

Chapter 3

Associations between Fathering, Mothering, and Maladjustment in Early Adolescence

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Abstract

This study focused on associations between fathering, mothering, and maladjustment in early adolescence: (1) How can we conceptualize the mechanism that makes for differences in effects of mother's and father's parenting on early adolescent maladjustment? (2) Can positive paternal behavior buffer the consequences of negative maternal behavior and vice-versa? (3) Are the theoretically derived differences for mother's and father's parenting supported by empirical investigation? In a large Dutch population-based sample of early adolescents it was found that maternal and paternal behaviors had comparable effects, but when estimated simultaneously, paternal (unlike maternal) overprotection and lack of emotional warmth were associated with maladjustment. The reversed pattern was found for rejection. Additional analyses strengthened our reasoning that mothers more than fathers respond with positive parenting to child problem behavior. The findings indicate that mothers and fathers cater to different needs of the child.

Introduction

Emotional and behavioral maladjustment of children and adolescents has often been linked to family factors (see Dmitrieva, Chen, Greenberger, & Gil-Rivas, 2004). Although in most families the father and the mother both play a role, the majority of the research on family and maladjustment has been done on the influence of maternal factors (Parke, 2000). Results of studies that have distinguished between mothers and fathers, however, have consistently shown that fathers matter and contribute to child and adolescent behavioral outcomes (Phares & Compas, 1992). The influence of fathers has been studied by a wide range of variables that can be divided in two general types of father involvement (cf. Cabrera, Tamis-LeMonda, Bradley, Hofferth, & Lamb, 2000): quantity and quality of care. Quantity of care can be operationalized as fathers being present versus absent and the amount of time fathers spend with their children. Quality of care can be measured with characteristics of father-child interactions, such as perceived warmth, neglect, and protection. The influence of fathers as operationalized with quantity of care dominates the literature on father involvement and child adjustment, even though it has been found that youth's behavior is more significantly predicted by the quality than the quantity of care (Carlson, 2006; Parke, 2000; Veneziano & Rohner, 1998).

In the present study we explicitly look at the quality of care, namely parental rejection, warmth, and overprotection as perceived by the child. The selection of the parental behaviors comes from research showing that authoritative parenting is beneficial for children's and adolescents' adjustment (e.g., Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Steinberg, 2001). This type of parenting is characterized by a healthy balance between providing affection and warmth on the one hand, and setting rules and limits and exercising appropriate protection and control on the other hand. Among a wide range of parenting behaviors, parental acceptance, rejection, and protection specifically have been related to the development of psychopathology such as aggression, delinquency, substance use, and depression (McLeod, Wood, & Weisz, 2007; Rohner & Britner, 2002; Sentse, Veenstra, Lindenberg, Verhulst, & Ormel, 2009). Although most of this parenting research is 'mother-focused', a growing body of literature suggests similar effects for father's involvement in parenting (see Marsiglio, Amato, Day, & Lamb, 2000).

Parenting behaviors may be especially relevant to study in early adolescence, as in this period the parent-child relationship changes substantially owing to physical and social changes, such as biological maturation and a growingly important role of peers (Agnew, 2003). The need for autonomy becomes more important, and fathers and mothers may contribute differently to these needs of the child. Many parents tend to develop interdependent styles of parenting early on, especially when the marital relationship is good (Baril, Crouter, & McHale 2007). We can thus expect, by and large, that parents will exhibit correlated parenting styles. The correlation of parenting implies, however, that if one looks at the parental effects on maladjustment separately, they will be quite similar even if maternal and paternal parenting actually have different effects. The reason for this is that with correlated parenting styles, maternal parenting becomes a proxy for paternal parenting and vice-versa. In order to study the unique effects of maternal and paternal parenting on maladjustment, one has to control for one while analyzing the other. Despite much previous research on parenting and maladjustment, we still know little about different effects of fathering and mothering once parenting of the other is taken into account.

In the present study, we aim to answer three main questions: (1) How can we conceptualize the mechanism that makes for differences in effects of mother's and father's parenting on early adolescent maladjustment? (2) Can positive paternal behavior buffer the consequences of negative maternal behavior and vice-versa? (3) Are the theoretically derived differences for mother's and father's parenting supported by empirical investigation?

Theory and Hypotheses

What, if anything, makes for different strength and possibly also direction of effects of maternal and paternal parenting on child maladjustment? Both externalizing and internalizing behaviors are affected by self-regulatory capacities (see Ellis, Rothbart, & Posner, 2004). In turn, self-regulatory capacities are in part dependent on the attachment to significant others who stand for certain goals, norms, values, and standards (Lindenberg, 2008; Veenstra, Lindenberg, Tinga, & Ormel, in press). For this it is not necessary that the significant other is physically present (Krampe, 2009), even though the psychological presence may ultimately be strengthened by more physical interaction (Carlson, 2006). For example, Shah (2003a,b) showed that subjects did much better on an analytical task they consider important to their father if they were covertly primed with the word "father" or "dad". It was

also found that this significant-other-effect holds for importance afforded to certain goals (Shah, 2003b) as well as for inhibition of goal pursuit (Shah, 2003a). In other words, the psychological presence of a significant other also influences what someone wants or does not want to do. Given that adolescents are often in contexts without parents, self-regulation is much aided by the psychological presence of father and mother because thinking of them reduces the attractiveness and accessibility of deviant goals and increases the accessibility of the goals they endorse.

Important for the present context, Shah (2003a,b) also found that the significant-other-effect depends on how close subjects felt to the significant other. Thus, circumstances that affect bonding with the father and mother will ultimately affect externalizing and internalizing behavior via its effect on self-regulation. The importance of bonding is compatible with, for example, findings by Kosterman, Haggerty, Spoth, and Redmond (2004), even though they do not make the link to self-regulation explicit. It is also compatible with the finding that adolescents' self-representation of the relationship with their parents partially mediates the link between parental behavior and adolescent maladjustment (Repinski & Shonk, 2002). If this reasoning is correct, the first question at hand then becomes: What influences the bonding with the mother and the father differently?

Active parenting hypotheses. From a goal-framing approach (Lindenberg, 2006) it can be argued that liking, and interpersonal closeness in particular, depends on the degree to which the other person helps to achieve important goals. This has been shown by La Guardia, Ryan, Couchman, and Deci (2000) with regard to the satisfaction of, especially, relatedness needs and autonomy needs. Satisfying relatedness and autonomy needs in the child is difficult to combine for one person, because closeness is necessary for relatedness whereas a certain distance is needed for autonomy. In many families there is thus some division of labor between mothers and fathers in this regard. Mothers seem to be especially important with regard to relatedness needs (Hunter & Youniss, 1982; Lewis & Lamb, 2003; Paterson, Field, & Pryor, 1994; Williams & Kelly, 2005). By contrast, fathers are especially important with regard to autonomy needs, being typically more distant than mothers, more engaged in play with the child, and more concerned with achievement standards (Hosley & Montemayor, 1997; National Institute of Child Health and Human Development Early Child Care Research Network, 2004). In this way, the child can bond differently with the mother and the father (Ducharme, Doyle, & Markiewicz, 2002). Thus, if the mother

fails in satisfying basic relatedness needs in her child, this will greatly disturb the bonding to the mother and children will be disadvantaged in their self-regulatory capacity, leading to more externalizing and internalizing behavior. Similarly, if the father fails to satisfy basic autonomy needs in his child, this will especially disturb the bonding to the father and children will thus be disadvantaged with regard to self-regulatory capacity, and ultimately with regard to externalizing and internalizing behaviors.

There are parenting practices that are likely to directly affect the satisfaction of basic needs of the youth: rejection and emotional warmth for relatedness needs, and overprotection for autonomy needs. From this, we can deduce our first testable hypotheses on active parenting, i.e. hypotheses about parent-driven effects: We expect a positive association of maternal rejection and a negative association of maternal emotional warmth with externalizing and internalizing behavior in early adolescence. This is expected not to hold for fathers. Furthermore, we expect a negative association of paternal overprotection with externalizing and internalizing behavior in early adolescence. This is expected not to hold for mothers. Because of the different functions of mothers and fathers for basic need satisfaction, we do not expect that the positive parenting behavior of one can buffer the negative parenting of the other. In line with the finding of Simons and Conger (2007) that an authoritative father could not 'compensate' for an uninvolved mother, we expect that the negative consequences of maternal rejection are not buffered by paternal emotional warmth. Conversely, we expect that the negative consequences of paternal overprotection are not buffered by maternal emotional warmth.

Reactive parenting hypotheses. There are also child-driven effects as parenting behaviors are in part a response to child behavior (Kerr, Stattin, & Pakalniskiene, 2008; Plomin, 1995). Given the differences between fathers and mothers referred to above, we can expect that fathers, being more distant than mothers, will react with declining emotional warmth the more the youth evades his influence by either transgressing important norms (externalizing behavior) or withdrawing (internalizing behavior). Thus our hypothesis on reactive parenting for the father is that we expect a negative association of emotional warmth with the youth's externalizing and internalizing behavior. This expectation finds some support in the finding by Fantl and colleagues (2008) of a unidirectional effect of child externalizing behavior on the relational quality with the father. For mothers, being generally more relationally concerned and caring than fathers, we can expect less negative

conditional responses to problem behavior of the child. As a result, when parenting is measured as perceived by the child (as it is in this study) the mother can be expected to gain in emotional warmth as the father becomes emotionally cooler. Thus, our hypothesis on reactive parenting of the mother is that we expect a positive association between (perceived) emotional warmth and maladjustment. Note that this reactive emotional warmth effect is statistically opposite to the (protective) active emotional warmth effect with regard to maladjustment. These counteracting effects can be expected to result in a weakening of the overall association between emotional warmth of mothers and child maladjustment in cross-sectional studies.

Reactive parenting can, in turn, affect maladjustment. This idea has been observed in the literature under various labels, such as 'cascading constraints' (see Lewis 1997), 'dynamic systems' (Granic & Patterson, 2006) or 'transactional model' (see Sameroff & MacKenzie, 2003). Given the timing of our data, there is no way we can assess such dynamic effects. However, we can still relate what we would expect. Due to his major importance for autonomy needs, decreasing emotional warmth by fathers should not contribute much to a vicious cycle that exacerbates maladjustment. Because the mother presumably caters more to relatedness needs, her limited conditional withdrawal of emotional warmth in response to rising maladjustment is likely to have a dampening effect on its escalation. In fact, recent research by Fanti and colleagues (2008) supports these expectations. Similarly, Hafen and Laursen (2009) found only reactive and no active effects for both paternal and maternal parenting with regard to externalizing behavior.

Control variables. We included some important control variables. There is a possibility that environmental influence (nurture) may actually be caused by shared genes (nature), also known as genetic confounding (Rutter et al., 1997). In other words, the relation between parenting and child behavior might be spurious when it reflects a third factor, shared genes, influencing both parenting behavior and child behavior. We therefore controlled for familial vulnerability to psychopathology as possible confounder. In addition, for reasons of their well-established influence on both externalizing and internalizing problems we also included gender and socio-economic status in the models as main effects and as possible moderators (Amato, 1994; Broidy et al., 2003; Costello, Compton, Keeler, & Angold, 2003; Keiley, Bates, Dodge, & Pettit, 2000; Twenge & Nolen-Hoeksema, 2002).

Method

Sample

This study is part of the TRacking Adolescents' Individual Lives Survey (TRAILS), an ongoing prospective cohort study based on a sample representative of the Dutch population, investigating the development of mental health from preadolescence into adulthood. Participants come from five municipalities, including both urban and rural areas, in the North of the Netherlands. So far, three data collection waves have been completed: T1 (2001-2002), T2 (2003-2004) and T3 (2005- 2007). A detailed description of the study design, sampling procedures, data collection, and measures of the TRAILS study can be found in De Winter et al. (2005) and Huisman et al. (2008).

Of all children approached for enrollment in the study, 76.0% participated, resulting in a sample size of 2230 (i.e., both the child and the parent actively agreed to participate). The mean age of the children at T1 was 11.09 years ($SD = 0.55$); 50.8% were girls; 10.3% were children who had at least one parent born in a non-Western country. Of these children 96.4% ($n = 2149$) participated in the second wave (T2: mean age 13.55 years, $SD = 0.54$; 51.2% were girls). The third wave (T3) was completed with 81.4 % of the original number of participants ($n = 1816$), mean age 16.27 years old ($SD = 0.73$) and 52.3% were girls. For the part on active parenting effects we selected the T2 participants for whom parenting data on both father and mother were available ($n = 2130$). Of these 2130 children, 80.1% were living with their biological parents and 7.3% of the children were living with one biological parent and his or her new spouse. Because the remaining 12.6% that were living with a single parent consisted of children that reported to see their other biological parent regularly to almost never, we excluded the cases that reported to see the other parent less than twice a month ($n = 44$). Thus, the first part of the analyses for this paper will be conducted on a total sample of $n = 2086$ children that had contact with two parents on a regular basis and provided information on perceived parenting behaviors for both parents. The second part of the analyses, to provide an extra test for the reactive parenting effects, were done with a smaller set of the sample, namely those involved at T3 providing data on parental responses to misbehavior ($n = 1543$).

Measures

Maladjustment. Externalizing and internalizing problems were assessed at T2 by the Dutch version of the Child Behavior Checklist (CBCL) and the self-report version of this questionnaire, the Youth Self-Report (Achenbach, 1991a; Achenbach, 1991b; Verhulst & Achenbach, 1995). It contains a list of 112 behavioral and emotional problems, which can be rated as 0 = not true, 1 = somewhat or sometimes true, or 2 = very or often true in the past six months. Test-retest reliabilities of the CBCL and YSR have been found to be good. The scale Externalizing Problems was constructed from items corresponding to Aggressive Behavior and Rule-Breaking Behavior. The scale Internalizing Problems was constructed from items corresponding to Anxious/ Depressed, Withdrawn/ Depressed, and Somatic Complaints (cf. Achenbach, 1991a). Consistent with other reports (e.g., Achenbach, McConaughy, & Howell, 1987; Verhulst & Van der Ende, 1992), the agreement between parent-reported and child-reported problems was only moderate ($r_s = .41$ and $.39$ for externalizing and internalizing problems). Because the parent and child scores are both valid and partly contain different information, meaning that they each hold different perspectives on child behavior across different contexts, we used the mean of the standardized parent and child scores as measures of externalizing and internalizing problems.

Perceived parenting. To assess the perception of parental rearing by children at T1 we used The Egena Minnen Beträffande Uppfostran (My Memories of Upbringing) for Children [EMBU-C] (Markus, Lindhout, Boer, Hoogendijk, & Arrindell, 2003). The original EMBU-C contained 81 items. Markus et al. (2003) developed a shorter version, which we used. The test-retest stability of a shortened version of the EMBU-C over a 2-month period has been found to be satisfactory ($r = .78$ or higher) as was the validity (Muris, Meesters, & Van Brakel, 2003).

Overprotection refers to fearfulness and anxiety for the child's safety, and intrusiveness. (e.g., "Does your mother/father forbid you to do things that your classmates are allowed to do because she/he is afraid of something happening to you?"). The scale contained 12 items with an internal consistency of $.70$ for fathers and $.71$ for mothers. Rejection refers to hostility, punishment (physical or not, abusive or not), derogation, and blaming of subject (e.g., "Does your mother/father sometimes punish you even though you haven't done anything wrong?"). The scale contained 12 items with an internal consistency of $.84$ for fathers and $.83$ for mothers. Emotional Warmth is characterized by giving special attention, praising for approved behavior,

unconditional love, and being supportive and affectionately demonstrative (e.g., "Does your mother/father make it obvious that she/he loves you?"). The scale contained 18 items with an internal consistency of .91 for both fathers and mothers. Children rated the EMBU-C as 1 = no, never, 2 = yes, sometimes, 3 = yes, often, or 4 = yes, almost always. Each item was asked for both the father and the mother.

Unfortunately we only have the EMBU-C measured at T1, but in order to provide another possibility for testing the hypotheses on the reactive parenting effects we also used a parenting measure from T3 that explicitly asked the child in which way their mother and father typically react in case of misbehavior: "What happens if you have done something you were not allowed to?". We had four items to indicate Problem Solving through Communication (e.g., "Honestly wants to understand why you did what you did"), three items to indicate Angry Outbursts (e.g., "Have outbursts of anger and tell you off"), and three items to indicate Guilt Inducing (e.g., "Is silent and cold toward you"). Children rated parental responses as 1 = no, never, 2 = yes, sometimes, 3 = yes, often, or 4 = yes, almost always. Each item was asked for both the father and the mother. The reliabilities of the scales ranged from .74 to .81.

Socioeconomic status (SES). At T1, SES was constructed based on the educational level of both parents, occupational level of both parents, and on family income level. Educational level of parents was categorized in 5 categories. Occupational level was based on the International Standard Classification for Occupations (Ganzeboom & Treiman, 1996). Finally, family income level was asked, with low family income defined as a monthly net family income of less than € 1135 per month, which approximately amounts to a welfare payment. SES has been measured as the average of the five items (standardized). The SES scale captures 61.2 percent of the variance in the five items and has an internal consistency of .84.

Familial vulnerability for psychopathology. Parental psychopathology with respect to depression, anxiety, substance abuse, antisocial behavior, and psychoses was measured at T1 by means of the Brief TRAILS Family History Interview, administered at the parent interview. Each syndrome was introduced by a vignette describing its main symptoms and followed by a series of questions to assess lifetime occurrence, professional treatment, and medication use. The scores for substance abuse and antisocial behavior were used to construct a familial vulnerability index for externalizing disorder. The scores for depression and anxiety were used to construct a familial

vulnerability index for internalizing disorder. For each syndrome, the parent was assigned to one of the categories 0 = (probably) not, 1 = (probably) yes, and 2 = yes and treatment/ medication. For antisocial behavior, this last category was 2= yes and police involvement. Subsequently, familial loadings were calculated based on the scores for both parents, for the domains of externalizing and internalizing disorders separately (see Ormel et al., 2005).

Analyses

Gender differences in maladjustment and parental behaviors were examined by means of *t*-tests. Effects of fathering and mothering, SES, and gender on adolescent maladjustment, adjusted for familial vulnerability for psychopathology, were tested with multiple linear regression analyses. Firstly, effects of fathering and mothering were explored separately. Secondly, a model containing these effects simultaneously was analyzed to find out whether effects of mothering still hold while controlling for fathering and vice versa. Then, interactions between fathering and mothering were included in these models. All the analyses were performed separately for externalizing and internalizing problems. Lastly, in order to test our hypotheses on reactive parenting, parental responses to misbehavior at T3 were regressed on early adolescent psychopathology at T2.

Results

Descriptive Analyses

Means and standard deviations of predictors and outcome variables are reported in Table 1, for girls and boys separately. All variables, except for SES, parental guilt inducing, and familial vulnerability for psychopathology, showed significant gender differences. Compared to girls, boys engaged more in externalizing problems and perceived more overprotection and rejection in both parents. Compared to boys, girls had higher levels of internalizing problems and perceived more emotional warmth, problem solving through communication, and angry outbursts in both parents.

Furthermore, paired samples *t*-tests were conducted to test whether mothers and fathers differed in their parenting behaviors. We found that children perceived significantly more overprotection ($t = 26.20, p < .01$) and emotional warmth ($t = 17.97, p < .01$) in their mothers compared to fathers. There were no differences between perceived rejection in fathers and mothers. For parental responses to misbehavior at T3, we found that children

Table 1
Means and Standard Deviations of T2 Maladjustment, T1 Parenting, T3 Parental Responses, and Familial Vulnerability for Psychopathology

Variables	Girls		Boys		Difference				
	Mean	SD	n	Mean	SD	n	t	df	p
Externalizing Problems	-0.05	.84	1050	0.06	.87	994	-2.76	2042	<.01
Internalizing Problems	0.19	.90	1050	-0.19	.77	994	10.28	2018	<.01
Socio-Economic Status	-0.01	.77	1073	-0.05	.81	1022	1.10	2074	.27
Maternal Overprotection	1.91	.40	1087	1.96	.42	1043	-2.69	2102	<.01
Maternal Rejection	1.45	.31	1086	1.52	.35	1043	-4.86	2065	<.01
Maternal Warmth	3.34	.47	1087	3.23	.51	1043	5.25	2096	<.01
Paternal Overprotection	1.76	.38	1087	1.81	.40	1043	-2.91	2108	<.01
Paternal Rejection	1.44	.33	1086	1.52	.36	1042	-4.84	2089	<.01
Paternal Warmth	3.20	.55	1087	3.10	.56	1043	3.93	2128	<.01
Maternal Problem Solving	2.50	.84	843	2.27	.88	743	5.31	1584	<.01
Maternal Angry Outbursts	1.24	.88	838	.95	.77	738	6.88	1574	<.01
Maternal Guilt Inducing	.26	.53	839	.24	.44	734	1.01	1571	.31
Paternal Problem Solving	2.18	.97	830	2.08	.94	736	2.05	1564	<.05
Paternal Angry Outbursts	1.22	.94	823	.96	.79	734	5.88	1555	<.01
Paternal Guilt Inducing	.33	.66	822	.27	.52	728	1.82	1548	.07
Familial Vulnerability Externalizing	0.14	.42	1065	0.13	.41	1011	0.35	2074	.72
Familial Vulnerability Internalizing	0.56	.79	1070	0.54	.79	1019	0.66	2087	.51

perceived significantly more guilt inducing ($t = 3.73, p < .01$) and less problem solving through communication ($t = -14.19, p < .01$) in fathers compared to mothers. There were no differences between angry outbursts in fathers and mothers.

Regression Analyses

The standardized regression coefficients estimated with multiple linear regression analyses are reported in Table 2 for externalizing problems and in Table 3 for internalizing problems. The results are highly comparable for the two outcome measures, so we will discuss these in terms of the effects on adolescent maladjustment in general. The effects of the control variables indicate that children who came from low SES families and who had a familial vulnerability for psychopathology were more likely to be maladjusted in early adolescence. An effect of gender was absent in the prediction of externalizing problems and emerged only for internalizing problems, showing that boys were less likely than girls to have internalizing problems. The control variables explained 4% of the variance in externalizing problems and 8.5% of the variance in internalizing problems.

Before we estimated the whole model, the effects of parenting on maladjustment were explored separately for fathers (see Tables 2 and 3, column 1) and mothers (see Tables 2 and 3, column 2). As we mentioned in the theory section, correlated maternal and paternal parenting styles will create similar patterns for the effects of fathers and mothers on maladjustment of the youth. The parenting styles were indeed highly correlated ($r = .80$ for Overprotection, $r = .68$ for Rejection, and $r = .79$ for Emotional warmth) and we do see quite similar patterns. Paternal overprotection and rejection were positively associated with externalizing and internalizing problems, whereas paternal emotional warmth was negatively related to these behaviors. The same goes for mothers, although perceived emotional warmth in mothers was only significantly related to externalizing and not to internalizing problems. After inclusion of the control variables, fathering explained 6.1% and mothering explained 6.8% of the variance in externalizing problems, whereas fathering explained 6% and mothering explained 4.5% of the variance in internalizing problems.

The test of our hypotheses requires that the association of fathering with maladjustment is analyzed while controlling for mothering, and vice-versa. Even though maternal and paternal parenting styles were correlated, multicollinearity measures showed that we can treat the scores as separate

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Table 2

Regression Coefficients of Control Variables, Fathering, and Mothering in the Prediction of Early Adolescent Externalizing Problems

Predictors at T1	T2 Externalizing Problems							
	$R^2 = .101$		$R^2 = .109$		$R^2 = .119$		$R^2 = .122$	
	β	p	β	p	β	P	β	p
Familial Vulnerability	.14	<.01	.13	<.01	.13	<.01	.13	<.01
Gender (1 = boys)	.03	.17	.03	.21	.02	.25	.03	.21
Socio-Economic Status	-.08	<.01	-.09	<.01	-.08	<.01	-.08	<.01
Paternal Overprotection	.12	<.01			.12	<.05	.14	<.01
Paternal Rejection	.13	<.01			.00	.99	.00	.98
Paternal Emotional Warmth	-.12	<.01			-.15	<.01	-.15	<.01
Maternal Overprotection			.08	<.01	-.02	.60	-.02	.62
Maternal Rejection			.19	<.01	.20	<.01	.18	<.01
Maternal Emotional Warmth			-.08	<.01	.04	.40	.03	.56
Maternal Rejection *							-.03	.17
Paternal Emotional Warmth								
Paternal Overprotection *							-.04	.07
Maternal Emotional Warmth								

Table 3

Regression Coefficients of Control Variables, Fathering, and Mothering in the Prediction of Early Adolescent Internalizing Problems

Predictors at T1	T2 Internalizing Problems							
	$R^2 = .148$		$R^2 = .132$		$R^2 = .155$		$R^2 = .156$	
	β	p	β	p	β	P	β	p
Familial Vulnerability	.18	<.01	.17	<.01	.17	<.01	.17	<.01
Gender (1 = boys)	-.25	<.01	-.25	<.01	-.25	<.01	-.25	<.01
Socio-Economic Status	-.04	.09	-.05	<.05	-.04	.10	-.04	.09
Paternal Overprotection	.13	<.01			.11	<.01	.12	<.01
Paternal Rejection	.13	<.01			.05	.14	.05	.18
Paternal Emotional Warmth	-.11	<.01			-.20	<.01	-.21	<.01
Maternal Overprotection			.12	<.01	.01	.73	.01	.73
Maternal Rejection			.13	<.01	.11	<.01	.11	<.01
Maternal Emotional Warmth			-.05	.06	.11	<.01	.11	<.01
Maternal Rejection *							.02	.48
Paternal Emotional Warmth								
Paternal Overprotection *							-.04	.06
Maternal Emotional Warmth								

variables. The variance inflation factor (VIF) indicates for each predictor the strength of the linear relationship with the other predictors. Tolerance statistics are equal to $1/\text{VIF}$. According to Menard (1995), Tolerance values below .20 are worthy of concern as they indicate that multicollinearity is possibly biasing the regression model. In the current study the Tolerance statistics were larger than .20 (they ranged from .25 to 1).

With regard to the hypothesis on *active* parenting effects, the simultaneous results (see Tables 2 and 3, column 3) show that maternal rejection was indeed related to higher levels of maladjustment in early adolescence and that paternal rejection did not relate to maladjustment. Also as expected, paternal overprotection was significantly associated with higher levels of maladjustment, while maternal overprotection was not. Thus, the basic hypotheses about active parenting and maladjustment are supported by the data for both mothers and fathers. With regard to the hypotheses on *reactive* parenting effects, we found that levels of maladjustment and emotional warmth of the father are indeed negatively related. For mothers, emotional warmth is positively related to internalizing problems and not related at all to externalizing problems. We had hypothesized that mothers' emotional warmth would be negatively associated with maladjustment (active parenting effect) whereas with regard to reactive parenting, her emotional warmth would be positively related to maladjustment. It is possible that these two effects cancel each other out statistically and that hence we found no association between mother's emotional warmth and externalizing behavior. In addition, we looked at associations between T2 maladjustment and T3 parental responses to misbehavior. In line with our hypotheses on reactive 'negative' parenting, the analyses showed that higher levels of maladjustment were significantly related to more angry outbursts of fathers and mothers and to more guilt inducing by fathers and mothers (β s = .07-.14, p s < .01). However, in line with our hypotheses on reactive 'positive' parenting, we found that only externalizing problems were related to less problem-solving through positive communication by both fathers and mothers (β = -.12 and -.17 resp., p s < .01), whereas internalizing problems were related to more positive problem-solving by mothers (β = .06, p < .05), and not by fathers. Thus, in line with the results in Tables 2 and 3 we again see that mothers, not fathers respond with more positive behavior to their children's internalizing problems.

Lastly, we hypothesized that given the different relations to fundamental needs, maternal positive parenting would not buffer for paternal

negative parenting and vice versa. To test this, we included interaction terms in the regression models with regard to emotional warmth, overprotection, and rejection (see Tables 2 and 3, column 4). The results show that, as we expected, paternal emotional warmth was not able to compensate for maternal rejection, and maternal emotional warmth did not buffer the effects of paternal overprotection. All these relations did not differ for boys and girls or for children from families with a different socio-economic status (two-way and three-way interactions with gender and SES are not shown in Tables 2 and 3 as they were non-significant). Moreover, analyses split by gender showed similar results as the results on the total sample, meaning that all the effects had the same direction yet a bit less strength due to the difference in power.

Discussion

In this study we focused on fathering, mothering, and maladjustment in early adolescence aiming for a theoretical contribution by distinguishing between effects of active and reactive parenting. The theory behind this distinction is, roughly, that in early adolescence the mother helps the child to control externalizing and internalizing problems by actively satisfying relatedness needs. The father helps in this way by actively satisfying autonomy needs. The mother's provision of emotional warmth and not rejecting the child can thus be expected to be negatively associated with maladjustment, whereas overprotection by fathers can be expected to be positively associated with maladjustment. Because mothers and fathers cater to different fundamental needs, we expected that the positive parenting of one cannot buffer the consequences of negative parenting by the other. With regard to reactive parenting, we reasoned that fathers can be expected to withdraw emotional warmth as reaction to maladjustment of the child, whereas mothers respond less conditionally in their emotional warmth to behavior problems and thus can be expected to appear emotionally warmer to the child the more the father becomes cooler in the face of rising maladjustment.

We first looked at paternal and maternal parenting behavior separately. In concordance with previous studies on mainly maternal behaviors (McLeod et al., 2007; Rothbaum & Weisz, 1994), we found for both mothering and fathering that perceived rejection and overprotection were associated with elevated levels of maladjustment in early adolescence. The

mothering and fathering effects were not only comparable in terms of direction but also in strength, except that mothers' emotional warmth did not seem to have an effect on internalizing behavior. With regard to externalizing problems, perceived emotional warmth by fathers and mothers was protective. Mothering and fathering explained similar amounts of variance in maladjustment. Because the maternal and paternal parenting behaviors were highly correlated, the separate effects do not yet tell us much about the unique contribution of mothering and fathering to maladjustment. Given the high correlation, fathering is in part a proxy for mothering and vice-versa.

In order to test the hypotheses on the effects of the unique contribution, mothering and fathering were analyzed simultaneously. Here, the picture changed considerably. Apparently, accounting for the behavior of one parent changes the impact of the other parent's behavior with regard to early adolescent externalizing and internalizing problems. As we had expected from the active parenting hypothesis, for both outcomes, we found that the risk-effect of perceived rejection by fathers disappeared completely, while the risk-effect of perceived rejection by mothers remained. Also as expected, we found that when overprotection in mothers and fathers was considered simultaneously, the association of overprotection by mothers with maladjustment disappeared (even though children experienced mothers to be more overprotective than fathers), while a significant association remained for fathers. The hypotheses concerning these effects were deduced from a theory about mothers and fathers catering to different fundamental needs of the child. The same theoretical basis had led to the expectation that the negative effects of parenting by the mother cannot be compensated by positive parenting of the father and vice-versa. These expectations were supported by the results and they strengthen our confidence in the reasoning behind the results.

With regard to reactive parenting, our results show that there is indeed a negative association between maladjustment of the child and emotional warmth by the father. If this were interpreted as an effect of active parenting, it would look like fathers could reduce the likelihood of externalizing and internalizing behavior of their child by heightened emotional warmth. Our contention that the causal direction goes the other way could not be explicitly tested with our data, but by also looking at parent's reaction (T3) to their children's maladjustment (T2) we showed that fathers unlike mothers did indeed not respond in a positive way to their child's behavior problems. Fathers reacted with higher levels of guilt inducing and lower levels of problem

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solving through communication in general and to internalizing problems specifically. In addition, we are encouraged by the results of Fanti and colleagues (2008) who found a unidirectional, thus not bidirectional path from maladjustment of the child to the quality of the relation with the father (and not mother).

This causal direction is in conflict with findings that it is especially father love that makes a difference for child adjustment (Rohner & Veneziano, 2001; Veneziano, 2003). There can be several reasons for this. First of all, father love is often used as a term to cover a good father-child relationship. Based on the theory defended here, we can say that indeed without a good father-child relationship there would be no significant-other-effect on children's self-regulation and thus no help from the father to battle externalizing and internalizing behavior. However, the claim here is that the quality of this father-child relationship depends first and foremost on the autonomy support from the father rather than emotional warmth. We also see that the measurement instruments of the father-child relationship quality often contain a variety of elements that are not related to emotional warmth. For example, Bronte-Tinkew and colleagues (2006) use items such as "I want to be like my father" and "How often does he help you do things that are important to you?". Secondly, many of the studies on the importance of father love for adjustment did not analyze paternal and maternal parenting styles simultaneously. In addition, many previous studies that found a protective effect of parental emotional warmth (for example Ge, Best, Conger, & Simons, 1996; Rohner & Britner, 2002; Sentse et al., 2009) had combined scores of fathers and mothers into one score as an indication for parenting behavior. As we have seen, this can lead to different results.

For perceived emotional warmth by mothers, we had predicted a comparative effect: as fathers become emotionally cooler the more the child gets into externalizing or internalizing problems, mothers appear emotionally warmer relative to the fathers because they react less conditionally with their emotional warmth to child behavior problems. For this effect to appear, we have to analyze maternal and paternal emotional warmth simultaneously. When we do this, we see a positive association between internalizing problems and maternal emotional warmth. Again, without a distinction between active and reactive parenting, this could be interpreted as mothers' emotional warmth contributing to internalizing problems of the child. This, however, finds no support in the literature, except for cases in which the signal of emotional warmth becomes disturbed by simultaneous psychological control,

as Aunola and Nurmi (2005) showed for young children. For externalizing behavior, mothers' emotional warmth had no effect once we controlled for paternal warmth. This could be the result of two effects going against each other. On the one hand, (perceived) emotional warmth by the mother prevents the escalation of externalizing behavior. On the other hand, once externalizing behavior is escalating, the mother's response is experienced as emotionally warm (in comparison to the cooling of the father). It could also indicate that the relational need of the child at this stage of development (with autonomy playing an increasingly important role) is satisfied mostly by the feeling of not being rejected by the mother. Future research is needed to clarify this relation, as with the present data it is not possible to go deeper into this distinction.

The effects of mothering and fathering and their interactions were not further qualified by socio-economic status nor by gender of the child. Although it has been suggested that paternal behavior is more strongly related to boys' maladjustment than to girls' maladjustment (Bronte-Tinkew et al., 2006), many researchers did not find any gender differences (e.g., Carlson, 2006; Veneziano & Rohner, 1998; Videon, 2005). The present study showed that fathering and mothering are similarly related to maladjustment for boys and girls, and for adolescents in different socio-economic status families.

There are some shortcomings that should be considered when reviewing the findings of the present study. Firstly, although we aimed to investigate the interdependence of fathering and mothering, the real-life interaction between parents is not captured in this study. That is, we had no information on how parents actually and actively influence (encourage, discourage) each other's behavior. Secondly, the best way to test for differences between active and reactive parenting effects would be to analyze cross-lagged paths between child behavior and parenting. Unfortunately, we do not have the same data at the different measurement waves so we had to rely on other kinds of analyses to test our hypotheses.

Despite these limitations, the current study has major strengths compared to previous research on this topic. The study and its hypotheses were theory-driven, in which we further distinguished between active and reactive parenting effects. Furthermore, most studies on the influence of fathers have looked into the quantity rather than the quality of care, and few dealt with early adolescents. The current study examined the separate and simultaneous effects of maternal and paternal parenting behaviors on both externalizing and internalizing problems in early adolescence. Moreover, we

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also tested the interaction between paternal and maternal behaviors in order to find out whether fathers' behavior could buffer negative behavior of mothers and vice versa. In addition, our measures were based on multiple informants and we controlled for familial vulnerability to psychopathology, early childhood behavior, gender, and socio-economic status. To conclude, our findings imply that fathers should no longer be ignored in parenting research because paternal effects can be different from maternal effects when estimated simultaneously and fathers can have a unique contribution to early adolescents' maladjustment above and beyond that of mothers.