities for fathers were .82, .70, and .74 at Time 2; .84, .69, and .72 at Time 5; and .80, .70, and .75 at Time 8. Test–retest reliabilities for the three parenting style dimensions for mothers were .89, .82, and .88. The test–retest reliabilities for fathers were .89, .85, and .85. Similar reliabilities have been reported in earlier studies on parenting styles (see, e.g., Chen, Liu, & Li, 2000; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Gadeyne et al., 2004; Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Pettit et al., 1997; Gray & Steinberg, 1999).

To further validate the factor structure of parenting styles, factor analyses for the scale were performed in another sample (consisting of mothers and fathers of 280 adolescents). The results showed an identical three-factor structure among both mothers and fathers (Aunola, Nurmi, Salmela-Aro, Niemivirta, & Vuori, 2005). The Cronbach’s alpha reliabilities for the three parenting style dimensions in this other data set were .88 (mothers) and .86 (fathers) for affection, .72 and .72 for behavioral control, and .79 and .80 for psychological control.

In the present sample, the correlation between affection and psychological control for mothers ranged between –.03 and –.11 (p ns) across the three measurements. Behavioral control correlated positively and statistically significantly with both affection (range from .17 to .18, p < .05) and psychological control (range from .28 to .39, p < .01). For fathers, behavioral control correlated positively and statistically significantly with psychological control (range from .18, p < .05 – .29, p < .01). Affection did not significantly correlate with either behavioral (r = .01 – .06, p ns) or psychological (r = –.13 to –.04, p ns) control at any of the measurement points.

Results

The research questions were examined using latent growth curve modeling (LGM) (Duncan, Duncan, Strycker, Li, & Alpert, 1999). This methodology makes it possible to investigate intraindividual changes in a particular variable of interest over time (i.e., growth trajectories) as well as interindividual differences in such changes (B. O. Muthén & Khoo, 1998) by differentiating the initial level component and different growth components (e.g., linear growth and quadratic growth). Moreover, the LGM methodology enables examination of the associations between these growth components across several variables, as well as their interactions. The analyses were performed using the Mplus statistical package (version 3; L. K. Muthén & Muthén, 1998–2004). The parameters of the models were estimated using the missing data method with an MLR estimator (L. K. Muthén & Muthén, 1998–
2004). This method allowed all the available data to be used in the estimation of the parameters of the models. Goodness of fit was evaluated using four indicators: \( \chi^2 / df \); Bentler's (1990) comparative fit index (CFI); the Tucker–Lewis index (TLI); and the standardized root mean square residual (SRMR). The means and standard deviations for the observed variables are given in Table 1.

LGMs for Individual Variables

As a first step, unconditional growth curve models (i.e., models without any predictors) were constructed separately for each variable in order to investigate the extent of individual variation in the initial level and the linear and quadratic growth components of each variable. In the case of children's internal and external problem behaviors, models were constructed across six measurement points. The model construction was started in both cases by testing a model which included three growth components: initial status, linear trend, and quadratic trend. However, because the quadratic term showed no statistically significant variance in these models, its variance was fixed at zero in the final models. The results for the final models are shown in Table 2.

The results for children's internal problem behavior (\( \chi^2(15, \: N = 207) = 32.29; \: CFI = 0.94; \: TLI = 0.94; \: SRMR = 0.06 \)) indicated that, at the mean level, children's internalizing problem behaviors showed a decreasing trend, leveling out over time (see Figure 1). Moreover, the results showed that the variance both of the level and of the linear trend were statistically significant, indicating that there were significant individual differences both in the initial status and in the developmental trend of internal problem behaviors. The correlation between the level and linear trend of internal problem behavior was negative and statistically significant (standardized estimate = \(-.54, \: p < .05\)), suggesting that the higher the initial level of internal problem behavior, the more the level of it decreased during the study period.

Models for mothers' and fathers' parenting styles, that is, affection, behavioral control, and psychological control, were constructed across three measurement points. Consequently, these models contained only two growth components: initial status and linear trend. These models for parenting styles were tested separately for each dimension and also separately for mothers and fathers. The results of the models are presented in Table 2.

The results for mothers' parenting styles showed, first, that at the mean level behavioral control slightly decreased over time (Figure 2, Table 2). No mean-level changes were evident in mothers' affection or psychological control. Second, the variances of the level components of all three parenting style dimensions were statistically significant. However, the variances for the linear trends of the three parenting style variables were not significant. This suggests that, although mothers showed different levels of affection, behavioral control, and psychological control, there were no individual differences in the changes in these parenting styles. The results for fathers' parenting styles showed a somewhat similar pattern. At the mean level, fathers' behavioral and psychological control decreased across time, whereas no mean-level changes were evident in fathers' affection (Figure 2, Table 2). As with mothers, the fathers' results also showed statistically significant interindividual variance in the Levels of affection, behavioral control, and psychological control. However, no statistically significant variance emerged in the linear trends of any of these variables. The absence of interindividual variation (i.e., individual diversity) in the linear trend of mothers' and fathers' parenting styles means also that children's problem behaviors, or any other variable, do not predict changes in mothers' and fathers' parenting styles in this sample (because there is no individual variation in these changes to be predicted). Because individual variation existed only in the levels of parenting styles, the linear trend components of these variables were not included in the subsequent conditional growth models.

Mothers' Parenting Styles and Children's Problem Behavior

Internal problem behavior. To examine whether the levels of mothers' affection, behavioral control, and psychological control would be associated with the initial level of children's internal problem behavior
and changes in this behavior across the six measurements, an LGM was constructed which included the associations between the level of the parenting style variables (Time 2) and the initial level of children’s internal problem behavior, and the paths from the level of parenting styles to the linear trend of internal problem behavior. The fit of the model was good: $\chi^2(27, N = 207) = 47.97; CFI = 0.93; TLI = 0.92; SRMR = 0.05$. The results showed, however, that the parenting style variables were not associated with the level of children’s internal problem behavior nor did they have any effects on its linear trend.

As a second step, the interaction terms of the three parenting style variables (both two- and three-way interactions) were added to the model in separate analyses for each. The results showed that the interaction term Affection $\times$ Psychological Control significantly predicted the linear trend of internal problem behavior (standardized estimate $= .20, p < .05$). To investigate this effect in detail, a median split was used to divide the data into two groups according to the level of maternal psychological control at Time 2. Because the parenting style variables were not perfectly normal, medians were thought to better represent the central tendencies of the distributions than means (Owens & Shaw, 2003).

<table>
<thead>
<tr>
<th>Means</th>
<th>Variances</th>
</tr>
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<tbody>
<tr>
<td><strong>Level</strong></td>
<td><strong>Linear trend</strong></td>
</tr>
<tr>
<td>Estimate</td>
<td>$t$-value</td>
</tr>
<tr>
<td>Internal problem behavior</td>
<td>1.84</td>
</tr>
<tr>
<td>External problem behavior</td>
<td>1.38</td>
</tr>
<tr>
<td>Mothers’ affection</td>
<td>4.16</td>
</tr>
<tr>
<td>Mothers’ behavioral control</td>
<td>3.82</td>
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<tr>
<td>Mothers’ psychological control</td>
<td>2.70</td>
</tr>
<tr>
<td>Fathers’ affection</td>
<td>3.92</td>
</tr>
<tr>
<td>Fathers’ behavioral control</td>
<td>3.80</td>
</tr>
<tr>
<td>Fathers’ psychological control</td>
<td>2.83</td>
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</tbody>
</table>

Note. $t$-Values greater than 1.96 in magnitude indicate a parameter estimate that is significantly different from zero. $^a$Fixed.
Growth curve analysis for children’s internal problem behavior and mothers’ affection was then conducted for these two groups using a multisample approach for the LGM (Curran & Hussong, 2003; Jöreskog & Sörbom, 1993; Rigdon, Schumacker, & Wothke, 1998). In this analysis, the path from affection to the linear trend of internal problem behavior was allowed to be estimated separately for each group, $\chi^2(47, N = 191) = 56.64; CFI = 0.97; TLI = 0.97; SRMR = 0.08$. The results showed that, among those children whose mothers reported a high level of psychological control ($n = 102$), the higher the level of maternal affection, the greater the increase in the children showed in internal problem behavior (standardized estimate = .25, $p < .05$). Among those whose mothers showed a low level of psychological control ($n = 89$), maternal affection had no effects on the trend of children’s internal problem behavior (standardized estimate = $-.13$, $p$ n.s.). The results are shown in Figure 3.

In order to investigate the Affection × Psychological Control interaction further, multisample analyses were performed by dividing the sample into two groups according to maternal affection at Time 2 and then investigating the effects of psychological control on the linear trend of internal problem behavior in these two groups. The results showed that among those children whose mothers reported a low level of affection, maternal psychological control had no effects on the trend of children’s internal problem behavior (standardized estimate = $-.07$, $p$ n.s.). Among those children whose mothers reported a high level of affection the impact of psychological control did not reach statistical significance either (standardized estimate = .27, $t = 1.71$, $p$ n.s).

Because of the somewhat low reliabilities of the internalizing problem behavior scale at measurement points 4 (Time 6) and 5 (Time 7), additional analyses were conducted in which the data gathered at these two time points were excluded from all statistical analyses reported previously. In these analyses, the results and major conclusions concerning the role of mothers’ parenting styles in children’s internalizing problem behaviors remained unchanged.

External problem behavior. Next, an analogous LGM was constructed for children’s external problem behavior and mothers’ parenting styles, $\chi^2(27, N = 207) = 39.89; CFI = 0.95; TLI = 0.94; SRMR = 0.06$. The results showed that the level of maternal affection predicted the Linear trend of external problem behavior (standardized estimate = .26, $p < .05$) but that the other parenting dimensions did not.

However, examination of the interaction terms showed that the interaction terms between Affection × Psychological Control (standardized estimate = .26, $p < .05$), and Behavioral control × Psychological Control (standardized estimate = .26, $p < .05$) significantly predicted the linear trend of external problem behavior. To investigate these effects in detail, the data were divided into two groups according to the level of maternal psychological control at Time 2 (median split). Growth curve analysis for children’s external problem behaviors and mothers’ affection and behavioral control was then conducted for these two groups, allowing the paths from the level of affection and behavioral control to the linear trend of external problem behavior to be estimated separately for each group, $\chi^2(58, N = 191) = 65.96; CFI = 0.97; TLI = 0.97; SRMR = 0.09$. The results showed, first, that, among children whose mothers reported a high level of psychological control ($n = 102$), a high level of maternal affection predicted an increase in children’s external problem behavior (standardized estimate = .42, $p < .001$). When combined with a low level of psychological control, no affection effects were found (standardized estimate = $-.09$, $p$ n.s). Second, among children whose mothers reported a low level of psychological control, behavioral control predicted a decrease in children’s external problem behavior (standardized estimate = $-.27$, $p < .05$). When combined with a high level of psychological control, no effects of behavioral control were found (standardized estimate = $-.01$, $p$ n.s). The results are shown in Figures 4 and 5.

In order to investigate the Affection × Psychological Control interaction further, and that of Behavioral Control × Psychological Control, two subsequent multisample analyses were conducted. First, the sample was divided into two groups according to maternal affec-
tion at Time 2, and the effects of psychological control on the linear trend of external problem behavior in these two groups were investigated. The results showed that among those children whose mothers reported a low level of affection, maternal psychological control decreased children’s external problem behavior (standardized estimate = −.35, p < .01). By contrast, among those children whose mothers reported a high level of affection maternal psychological control increased their children’s external problem behavior (standardized estimate = .31, p < .05).

Second, the sample was divided into two groups according to maternal behavioral control at Time 2, and the effects of psychological control on the linear trend of external problem behavior were investigated. The results showed that among those children whose mothers reported a low level of behavioral control, no effects of psychological control on the trend of external problem behavior were found (standardized estimate = .04, p ns). Among those children whose mothers reported a high level of behavioral control, the impact of psychological control did not reach statistical significance either (standardized estimate = .19, p ns).

**Fathers’ Parenting Styles and Children’s Problem Behavior**

Next, analogous analyses were performed for fathers’ parenting styles and children’s internal and external problem behaviors separately. However, no associations between the levels of fathers’ parenting styles, and children’s level and linear trends of internal or external problem behaviors were found.

Because of the somewhat low reliabilities of the internalizing problem behavior scale at measurement points 4 (Time 6) and 5 (Time 7), additional analyses were conducted in which the data gathered at these two time points were excluded. The results and major conclusions concerning the role of fathers’ parenting styles in children’s internalizing problem behaviors remained unchanged, with one exception: when using only four as against all six measurement points for internalizing problem behaviors, fathers’ psychological control was positively associated with the rate of change of internalizing problem behavior.

Because in the present study fewer fathers than mothers participated, it is possible that the absence of statistically significant predictions in the fathers’ data is due to low sample size. To investigate this possibility, we performed various simulation analyses to test whether any effects of fathers’ parenting styles would become statistically significant if there had been as many fathers as mothers (N = 191) in the original sample. These simulation analyses showed that, when the sample of fathers was made equal to that of mothers, fathers’ high psychological control was found to predict positively the linear trend of children’s externalizing problem behaviors (standardized estimate = .26, p < .05; R² = .07). No other effects turned out to be significant in these simulation analyses.

**Discussion**

This study examined the extent to which the impact of a particular parenting dimension on children’s internal and external problem behaviors would be
found to be dependent on the other two dimensions. The results showed that a high level of maternal psychological control combined with high affection predicted increases in the levels of children’s internal and external problem behaviors during their transition from kindergarten to primary school. By contrast, a high level of maternal behavioral control combined with a low level of psychological control predicted decreases in the level of children’s external problem behavior.

The finding that mothers’ psychological control in combination with high affection was detrimental to child adjustment was unexpected. There are at least two possible explanations for this result. The first is that high affection when combined with psychological control, that is, guilt-inducing and manipulative child-rearing, leads to enmeshment in parent–child communication (Aunola & Nurmi, 2004). On the one hand, mothers are supportive and close to the child but, on the other hand, they communicate guilt-inducing attitudes which manipulate the child’s psychological world and increase the child’s dependence. Such enmeshment, being characterized as family communication patterns that lead to psychological and emotional fusion among family members (Barber & Buehler, 1996), restricts children’s expression of their own thoughts and emotions. Consequently, it may also lead to various forms of problem behaviors among children (Schaefer, 1965; Humphrey, 1989).

The second explanation is that a child-rearing pattern characterized by both a high level of affection and a high level of psychological control may communicate an inconsistent message of maternal approval and love to a child (Barber, 1996). In parenting, such a discrepancy (Punamäki, Qouta, & El-Sarraj, 2001), or double message (Humphrey, 1989), may impact negatively on child adjustment, for example, by provoking anxiety and by diminishing the child’s sense of control (Chorpita & Barlow, 1998). The fact that in the present study high psychological control combined with high affection increased not only internal but also external problem behavior among children suggests that internal distress and negative emotions aroused by guilt-inducing mothering also has an influence on a child’s undercontrolling behavior (see also Olsen et al., 2002; Yang et al., 2004).

The results of this study showed further that, among those children whose mothers reported low affection, maternal psychological control predicted a decrease in children’s external problem behavior. One possible explanation for this result is that low affection combined with low psychological control is a sign of disengaged and neglectful parenting, which has been shown to be the most detrimental combination in child development (Baumrind, 1989, 1991). By contrast, low affection combined with high psychological control may be a more functional parenting pattern, which also leads to a decrease in external problem behavior.

Overall, the results of this study concerning the interaction between maternal affection and psychological control were against our hypothesis (2c) and also different from the findings reported previously for adolescents. For example, Gray and Steinberg (1999) and Pettit and Laird (2002) found that parental affection and involvement decreased problem behaviors, particularly when combined with a high level of psychological control. By contrast, the results of the present study among children showed that maternal affection when combined with high psychological control had a negative impact on child adjustment. We have previously shown a similar pattern of impact of maternal parenting on children’s mathematics skill development using the same sample (Aunola & Nurmi, 2004). One explanation for this discrepancy between the findings of the present study and those of previous research is that the impact of parenting varies according to the child’s age. For example, it may be that manipulation of the affective relationship with the child by use of psychological control (Baumrind, 1966; Schaefer, 1965), that is, contingent affection, is harmful, especially during middle childhood, because at that age children have not yet begun to separate emotionally and psychologically from their parents (Barber et al., 1994). By contrast, during adolescence, when individuals are gaining increasing autonomy from their parents, a warm parental relationship may function as a protective factor against the negative impacts of psychological control. However, because there are thus far only few studies conducted among kindergarten and school-aged children, further studies should be performed to support this explanation.

The other possible explanation is the fact that in previous studies parenting styles have been measured using adolescents’ reports (Gray & Steinberg, 1999; Pettit & Laird, 2002), whereas in the present study we used parent-reported parenting styles. It is possible, for example, that children and adolescents are unable to differentiate between psychological control and affection in their mothers’ and fathers’ parenting to the same extent as are parents themselves, and therefore child-reported parenting measures are unable to tap the enmeshment consequences of parenting characteristics.

The results of the present study showed further that, among mothers, psychological control moder-
ated the impact of behavioral control on children’s external problem behaviors: a high level of maternal behavioral control predicted a decrease in the child’s external problems, but only if combined with a low level of psychological control. When combined with a high level of psychological control, behavioral control was found to have no impact. This result is consistent with that of Galambos et al. (2003), who found that parental high behavioral control was negatively associated with adolescents’ external problem behaviors but only if combined with low levels of psychological control. In previous research, parental behavioral control has been shown to be associated with low levels of various kinds of externalizing problems among children and adolescents, such as antisocial behavior and conduct disorders (e.g., Barber, 1996; Hart et al., 2003). It has been suggested that behavioral control exercised by parents prevents externalizing problem behaviors because it fosters children’s own self-regulation in social situations (Lewis, 1981; Hart et al., 2003). The results of the present study, and those found by Galambos et al. (2003), suggest, however, that the positive impacts of behavioral control vanish if mothers show simultaneously a high level of psychological control. One possible explanation for why behavioral control has beneficial effects particularly when combined with a low psychological control is that such a pattern of parenting provides clear rules and expectations for the child but simultaneously also allows him or her to experience and express own thoughts and emotions freely, described also in terms of psychological autonomy (Hart et al., 2003). This kind of autonomy, or feeling of being respected as an individual, has been suggested to be important in the processes of internalizing rules and becoming self-governing (Grolnick, 2003; Hart et al., 2003). The fact that the positive effect of mothers’ behavioral control on children’s external problem behaviors diminished when combined with a high psychological control may be because high behavioral control together with high psychological control reflects parental “overmanagement” (Pettit et al., 2001), and in this way intrudes on rather than benefits the child’s autonomy and self-regulation (Galambos et al., 2003). This kind of overmanagement resembles in fact the authoritarian parenting style (Barber, 1996; Baumrind, 1966, 1989, 1991; Barber, Bean, & Erickson, 2002).

Overall, the results of the present study add to the previous literature by showing that behavioral control is a good strategy for preventing external problem behavior among children (Coopersmith, 1967; Pettit et al., 2001), provided that the child’s sense of competence and autonomy are not simultaneously violated by intrusive and manipulative parenting. The fact that mothers’ behavioral control combined with low psychological control decreased external problem behaviors rather than internal problem behavior is consistent with previous findings suggesting that behavioral control is an important factor in fostering pro-social behavior and preventing external problem behaviors in particular (Lewis, 1981; Hart et al., 2003).

In this study, no interactions were found between parental affection and behavioral control in the prediction of children’s problem behaviors. This result resembles that of Galambos et al. (2003), but conflicts with the results reported by Gray and Steinberg (1999) and Forehand and Nousiainen (1993). The present result is also in contradiction to the traditional typological theory of parenting styles, according to which it is a combination of high affection and high behavioral control that leads to the most positive child outcomes (Maccoby & Martin, 1983; Steinberg, 2001). One possible explanation for the inconsistencies between the results found in the present study and those of some earlier ones is that psychological control in previous studies has typically been included in either the affection (as in measuring negative affect or lack of autonomy granting) or behavioral control (as in measuring control in terms of restrictiveness) dimensions of parenting, or incorporated into the parenting style typology (e.g., as a characteristic of authoritarian parenting) rather than measured as a separate variable (for a review, see Pettit & Laird, 2002). Thus, researchers have not distinguished the impacts of psychological control from the impacts of affection and behavioral control. The results of this study suggest that such differentiation is important, because psychological control in combination with affection, or in combination with behavioral control, is a more powerful predictor of the child’s adjustment than is the combination of affection and behavioral control (see also Aunola & Nurmi, 2004).

The results of the present study showed further that mothers’ parenting played an important role in young children’s problem behaviors, whereas fathers’ parenting had only a marginal role. One explanation for the importance of mothers’ parenting style is that, because mother–child interactions are characterized more than father–child interactions by warmth, responsiveness, and intimate exchanges (Collins & Russel, 1991; Forehand & Nousiainen, 1993), children are more open to maternal than paternal influences (Darling & Steinberg, 1993). Mothers, compared to fathers, have also been shown to make a greater effort to maintain dependency in
their children (for a review, see Collins & Russel, 1991). It may be that the impact of psychological control in this kind of dependent relationship is greater than in the more autonomous father–child relationship. Another possible explanation for fathers’ marginal role is that, in the present study, the measures of parenting did not cover the kind of interaction that is important in a father–child relationship. For example, it has been suggested previously that fathers’ playful, companionable, and patient interaction styles are particularly important for children’s adjustment (Hart et al., 2003). The third possible explanation for the minor effect of fathers’ parenting is that the sample of fathers was too small for the effects of fathers’ parenting to be detected statistically (Chou, Bentler, & Pentz, 2000).

The results of this study also showed that it was parenting styles that contributed to children’s problem behaviors rather than vice versa: the fact that there were no interindividual variances in the trends of any of the parenting variables suggest that child outcomes did not influence their parents’ parenting styles during this early period (see also Aunola & Nurmi, 2004). This result is in accordance with the traditional notion of parents’ role in children’s socialization (for a review, see Maccoby, 1992), but runs contrary to the notion that child characteristics influence parenting (Bell, 1968; Harris, 1995). Although in the present study children’s problem behaviors were not found to predict changes in mothers’ and fathers’ parenting styles, it is still possible that the impact of parenting is dependent on child characteristics. The present study does not, for example, answer the question of what kind of role parenting styles play in modifying the expression of genetically based temperamental differences (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Repetti, Taylor, & Seeman, 2002) or in maintaining, or exacerbating, preexisting vulnerabilities in risky families (Dodge & Petitt, 2003; Hart et al., 2003; Repetti et al., 2002).

There are six limitations that should be considered in any attempt to generalize the findings of this study. First, problem behaviors were assessed on the basis of children’s self-reports. The rationale for using this methodology was that there are some findings suggesting that children are already able to assess their behavior reliably at quite a young age (Edelsohn, Ialongo, Wertheramer-Larsson, & Crockett, 1992; Ialongo et al., 2001). However, because it is possible that the results obtained using children’s assessments will differ somewhat from those obtained using other data sources, there is a need in future research to gather information from several sources, for example, child and parent reports as well as observational data, to form a more complete understanding of the role of parenting. Second, the problem behavior measurement used in this study focused mainly on one aspect of internalizing problem behavior, that is, depressive symptoms, and on one aspect of externalizing problem behavior, that is, antisocial behavior/problematic peer relations. This in turn points to the need in future studies to investigate the effects of parenting styles on other domains of internalizing (e.g., anxiety, fearfulness) and externalizing (e.g., impulsiveness, oppositional and nonconforming behaviors) problem behaviors as well. Third, parent-reported questionnaires were used to measure parenting styles. Although measures of this kind provide information about parental attitudes, there is an obvious advantage to be gained from using observational methods, which study how parents actually behave in interaction situations with their offspring. The fact that findings from studies that have used observational methods and those that have used self-report measures of parenting on children’s problem behaviors are relatively consistent (for a review, see Hart et al., 2003) suggests, however, that different information sources may, at least in part, yield similar information about parental behaviors. Fourth, the instrument used in the present study to measure psychological control emphasized the guilt-inducing aspect rather than, for example, excessive criticism and restrictive or possessive communication. It is possible, therefore, that the present results concerning the impacts of psychological control hold particularly for guilt induction rather than other aspects of psychological control. Fifth, the internal consistencies for the parent-reported behavioral control construct were somewhat low. Clearly, there is a need to develop measures targeted at the parents of kindergarten and school-aged children. Finally, in the present study, fathers’ data were subject to a selection effect. Children whose fathers did not participate reported a higher level of both internalizing and externalizing problem behaviors than those whose fathers participated. It is therefore possible that, although the effects of fathers’ parenting were not strong in a sample biased in favor of children whose fathers participated, these effects might have turn out to be significant among those with higher levels of problem behaviors. Moreover, before making any generalizations concerning the role of fathers’ parenting styles, there is a need to investigate the role of fathers using larger and more representative samples.

Overall, the results of this study add to the previous literature on parenting styles and children’s
adjustment by showing, first, that in mothers high psychological control together with a high level of affection appears to be the most detrimental combination for the development of problem behaviors among children. Second, mothers’ high behavioral control was shown to decrease children’s external problem behaviors but only in combination with a low level of psychological control. These results support the notion that it is not single parenting style variables as such, but rather their combination that is influential in child development (Baumrind, 1991; Darling & Steinberg, 1993).

References


