

# Challenging Circumstances Moderate the Links Between Mothers' Personality Traits and Their Parenting in Low-Income Families With Young Children

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The need for research on potential moderators of personality–parenting links has been repeatedly emphasized, yet few studies have examined how varying stressful or challenging circumstances may influence such links. We studied 186 diverse, low-income mother–toddler dyads. Mothers described themselves in terms of Big Five traits, were observed in lengthy interactions with their children, and provided parenting reports. Ecological adversity, assessed as a cumulative index of known risk factors, and the child's difficulty observed as negative affect and defiance in interactions with mothers were posited as sources of parenting challenge. Mothers high in Neuroticism reported more power assertion. Some personality–parenting relations emerged only under *challenging conditions*. For mothers raising difficult children, higher Extraversion was linked to increased observed power assertion, but higher Conscientiousness was linked to decreased reported power assertion. There were no such relations for mothers of easy children. By contrast, some relations emerged only *in the absence of challenge*. Agreeableness was associated with more positive parenting for mothers who lived under conditions of low ecological adversity, and with less reported power for those who had easy children, and Openness was linked to more positive parenting for mothers of easy children. Those traits were unrelated to parenting under challenging conditions.

*Keywords:* Big Five, personality, parenting, stressful circumstances

Being a parent is an affectively charged and often difficult key life role. Parenting is determined by a complex interplay among the parent's individuality, the child's characteristics, and the family's ecology (Belsky, 1984; Shaw et al., 1998). Recent years have seen a rapid growth of interest in integrating research on personality with the study of parenting, reflected in comprehensive reviews (e.g., Belsky & Barends, 2002; Belsky & Jaffee, 2006; Prinzie, Stams, Deković, Reijntjes, & Belsky, 2009). Those reviews indicate that although links between parents' personality and parenting exist—typically, lower Neuroticism, and higher Extraversion, Agreeableness, Conscientiousness, and Openness being associated with better parenting—the findings are modest and inconsistent. As Caspi, Roberts, and Shiner (2005) noted,

most of the research has focused on the main effects of personality and has not addressed the conditions under which particular person-

ality attributes are more or less important in explaining parenting behavior (e.g., are personality main effects moderated by qualities of the marital relationship or by the child's temperament?). (pp. 472–473)

How should we decide which of many possible factors might significantly moderate personality–parenting links? Personality researchers have shown that the Big Five traits interact in multiple ways with stress when predicting reactivity, distress, appraisals, and behavioral coping strategies (Bolger & Zuckerman, 1995; Connor-Smith & Flachsbart, 2007; David & Suls, 1999; Suls, David, & Harvey, 1996; Watson & Hubbard, 1996), although the findings are not entirely consistent (Lee-Baggeley, Preece, & De-Longis, 2005). Typically, Neuroticism and Conscientiousness are linked to less and more adaptive responses to stress, respectively. That work suggests that stress and challenge inherent in real-life circumstances of parents are likely to be important potential moderators of personality–parenting links.

Such research is overdue, despite the fact that already three decades ago, Belsky (1984) argued that contextual stress, parental personality, parenting, and child characteristics should be examined in their interplay and that their interactions rather than main effects are key. Note that once such interactions are examined, they might well qualify all or some of the main effects of parental personality traits and clarify why in the personality literature such effects have not been consistently replicated. Furthermore, certain traits may be seen as the parent's inner resources that can buffer (or amplify) adverse effects of risks (Kochanska, Aksan, Penney, & Boldt, 2007; Koenig, Barry, & Kochanska, 2010). Our goal was to examine how stress, hardship, or challenge in a family's context moderates links between mothers' personality and their parenting.

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In assessing stress or challenge, we emphasized two distinct sets of factors that put parenting at risk: *ecological adversity* and *the child's difficulty* (Abidin, 1992; Belsky, 1984; Deater-Deckard, Dodge, Bates, & Pettit, 1998; Popp, Spinrad, & Smith, 2008). Following Belsky's (1984) classic article, considerable research has supported the negative impact of several aspects of *ecological adversity* for parenting; yet, almost nothing is known about adversity as a *moderator* of personality–parenting links. We have found that traits such as optimism or trust may serve to offset the negative impact of adversity on parenting (Kochanska et al., 2007), but those findings were for families from a community sample where adversity was generally low.

Considerable evidence supports the consensus regarding ecological factors that challenge early parenting. Greater risk has been linked to mothers' young age (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Bornstein, Putnick, Suwalsky, & Gini, 2006; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982; Wakschlag et al., 2000), low education and low income (Baharudin & Luster, 1998; Conger, Ge, Elder, Lorenz, & Simons, 1994; McLoyd, 1998), decreasing stability of the family structure (married, cohabitating, single, divorced; Amato & Keith, 1991; Bachman, Coley, Carrano, 2011; Osborne & McLanahan, 2007), more children (Keenan, Gunthorpe, & Grace, 2007; Trentacosta et al., 2008), and more stressful recent life events (Abidin, 1992).

Typically, such risks are scored as present or absent and summed into a cumulative score (Ackerman, Izard, Schoff, Youngstrom, & Kogos, 1999; Deater-Deckard et al., 1998; Lengua, Honorado, & Bush, 2007; Rutter, 1978; Sameroff, Seifer, Barocas, Zax, & Greenspan, 1987; Shaw, Winslow, Owens, & Hood, 1998), but more sensitive indices have been advocated (Burchinal, Vernon-Feagans, Cox, & Key Family Life Project Investigators, 2008). Following our earlier work with a community sample (Kochanska et al., 2007), we graded each of the six factors listed above, guided by the extant research, to produce a more fine-grained index. Those values were added to reflect cumulative ecological adversity. All participants were low-income, ethnically diverse mothers, and thus all risk factors were robustly represented. Note that Connor-Smith and Flachsbart (2007) suggested that in highly stressed samples, links between personality and behavior under stress may be stronger.

Whereas factors comprising ecological adversity are external to the mother–child relationship, that relationship itself—specifically, *qualities of the individual child*—may also produce significant parenting challenge. A large literature has shown that children's difficulty, mostly negative emotionality and defiance, can lead to considerable parenting stress (Bates, 1980; Crockenberg & Litman, 1990; Lipscomb et al., 2011; Lorber & Egeland, 2011; Paulussen-Hoogeboom, Stams, Hermanns, & Peetsma, 2007; Putnam, Sanson, & Rothbart, 2002; Rothbart & Bates, 2006). We examined children's observed negative emotionality and defiance as indices of *difficulty* they pose in the parenting process.

Little is known about specific interactions of parental personality and child difficulty for behaviorally assessed parenting. Clark, Kochanska, and Ready (2000) found that, when interacting with highly affectively negative young children, highly extraverted mothers resorted to more power assertion. Karreman, van Tuijl, van Aken, and Dekovic (2008) replicated that finding for fathers and undercontrolled toddlers, using short observations. Koenig et al. (2010) found that when raising difficult, anger-prone children,

mothers' higher Optimism and fathers' higher Openness were associated with more positive parenting.

We observed maternal parenting in multiple lengthy, scripted, naturalistic contexts that resembled typical daily lives of parents of toddlers. Two main dimensions of parenting were assessed: positive, responsive behavior and power-assertive behavior. Toddler age is a time of rapid developmental changes in children's competencies and of unique challenges in the parent–child relationship, including the onset of discipline. How parent–child dyads navigate the toddler years has long-term implications for development (Belsky, Woodworth, & Crnic, 1996).

Although we relied mostly on observations of maternal behavior, we collected parenting self-reports as well. Whereas self-reports cannot replace behavioral measures, they provide useful complementary information when used together with observations, much like self-reported attitudes in social psychology. Parenting attitudes and cognitions have links with parental personality (Bornstein, Hahn, & Haynes, 2011) and play an important role in family life (Bugental & Johnston, 2000; de Haan, Prinzie, & Dekovic, 2009). Whereas the mother's actions may often be a response to the child's immediate behavior, her self-reported beliefs may reflect more deliberate and abstract attitudes that guide parents' long-term socialization goals.

On the basis of the extant research (e.g., Prinzie et al., 2009) and our past findings for mothers and their young children (Clark et al., 2000; Kochanska, Friesenborg, Lange, & Martel, 2004), we anticipated that high Neuroticism and low Conscientiousness would be linked to less adaptive, and Agreeableness to more adaptive parenting. We were most interested, however, in ecological adversity and child difficulty as *moderators of personality–parenting relations*. Significant interactions might explain why many studies that have mostly ignored such potential moderators have yielded weak or inconsistent results (Caspi et al., 2005). On the basis of the evidence on links between personality and coping, we expected that high Neuroticism and high Conscientiousness would be linked, respectively, to less and more adaptive parenting under stress. On the basis of past work (Clark et al., 2000; Karreman et al., 2008), we expected that when faced with a challenging child, highly extraverted mothers may resort to more power assertion (Clark et al., 2000), although generally, research on Extraversion and stress has yielded inconsistent results.

No study has found significant moderation effects of parenting stress on links between Agreeableness and Openness and observed maternal behavior (note that social psychology research on those traits and coping has also failed to produce consistent findings; Connor-Smith & Flachsbart, 2007; Watson & Hubbard, 1996). Also, to our knowledge, no study has examined ecological adversity and child difficulty simultaneously, and most studies have involved low-risk, relatively homogeneous, modestly sized two-parent community samples. Consequently, this work was necessarily in some respects exploratory.

## Method

### Participants and Design

Mothers of young children volunteered for the study broadly advertised in several Iowa counties, using community boards in libraries, stores, and day care centers, targeting particularly venues

frequented by low-income families (e.g., Women, Infants, and Children offices, Department of Health and Human Services offices, thrift stores, free medical clinics, pediatric offices, Head Start locations, mobile homes parks, subsidized housing complexes, etc.). The mother was eligible for the study if she received or qualified for aid from a government agency or Earned Income Tax Credit, could speak English during observations, and the child's development was normal. One hundred eighty-six mothers of 24- to 44-month-old ( $M = 30.33$ ,  $SD = 5.40$ ) children (90 girls) were accepted. The average annual family income was \$20,385 ( $SD = \$13,010$ ); 5% of mothers had not completed high school, 50% had a high school education or GED, 19% had an associate's degree, and 26% had a bachelor's or technical degree. Mothers' average age was 27.58 years ( $SD = 4.88$ ). There were 11% Hispanic, and 88% not Hispanic mothers; 73% White, 15% African American, 2% Asian, 2% American Indian, and 8% more than one race or unreported. Fifty-four percent were married, 13% cohabitated, 6% were divorced, 25% were single, and 2% in other arrangements.

Mother-child dyads participated in a 3-hr laboratory session, conducted by a female staff member, to provide behavioral data on parenting and child difficulty. Data were coded from digital recordings by separate coding teams. Coders used approximately 20% of cases for reliability, and realigned frequently to prevent observer drift. Kappas were used for categorical variables, and intraclass correlations (ICCs) for continuous measures. When appropriate, data were aggregated to produce robust constructs (Rushton, Brainerd, & Pressley, 1983).

### Measure of Ecological Adversity

The *ecological adversity index* was created by grading each risk factor (mother education, her age, marital status, the number of children, family income per member of the household, and the total amount of stress experienced in the last year) on the same metric, from 0 (the lowest) to 3 (the highest) level of risk, based on extant research. The grading was as follows: *Mother education*: bachelor's or a technical degree = 0, associate's degree = 1, high school or GED = 2, less than high school = 3. *Mother age*: 26 or older = 0; 23–25 = 1, 20–22 = 2, 19 or younger = 3. *Marital status*: married = 0, cohabitating = 1, divorced = 2, single or in other arrangements = 3. *Number of children*: 1–2 = 0, 3 = 1, 4 = 2, 5 or more = 3. *Income per member of household*: more than \$7,500 = 0, \$5,000–7,500 = 1, \$2,500–\$5,000 = 2, less than \$2,500 = 3. *Total stress in the last year*: reported in the Life Experiences Survey where potential events are rated from 1 (*not stressful*) to 4 (*very stressful*) (Sarason, Johnson, & Siegel, 1978) ( $M = 25.87$ ,  $SD = 18.84$ ). Mothers with the lowest 25% of the scores received 0, between 25% and 50% = 1, between 50% and 75% = 2, and above 75% = 3. The ecological adversity index ranged from 0 to 13 ( $M = 6.29$ ,  $SD = 3.32$ ; 44 mothers in the 0–3 range, 54 mothers in the 4–6 range, 62 mothers in the 7–10 range, and 25 mothers in the 11–13 range). One mother did not provide sufficient data.

### Measure of Child Difficulty

#### Negative child affect in interactions with mothers.

**Observed contexts.** Children's affect expressed in the interactions with mothers was coded in the laboratory session for 62 min,

encompassing scripted contexts: introduction to the laboratory (5 min), mother busy with questionnaires (10 min), a snack (12 min), play (10 min), toy cleanup (10 min), free time (10 min), and gift (5 min).

**Coding.** Affect was coded for every 30-s segment. Here, we focus on negative affect: neutral/negative (not a "full-blown" negative affect, but signs of fatigue, subtle discomfort, minor whimpers, negatively "tinged" mood, etc.) and discrete negative affect ("full-blown" distress, cry, anger, etc.). Particularly intense or pervasive (15 s or more) expressions were marked. Kappas ranged from .72 to .82.

**Data aggregation.** We weighed the tallied instances of the intense/pervasive negative affect by 3, discrete negative affect by 2, and neutral/negative mood by 1. These figures were added and divided by the number of coded segments to create a score of *the child's negative affect in interactions with the mother* (Clark et al., 2000; Kim & Kochanska, 2012) ( $M = 0.18$ ,  $SD = 0.23$ ).

#### Defiance in interactions with mothers.

**Observed contexts.** Children's defiance was coded in contexts "saturated" with typical control issues (55 min): "Do" (toy cleanup, 10 min) and "Don't" (prohibition regarding touching very attractive, off-limits toys on a low shelf, 45 min). In the "Do" context, every 30-s segment was coded. In the "Don't" contexts, episodes of control were first identified (when the child's attention turned to the prohibited toys), and every 30-s segment within those episodes was coded.

**Coding and data aggregation.** Child defiance was described as resistance to maternal control accompanied by poorly controlled anger, screaming/crying, kicking or throwing objects, hitting mother, whining, or a deliberate behavior opposite to maternal demand. Reliability, kappas, ranged from .71 to .92 for "Do" and .88 for "Don't."

**Data aggregation.** In "Do" and "Don't" contexts, all instances of defiance were tallied and divided by the number of segments ( $M = 0.05$ ,  $SD = 0.11$ , and  $M = 0.07$ ,  $SD = 0.10$ , respectively). Those scores were standardized and averaged into one defiance score.

**Overall measure of child difficulty.** Children's negative affect and defiance robustly correlated,  $r(186) = .71$ ,  $p < .001$ , and were aggregated (with the former standardized) into one score of *child difficulty* ( $M = 0.00$ ,  $SD = 0.80$ ).

### Measure of Mothers' Personality

Mothers completed the NEO Five-Factor Inventory (Costa & McCrae, 1992). We created means for each 12-item scale: Neuroticism (proneness to negative affect;  $\alpha = .82$ ,  $M = 1.67$ ,  $SD = 0.62$ ), Extraversion (tendency to be sociable, assertive, active;  $\alpha = .65$ ,  $M = 2.50$ ,  $SD = 0.43$ ), Conscientiousness (tendency to be planful, organized, responsible, purposeful;  $\alpha = .83$ ,  $M = 2.83$ ,  $SD = 0.54$ ), Agreeableness (tendency to be prosocial, altruistic, kind;  $\alpha = .73$ ,  $M = 2.81$ ,  $SD = 0.46$ ), and Openness (intellectual curiosity, imagination;  $\alpha = .74$ ,  $M = 2.32$ ,  $SD = 0.53$ ).

### Observed Measures of Mothers' Parenting

#### Responsiveness in interactions with children.

**Observed contexts.** Maternal responsive behavior was coded during the same naturalistic interactions in the laboratory as the child's affect (62 min total), in the seven scripted contexts.

**Coding and data aggregation.** Responsiveness was rated for each context, from 1 (*highly unresponsive*) to 7 (*highly responsive*), integrating the classic dimensions (Ainsworth, Bell, & Stayton, 1971): sensitivity-insensitivity to child signals, cooperation-interference (support for child autonomy), and acceptance-rejection (affection, warmth). Reliability, ICCs, were .81–.93. The scores cohered across the contexts (Cronbach's  $\alpha = .89$ ) and were averaged into the mother's *overall responsiveness score toward the child* ( $M = 4.55$ ,  $SD = 1.07$ ).

**Positive affect in interactions with children.**

**Observed contexts.** Mothers' affect was coded in the same contexts as the children's affect (62 min, encompassing multiple scripted situations).

**Coding and data aggregation.** The same approach was used as that applied to the child (see also Kochanska et al., 2007, for a different sample). Affect was coded for every 30-s segment. Here, we focus on positive affect: neutral/positive (not a "full-blown" positive emotion, but an upbeat, pleasant, engaged mood) and discrete positive affect ("full-blown" affection and joy). Particularly intense or pervasive expressions were marked. Kappas ranged from .62 to .80.

**Data aggregation.** The tallied instances of the mothers' intense or pervasive positive affect were weighed by 3, discrete positive affect by 2, and neutral/positive mood by 1. These figures were then added and divided by the number of coded segments to create a score of the *mother's positive affect in interactions with the child* ( $M = 0.94$ ,  $SD = 0.31$ ).

**Overall measure of positive parenting.** Mothers' overall responsiveness and positive affect robustly correlated,  $r(186) = .67$ ,  $p < .001$ . They were standardized and combined into a *positive parenting score* ( $M = 0.00$ ,  $SD = 0.91$ ).

**Power-assertive behavior.**

**Observed contexts.** Mothers' power-assertive behavior was observed during the 55 min of control interactions, as described above (a 10-min toy cleanup and 45 min of the prohibition contexts). The same 30-s segments as those used for child defiance were also coded for the mother's power assertion.

**Coding.** For each segment, the coders rated maternal global influence style in terms of amount of power: no interaction, social exchange (but no attempt to control child), gentle guidance (subtle, gentle control), control (matter-of-fact, assertive control), and forceful negative control (threatening, combative control). Additionally, coders recorded maternal physical power-assertive techniques: assertive physical control (firmly holding child, taking a toy away, blocking access to toys), and forceful, negative physical control (handling child roughly, spanking, yanking toys away). Reliabilities, kappas, were as follows: for global influence style, .73–.94 ("Do") and .86 ("Don't"), and for the physical power-assertive techniques, from .50 (one case only) to 1.00 ("Do"), and .77–.86 ("Don't").

**Data aggregation.** For each context ("Do" and "Don't"), we tallied all instances of each global and physical code and divided by the number of segments, weighed those scores to reflect the amount of power (no interaction by  $-2$ , social exchange by  $-1$ , gentle guidance by 1, control by 2, forceful negative control by 3, assertive physical control by 4, and forceful negative physical control by 5), and summed the weighed scores. Those two scores were standardized and averaged into an *overall score of maternal power-assertive behavior* ( $M = 0.00$ ,  $SD = 0.76$ ).

## Self-Reported Measures of Mothers' Power-Assertive Parenting

**Parental response to child misbehavior (Holden & Zambarano, 1992; Vittrup, Holden, & Buck, 2006).** The mother reported how frequently, in an average week (from 0 [*never*] to 6 [*nine or more times a week*]) she used each of several discipline techniques in response to common child misbehaviors. We focused on three techniques: threaten ( $M = 1.69$ ,  $SD = 1.82$ ), spank ( $M = 0.97$ ,  $SD = 1.03$ ), and yell in anger ( $M = 1.87$ ,  $SD = 1.46$ ).

**Attitudes toward spanking (Holden & Zambarano, 1992; Vittrup et al., 2006).** The mother indicated her agreement (from 1 [*strongly disagree*] to 7 [*strongly agree*]) with 10 statements about her use of and views on spanking. All items were aggregated into one score of endorsement of spanking (Cronbach's  $\alpha = .91$ ,  $M = 2.89$ ,  $SD = 1.45$ ).

**Overall measure of self-reported power assertion.** The four scores (threatening, spanking, yelling, and endorsing spanking) cohered ( $\alpha = .71$ ), and they were standardized and averaged into one score of *self-reported use of power assertion* ( $M = -0.00$ ,  $SD = 0.73$ ).

## Results

### Preliminary Analyses

Table 1 presents correlations among the constructs. The correlations among personality traits were consistent with our work with community mothers (Clark et al., 2000; Kochanska et al., 2004). Neuroticism correlated negatively with Extraversion, Conscientiousness, and Agreeableness, and the three latter traits were positively interrelated. Ecological adversity and child difficulty were modestly related, and each linked to less positive and more power-assertive maternal behavior, but unrelated to personality (except for more adversity relating to less Agreeableness). Mothers who reported higher Agreeableness and Openness scored higher on positive parenting, and those who reported higher Neuroticism and lower Conscientiousness reported using more power assertion. Mothers' observed positive parenting and power assertion were negatively related, but unrelated to their self-reported parenting.

### Ecological Adversity, Child Difficulty, and Mothers' Personality as Predictors of Parenting

We conducted three hierarchical multiple regressions to examine ecological adversity and child difficulty, mothers' personality, and their interactions as predictors of (a) positive parenting, (b) power-assertive behavior, and (c) self-reported power assertion. Ecological adversity and child difficulty were entered in Step 1, the five personality traits added in Step 2, and all 10 interactions (Ecological Adversity  $\times$  Each Trait and Child Difficulty  $\times$  Each Trait) added in Step 3. Table 2 presents the standardized regression coefficients for the final equations, with all predictors entered. Controlling for child gender and age did not affect the results.

**Predicting mothers' positive parenting.** Each step added significant explained variance. In the final equation, under conditions of high ecological adversity, mothers engaged in less positive parenting. Higher Agreeableness and Openness were associated with more positive parenting, but the former effect was qualified

Table 1  
Intercorrelations Among Ecological Adversity, Child Difficulty, Mothers' Personality Traits, and Parenting Measures

Variable	Ecological adversity	Child difficulty	Mothers' personality traits					Mothers' parenting		
			N	E	C	A	O	Positive parenting	Power-assertive behavior	Self-reported power assertion
Ecological adversity	—	.21***	.05	-.03	.14†	-.18**	-.04	-.34****	.23***	-.12†
Child difficulty		—	.03	.07	.05	-.07	-.06	-.16*	.58****	.00
Mothers' personality traits										
N			—	-.39****	-.38****	-.39****	.03	-.09	.01	.25***
E				—	.14†	.24****	.04	.07	.08	-.05
C					—	.16*	-.01	-.09	.08	-.24****
A						—	-.12	.24****	-.00	-.14†
O							—	.17**	-.07	.08
Mothers' parenting										
Positive parenting								—	-.15*	-.05
Power-assertive behavior									—	.04

Note. N = Neuroticism; E = Extraversion; C = Conscientiousness; A = Agreeableness; O = Openness.  
†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .025$ . \*\*\*  $p < .01$ . \*\*\*\*  $p < .001$ .

by the significant interaction with ecological adversity and the latter—by the interaction with child difficulty. Those interaction effects were examined using simple slopes (Aiken & West, 1991) and graphed in Figure 1A and 1B.

In Figure 1A, the simple slope of Agreeableness on positive parenting was significant for mothers who lived under conditions of low adversity (1 SD below the mean;  $b = .41$ ,  $SE = .11$ ,  $p < .001$ ); those who were more agreeable engaged in more positive parenting. Agree-

ableness was unrelated to positive parenting under conditions of high adversity (1 SD above the mean;  $b = .07$ ,  $SE = .09$ ,  $ns$ ).

In Figure 1B, the simple slope of Openness on positive parenting was significant for mothers of easy children (1 SD below the mean;  $b = .31$ ,  $SE = .09$ ,  $p = .001$ ), with more open mothers being more positive with their toddlers. There was no link between Openness and positive parenting for mothers of difficult children (1 SD above the mean;  $b = .03$ ,  $SE = .09$ ).

Table 2  
Ecological Adversity, Child Difficulty, and Mothers' Personality Traits as Predictors of Their Parenting

Outcomes	Positive parenting		Power-assertive behavior		Self-reported power assertion	
	$\beta$	$F$	$\beta$	$F$	$\beta$	$F$
Predictors						
Ecological adversity	-.26	13.60****	.10	2.25	-.14	3.43†
Child difficulty	-.06	<1	.54	69.47****	.10	1.66
N	-.07	<1	.03	<1	.18	4.17*
E	.06	<1	.05	<1	.05	<1
C	-.13	2.98†	.04	<1	-.19	5.99**
A	.26	11.34****	.06	<1	-.05	<1
O	.19	7.40***	-.04	<1	.07	<1
N × Ecological Adversity	.12	1.91	-.06	<1	-.05	<1
E × Ecological Adversity	.15	3.45†	.05	<1	-.03	<1
C × Ecological Adversity	-.05	<1	-.06	<1	.13	2.66
A × Ecological Adversity	-.18	4.79*	-.03	<1	-.09	1.05
O × Ecological Adversity	.11	2.27	.03	<1	.11	2.08
N × Child Difficulty	-.11	1.70	-.09	1.29	-.01	<1
E × Child Difficulty	.01	<1	.22	11.53****	-.02	<1
C × Child Difficulty	.01	<1	-.00	<1	-.18	5.31**
A × Child Difficulty	.05	<1	-.01	<1	.18	4.16*
O × Child Difficulty	-.16	4.56*	-.13	3.69†	.15	3.68†
	$R^2 = .28$ $F(17, 167) = 3.89****$		$R^2 = .43$ $F(17, 167) = 7.29****$		$R^2 = .21$ $F(17, 166) = 2.65****$	

Note. The presented values are from the final step, with all predictors in the equation. The predictors were entered as follows: In Step 1, ecological adversity and child difficulty; in Step 2, the five maternal personality traits; in Step 3, the five interaction terms of ecological adversity and personality traits and the five interaction terms of child difficulty and personality traits.  $F_{ch}$  values were as follows: For Positive parenting, after Step 1, 12.54,  $p < .001$ ; after Step 2, 2.97,  $p < .025$ ; after Step 3, 2.21,  $p < .025$ ; for Power-assertive behavior, after Step 1, 49.07,  $p < .001$ ; after Step 2, .89,  $ns$ ; after Step 3, 2.03,  $p < .05$ ; for Self-reported power assertion, after Step 1, 1.45,  $ns$ ; after Step 2, 3.74,  $p < .01$ ; after Step 3, 2.17,  $p < .025$ . N = Neuroticism; E = Extraversion; C = Conscientiousness; A = Agreeableness; O = Openness.  
†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .025$ . \*\*\*  $p < .01$ . \*\*\*\*  $p < .001$ .

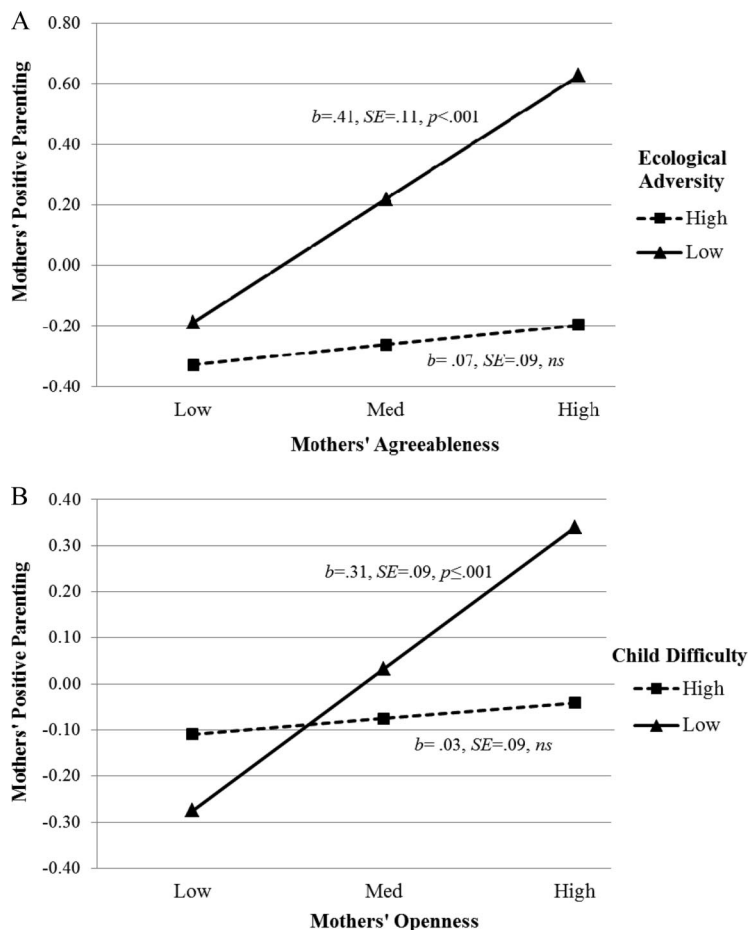


Figure 1. Ecological adversity moderates the effect of mothers' personality (A: Agreeableness) on their positive parenting, and children's difficulty moderates the effect of mothers' personality (B: Openness) on their positive parenting. Solid line represents significant simple slope; dashed line represents nonsignificant simple slope.

**Predicting mothers' power-assertive behavior.** Step 1 explained significant variance, due to higher child difficulty linked to more power assertion, an effect that remained significant in the final equation. Step 3 (the interaction effects) added significant explained variance. There was a significant interaction of maternal Extraversion and child difficulty, graphed in Figure 2. The simple slope of Extraversion on power assertion was significant for mothers with highly difficult children (1 *SD* above the mean;  $b = .18$ ,  $SE = .06$ ,  $p < .01$ ); more extraverted mothers relied more on power assertion when controlling difficult children. The link was absent for mothers of easy children (1 *SD* below the mean on difficulty;  $b = -.11$ ,  $SE = .07$ , *ns*).

**Predicting mothers' self-reported power assertion.** Step 2 and Step 3 each added significant explained variance. Higher Neuroticism and lower Conscientiousness were associated with more power assertion, but the latter effect was qualified by the significant interaction with child difficulty. The simple slope of Conscientiousness on reported power was significant for the mothers who had highly difficult children (1 *SD* above the mean;  $b = -.30$ ,  $SE = .10$ ,  $p < .01$ ); more conscientious mothers reported less power. There was no such relation for mothers of easy toddlers ( $b = .03$ ,  $SE = .08$ , *ns*) (see Figure 3A).

There was also a significant interaction of Agreeableness and child difficulty. The simple slope of Agreeableness on reported power was significant for mothers of easy toddlers ( $b = -.21$ ,  $SE = .09$ ,  $p < .025$ ), with more agreeable mothers reporting less power, but not significant for mothers of difficult toddlers ( $b = .08$ ,  $SE = .10$ , *ns*) (see Figure 3B).

## Discussion

This multimethod study using both observed and self-reported measures contributes to the growing body of research that aims to integrate research on parenting with that on personality. The results affirm the need to move beyond main effects of personality on parenting and to consider how different traits might operate under varying family circumstances (Caspi et al., 2005). Although Prinzie and colleagues (2009) examined child and parent age and types of designs as possible moderators of personality–parenting links, it is perhaps even more important to examine psychologically potent factors, such as the amount of stress, adversity, and challenge impinging on the parent. Personality research has shown that the Big Five traits interact with stress, predicting emotional responses and behavioral coping strategies (Bolger & Zuckerman,

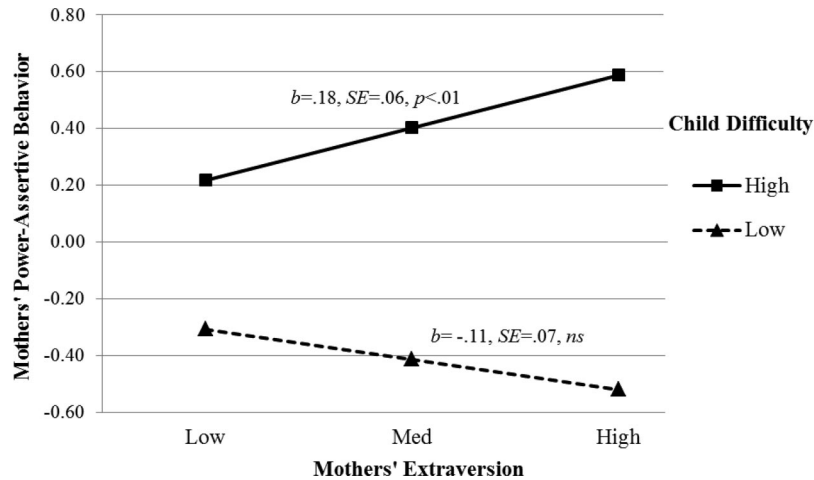


Figure 2. Children's difficulty moderates the effect of mothers' personality (Extraversion) on their power-assertive behavior. Solid line represents significant simple slope; dashed line represents nonsignificant simple slope.

1995; David & Suls, 1999; Suls et al., 1996; Watson & Hubbard, 1996), particularly in highly stressed samples (Connor-Smith & Flachsbart, 2007). Furthermore, specific kinds of stress or challenge may differently moderate personality-behavior links (Lee-Baggeley et al., 2005; Suls, Martin, & David, 1998). Karreman et al. (2008) suggested that differences in parent personality may be, in fact, most relevant during the demanding experience of raising a difficult child.

In some respects, our data are consistent with existing research in which mostly main effects have been considered (Belsky & Jaffee, 2006; Prinzie et al., 2009). Mothers high on Neuroticism reported more power assertion (and that effect was not altered by stress). Mothers scoring highly on Agreeableness, Conscientiousness, and Openness appeared more responsive and positive toward their toddlers and reported less reliance on and preference for the use of power—yet, those findings must be qualified. Adding measures of the more or less challenging parenting circumstances as potential moderators to the equations revealed that those personality-parenting links were moderated by the amount of parenting challenge, and significant under some, but not all, conditions. This is a contribution of this work, because without examining such moderators (as in past studies), such conclusions could not be reached.

Two effects emerged *in the presence of challenge* due to raising a difficult child. Dealing with highly negative, defiant toddlers, highly conscientious mothers reported less power assertion, whereas low scorers reported more power. Difficult children and parents often enter a maladaptive coercive trajectory (Lipscomb et al., 2011; Lorber & Egeland, 2011), and thus Conscientiousness may be an important inner resource that may help offset such risks. This is consistent with the portrayal of highly conscientious individuals as proficient at controlling impulses and relying on adaptive, problem-focused strategies of coping with stress (Roberts, Jackson, Fayard, Edmonds, & Meints, 2009; Watson & Hubbard, 1996).

By contrast, when faced with difficult toddlers, highly extraverted mothers used more power assertion when observed in the laboratory, whereas low scorers used less. This is a third study to

find this pattern using behavioral measures of parenting and child difficulty (Clark et al., 2000; Karreman et al., 2008). Extraversion is a multifaceted construct that encompasses subtraits of affiliation, energy, ambition, positive activity, ascendance, and warmth, but also assertiveness (Costa & McCrae, 1992; Watson & Clark, 1997), and it correlates with both affiliation and dominance (Costa & McCrae, 1988). Consequently, perhaps the child's angry opposition activates certain aspects of Extraversion, and then highly extraverted parents behave in a more assertive and dominant manner, including reliance on more forceful discipline. Given inconsistent evidence for Extraversion in parenting, more research is needed.

Three personality-parenting relations emerged only *in the absence of challenge and stress*. Two involved maternal Agreeableness, and the pattern was consistent across both types of challenge (ecological adversity and child difficulty) and both aspects of parenting (responsive, positive behavior and self-reported power assertion). Higher Agreeableness conferred its advantages—links with more positive parenting and less power—only in the absence of challenge and stress. Those advantages were no longer present when the mother faced highly adverse circumstances or a difficult child.

There is little personality literature from which to draw to explain those findings. Future research on potential mediators of the links between personality and parenting (e.g., cognitive appraisals, parenting cognitions, parental affect) may elucidate possible mechanisms that explain those results. Bornstein and colleagues (2007) found that mothers higher in Agreeableness were more satisfied in their parenting role (and presumably, satisfaction may lead to more adaptive parenting). Smith and colleagues (2007) and Belsky, Crnic, and Woodworth (1995) reported that effects of Agreeableness on parenting were mediated by parental positive emotions. However, parenting satisfaction and positive emotions (the putative mediators) may be easily undermined by external negative factors, such as adversity or child difficulty. Consequently, the indirect effect of Agreeableness on parenting may then also be diminished.

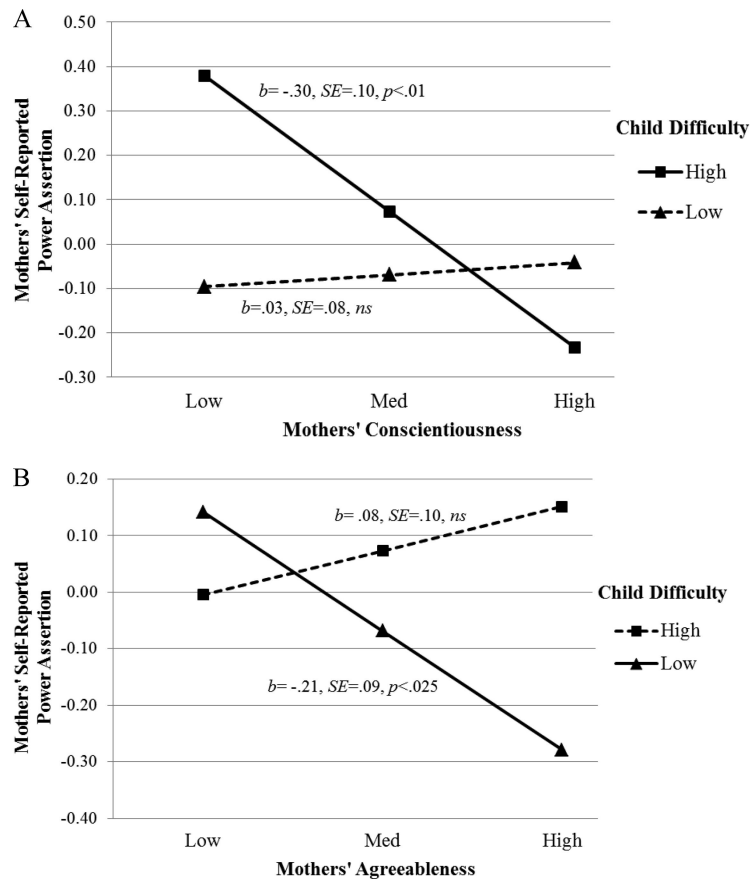


Figure 3. Children's difficulty moderates the effect of mothers' personality (A: Conscientiousness; B: Agreeableness) on their self-reported power-assertion. Solid line represents significant simple slope; dashed line represents nonsignificant simple slope.

Somewhat surprisingly, Openness predicted more positive parenting for mothers of easy children, but the link was absent when children were difficult. One observational study (Koenig et al., 2010) found an opposite effect, but only for fathers in a community sample. Perhaps low-income mothers who deal with a difficult child focus on the immediate management, rather than on "enlarging and examining experience," typical for high scorers (McCrae, 1996). Openness-related traits, however, may foster positive parenting when children do not present an immediate challenge. Clearly, more research is needed to understand Openness-parenting relations.

This study also informs research on parenting. Although detrimental effects of ecological adversity and child difficulty are known, our results suggest that they may be quite specific, with the former undermining maternal responsive, affectively positive parenting and the latter associated strongly with maternal reliance on power assertion. Perhaps the more chronic stress due to pervasive factors in the mother's life, such as financial strain, unstable family relationships, and stressful life events taxes her capacity to notice and respond sensitively to the child's signals and needs, and to maintain a joyful and affectionate mood. By contrast, more immediate stress due to the child's aversive, angry resistance is, not surprisingly, strongly linked to the mother's forceful, power-assertive discipline (Paulussen-Hoogbeem et al., 2007).

Most of our significant effects were modest, a common pattern (Prinz et al., 2009). Furthermore, although it is tempting to speculate about causal links among the studied constructs of ecological adversity, child difficulty, the mother's personality, and her parenting, the actual dynamics are complex and involve several mechanisms not examined here. Genetic factors underpin parents' and children's traits, parenting, and education, or perceived stress (Caspi et al., 2005; Maccoby, 2000; Wade & Kendler, 2000). Future research that integrates the parent's personality, the child's characteristics, and the types of adversity that permeate the context of parenting promises to inform personality and social psychology, developmental psychology, and developmental psychopathology. Such integration is a goal well worth pursuing.

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