

# Parenting During Toddlerhood

## Contributions of Parental, Contextual, and Child Characteristics

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The present study examines the contribution of parental, contextual, and child characteristics to parenting behavior during toddlerhood in 111 two-parent families with a 17-month-old son ( $M = 16.9$  months,  $SD = 0.57$ ). Parenting was conceptualized in terms of five dimensions: support, structure, positive discipline, psychological control, and physical punishment. In general, results indicate that the effects of parental, contextual, and child characteristics on parenting dimensions do not differ for mothers and fathers. The only uncovered difference concerns the effect of children's inhibitory control, which was significant for maternal but not for paternal support. For both mothers and fathers, support, structure, and the use of psychological control are mainly influenced by parental characteristics, whereas the use of positive discipline and physical punishment are best predicted by contextual characteristics. Overall, the contribution of child characteristics to parenting dimensions was moderate.

**Keywords:** *maternal behavior; paternal behavior; parental characteristics; contextual characteristics; child characteristics*

The transition from infancy to toddlerhood is characterized by a number of changes in the behavioral repertoire of both child and parent. Besides an enlargement of the child's linguistic skills and mobility, there is also an increase in negativity and oppositionality during this period that heralds the onset of independence (Keenan & Wakschlag, 2000). Parents have to adjust

their child rearing to these newly achieved behaviors, and their parenting tasks broaden. Although during infancy the primary role of the parents was the providence of nurturance and care giving, parents now have to set limits and provide guidance as well. Many researchers noted that parenting during toddlerhood plays a unique and important role in the developmental outcomes of the child (Maccoby, 2000). Furthermore, research shows that parenting is quite stable at this very young age (Dallaire & Weinraub, 2005). These two points stress the importance of studying factors that account for variations in child-rearing behavior throughout this developmental period. In the present study, we address this question by examining three groups of factors suggested by Belsky's (1984) ecological model of the determinants of parenting: parental personality, contextual features, and characteristics of the child. Since the introduction of Belsky's process model of parenting in 1984, many parts of the model have been studied, and some studies have confirmed the general model (Michalcio & Solomon, 2002). However, these previous studies are limited for three reasons.

The first limitation is that past work on the determinants of parenting during toddlerhood has examined only a restricted range of parental behavior, mainly the affective qualities of parenting, and has thus ignored the multidimensional nature of parenting (Darling & Steinberg, 1993). The present study examines the determinants of five parental dimensions, that is, parental support, structure, positive discipline, psychological control, and physical punishment. Support includes parental involvement in positive parent-child interactions and the extent to which parents are sensitive and responsive to the child's signals and needs. Structure concerns the parents' tendency to provide a structured environment by being consistent and predictable. Positive discipline refers to the extent to which parents praise the child's good behavior and provide explanation for why specific behavior is unwanted. Psychological control represents the extent to which parents raise their voice and take away affection or attention as a response to children's disruptive behavior. The fifth dimension, physical punishment, refers to the parents' tendency to spank the child when he or she misbehaves.

A second limitation of former work on the determinants of parenting is that these studies have frequently investigated only one or two out of the three predicting domains that are expected to play a role in parenting. As a consequence, less is known about the unique contributions of various parental, contextual, and child characteristics to parenting. The present study examines all three predicting domains to determine their unique contributions. Based on previous findings, for each domain we selected those characteristics that appear to be especially important determinants of parenting.

## Parental Personality

Given that individual differences in personality manifest themselves in a wide range of behavioral domains, including social relationships, personality is expected to be a determinant of parenting (Belsky, 1984; Belsky & Barends, 2002). In fact, Belsky (1984) proposes that parental characteristics are probably the most important determinants of parenting behavior because they act on parenting both directly and indirectly through their effect on social-contextual factors that affect parenting. Results from diverse studies confirm that parental characteristics are important contributors to parenting behavior. Studies using the five factor model of personality show that high scores on positive personality traits (agreeableness, extraversion, openness, and conscientiousness) are related to positive ambience, nurturance, and adaptive parenting (Belsky & Barends, 2002; Clark, Kochanska, & Ready, 2000; Kochanska, Friesenborg, Lange, & Martel, 2004; Metsäpelto & Pulkkinen, 2003; Woodworth, Belsky, & Crnic, 1996), whereas high scores on neuroticism are related to low levels of parental supportiveness (Kochanska et al., 2004; Metsäpelto & Pulkkinen, 2003; Woodworth et al., 1996).

The current study extends the Big Five personality traits with self-control. Self-control is described as a stable aspect of personality (Baumeister, 2002) and is thought to be an important individual characteristic with regard to social behavior (Houck & LeCuyer-Maus, 2004). Surprisingly, self-control has—not yet been investigated in relation to parenting behavior. Individuals with a low degree of self-control are characterized by self-centeredness, impulsivity, and a tendency to immediately satisfy desires. Thus, it can be expected that low self-control is incompatible with patient, warm, and consequent parenting behavior.

## Social Contextual Characteristics

Features from the broader social context in which the parent–child relationship is embedded form the second determinant of parenting (Belsky, 1984). There is a body of evidence that the feeling of social support on one hand and the experience of stress on the other hand are likely to promote or undermine parental competence. The present study examines three features from the social context: marital satisfaction, socioeconomic status (SES), and family size.

Belsky (1981) claimed that the marital relationship serves as the principal support system for parents. Difficult child behavior, which is common during toddlerhood, is a stress to this marital relationship (Calzada, Eyberg, Rich, & Querido, 2004). Therefore, we consider marital satisfaction as an

important predictor of parenting during this developmental period. Several studies showed that parents who feel supported by their spouse and experience a moderate to high satisfaction with their marriage show more skillful parenting behavior (Kendler, Sham, & MacLean, 1997; Van Bakel & Riksen-Walraven, 2002). Marital dissatisfaction, in contrast, is related to more parental negativity and rejection (Belsky, Youngblade, Rovine, & Volling, 1991; Hetherington & Clingempeel, 1992) and a more lax and inconsistent discipline style (Mann & MacKenzie, 1996).

The SES is hypothesized to influence parenting behavior in two ways. First, it is thought that parents' occupational and social status predicts differences in parental values and goals, which lead to differences in child-rearing behaviors (Kohn, 1963). Second, economic hardship exposes parents low on SES to additional stressors that undermine skillful parenting (McLoyd, 1990). In fact, low SES is found related to more harsh parent-child interactions, whereas parents high on SES are more warm and responsive and use more appropriate and consistent discipline techniques (Pinderhughes, Nix, Foster, & Jones, 2001; Van Bakel & Riksen-Walraven, 2002).

Family size is also considered to be an important predictor of parenting. When there are more children present in the family, parents have to divide their attention and parenting resources are challenged. Indeed, in a study with school-aged children, Pinderhughes and colleagues (2001) found that parents tend to be more consistent and less harsh in their discipline behavior when fewer children were present in a family. Another study showed that children with more siblings were less overprotected and less controlled by their parents (Kendler et al., 1997).

### **Child Characteristics**

Belsky (1984) also draws attention to the role of the child as a contributor to parenting behavior. A growing body of evidence suggests that parents adjust their behavior to the characteristics of their child. Difficult children invoke harsh, problem-inducing parenting, whereas children's positive emotionality elicits positive, adapted parenting (Kochanska et al., 2004; Neitzel & Stright, 2004).

Until now, temperamental features of the child have received the most attention in terms of influencing parental behavior. However, there are other characteristics worth considering, such as the language abilities of the child. During toddlerhood, children make major transitions in their linguistic skills. By using speech, a child is able to express what he or she wants or needs, which makes it easier for the parent to react in a responsive manner. A study

that examined this relationship showed a positive relation between parental warmth and toddler's language skills (Fuligni, Han, & Brooks-Gunn, 2004).

The third limitation of studies on determinants of parenting is the exclusive focus on mothers. Despite the growing acknowledgement that fathers play an important role in child development, still little research is done on paternal behavior. Studies that did examine differences between maternal and paternal behavior showed that mothers are more responsive and warm in their parenting than fathers (Calzada et al., 2004; Kendler et al., 1997), whereas fathers are more restrictive (Metsäpelto & Pulkkinen, 2003). Thus, mothers and fathers differ from each other with regard to their parental behavior. But whether parental, contextual, and child characteristics play different roles in parenting of mothers and fathers is unclear. Studies that focused on the determinants of both mothering and fathering are scarce and contradictory. With regard to the relatedness between parents' personality and parenting behavior, Belsky, Crnic, and Woodworth (1995) established that mothering was more consistently predicted by personality than was fathering, with extraversion playing a larger role in fathering and agreeableness being more important for mothering. Kochanska and colleagues (2004) cautiously concluded that parental agreeableness and openness had differential effects on maternal and paternal positive affect. However, the effects of personality on responsiveness and monitoring were similar for mothers and fathers. In addition, Metsäpelto and Pulkkinen (2003) observed that parental personality traits influenced maternal and paternal nurturance, restrictiveness, and knowledge (awareness of children's friends and activities) in similar ways.

In reference to contextual features, a longitudinal study on the interrelations of marital and parent-child relationships (Belsky, Youngblade, et al., 1991) found that paternal behavior was more influenced by a deteriorating quality of marriage than maternal behavior was. In addition, Grolnick, Weiss, McKenzie, and Wrightman (1996) showed that higher SES fathers tended to be more involved and provided more structure, whereas for maternal behavior no significant relations were found with SES.

Concerning the effects of child characteristics, Kochanska and colleagues (2004) found that children's fearfulness, activity level, and joy had different effects on maternal and paternal positive affect and responsiveness. For parental monitoring, however, the child's temperament had similar effects for mothers and fathers.

The results of these former studies not only are inconsistent but also are limited by a lack of evidence supporting cross-gender comparability of measures used to assess parental behavior. To examine differences in maternal

and paternal behavior, it is critical that the measures of these behaviors have similar meaning for mothers and fathers. When measures are not equivalent for mothers and fathers, findings of a between-group difference cannot be interpreted unambiguously (Cheung & Rensvold, 2002) because these differences may simply mean that different phenomena were measured. In this study, preliminary to examine mother–father comparisons, the comparability of the measures of parenting dimensions for mothers and fathers is investigated.

To summarize, the present study tries to expand the existing knowledge on the determinants of parenting by (a) examining the determinants of a broad range of parenting dimensions, (b) studying the unique effects of parental, contextual, and child characteristics on parenting dimensions, and (c) examining these effects on both maternal and paternal dimensions.

## Method

### Participants and Procedure

The data used in the present study were collected as part of the first wave of a longitudinal project on the development of physical aggression in toddlerhood. Within this project, only boys were included because it is thought that physical aggression is more common among boys than girls. The boys are followed from the time they were 17 months of age because that is the age of onset of aggressive behavior (Tremblay et al., 1999).

Participants were 111 two-parent families, each with a 17-month-old infant boy ( $M = 16.9$  months,  $SD = 0.57$ ). About half of the boys ( $n = 57$ ) were firstborn children. The age of the mothers ranged from 22 to 44 years ( $M = 32.8$ ,  $SD = 3.98$ ) and from 22 to 48 years ( $M = 34.7$ ,  $SD = 4.72$ ) for the fathers. The level of education ranged from low (elementary school) to high (college degree or more). The recruitment of these families was based on the records of “infant wellcare clinics” in three cities situated in the middle of the Netherlands. A recruitment letter, which explained the goals of the project, was sent to 192 families followed by a telephone call. Of these 192 families, 117 families volunteered. A lack of time was the most prevalent reason for refusal of participation. In four families, mothers and fathers separately lived. These families were excluded from the current study. In addition, two families were excluded because of missing data.

Both mothers and fathers completed questionnaires about their parental behavior and personal characteristics. Only mothers filled in questionnaires

about their toddler's characteristics. The return rate of the questionnaires was 100%, as the questionnaires were collected at home.

### **Instruments**

All instruments that were originally produced in English and for which no standard Dutch translation was available were translated by means of a double-translation procedure. Because the children in this study are 17 months of age, several items were not age appropriate and had to be revised or left out. Scores for the parenting dimensions were assigned by computing mean scores of the scales of which these dimensions consisted. With regard to lack of structure, the scales that measured this parenting dimension had to first be standardized because they had different rating scales. For parental, contextual, and child characteristics, scores were assigned by computing mean scores of all the items of which the scales consist. For all scales, a high score indicates that the behavior or characteristic is highly represented within the individual.

### **Parenting**

*Support.* Two scales represented the parenting dimension support. The first scale, responsiveness (4 items), reflects the degree to which parents adequately and responsively react to the needs, signals, and conditions of the child (Gerris et al., 1993). A sample item is "I know very well what my child feels or needs." Parents rated the frequency of their parenting behavior on a 5-point scale ranging from 1 (*never*) to 5 (*always*). The second scale, positive interactions (5 items), measures the degree to which a parent is involved in positive interactions with the child (Strayhorn & Weidman, 1988). The frequency of positive parent-child interactions was measured on a 5-point scale (e.g., "How often do you and your child laugh together?"), ranging from 1 (*never*) to 5 (*many times each day*).

*Lack of structure.* Three scales that assess the degree to which parents provide a structured environment for their child represent the dimension of lack of structure. The first two scales are from the shortened version of the Parenting Scale (Irvine, Biglan, Smolkowski, & Ary, 1999). The first scale, laxness (6 items), describes a parent who is permissive and inconsistent when providing discipline. The second scale, overreaction (4 items), measures the parental tendency to react on children's misbehavior in an unstructured, exaggerated manner. For both laxness and overreaction, the items

present a specific parental situation followed by two options that act as opposite anchor points for a 7-point scale. A high score indicates that parents are respectively lax or overreactive in their parenting. A sample item for laxness is, "If my child gets upset when I say 'no,' I stick to what I said—or the opposite—I back down and give in to my child." A sample item for overreaction is, "When my child misbehaves, I handle without getting upset—or the opposite—I get so frustrated that my child can see I'm upset." The third scale, inconsistency, was assessed by five items from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996) that measure parental inconsistency in applying discipline. Parents rated themselves on a 5-point Likert-type scale ranging from 1 (*never*) to 5 (*always*). A sample item is, "You threaten to punish your child, and then do not actually punish him."

*Positive discipline.* Two indicators of positive discipline were assessed. Parental reinforcement of good behavior was measured by 6 items derived from the Alabama Parenting Questionnaire (Shelton et al., 1996). Parents had to indicate how often they praised their child's good behavior (i.e., "You praise your child when he behaves well."). The second indicator, induction, was measured with 4 items (Gerris et al., 1993). Parents reported how often they point out the consequences of the child's misbehavior. A sample item is, "When my child does not listen to me, I explain to him that it annoys me." Both scales are measured on a 5-point scale ranging from 1 (*never*) to 5 (*always*).

*Psychological control.* To assess positive control, two scales were used. Four items measured love withdrawal (Gerris et al., 1993). Parents reported how often they used withdrawal of attention and/or affection as a technique to discipline their child (e.g., "When my child misbehaves, I don't listen to what he says.") The second scale, verbal punishment, was measured with 10 items derived from the discipline scale of the Parent Behavior Checklist (Fox, 1994) and assessed the parental tendency to raise their voice as a response to their child's misbehavior (e.g., "I yell at my child for being too noisy at home."). Both scales are measured on a 5-point scale (1 = *never*, 5 = *always*).

*Physical punishment.* Two scales assessed parental use of physical punishment. Five items were drawn from the discipline scale of the Parental Behavior Checklist (Fox, 1994), and 5 items were from the Alabama Parenting Questionnaire (Shelton et al., 1996). The items measured the frequency which parents use physical punishment as a manner to discipline their child. On a 5-point scale parents had to indicate how often they use spanking as



a discipline technique, ranging from 1 (*never*) to 5 (*always*). Sample items are, "When my child has a temper tantrum, I spank him," and "You spank your child with your hand when he has done something wrong."

The internal reliabilities of the five parenting dimensions are, respectively, .77, .82, .76, .72, and .76 for mothers. For fathers, these reliabilities are .80, .78, .75, .72, and .78, respectively.

### Parental Characteristics

*Parental personality.* Parents described their own personality using a Dutch adaptation (Gerris et al., 1998) of 30 adjective Big Five personality markers selected from Goldberg (1992). Extraversion taps the extent to which a person is sociable, fun loving, and optimistic. Persons who are agreeable are friendly, helpful, and straightforward. A high score on the dimension openness to experience indicates that a person tends to enjoy new experiences, has broad interests, and is very imaginative. Conscientiousness reflects the extent to which a person is well organized and has high standards. Emotional stability measures the degree to which a person is nervous, anxious, and irritable. Parents indicated on a 7-point scale (1 = *very untrue for me*, 7 = *very true for me*) the degree to which a trait adequately described their personality. Each personality dimension was measured by 6 items. The reliabilities for fathers and mothers ranged from .81 to .91.

*Parental self-control.* Self-control was assessed by 24 items developed by Grasmick, Title, Bursik, and Arneklev (1993). The parents rated themselves on a 4-point scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). A sample item is, "I often act on the spur of the moment." Persons scoring low on self-control are impulsive, prefer simple tasks, have a high risk-seeking potential, favor physical (as opposed to mental) activities, are self-centered, and possess volatile tempers. The internal consistencies were .81 for the mothers and .80 for the fathers.

### Contextual Characteristics

*Marital satisfaction.* Mothers and fathers separately assessed the quality of their relationship with 6 items coming from the ÉLDEQ (2003) study in Quebec. The 6 items (e.g., "In general, how often do you think that things between you and your partner are going well?") had to be rated on a 6-point scale ranging from 1 (*all the time*) to 6 (*never*). The internal consistencies were .70 for mothers and .67 for fathers.

*Family size.* Mothers were asked to indicate the number of children living in the home.

*SES.* To classify the family's SES, the education and occupation of both parents are used according to the four-factor index developed by Brandis and Henderson (1970).

### **Child Characteristics**

*Temperament.* Five temperamental features were measured by the Early Childhood Behavior Questionnaire (Putnam, Gartstein, & Rothbart, 2003). Mothers were asked to report on a 5-point Likert-type scale to which extent each item applied to their child (1 = *never*, 7 = *always*). Inhibitory control (14 items) refers to the ability of the child to stop, moderate, or suppress a behavior under instruction (e.g., "When told 'no,' how often did your child stop the activity immediately?"). Soothability (14 items) refers to the rate of recovery from peak stress, excitement, or general arousal (e.g., "Following an exciting event, how often did your child calm down quickly?"). The third feature is frustration (9 items), measuring how often a child shows signs of anger in situations involving conflicts with the mother or another child (e.g., "When it was time for bed and your child did not want to go, how often did he physically resist or struggle?"). Eleven items measure shyness, indicating how often a child shows inhibition, distress, or signs of shyness in novel or uncertainty provoking situations (e.g., "When he saw other children while in the park or playground, how often did your child approach and immediately join in the play?"). The last feature, activity level (7 items), refers to the level of gross motor activity (e.g., "How often during the last two weeks did your child play games which involved running around, banging, or dumping out toys?"). The internal reliabilities for these temperamental features were .90, .85, .72, .75, and .68, respectively.

*Language development.* Seven items, selected from various sources, measured to what extent the child is able to express himself with words (Brouwers-de Jong, Burgmeijer, & Laurent de Angulo, 1996; Bunge et al., 2005). Each item consists of a statement about the verbal capacities of the child. Sample items are "Has your child ever spoken a partial sentence of 3 words or more?"; "Does your child know words or has own words for objects or events other than mammy and daddy, such as ball, car, eating, go to sleep?"; "Does your child have difficulties expressing their needs in words?" Mother had to indicate if the statement was true (1) or false (2) for her son. Cronbach's alpha was .71.

## Results

### Factor Structure of Parenting

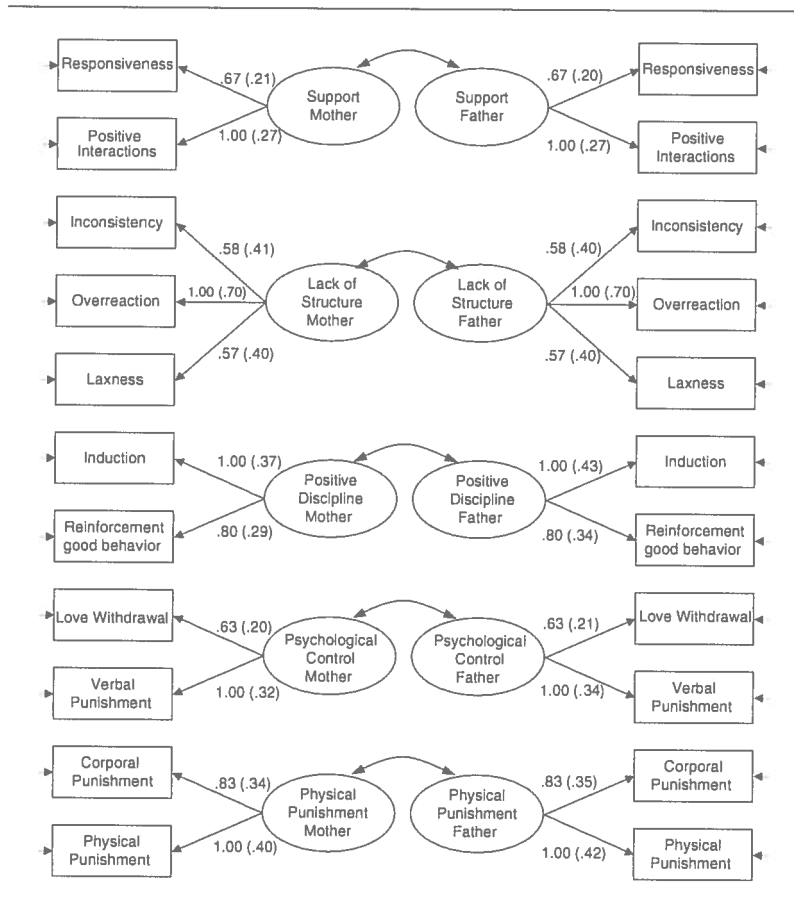
To examine whether the 11 parenting scales that were measured in the present study represent the five parental dimensions (support, structure, positive discipline, psychological control, and physical punishment) and to verify if these five parental dimensions have similar meanings (i.e., are measurement invariant) for both mothers and fathers, a confirmatory factor analysis was conducted using structural equation modeling (LISREL 8). Because the mothers and fathers in the present study come from the same family—and as a consequence cannot be considered as independent—a factor model was construed in which maternal and paternal dimensions were simultaneously assessed. The model specified 10 factors (5 for maternal and 5 for paternal dimensions) as separate but correlated parenting dimensions (Figure 1). The loading of a single scale on each factor was constrained to 1.0 to establish a metric for the latent factors. Factor variances and the correlation among the factors were free to vary. Furthermore, the model required that maternal scales only loaded on maternal dimensions of parenting and paternal scales only on paternal dimensions. The test for gender differences involved the comparison of a model in which the loadings of maternal scales on the maternal dimensions were allowed to be different from the loadings of paternal scales on the paternal dimensions (unconstrained model) to a model in which these loadings were constrained to be equal across gender (constrained model). A significant difference between these two models would indicate that there are significant differences in the factor structure of maternal and paternal behavior.

The constrained model produced an adequate fit:  $\chi^2(166) = 205.91$ , root mean square error of approximation (RMSEA) = .04, non-normed fit index = .93, comparative fit index (CFI) = .96. The factor analysis in which the factor loadings of maternal and paternal dimensions were unconstrained showed no significant difference in chi-square compared to the constrained model ( $\Delta df = 6$ ,  $\Delta\chi^2 = 9.40$ ,  $p > .05$ ). This indicates that the factor structure is consistent across gender and that the parenting dimensions are measured invariant for mothers and fathers. All factor loadings are significant at the  $p < .001$  level (Figure 1).

### Descriptive Statistics and Correlation Analysis

Table 1 shows that there are no differences in the reports of mothers and fathers with regard to levels of lack of structure, positive discipline,

**Figure 1**  
**Factor Structure of Parenting for Maternal and Paternal Behavior**



Note: The coefficients in front of the parentheses are unstandardized loadings; the coefficients in parentheses are standardized loadings. All factor loadings are significant at  $p < .001$ .

psychological control, and physical punishment. However, mothers reported more support than fathers. Mothers also scored higher on extraversion and self-control than did fathers. Fathers reported higher scores on emotional stability than did mothers.

**Table 1**  
**Means, Standard Deviations, and Differences Between**  
**Mothers and Fathers**

	Mothers		Fathers		<i>t</i> -Value (Paired)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
<b>Parenting</b>					
Support	4.41	0.34	4.14	0.40	6.49***
Lack of structure <sup>a</sup>	-0.05	0.79	0.04	0.78	-0.95
Positive discipline	3.73	0.58	3.62	0.59	1.59
Psychological control	1.49	0.38	1.58	0.44	-1.93
Physical punishment	1.40	0.43	1.44	0.42	-0.92
<b>Parental characteristics</b>					
Extraversion	5.32	1.07	4.86	1.08	3.47***
Agreeableness	5.74	0.55	5.72	0.65	0.18
Conscientiousness	5.00	1.09	4.87	1.10	0.95
Emotional stability	4.73	1.01	5.07	0.96	-2.62*
Openness	4.74	1.01	4.94	0.96	-1.66
Self-control	3.07	0.30	2.94	0.31	3.18**
<b>Contextual characteristics</b>					
Marital satisfaction	4.89	0.50	4.83	0.52	1.45
Socioeconomic status	11.06	2.01			
Family size	1.71	0.93			
<b>Child characteristics</b>					
Inhibitory control	3.68	0.93			
Soothability	5.84	0.64			
Activity level	3.91	0.92			
Frustration	3.40	0.87			
Shyness	3.30	0.82			
Language abilities	1.42	0.25			

a. Standardized scores.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

To assess the degree of relatedness within and among the three blocks of predictors (personal, contextual, and child characteristics), bivariate correlations were computed for mothers and fathers separately (Table 2). Within the block of maternal personality, 5 out of 15 correlations were significant, with a mean correlation of  $r = .16$ , ranging from  $r = .02$  to  $r = -.50$ . For paternal personality, 8 out of 15 correlations were significant, with a mean correlation of  $r = .21$ , ranging from  $r = .02$  to  $r = .43$ . None of the contextual variables were interrelated. Within the block of child characteristics, 3 out of 15

Table 2  
Intercorrelations Among Determinants of Parenting

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Extraversion		.35***	-.08	.28**	.24*	.12	.19*	-.03	.11	.12	-.04	-.04	-.07	-.28	.18
2. Agreeableness	.27**		.11	.33***	.43***	.25**	.17	-.19*	.00	.19*	.01	-.11	-.10	-.13	.09
3. Conscientiousness	-.05	.02		.13	.02	.28**	.01	-.13	.11	.19	.05	-.01	.04	.02	.15
4. Emotional stability	.50***	.20*	-.15		.08	.23*	.33***	-.09	.25**	.12	.08	.04	-.07	-.08	.28**
5. Openness	.18	.09	-.06	.07		.17	.10	.08	.09	.22*	.06	-.04	-.05	-.08	.03
6. Self-control	.03	.22*	.28**	.16	-.18		.30**	-.11	.13	.22*	-.08	-.12	-.04	-.16	.29**
7. Marital satisfaction	.17	.13	.07	.23*	.21*	.11		-.04	.15	.09	-.02	.02	-.02	-.09	.18
8. Family size	.06	-.03	.04	.01	.03	-.07	-.03								
9. Socioeconomic status	.18	.05	.15	.12	.10	.12	.13	.09							
10. Inhibitory control	.01	.11	.18	.14	.06	.30**	.26**	-.08	.06						
11. Soothability	.37***	.28**	.13	.24*	.06	.17	.08	.03	.21*	.10					
12. Activity level	-.01	-.00	-.13	-.10	.12	.01	-.03	.01	-.06	-.15	-.11				
13. Frustration	-.19*	-.07	-.01	-.31**	-.02	-.21*	-.05	.22*	.02	-.32**	-.39***	.18			
14. Shyness	-.19*	-.06	.07	-.31**	.04	-.10	-.01	.05	.10	-.19	-.04	.02	.23*		
15. Language abilities	.07	-.16	-.07	.15	.24*	-.14	.13	-.16	.15	.06	-.04	.07	-.05	.08	

Note: Correlations for mothers are below the diagonal; correlations for fathers are above the diagonal.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

correlations were significant. The mean correlation was  $r = .14$  (min  $r = .02$ , max  $r = .39$ ).

With regard to independency of the predictor variables among the three blocks of predictors, the highest correlation was found between maternal extraversion and soothability of the child ( $r = .37, p < .001$ ). Overall, these relatively low mean correlations suggested moderate to high levels of independency of the predictor variables within and among the three blocks.

Correlations among predictor variables and parenting behavior are shown in Table 3. Each predictor, with exception of children's shyness, was related to at least one dimension of parenting. The pattern of correlations between parental characteristics and parenting behavior is partly comparable for mothers and fathers. Parents who scored high on emotional stability and parents high on self-control reported higher scores on support and structure and lower scores on psychological control. Mothers and fathers who scored high on agreeableness indicated higher scores on support, structure, and positive discipline. For maternal characteristics, five more significant correlations were found for her reported parenting. That is, extraverted mothers reported more support, agreeable mothers and mothers who scored high on self-control indicated to use physical punishment less often, and emotional stable mothers reported more positive discipline. With regard to paternal characteristics, fathers who scored high on openness indicated to be more supportive and structured in their parenting.

With regard to social contextual features, Table 3 shows that parents who are satisfied with their marriage reported more support and less lack of structure. Mothers who scored high on marital satisfaction reported more positive discipline. The SES was negatively related with the use of physical punishment in both mothers and fathers. Family size was related to lower scores of paternal support and paternal positive discipline.

As for child characteristics, only few correlations were found significant. Maternal support was related to higher levels of the child's inhibitory control and soothability and lower levels of frustration. Paternal support was only positively related to the language abilities of the child. Lack of structure in maternal behavior was related to lower levels of inhibitory control. Mothers' use of psychological control was positively related with high activity level.

Overall, the predictors appear to be more strongly related to support, lack of structure, and positive discipline than to psychological control and physical punishment. Child characteristics show a weak and inconsistent relationship to parenting and seem to correlate more strongly with maternal than with paternal parenting.

Table 3  
Correlations Among Predictor Variables and Parenting Dimensions

	Support		Lack of Structure		Positive Discipline		Psychological Control		Physical Punishment	
	M	F	M	F	M	F	M	F	M	F
1. Parental characteristics										
Extraversion	.26**	.08	-.17	-.17	.14	.05	-.08	-.02	-.17	-.05
Agreeableness	.27**	.35***	-.24*	-.22*	.23*	.24*	-.12	-.06	-.24*	.04
Conscientiousness	.09	.07	-.20*	-.13	-.08	.02	-.08	.00	-.11	-.02
Emotional stability	.28**	.29**	-.31**	-.39***	.21*	-.01	-.23*	-.26**	-.11	-.15
Openness	.16	.28**	.00	-.21*	.08	.12	.09	-.09	-.02	-.06
Self-control	.22*	.22*	-.31**	-.23*	.08	.01	-.39***	-.34***	-.21*	-.10
2. Contextual characteristics										
Marital satisfaction	.35***	.22*	-.31**	-.21*	.30**	.15	-.04	-.11	.05	-.04
Family size	-.02	-.28**	.13	.17	-.17	-.19*	-.03	.17	.12	.14
Socioeconomic status	.06	.06	.08	.00	.09	-.09	-.07	.03	-.27**	-.27**
3. Child characteristics										
Inhibitory control	.36***	-.01	-.28**	-.12	.09	-.02	-.17	-.01	-.08	.11
Soothability	.24*	.08	-.09	-.15	.04	-.05	-.18	-.08	-.09	-.06
Activity level	-.15	.01	.17	.07	-.06	-.02	.31**	.07	-.03	-.04
Frustration	-.23*	-.09	.09	.05	.02	.08	.18	.06	.06	.00
Shyness	-.17	-.08	.12	.18	-.05	.00	.03	.10	-.08	.13
Language abilities	.13	.26**	-.01	.01	.23*	.13	.08	.01	.04	-.05

Note: M = mother; F = father.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .



### Effects of Personal, Contextual, and Child Characteristics on Parenting Behavior

To more rigorously test whether parental, contextual, and child characteristics had significantly different effects on maternal and paternal behavior, model-fitting analyses were carried out using structural equation modeling (LISREL 8). Each of the five parenting dimensions were separately analyzed, as the number of participants per parameter in a full model containing all five parental behaviors would exceed the appropriate ratio (at least 5 to 1). The small sample size also did not allow us to test a regression model in which all six parental characteristics, three contextual features, and six child characteristics were simultaneously entered (Bentler, 1990). Therefore, to examine the unique contributions of the characteristics from the three domains, the regression analyses were carried out in two steps. In both steps, regression models were construed in which maternal and paternal behavior were simultaneously assessed. In the first step, for all five parenting dimensions three regression models were carried out, one for each domain of predictors. Subsequently, within these three models, the characteristics that significantly contributed to the specific parenting dimension were identified. By comparing a model in which the regression coefficients were constrained to be equal for mothers and fathers with a model in which these constraints were released, mother–father differences were examined. In the second step, a final model was construed in which the parental, contextual, and child characteristics that significantly contributed in the first step were simultaneously entered to examine the unique contributions of the three predicting domains and the various characteristics. Again, the fit of the constrained and unconstrained models were compared to examine if characteristics had similar effects on maternal and paternal behavior. Results of the final models are given in Table 4.

*Support.* The regression model in which the effects of parental characteristics on support are constrained to be equal for mothers and fathers showed a good fit,  $\chi^2(18) = 15.27$ , RMSEA = .00, normed fit index (NFI) = .95, CFI = 1.00. Releasing constraints did not significantly improve the fit,  $\Delta\chi^2(6) = 2.32$ . The model showed that agreeableness, emotional stability, and openness are positively related to support.

The constrained model of the social contextual characteristics was also acceptable,  $\chi^2(5) = 8.79$ , RMSEA = .08, NFI = .89, CFI = .94. The regression model in which the effect sizes of contextual features were unconstrained across mothers and fathers showed no significant difference in chi-square

Table 4  
 Standardized Gamma Coefficients in Multiple Regressions of Maternal and Paternal Distinct Sets of  
 Predictors (Simultaneously Estimated)

	Support		Lack of Structure		Positive Discipline		Psychological Control		Physical Punishment	
	M	F	M	F	M	F	M	F	M	F
1. Parental characteristics										
Extraversion	.19**	.20**			.20**	.22**				
Agreeableness		-.15*		-.14*						
Conscientiousness	.14*	-.32***		-.29***						
Emotional stability	.10									
Openness										
Self-control	.15***	.15***	.14***	.17***	.05***	.07***	-.33***	-.29***	-.14*	-.15*
$\Delta R^2$							.18***	.14***	.03*	.03*
2. Contextual characteristics										
Marital satisfaction	.17*	.16*	-.19**	-.19**	.16*	.16*	-.13	-.12	.13	.14
Family size										
Socioeconomic status	-.26***	-.26***								
$\Delta R^2$	.05**	.03**	.05**	.04**	.05**	.05**			.08***	.09***
3. Child characteristics										
Inhibitory control	.30***	—	-.10	-.10						
Soothability	.10	.09							.21**	.17**
Activity level										
Frustration										
Shyness										
Language abilities	.12	.11			.15*	.14*				
$\Delta R^2$	.13**	.01	.02	.00	.02*	.03*	.05**	.03**		
$R^2$	.33***	.19***	.21***	.21***	.12***	.15***	.23***	.17***	.11***	.11***

Note: M = mother; F = father.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

compared to the constrained models,  $\Delta\chi^2(3) = 7.06$ . For contextual features, marital satisfaction was positively related to both maternal and paternal support.

For the constrained model of child characteristics, fit measures were not in acceptable range,  $\chi^2(6) = 12.91$ , RMSEA = .11, NFI = .86, CFI = .89. The difference in chi-square between the constrained and unconstrained model was significant,  $\Delta\chi^2(6) = 12.91$ ,  $p < .05$ , suggesting that there are different effects of child characteristics on maternal and paternal behavior. To determine which of the child characteristics had this different effect, the constrained model was tested again, and the equality constraints were removed one at the time. The results showed that only the effect of inhibitory control on support was significantly different for mothers and fathers. Removal of this equality constraint led to a model with adequate fit,  $\chi^2(5) = 4.23$ , RMSEA = .00, NFI = .96, CFI = 1.00, which was not significantly different in chi-square from the unconstrained model,  $\Delta\chi^2(5) = 4.23$ . This model showed that the child's soothability and language abilities are positively related to maternal and paternal support and that the inhibitory control of the child only influenced maternal support.

The final model, in which all significant predictors from the three blocks of predictors were simultaneously entered (with inhibitory control of the child only having an effect on maternal support), showed good fit,  $\chi^2(15) = 10.35$ , RMSEA = .00, NFI = .97, CFI = 1.00. The difference in chi-square between the unconstrained and constrained models was not significant,  $\Delta\chi^2(6) = 3.05$ ,  $p > .05$ , indicating that also in this final model the effects of parental, contextual, and child characteristics were similar for mothers and fathers. The constrained model revealed that only the effects of agreeableness, emotional stability, marital satisfaction, and inhibitory control were unique (Table 4). Higher levels of support were reported by parents who are agreeable and emotionally stable, parents who are satisfied with their marriage, and by mothers of children who scored high on inhibitory control.

*Lack of structure.* For lack of structure, the constrained model of parental characteristics,  $\chi^2(18) = 14.70$ , RMSEA = .00, NFI = .95, CFI = 1.00, the constrained model in which the effects of social contextual features,  $\chi^2(5) = 7.31$ , RMSEA = .06, NFI = .90, CFI = .96, and the constrained model of child characteristics,  $\chi^2(6) = 3.75$ , RMSEA = .00, NFI = .95, CFI = 1.00, all showed acceptable to good fit. The differences in chi-square between the constrained and unconstrained models were not significant,  $\Delta\chi^2(6, 3, \text{ and } 6) = 6.33, 1.05, \text{ and } 3.75$ ,  $p > .05$ . The three models showed significant effects for

conscientiousness, emotional stability, marital satisfaction, and the child's inhibitory control.

The final model showed adequate fit,  $\chi^2(10) = 12.09$ , RMSEA = .05, NFI = .92, CFI = .98. The difference in chi-square between the unconstrained and constrained models was not significant,  $\Delta\chi^2(4) = 3.67$ ,  $p > .05$ , indicating that in this final model the effects of the predictors were similar for mothers and fathers. Within this final model all effects remained significant, except for inhibitory control. Thus, parents who are highly conscientious and emotionally stable and parents who are satisfied with their marriage reported to be more structured.

*Positive discipline.* With regard to positive discipline, the constrained model of parental characteristics,  $\chi^2(18) = 18.12$ , RMSEA = .01, NFI = .92, CFI = .99, the constrained model of social contextual features were tested,  $\chi^2(5) = 4.32$ , RMSEA = .00, NFI = .94, CFI = 1.00, and the constrained model of child characteristics,  $\chi^2(6) = 1.98$ , RMSEA = .00, NFI = .97, CFI = 1.00, all showed good fit. The differences in chi-square between the constrained and unconstrained models were not significant,  $\Delta\chi^2(6, 3, \text{ and } 6) = 4.85, 3.69, \text{ and } 1.98$ ,  $p > .05$ . Results from these three models indicated agreeableness, marital satisfaction, family size, and language abilities to have significant effects on parental report of positive discipline.

The final model showed good fit,  $\chi^2(8) = 5.52$ , RMSEA = .00, NFI = .95, CFI = 1.00. Comparison between the unconstrained and the constrained models did not show a significant difference in chi-square,  $\Delta\chi^2(4) = 3.74$ ,  $p > .05$ . In this final model, only the effect of family size was not significant anymore. Positive discipline is more frequently reported by parents who are agreeable, parents who are satisfied with their marriage, and parents of children with better language skills.

*Psychological control.* The constrained models that tested the effects on psychological control showed adequate fit for parental characteristics,  $\chi^2(18) = 15.82$ , RMSEA = .00, NFI = .94, CFI = 1.00, social contextual features,  $\chi^2(5) = 6.79$ , RMSEA = .06, NFI = .87, CFI = .99, and child characteristics,  $\chi^2(6) = 5.31$ , RMSEA = .00, NFI = .93, CFI = 1.00. The differences in chi-square between the constrained and unconstrained models were not significant,  $\Delta\chi^2(6, 3, \text{ and } 6) = 1.38, 4.34, \text{ and } 5.31$ ,  $p > .05$ . Parental emotional stability and self-control and the child's activity level had significant effects on psychological control. For contextual characteristics, no significant effects were found.

The final model, in which the effects of these three characteristics were simultaneously examined, showed acceptable fit,  $\chi^2(7) = 10.95$ ,

RMSEA = .07, NFI = .85, CFI = .92. Comparison between the unconstrained and the constrained models did not show a significant difference in chi-square,  $\Delta\chi^2(3) = 4.53, p > .05$ . Parents who are emotionally unstable and lack self-control and parents of highly active children reported to use psychological control more frequently.

*Physical punishment.* With regard to physical punishment, the constrained models that tested the effects of parental characteristics,  $\chi^2(18) = 15.55$ , RMSEA = .00, NFI = .94, CFI = 1.00, and social contextual features,  $\chi^2(5) = 0.64$ , RMSEA = .00, NFI = .99, CFI = 1.00, and the constrained model of child characteristics,  $\chi^2(6) = 9.70$ , RMSEA = .08, NFI = .85, CFI = .90, showed acceptable to good fit. The differences in chi-square between the constrained and unconstrained models were not significant,  $\Delta\chi^2(6, 3, \text{ and } 6) = 8.52, 0.43, \text{ and } 9.70, p > .05$ . These constrained models showed significant effects for self-control, family size, and SES. No significant effects were found for child characteristics.

The final model showed acceptable fit,  $\chi^2(5) = 3.51$ , RMSEA = .00, NFI = .93, CFI = 1.00. Comparison between the unconstrained and the constrained models did not show a significant difference in chi-square,  $\Delta\chi^2(3) = 0.63, p > .05$ , indicating that also in this final model effects of these characteristics are similar for mothers and fathers. Parents who lack self-control and parents low on SES reported to use physical punishment more frequently.

## Discussion

The purpose of this study was to expand the knowledge with regard to maternal and paternal behavior during toddlerhood and their determinants. Whereas the focal point of past work on the contributors of parenting during this developmental period was frequently restricted to parental responsiveness, the current study conveyed a multidimensional approach of parenting and focused on five parental dimensions that are central during toddlerhood: support, (lack of) structure, positive discipline, psychological control, and physical punishment. Results from the confirmatory factor analysis supported these five parenting dimensions as metric invariant across mothers and fathers. This finding indicates that mother–father comparisons can be made.

By adopting Belsky's (1984) process model, it was examined to which extent these parenting dimensions are determined by parental, contextual, and child characteristics. In addition, it was tested whether the effects of these characteristics were different for mothers and fathers. Results showed that the three predicting domains indeed contributed to parenting behavior.

Parental characteristics proved to be the most powerful contributors to all five parental dimensions. With regard to contextual characteristics, significant contributions were found for all parenting dimensions with exception of psychological control. For the use of physical punishment, contextual characteristics appeared to be the most important predictors. The contribution of child characteristics to parenting was fairly limited. Unique effects of this domain were relatively small and found significant only for maternal support and maternal and paternal lack of structure. In general, these results support Belsky's model, proposing that parental characteristics are the most important determinants of parenting behavior, followed by contextual characteristics and child characteristics being the least important contributors.

The unique effects of the parental, contextual, and child characteristics found in this study are affirmative of former findings on the determinants of parenting. Results showed that parental agreeableness, emotional stability, and conscientiousness are important contributors to parental dimensions, as was found by many others (Belsky & Barends, 2002; Clark et al., 2000; Kendler et al., 1997; Kochanska et al., 2004; Metsäpelto & Pulkkinen, 2003; Pinderhughes et al., 2001; Van Bakel & Riksen-Walraven, 2002; Woodworth et al., 1996). Parents who were agreeable, who were emotionally stable, and who were conscientious reported higher scores on support and positive discipline and lower levels of lack of structure and psychological control. Parental self-control added to the explained variance in two parenting behaviors: psychological control and physical punishment. Parents low on self-control, that is, parents who are self-centered and prone to act on impulse, reported a more frequent use of psychological control and physical punishment. Thus, parental self-control was associated with two harsh discipline techniques.

This finding argues that in future studies on determinants of parenting, the personality domain should be expanded to include self-control, especially because these two harsh discipline techniques have repeatedly been associated with developmental problems in children (Barber, 1996; DeKlyen, Speltz, & Greenberg, 1998).

The findings of the present study that marital satisfaction and SES are influencing parenting behavior are also in line with previous studies (Belsky, Youngblade, et al., 1991; Kendler et al., 1997; Mann & MacKenzie, 1996; Pinderhughes et al., 2001; Van Bakel & Riksen-Walraven, 2002). Parents who were satisfied with their marriage reported higher levels of support and positive discipline and lower levels of lack of structure. It seems that the support these parents get from their spouses promotes their parental competence.

With regard to the family's SES status, results showed that parents low on SES reported higher levels of physical punishment. Remarkably, this SES

status contributed more to physical punishment than any other parental, contextual, or child characteristic. It is argued that this negative relationship between SES and harsh discipline is mediated by parental beliefs about spanking (Kohn, 1963). This mediating role of parental values between social class and parental behavior was also suggested for Dutch families (Gerris, Dekovic, & Janssens, 1997). It is also possible that parents low on SES experience more stress that undermines adaptive parenting (McLoyd, 1990).

The contribution of child characteristics to parenting was fairly limited. Child characteristics only explained a unique proportion of variance in maternal support and maternal and paternal lack of structure. As for the child's temperamental features, only inhibitory control and activity level influenced parenting. That is, mothers reported more support when their child had higher levels of inhibitory control and both parents indicated higher scores on psychological control when their child was highly active. The finding that, in general, the temperamental features of the child were not strongly predictive of parenting is in line with previous studies. Former studies found that the child's emotionality was not predictive of maternal or paternal behavior (Clark et al., 2000; Woodworth et al., 1996). Van Bakel and Riksen-Walraven (2002) only found the child's social fearfulness related to the quality of parenting.

The language abilities of the child exerted positive influence on the parental report of using positive discipline. One explanation is that in this study, positive discipline is composed of two discipline techniques in which the use of speech is central: praising the child and explaining what the consequences of specific behavior are. It can be assumed that when children are more communicative in interactions with their parents, thus showing that they understand language, parents are more likely to use speech to discipline their child.

In general, two conclusions can be drawn from the results with regard to the unique effects of parental, contextual, and child characteristics on parenting behavior. First, the findings emphasize the importance of simultaneously considering predictors from different domains. This is shown by the fact that some predictors that were significant when separately analyzed per domain had no significant effects once we controlled for predictors from other domains (e.g., the child's soothability and family size). Second, conceptualization of parenting as multidimensional seems to be important, as the five parenting dimensions were predicted by somewhat different sets of variables.

One of the major issues addressed in this study was the comparison of the determinants of maternal and paternal dimensions. The exclusive focus

on maternal behavior in previous studies undermined the important role of paternal behavior. In general, mothers and fathers were mainly similar in their reported parenting. Both mothers and fathers reported relatively high levels of positive discipline and low levels of psychological control and physical punishment. The only difference between mothers and fathers was in the level of their reported support, with mothers rating themselves slightly higher on this dimension than did fathers. These results are in accordance with previous studies that found differences in responsiveness or warmth but not in other parental behavior (Calzada et al., 2004; Kendler et al., 1997).

In addition, the present study showed that parental, contextual, and child characteristics have similar influence on both maternal and paternal behavior. In contrast, the few previous studies that focused on the determinants of maternal and paternal behavior showed small but significant differences between mothers and fathers (Belsky, Youngblade, et al., 1991; Kochanska et al., 2004). The present study uncovered that only one characteristic had different effects for mothers and fathers. That is, the child's inhibitory control added to maternal but not to paternal report of support. This suggests that mothers are more sensitive to their child's ability to inhibit behavior than fathers.

There are two possible explanations for the fact that the present study did not find differences in the effects of parental, contextual, and child characteristics for mothers and fathers whereas other studies did. The first explanation lies in the analyses that were used. The studies that did find differences in determinants of maternal and paternal behavior (Belsky et al., 1995; Belsky, Youngblade, et al., 1991; Grolnick et al., 1996) based their results on comparisons of correlation or regression coefficients without statistically testing these differences. The present study used a more rigorously statistical test to compare the effects of mothers and fathers. Two other studies that statistically tested the effects of determinants on maternal and paternal behavior also failed to find significant differences between the effects on mothering and fathering (Metsäpelto & Pulkkinen, 2003) or emphasized that caution is needed with regard to these mother–father differences, as these are small and need to be replicated (Kochanska et al., 2004).

Second, the present study took into consideration the concept of metric invariance. As clarified in the introduction, to examine differences in maternal and paternal behavior, it is critical that the measures of these behaviors have similar meaning for mothers and fathers. If the assumption of measurement invariance has not been established, then the findings of between-group differences may simply mean that different behaviors were measured (Cheung & Rensvold, 2002). Thus, when measurement invariance is not



accounted for, the interpretation of between differences may be biased. In this study, the parental dimensions that were considered were metric invariant. This gives us greater confidence that the results with regard to similarities and differences in the effects of determinants on parenting can be interpreted by that means and are not a consequence of measuring different behaviors for mothers and fathers.

There are some limitations within the present study. First, it should be noted that the results are based on cross-sectional data, and thus no causal relationships can be drawn. Following Belsky's (1984) model, in the present study we assumed that parental, contextual, and child characteristics influence parenting behavior. Parental characteristics are known to exhibit considerable continuity over time, and it is likely that they precede and influence parenting behavior (McCrae & Costa, 1994). For the associations between child characteristics and parenting, however, the direction of the effects is less clear. Belsky, Fish, and Isabella (1991), for example, have found that the characteristics of the child are influenced by parental behavior. Longitudinal research is needed to confirm the direction of the paths among parental, contextual, and child characteristics and parenting behavior.

A second limitation of this study is that only parental self-reports were used, which are likely to suffer from social desirability effects (Nederhof, 1985). It should be noted that parenting reports and not actual parenting behavior was measured. It can be thought that the reported parental behavior is different from the behavior these parents actually show. However, there are some studies that addressed this and concluded that what parents report gives a good indication of what parents actually do (Johnston, Scoular, & Ohan, 2004; Vereijken, Hanta, & Van Lieshout, 1997). Furthermore, because both the determinants of parenting and parenting behavior were based on parental report, the independence of these measures may be doubtful. Therefore, the results need to be carefully interpreted. However, parental, contextual and child characteristics were found only moderately related. Moreover, the multiple regression analyses showed that parental, contextual, and child characteristics independently explained unique percentages of variance in parenting behavior.

Fourth, only mother reported the characteristics of the child. This may lead to informant bias. However, the finding that the effects of child characteristics are generally similar for mothers and fathers indicates that this bias did not significantly affect the results.

The present study is based on boys 17 months of age. It is possible that the results would have been different for girls. However, two previous studies on the determinants of parenting that included both boys and girls found

no effect of the child's gender (Kochanska et al., 2004; Neitzel & Stright, 2004). It is also possible that the same study on older children would lead to different results. Although the results of the present study with regard to the effects of personality and the social contextual features on parenting resemble that of previous work, the effects of child characteristics were very limited. One of the reasons may be the child's age. It is possible that the children's characteristics have more impact on their parents' behavior as the children grow older (Van Bakel & Riksen-Walraven, 2002).

Despite these methodological limitations, the present study expands existing literature on maternal and paternal behavior in several ways. First, it was shown that various parenting dimensions that are comparable for mothers and fathers can conceptualize parenting. Second, this study provides evidence that mothers and fathers are fairly similar in parenting behavior and that these behaviors are influenced by parental, contextual, and child characteristics in similar ways. Third, in addition to confirming determinants of parenting found in earlier studies, the present study also identified some important new ones, such as parental self-control and the child's language abilities, that should receive more attention in future research.

## References

- Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296-3319.
- Baumeister, R. F. (2002). Yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research, 28*, 670-676.
- Belsky, J. (1981). Early human experience: A family perspective. *Developmental Psychology, 17*, 3-23.
- Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55*, 83-96.
- Belsky, J., & Barends, N. (2002). Personality and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 3: Being and becoming a parent* (pp. 415-438). Mahwah, NJ: Lawrence Erlbaum.
- Belsky, J., Crnic, K., & Woodworth, S. (1995). Personality and parenting: Exploring the mediating role of transient mood and daily hassles. *Journal of Personality, 63*, 905-929.
- Belsky, J., Fish, M., & Isabella, R. A. (1991). Continuity and discontinuity in infant negative and positive emotionality: Family antecedents and attachment consequences. *Developmental Psychology, 27*, 421-431.
- Belsky, J., Youngblade, L. M., Rovine, M., & Volling, B. (1991). Patterns of marital change and parent-child interaction. *Journal of Marriage and Family, 53*, 487-498.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238-246.
- Brandis, W., & Henderson, D. (1970). *Primary socialization, language and education: Social class, language and communication*. Oxford, UK: Sage.

- Brouwers-de Jong, E. A., Burgmeijer, R. J. F., & Laurent de Angulo, M. S. (1996). *Ontwikkelingsonderzoek op het consultatiebureau: handboek bij het vernieuwde Van Wiechenonderzoek* [Developmental research in infant welfare centers: Manual of the renewed Van Wiechen Survey]. Assen, the Netherlands: Van Gorcum.
- Bunge, E. M., Essink-Bot, M. L., Kobussen, M. P. M. H., Van Suijlekom-Smit, L. W. A., Moll, H. A., & Raat, H. (2005). Reliability and validity of health status measurement by the TAPQOL. *Archives of Disease in Childhood, 90*, 351-358.
- Calzada, E. J., Eyberg, S. M., Rich, B., & Querido, J. G. (2004). Parenting disruptive preschoolers: Experiences of mothers and fathers. *Journal of Abnormal Child Psychology, 32*, 203-213.
- Cheung, G. W., & Rensvold, R. B. (2002). Evaluating goodness-of-fit indexes for testing measurement invariance. *Structural Equation Modelling, 9*, 233-255.
- Clark, L. A., Kochanska, G., & Ready, R. (2000). Mothers' personality and its interaction with child temperament as predictors of parenting behavior. *Journal of Personality and Social Psychology, 79*, 274-285.
- Dallaire, D. H., & Weinraub, M. (2005). The stability of parenting behaviors over the first 6 years of life. *Early Childhood Research Quarterly, 20*, 201-219.
- Darling, N., & Steinberg, L. (1993). Parenting style as context: An integrative model. *Psychological Bulletin, 113*, 487-496.
- DeKlyen, M., Speltz, M. L., & Greenberg, M. T. (1998). Fathering and early onset conduct problems: Positive and negative parenting, father-son attachment, and the marital context. *Clinical Child and Family Psychology Review, 1*, 3-21.
- ÉLDEQ. (2003, October). *Longitudinal study of child development in Québec, 1998-2002*. Retrieved October, 14, 2003, from [http://www.stat.gouv.qc.ca/publications/sante/pdf\\_eldeq/E3-Saqm\\_NS\(29mois\).pdf](http://www.stat.gouv.qc.ca/publications/sante/pdf_eldeq/E3-Saqm_NS(29mois).pdf)
- Fox, R. A. (1994). *Parent Behavior Checklist*. Brandon, VT: Clinical Psychology Publishing.
- Fuligni, A. S., Han, W. J., & Brooks-Gunn, J. (2004). The infant-toddler HOME in the 2nd and 3rd years of life. *Parenting, Science and Practice, 4*, 139-159.
- Gerris, J. R. M., Dekovic, M., & Janssens, J. M. A. M. (1997). The relationship between social class and childrearing behaviors: Parents' perspective taking and value orientations. *Journal of Marriage and Family, 59*, 834-847.
- Gerris, J. R. M., Houtmans, M. J. M., Kwaaitaal-Roosen, E. M. G., Schipper, J. C., Vermulst, A. A., & Janssens, J. M. A. M. (1998). *Parents, adolescents, and young adults in Dutch families: A longitudinal study*. Nijmegen, the Netherlands: University of Nijmegen, Institute of Family Studies.
- Gerris, J. R. M., Van Bostel, D. A. A. M., Vermulst, A. A., Janssens, J. M. A. M., Van Zutphen, R. A. H., & Felling, A. J. A. (1993). *Parenting in Dutch families*. Nijmegen, the Netherlands: University of Nijmegen, Institute of Family Studies.
- Goldberg, L. R. (1992). The development of markers of the Big-Five factor structure. *Psychological Assessment, 4*, 26-42.
- Grasmick, H. G., Tittle, C. R., Bursik, R. J., & Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. *Journal of Research in Crime and Delinquency, 30*, 5-9.
- Grolnick, W. S., Weiss, L., McKenzie, L., & Wrightman, J. (1996). Contextual, cognitive, and adolescent factors associated with parenting in adolescence. *Journal of Youth and Adolescence, 25*, 33-54.
- Hetherington, M. E., & Clingempeel, G. W. (1992). Coping with marital transitions: A family systems perspective. *Monographs of the Society for Research in Child Development, 57*, 1-14.

- Houck, G. M., & LeCuyer-Maus, E. A. (2004). Maternal limit setting during toddlerhood, delay of gratification, and behavior problems at age five. *Infant Mental Health Journal*, 25, 28-46.
- Irvine, A. B., Biglan, A., Smolkowski, K., & Ary, D. V. (1999). The value of the Parenting Scale for measuring the discipline practices of parents of middle school children. *Behaviour Research and Therapy*, 37, 127-142.
- Johnston, C., Scoular, D. J., & Ohan, J. L. (2004). Mothers' reports of parenting in families of children with symptoms of attention-deficit/hyperactivity disorder: Relations to impression management. *Child and Family Behavior Therapy*, 26, 45-61.
- Keenan, K., & Wakschlag, L. S. (2000). More than the terrible twos: The nature and severity of behavior problems in clinic-referred preschool children. *Journal of Abnormal Child Psychology*, 28, 33-46.
- Kendler, K. S., Sham, P. C., & MacLean, C. J. (1997). The determinants of parenting: An epidemiological, multi-informant, retrospective study. *Psychological Medicine*, 27, 549-563.
- Kochanska, G., Friesenborg, A. E., Lange, L. A., & Martel, M. M. (2004). Personality processes and individual differences—Parents' personality and infants' temperament as contributors to their emerging relationship. *Journal of Personality and Social Psychology*, 86, 744-759.
- Kohn, M. L. (1963). Social class and parent-child relationships: An interpretation. *American Journal of Sociology*, 68, 471-480.
- Maccoby, E. E. (2000). Parenting and its effects on children: On reading and misreading behavior genetics. *Annual Review of Psychology*, 51, 1-29.
- Mann, B. J., & MacKenzie, E. P. (1996). Pathways among marital functioning, parental behaviors, and child behavior problems in school-age boys. *Journal of Clinical Child Psychology*, 25, 183-191.
- McCrae, R. R., & Costa, P. T. (1994). The stability of personality: Observations and evaluations. *Current Directions in Psychological Science*, 3, 173-175.
- McLoyd, V. C. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting and socioeconomic development. *Child Development*, 61, 311-346.
- Metsäpelto, R. L., & Pulkkinen, L. (2003). Personality traits and parenting: Neuroticism, extraversion, and openness to experience as discriminative factors. *European Journal of Personality*, 17, 59-78.
- Michalcio, S. P., & Solomon, C. R. (2002). The relationship between older and newer parenting categories and child behavior. *American Journal of Orthopsychiatry*, 72, 401-414.
- Nederhof, A. J. (1985). Methods of coping with social desirability bias: A review. *European Journal of Social Psychology*, 15, 263-280.
- Neitzel, C., & Stright, A. D. (2004). Parenting behaviours during child problem solving: The roles of child temperament, mother education and personality, and the problem-solving context. *International Journal of Behavioral Development*, 28, 166-179.
- Pinderhughes, E. E., Nix, R., Foster, M. E., & Jones, D. (2001). Parenting in context: Impact of neighborhood poverty, residential stability, public services, social networks, and danger on parental behaviors. *Journal of Marriage and Family*, 63, 941-953.
- Putnam, S. P., Gartstein, M. A., & Rothbart, M. K. (2003). *Fine-grained assessment of toddler temperament*. Unpublished manuscript.
- Shelton, K. K., Frick, P. J., & Wootton, J. (1996). Assessment of parenting practices in families of elementary school-age children. *Journal of Clinical Child Psychology*, 12, 317-329.

- Strayhorn, J. M., & Weidman, C. S. (1988). A parent practices scale and its relation to parent and child mental health. *Journal of the American Academy of Child and Adolescent Psychiatry*, 27, 613-618.
- Tremblay, R., Japel, C., Pérusse, D., McDuff, P., Boivin, M., Zoccolillo, M., et al. (1999). The search for the age of "onset" of physical aggression: Rousseau and Bandura revisited. *Criminal Behavior and Mental Health*, 9, 8-23.
- Van Bakel, H. J. A., & Riksen-Walraven, M. J. (2002). Parenting and development of one-year-olds: Links with parental, contextual, and child characteristics. *Child Development*, 73, 256-273.
- Vereijken, C. M. J. L., Hanta, S., & Van Lieshout, C. F. M. (1997). Validity of attachment Q-sort descriptions by mothers: The Japanese case. *Japanese Psychological Research*, 39, 291-299.
- Woodworth, S., Belsky, J., & Crnic, K. (1996). The determinants of fathering during the child's second and third years of life: A developmental analysis. *Journal of Marriage and Family*, 58, 679-692.