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## The relation between parental personality and observed parenting: The moderating role of preschoolers' effortful control

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### Abstract

In this study, the relation between self-reported parental personality, using the five-factor model, and observed parenting was examined. In addition, we investigated the moderating role of observed preschoolers' temperamental effortful control (i.e., the ability to suppress a dominant response in order to perform a subdominant response) in this relation. The sample included 89 two-parent families and their firstborn 36-month-old children. Weak to modest associations were found between personality and observed parenting. Effortful control appeared to moderate the relation between parental personality and parenting: fathers' neuroticism was positively associated with fathers' positive control and fathers' extraversion was positively associated with fathers' negative control, but only when children had a low level of effortful control. Thus, individual differences in personality appeared to be most relevant during the demanding experience of parenting a less self-regulated child.

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*Keywords:* Personality; Five-factor model; Parenting; Effortful control; Temperament; Preschoolers

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## 1. Introduction

Although there is a body of research on adult personality and its impact on adult behavioral and social functioning, few studies have investigated the role of parental personality in parenting practices (Belsky & Barends, 2002; Clark, Kochanska, & Ready, 2000). This may seem surprising, since parental personality was proposed as an important determinant of parenting in Belsky's process model (Belsky, 1984). In this model, parenting is considered to be determined by three factors, namely parental personality, the child's individual characteristics, and contextual sources of stress and support, but Belsky (1984) argued that parental personality is the most important determinant.

Associations have been found between personality and parenting of children (Belsky, Crnic, & Woodworth, 1995; Clark et al., 2000; Kochanska, Clark, & Goldman, 1997; Mangelsdorf, Gunnar, Kestenbaum, Lang, & Andreas, 1990; Metsäpelto & Pulkkinen, 2003; Prinzie et al., 2004; Van Aken et al., *in press*). Generally, emotional stability (reverse of neuroticism), openness to experience, agreeableness and conscientiousness were positively associated with parental positive control and support and negatively with negative control. Extraversion was associated with more negative control (e.g., Clark et al., 2000), but in contrast also with more warm and supportive behavior (e.g., Mangelsdorf et al., 1990).

These studies examined the direct link between parental personality and parenting. Belsky (1984) argued that personality also interacts with stressors and supports to enhance or undermine a parent's capacity to provide growth-promoting care to the child. However, two decades later, we still do not know enough about the mechanisms through which parental personality is associated with parenting (Belsky & Barends, 2002; Clark et al., 2000). The present study examined the moderating role of preschoolers' temperamental effortful control in the relation between parental personality (in terms of the five-factor model (Costa & McCrae, 1992)) and observed parenting in a Dutch community sample.

Effortful control is a child characteristic, referring to the self-regulatory aspect of young children's temperament, which is likely to affect the family environment. It is defined as 'the ability to suppress a dominant response to perform a subdominant response' (Rothbart, 1989). Effortful control thus reflects inhibitory as well as initiating behaviors. Several domains of functioning are involved, including the cognitive, social, emotional, motor, and behavioral domains. However, effortful control has been found to reflect a highly coherent underlying broad competence (Kochanska, Murray, & Harlan, 2000).

Parenting preschoolers with a low level of effortful control (i.e., children who have difficulties in modulating their emotions and impulses) will probably be more demanding than parenting preschoolers with a high level of effortful control. In this demanding situation, parents will be more or less likely to meet their children's needs, depending on their personality (Clark et al., 2000). Parents will be forced to use disciplinary strategies, and they will use strategies that fit their personalities. Thus, the association between parental personality and observed parenting, presumably parental control, is expected to be stronger for children low in effortful control than for children high in effortful control.

Although no studies examined the moderating role of effortful control in the relation between parental personality and parenting, studies on other aspects of child temperament seem to support this theory. Clark et al. (2000) found infants' negative emotionality to interact with extraversion in mothers in relation to parental power assertion. When children were high in negative emotional-

ity, mothers who were high in extraversion were more power assertive, but when children were low in negative emotionality, mothers' extraversion was not associated with power assertion. Mangelsdorf et al. (1990) found that an insecure attachment relationship was more probable when infants who were prone to distress had mothers who were high on Constraint, representing rigidity, traditionalism and low risk-taking.

The study on parental personality and children's effortful control yields more insight in the mechanism by which parents' and children's characteristics contribute to parenting. A link between personality and parenting may be explained by overlapping genetic influences. Although there is debate on it, twin and adoption studies of young children and adolescents have shown that a portion of the variance in the parent-child relationship is genetic rather than environmental (Krueger, Markon, & Bouchard, 2003; Rowe, 1981; Spinath & O'Connor, 2003). Because parents and their child share a substantial portion of their genes, it is not possible to completely entangle the effects of parents' and children's characteristics (Denissen, Van Aken, & Dubas, submitted). However, the investigation of the moderating role of children's effortful control will help to understand the interplay between parents' and children's characteristics on parenting behaviors.

In the present study, we examine parental personality in relation to three parenting behaviors (positive control, negative control and warmth). Parenting and effortful control are measured by means of observations, in order to avoid within-reporter bias with the self-reported personality measures. Neuroticism is expected to be positively related to negative control (power-assertive techniques to control the child's behavior) and negatively to positive control (instructional and guiding behavior) and warmth. Openness to experience, agreeableness and conscientiousness are expected to be negatively related to negative control and positively to positive control and warmth. No predictions are made regarding extraversion, because previous results have been contradictory (Belsky et al., 1995; Clark et al., 2000; Mangelsdorf et al., 1990). We expect child effortful control to moderate the relation between parental personality and parenting. A stronger association between personality and parenting is hypothesized for children with a low level of effortful control than for children with a high level of effortful control.

## 2. Method

### 2.1. Participants

Participants were 89 two-parent families raising firstborn preschool-aged children. Children (45 boys, 44 girls) were 36 months old (range 35–37) at the time of the study. Mothers' average age was 34.5 years ( $SD = 4.2$ , range 21–46); fathers' average age was 36.5 years ( $SD = 4.7$ , range 22–50). All mothers and fathers were the biological parents of the children. In 56% of the families, the child had a younger sibling. On average, couples had been together for 10.3 years ( $SD = 4.7$ , range 3–22). Ninety-eight percent of the fathers and 99% of the mothers had Dutch nationality. The majority of the parents worked outside the home (97% of the fathers and 94% of the mothers) and were highly educated (36.0% of the fathers and 32.6% of the mothers had college education and 30.3% of the fathers and 23.6% of the mothers had university education) or moderately educated (30.5% of the fathers and 41.6% of the mothers finished professional education or high school).

## 2.2. Procedure

This study was part of a research project on family dynamics and child adjustment. Families were recruited through daycare centers and preschool playgroups in different parts of the Netherlands. Parenting was measured during home visits on the basis of a dyadic mother–child play session and a dyadic father–child play session. Each session consisted of unstructured and structured play tasks, most of them followed by a clean-up period. The tasks involved solving a matching game, engaging in a building game, and reading a picture book. The tasks were similar for both parents. At daycare centers and preschool playgroups, children were observed while they performed eleven tasks measuring effortful control. The session took place in a room where no other children were present. All tasks were presented as games and after each task the child was rewarded, regardless of his/her performance. The children received two gifts, which were part of the observation battery. All observation sessions were videotaped and afterwards independently coded by a trained coding team. After the home visit, the parents were each asked to complete a questionnaire.

## 2.3. Measures

### 2.3.1. Personality

The NEO-five factor inventory (NEO-FFI; Costa & McCrae, 1992; Dutch version Hoekstra, Ormel, & De Fruyt, 1996), a 60-item self-report inventory, was used to measure the five-factor model of parental personality. Items were scored using a 5-point Likert-scale, ranging from 1 (totally disagree) to 5 (totally agree). The NEO-FFI raw scale scores were transformed into stanine scale scores (with a mean of 5 and a standard deviation of 2) using the norms for the Dutch NEO-FFI, obtained from a general population sample ( $N = 1390$  women,  $N = 958$  men; Hoekstra et al., 1996). Internal consistencies (Cronbach's alpha) ranged from .60 (Openness) to .81 (Neuroticism) for mothers and from .59 (Agreeableness) to .81 (Extraversion) for fathers.

### 2.3.2. Parenting

Parenting behaviors during mother–child and father–child interactions were measured, using the videotaped records, with the Coparenting and Family Rating System (CFRS; McHale, 1995). Rating scales were translated into Dutch and pilot tested. Six dimensions of parenting behavior were measured using a 7-point Likert-type scale (McHale, 1995). For all three tasks, we rated behavior in three minutes of family interaction: the first, middle, and last minute of each task. Thus, for each dyadic session, nine ratings per dimension were created. A principal components analysis with varimax rotation was conducted. We used the eigenvalue greater than one rule and inspection of the scree plot for determining the number of factors to be extracted. For mothers and fathers, three factors were extracted: *Positive Control* (scales provision of structure, limit-setting, sensitivity), *Negative Control* (scales negativity and investment), and *Warmth* (scale warmth). For both mothers and fathers, the three-factor solution accounted for 74% of the variance in parenting scores. All factor loadings were above .51 for mothers and .64 for fathers. Factors were created by averaging the scale scores.

Approximately 15% of the videotapes were coded by two coders. Gamma was used as a measure of reliability, because it is a statistic that controls for chance agreement, but is more appropriate for

ordinal data than Kappa (Liebetrau, 1983; Schoppe, Mangelsdorf, & Frosch, 2001). Mean Gamma for maternal parenting was .88, ranging from .81 (sensitivity) to .96 (limit-setting) and mean Gamma for paternal parenting was .88, ranging from .79 (sensitivity) to .92 (limit-setting).

### 2.3.3. *Effortful control*

Eleven tasks of the Effortful Control Battery (Kochanska et al., 2000) were translated and adapted into Dutch and pilot tested for the observation of effortful control. On the basis of the one-factor solution of a principal components analysis of the total sample of this study, five tasks with factor loadings lower than .30 were deleted. Tasks included were Snack Delay, Wrapped Gift, Gift-in-Bag, Tongue, Dinky Toys, and Shapes. The task *Snack Delay* measures the ability of a child to keep his or her hands on a mat on the table in front of a piece of candy under a transparent cup, until the researcher lifts and eventually rings a bell as permission to pick up the candy. The snack delay score consists of the ability to delay. Points are added for the child's ability to keep his or her hands on the mat. *Wrapped Gift* assesses the child's ability not to peek when the gift is wrapped behind his or her back and, secondly, not to touch the gift until the researcher returns from getting a bow for the gift. Scores include latency to peeking during wrapping and latency to touching, lifting, or opening the gift during the absence of the researcher. Additional scores indicate the extent of peeking during wrapping, and the extent of touching when the researcher has left the room. *Gift-in-Bag* is a similar task in which the child has to wait while the researcher leaves the room for 3 min to get a bow for the gift. Besides latency, scores reflect behavior involving the bag and the time the child remains sitting in his or her seat. The *Tongue task* measures whether the child can keep a candy in his or her mouth without chewing it. The score reflects average latency to chewing or swallowing the candy across four trials. *Dinky Toys* refers to a task which captures the child's ability to keep his or her hands on his or her knees while telling the researcher what toy he or she finds most attractive to play with from a box, filled with toys. Scores reflect the ability not to remove hands from knees. During the *Shapes task* the child is asked to point to the image of a small fruit that was embedded in a dominant picture of a large fruit. Scores for three trials were averaged.

The tasks were coded from videotapes by five coders. Reliability, based on approximately 15% of the videotapes that were double coded, was computed for all pairs of coders. Following Kochanska et al. (2000), Cohen's Kappa was calculated for all aspects of each task using categorical scores (Wouters, 1988) and percentage agreement was calculated for aspects of the tasks using latency scores. The average Kappa was .79 with an average Kappa per task ranging from .63 (*Gift-in-Bag*) to .85 (*Wrapped Gift*). The average percentage agreement was 92% (latency scores coded within 1 s), ranging per task from 88% (*Wrapped Gift*) to 99% (*Tongue task*). A composite score for *Effortful Control* was calculated by averaging standardized task scores.

## 3. Results

### 3.1. *Descriptive analyses*

The sample size varied for parent reports (parental personality,  $N = 72$  mothers and 72 fathers) and observational data (parenting and effortful control,  $N = 89$  mothers and 89 fathers). The

families in which only parent reports were available did not significantly differ from the families of the observational data on the following variables: educational level, nationality, marital status, gender of child, one versus more children, age of parents, hours work outside the home, amount of years together with partner, effortful control, maternal and paternal parenting.

Table 1 shows the descriptives of maternal and paternal personality and parenting. With respect to parenting, fathers showed more negative control,  $t(87) = 2.34, p < .05$ , and less positive control,  $t(87) = -4.72, p < .001$ , than did mothers. For mothers, intercorrelations of personality dimensions were between  $r = -.01$ , ns (neuroticism with agreeableness) and  $r = -.34, p < .01$  (neuroticism with conscientiousness and extraversion). For fathers, intercorrelations of personality dimensions were between  $r = .01$ , ns (openness with conscientiousness) and  $r = -.38, p < .001$  (neuroticism with extraversion). Correlations between the personality dimensions of parents and parenting are presented in Table 2. There were few significant associations. Mothers and fathers who scored higher on openness generally used less negative control.

Table 1  
Means and standard deviations of maternal and paternal personality and parenting

	Mothers		Fathers	
	<i>M</i>	SD	<i>M</i>	SD
<i>Personality</i>				
Neuroticism	4.34	1.58	4.09	1.57
Extraversion	5.19	1.69	5.09	1.81
Openness	5.57	1.52	5.87	1.51
Agreeableness	5.52	1.75	5.30	1.68
Conscientiousness	5.17	1.98	4.71	1.69
<i>Parenting</i>				
Positive control	5.51	.51	5.23	.69
Negative control	2.95	.36	3.05	.40
Warmth	4.31	.63	4.42	.57

Table 2  
Correlations of parental personality with observed parenting

	Positive control	Negative control	Warmth
Neuroticism, M	.10	.16	-.15
Neuroticism, F	.09	.09	-.14
Extraversion, M	.09	-.23	.08
Extraversion, F	-.02	.03	.10
Openness, M	-.05	-.31**	.08
Openness, F	.01	-.27*	-.04
Agreeableness, M	-.02	-.10	-.04
Agreeableness, F	-.05	-.10	-.12
Conscientiousness, M	-.12	.02	.12
Conscientiousness, F	.02	.08	-.00

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

M = mothers, F = fathers.

### 3.2. Moderation analyses

A series of hierarchical regression analyses was performed to examine the moderating role of effortful control of children in the relation between parental personality and observed parenting. Separate regression analyses were conducted for mothers and fathers. In each analysis, child effortful control was entered at step 1 and the five personality dimensions of the parent were entered as a block at step 2 to examine the contributions of parental personality, when controlled for effortful control of children, to the parenting behaviors. The interactions between the personality dimensions and effortful control were entered as a block at step 3. To avoid multicollinearity between the main effects and the interaction terms, the scores of the personality dimensions and effortful control were standardized into *z*-scores before creating the interaction terms (Miles & Shevlin, 2001). Significant interactions were interpreted by plotting regression lines for high (more than one standard deviation above the mean) and low (more than one standard deviation below the mean) standardized values of effortful control and personality dimensions (Holmbeck, 1997).

Table 3

Contributions ( $\beta$ -values) of parental personality, child effortful control and the interaction between personality and effortful control to parenting behavior

Step	Positive control		Negative control		Warmth	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
1. Effortful control	.38**	.20	-.27*	-.20	-.06	-.09
2. Effortful control	.38**	.15	-.23	-.20	-.05	-.10
<i>Personality traits</i>						
Neuroticism	.06	-.29	.09	.27	-.10	-.15
Extraversion	.21	-.16	-.22	-.11	-.03	-.01
Openness	-.08	.04	-.25	-.02	.12	.18
Agreeableness	-.12	.14	-.03	.17	-.01	.09
Conscientiousness	-.18	-.19	.20	.15	.10	-.09
3. Effortful control	.41**	.25	-.20	-.14	-.07	-.11
<i>Personality traits</i>						
Neuroticism	.09	-.29	.09	.17	-.18	-.08
Extraversion	.29	-.16	-.22	-.13	-.14	.02
Openness	-.06	.05	-.24	-.07	.03	.26
Agreeableness	-.17	.18	-.04	.16	-.02	.08
Conscientiousness	-.17	-.19	.25	.14	.13	-.12
<i>Interactions</i>						
Neuroticism $\times$ EC	-.01	-.41**	-.07	-.17	-.08	-.16
Extraversion $\times$ EC	-.09	.03	.06	-.36*	-.23	.07
Openness $\times$ EC	.26	-.06	-.18	-.15	-.25	.04
Agreeableness $\times$ EC	.06	-.08	.18	-.08	-.01	-.06
Conscientiousness $\times$ EC	-.13	.13	-.09	.29	.16	-.19
$R^2$	.28	.33	.27	.27	.18	.13

EC = effortful control.

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

Table 3 shows the contributions of child effortful control, parental personality and the interaction between personality and effortful control to the parenting behaviors of mothers and fathers. A significant main effect was found for effortful control, indicating that a higher level of effortful control of the child was associated with more parental positive control (significant at all steps) and

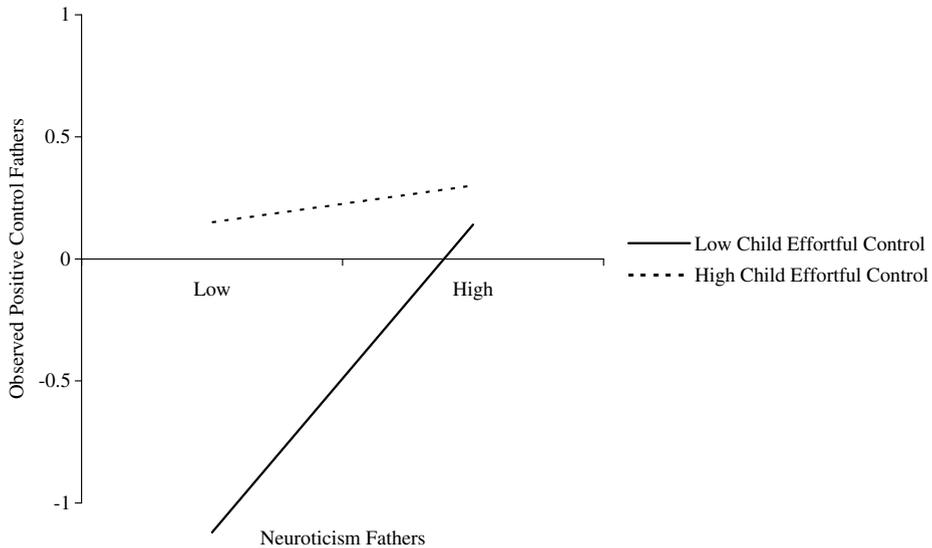


Fig. 1. Interaction between fathers' neuroticism and child effortful control in the prediction of positive control by fathers.

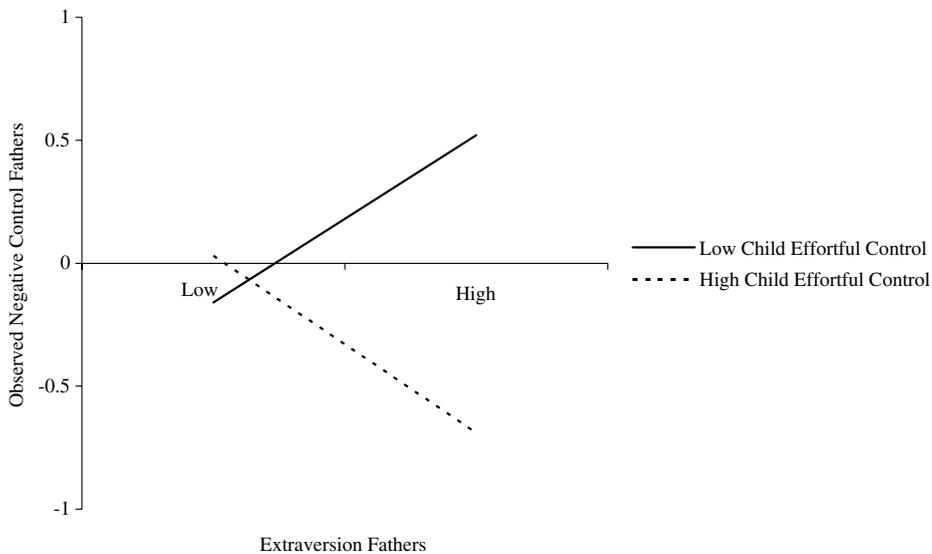


Fig. 2. Interaction between fathers' extraversion and child effortful control in the prediction of negative control by fathers.

less negative control (significant at step 1). Two interaction effects were found in the prediction of observed parenting. First, effortful control significantly moderated the relation between fathers' neuroticism and fathers' positive control. Fig. 1 shows that neuroticism in fathers was positively related to positive control only when the child scored low on effortful control. When children scored high on effortful control, neuroticism in fathers was not associated with positive control. Second, effortful control moderated the relation between fathers' extraversion and fathers' negative control. Fig. 2 shows that extraversion in fathers was positively related to negative control when children scored low on effortful control, but was negatively related to negative control when children scored high on effortful control.

#### 4. Discussion

The current study examined the relation between parental personality and observed parenting, as well as the moderating role of preschoolers' effortful control in this relation. The only personality dimension found to be associated with parenting was openness to experience, which correlated negatively with negative control in both mothers and fathers. Parents who are open-minded may be more creative in managing maladaptive behavior in the child and will therefore less rapidly choose negative control to discipline their child. Openness was also found to be associated with negative control in prior studies (e.g. Metsäpelto & Pulkkinen, 2003; Prinzie et al., 2004; Spinath & O'Connor, 2003).

The weak associations between parental personality and parenting are possibly due to different methods used for the assessment of the constructs. In contrast to most studies in this field, which used parent reports to measure both personality and parenting (see Clark et al., 2000), we used observational measures to assess parenting. Questionnaires measure parental attitudes and behaviors that parents value, whereas observations reflect situation-specific behavior and behavior of which the parent is not always aware of (Bornstein, Cote, & Venuti, 2001). Kochanska et al. (1997) found that mothers' personality predicted their self-reported parenting, but not their observed parenting.

The results showed that children's temperamental effortful control is likely to affect parenting. The higher the level of effortful control was in children, the more positive control and the less negative control mothers showed in interaction with their child. Children who were able to suppress a dominant response and to initiate a subdominant response were probably easy to handle, and therefore mothers were likely to behave sensitively and to guide the child's behavior in a positive way. Similar results had been found by Kochanska et al. (2000).

Effortful control furthermore sheds light on the mechanism between personality and parenting. There were associations between personality dimensions and parenting behaviors, but only when children had a low level of effortful control. When children had a low level of effortful control, neuroticism in fathers was positively related to the use of positive control, whereas extraversion in fathers was positively related to fathers' negative control. More neurotic fathers tend to control their less self-regulated child by setting limits and providing structure, whereas less neurotic fathers probably wait longer to intervene. Furthermore, more extraverted fathers, who are talkative and expressive, probably show their negative feelings sooner than more introverted fathers, who are likely to keep their dissatisfaction to themselves. When children had a high level of

effortful control, neuroticism in fathers was not related to their positive control. More extraverted fathers, however, showed less negative control when children had a high level of effortful control. When children are able to regulate their impulses and emotions, more extraverted fathers probably have the opportunity to show their positive feelings. These results correspond with moderation effects found with other aspects of children's temperament (Clark et al., 2000; Mangelsdorf et al., 1990). The different associations found between fathers' extraversion and negative control for preschoolers with a low and high level of effortful control might explain contradictory associations with extraversion found previously (Belsky et al., 1995; Clark et al., 2000; Mangelsdorf et al., 1990). No moderation effects were found in the prediction of warmth, probably because control is a better strategy in stressful situations to regain control over the child.

Moderation effects were found for fathers only, whereas a main effect of children's effortful control on parental control was found for mothers only. These findings may indicate that mothers' controlling strategies are guided by their children's temperament, while fathers' controlling strategies are also dependent on their own personality. Because generally mothers tend to be the main caregivers, they may have more parenting experience than fathers, because of which they act in response to the child exclusively. However, Clark et al. (2000) found moderation effects in the relation between personality and parenting in mothers, thus more research on sex differences is needed.

Although this was not a behavior genetic study, intended to examine the heritability of the family environment, the findings may indicate common gene effects between personality and parenting. Parental personality and child effortful control, both considered to have constitutional origins (McCrae et al., 2000; Rothbart, Ahadi, & Evans, 2000), appeared to affect styles of affect, behavior, and cognition, and the person's impact on the family environment (for a discussion on this issue see Krueger et al., 2003). The current study used cross-sectional data, because of which the direction of effects could not be drawn. However, this study suggests that future research on genes and family environment should consider both characteristics of parents and children.

Several limitations of this study should be noted. First, participating families were primarily white, middle- to upper-middle, dual-income, and well-functioning and the findings cannot be generalized to other populations. A stronger relation between parental personality and parenting would probably have been found in clinically distressed families. Second, as proposed in Belsky's (1984) process model, contextual sources of stress are also important to consider as a determinant of parenting. Results of personality affecting parenting when the person is stressed may have been stronger when we included other sources of stress in the family besides children's effortful control (see for example Kochanska, Aksan, Penney, & Boldt, 2007). Third, because of the restricted sample size, we did not take the child's sex into account. Future studies should investigate the role of the child's sex in the relation between parental personality, child effortful control and parenting.

In conclusion, the current study examined the relation between parental personality and observed parenting, and the moderating role of preschoolers' effortful control in this relation. The strengths of this study were the systematic approach to examining personality, namely by studying the five-factor model, the examination of multiple parenting behaviors in both mothers and fathers, and the use of observational data for parenting and effortful control in a Dutch community sample. Parental personality generally did not appear to be directly reflected in parenting behaviors, but its effect was visible when parents were exposed to the stresses of raising a difficult

child. More neurotic fathers used more positive control and more extraverted fathers used more negative control, only when children had a low level of effortful control.

## References

- 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 (2nd ed. Children and parenting)* (Vol. 1, pp. 415–438). Mahwah, NJ: Lawrence Erlbaum Associates.
- 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.
- Bornstein, M. H., Cote, L. R., & Venuti, P. (2001). Parenting beliefs and behaviors in northern and southern groups of Italian mothers of young infants. *Journal of Family Psychology*, *15*, 663–675.
- 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.
- Costa, P. T., Jr., & McCrae, R. R. (1992). *Revised NEO Personality Inventory (NEO-PI-R) and the Five Factor Inventory (NEO-FFI): Professional manual*. Odessa, FL: Psychological Assessment Resources Inc.
- Denissen, J. J., Van Aken, M. A. G., & Dubas, J. S. (submitted). It takes two to tango: The joint impact of parents' and adolescents' personality on the quality of their mutual relationship.
- Hoekstra, H. A., Ormel, J., & De Fruyt, F. (1996). *NEO Persoonlijkheidsvragenlijsten: NEO-PI-R: NEO-FFI*. Lisse: Swets Test Services.
- Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child–clinical and pediatric psychology literatures. *Journal of Consulting and Clinical Psychology*, *65*, 599–610.
- Kochanska, G., Aksan, N., Penney, S. J., & Boldt, L. J. (2007). Parental personality as an inner resource that moderates the impact of ecological adversity on parenting. *Journal of Personality and Social Psychology*, *92*, 136–150.
- Kochanska, G., Clark, L. A., & Goldman, M. S. (1997). Implications of mothers' personality for their parenting and their young children's developmental outcomes. *Journal of Personality*, *65*, 387–420.
- Kochanska, G., Murray, K. T., & Harlan, E. T. (2000). Effortful control in early childhood: Continuity and change, antecedents, and implications for social development. *Developmental Psychology*, *36*, 220–232.
- Krueger, R. F., Markon, K. E., & Bouchard, T. J. Jr., (2003). The extended genotype: The heritability of personality accounts for the heritability of recalled family environments in twins reared apart. *Journal of Personality*, *71*, 809–833.
- Liebetrau, A. M. (1983). *Measures of association*. Beverly Hills, CA: Sage.
- Mangelsdorf, S., Gunnar, M., Kestenbaum, R., Lang, S., & Andreas, D. (1990). Infant proneness-to-distress temperament, maternal personality, and mother-infant attachment: Associations and goodness of fit. *Child Development*, *61*, 820–831.
- McCrae, R. R., Costa, P. T., Ostendorf, F., Angleitner, A., Hřebíčková, M., Avia, M. D., et al. (2000). Nature over nurture: Temperament, personality, and life span development. *Journal of Personality and Social Psychology*, *78*, 173–186.
- McHale, J. P. (1995). Coparenting and triadic interactions during infancy: The roles of marital distress and child gender. *Developmental Psychology*, *31*, 985–996.
- 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.
- Miles, J., & Shevlin, M. (2001). *Applying regression & correlation: A guide for students and researchers*. London: Sage.
- Prinz, P., Onghena, P., Hellinckx, W., Grietens, H., Ghesquiere, P., & Colpin, H. (2004). Parent and child personality characteristics as predictors of negative discipline and externalizing problem behaviour in children. *European Journal of Personality*, *18*, 73–102.
- Rothbart, M. K. (1989). Temperament and development. In G. A. Kohnstamm, J. A. Bates, & M. K. Rothbart (Eds.), *Temperament in childhood* (pp. 187–247). New York: Wiley.

- Rothbart, M. K., Ahadi, S. A., & Evans, D. E. (2000). Temperament and personality: Origins and outcomes. *Journal of Personality and Social Psychology*, 78, 122–135.
- Rowe, D. C. (1981). Environmental and genetic influence on dimensions of perceived parenting: A twin study. *Developmental Psychology*, 17, 203–208.
- Schoppe, S. J., Mangelsdorf, S. C., & Frosch, C. A. (2001). Coparenting, family process, and family structure: Implications for preschoolers' externalizing behavior problems. *Journal of Family Psychology*, 15, 526–545.
- Spinath, F. M., & O'Connor, T. G. (2003). A behavioral genetic study of the overlap between personality and parenting. *Journal of Personality*, 71, 785–808.
- Van Aken, C., Junger, M., Verhoeven, M., Van Aken, M. A. G., Deković, M., & Denissen, J. J. A. (in press). Parental personality, parenting and toddlers' externalising behaviours. *European Journal of Personality*.
- Wouters, L. (1988). *An IBM-PC program to compute kappa or weighted kappa*. University of Amsterdam.