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Rearing Difficult Children: Parents' Personality and Children's Proneness to Anger as Predictors of Future Parenting

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Abstract

Objective—This multi-method study of 102 mothers, fathers, and children examined children's difficult temperament as a moderator of the links between parental personality and future parenting.

Methods—Parents described themselves on the Big Five traits and Optimism. Children's difficult temperament was observed at 25 and 38 months in paradigms that assessed proneness to anger. Each parent's responsive, affectively positive parenting was observed in lengthy naturalistic interactions at 67 months.

Results—Regardless of child temperament, for mothers, low Neuroticism, and for fathers, high Extraversion predicted more positive parenting. For difficult, anger-prone children, mothers' low and high Optimism and fathers' low and high Openness were associated, respectively, with less or more positive parenting.

Conclusions—Challenges due to children's difficult temperaments appear to amplify links between parental personality traits and parenting.

INTRODUCTION

Parenting, once seen as a unidirectional flow of influence from the parent to the child, is now viewed as a complex bidirectional process between two individuals, each with distinct traits. How the parent's and the child's characteristics interact is seen as critical for understanding parenting and children's outcomes. In their insightful early work, Thomas and Chess (1977) stressed that the fit between the parent's and the child's characteristics predicts future developmental trajectories. Ecological theorists see development as shaped by multiple factors, including child and parent characteristics, neighborhood, and society (Bronfenbrenner, 1986). Considering the parent's and the child's individualities as determinants of parenting is consistent with the ecological approach (Belsky, 1984; Belsky & Barends, 2002; Belsky & Jaffee, 2006; Prinzie, Stams, Deković, Reijntjes, & Belsky, 2009).

Research has increasingly elucidated the complexities among parenting, parents' personalities, and qualities of children's temperament. For example, there is growing

evidence that biologically based *child individuality* moderates the impact of parenting on child outcomes (Bates, Pettit, Dodge, & Ridge, 1998; Belsky, Bakermans-Kranenburg, & van IJzendoorn, 2007; Belsky, Hsieh, & Crnic, 1998; Belsky & Pluess, 2009a, ^b; Kochanska, Aksan, & Joy, 2007; Rothbart & Bates, 2006; Van Zeijl et al., 2007; Xu, Farver, & Zhang, 2009).

Most research on parental personality has focused on its main effects on parenting, and it has increasingly embraced the “Big Five” approach, including the traits of Neuroticism, Extraversion, Agreeableness, Conscientiousness, and Openness (Costa & McCrae, 1992; McCrae & Costa, 1987). Neuroticism (and closely related depression) has been the most studied personality trait in respect to parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000; Philipps & O'Hara, 1991; Prinzie et al., 2009). In general, people who are high in Neuroticism tend to lack emotional stability and tend to be anxious, tense, and prone to negative affect (Vondra & Belsky, 1993). Neuroticism may interfere with optimal parenting by making it difficult for parents to have positive interactions with their children, and might limit parents' ability to respond appropriately and adequately to their child's signals; indeed, the extant evidence is consistent with such a pattern. That research has generally, albeit not consistently, shown that Neuroticism, irritability, mistrust, hostility, and other forms of negative emotionality are associated with less warm and more negative and forceful parenting, and Agreeableness, Extraversion, and Conscientiousness are linked to more positive and adaptive parenting (Belsky & Jaffee, 2006; Clark, Kochanska, & Ready, 2000; Coplan, Reichel, & Rowan, 2009; Kochanska, Clark, & Goldman, 1997; Levy-Shiff & Israelashvili, 1988; Losoya, Callor, Rowe, & Goldsmith, 1997; Prinzie et al., 2009).

Other personality traits may have positive implications for parenting. For example, persons high in Extraversion tend to be very social, outgoing, and experience a high level of positive affect (Goldberg, 1990). Thus, parents high in Extraversion might be more likely to express high positivity during interactions with their children and engage in active, stimulating parenting (Prinzie et al., 2009). This may be particularly true for fathers, who tend to have playful, high-intensity interactions with their children (Bornstein & Sawyer, 2006; Parke, 2002). However, Clark and colleagues (2000) found that, under some circumstances, mothers high in Extraversion used more power assertion when disciplining their children, particularly when their children were high in negative emotionality.

Agreeableness may also have positive implications for parenting. Agreeable people are easygoing, warm, and good-natured; thus, parents who are high in Agreeableness would provide a kind, warm environment where the child feels understood and protected (Prinzie et al., 2009). Coplan, Reichel, and Rowan (2009) found that mothers who were high in Agreeableness rarely engaged in coercive parenting, particularly when dealing with dysregulated children.

Individuals who score highly on Conscientiousness are generally well-organized, self-disciplined, and planful (Goldberg, 1990). A conscientious parent may be more likely to provide a structured and consistent environment for his or her children (Prinzie et al., 2009). Mothers who are highly conscientious expressed a lot of positive emotions to their children (Smith et al., 2007) and consistently tracked children's cues and whereabouts (Kochanska, Friesenborg, Lange, & Martel, 2004).

Finally, a person who is high on Openness enjoys new experiences and is imaginative. Parents who are high on Openness are likely to provide new and stimulating experiences for the child (Prinzie et al., 2009); additionally, such parents may be flexible and open to novel, non-traditional parenting approaches and eager to learn about the child's individual qualities. The meta-analysis of parenting and personality (Prinzie et al., 2009) revealed that high

Extraversion, Agreeableness, Conscientiousness, and Openness and low Neuroticism were related to warm parenting practices and adaptive behavioral control.

Although researchers studying personality and parenting have increasingly accepted the Big Five approach to personality (Prinz et al., 2009), Belsky and Barends (2002) have nevertheless argued for including other traits beyond the routinely studied Big Five. We believe that Optimism, in particular, may play an important role in family processes and parenting (Kashdan et al., 2002; Kochanska, Aksan, Penney, & Boldt, 2007; Scheier & Carver, 1993). Optimism is robustly associated with strategies individuals adopt to cope with long-term challenges and stresses, conditions typically associated with parenting (Scheier & Carver, 1993). We believe that Optimism is not fully subsumed under the Big Five. Smith and colleagues (1989) found high correlations between Optimism and Neuroticism; however, other researchers have attempted to clarify any overlap between the two traits and were unable to reach any conclusive results (Boland & Cappeliez, 1997). In response to such inconclusive findings, Scheier, Carver, and Bridges (1994) found Optimism to be a unique, significant predictor of various outcomes (e.g., depression, coping, intensity of symptoms) even when other predictors (e.g., trait anxiety, self-esteem, Neuroticism) were statistically controlled. Thus, assessing parents' Optimism may potentially add another meaningful dimension of personality to the Big Five.

Personality is strongly associated with – indeed, often defined in terms of – one's reactions to adversity, stress, and challenge (Bouchard, Guillemette, & Landry-Léger, 2004; Connor-Smith & Flachsbart, 2007; Suls, David, & Harvey, 1996; Watson & Hubbard, 1996). Typically, individual differences are amplified under stress (Caspi & Moffitt, 1993), perhaps because personality traits influence coping styles (Bolger & Eckenrode, 1991; Bolger & Zuckerman, 1995).

Parenting can often be challenging and stress inducing. In particular, children with difficult temperaments can be a source of considerable pervasive, long-term, and daily stress (Bates & Pettit, 2007; Coplan, Bowker, & Cooper, 2003; Gallagher, 2002; Oestberg, & Hagekull, 2000; Pesonen et al., 2008; Putnam, Sanson, & Rothbart, 2002; Rothbart & Putnam, 2002).

Consequently, we expected to find more links between parents' personality and parenting in families challenged by the child's difficult temperament than in families with easy children. Given rather sparse empirical data base, however, this direction was exploratory. Most of our specific predictions were tentative and extrapolated from social psychology. High Neuroticism implies a relatively poor capacity to cope with stressors (Watson & Clark, 1984; Watson, Clark, & Harkness, 1994). Individuals with high Neuroticism scores recover more slowly and react less adaptively to stress than those with low scores (David & Suls, 1999). Conscientiousness often predicts resilience (Watson & Hubbard, 1996), mostly due to active, task-oriented coping. Finally, Optimism has been linked to more adaptive coping (Brissette, Scheier, & Carver, 2002; Carver et al., 1993).

We have also drawn from studies where the relations among personality, stress, and parenting were examined. Researchers have begun to explore how parents with different personalities function when faced with difficult versus easy children. Coplan et al. (2009) found that, for emotionally dysregulated children, the relations between mothers' personality and parenting were particularly strong; mothers' Agreeableness was negatively associated with coercive parenting, and mothers' Neuroticism was associated with overprotecting parenting. All measures, however, came from one informant (the mother). Clark et al. (2000), using behavioral measures of parenting and child temperament, found that child negative emotionality moderated the relation between maternal empathy and Extraversion and her power assertion. Mothers low in empathy, and those high in Extraversion, resorted

to more power assertion at the onset of the second year, but only if they had difficult infants. That study, however, was limited to short-term predictions (over 6 months) and assessed mothers only. In a study using concurrent measures, Karreman, van Tuijl, van Aken, and Dekovic (2008) examined children's capacity for self-regulation as a potential moderator of the links between mothers' and fathers' personality and their parenting. Two such effects were found for fathers: Preschoolers' effortful control moderated the links between fathers' Neuroticism and their positive control and the links between fathers' Extraversion and their negative control.

When faced with parenting stress, persons high in Conscientiousness cope with empathy and sensitivity (Lee-Baggeley, Preece, & DeLongis, 2005). Optimism also helps parents cope with stress. More optimistic parents of children with developmental delays were less likely to experience parenting stress in response to their children's behavior problems (Paczkowski & Baker, 2008). Kochanska et al. (2007) found that high demographic adversity was detrimental to parents who were low in Optimism in terms of their responsiveness, but parents who were high in Optimism showed no such detriment.

In sum, the extant research has produced encouraging leads about relations among personality, temperament, and parenting. However, overall, the empirical data are relatively limited. Our study aims to build on and extend the earlier work and to adopt an explicitly ecological approach by studying families in naturalistic contexts and over extended time (Belsky & Jaffee, 2006).

Children's "difficult temperament" has been operationalized in various ways (Bates, 1980). We chose to focus on children's anger proneness. We viewed anger proneness as the most salient aspect of a "difficult temperament" -- a substantial stressor that may moderate links between parents' personality and future parenting. We assessed anger proneness in standardized behavioral laboratory paradigms in the second and third years. Those years are critical in the evolving parent-child relationship. Parents begin to exercise control and rapidly increase their demands, and children begin to resist influence, often showing anger and defiance (Crockenberg & Litman, 1990; Kuczynski & Kochanska, 1990). Toddlers who are very prone to anger pose the most stressful challenges for parents (Bates & Pettit, 2007).

We examined parents' personality and children's difficult anger-prone temperament as influences on parenting. We examined both main effects of the personality traits and their interactions with child anger. Based on the extant research, we expected that low Neuroticism and high Agreeableness, Extraversion, Openness, Conscientiousness, and Optimism would be related to more positive parenting. We also expected that, for parents of difficult children, who make parenting more stressful, the relations between some personality traits and parenting would be amplified, but those directions of our analyses were exploratory.

We used a relatively long-term longitudinal design, allowing us to understand developmental processes occurring over time (Gallagher, 2002). We employed a multi-trait multi-measure approach: repeated behavioral observations of parents and children, parents' self-reports, and parents' reports about the child. Parental personality was assessed when children were infants, child anger proneness at toddler age, and parenting at kindergarten age because of its importance as a normative developmental transition (Rimm-Kaufman & Pianta, 2000). We focused on responsive and affectively positive parenting. Attachment researchers have emphasized the importance of responsiveness during early childhood, but warm, supportive parenting is no less critical later on (Trentacosta et al., 2008).

The need to include mothers and fathers has been repeatedly stressed, but such studies continue to be sparse (Phares, Fields, Kamboukos, & Lopez, 2005). Research comparing

mothers' and fathers' parenting has focused mainly on mean differences (McElwain, Halberstadt, & Volling, 2007; Parke, 2002). Few studies have addressed determinants of mothers' and fathers' parenting, including personality, and findings were often difficult to interpret (Belsky & Barends, 2002; Deater-Deckard & Scarr, 1996; Volling, McElwain, Notaro, & Herrera, 2002). Consequently, we included both mother-child and father-child dyads in the present work.

METHOD

Participants and Design

Two-parent families with infants, representing a broad range of income and education, residing in college and farming towns, a small city, and rural areas in the Midwest volunteered for a longitudinal study. Ninety percent of mothers were European American, 3% Latin American, 2% African American, 1% Asian American, 1% Pacific Islander, and 3% "other" non-White. Among fathers, 84% were European American, 8% Latin American, 3% African American, 3% Asian American, and 2% "other". In 20% of families, one or both parents were non-White. Data reported here come from four assessments: when children were 7 months ($N = 102$, 51 girls), 25 months ($N = 100$, 50 girls), 38 months ($N = 100$, 50 girls), and 67 months ($N = 91$, 45 girls).

Female experimenters ("Es") conducted home and laboratory 2-3-hr sessions: two home sessions, one with each parent, at 7 months; two laboratory sessions, one with each parent, at 15, 25, 38, and 67 months; and one home and one laboratory session, with each parent taking part in half of each, at 38 months. All sessions were videotaped for future coding. Multiple coding teams used at least 20% of cases for reliability and frequently "realigned" to prevent drift. Variables were substantially aggregated across coded segments, contexts, and assessments to yield robust constructs (Rushton, Brainerd, & Pressley, 1983).

Parents' personality was assessed using self-reports when children were 7 months. Children's difficult temperament was observed at 25 and 38 months. At 67 months, mothers' and fathers' positive parenting was observed in a naturalistically furnished laboratory.

Measures of Parents' Personality Traits, 7 Months

The Big Five traits—Parents completed the NEO Five Factor Inventory (NEO-FFI; Costa & McCrae, 1992), a 60-item self-report to assess Neuroticism (prone to negative affect), Extraversion (a tendency to be sociable, assertive, active), Conscientiousness (a tendency to be planful, organized, purposeful), Agreeableness (a tendency to be prosocial, kind), and Openness (intellectual curiosity, imagination).

Optimism—Parents completed the Socialization scale (CPI, Gough, 1957) with 54 true-false items. We followed an earlier cluster analysis (Stein, Gough, & Sarbin, 1966) that was fruitful in our past work on parenting (Kochanska et al., 2007). That analysis of the CPI items, cross-validated on several groups of participants, produced three clusters. Here we focus on one cluster, Optimism and Trust in Others vs. Dysphoria, Distrust, and Alienation (henceforth Optimism). This 11-item cluster included items such as "Most of the time I feel happy." Examples of "false" items included: "Life usually hands me a pretty raw deal.", "A person is better off if he doesn't trust anyone.", "With things going as they are, it's pretty hard to keep up hope of amounting to something."

Cronbach's alphas for the personality traits were .66 to .85 for mothers and .75 to .84 for fathers. The descriptive statistics were reported in Kochanska et al. (2007).

Children's Difficult Temperament (Anger Proneness, 25 and 38 Months)

Paradigms—Children's anger was observed in standardized episodes of toy retraction (LAB-TAB, Goldsmith & Rothbart, 1999): two episodes at 25 months and one episode at 38 months. The child was presented with an attractive toy; once he or she has become engaged with it, E retracted the toy and held it in the child's view, but out of reach, for up to 30 s.

Coding and data aggregation—For each 5-s segment, coders rated discrete expressions of anger in three modalities: facial, body, and vocal (e.g., grimacing, clenching teeth, making fists, arching back, kicking, attempting to retrieve toy, screaming, whining, crying, “Give it to me!”). The latencies to the first expression of anger and peak intensity of expression, ranging from 0 (*no anger expressed*) to 3 (*anger expressed in all modalities*) were also coded. Inter-coder reliabilities, alphas, were very high (.99 to 1.00).

The variables were standardized and aggregated within and (if applicable) across episodes at each age. We combined latency to anger (reversed), peak intensity, and facial, bodily, and vocal anger (alphas = .71 and .77), and at 25 months we combined the two composite scores, which correlated, $r(97) = .58, p < .001$, into one anger score. At 38 months, alpha for the one episode was .66. The overall scores correlated across 25 and 38 months, $r(97) = .31, p < .0025$, and were combined into one score of proneness to anger at toddler age, $M = -.01, SD = .64$, range = -.99 to 1.84.

Mothers' and Fathers' Positive Parenting, 67 Months

Responsiveness to the child—Mothers' and fathers' responsiveness to their children was assessed in the laboratory during naturalistic interactions in typical daily contexts that encompassed routine chores, care giving, leisure activities, such as snack, play, cleaning up toys, parent busy, opening a gift (60 min of cumulative interaction for each parent-child dyad, thus 120 min for each family). Coding was adapted from Ainsworth, Blehar, Waters, and Wall (1978). The coder made one judgment that integrated sensitivity-insensitivity, acceptance-rejection, and cooperation-interference for each context (e.g., play, snack), ranging from 1 (*highly unresponsive*) to 7 (*highly responsive*). Reliability, kappa, was .88. The scores cohered across all contexts (alphas = .82 and .71 for mothers and fathers, respectively), and were aggregated into one overall responsiveness score for the mother, $M = 4.64, SD = .81$, range = 2.33 to 6.00, and one for the father, $M = 5.03, SD = .77$, range = 2.50 to 6.00.

Affectively positive parent-child interactions—Each parent's affect was coded in the same parent-child interactive contexts as described above (60 min for each parent). For each 30-s segment, the parent's affect was coded as a discrete positive emotion (joy, affection) or a discrete negative emotion. Particularly intense or pervasive discrete emotions were marked. More than one discrete emotion could be coded in one segment, but each only once.

If no discrete emotion was present, neutral positive or neutral negative mood code was used for the segment. The neutral positive code described a parent who appeared comfortable, animated, interested, and emotionally present, but was not expressing a “full-blown” positive emotion. The neutral negative code described a parent who appeared fatigued or uncomfortable, and “would rather be elsewhere”, but was not expressing a “full-blown” negative affect. Reliability of affect coding, kappa, was .79.

For each parent, two overall composites (positive emotional tone and negative emotional tone) were created by tallying and weighing scores (neutral mood codes were multiplied by 1, the non-intense discrete emotions by 2, and the intense emotions by 3) and adding across all segments. This sum was divided by the number of coded segments. Thus, the created

positive and negative emotional tone scores were standardized, and then the negative emotional tone score was subtracted from the positive emotional tone score to create an overall score of affectively positive interactions for each mother and father, mothers, $M = .00$, $SD = 1.92$, range = -5.70 to 3.96, and fathers, $M = .00$, $SD = 1.78$, range = -12.57 to 2.50.

Positive parenting—As expected, the responsiveness and affectively positive interactions scores correlated for mothers, $r(90) = .71$, and fathers, $r(88) = .37$, $ps < .001$, and following the standardization of the responsiveness scores, they were aggregated into an overall score of positive parenting for each parent, mothers, $M = .00$, $SD = 1.36$, range = -4.50 to 2.60, and fathers, $M = .00$, $SD = 1.17$, range = -6.17 to 2.06.

RESULTS

Preliminary Analyses

First, we examined how the parents' personality traits, self-reported when children were infants, correlated with children's anger proneness observed at toddler age and with each parent's positive parenting observed when children were 67 months (see Table 1). Parents' traits were unrelated to children's proneness to anger. For both parents, high Neuroticism correlated with less positive parenting; additionally, for fathers, high Extraversion and Optimism correlated with more positive parenting.

Additionally, we examined correlations between child anger and parents' positive parenting. More angry toddlers received less maternal positive parenting at 67 months, $r(90) = -.21$, $p < .05$, but children's anger proneness was unrelated to fathers' positive parenting, $r(88) = -.11$, ns . Mothers' and fathers' positive parenting marginally correlated, $r(87) = .19$, $p < .10$.

Testing Main and Interaction Effects of Parents' Personality and Child Anger Proneness on Future Parenting

In two multiple regressions, child anger proneness (standardized) was entered at Step 1; then, the parent's standardized personality traits were entered at Step 2; finally, their interactions with child anger, where our expectations were more tentative, were allowed to enter stepwise (forward) (Step 3). The first regression was conducted for mothers and children, and the second one for fathers and children (see Tables 2 and 3). Child gender had no main effect on either parent's positive parenting (both $ts < 1$), so it was not included. Tables 2 and 3 include Bs , SE of Bs , and Betas for each predictor and R^2 and F_{ch} for each step of the model.

The significant interactions were further probed using simple slopes tests (Aiken & West, 1991). Child anger proneness was treated as a moderator, and the slopes were examined for children who were below 1 SD on the score of anger proneness ("easy") and above 1 SD on that score ("difficult").

Mothers' personality, children's anger proneness, and positive parenting—In the final equation, there was one main effect: More neurotic mothers engaged in less positive parenting. The child's anger proneness was marginally significant.

There was one interaction between maternal personality and child temperament: The interaction term of the mother's Optimism and child anger was significant. The simple slopes probing the interaction are depicted in Figure 1. The simple slopes for toddlers who were low and high on anger were in the opposite directions, but both fell short of significance: For easy children, mothers' Optimism related to less positive parenting, $b =$

-0.37, $SE = .20$, $p = .06$, but for difficult, angry children, there was an opposite relation, with maternal Optimism related to more positive parenting, $b = 0.26$, $SE = .19$, $p = .17$.

Fathers' personality, children's anger proneness, and positive parenting—The regression produced one main effect of fathers' personality on parenting: More extraverted fathers engaged in more positive parenting. There was one significant interaction between fathers' personality and child anger, and it involved fathers' Openness. The simple slopes probing the interaction appear in Figure 2. For easy children, there was no link between fathers' Openness and positive parenting, simple slope $b = -0.12$, $SE = 0.17$, ns . For difficult, angry toddlers, fathers' higher Openness predicted more positive parenting, simple slope $b = 0.52$, $SE = 0.20$, $p < .025$.

DISCUSSION

In their review, Prinzie et al. (2009) argued that, despite progress, empirical evidence on links between parents' personality and parenting, particularly using prospective long-term designs and multiple parental traits considered simultaneously, remains limited. Belsky and Jaffee (2006) and Prinzie et al. (2009) further emphasized that a widespread acceptance of the Big Five framework has helped organize research on personality and parenting, and they urged researchers to include all five traits in their work. However, Belsky and Barends (2002) argued also that research that includes traits *beyond that framework* can yield additional valuable insights. Furthermore, scholars representing the ecological perspective (e.g., Belsky, 1984) have long argued that parenting research should consider the effects of both the parent and the child, include both mothers and fathers, adopt a developmental perspective, and use a multi-method approach.

We heed this cumulative advice in this work. The strengths of this research include a multi-trait multi-method approach, robust behavioral measures of child temperament and parenting, a prospective longitudinal design that spans a period of the first 5½ years of the child's life, the inclusion of both mothers and fathers, and a relatively broad range of parental personality traits.

Several findings in this study dovetailed with the extant research on the Big Five and parenting. However, the effects were not the same across both parents. The extant research (Belsky & Jaffee, 2006) and a meta-analysis (Prinzie et al., 2009) found that higher Neuroticism was associated with less warm parenting, less behavioral control, and less support for autonomy; other individual studies have found this same pattern (Kochanska, Aksan, Penney, & Boldt, 2007; Metsapelto & Pulkinnen, 2003). It was, thus, expected that Neuroticism would be associated with lower levels of positive parenting. This was indeed found, however, for mothers only -- mothers' high Neuroticism predicted less positive parenting, regardless of child temperament.

Also, as has been reported (Belsky & Jaffee, 2006), Extraversion predicted more positive parenting, but for fathers only. Highly extraverted fathers engaged in highly responsive and affectively positive parenting. Fathers' interactions with children have been described as more playful, upbeat, and physically more intense and stimulating than mothers' interactions, which tend to be more quiet and soothing (Parke, 2002). Extraversion, with its sociable and emotionally positive core, fits well with a parenting role of a stimulating playmate.

We did not find expected interactions involving Neuroticism, Conscientiousness, or Agreeableness and child difficult temperament in predicting positive parenting. This was surprising and is not readily explained, although we note that Clark and colleagues (2000)

similarly failed to find interactions between maternal Big Five traits and infant negative emotionality when predicting maternal responsiveness in another community sample. Coplan and colleagues (2009) found maternal Neuroticism to be associated with overprotective parenting, and the association was stronger in children who were very shy. However, shyness is a different aspect of temperament than anger; the former is associated with internalizing difficulties and the latter is associated with externalizing problems. Clearly, parents' Neuroticism, Conscientiousness, and Agreeableness and the interactions between these traits and child difficulty may be complex and they should continue to be examined in future research.

We did, however, find the expected significant interaction effect for mothers' Optimism, although in view of the fact that simple slopes analyses fell short of significance, these effects should be considered with caution and replicated. When rearing difficult, anger-prone children, Optimism was a helpful trait for mothers. Research in personality and social psychology has also shown multiple adaptive implications of Optimism. Optimism has been found to promote psychological and physical well-being in individuals (Scheier & Carver, 1993). Optimism correlates positively with good coping skills and positive reinterpretation of negative life events and negatively with rumination (Fontaine, Manstead, & Wagner, 1993). Furthermore, individuals high in Optimism report few daily hassles and few physical symptoms (Nelson, Karr, & Coleman, 1995). This body of research is directly relevant to this study, because the findings suggest that, when faced with a difficult child, an optimistic parent is likely to resort to adaptive coping (e.g., effective modulation of anger, patience, and appropriate child management strategies). Furthermore, he or she is likely to redefine child difficulty in positive terms (e.g., "vigor", "spunk", "high energy") and is unlikely to feel overly stressed and to dwell on the child's misbehaviors and limitations.

We also found that Openness was linked to fathers' parenting of difficult children. It is likely that, when faced with a challenging toddler, the parent's tendencies to explore new, imaginative strategies and to be open to creative solutions to stressful encounters, rather than rely on preconceived notions or on coercive strategies, are particularly adaptive. Bornstein and colleagues (2007) found that Openness was associated with mothers' knowledge of child development and mothers' perceptions of parenting competence. Since perceptions of parenting competency and knowledge of children's development have been linked to better parenting practices (e.g., de Haan, Prinzie, & Dekovic, 2009; Johnston & Mash, 1989; Morawska, Winter, & Sanders, 2009), future studies examining relations between parents' personality and parenting should make use of measures assessing parents' sense of competence and knowledge of children's development as potential mediators. In general, Openness has rarely been studied in the context of parenting (Prinzie et al., 2009), and even less so for both parents and in relation to child difficulty, and thus our analyses were exploratory. Clearly, however, this trait deserves more research attention.

Belsky and Pluess (2009) have argued that interactions between an individual's vulnerability and experience sometimes reflect a dual-risk, or diathesis-stress model (when a co-occurrence of two risk factors leads to a particularly negative outcome), but sometimes, they reflect differential susceptibility (when vulnerable individuals do worse than others under highly stressful or poor circumstances, but better than others when experiential influences are positive). Although such questions are typically posed with regard to *children's* vulnerabilities, experiences, and developmental outcomes, they could theoretically be also applied to *parents*.

Consequently, in this study, in a frankly exploratory fashion, we viewed low maternal Optimism and low paternal Openness as forms of individual parental vulnerability; having an easy versus difficult child as low or high environmental stress impinging on the parent;

and positive parenting as the outcome. Adopting this perspective, we suggest that both interactions appear consistent with the dual-risk, or diathesis-stress model. A combination of two potential risks -- low Optimism or low Openness and the child's difficult temperament -- results in a particularly poor outcome, or low level of positive parenting.

Several future questions await inquiry. Foremost among those are "hidden" causal mechanisms that link parents' and children's traits, and parenting. In particular, parents' genotypes may be related to their personalities, to their parenting, and to their children's traits (Prinz et al., 2009; Spinath and O'Connor, 2003). A future focus on parents' and children's genotypes in behavioral research promises to elucidate such processes.

This study had several limitations. Ecological and family system perspectives assume interconnectedness of family relationships. Moreover, one parent's adaptive traits may compensate for the other parent's maladaptive traits. The relatively modest sample size, however, made it difficult to examine simultaneously both parents' personality traits. Another limitation was a relatively homogenous nature of the sample, both in terms of ethnicity (although 20% of families did include at least one non-White parent), and in terms of low risk. Future studies that employ larger, more diverse, and more stressed samples will be critical for a better understanding of the studied processes in ecologically informed designs. Finally, given the promising leads regarding the role of parental Optimism, future studies should implement more up-to-date instruments. The relatively old Socialization subscale we used to capture Optimism has several weaknesses. Future studies should implement a newer measure of Optimism; the Life Orientation Test-Revised (LOT-r; Scheier, Carver, & Bridges, 1994) assesses expectancies for positive versus negative outcomes. Although this measure is not new, it is the most common measure of Optimism used to date.

The complex interplay among the parent's and the child's individualities and parenting has been explicitly acknowledged in ecological perspectives (Belsky & Jaffee, 2006). Progress in understanding such dynamics will inform both basic and translational research on children's adaptive and maladaptive development in families.

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Figure 1.
Child anger proneness moderates the effect of maternal optimism on her positive parenting.

Figure 2.
Child anger proneness moderates the effect of paternal openness on his positive parenting.

TABLE 1

Correlations between Parents' Personality Traits and Child Anger Proneness and Positive Parenting

Parent Personality Trait (7 Months)	Child Anger Proneness (25-38 months)	Positive Parenting (67 Months)
Mothers		
Neuroticism	.01	-.27***
Extraversion	.00	.04
Conscientiousness	-.01	-.01
Agreeableness	-.03	.15
Openness	.08	.06
Optimism	.03	.15
Fathers		
Neuroticism	-.05	-.27**
Extraversion	-.05	.39***
Conscientiousness	.06	.09
Agreeableness	-.09	.04
Openness	.16	.10
Optimism	-.15	.32***

Note: Correlations with positive parenting are for the measures within a given parent-child dyad.

**
 $p < .025$.

 $p < .01$.

TABLE 2

Children's Anger Proneness at Toddler Age (25-38 Months) as a Moderator of Links between Mothers' Personality Traits and Positive Parenting at Kindergarten Age (67 Months)

Predictor(s) Entered	Step 1			Step 2			Step 3		
	Beta	B	SE B	Beta	B	SE B	Beta	B	SE B
Step 1									
C Anger Proneness	-.22*	-.46	.21	-.23*	-.47	.21	-.17+	-.35	.20
Step 2									
M Neuroticism				-.32**	-.42	.17	-.31**	-.41	.16
M Extraversion				-.06	-.08	.15	-.04	-.05	.15
M Agreeableness				.14	.18	.14	.15	.20	.13
M Openness				.08	.12	.16	.08	.12	.15
M Conscientiousness				-.07	-.09	.15	.02	.02	.14
M Optimism				-.02	-.02	.17	-.04	-.06	.17
Step 3 (Forward Stepwise)									
M Optimism $\times$ C Anger							.32***	.49	.16

Note: *F* and *Beta* statistics are for the final equations, with all predictors entered. Child proneness to anger was entered at Step 1, mothers' personality traits were entered at Step 2, and their interactions with child anger were allowed to enter stepwise (forward). M=Mother; C=Child

After Step 1: $R^2 = .05$, $F(1, 87) = 4.59^*$; After Step 2: $R^2 = .16$, $F(7, 81) = 2.19^*$; After Step 3: $R^2 = .25$, $F(8, 80) = 3.37^{***}$

+ $p < .10$.

* $p < .05$.

** $p < .025$.

*** $p < .01$.

Children's Anger Proneness at Toddler Age (25-38 Months) as a Moderator of Links between Fathers' Personality Traits and Positive Parenting at Kindergarten Age (67 Months)

TABLE 3

Predictor(s) Entered	Step 1			Step 2			Step 3		
	Beta	B	SE B	Beta	B	SE B	Beta	B	SE B
Step 1									
C Anger Proneness	-.09	-.18	.21	-.06	-.12	.20	-.11	-.22	.20
Step 2									
F Neuroticism				-.14	-.17	.14	-.13	-.16	.14
F Extraversion				.33***	.39	.13	.38****	.46	.13
F Agreeableness				-.13	-.17	.14	-.13	-.17	.14
F Openness				.06	.07	.12	.10	.12	.12
F Conscientiousness				-.07	-.09	.14	-.08	-.09	.14
F Optimism				.20 ⁺	.24	.14	.17	.20	.13
Step 3 (Forward Stepwise)									
F Openness × C Anger							.24*	.50	.21

Note: F and Beta statistics are for the final equations, with all predictors entered. Child proneness to anger was entered at Step 1, fathers' personality traits were entered at Step 2, and their interactions with child anger were then allowed to enter stepwise (forward).

**p < .025.

F=Father; C=Child

After Step 1: R² = .01, F(1, 83) < 1; After Step 2: R² = .23, F(7, 77) = 3.36***; After Step 3: R² = .29, F(8, 76) = 3.79*** *

⁺ p < .10.

* p < .05.

*** p < .01.

**** p < .001